#### **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	1					
Building number, street na					Unit no.	Lot/con.
Municipality		Destal sade	Dian number/ other des	intinu		
Municipality		Postal code	Plan number/ other des	cription		
RICHMOND HILL		" " " "				
B. Individual who revi	ews and takes	responsibility fo				
Name MICHAEL O'ROURKE			Firm HVAC DESIGNS LTD.			
Street address			ITTAO DEGIGITO ETD.	Unit no.		Lot/con.
375 FINLEY AVE				202		N/A
Municipality		Postal code	Province	E-mail		
AJAX		L1S 2E2	ONTARIO	info@hvacde	signs.ca	
Telephone number		Fax number		Cell number		
(905) 619-2300		(905) 619-2375		( )		
C. Design activities ur	ndertaken by in	dividual identifi	ed in Section B. [Buil	ding Code Ta	able 3.5.2.1 OF Div	ision C]
☐ House		⊠ HVAC	– House		Building Structur	 al
☐ Small Buildings			g Services		Plumbing – Hous	
☐ Large Buildings			ion, Lighting and Po		Plumbing – All B	
Complex Building Description of designer's v		☐ Fire Pr	Model:		On-site Sewage	Systems
HEAT LOSS / GAIN CALC DUCT SIZING RESIDENTIAL MECHANI RESIDENTIAL SYSTEM I D. Declaration of Desi	CAL VENTILATION		IARY Project:	CENTREFIELD	(WEST GORMLEY)	
I MICHAEL				dealare t	hat (ahaasa ana aa a	oproprieto):
I WIICHAEL		int name)		_ ueciale i	hat (choose one as a	оргорпасе).
Division C, of t classes/catego Indi	ne Building Code.		on behalf of a firm regist I the firm is registered, in		section 3.2.4.of appropriate	
	_		m qualified in the appropon C, of the Building Cod		as an "other	
Indi	vidual BCIN:	19669				
			d qualification:	O.B.C SEN	NTENCE 3.2.4.1	(4)
☐ The design wo Basis for exem		from the registrat ation and qualificati	ion and qualification requon:	irements of the	Building Code.	
I certify that:						
	ation contained mitted this applica		ule is true to the best of r edge and consent of the	firm.	1 .01	
April 19, 20	21			Mucha	of Offmhe	•
Date		_			Signature of Des	signer
					<u> </u>	

#### NOTE

<sup>1.</sup> 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 qualification under Subsections 3.2.4. and 3.2.5. of Division C.

<sup>2.</sup> Schedule 1 is not required to be completed by 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 license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.



SITE NAME:	CENTR	REFIELI	D (WES	T GOR	MLEY)												DATE:	Apr-21			1	WINTER	R NATURAL AIR CH	ANGE	RATE	0.233		HEAL	LOSS	ΔI Tr.	10		CSA	
BUILDER:	ROYAL	PINE	HOME	3				TYPE:	4500				GFA:	2758			LO#	87504			s	UMMER	R NATURAL AIR CH	ANGE	RATE	0.073		HEAT	GAIN	ΔT °F.	13	SB-12	PERFO	RMANCE
ROOM USE				MBR			ENS					BED-2			BED-3			BED-4			ENS-3/4	ı			WIC-2	!		ENS-2	!					
EXP. WALL				44			23					11			32			13			6				12			12						
CLG. HT.				9			9					9			9			9			9				9			9						
	FACTO	RS																																
GRS.WALL AREA	LOSS	GAIN		396			207					99			288			117			54				108			108						
GLAZING				LOSS	GAIN		LOSS	GAIN				LOSS	GAIN		LOSS	GAIN			GAIN		LOSS	GAIN			LOSS	GAIN		LOSS	GAIN					
NORTH	21.8	16.0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	7	152	112					
EAST	21.8	41.6	o	0	0	o	0	0			33	719	1371	36	784	1496	ō	0	Ō	0	0	0		16	349	665	0	0	0					
SOUTH		24.9	o	0	0	8	174	199			0	0	0	0	0	0	16	349	398	7	152	174		0	0	0	0	0	0					
WEST	21.8	41.6	36	784	1496	16	349	665			0	0	0	o	0	0	0	0	0	ó	0	0		0	0	0	0	0	0					
SKYLT.	35.8	101.2	0		0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0					
DOORS		4.3	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0					
NET EXPOSED WALL	4.2	0.7		1514	249	183	770	127			_	278	46	252	-	-		425	70	47	198	33		92	387	64		425	70					
NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE GR			360					0			66				1060	174	101				190			0			101	425	0					
		0.6		0	0	0	0	-			0	0	0	0	0	0	0	0	0	0	-	0		-	0	0	0	-						
EXPOSED CLG	1.3	0.6	420	552	247	130	171	76			270	355	159	222	292	131	208	273	122	86	113	51		38	50	22	72	95	42					
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0					
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0			160	418	69	0	0	0	0	0	0	0	0	0		38	99	16	45	117	19					
BASEMENT/CRAWL HEAT LOSS	l			0			0					0			0			0			0				0			0						
SLAB ON GRADE HEAT LOSS	1		1	0		1	0					0			0		1	0			0				0		1	0		1				
SUBTOTAL HT LOSS	1		1	2850		1	1463					1769			2136		l	1047			463				885			789		1				
SUB TOTAL HT GAIN	l		l		1992	l		1067			l		1644	l		1801			591			257				767			243					
LEVEL FACTOR / MULTIPLIER			0.20			0.20	0.23				0.20			0.20	0.23		0.20	0.23		0.20				0.20			0.20							
AIR CHANGE HEAT LOSS				646			332					401			484			237			105				201			179						
AIR CHANGE HEAT GAIN					93			50					77			84			28			12				36			11					
DUCT LOSS				0			0					217			0			0			0				109			97						
DUCT GAIN					0			0					253			0			0			0				80			25					
HEAT GAIN PEOPLE	240		2		480	0		0			1		240	1		240	1		240	0		0		0		0	0		0					
HEAT GAIN APPLIANCES/LIGHTS					566			0					566			566			566			0				0			0					
TOTAL HT LOSS BTU/H				3496			1795					2387			2620			1284			568				1194			1065						
TOTAL HT GAIN x 1.3 BTU/H					4071			1452					3615			3499			1852			350				1148			364					
DOM HOT	1			DEN		1	DIN			T/OT							l	14//D		1	F01/									1				
ROOM USE				DEN			DIN			T/GT					LAUN			W/R			FOY												BAS	
EXP. WALL				25			26			70					26			8			24												168	3
	F4070																																	3
EXP. WALL CLG. HT.	FACTO			25 11			26 11			70 11					26 13			8 11			24 11												168 10	3
EXP. WALL CLG. HT. GRS.WALL AREA				25 11 275			26 11 286			70 11 770					26 13 338			8 11 88			24 11 264												168 10 117	6
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING	LOSS	GAIN		25 11 275 LOSS			26 11 286 LOSS		L	70 11 770 OSS GAI	N				26 13 338 LOSS	GAIN		8 11 88 LOSS	GAIN		24 11 264 LOSS	GAIN											168 10 1170 LOS	6 S GAIN
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH	LOSS 21.8	GAIN 16.0	0	25 11 275 LOSS 0	0	0	26 11 286 LOSS 0	0	L O	70 11 770 OSS GAI 0 0				8	26 13 338 LOSS 174	GAIN 128	0	8 11 88 LOSS 0	GAIN 0	0	24 11 264 LOSS 0	GAIN 0											168 10 1170 LOS 0 0	6 S GAIN 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST	21.8 21.8	16.0 41.6	37	25 11 275 LOSS 0 806	0 1537	0	26 11 286 LOSS 0	0	L 0 0	70 11 770 OSS GAI 0 0				0	26 13 338 LOSS 174 0	GAIN 128 0	0	8 11 88 LOSS 0	GAIN 0 0	28	24 11 264 LOSS 0 610	GAIN 0 1163											168 10 1170 LOS 0 0	6 S GAIN 0 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH	21.8 21.8 21.8 21.8	16.0 41.6 24.9	37 0	25 11 275 LOSS 0 806 0	0	0 31	26 11 286 LOSS 0 0 675	0 0 772	L 0 0	70 11 770 OSS GAI 0 0 0 0				0	26 13 338 LOSS 174 0	GAIN 128 0	0 9	8 11 88 LOSS 0 0	GAIN 0 0 224	28 0	24 11 264 LOSS 0 610 0	GAIN 0 1163 0											168 10 1176 LOS 0 0 0 0	6 S GAIN 0 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST	21.8 21.8 21.8 21.8 21.8	16.0 41.6 24.9 41.6	37 0 0	25 11 275 LOSS 0 806 0	0 1537 0 0	0 31 0	26 11 286 LOSS 0 0 675	0 0 772 0	0 0 0 134	70 11 770 OSS GAI 0 0 0 0 0 0				0 0	26 13 338 LOSS 174 0 0	GAIN 128 0 0	0 9 0	8 11 88 LOSS 0 0 196	GAIN 0 0 224 0	28 0 0	24 11 264 LOSS 0 610 0	GAIN 0 1163 0										1	168 10 1170 LOS 0 0 0 0 12 261 4 87	6 S GAIN 0 0 1 299 166
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT.	21.8 21.8 21.8 21.8 21.8 35.8	16.0 41.6 24.9 41.6 101.2	37 0 0 0	25 11 275 LOSS 0 806 0	0 1537 0 0	0 31 0 0	26 11 286 LOSS 0 0 675 0	0 0 772 0	0 0 0 134 2	70 11 770 OSS GAI 0 0 0 0 0 0 919 556				0 0 0	26 13 338 LOSS 174 0 0	GAIN 128 0 0	0 9 0 0	8 11 88 LOSS 0 0 196 0	GAIN 0 0 224 0	28 0 0 0	24 11 264 LOSS 0 610 0	GAIN 0 1163 0 0										1	168 10 1170 LOS 0 0 0 0 12 261 4 87 0 0	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS	21.8 21.8 21.8 21.8 21.8 35.8 25.8	16.0 41.6 24.9 41.6 101.2 4.3	37 0 0 0 0	25 11 275 LOSS 0 806 0 0	0 1537 0 0 0	0 31 0 0	26 11 286 LOSS 0 0 675 0	0 0 772 0 0	L 0 0 0 134 :	70 11 770 OSS GAI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8			0 0 0 0 0	26 13 338 LOSS 174 0 0 0 0 517	GAIN 128 0 0 0	0 9 0 0	8 11 88 LOSS 0 0 196 0	GAIN 0 0 224 0 0	28 0 0 0 20	24 11 264 LOSS 0 610 0 0 0	GAIN 0 1163 0 0 0										1	168 10 1170 LOS 0 0 0 0 12 261 4 87 0 0	6 S GAIN 0 0 1 299 166 0 7 85
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL	21.8 21.8 21.8 21.8 35.8 25.8 4.2	16.0 41.6 24.9 41.6 101.2 4.3 0.7	37 0 0 0 0 0 238	25 11 275 LOSS 0 806 0 0 0	0 1537 0 0 0 0	0 31 0 0 0 255	26 11 286 LOSS 0 0 675 0 0	0 0 772 0 0 0	0 0 0 134 2 0 0	70 11 770 OSS GAI 0 0 0 0 0 0 0 0 0 0 0 0 919 556 0 0 0 0 0 0	8			0 0 0 0 20 310	26 13 338 LOSS 174 0 0 0 0 517 1304	GAIN 128 0 0 0 0 85 214	0 9 0 0 0 79	8 11 88 LOSS 0 0 196 0 0 0 332	GAIN 0 0 224 0 0 0	28 0 0 0 20 216	24 11 264 LOSS 0 610 0 0 0 517 908	GAIN 0 1163 0 0 0 85 149										1	168 100 1177 LOS 0 0 0 0 112 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 S GAIN 0 0 1 299 166 0 7 85 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE GR	21.8 21.8 21.8 21.8 25.8 25.8 4.2 3.7	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6	37 0 0 0 0 238	25 11 275 LOSS 0 806 0 0 0 0	0 1537 0 0 0 0 165	0 31 0 0 0 255 0	26 11 286 LOSS 0 0 675 0 0 1072	0 0 772 0 0 0 176	0 0 0 134 2 0 0 636 2	70 11 770 OSS GAI 0 0 0 0 0 0 919 556 0 0 0 0 06675 444	8			0 0 0 0 20 310	26 13 338 LOSS 174 0 0 0 0 517 1304 0	GAIN 128 0 0 0 0 85 214	0 9 0 0 0 79	8 11 88 LOSS 0 0 196 0 0 0 332	GAIN 0 0 224 0 0 0 55	28 0 0 0 20 216 0	24 11 264 LOSS 0 610 0 0 0 517 908 0	GAIN 0 1163 0 0 85 149 0										1 2 5	1688 100 1170 LOS 0 0 0 0 0 0 12 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 S GAIN 0 0 1 299 166 0 7 85 0 7 305
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE OR EXPOSED CLG	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6	37 0 0 0 0 238 0	25 11 275 LOSS 0 806 0 0 0 0 1001 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0	26 11 286 LOSS 0 0 675 0 0 1072 0	0 0 772 0 0 0 176 0	0 0 0 134 2 0 0 636 2	70 11 770 OSS GAI 0 0 0 0 0 0 919 556 0 0 0 6675 444 0 0 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 0 332 0	GAIN 0 0 224 0 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59	GAIN 0 1163 0 0 85 149 0 26										2	1688 100 1177 LOS 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 (S. GAIN
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BAMT WALL ABOVE OR EXPOSED LG NO ATTIC EXPOSED CLG	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 0 1001 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0	0 0 772 0 0 0 176 0	0 0 0 134 2 0 0 636 2 0	70 11 770 OSS GAI 0 0 0 0 0 0 0 919 556 0 0 0 0 6675 444 0 0 0 0 0 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 332 0 0 0	GAIN 0 0 224 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0	GAIN 0 1163 0 0 85 149 0 26										1 2 5	1688 100 1177 LOS 0 0 0 0 0 12 261 4 87 0 0 0 0 20 517 0 0 0 0 4 185 0 0 0 0 0	6 S GAIN 0 0 1 299 166 0 7 85 0 7 305 0 0
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BMT WALL ABOVE OR EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6	37 0 0 0 0 238 0	25 11 275 LOSS 0 806 0 0 0 0 1001 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0	26 11 286 LOSS 0 0 675 0 0 1072 0	0 0 772 0 0 0 176 0	0 0 0 134 2 0 0 636 2	70 11 770 OSS GAI 0 0 0 0 0 0 919 556 0 0 0 6675 444 0 0 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 0 332 0	GAIN 0 0 224 0 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0	GAIN 0 1163 0 0 85 149 0 26										1 2 5	1688 100 1170 LOS 0 0 0 0 0 0 12 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 S GAIN 0 0 1 299 166 0 7 85 0 7 305 0 0 0 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE GR EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0	0 0 772 0 0 0 176 0	0 0 0 134 2 0 0 636 2 0	70 111  770  OSS GAI 0 0 0 0 0 0 9191 556 0 0 0 0 0 0 6675 44 0 0 0 0 0 0 0 0 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0	GAIN 0 0 224 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0	GAIN 0 1163 0 0 85 149 0 26										1 2 5	1688 100 1177 LOS 0 0 0 0 0 12 261 4 87 0 0 0 0 20 517 0 0 0 0 4 185 0 0 0 0 0	6 S GAIN 0 0 1 299 166 0 7 85 0 7 305 0 0 0 0
EXP. WALL CLG. HT. GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE OR EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0	0 0 772 0 0 0 176 0	0 0 0 134 2 0 0 636 2 0	70 11  770  OSS GAI 0 0 0 0 0 0 0 0 0 919 556 0 0 0 0 0 0 6675 44 0 0 0 0 0 0 0 0 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 332 0 0 0 0 0 0 0	GAIN 0 0 224 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0 0	GAIN 0 1163 0 0 85 149 0 26										1 2 5	168 10 1177 LOS 0 0 0 0 0 0 12 2614 87 0 0 0 0 0 0 0 0 0 0 0 0 0 5675	6 (SS GAIN 0 0 0 1 299 166 0 0 7 85 0 0 7 305 0 0 0 9
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT LOSS	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0	0 1537 0 0 0 0 165 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0	0 0 772 0 0 0 176 0 0	0 0 0 134 2 0 0 636 2 0	70 11  770  OSS GAI 0 0 0 0 0 0 0 919 556 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0	GAIN 128 0 0 0 0 85 214 0 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0	GAIN 0 0 2224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0	GAIN 0 1163 0 0 85 149 0 0 0										1 2 5	1688 100 1170 LOS 0 0 0 0 0 0 12 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 (S GAIN 0 0 0 0 1 299 166 0 0 7 85 0 0 0 0 9 9 1
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED BMT WALL ABOVE OR EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT GAIN	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0	0 1537 0 0 0 0 165 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0	0 0 772 0 0 0 176 0	0 0 0 134 0 0 636 0 0	70 11  770  OSS GAI 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0	GAIN 128 0 0 0 0 85 214 0	0 9 0 0 0 79 0	8 11 88 LOSS 0 0 196 0 0 332 0 0 0 0 0 0 0	GAIN 0 0 224 0 0 55 0	28 0 0 0 20 216 0 45	24 11 264 LOSS 0 610 0 0 517 908 0 59 0 0	GAIN 0 1163 0 0 85 149 0 26										1 2 5	168 10 1177 LOS 0 0 0 0 0 0 12 2614 87 0 0 0 0 0 0 0 0 0 0 0 0 0 5675	6 (SS GAIN 0 0 0 1 299 166 0 0 7 85 0 0 7 305 0 0 0 9
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED LG EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUB TOTAL HT GAIN LEVEL FACTOR / MULTIPLIER	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 0 165 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 0 1072 0 0 0 1748	0 0 772 0 0 0 176 0 0	0 0 0 134 0 0 636 0 0	70 11  770  OSS GAI 0	8			0 0 0 0 20 310 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 1995	GAIN 128 0 0 0 0 85 214 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 528 0.28	GAIN 0 0 2224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 517 908 0 59 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 0 0										5	168 10 1177 LOS 0 0 0 0 0 12 261 4 87 0 0 0 20 517 0 0 0 0 0 0 0 0 567 840	6 S GAIN 0 0 1 299 166 0 7 85 0 0 0 0 0 9 1 1 856 7
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED BMT WALL ABOVE OR EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT GAIN	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0	0 1537 0 0 0 0 165 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 675 0 0 1072 0 0 0 1748	0 0 772 0 0 0 176 0 0	0 0 0 134 0 0 636 0 0	70 11  770  OSS GAI 0	8			0 0 0 0 20 310 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0	GAIN 128 0 0 0 0 85 214 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 0 0 0 0 528	GAIN 0 0 2224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 0 517 908 0 59 0 0 0 0	GAIN 0 1163 0 0 85 149 0 0 0										5	168 10 1177 LOS 0 0 0 0 12 261 4 877 0 0 0 20 517 0 0 0 0 0 0 0 5679	6 S GAIN 0 0 1 299 166 0 7 85 0 0 0 0 0 9 1 1 856 7
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED LG EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUB TOTAL HT GAIN LEVEL FACTOR / MULTIPLIER	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 0 165 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 0 1072 0 0 0 1748	0 0 772 0 0 0 176 0 0	0 0 0 134 0 0 636 0 0	70 11  770  OSS GAI 0	8			0 0 0 0 20 310 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 1995	GAIN 128 0 0 0 0 85 214 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 528 0.28	GAIN 0 0 2224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 517 908 0 59 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 0 0										5	168 10 1177 LOS 0 0 0 0 0 12 261 4 87 0 0 0 20 517 0 0 0 0 0 0 0 0 567 840	6 S GAIN 0 0 1 299 166 0 7 85 0 0 0 0 0 9 1 1 856 7
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE OR EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT LOSS SUBTOTAL HT GAIN LEVEL FACTOR, MULTIPLIER AIR CHANGE HEAT LOSS	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 165 0 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 0 1072 0 0 0 1748	0 0 772 0 0 0 176 0 0 0	0 0 0 134 0 0 636 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 0 0 0 1919 556 0	8			0 0 0 0 20 310 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 1995	GAIN 128 0 0 0 85 214 0 0 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 528 0.28	GAIN 0 0 224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 517 908 0 59 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 0 0 1424										5	168 10 1177 LOS 0 0 0 0 0 12 261 4 87 0 0 0 20 517 0 0 0 0 0 0 0 0 567 840	6 S GAIN 0 0 0 1 299 166 0 7 305 0 0 0 9 1 856 7 2
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BANT WALL ABOVE OR EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLB ON GRADE HEAT LOSS SUB TOTAL HT GAIN LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS AIR CHANGE HEAT CAIN	21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 165 0 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0 0 1748	0 0 772 0 0 0 176 0 0 0	0 0 0 134 0 0 636 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 919 556 0	8			0 0 0 0 20 310 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 128 0 0 0 85 214 0 0 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 0 528 149	GAIN 0 0 224 0 0 0 555 0 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 517 908 0 0 0 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 0 0 1424										5	168 10 1177 LOS 0 0 0 0 0 0 12 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 S GAIN 0 0 0 1 299 166 0 7 305 0 0 0 9 1 856 7 2
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE GR EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT GAIN LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS AIR CHANGE HEAT GAIN DUCT LOSS	21.8 21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8 2.6	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 165 0 0 0	0 31 0 0 0 255 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0 0 1748	0 0 772 0 0 176 0 0 0	0 0 0 134 0 0 636 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8			0 0 0 0 20 310 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 128 0 0 0 0 85 214 0 0 0	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 0 528 149	GAIN 0 0 2224 0 0 0 555 0 0 0 0	28 0 0 0 20 216 0 45 0	24 11 264 LOSS 0 610 0 0 517 908 0 0 0 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 26 0 0										5	168 10 1177 LOS 0 0 0 0 0 0 12 261 4 87 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 S GAIN 0 0 0 1 299 1666 0 7 85 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE GR EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUB TOTAL HT GAIN LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS AIR CHANGE HEAT GAIN DUCT LOSS DUCT GAIN	21.8 21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8 2.6	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 165 0 0 0	0 31 0 0 0 255 0 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0 0 1748	0 0 772 0 0 0 176 0 0 0 0	0 0 0 134 2 0 0 636 2 0 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8			0 0 0 0 0 20 310 0 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 128 0 0 0 85 214 0 0 0 427	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 0 528 149	GAIN 0 0 0 224 0 0 0 555 0 0 0 0 279 13	28 0 0 0 20 216 0 45 0 0	24 11 264 LOSS 0 610 0 0 517 908 0 0 0 0 0 0 2094	GAIN 0 1163 0 0 85 149 0 26 0 0 1424 67 0										5	168 10 1177 LOS 0 0 0 0 0 12 2614 4 87 0 0 0 20 517 0 0 0 04 1857 0 0 0 5679 8400	6 S GAIN 0 0 1 299 166 0 7 305 0 0 0 9 1 856 7 2 40 0 0
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BMI WALL ABOVE OR EXPOSED CLG EXPOSED CLG NO ATTIC EXPOSED CLG EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUB TOTAL HT GAIN LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS AIR CHANGE HEAT LOSS DUCT GAIN DUCT GAIN HEAT GAIN PEOPLE	21.8 21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8 2.6	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0 0	25 11 275 LOSS 0 806 0 0 0 1001 0 0 0 0 1807	0 1537 0 0 0 0 1655 0 0 0 0	0 31 0 0 0 255 0 0 0	26 11 286 LOSS 0 0 675 0 0 1072 0 0 0 0 1748	0 0 772 0 0 176 0 0 0 0	0 0 0 134 2 0 0 636 2 0 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 919 556 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8			0 0 0 0 0 20 310 0 0 0	26 13 338 LOSS 174 0 0 0 517 1304 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 128 0 0 0 85 214 0 0 0 427	0 9 0 0 0 79 0 0 0	8 11 88 LOSS 0 0 196 0 0 0 332 0 0 0 0 0 528 149	GAIN 0 0 0 224 0 0 0 555 0 0 0 0 0 2799	28 0 0 0 20 216 0 45 0 0	24 11 264 LOSS 0 610 0 0 517 908 0 0 0 0 0 0 2094	GAIN 0 1163 0 0 0 85 149 0 26 0 0 1424 67 0 0										5	168 10 1177 LOS 0 0 0 0 0 12 2614 4 87 0 0 0 20 517 0 0 0 04 1857 0 0 0 5679 8400	6 S GAIN 0 0 0 1 299 1666 0 0 7 85 0 0 0 0 0 0 9 1 856 7 2 40 0 566
EXP. WALL CLG. HT.  GRS.WALL AREA GLAZING NORTH EAST SOUTH WEST SKYLT. DOORS NET EXPOSED WALL NET EXPOSED BSMT WALL ABOVE OR EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS SLAB ON GRADE HEAT LOSS SUBTOTAL HT GAIN LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS AIR CHANGE HEAT LOSS DUCT GAIN HEAT GAIN APPLIANCES/LIGHTS	21.8 21.8 21.8 21.8 21.8 35.8 25.8 4.2 3.7 1.3 2.8 2.6	16.0 41.6 24.9 41.6 101.2 4.3 0.7 0.6 0.6 1.3	37 0 0 0 0 238 0 0 0	25 11 275 LOSS 0 806 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1537 0 0 0 0 1655 0 0 0 0	0 31 0 0 0 255 0 0 0	26 11 286 LOSS 0 0 675 0 0 0 1072 0 0 0 0 1748 492	0 0 772 0 0 176 0 0 0 0	0 0 0 134 2 0 0 636 2 0 0 0	70 111 7770 OSS GAI 0 0 0 0 0 0 0 0 0 919 556 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	888			0 0 0 0 0 20 310 0 0 0	26 13 338 LOSS 174 0 0 0 5517 1304 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 128 0 0 0 85 214 0 0 0 427	0 9 0 0 0 79 0 0 0 0	8 11 88 LOSS 0 0 0 196 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 0 0 0 224 0 0 0 555 0 0 0 0 0 2799	28 0 0 0 20 216 0 45 0 0	24 11 264 LOSS 0 610 0 0 517 908 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	GAIN 0 1163 0 0 0 85 149 0 26 0 0 1424 67 0 0										5	168 10 1177 LOS 0 0 0 0 0 0 12 261 4 87 0 0 00 04 185 0 0 0 0 567: 840 0	6 S GAIN 0 0 0 1 299 1666 0 0 7 85 0 0 0 0 0 0 9 1 856 7 2 40 0 566

TOTAL HEAT GAIN BTU/H:

36155

TONS: 3.01

LOSS DUE TO VENTILATION LOAD BTU/H: 1670

STRUCTURAL HEAT LOSS: 46916

TOTAL COMBINED HEAT LOSS BTU/H: 48586

Michael Oxounde.



			EFIELD (' PINE HO	WEST GO	ORMLEY	)		TYPE:	4500				DATE:	Apr-21			GFA:	2758	LO#	87504				
HEATING CFM TOTAL HEAT LOSS AIR FLOW RATE CFM		A	TOTAL F	DLING CFM HEAT GAIN RATE CFM	35,880		a	furı a/c coil ıvailable	pressure nace filter pressure pressure r s/a & r/a	0.05 0.2							<b>59TN6A</b> - FAN		*CARRIE 60 820	R		AFUE = (BTU/H) = (BTU/H) =	60,000	
RUN COUNT	4th	3rd	2nd	1st	Bas													EDLOW	0		DESI	GN CFM =		_
S/A R/A	0	0	11 4	8	1				essure s/a		-1-		pressure					MEDIUM JM HIGH	1145 0			CFM @ .	6 " E.S.P.	
All S/A diffusers 4"x10" unle				out.	<u> </u>	J			ress. loss essure s/a	0.02			ess. Loss essure r/a				MEDIO	HIGH	1520		TEMPERAT	URE RISE	47	°F
All S/A runs 5"Ø unless not							aa,	aotou pro	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.10	,	aotoa pro	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.10					.020					- '
RUN#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		21	22	23	24
ROOM NAME	MBR	ENS	BED-2		BED-3	BED-4				MBR	ENS-2	DEN	DIN	KT/GT	KT/GT	KT/GT	LAUN	W/R	FOY		BAS	BAS	BAS	BAS
RM LOSS MBH. CFM PER RUN HEAT	1.75 43	1.79 44	1.19 29	1.19 29	1.31 32	1.28 31	0.57 14	1.31 32	1.19 29	1.75 43	1.07 26	2.32 57	2.24 55	2.39 58	2.39 58	2.39 58	2.56 62	0.68 17	2.68 66		3.72 91	3.72 91	3.72 91	3.72 91
RM GAIN MBH.	2.04	1.45	1.81	1.81	1.75	1.85	0.35	1.75	1.15	2.04	0.36	3.05	2.03	2.97	2.97	2.97	1.32	0.38	1.94		0.48	0.48	0.48	0.48
CFM PER RUN COOLING	65	46	58	58	56	59	11	56	37	65	12	97	65	95	95	95	42	12	62		15	15	15	15
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.16	0.16	0.16	0.17	0.17	0.17		0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	49	28	40	41	38	22	23	41	44	59	41	25	10	29	38	49	34	3	28		43	21	23	26
EQUIVALENT LENGTH	180	160	120	130	130	160	190	160	140	160	150	120	80	90	150	100	110	120	150		120	100	140	120
TOTAL EFFECTIVE LENGTH ADJUSTED PRESSURE	229 0.08	188 0.09	160 0.11	171	168	182	213	201 0.09	184	219	191	145	90	119	188	149	144	123	178		163	121	163	146
ROUND DUCT SIZE	0.08 5	0.09 4	5	0.1 5	0.1 5	0.09 <b>6</b>	0.08 4	0.09 5	0.09 4	0.08 5	0.09 4	0.11 <b>6</b>	0.19 5	0.14 <b>6</b>	0.09 <b>6</b>	0.11 <b>6</b>	0.12 5	0.14 4	0.1 5		0.1 <b>6</b>	0.13 <b>6</b>	0.1 <b>6</b>	0.11 <b>6</b>
HEATING VELOCITY (ft/min)	316	505	213	213	235	158	161	235	333	316	298	291	404	296	296	296	455	195	485		464	464	464	464
COOLING VELOCITY (ft/min)	477	528	426	426	411	301	126	411	424	477	138	495	477	484	484	484	308	138	455		76	76	76	76
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10		4X10	4X10	4X10	4X10
TRUNK	Α	В	D	D	С	В	D	С	D	Α	D	С	D	В	A	Α	A	В	С		Α	В	С	С
RUN#																								
ROOM NAME																								
RM LOSS MBH.																								
CFM PER RUN HEAT																								
RM GAIN MBH.																								
CFM PER RUN COOLING ADJUSTED PRESSURE																								
ACTUAL DUCT LGH.																								
EQUIVALENT LENGTH																								
TOTAL EFFECTIVE LENGTH																								
ADJUSTED PRESSURE																								
ROUND DUCT SIZE HEATING VELOCITY (ft/min)																								
COOLING VELOCITY (ft/min)																								
OUTLET GRILL SIZE																								
TRUNK																								
SUPPLY AIR TRUNK SIZE																	RETURN A	AID TDI INI	K SIZE					
OOT ET AIR TROUT OILL	TRUNK	STATIC	ROUND	RECT			VELOCITY			TRUNK	STATIC	ROUND	RECT			VELOCITY	I CITAL P	TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)			CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	355	0.08	9.5	10	Х	8	639		TRUNK G		0.00	0	0	X	8	0	TRUNK O	0	0.05	0	0	X	8	0
TRUNK B	596	0.08	11.6	16	Х	8	671		TRUNK H		0.00	0	0	Х	8	0	TRUNK P TRUNK Q	0	0.05	0	0	Х	8	0
TRUNK C TRUNK D		0.09 0.08	9.4 11.2	10 14	X X	8 8	664 708		TRUNK I TRUNK J	0	0.00	0 0	0	X X	8 8	0	TRUNK Q	0 0	0.05 0.05	0 0	0 0	X X	8 8	0 0
TRUNK E		0.00	0	0	X	8	0		TRUNK K	0	0.00	0	0	×	8	0	TRUNK S	0	0.05	0	0	X	8	0
TRUNK F	-	0.00	ő	Ö	X	8	Ö		TRUNK L	ŏ	0.00	Ö	Ö	X	8	ő	TRUNK T	0	0.05	Ö	0	X	8	0
													_		_		TRUNK U TRUNK V	0	0.05	0	0 0	X	8 8	0
RETURN AIR #	1	2	3	4	5	6	7									BR	TRUNK V	0	0.05 0.05	0	0	X X	8	0
	Ö	0	Ő	Ō	0	Ö	ó	0	0	0	0	0	0	0	0		TRUNK X	800	0.05	14.5	24	X	8	600
AIR VOLUME	135	135	125	125	75	330	85	Ō	0	0	Ō	0	0	0	0	135	TRUNK Y	0	0.05	0	0	X	8	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	TRUNK Z	0	0.05	0	0	X	8	0
ACTUAL DUCT LGH.	46	39	51	43	34	16	41	1	1	1	1	1	1	1	1	14	DROP	1145	0.05	16.6	24	X	10	687
EQUIVALENT LENGTH TOTAL EFFECTIVE LH	175 221	175 214	215 266	220 263	255 289	135 151	215 256	0 1	0 1	0 1	0 1	0 1	0	0 1	0 1	260 274								
ADJUSTED PRESSURE	0.07	0.07	0.06	0.06	0.05	0.10	0.06	14.80	14.80	14.80	14.80	14.80	14.80	1 14.80	14.80	0.05								
ROUND DUCT SIZE	6.8	6.8	6.9	6.9	6	8.8	6	0	0	0	0	0	0	0	0	7.5								
INLET GRILL SIZE	8	8	8	8	8	8	8	Ŏ	Ö	Ö	Ö	Ö	Ö	Ö	Ö	8								
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1							
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	14								



TYPE: 4500

CENTREFIELD (WEST GORMLEY) SITE NAME:

#### RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

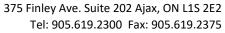
LO#

87504

COMBUSTION APPLIANCES	9.32.3.1(1)	SUPPLEMENTAL VENTILATION CAPACITY	9.32.3.5.
a) Direct vent (sealed combustion) only		Total Ventilation Capacity180.2	cfm
b) Positive venting induced draft (except fireplaces)		Less Principal Ventil. Capacity 79.5	cfm
c) Natural draft, B-vent or induced draft gas fireplace		Required Supplemental Capacity 100.7	cfm
d) Solid Fuel (including fireplaces)			
e) No Combustion Appliances		PRINCIPAL EXHAUST FAN CAPACITY  Model: VANEE 65H Location:	BSMT
HEATING SYSTEM		79.5 cfm	HVI Approved
✓ Forced Air Non Forced Air		PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
		CFM ΔT °F FACTOR 79.5 CFM X 78 F X 1.08 χ	% LOSS 0.25
Electric Space Heat			
		SUPPLEMENTAL FANS BY INSTALLING CONTRACT  Location Model cfm HVI	Sones
HOUSE TYPE	9.32.1(2)	ENS BY INSTALLING CONTRACTOR 50 ✓	3.5
✓ I Type a) or b) appliance only, no solid fuel		ENS-3/4 BY INSTALLING CONTRACTOR 50 ✓ ENS-2 BY INSTALLING CONTRACTOR 50 ✓	3.5
Type a) of b) appliance only, no solid ruci		W/R BY INSTALLING CONTRACTOR 50 ✓	3.5
II Type I except with solid fuel (including fireplaces	)	LIEAT RECOVERY VENTU ATOR	0.22.2.44
III Any Type c) appliance		HEAT RECOVERY VENTILATOR  Model: VANEE 65H	9.32.3.11.
		cfm high 64	cfm low
IV Type I, or II with electric space heat  Other: Type I, II or IV no forced air		75 % Sensible Efficiency ✓ (@ 32 deg F ( 0 deg C)	HVI Approved
SYSTEM DESIGN OPTIONS	O.N.H.W.P.	LOCATION OF INSTALLATION	
		Lot: Concession	
1 Exhaust only/Forced Air System		Township Plan:	
2 HRV with Ducting/Forced Air System		Address	
✓ 3 HRV Simplified/connected to forced air system		Roll # Building Permit #	
4 HRV with Ducting/non forced air system		BUILDER: ROYAL PINE HOMES	
Part 6 Design		Name:	
TOTAL VENTILATION CAPACITY	9.32.3.3(1)	Address:	
Basement + Master Bedroom 2 @ 21.2 cfm 42.4	cfm	City:	
Other Bedrooms <u>3</u> @ 10.6 cfm <u>31.8</u>	cfm	Telephone #: Fax #:	
Kitchen & Bathrooms 5 @ 10.6 cfm 53	cfm	INSTALLING CONTRACTOR	
Other Rooms _ 5 @ 10.6 cfm _ 53.0	cfm	Name:	
Table 9.32.3.A. TOTAL 180.2	cfm	Address:	
		City:	
PRINCIPAL VENTILATION CAPACITY REQUIRED	9.32.3.4.(1)		
1 Bedroom 31.8	cfm	Telephone #: Fax #:	
2 Bedroom 47.7	cfm	DESIGNER CERTIFICATION I hereby certify that this ventilation system has been designed	
3 Bedroom 63.6	cfm	in accordance with the Ontario Building Code.  Name: HVAC Designs Ltd.	
4 Bedroom 79.5	cfm	Signature: Michael Okambe.	
5 Bedroom 95.4	cfm	HRAI # 001820	
TOTAL 79.5 cfm		Date: April-21	
	IFIED IN THE AP	PPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING C	ODE.



			Form	nula Sheet (For Air Lea	akage / Ventiliation C	alculation)		<u></u>	<u> </u>	<del>-</del>			
LO#: 875	04	Model: 4500		Builde	Ider: ROYAL PINE HOMES Date: 4/19/2021								
		Volume Calculati	on				Air Change & Delt	a T Data					
				7						1			
se Volume	51 4 (6.2)		1 (6:3)				TURAL AIR CHANG		0.233				
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)			SUMMER NA	TURAL AIR CHANG	GE RATE	0.073	]			
Bsmt	1255 1255	10	12550										
First Second	1503	9	13805 13527				Design To	mperature Diff	oronco				
Third	0	9	0	+			Tin °C	Tout °C	ΔT °C	ΔT°F			
Fourth	0	9	0	-		Winter DTDh	22	-21	43	78			
Tourtin		Total:	39,882.0 ft <sup>3</sup>	-		Summer DTDc	24	31	7	13			
		Total:	1129.3 m <sup>3</sup>	†		Sammer Bibe				13			
		<u>'</u>	1										
	5.2.3	3.1 Heat Loss due to A	ir Leakage			6.2.6	ensible Gain due	to Air Leakage					
		V.					V.						
	$HL_{airb} =$	$LR_{airh} \times \frac{V_b}{3.6} \times$	$DTD_h \times 1.2$		Н	$IG_{salb} = LR_{airc} >$	$(\frac{v_b}{2c} \times DTD_c)$	× 1.2					
0.233		_ x _ 43 °C		= 3788 W	= 0.073	x 313.70	5.0		=	194 W			
0.233	x <u>313.70</u>	_ X <u>43 C</u>	_	- 3700 W	- 0.073	X 313.70	- × <u> </u>	X 1.2		194 W			
				= 12924 Btu/h	<sub>T</sub>				=	663 Btu/h			
				- 12324 Btu/II	1				-	003 Btu/1			
	5.2.3.2 He	at Loss due to Mecha	nical Ventilation			6.2.7 Sei	nsible heat Gain d	ue to Ventilatio	n				
	$HL_{vairb} =$	$PVC \times DTD_h \times$	$1.08 \times (1 - E)$		HL	$_{vairb} = PVC \times D$	$TD_h \times 1.08 \times$	(1 - E)					
					_								
80 CFM	x 78 °F	x 1.08	x 0.25	= 1670 Btu/h	80 CFM	x <u>13 °F</u>	x 1.08	x 0.25	_ =	275 Btu/h			
			5.2.3.3 Calcula	tion of Air Change Heat	Loss for Each Room (Flo	or Multiplier Section)							
		ш	- Land East	or $\times$ $HL_{airbv}$ $\times$ {( $H$	и ти Ут	(111   111	b						
			iirr — Level Puct	$OI \wedge IIL_{airbv} \wedge \{(II$	Lager + ILbger) +	(IIL agclevel + IIL	bgclevel)}						
				HLairve Air Leakage +	Level Conductive Heat	Air Leakage Heat Lo	s Multiplier (LF x						
		Level	Level Factor (LF)	Ventilation Heat Loss	Loss: (HL <sub>clevel</sub> )	HLairby / I							
				(Btu/h)			·						
		1	0.5	1	8,401	0.76							
		2	0.3	1	13,766	0.28							
		3	0.2	12,924	11,402	0.22							
		4	0	1	0	0.00	-						
		5	0		0	0.00	0						
				+ ventilation heat loss									







#### **HEAT LOSS AND GAIN SUMMARY SHEET**

		HEAT	LOSS AND GA	AIN SUIVIIVIARY SHEET	
MODEL:	4500	·		BUILDER: ROYAL PINE HOME	S
SFQT:	2758	LO#	87504	SITE: CENTREFIELD (WES	T GORMLEY)
DESIGN A	ASSUMPTIONS				
HEATING			°F	COOLING	°F
OUTDOO	R DESIGN TEMP.		-6	OUTDOOR DESIGN TEMP.	88
INDOOR I	DESIGN TEMP.		72	INDOOR DESIGN TEMP. (MAX 75°F)	75
BUILDING	5 DATA				
ATTACHN	ΛΕΝΤ:		DETACHED	# OF STORIES (+BASEMENT):	3
					_
FRONT FA	ACES:		EAST	ASSUMED (Y/N):	Υ
AID CHAA	ICEC DED LIQUID.		2.50	ACCUMED (V/AI).	V
AIR CHAN	IGES PER HOUR:		2.50	ASSUMED (Y/N):	Υ
AIR TIGH	TNESS CATEGORY:		TIGHT	ASSUMED (Y/N):	Υ
WIND EX	POSURE:	:	SHELTERED	ASSUMED (Y/N):	Υ
HOUSE W	OLUME (ft³):		39882.0	ASSUMED (Y/N):	Υ
HOUSE V	OLOIVIL (IT ).		39882.0	ASSOMED (1/N).	'
INTERNA	L SHADING:	BLINDS	/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR	R LIGHTING LOAD (Btu/	/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Υ
FOLINDA <sup>-</sup>	TION CONFIGURATION	1	BCIN 1	DEPTH BELOW GRADE:	7.0 ft
TOUNDA	HON CONFIGURATION	•	BCIIV_1	DEI III DELOW GRADE.	7.010
LENGTH:	48.0 ft	WIDTH:	36.0 ft	EXPOSED PERIMETER:	168.0 ft

2012 OBC - COMPLIANCE PACKAGE		
	Compliance	Package
Component	SB-12 PERF	ORMANCE
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	18.50
Basement Walls Minimum RSI (R)-Value	20	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	1.6	-
Skylights Maximum U-Value	2.6	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	TE=94%	-

INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE





## **Residential Foundation Thermal Load Calculator**

Supplemental tool for CAN/CSA-F280

We	eather Sta	tion Description
Province:	Ontario	·
Region:	Richmon	d Hill
	Site D	escription
Soil Conductivity:	Normal o	conductivity: dry sand, loam, clay
Water Table:	Normal (	7-10 m, 23-33 ft)
F	oundatio	n Dimensions
Floor Length (m):	14.6	
Floor Width (m):	11.0	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	Insulation Configuration
Window Area (m²):	1.5	
Door Area (m²):	1.9	
	Radi	ant Slab
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
	Desig	n Months
Heating Month	1	
	Founda	tion Loads
Heating Load (Watts):		1664

**TYPE:** 4500 **LO#** 87504

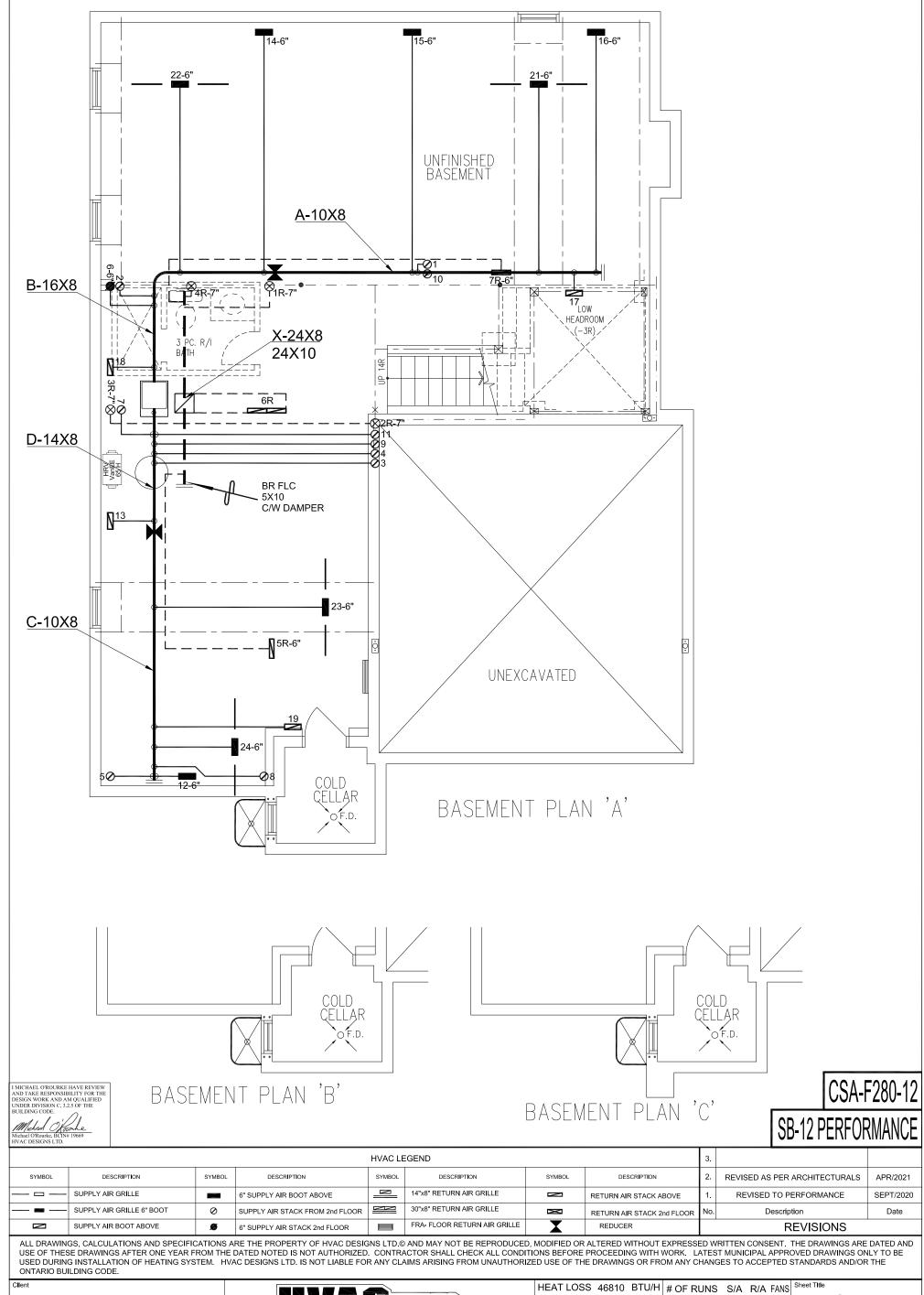


## **Air Infiltration Residential Load Calculator**

Supplemental tool for CAN/CSA-F280

Weather Statio	n Des	cripti	ion		
Province:	Ontar	io			
Region:	Richn	nond H	lill		
Weather Station Location:	Open	flat te	rrain, g	grass	
Anemometer height (m):	10				
Local Sh	ieldin	g			
Building Site:	Subu	ban, fo	orest		
Walls:	Heavy	/			
Flue:	Heavy	/			
Highest Ceiling Height (m):	7.01				
Building Cor	figura	ation			
Type:	Detac	hed			
Number of Stories:	Two				
Foundation:	Full				
House Volume (m³):	1129.	3			
Air Leakage/	Venti	atior	1		
Air Tightness Type:	Energ	y Star	Detach	ned (2.	5 ACH)
Custom BDT Data:	ELA @	9 10 Pa	Э.		1054.2 cm <sup>2</sup>
	2.50				ACH @ 50 Pa
Mechanical Ventilation (L/s):	To	tal Sup	ply		Total Exhaust
		37.5			37.5
Flue S	Size				
Flue #:	#1	#2	#3	#4	
Diameter (mm):	0	0	0	0	
Natural Infiltr	ation	Rate	es.		
Heating Air Leakage Rate (ACH/H):		C	).23	3	
Cooling Air Leakage Rate (ACH/H):		C	0.07	3	

**TYPE:** 4500 **LO#** 87504



## ROYAL PINE HOMES

Project Name

4500

CENTREFIELD (WEST GORMLEY)
RICHMOND HILL, ONTARIO

2758 sqft

# 375 Finley Ave Suite 202 - Aiay Ontario

375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca

Specializing in Residential Mechanical Design Services

Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

		OSS 46810	BTU/H	# OF RUNS	S/A	R/A	FANS	She
		UN <b>I</b> T DATA		3RD FLOOR				
		CARRIER		2ND FLOOR	11	4	3	
	MODEL 59T	N6A-060-14\	/	1ST FLOOR	8	3	2	
	INPUT	60	MBTU/H	BASEMENT	4	1	0	Dat
	OUTPUT	50	MBTU/H	ALL S/A DIFFU:	SERS	4 "x10	)"	Sca
	COOLING	58		UNLESS NOTE				
е	CCCLING	3.0	TONS	ON LAYOUT. A UNLESS NOTE				_

ON LAYOUT. UNDERCUT

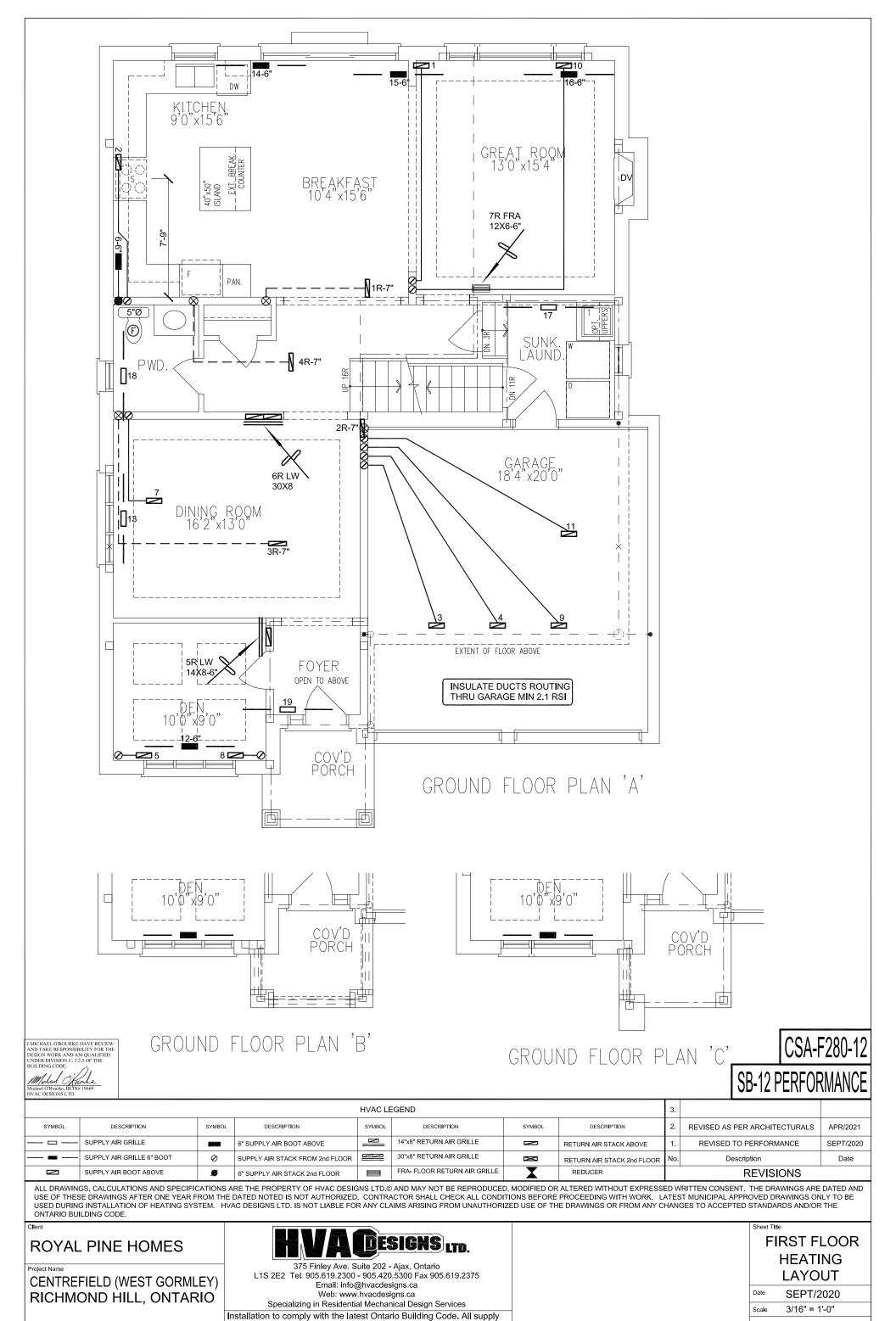
DOORS 1" min. FOR R/A

cfm @ 0.6" w.c.

FAN SPEED

1145

IS	Sheet Title								
_	В	ASEMENT							
	HEATING								
		LAYOUT							
	Date	SEPT/2020							
	Scale	3/16" = 1'-0"							
Ø	BCIN# 19669								
	LO#	87504							



branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be

adequately insulated and be gas-proofed.

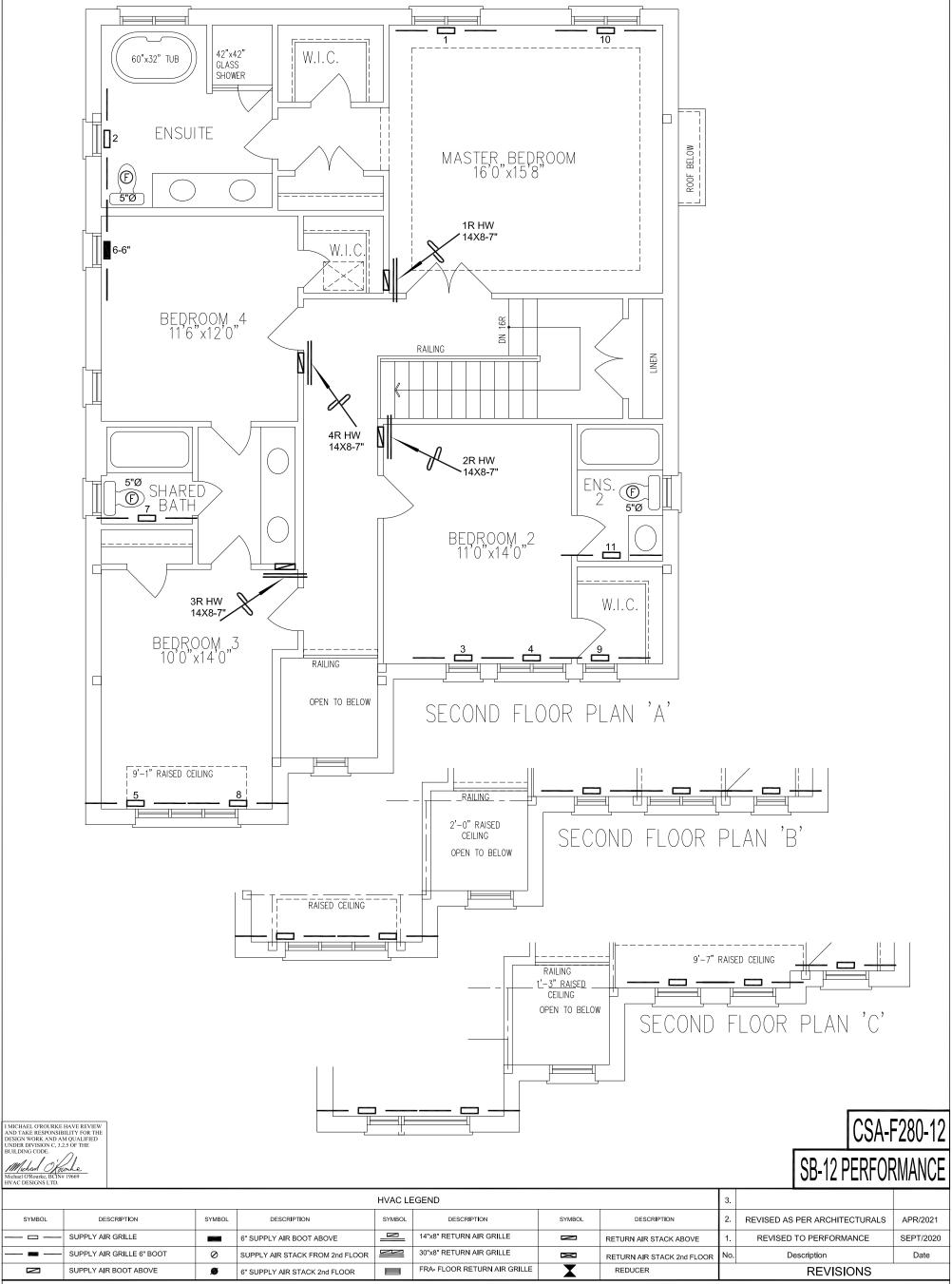
2758 sqft

4500

BCIN# 19669

LO#

87504



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## ROYAL PINE HOMES

Project Name

CENTREFIELD (WEST GORMLEY)
RICHMOND HILL, ONTARIO

# HVA DESIGNS LTD.

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### SECOND FLOOR HEATING LAYOUT

 Date
 SEPT/2020

 Scale
 3/16" = 1'-0"

 BCIN# 19669

LO# 87504

4500 2758 sqft