

Schedule 1: Designer Information

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			Lot:	
FP Town 2 End			Lot/con.	
Municipality Clarington	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design	gn activities			
Name David DaCosta		Firm	gtaDesigns Inc.	
Street address 2985 Drew Roa	d, Suite 202		Unit no.	.ot/con.
Municipality Mississauga	Postal code L4T 0A4	Province Ontario	E-mail dave@gtadesig	ıns.ca
Telephone number	Fax number		Cell number	
(905) 671-9800	<u> </u>	') 494-9643	(416) 268-68	20
C. Design activities undertaken by individual identified in S	ection B. [Bu	liding Code Table	3.5.2.1 of Division C	
☐ House ☑ HVAC – H	louse		■ Building Structural	
☐ Small Buildings ☐ Building Se	ervices		☐ Plumbing – House	
	Lighting and Po	wer	☐ Plumbing – All Buildings	
☐ Complex Buildings ☐ Fire Protect	ction		On-site Sewage Systems	i
Description of designer's work Mod	del Certification	1	Project #	PJ-00022
Usedian and Ocalina Land Octoberian		Duilder	Layout #	JB-00696
Heating and Cooling Load Calculations Air System Design		Builder Project	Delpark/Highcastle Hor Northglen	mes
Residential mechanical ventilation Design Summary				
Residential System Design per CAN/CSA-F280-12		Model	FP Town 2 End - Bradf	ord
Residential New Construction - Forced Air		SB-12	Package D	
D. Declaration of Designer				
David DaCosta	declare that (d	choose one as appro	priate):	
(print name)				
I review and take responsibility for a 3.2.4 Division C of the Building Cocclasses/categories.	•	•		
Individual BCIN:				
Firm BCIN:			-	
			•	
Individual BCIN:	3296	64		
Basis for exemp	tion from registr	ation:	Division C 3.2.4.1. (4)	
☐ The design work is exempt from the	e registration and	d qualification requiren	nents of the Building Code.	
Basis for exemp	tion from registr	ation and qualification:		
I certify that:				
The information contained in this schedule is true to the best of n	ny knowledge.			
I have submitted this application with the knowledge and consent	t of the firm.			
June 17, 2015		Mane 14		
Date		Signature of De	signer	

NOTE:

1. 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, temporay license, or a certificate of authorization, issed by the
Ontario Associstion 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.



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

Page 2

Heat loss and gain calcul	ation summary sheet CSA-F280-M12 Standard
	rk/Highcastle Homes Form No. 1
and may not be used by any other persons without authorization. Docum	
	Location
Address (Model): FP Town 2 End - Bradford	Site: Northglen
Model:	Lot:
City and Province: Clarington	Postal code:
	ns based on
	assidy & Co. Dwgs Dated Apr/2013
Attachment: Townhome	Front facing: East/West Assumed? Yes
No. of Levels: 3 Ventilated? Included	Air tightness: 1961- Present (ACH=3.57) Assumed? Yes
Weather location: Durham	Wind exposure: Shelterd
HRV?	Internal shading: Light-translucent Occupants: 4
Sensible Eff. at -25C 0 Apparent Effect. at -0C 0	Units: Imperial Area Sq. ft 1053
Heating design conditions	Cooling design conditions
Outdoor temp -4.0 Indoor temp: 72 Mean soil tem; 48	Outdoor temp 84 Indoor temp: 75 Latitude: 44
Above grade walls	Below grade walls
	Style A: As per Selected OBC SB12 Package D R 20
·	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: 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



Builder: Delpark/Highcastle Homes

Air System Design

SB-12 Package D 2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca

2015 June 17, 2015 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.

Page 3 PJ-00022

Project: Nort	thglen		ı	Model:		FP Tov	wn 2 En	d - Brad	dford			Sy	stem 1	1		of the Bui ndividual	_		Man	u A	A C		David Da			oject # yout #		-00022 -00696
DESIGN LOAD SPECIFICATION	S		Į.	AIR DISTI	RIBUTION	& PRES	SURE					FURNACE	/AIR HAN	NDLER DA	ATA:			BOILER/V	VATER HI	EATER D	ATA:			,	A/C UNIT	DATA:		
Level 1 Net Load Level 2 Net Load Level 3 Net Load Level 4 Net Load	7,497 8,377 6,691 0	btu/h		Equipmer Additiona Available Return Br	l Equipme Design P	ent Press ressure	ure Drop		0.5 ' 0.225 ' 0.275 ' 300 f	'w.c. 'w.c.	1	Make Model Input Btu Output Bt	h	Amai 3000 2880	302BNA 10			Make Model Input Btu Output Bt			Т	·уре		(Amana Cond Coil		1.5 1 1.5 1.5	Гon
Total Heat Loss	22,566 I	btu/h	- 1	R/A Plenu	ım Pressu	ire			0.138 '	'w.c.	- 1	E.s.p.		0.50)	' W.C.		Min.Outp	ut Btu/h		Α	WH						
Total Heat Gain	13,664 I			S/A Plenu					0.14 '	'w.c.		Water Ter	np		•	deg. F.							wer DATA	\ :				
Total Heat Loss + 10%	24,822			Heating A			-			cfm/btuh		AFUE		96%	ó			Blower Sp	peed Sele	cted:	T2				Blower Ty	•	ECM	
Building Volume Vb	13126 1		•	Cooling A	ir Flow P	-	-			fm/btuh		Aux. Heat													-	ess DC O		
Ventilation Load	5,521						R/A Temp			deg. F.	•	SB-12 Pag	kage	Packag	ge D			Heating C	neck _	621 c	tm			,	Cooling C	neck _	621	etm
Ventilation PVC	60 (cfm		Different			S/A Temp	1	113 (deg. F.		Famm Die		42 4				Calastad	-f	624 -			,	!: A	is Flaus B	-4-	624	
Supply Branch and Grill Sizing				Diffuser le	oss =	0.01 "	w.c.					Temp. Ris	e>>> =	43 0	eg. F.			Selected of	ctm> =	<u>621</u> c	ım		,	Jooling A	ir Flow R	ate =	621	rm
							Level 1 0	Outlets													Level 2 O	outlets						
S/A Outlet No.	8	11	12	13											6	7	9	10										
Room Use	CAV	BASE	BASE	BASE											KIT	GRT	FOY	PWD										
Btu/Outlet	1170	2109	2109	2109											3352	2259	1887	879										
Heating Airflow Rate CFM	32	58	58	58											92	62	52	24										
Cooling Airflow Rate CFM	2	18	18	18											98	96	90	43										
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
Actual Duct Length	34	17	10	16											18	17	20	20										
Equivalent Length	120	100	160	130	90	90	90	90	90	90	90	90	90	90	130	110	100	140	90	90	90	90	90	90	90	90	90	90
Total Effective Length	154	117	170	146	90	90	90	90	90	90	90	90	90	90	148	127	120	160	90	90	90	90	90	90	90	90	90	90
Adjusted Pressure	0.08	0.11	0.08	0.09	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.09	0.10	0.11	80.0	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Duct Size Round	4	5	5	5											6	6	6	5										
Outlet Size	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	В	Α	В	В											Α	Α	В	В										
							Level 3 (Outlets													Level 4 O	outlets						
S/A Outlet No.		2	3	4	5																							
		_																										
Room Use		MAST	BED 2	BED 3	BATH																							
Room Use Btu/Outlet			BED 2 1599	BED 3 2009	BATH 795																							
		MAST																										
Btu/Outlet		MAST 2289	1599	2009	795																							
Btu/Outlet Heating Airflow Rate CFM	0.13	MAST 2289 63	1599 44	2009 55	795 22	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM	0.13	MAST 2289 63 87	1599 44 64	2009 55 71	795 22 15	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure	0.13 90	MAST 2289 63 87 0.13	1599 44 64 0.13	2009 55 71 0.13	795 22 15 0.13	0.13 90	0.13 90	0.13 90	0.13 90	0.13 90	0.13 90	0.13 90	0.13 90	0.13	0.13	0.13	0.13 90	0.13 90	0.13 90	90	0.13 90	0.13	90	0.13 90	0.13	90	0.13 90	0.13 90
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length		MAST 2289 63 87 0.13 34	1599 44 64 0.13 33	2009 55 71 0.13 41	795 22 15 0.13 37																							
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length	90	MAST 2289 63 87 0.13 34 110	1599 44 64 0.13 33 110	2009 55 71 0.13 41 130	795 22 15 0.13 37 180	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	90 90	MAST 2289 63 87 0.13 34 110	1599 44 64 0.13 33 110 143	2009 55 71 0.13 41 130	795 22 15 0.13 37 180 217	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size	90 90	MAST 2289 63 87 0.13 34 110 144 0.09 6	1599 44 64 0.13 33 110 143 0.09 5 3x10	2009 55 71 0.13 41 130 171 0.08 6 4x10	795 22 15 0.13 37 180 217 0.06 4 3x10	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90	90 90
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	90 90 0.14	MAST 2289 63 87 0.13 34 110 144 0.09 6	1599 44 64 0.13 33 110 143 0.09	2009 55 71 0.13 41 130 171 0.08	795 22 15 0.13 37 180 217 0.06	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk	90 90 0.14	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A	1599 44 64 0.13 33 110 143 0.09 5 3x10 B	2009 55 71 0.13 41 130 171 0.08 6 4x10 B	795 22 15 0.13 37 180 217 0.06 4 3x10 B	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing	90 90 0.14 4x10	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A	1599 44 64 0.13 33 110 143 0.09 5 3x10 B	2009 55 71 0.13 41 130 171 0.08 6 4x10 B	795 22 15 0.13 37 180 217 0.06 4 3x10 B	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 Supply Tru	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No.	90 90 0.14 4x10	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A	1599 44 64 0.13 33 110 143 0.09 5 3x10 B	2009 55 71 0.13 41 130 171 0.08 6 4x10 B	795 22 15 0.13 37 180 217 0.06 4 3x10 B	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14	90 90 0.14	90 90 0.14 4x10	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM	90 90 0.14 4x10 1R 145	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40	795 22 15 0.13 37 180 217 0.06 4 3x10 B	90 90 0.14 4x10 0.02 "	90 90 0.14 4x10 w.c	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 Return Tri	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 Supply Tru	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure	90 90 0.14 4x10 1R 145 0.12	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12	2009 55 71 0.13 41 130 171 0.08 6 4x10 B	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10 Return Tro	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing :FM	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect.	90 90 0.14 4x10	90 90 0.14 4x10 <u>S</u> T	90 90 0.14 4x10 Supply Tru	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length	90 90 0.14 4x10 1R 145 0.12 28	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12	90 90 0.14 4x10 0.02 " 6R	90 90 0.14 4x10 7R 0.12	90 90 0.14 4x10 8R 0.12	90 90 0.14 4x10 9R 0.12	90 90 0.14 4x10	90 90 0.14 4x10 11R 0.12	90 90 0.14 4x10	90 90 0.14 4x10 Return Tro	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10	90 90 0.14 4x10 Supply Tru	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14 4x10	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length	90 90 0.14 4x10 1R 145 0.12 28 175	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12 15 175	90 90 0.14 4x10 0.02 " 6R 0.12	90 90 0.14 4x10 7R 0.12	90 90 0.14 4x10 8R 0.12	90 90 0.14 4x10 9R 0.12	90 90 0.14 4x10 10R 0.12	90 90 0.14 4x10 11R 0.12	90 90 0.14 4x10	90 90 0.14 4x10 Return Tro	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing :FM	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect.	90 90 0.14 4x10	90 90 0.14 4x10 <u>S</u> T	90 90 0.14 4x10 Supply Tru Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Equivalent Length Total Effective Length	90 90 0.14 4x10 1R 145 0.12 28 175 203	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 230	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12 15 175 190	90 90 0.14 4x10 0.02 " 6R 0.12 70	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70	90 90 0.14 4x10 9R 0.12 70	90 90 0.14 4x10 10R 0.12 70	90 90 0.14 4x10 11R 0.12 70 70	90 90 0.14 4x10	90 90 0.14 4x10 Return Trunk Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 <u>S</u> T	90 90 0.14 4x10 Supply Tru Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 230 0.05	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5 5R 111 0.12 15 175 190 0.06	90 90 0.14 4x10 0.02 " 6R 0.12	90 90 0.14 4x10 7R 0.12	90 90 0.14 4x10 8R 0.12	90 90 0.14 4x10 9R 0.12	90 90 0.14 4x10 10R 0.12	90 90 0.14 4x10 11R 0.12	90 90 0.14 4x10	90 90 0.14 4x10 Return Trunk Orop	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 <u>S</u> T	90 90 0.14 4x10 Supply Tru Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06 7.5	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06 6.0	1599 44 64 0.13 33 110 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07 8.5	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 205 230 0.05 5.0	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12 15 175 190 0.06 6.0	90 90 0.14 4x10 0.02 " 6R 0.12 70	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70	90 90 0.14 4x10 9R 0.12 70	90 90 0.14 4x10 10R 0.12 70	90 90 0.14 4x10 11R 0.12 70 70	90 90 0.14 4x10	90 90 0.14 4x10 Return Tro Trunk Orop	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 S T A A B C C C C E	90 90 0.14 4x10 Supply Tru Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06 7.5 8	2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06 6.0 8	1599 44 64 0.13 33 1100 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07 8.5 6	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 230 0.05 5.0 FLC	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5 5R 111 0.12 15 175 190 0.06 6.0 FLC	90 90 0.14 4x10 0.02 " 6R 0.12 70 70 0.17	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70 70	90 90 0.14 4x10 9R 0.12 70 70	90 90 0.14 4x10 10R 0.12 70 70 0.17	90 90 0.14 4x10 11R 0.12 70 70 0.17	90 90 0.14 4x10	90 90 0.14 4x10 Return Tro Trunk Orop	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 S T	90 90 0.14 4x10 Supply Truk Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Inlet Size " "	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06 7.5 8	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06 6.0 8 x	1599 44 64 0.13 33 1100 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07 8.5 6 x	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 205 230 0.05 5.0	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5R 111 0.12 15 175 190 0.06 6.0	90 90 0.14 4x10 0.02 " 6R 0.12 70	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70	90 90 0.14 4x10 9R 0.12 70	90 90 0.14 4x10 10R 0.12 70	90 90 0.14 4x10 11R 0.12 70 70	90 90 0.14 4x10	90 90 0.14 4x10 Return Tri Trunk Orop	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 S T A A B C C C C E	90 90 0.14 4x10 Supply Truk Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Inlet Size	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06 7.5 8	2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06 6.0 8	1599 44 64 0.13 33 1100 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07 8.5 6	2009 55 71 0.13 41 130 171 0.08 6 4x10 B ssure Loss 4R 40 0.12 25 205 230 0.05 5.0 FLC	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5 5R 111 0.12 15 175 190 0.06 6.0 FLC	90 90 0.14 4x10 0.02 " 6R 0.12 70 70 0.17	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70 70	90 90 0.14 4x10 9R 0.12 70 70	90 90 0.14 4x10 10R 0.12 70 70 0.17	90 90 0.14 4x10 11R 0.12 70 70 0.17	90 90 0.14 4x10	90 90 0.14 4x10 Return Tri Trunk Orop	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 S T	90 90 0.14 4x10 Supply Truk Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14
Btu/Outlet Heating Airflow Rate CFM Cooling Airflow Rate CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Outlet Size Trunk Return Branch And Grill Sizing R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round Inlet Size " "	90 90 0.14 4x10 1R 145 0.12 28 175 203 0.06 7.5 8	MAST 2289 63 87 0.13 34 110 144 0.09 6 4x10 A 2R 100 0.12 38 175 213 0.06 6.0 8 x	1599 44 64 0.13 33 1100 143 0.09 5 3x10 B Grill Pres 3R 225 0.12 11 150 161 0.07 8.5 6 x	2009 55 71 0.13 41 130 6 4x10 8 4x10 8 4x10 25 205 230 0.05 5.0 FLC x	795 22 15 0.13 37 180 217 0.06 4 3x10 B 5 5R 111 0.12 15 175 190 0.06 6.0 FLC	90 90 0.14 4x10 0.02 " 6R 0.12 70 70 0.17	90 90 0.14 4x10 7R 0.12 70 70	90 90 0.14 4x10 8R 0.12 70 70	90 90 0.14 4x10 9R 0.12 70 70	90 90 0.14 4x10 10R 0.12 70 70 0.17	90 90 0.14 4x10 11R 0.12 70 70 0.17	90 90 0.14 4x10	90 90 0.14 4x10 Return Tri runk Drop 2 7 6 8	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 Sizing FM 621	90 90 0.14 4x10 Press. F 0.05	90 90 0.14 4x10 Round 13.5 13.5	90 90 0.14 4x10 Rect. 24x10 20x8	90 90 0.14 4x10 Size	90 90 0.14 4x10 S T	90 90 0.14 4x10 Supply Truk Trunk	90 90 0.14 4x10 unk Duct	90 90 0.14 4x10 : Sizing CFM F	90 90 0.14 4x10 Press. F	90 90 0.14 4x10 Round	90 90 0.14 4x10 Rect. 8	90 90 0.14 4x10 Size	90 90 0.14



Total Heat Loss

Total Heat Gain

22,566 btu/h

13,664 btu/h

Heatloss/Gain Calculations CSA-F280-12

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

e-mail dave@gtadesigns.ca

None Alete

David DaCosta

Package D

	Builder:	Delpark/Highcast	le Homes	_	Date:			June	17, 2015			_			Wea	ther Data	D	urham	44	-4.0	84 20	48.2				Pa
2012 OBC	Project:	Northgle	n	м	odel: _		FP '	Town 2	End - Brad	ford		_	Syste	m 1	Hea	at Loss ^T	76 deg. F	=	Ht gain ^T	9.2	deg. F	GTA:	1053		Project # _ayout #	PJ-00 JB-00
Run ft. exposed wall A Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall A			BAS 66 A B 2.0 AG 442 Area A B Fir	SE.	1.0 <i>i</i> 175 <i>i</i>	Area A B		A B Ar Ar B Fli	G rea		A B AG Area A B	,	A B AG Area A B		A B AG Area A B Fir		A B AG Area A B Fir		A B AG Area A B Fir		A B AG Area A B Fir		A B A A A B Fi	G rea	, , ,	A B AG Area A B B
Gross Exp Wall B Components	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 13.79 8.50 50.00 22.86 22.05 Slab On C	24.13 10.74 24.13 27.18 24.13 20.71 38.19 21.24 37.44 87.34 25.25 3.06 5.51 0.67 8.94 1.08 1.52 0.72 3.32 1.58 3.45 0.15	Loss 7	7 7 22 82 228 17 1	175		25 25 0	Lo	oss Gain		Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain		oss Gai	n I	Loss Ga
Level 1 HC Total Run ft. exposed wall B Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Exposed Floors Gross Exp Wall A	1 =.25 p	0.32 0.10 239	1.0 632 KII 20 A B 10.0 168 Area A B Fir 200	1213	10.0 167	В	36	18 A B 10.0 70 Ar A B Fli	rea	10.	1 Area A B Fir		A B Area A B Fir		A B Area A B Fir		A B Area A B Fir		A B Area A B Fir		A B Area A B Fir		A B A A B B FI	rea	, ,	A B Area A B B-Fir
Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Net exposed walls A Net exposed walls B Exposed Ceilings A Exposed Floors Exposed Floors	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 15.13 8.50 50.00 22.86 22.05	Loss Gain 24.13 10.74 24.13 27.18 24.13 20.71 38.19 21.24 37.44 87.34 25.25 3.06 5.02 0.61 8.94 1.08 1.52 0.72 3.32 1.58 3.45 0.15	Loss 35 84 20 48 21 53 124 62	3 414 60 64	27	651	734 123				Loss 6 145 7 169	145	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	L	oss Gair	n I	Loss Ga
Foundation Conductive Heatloss Total Conductive Heat Loss, Air Leakage Heat Loss/Gain Ventilation Case 1 Case 2 Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	Slab On C x 1 =.25 p	0.1133 0.0029 0.24 0.10 82.08 9.94 0.32 0.10 239	248 28 59	1505 1 4	1.0	1671 189 398	857 3 84 683	1.5	158 333	60 1 45	650 74 155	349														
Level 2 HL Total 8,377 Level 2 HG Total 7,198		otal HL for per room	335	2153		2259	2114		1887	89	879	943														

 $\label{eq:Division C} \textbf{Division C subsection 3.2.5. of the Building Code. Individual BCIN:}$



Total Heat Loss

Total Heat Gain

22,566

13,664

btu/h

btu/h

Heatloss/Gain Calculations CSA-F280-12

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

																			e-ma	ail dave@	gtadesig	ns.ca											
		Builder:	Delpark/	/Highcast	le Home	s	D)ate:		J	une 17, 2	015							Weath	ner Data	D	urham	44	-4	4.0 8	4 20	48	3.2			•		Page 5
2012 OBC		Project:		Northgle	n		Мо	odel:		FP Tow	n 2 End -	Bradfor	d		-	Sys	tem 1		Heat	Loss ^T	76 deg. F	:	Ht gain ^1		9.2 d	eg. F	G'	TA:	1053	Lay	ject # yout #	JB-	00022 00696
	Level 3					MAST		В	ED 2		BED	3		BATH		-																	
	ft. exposed wall A				25 A			13 A		20	Α (10	Α		Α			Α		Α		Α			Α			Α		Α	١.	
Run	ft. exposed wall B				В			В			В			В		В			В		В		В			В			В		В	3	
	Ceiling height				8.0 210 Ar			8.0	_	8.0) I Area		8.0	Area			_		A		A		A = a	_					Araa		,		
E	Floor area Exposed Ceilings A				210 A	ea		185 Are	d		I Area		55			Are A	d		Area A		Area A		Are A	a		Ar A	#d		Area A		A	lrea	
	Exposed Ceilings B				В			В			В			В		В			В		В		В			В			В		В		
	Exposed Floors				Fir	•		Flr			Flr			Flr		Fir			Fir		Flr		Fir			Fli			Flr		F	lr .	
	Gross Exp Wall A				200			104		16)		80																				
	Gross Exp Wall B Components	R-Values L	nss G	ain	I o	ss G	ain	Los	s Gair		Loss	Gain		Loss	Gain	Lo	s Gain		Loss	Gain	Loss	Gain	Los	s 6	ain	Lo	ss G	ain	Loss	s Gain		.oss	Gain
	North Shaded	3.15	24.13	10.74						Ī		T	T [Ī					T [1			1 Ē		
	East/West	3.15	24.13	27.18	24	579	652	18	434	89 1																							
	South	3.15	24.13	20.71							217	186	7	169	145																		
	Existing Windows Skylight	1.99 2.03	38.19 37.44	21.24 87.34																											1		
	Doors	3.01	25.25	3.06																													
	et exposed walls A	15.13	5.02	0.61	176	884	107	86	432	52 13	668	81	73	367	44																		
	et exposed walls B	8.50	8.94	1.08	240	240	450	405	204	24 42				٠.	4.0																		
	Exposed Ceilings A Exposed Ceilings B		1.52 3.32	0.72 1.58	210	319	152	185	281 1	34 16 ⁻	245	117	55	84	40																		
	Exposed Floors	22.05	3.45	0.15																													
Foundation Cond	ductive Heatloss																														4		
Total Conductive	Heat Loss Heat Gain					1782	011	1	147	75	1564			619	229																		
Air Leakage	Heat Loss/Gain		0.0915	0.0029		163	911		105	2	143	873		57																			
	Case 1	х	0.19	0.10		343	89			66	301			119																			
Ventilation	Case 2		82.08	9.94																													
	Case 3 Heat Gain People		0.32	0.10 239	-		478	4		39		239																		4			
	Appliances Loads	1 =.25 pe	rcent	2730	2		4/0	- 1		39		238																					
	Duct and Pipe loss			10%						98																							
Level 3 HL Total Level 3 HG Total	6,691 5,217		al HL for pe HG per roo			2289	1925	1	599	04	2009	1560		795	328																		
									,																								
	Lavel 4																																
Run	Level 4 of ft. exposed wall A				Α			Α	20	15	Α			Α		Α			Α		Α		Α			А			Α		А		
	ft. exposed wall B				В			В	-		В			В		В			В		В		В			В			В		В		
	Ceiling height																																
_	Floor area				Ar	ea		Are	a		Area			Area		Are	a		Area		Area		Are	а		Ar	ea		Area	1		rea	
	Exposed Ceilings A Exposed Ceilings B				A B			A B			A B			A B		A B			A B		A B		A B			A B			A B		A B		
-	Exposed Floors				Fir			Fir			Fir			Fir		Fir			Flr		Flr		Fir			Fli			Fir		F		
	Gross Exp Wall A																																
	Gross Exp Wall B	n.v. 1.				_																		_			_						
	Components North Shaded	3.15	24.13	ain 10.74	Lo	ss G	ain	Los	s Gair	_	Loss	Gain	T [Loss	Gain	Lo	s Gain	_	Loss	Gain	Loss	Gain	Los	is G	ain	Lo	ss G	ain	Loss	s Gain	ıĖ	.oss	Gain
	East/West	3.15	24.13	27.18																													
	South	3.15	24.13	20.71																													
	Existing Windows	1.99	38.19	21.24																													
	Skylight Doors	2.03 3.01	37.44 25.25	87.34 3.06																													
Ne	et exposed walls A	15.13	5.02	0.61																													
Ne	et exposed walls B	8.50	8.94	1.08																											4		
	Exposed Ceilings A	50.00	1.52	0.72 1.58																													
E	Exposed Ceilings B Exposed Floors	22.86 22.05	3.32 3.45	0.15																													
Foundation Cond				,5																													
Total Conductive	Heat Loss Heat Gain																																
Air Leakage	Heat Loss/Gain		0.0000	0.0029																													
	Case 1	x	0.00	0.10																													
Ventilation	Case 2		82.08	9.94																													
	Case 3 Heat Gain People		0.32	0.10 239																											4		
	Appliances Loads	1 =.25 pe	rcent	2730																													
	Duct and Pipe loss	20 pc		10%																													
Level 4 HL Total	0		al HL for pe																														
Level 4 HG Total	0	Total	HG per roo	m x 1.3	_						<u> </u>	1	1 1		Ll	. ∟			L			_	↓ L			<u> </u>					1		
								l re	view and	ake resi	onsibilit	y for the	desian	work a	nd am qua	alified in f	he appropr	riate ca	tegory as	an "other	designer" ı	ınder								5	SB-12 Pa	ackad	9
	22 566											,							3, 40	4													

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

Mana Matte

David DaCosta

Package D



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

Project # Layout # Page 6 PJ-00022 JB-00696

32964

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

	DOCUMENT C.Z.O. OF the Building Code.	Judi Dona. 5255.		VIG BUCCOLL
Package: Project:	Package D Clarington	Model:	FP Town 2 End - E	?dfard
Project:	-			Srauloru
	RESIDENTIAL MECHANICAL			
	For systems serving one dwelling unit & co	onforming to the Untario Buildin	g Code, O.geg 159/93	
	Location of Installation	Total V	entilation Capacity 9.32.3.	.3(1)
Lot #	Plan #	Bsmt & Master Bdrm	n 2 @ 20 cfr	m 40 cfm
Township	Clarington	Other Bedrooms Bathrooms & Kitcher	2 @ 10 cfr	m 20 cfm
Roll #	Permit #	Other rooms	1 @ 10 cfr Total	
Address				
		Principa	I Ventilation Capacity 9.32	3 //1\
	Builder	Trincipa	T Ventuation Capacity 5.52	.5.7(1)
Name	Dalaced #Polesconds Heaves	Master bedroom	1 @ 30 cfr	
Address	Delpark/Highcastle Homes	Other bedrooms	2 @ 15 cfr Total	m <u>30</u> cfm 60
City		Prin	ncipal Exhaust Fan Capacit	tv
Tel	Fax	Make	Model	Location
		Broom	684N	Enquito
	Installing Contractor	Broan	004IN	Ensuite
Name	<u> </u>	90 cfm	2	.5 Sones
Address		1	Heat Recovery Ventilator	
		Make	iout nootery renimate.	
City		Model	cfm high	0 cfm low
Tel	Fax	Sensible efficiency (@ -25 deg C	<u>0</u>
		Sensible efficiency (೨ 0 deg C	<u>0</u>
	Combustion Appliances 9.32.3.1(1)	Supp	lemental Ventilation Capac	city
a) x c) x	Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Natural draft, B-vent or induced draft fireplaces Solid fuel (including fireplaces)	Total ventilation cap	•	100.0 60.0 40.0 cfm
d) e)	No combustion Appliances	KEQUIKED supplen	nemai vent. Capacity	40.0 cfm
_ ′ 🗀				
	Hosting System		upplemental Fans 9.32.3.5.	Sones
x	Heating System Forced air	Location Pwd.	cfm Model 50 770	Solles
	Non forced air Electric space heat (if over 10% of heat load)			
		<u> </u>		
l x	House Type 9.32.3.1(2) Type a) or b) appliances only, no solid fuel	all fans HVI listed	Make Broan	or Equiv.
ıı X	Type I except with solid fuel (including fireplace)		2.00	
III I	Any type c) appliance		Designer Certification	
IV Other	Type I or II either electric space heat Type I, II or IV no forced air		this ventilation system has b he Ontario Building Code.	een designed

Otnei	r	Type I, II or IV no forced air		in accordance w	ith the Ontario B	uliding Code.
		System Design Option	i [Name	David Da	aCosta
1 2	Х	Exhaust only / forced air system HRV WITH DUCTING / forced air system		Signature	Mane	Mest
3 4		HRV simplified connection to forced air system HRV full ducting/not coupled to forced air system		HRAI#	5190	BCIN#
		Part 6 design		Date	June 17	, 2015

gtaDesigns

Energy Efficiency Design Summary

(Part 9 Residential)

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-00696

I his form is used t	o summarize tr	e energy			he project. Information in the project. Information in the project.	on on com	pletting tries	S TOTTI IS OF	the reverse				
Application No.			1 01	use by Fill		hor							
Application No:					Model/Certification Num	iber							
A. Project Informatio	n												
Building number, street name						Unit numbe	r	Lot/Con					
		F	P Town 2	2 End - Bi	adford								
Municipality Claringto	on		Postal code	Э	Reg. Plan number / other	er descriptio	n						
B. Compliance Option	n												
	☑ SB-12 Prescriptive [SB-12 - 2.1.1.] Table						GHIJ	JKLM	Package D				
☐ SB-12 Performanc	* Attach	e: Package: A B C D E F G H I J K L M Package D ch energy performance calculations using an approved software											
					BOP form								
_ 6,7 1					use must be evaluated by NRCan advisor and meet a rating of 80								
C. Project Design Co	nditions								<u>_</u>				
Climatic Zone (SB		Heat	ing Equip	ment		Space	Heating F	uel Sourc	е				
☑ Zone 1 (< 5000 degree	-		≥ 90% AF		☑ Gas		Propane		☐ Solid Fuel				
☐ Zone 2 (≥ 5000 degree	• •		≥ 78% < 9	00% AFUE	□ Oil		Electric		Earth Energy				
	+Skylights+Gla	ass Doors	S		-	Other	Buildina (Conditions					
Gross Wall Area =	127 m²				☐ ICF Basement		Walkout B		☐ Log/Post&Beam				
Gross Window+ Area =	18 m²	% '	Windows+	<u>14%</u>	☐ ICF Above Grade	_	Slab-on-gr		9				
		ovide value	as and ratin	as of the en	ergy efficiency compon				Star ROP form				
Building Con		ovide value		values		ng Comp		cii Liieigy c	Efficiency Ratings				
Thermal Insulation	iponent		KOI / K	values			Offerit		Linciency Ratings				
					Windows & Doors ¹								
Cailing with Attic Space			_	-0	Windows/Sliding Glass Doors 1.8								
Ceiling with Attic Space				50		Blass Doo	rs						
Ceiling without Attic Space			3	31	Skylights	lass Doo	rs		1.8 2.8				
Ceiling without Attic Space Exposed Floor			3	31 31	Skylights Mechanicals		rs		2.8				
Ceiling without Attic Space Exposed Floor Walls Above Grade			3 3	31 31 24	Skylights Mechanicals Space Heating Equ	uip.²	rs		2.8 94%				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls	do)		3 3 2 2	31 31 24 20	Skylights Mechanicals Space Heating Equation HRV Efficiency (%	uip.²	rs		2.8 94% 0%				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra			3 3 2 2	31 31 24	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF)	uip.²	rs		2.8 94%				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be	low grade)		3 3 2 2 2 2 1	31 31 224 20 x	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in V	uip. ²) W/m2.K, or	ER rating		2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra	low grade) de, or heated)		3 3 2 2 2 1	31 31 24 20 x	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in V	uip. ²) W/m2.K, or	ER rating		2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra	low grade) de, or heated)		3 3 2 2 2 1	31 31 24 20 x	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in V	uip. ²) W/m2.K, or	ER rating		2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance:	low grade) de, or heated) Design Verifi	cation [c	3 3 2 2 2 1 1 omplete app	31 31 24 20 x 10 10 plicable sec	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance	low grade) de, or heated) Design Verifi	cation [c	3 3 2 2 2 1 1 omplete app	31 31 24 20 x 10 10 plicable sec	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in V	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance: The annual energy consumptic The annual energy consumptic	low grade) de, or heated) Design Verifi on using Subsection of this house	cation [c	1 1 1 omplete appleted is_	31 24 20 x 10 10 plicable sec	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The software used to simulate	low grade) de, or heated) Design Verifi on using Subsection of this house the annual ene	cation [c ction 2.1.1 as design rgy use of	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31 24 20 x 10 10 plicable sec ackage	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in 1/2. Provide AFUE or incidence in 1/2 is	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance: The annual energy consumptic The annual energy consumptic	low grade) de, or heated) Design Verifi on using Subsection of this house the annual ene	cation [c ction 2.1.1 as design rgy use of	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31 24 20 x 10 10 plicable sec ackage	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in 1/2. Provide AFUE or incidence in 1/2 is	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attache	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house was the h	cation [c ction 2.1.1 as desigr rgy use of akage of _	3 3 2 2 2 1 1 1 omplete applete applete is	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pr	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The software used to simulate The building is being designed	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house was the h	cation [c ction 2.1.1 as desigr rgy use of akage of _	3 3 2 2 2 1 1 1 omplete applete applete is	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pr	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cornec, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attache	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house was the h	cation [c ction 2.1.1 as desigr rgy use of akage of _	3 3 2 2 2 1 1 1 omplete applete applete is	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pr	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cornance, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attach Energy Star and EnerGuide80	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house was the h	cation [c ction 2.1.1 as desigr rgy use of akage of _	3 3 2 2 2 1 1 1 omplete applete applete is	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pr	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Street SB-12 Performations if SB-12 Performations is SB-12 Performations in SB-12 Perfo	uip. ²) W/m2.K, or dicate if cornance, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attach Energy Star and EnerGuide80	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house was the h	cation [c ction 2.1.1 as desigr rgy use of akage of _	3 3 2 2 2 1 1 1 omplete applete applete is	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pr	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Street SB-12 Performations if SB-12 Performations is SB-12 Performations in SB-12 Perfo	uip. ²) W/m2.K, or dicate if cornance, Energ	ER rating ndensing ty gy Star or E	nerGuide8	2.8 94% 0% 0.67				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attache Energy Star and EnerGuide80 Evaluator/Advisor/Rater Name:	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house with the control of th	cation [c ction 2.1.1 as desigr rgy use of akage of _ will be lab	. SB-12 Paned isair eled on co	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pompletion b	Skylights Mechanicals Space Heating Equation (%) DHW Heater (EF) NOTES 1. Provide U-Value in Value i	uip. ²) W/m2.K, or dicate if cornance, EnergyGj (1 G	ER rating odensing tyles of the state of the	nerGuide8(94% 0% 0.67 d system used p options used]				
Ceiling without Attic Space Exposed Floor Walls Above Grade Basement Walls Slab (all >600mm below gra Slab (edge only ≤600mm be Slab (all ≤600mm below gra E. Performance SB-12 Performance: The annual energy consumptic The annual energy consumptic The software used to simulate The building is being designed Energy Star: BOP form attache Energy Star and EnerGuide80 Evaluator/Advisor/Rater Name:	low grade) de, or heated) Design Verifi on using Subsection of this house the annual energing an air leaded. The house with the control of th	cation [c ction 2.1.1 as desigr rgy use of akage of _ will be lab	. SB-12 Paned isair eled on co	31 31 24 20 x 10 10 plicable sec ackageGj ng is:changes pompletion b	Skylights Mechanicals Space Heating Equation HRV Efficiency (% DHW Heater (EF) NOTES 1. Provide U-Value in Value in Va	uip. ²) W/m2.K, or dicate if cor nnce, EnergGj (1 G	ER rating ndensing tyly Star or E	nerGuide8(2.8 94% 0% 0.67 d system used 0 options used]				



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

Page 8 PJ-00022 Project #

Layout # JB-00696

Pac Proj				stem: //odel:		FP T	Syste own 2 En		Layout #	JB-00696
		A	ir Leakage (Calculat	ions					
	Building A	ir Leakage Heat Loss	3		Building	Air Leaka	ge Heat Ga	in		
	B LRairh 0.018 0.130	Vb HL^T 13126 76	HLleak 2340		B 0.018	LRairh 0.008	Vb 13126	HG^T 9.2	HG Leak 18	
							Lev	/els		
	Air Leakage Hea	t Loss/Gain Multiplie	r Table (Section 11)			1	2	3	4	
	Level Level Building Factor (LF) Air	Level Conductive Heat Loss	Air Leakage He Multiplie			(LF)	(LF)	(LF)	(LF)	
	1 0.5 2 0.3 3 0.2 2340	3865 6198 5113	0.3028 0.1133 0.0915			1.0	0.6 0.4	0.5 0.3 0.2	0.4 0.3 0.2	
	4 0	0	0.0000		<u> </u>			0.2	0.1	
	110 1 5 117	18	Air Leakage He	Heat Gain Levels this Dwelling						
	HG LEAK BUILDING CONDUCTIVE HE	0.0029					3			
_		V	entilation C	alculation	ons					
	Ventila	ition Heat Loss				Ventila	ation Heat G	ain		
Vent		on Heat Loss		Ventilation Heat Gain						Vent
	C PVC HL^T 1.08 60 76	1 /	bvent 1925	C PVC HG^T HGbvent 1.1 60 9.2 596						
	Ca	se 1		Case 1						
	Ventilation Heat Lo	oss (Exhaust only System	ns)		Ventila	ition Heat G	ain (Exhaust	Only Syster	ms)	
1		Exhaust Only				aust Only	Multi	iplier		_
Case	Level LF HLbvent 1 0.5	LVL Cond. HL 3865	Multiplier 0.64		Sbvent uilding	596 6113	0.	10		Case
0	2 0.3 3 0.2 4 0	6198 5113 0	0.24 0.19							O
		se 2	0.00				Case 2			
		oss (Direct Ducted Syster	ms)		Ventila	tion Heat G	ain (Direct D	ucted Syste	ms)	
e 2		Multiplier	<u> </u>					iplier	· 1	e 2
Case	C HL^T (1-E) HRV	82.08			C 1.08	HG^T 9.2		94		Case
		se 3	l			J.2	Case 3		<u></u>	
		Loss (Forced Air Systems	s)		Venti	lation Heat	Gain (Forced	l Air System	s)	
se 3	HI h	/ent Mul	Itinlier				Vent He	at Gain	Multiplier	, se 3
Case	Total Ventilation 4925 0.32				Sbvent 596	HG*1.3		96	0.10	Case
		Load								

Foundation Conductive Heatloss Level 1	913	Watts	3117	Btu/h	
Foundation Conductive Heatloss Level 2		Watts		Btu/h	

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather Station D	escription		
Province:	Ontario	~	
Region:	Durham	~	
Weather Station Location:	Open flat terrain, grass	-	
Anemometer height (m):	1.0		
Local Shield	ling		
Building Site:	Suburban, forest	▼	
Walls:	Heavy	•	
Flue:	Heavy	•	
Highest Ceiling Height (m):			6.10
Building Configu	uration	6.4	
Type:	Semi-Detached	T	
Number of Stories:	Two	•	
Foundation:	Full	T	
House Volume (m³):	566.3	37	71.73
Air Leakage/Ven	ntilation		
Air Tightness Type:	Present (1961-) (ACH=3.57)	¥	
	ELA @ 10 Pa. 185,83	cm ²	
Custom BDT Data:	3,57 ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply: Total Exhaust		
	0 30		
Flue Size			
Flue #:	#1 #2 #3	#-	4
Diameter (mm):	0 0 0		0
Envelope Air Leak	kage Rate		
Heating Air Leakage Rate (ACH/H):	0.130		
Cooling Air Leakage Rate (ACH/H):	0.008		

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weat	her Sta	tion Description
Province:	Ontario	▼
Region:	Durham	▼
	Site D	escription
Soil Conductivity:	High cond	luctivity: moist soil
Water Table:	Normal (7	7-10 m, 23-33 Ft)
Fou	undatio	n Dimensions
Floor Length (m):	11.96	
Floor Width (m):	3.43	
Exposed Perimeter (m):	20.12	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	Insulation Configuration
Window Area (m²):	0.56	
Door Area (m²):	0.00	
	Radi	ant Slab
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	23	
	Desig	n Months
Heating Month	1	
	Founda	ation Loads
Heating Load (Watts):		913

FLEX DUCT RIDIT ROUND DUCT SUPPLY DIFFUSER

LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILL 0 SUPPLY AIR PIPE RISER VOLUME DAMPER



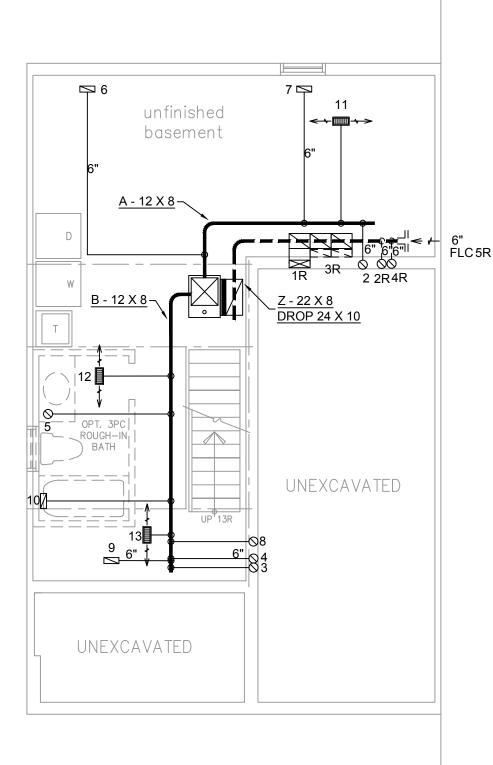
RETURN AIR PIPE RISER RETURN ROUND DUCT

DUCT CONNECTION

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

R.A. 1

THERMOSTAT 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)

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

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

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

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

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY OF GTA DESIGNS. GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHUAST 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	BTU/HR.
22,566	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
GMEC960302BN	IA.
UNIT HEATING INPUT	BTU/HR.
30,000	
UNIT HEATING OUTPUT	BTU/HR.
28,800	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
621	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	4	2	1
1ST FLOOR	5	2	2
BASEMENT	3	1	
FLOOR PLAN: BASEM	IENT	-	

DD

JB-00696

RΒ

1	BRADFORD
	PROJECT: NORTHGLEN
1053	BOWMANVILLE,0
G NO. M1	SCALE: 3/16" = 1"-0"

JUNE 17, 2015
DELPARK HIGHCASTLE
FP TOWN 2 END - BRADFORD
NORTHGLEN BOWMANVILLE,ONT.

SUPPLY AIR RETURN AIR GRILLE **DUCT CONNECTION** LOW/HIGH WALL/KICK SUPPLY DIFFUSER FLEX DUCT (SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE TO JOIST LINING R.A. RETURN AIR HRV EXHAUST GRILL RIDIT ROUND DUCT @ ⊘ 1 THERMOSTAT RETURN AIR PIPE RISER SUPPLY AIR PIPE RISER 8 PRINCIPAL EXHAUST FAN SWITCH RETURN AIR FROM BASEMENT SECOND FLOOR SUPPLY DIFFUSER VOLUME DAMPER RETURN ROUND DUCT W/R & PRINCIPAL EXHAUST FAN 2 🖈 . direct ven FIREPLACE 4" X 10" 6"Ø 4" X 10" 6"Ø GA GREAT ROOM 6" 3R FLR 30X6

DW

FOYER 4" X 10" 6"Ø

KITCHEN

₹

10 PWD

(F)5'

COVERED

PORCH

CIRCULATION 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)

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

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

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

EXHUAST 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

22,566	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
GMEC960302BNA	
UNIT HEATING INPUT	BTU/HR.
30,000	
UNIT HEATING OUTPUT	BTU/HR.
28,800	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
621	

HEAT-LOSS

1R

2R

GARAGE

BTU/HR.

6"6"

Λ

FLC4R

8 CAV

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
3KD FLOOK			
2ND FLOOR	4	2	1
1ST FLOOR	5	2	2
DACEMENT	3	1	
BASEMENT	ა	I	
GROUND FLOOR			
31100110	<u> </u>	<u> </u>	

DD

JB-00696

RB

1053

M2

DELPARK HIGHCASTLE
FP TOWN 2 END - BRADFORD
PROJECT: NORTHGLEN BOWMANVILLE,ONT.

3/16" = 1"-0"

JUNE 17, 2015

FLEX DUCT RIDIT ROUND DUCT SUPPLY DIFFUSER

a|< + 0

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

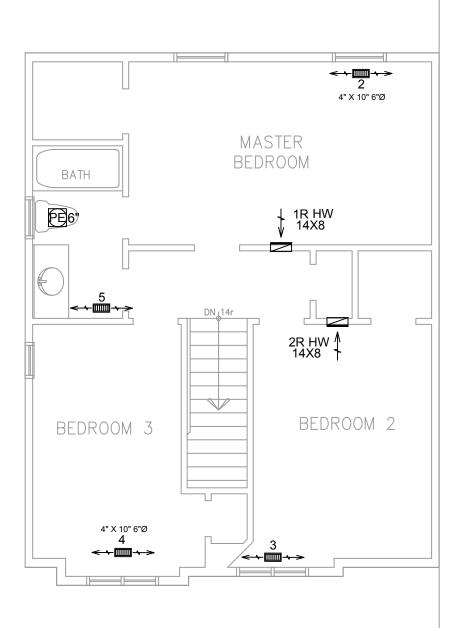
 $\stackrel{\downarrow}{=}$

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

R.A. ①

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

SUPPLY AIR



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)

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

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

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

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

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY OF GTA DESIGNS. GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHUAST 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

22,500	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
GMEC960302BNA	-
UNIT HEATING INPUT	BTU/HR.
30,000	
UNIT HEATING OUTPUT	BTU/HR.
28,800	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
621	

HEAT-LOSS

BTU/HR.	# OF RUNS	S/A	R/A	FANS
OR EQUAL.	3RD FLOOR			
OR EQUAL.	2ND FLOOR	4	2	1
DT. 1/1/10	1ST FLOOR	5	2	2
BTU/HR.	BASEMENT	3	1	
BTU/HR.				
TONS	FLOOR PLAN: SECOND	FLO	OR	

DD JB-00696

RΒ

1053

[^]M3

JUNE 17, 2015
OONE 17, 2010
DELPARK HIGHCASTLE
FP TOWN 2 END -
BRADFORD
ROJECT:
NORTHGLEN
BOWMANVILLE,ONT.
OALE: 3/16" = 1"-0"