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			Unit no.	Lot/con.
Municipality	Postal code	Plan number/ other des	cription	
RICHMOND HILL				
B. Individual who reviews and ta	kes responsibility	for design activities		
Name	nee reepenenanty	Firm		
MICHAEL O'ROURKE		HVAC DESIGNS LTD.		
Street address			Unit no.	Lot/con.
375 FINLEY AVE	<u></u>	1	202	N/A
Municipality	Postal code L1S 2E2	Province ONTARIO	E-mail	
AJAX	_	UNTARIO	info@hvacdesigns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	•	Cell number	
` '	` ,		,	OF D' 1-1 01
C. Design activities undertaken b	y individual identi	itled in Section B. [Buil	ding Code Table 3.5.2.1	OF Division Cj
☐ House	⊠ HVA	C – House	☐ Building S	Structural
☐ Small Buildings		ing Services	Plumbing	- House
☐ Large Buildings		ction, Lighting and Pov Protection		- All Buildings
Complex Buildings	☐ File F			ewage Systems
Description of designer's work HEAT LOSS / GAIN CALCULATIONS		Model:	4505 ELMWOOD	
DUCT SIZING				
RESIDENTIAL MECHANICAL VENTIL	ATION DESIGN SUM	IMARY Project:	CENTREFIELD (WEST GORN	MLFY)
RESIDENTIAL SYSTEM DESIGN per	CSA-F280-12	i roject.	CENTRETICED (WEST GORI	VILL 1
D. Declaration of Designer				
MICHAEL O'ROURK			declare that (choose	one as appropriate):
	(print name)			
☐ I review and take responsib Division C, of the Building C classes/categories.				of opriate
Individual BCIN:				
Firm BCIN:				
I review and take responsible designer under subsection		am qualified in the approp		
In dividual DOIN.	10000	-		
Individual BCIN: Basis for exempt	<u>19669</u> ion from registration a	and qualification:	O.B.C SENTENCE 3	3.2.4.1 (4)
·	· ·			
The design work is exempt Basis for exemption from re			irements of the Building Cod	de.
I certify that:				
The information contain I have submitted this ap		edule is true to the best of n wledge and consent of the		
			Michael O'Ko	21.
June 4, 2021				
Date			Signatu	re of Designer

^{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 qualification under Subsections 3.2.4. and 3.2.5. of Division C.

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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			lUr	nit no.	Lot/con.
Ballallig Hambol, olloot Hamo			01		2000011.
Municipality	Postal code	Plan number/ other desc	cription		
RICHMOND HILL					
B. Individual who reviews and takes	responsibility fo	or design activities			
Name	reepenement, it	Firm			
MICHAEL O'ROURKE		HVAC DESIGNS LTD.			
Street address			Unit no.		Lot/con.
375 FINLEY AVE			202		N/A
Municipality	Postal code	Province	E-mail		•
AJAX	L1S 2E2	ONTARIO	info@hvacdesign	ıs.ca	
Telephone number	Fax number	•	Cell number		
(905) 619-2300	(905) 619-2375		()		
C. Design activities undertaken by i	ndividual identifi	ed in Section B. [Build	ding Code Table	3.5.2.1 OF Divi	sion C]
☐ House ☐ Small Buildings	⊠ HVAC	– House g Services		ilding Structura ımbing – Hous	
☐ Large Buildings		ion, Lighting and Pov		ımbing – Nous ımbing – All Bı	
☐ Complex Buildings	☐ Fire Pr			-site Sewage	
Description of designer's work		Model:	4505		-
HEAT LOSS / GAIN CALCULATIONS			ELMWOOD		
DUCT SIZING			OPT GROUND		
RESIDENTIAL MECHANICAL VENTILATI	ON DESIGN SUMN	MARY Project:	CENTREFIELD (WE	ST GORMLEY)	
RESIDENTIAL SYSTEM DESIGN per CSA	\-F280-12		02	o. co	
D. Declaration of Designer					
I MICHAEL O'ROURKE			declare that (choose one as ap	propriate):
(k	orint name)		·		,
☐ I review and take responsibility Division C, of the Building Code classes/categories.				on 3.2.4.of appropriate	
Individual BCIN:					
Firm BCIN:					
I review and take responsibility designer under subsection 3		am qualified in the appropo on C, of the Building Code		ı "other	
المطان ينظر بما المحالية	10000				
Individual BCIN: Basis for exemption	19669 from registration an	d qualification:	OBC SENTER	NCF 3241 ((4)
Basic for exemplicin	nom rogion and an	a quamouton.	O.D.O OLIVIE	102 0.2.1.1	<u>.·/</u>
☐ The design work is exempt Basis for exemption from regist		tion and qualification requi ion:	rements of the Buil	ding Code.	
I certify that:					
The information contained I have submitted this applic		ule is true to the best of m ledge and consent of the			
lune 4, 2024			Michael	Okounho	_
June 4, 2021	_		,	Signature of Des	ignor
Date				Signature of Des	ignei

^{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 qualification under Subsections 3.2.4. and 3.2.5. of Division C.

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Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Proj	ect Information						
Building r	number, street name					Unit no.	Lot/con.
Municipal	ity	Postal code	Plan numbe	er/ other des	cription		
RICHMON	D HILL						
B. Indiv	idual who reviews and ta	kes responsibility	for design a	ctivities			
Name			Firm				
Street ad	_ O'ROURKE		HVAC DES	IGNS LTD.	Unit no.		Lot/con.
375 FINL					202		N/A
Municipal		Postal code	Province		E-mail		
AJAX	•	L1S 2E2	ONTARIO		info@hvacd	esigns.ca	
•	e number	Fax number	•		Cell number		
(905) 619	9-2300	(905) 619-2375	5		()		
C. Desi	gn activities undertaken	by individual identi	fied in Section	on B. [Buile	ding Code T	able 3.5.2.1 OF	Division C]
☐ Hou	ise	⊠ HVA	C – House			Building Struc	tural
	all Buildings	Buildi	ing Services			Plumbing – H	ouse
	ge Buildings nplex Buildings		ction, Lightin Protection	g and Pov		I Plumbing – Al I On-site Sewa	
		☐ Fire F	Protection	Madali		On-site Sewa	ge Systems
•	on of designer's work SSS / GAIN CALCULATIONS	.		Model:	4505 ELMWOOD		
DUCT SIZ					OPT 2ND		
RESIDEN	ITIAL MECHANICAL VENTII	LATION DESIGN SUM	IMARY	Project:	CENTREFIELD	(WEST GORMLEY))
	ITIAL SYSTEM DESIGN per	CSA-F280-12		,		(**************************************	,
D. Decla	aration of Designer						
I	MICHAEL O'ROUR				declare	that (choose one a	is appropriate):
		(print name)					
	I review and take responsible Division C, of the Building Casses/categories.					section 3.2.4.of appropriat	е
	Individual BCIN Firm BCIN:	<u> </u>					
X	I review and take responsite designer" under subsection		am qualified ir sion C, of the B			as an "other	
	Individual BCIN						
	Basis for exemp	tion from registration a	and qualification	າ:	O.B.C SE	NTENCE 3.2.4.	1 (4)
	The design work is exempt Basis for exemption from re			fication requi	irements of the	e Building Code.	
I certify th	nat:						
	 The information contai I have submitted this a 		edule is true to t wledge and cor				
	June 4, 2021				Mich	al Kounh	le.
	Date					Signature of	Designer

^{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 qualification under Subsections 3.2.4. and 3.2.5. of Division C.

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Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information	Commence of the Commence of th	construction of the constr		and the state of t	
Building number, street name			Un	it no.	Lot/con.
Municipality	Postal code	Plan number/ other desc	ription		
RICHMOND HILL					
B. Individual who reviews and takes	responsibility fo	r design activities	managan bara barangan	edinakara deserti	graphorical build well for an
Name		Firm	:		
MICHAEL O'ROURKE Street address		HVAC DESIGNS LTD.	Unit no.		Lot/con.
375 FINLEY AVE			202		N/A
Municipality	Postal code	Province	E-mail		
AJAX	L1S 2E2	ONTARIO	info@hvacdesign	s.ca	
Telephone number (905) 619-2300	Fax number		Cell number		
	(905) 619-2375		` '	157 Sec. 10	
C. Design activities undertaken by ir	idividual identifie	ed in Section B. [Build	ing Code Table 3	3.5.2.1 OF Divisi	ion C]
☐ House	⊠ HVAC	– House	□ Bui	ilding Structura	al
☐ Small Buildings	Buildin	g Services	🖵 Plu	ımbing – Hous	е
☐ Large Buildings	☐ Detecti ☐ Fire Pr	ion, Lighting and Pov		ımbing – All Bu -site Sewage S	
Complex Buildings	- Fire Pr			-site Sewage (
Description of designer's work HEAT LOSS / GAIN CALCULATIONS		Model:	4505 ELMWOOD		
DUCT SIZING			OPT 5 BED 4 BATH		
RESIDENTIAL MECHANICAL VENTILATIO		ARY Project:	CENTREFIELD (WES	ST GORMLEY)	
RESIDENTIAL SYSTEM DESIGN per CSA	-F280-12		193513555555	100000000000000000000000000000000000000	satisfication of the second
D. Declaration of Designer	and the control the more con-	PLANTA AFRON TO THE ART AND AR	e e e e e e e e e e e e e e e e e e e		Control accompanies (State of State of
MICHAEL O'ROURKE	orint name)		declare that (choose one as ap	propriate):
☐ I review and take responsibility f	or the design work (on hehalf of a firm register	ed under subsection	n 3 2 4 of	
Division C, of the Building Code	I am qualified, and	the firm is registered, in the	ne	appropriate	
classes/categories.					
Individual BCIN:					
Firm BCIN:					
☑ I review and take responsibility f				other "other"	
designer" under subsection 3.	2.5.of Di visio	on C, of the Building Code			
Individual BCIN:	19669			105 0011	· •
Basis for exemption	from registration and	d qualification:	O.B.C SENTEN	NCE 3.2.4.1 (<u>(4)</u>
☐ The design work is exempt		ion and qualification requi	rements of the Build	ling Code.	
Basis for exemption from registr	ation and qualification	on:			
I certify that:					
The information contained	in this sched	ule is true to the best of m	y knowledge.		
I have submitted this application	ation with the knowle	edge and consent of the fi	rm.		
			met 1 P	21	
June 4, 2021	_		Michael	Mounta	·
Date				Signature of Des	igner

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Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Proj	ect Information	POSPECTO CONTRACTOR		o Parisana		ender of the control	THE RESERVE OF THE PARTY OF THE
Building n	number, street name				27.77.49494	Unit no.	Lot/con.
Municipal	ity	Postal code	Plan number/	other desc	cription		
RICHMONI	D HILL						
B. Indiv	idual who reviews and takes	responsibility f	or design activ	ities	Harris Maria	Andrew Commencer	The Prince
Name			Firm				
	_ O'ROURKE		HVAC DESIGN	NS LTD.	Ţ		
Street add					Unit no.		Lot/con.
Municipali		Postal code	Province		E-mail		INA
AJAX	·· ·	L1S 2E2	ONTARIO		info@hvacd	esigns.ca	
Telephone	e number	Fax number			Cell number		
(905) 619	9-2300	(905) 619-2375			()		
C. Desig	gn activities undertaken by i	ndividual identif	ied in Section E	3. [Build	ing Code Ta	able 3.5.2.1 OF Divi	sion C]
☐ Hou			C – House			Building Structu	
	all Buildings de Buildings		ng Services	I D		Plumbing – Hou	
	nplex Buildings		ction, Lighting a Protection	and Pow		🕽 Plumbing – All E 🕽 On-site Sewage	
	n of designer's work		In	Model:	4505		
	SS / GAIN CALCULATIONS				ELMWOOD		
DUCT SIZ		ON DECION CUM	## DV		OPT GROUN	D 5 BED 4 BATH	
	TIAL MECHANICAL VENTILATION TIAL SYSTEM DESIGN per CSA		MARY F	Project:	CENTREFIELD	(WEST GORMLEY)	
2 AT ALL SAME AT 1 SAME \$20.00 TOO.	ration of Designer		April 1946		-160 L	24 Menny 5	Prize I
	MICHAEL O'ROURKE		79/17/27-2-19/2/		doctoro	that (choose one as a	nnronrioto):
		rint name)		-	ucciaic	that (choose one as a	ppropriate).
	I review and take responsibility to Division C, of the Building Code classes/categories.	or the design work I am qualified, and	on behalf of a firn d the firm is regist	n registere ered, in th	ed under subs ie	ection 3.2.4.of appropriate	
	Individual BCIN: Firm BCIN:						
区	I review and take responsibility f designer" under subsection 3.	or the design and a 2.5.of Di vis	am qualified in the ion C, of the Build			s an "other	
	Individual BCIN:	19669					
	Basis for exemption	rom registration ar	nd qualification:		O.B.C SE	NTENCE 3.2.4.1	(4)
	The design work is exempt Basis for exemption from registr	from the registra ation and qualificat	tion and qualificat	ion requir	ements of the	Building Code.	
I certify the	at:						
	 The information contained I have submitted this application 	in this sched ation with the know	dule is true to the bledge and consen	est of my t of the fir	/ knowledge. m.		
	June 4, 2021				Mah	al Ofounda	· .
	Date	-		•		Signature of De	signer
				······································		5	J
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 qualification under Subsections 3.2.4. and 3.2.5. of Division C.

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CSA-F280-12 SB-12 PERFORMANCE

78

HEAT LOSS AT °F. HEAT GAIN AT °F.

260

741

593 0.19

0.20

0.19 0.20

0.19

0.19

0.20

0.19 563

0.19

0.19

0.19

0.20

LEVEL FACTOR / MULTIPLIER AIR CHANGE HEAT LOSS

AIR CHANGE HEAT GAIN DUCT LOSS **DUCT GAIN**

418

0 0 2239

SLAB ON GRADE HEAT LOSS SUBTOTAL HT LOSS SUB TOTAL HT GAIN

4.3 0.6 0.6 1.3 0.4

4.2 3.7 1.3 2.8

EXPOSED CLG

NO ATTIC EXPOSED CLG

EXPOSED FLOOR BASEMENT/CRAWL HEAT LOSS

NET EXPOSED WALL

NET EXPOSED BSMT WALL ABOVE GR

263 0.20

2210

589

30

163

117

5

573

0 116 0

758

0.19

0.20

0.19

4

28 0 0

0 240 601

549

989

1259

1116

1905

1877

5284

4531

119

1309

432

1669

2657

0 480 601

240

HEAT GAIN PEOPLE

HEAT GAIN APPLIANCES/LIGHTS TOTAL HT LOSS BTU/H

TOTAL HT GAIN x 1.3 BTU/H

3936

1180

3746

240 601

0 240 601

317 240 601

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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					GAIN	125	0		0	0	82	196	•	•	•					406			22		c		601		-
PAGE	28	7		311	Loss	174	0	0	0	0	517	1189	0	0	0	0			1881		0.30	563		0				2444	
						80	0	0	0	0	20	283	0	0	0	0					0.30					0			
					GAIN	0	0	874	•	•	0	143	•	0	0	0				1017			54		0		601		-
2	24	10		242	LOSS	0	0	784	0	0	0	868	0	0	0	0	0	0	1652		0.30	495		0				2147	
									0												0.30					0			
					GAIN	•	0	243	3035	0	85	444	•	•	13	0				3820			203		0	0	601		6040
20/02	74	10		747	LOSS	0	0	218	1634	0	517	2702	0	0	28	0	0	•	5098		0.30	1527		0				6625	
						0	0	10	75	0	20	642	0	0	9	0					0.30					0			
										-	_																		
					GAIN	0	1497	0	0	0	0	198								1695			90		0	0	601		3402
2	32	5		323	LOSS	0	806	0	0	•	0	1204	0	0	0	0	0	0	2010		0.30	602		0				2611	
						0	37	۰	•	•	•	286	•	•	•	•					0.30					۰			
			SRS	GAIN		15.6	40.5	24.3	40.5	101.2	4.3	0.7	9.0	9.0	1.3	0.4													
			FACTORS	LOSS		21.8	21.8	21.8	21.8	35.8	25.8	4.2	3.7	1.3	2.8	5.6										240			
100	EXP. WALL	CLG. HT.		GRS.WALL AREA LOSS GAIN	GLAZING	NORTH	EAST	SOUTH	WEST	SKYLT.	DOORS	WALL	NET EXPOSED BSMT WALL ABOVE GR	EXPOSED CLG	D CLG	LOOR	SSOT.	SSOT.	SSO7.	T GAIN	PLIER	SSO7.	I GAIN	DUCT LOSS	DUCT GAIN	HEAT GAIN PEOPLE	LIGHTS	вти/н	BTU/H
	EXP	ರ		3.WALL	5	_		٠,		υ,	ت	NET EXPOSED WALI	WALL AS	XPOSE	NO ATTIC EXPOSED CLG	EXPOSED FLOOR	BASEMENT/CRAWL HEAT LOSS	SLAB ON GRADE HEAT LOSS	SUBTOTAL HT LOSS	SUB TOTAL HT GAIN	LEVEL FACTOR / MULTIPLIER	AIR CHANGE HEAT LOSS	AIR CHANGE HEAT GAIN	DUCT	DOC	3AIN PE	HEAT GAIN APPLIANCES/LIGHTS	TOTAL HT LOSS BTU/H	V × 1.3
				GR								ET EX.	ED BSMT	ш	TTIC E.	EXP	CRAW	GRADI	UBTO	UB TO	CTOR,	HANG	CHANG			HEAT C	4 APPLI	AL HT	IT GAII
												~	T EXPOS		NO A		MENT	AB ON	"	J	VEL FA	AIR	AIR			_	AT GAIN	<u>10</u>	TOTAL HT GAIN x 1.3 BTU/H
													빌				BASE	S			Ē						뽀		F

WINTER NATURAL AIR CHANGE RATE 0.219 SUMMER NATURAL AIR CHANGE RATE 0.068 DATE: Jun-21 LO# 91155 BED-4 13 8 BED-3 42 9 GFA: 3289 BED-2 8 OPT GROUND 5 BED 4 BATH TYPE: 4505 SITE NAME: CENTREFIELD (WEST GORMLEY) BUILDER: ROYAL PINE HOMES FACTORS ROOM USE EXP. WALL CLG. HT

104 LOSS

357 LOSS

208 LOSS

315 .0SS

LOSS GAIN

GRS.WALL AREA

15.6 40.5 40.5

21.8 21.8 21.8 21.8 35.8 25.8

NORTH EAST SOUTH WEST SKYLT.

GLAZING

DESIGNS LTD.

STRUCTURAL HEAT LOSS: 49392

TOTAL COMBINED HEAT LOSS BTU/H: 51396

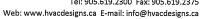
LOSS DUE TO VENTILATION LOAD BTU/H: 2004

TONS: 3.01

36119

TOTAL HEAT GAIN BTU/H:

	1		pane		
		ĥ	24 BAS 3.92 95 0.46 15 0.16 27 110	0.12 6 484 76 4X10 A	(t/min) (t/min
	97 % 50,000 58,000	.6 " E.S.P.	23 BAS 3.92 95 0.46 15 0.16 8 150 150	0.1 6 484 76 4X10 B	∞∞∞∞∞∞∞∞∞∞ <u></u>
	AFUE = 97 % INPUT (BTU/H) = 60,000 OUTPUT (BTU/H) = 58,000	DESIGN CFM = CFM @ .6	22 BAS 3.92 95 0.46 15 0.16 26 120 146	0.11 6 484 76 4X10 D	*****
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3289	** 16A-060-14V FAN SPEED	MEDLOW MEDIUM MEDIUM HIGH HIGH	18 W/R 0.55 13 0.29 10 17 150 167	0.1 4 115 3X10 A	R TRUNK: TRUNK CFM 0 0 0 0 0 0 0 0 0 0 0 0 1200
GFA.	\$9TN6A-060-14V FAN SPEED	MEDIUI	17 LAUN 2.44 59 1.34 45 0.17 120	0.11 5 433 330 3X10 C	RETURN AIR TRUNK STATEUNK STATEUNK O 0.0.0 TRUNK O 0.0.0 TRUNK O 0.0.0 TRUNK O 0.0.0 TRUNK V O 0.0.0 TRUNK X S S S S S S S S S S S S S S S S S S
			16 DIN 2.15 52 2.17 73 0.17 6 140	0.12 6 265 372 4X10 B	Well corry (formin) (
			15 KB/G 2.21 54 2.00 67 0.17 100	0.11 5 396 492 3X10 C	8 8 8 8 8 8 8 8 0 0 0 0 0 0 0 0 0 0 0 0
Jun-21		0.17 0.02 0.15	74 KB/G 2.21 54 2.00 67 0.17 39 130	0.1 5 396 492 3X10 C	×××××× 000.00 0 × 0
DATE: Jun-21		ressure s. Loss sure r/a	73 K/B/G 2.21 54 2.00 67 0.17 130 158	0.11 5 396 492 3X10 D	RECT RECT 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Ξ		r/a pressure r/a grille press. Loss adjusted pressure r/a	12 LIV 2.61 63 3.10 104 0.16 90	0.13 6 321 530 4X10 A	ROUND DUCT DO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
BED 4 BATH		r/a g adjus	11 0.55 0.55 13 0.36 12 27 27 140	0.1 4 149 138 3X10 B	STATIC 10.00 0.0
2	0.6 0.05 0.2 0.35	0.18 0.02 0.16	10 MBR E 1.33 32 1.70 57 0.17 49 150	0.09 5 235 419 3X10 D	172 NAVINK 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
OPT GROUND 4505	ace pressure furnace filter coil pressure ole pressure for s/a & r/a	sure s/a ss. loss sure s/a	9 ENS-3 0.49 12 0.56 19 44 130	0.1 4 138 218 3X10 B	TRUNK G TRUNK H TRUNK H TRUNK C 1 TRUNK L 14.80 0 0 0 0 1 1 14.80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
TYPE: 4	furnace pressure furnace filter a/c coil pressure available pressure for s/a & r/a	plenum pressure s/a max s/a dif press. loss min adjusted pressure s/a	8 BED-3 1.87 46 2.64 89 0.16 47 170	0.07 6 235 454 4X10 A	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
	av	pler max s min adjus	ENS-2 0.49 12 0.12 4 4 0.17 37 140	_	(firm) (firm) 483 579 579 579 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
			6 1.18 29 1.88 63 63 0.17 29 130		8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
RMLEY)	1200 35,789 33.53	Bas 4	5 BED-3 1.87 46 2.64 89 0.16 49 180	0.07 6 235 454 4X10 A	×××××× 50.006 6.15 6.00 6.15 6.00 6.15 6.00 6.15 6.00 6.15 6.00 6.00 6.00 6.00 6.00 6.00 6.00 6.0
EST GOF ES		3 8 t	4 1.97 1.97 48 2.27 76 0.17 120	6 245 388 4X10 B	BED-5 11.26 11.26 11.26 11.26 11.26 12.2 12.2
IELD (WI	COOLING CFM TOTAL HEAT GAIN AIR FLOW RATE CFM	2nd 16 5 on layout	3 1.97 1.97 48 2.27 76 0.17 130 188		ENS.3
SITE NAME: CENTREFIELD (WEST GORMLEY) BUILDER: ROYAL PINE HOMES	AIR	3rd 2nd 0 16 0 16 0 5 otherwise on layout.	2 MBR 1 1.33 32 3.2 57 5.7 57 5.8 58 150		WIC F 0.43 F 0.17
NAME: C ILDER: F	1200 49,392 24.3	4th 0 0 ss noted c	ENS 0.56 0.44 15 0.17 150	0.09 4 161 172 3X10 D	ENS 0.056 0.074 0.044 1.15 0.077 0.09 0.09 0.09 0.09 0.09 0.09 0.0
SITE BU	G CFM T LOSS E CFM	7 710" unles less note			NAME S MBH. A HEAT A MEAT OLING SSURE T LGH. ENGTH SSURE T LGH. CHOWN C COUNK B UNK C
	HEATING CFM TOTAL HEAT LOSS AIR FLOW RATE CFM	RUN COUNT S/A S/A R/A diffusers 4"x runs 5"Ø unl	ROOM RONS ROOM NAME RM LOSS MBH. CFM PER RUN HEAT RM GAIN MBH. CFM PER RUN COOLING ADUSTED PRESSURE ACTUAL DUCT LGH. ACTUAL LENGTH ALL EFFECTIVE LENGTH	ADDOING TREATH ROUND DUCT SIZE HEATING VELOCITY (ffmin) COOLING VELOCITY (ffmin) OUTLET GRILL SIZE TRUNK	ROOM NAME ROOM NAME CFM PER RUN EAGN MBH, CFM PER RUN COCING ADUSTED PRESSURE ACTUAL DUCT LCH— ACTUAL DUCT LCH— ADUSTED PRESSURE ROUND DUCT SIZE HEATING VELOCITY (ffmin) OUTLET GRILL SIZE TRUNK A TRUNK B TRUNK B TRUNK C TR
	T AIR	RUN COUNT 4th 3rd 2 S/A 0 0 1 R/A 0 0 1 All S/A diffusers 4"x10" unless noted otherwise on layout	ROOM NAME RM LOSS MBH. CFM PER RUN HEAT RM GAIN MBH. CFM PER RUN COCLING ADJUSTED PRESSURE ACTUAL DUCT LGH. EQUIVALENT TOTAL EFFECTIVE LENGTH	HEATING COOLING	ROOM NAME RM COSS MBH. CFM PER RUN HEAT RM GANN MBH. CFM PER RUN COCING ADUUSTED PRESSURE ACTUAL DUCT LGH. EQUIVALENT LENGTH ADUUSTED PRESSURE ROUND DUCT SIZE HEATING VELOCITY (ffmin) COCILING VELOCITY (ffmin) COCILING VELOCITY (ffmin) OUTLET GRILL SIZE TRUNK A TRUNK B TRUNK D
ı				l	[α ∢ σ ∢ π Ε ∢ ϗ Ξ Ξ





TYPE: SITE NAME: 4505

CENTREFIELD (WEST GORMLEY)

LO#

91155 OPT GROUND 5 BED 4 BATH

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES	9.32.3.1(1)	SUPPLEMENTAL VENTILATION CAPACITY	9.32.3.5.
a)		Total Ventilation Capacity 201.4	cfm
b) Positive venting induced draft (except fireplaces)		Less Principal Ventil. Capacity 95.4	cfm
c) Natural draft, B-vent or induced draft gas fireplace		Required Supplemental Capacity 106.0	cfm
d) Solid Fuel (including fireplaces)			
e) No Combustion Appliances		PRINCIPAL EXHAUST FAN CAPACITY	
		Model: VANEE 65H Location:	BSMT
HEATING SYSTEM		95.4 cfm	✓ HVI Approved
Forced Air Non Forced Air		PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
		CFM ΔT *F FACTOR 95.4 CFM X 78 F X 1.08	% LOSS X 0.25
Electric Space Heat		SUPPLEMENTAL FANS BY INSTALLING CONTI	PACTOR
	1	Location Model cfm	HVI Sones
HOUSE TYPE	9.32.1(2)	ENS BY INSTALLING CONTRACTOR 50	✓ 3.5
		ENS-2 BY INSTALLING CONTRACTOR 50	✓ 3.5 ✓ 3.5
Type a) or b) appliance only, no solid fuel		ENS-4/5 BY INSTALLING CONTRACTOR 50 W/R BY INSTALLING CONTRACTOR 50	✓ 3.5 ✓ 3.5
II Type I except with solid fuel (including fireplaces)			
III Any Type c) appliance		HEAT RECOVERY VENTILATOR Model: VANEE 65H	9.32.3.11.
The state of the s		155 cfm high64	cfm low
IV Type I, or II with electric space heat		75 % Sensible Efficiency	✓ HVI Approved
Other: Type I, II or IV no forced air		@ 32 deg F (0 deg C)	
		LOCATION OF INSTALLATION	
SYSTEM DESIGN OPTIONS	D.N.H.W.P.	Lat	
1 Exhaust only/Forced Air System		Lot: Concession	
2 HRV with Ducting/Forced Air System		Township Plan:	
2 HRV with buckling/Forced All 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			
FOTAL VENTILATION CAPACITY	9.32.3.3(1)	Name: Address:	
Basement + Master Bedroom 2 @ 21.2 cfm 42.4	cfm	City:	
Other Bedrooms <u>4</u> @ 10.6 cfm <u>42.4</u>	cfm	Telephone #: Fax #:	
Kitchen & Bathrooms6 @ 10.6 cfm63.6	cfm	INSTALLING CONTRACTOR	
Other Rooms5 @ 10.6 cfm53.0	cfm	Name:	
Table 9.32.3.A. TOTAL <u>201.4</u>	cfm	Address:	
DDINGIDAL VENTUATION CADACITY REQUIRED	22244	City:	
PRINCIPAL VENTILATION CAPACITY REQUIRED	9.32.3.4.(1)	Telephone #: Fax #:	
1 Bedroom 31.8	cfm		
2 Bedroom 47.7	cfm	DESIGNER CERTIFICATION I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
3 Bedroom 63.6	cfm	Name: HVAC Designs Ltd.	
4 Bedroom 79.5	cfm	Signature: Mahad Office .	
5 Bedroom 95.4	cfm	HRAI # 001820	
TOTAL 95.4 cfm		Date: June-21	

NIER NATURAL AIR CHANGE RATE Oute: 2021 MMER NATURAL AIR CHANGE RATE Design Temperature Difference Tin $^{\circ}$ C Design Temperature Difference Tin $^{\circ}$ C Tout $^{\circ}$ C Tout $^{\circ}$ C $^{$				Form	80-12 Kesidential Hea Jula Sheet (For Air Lea	CSA F280-12 Kesidential Heat Loss and Heat Gain Calculations Formula Sheet (For Air Leakage / Ventiliation Calculation)	Calculations alculation)			
Floor Area (if*) Floor Height (**) Floor Heigh (**) Floo	LO#: 9115	35	Model: 4505		Builde	er: ROYAL PINE HOMES			Date: 2	2021-06-04
Floor Area (IP) Floor Height (H) Volume (IP)			Volume Calculation	on			Air Change & Delt.	a T Data		
Floor Area (if Floor Height (if) Volume (if Volu	e Volume						WINTER NATURAL AIR CHANG	ie RATE	0.219	
1534 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 10 14663.4 14663.		Floor Area (ft²)	Floor Height (ft)	Volume (ft³)			SUMMER NATURAL AIR CHANG	3E RATE	0.068	
1881 8 14888 9 0 0 9 0 0 0 0 0 0	First	1434	10	14483.4						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Second	1861	8	14888			Design Te	mperature Diff	erence	
100 100	Third	0	6	0			Cin Cin	Tout °C	AT °C	AT %F
Total:	-ourth	0	6	0	· · ·			-21	43	78
			Total:	42,277.4 ft³				31	7	13
$H_{Catrb} = LR_{atrh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ $\times 332.55 \times 43^{\circ}C \times 1.2$ $\times 332.55 \times 43^{\circ}C \times 1.2$ $= 129316 \mathrm{Btu}/h$ $H_{Dustrb} = DVC \times DTD_h \times 1.08 \times (1 - E)$ $\times 78^{\circ}F \times 1.08 \times (1 - E)$ $\times 78^{\circ}F \times 1.08 \times (1 - E)$ $\times 18^{\circ}F \times 108 \times (1 - E)$ $\times 18$				11.70	7					
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2 \\ \times 332.55 \times 43^{\circ}C \times 1.2 \\ \times 32.55 \times 43^{\circ}C \times 1.2 \\ \times 43^{\circ}C \times 1$		5.2.3	1.1 Heat Loss due to A	ir Leakage			6.2.6 Sensible Gain due t	to Air Leakage		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		$HL_{airb} =$	$LR_{airh} imes rac{V_b}{3 \ \epsilon} imes I$	$DTD_h \times 1.2$)H	$G_{salb} = LR_{airc} \times \frac{V_b}{2.6} \times DTD_c > 0$	× 1.2		
	0.219		x 43°C	_ x		0.068	3.0 x 332.55 x 7°C	- 1	"	194 W
5.3.3.2 Heat Loss due to Mechanical Ventilation HL $_{vairb}$ = $PVC \times DTD_h \times 1.08 \times (1 - E)$ HL $_{vairb}$ = $PVC \times DTD_h \times 1.08 \times (1 - E)$ x $78 \cdot F$ x 0.25 = 2004 Btu/h 95 CFM x $13 \cdot F$ x 0.25 = = 5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section) x 0.25 = = = HL $_{airr}$ = Level Factor \times HL $_{airbv}$ × {(HL $_{agcrr}$ + HL $_{bgcrr}$) + (HL $_{agcrevel}$ + HL $_{bgclevel}$)} Huistrowly Hulevel) Huistrow Air Leakage Heat Loss Multiplier (LFx) 1 0.5 0.3 0.29 0.701 2 0.0 0.000 0.000 3 0.2 12,945 0.000 4 0 0 0.000 *H Lairboy - Air leakage heat loss + vanitiation heat loss + vanitiation heat loss + vanitiation heat loss + vanitiation					Ш				"	662 Btu/h
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1-E)$ $\times 78 ^{\circ}F \times 1.08 \times (1-E)$ $= 1.08 \times 0.25 = 2004 \text{ Btu/h}$ $= 5.2.3.3 \text{ Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)}$ $HL_{airr} = Level Factor \times HL_{airby} \times \{(HL_{agrr} + HL_{bgcr}) + (HL_{agrcevel} + HL_{bgcrbevel})\}$ $= 1 \times 0.5 \times 0.3$ $= 1.0.916$ $= 0.0.000$ $= 0.0.000$ $= 0.0.000$ $= 0.0.000$		5.2.3.2 Hea	at Loss due to Mechai	nical Ventilation			6.2.7 Sensible heat Gain du	ue to Ventilatio		
		$HL_{vairb} =$	$PVC \times DTD_h \times C$	$1.08 \times (1 - E)$		HL_{v}	$airb = PVC \times DTD_h \times 1.08 \times ($	(1 - E)		
$HL_{airr} = Level \ Factor \ (Level \ (Level \ Factor \ (Level \ Level \ Level \ (Level \ ($	5 CFM				Ш	95 CFM	13 °F × 1.08		"	330 Btu/h
$HL_{airr} = Level Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agctevel} + HL_{bgclevel})\}$ $Level $				5.2.3.3 Calcula	ition of Air Change Heat	Loss for Each Room (Floo	r Multiplier Section)			
Level Level Factor (LF) Hrairve Air Leakage + 2 Level Conductive Heat Loss Loss: (Ht_clevel) Level Conductive Heat Loss Loss: (Ht_clevel) Hrairby / Hilevel) 1 0.5 (Btu/h) 9,207 0.701 2 0.3 12,941 0.299 4 0 0.000 5 0 0 *Hairby = Air leakage heat loss + ventilation heat loss 0 0			HL_{α}	$_{itrr} = Level\ Factu$	or \times $HL_{airbv} \times \{(H)\}$	$L_{agcr} + HL_{bgcr}$) \div ($HL_{agclevel} + HL_{bgclevel}$			
9,207 12,941 13,836 0			Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)			
12,941 13,836 0 0			H 6	0.5		9,207	0.701			
13,836 0 0			2	0.3		12,941	0.299			
0			m	0.2	12,916	13,836	0.187			
0			4	0		0	0.000			
*HLairby = Air leakage heat loss + ventilation heat loss			5	0		0	0.000			
* Section Se			*HLairby = £	۱۰ Air leakage heat loss ۱۰	+ ventilation heat loss	c				



375 Finley Ave. Suite 202 Ajax, ON L1S 2E2 Tel: 905.619.2300 Fax: 905.619.2375

Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL:	4505		OPT GROUND 5 E	BED 4 BATH	BUILDER: ROYAL PINE HOMES	
SFQT:	3289	LO#	91155		SITE: CENTREFIELD (WEST	GORMLEY)
DESIGN A	SSUMPTIONS					
HEATING			°F	COOLING	j	°F
OUTDOOF	R DESIGN TEMP.		-6	OUTDOO	OR DESIGN TEMP.	88
INDOOR E	DESIGN TEMP.		72	INDOOR	DESIGN TEMP. (MAX 75°F)	75
BUILDING	i DATA					
ATTACHIV	IENT:		DETACHED	# OF STO	DRIES (+BASEMENT):	3
FRONT FA	CES:		EAST	ASSUME	D (Y/N):	Υ
AIR CHAN	GES PER HOUR:		2.50	ASSUME	D (Y/N):	Υ
AIR TIGHT	NESS CATEGORY:		TIGHT	ASSUME	D (Y/N):	Υ
WIND EXP	POSURE:		SHELTERED	ASSUME	D (Y/N):	Υ
HOUSE VO	DLUME (ft³):		42277.4	ASSUME	D (Y/N):	Υ
INTERNAL	. SHADING:	BLINDS	CURTAINS	ASSUME	D OCCUPANTS:	6
INTERIOR	LIGHTING LOAD (Btu/	h/ft²):	1.27	DC BRUS	HLESS MOTOR (Y/N):	Υ
FOUNDAT	ION CONFIGURATION		BCIN_1	DEPTH B	ELOW GRADE:	6.0 f
LENGTH:	38.0 ft	WIDTH:	56.0 ft	EXPOSE	PERIMETER:	188.0 f

2012 OBC - COMPLIANCE PACKAGE		
	Compliance	e Package
Component	SB-12 PER	FORMANCE
	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

W	eather Sta	ation Description		
Province:	Ontario			
Region:	Richmond Hill			
	Site D	Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay			
Water Table:	Normal	Normal (7-10 m, 23-33 ft)		
	Foundatio	on Dimensions		
Floor Length (m):	11.6			
Floor Width (m):	17.1			
Exposed Perimeter (m):	0.0			
Wall Height (m):	2.7			
Depth Below Grade (m):	1.83	Insulation Configuration		
Window Area (m²):	1.2			
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):		1855		

TYPE: 4505 **LO#** 91155

OPT GROUND 5 BED 4 BATH



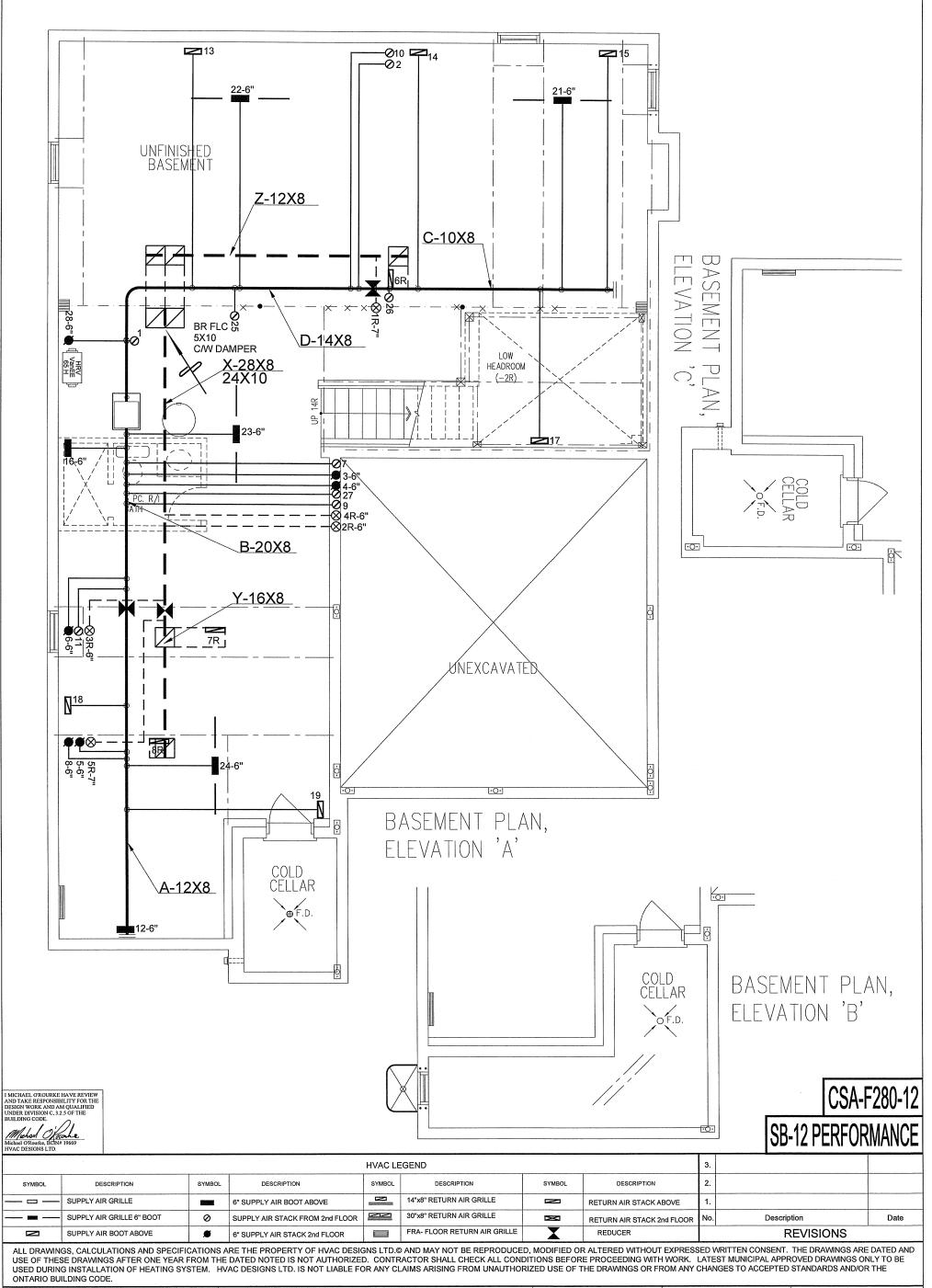
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Stati	on Des	cript	ion				
Province:	Onta	rio					
Region:	Richmond Hill						
Weather Station Location:	Open flat terrain, grass						
Anemometer height (m):	10						
Local S	hieldin	g					
Building Site:	Suburban, forest						
Walls:	Heavy						
Flue:	Heavy						
Highest Ceiling Height (m):	6.43						
Building Co	nfigur	ation					
Type:	Detached						
Number of Stories:	Two						
Foundation:	Full						
House Volume (m³):	1197.2						
Air Leakage	/Venti	latio	1				
Air Tightness Type:	Energ	gy Star	Detacl	ned (2.	5 ACH)		
Custom BDT Data:	ELA @ 10 Pa.				1117.5 cm ²		
	2.50				ACH @ 50 Pa		
Mechanical Ventilation (L/s): Total Supp		ply		Total Exhaust			
	45.0				45.0		
Flue	Size						
Flue #:	#1	#2	#3	#4			
Diameter (mm):	0	0	0	0			
Natural Infile	ration	Rate	S				
Heating Air Leakage Rate (ACH/H)	•	C).21				
Cooling Air Leakage Rate (ACH/H):		C					

TYPE: 4505 **LO#** 91155

OPT GROUND 5 BED 4 BATH



ROYAL PINE HOMES

CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO

OPT GROUND 5 BED 4 BATH

4505 3289 sqft

375 Finley Ave. Suite 202 - Aiax. 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. FAN SPEED

HEAT LOSS		BTU/H	# OF	RUNS	S/A	R/A	FANS
UNIT DATA		3RD	FLOOR				
MAKE CAR	RIER		2ND	FLOOR	16	5	5
MODEL 59TN6A	-060-14\	/	1ST	FLOOR	8	3	2
INPUT 6	60	мвти/н	BAS	EMENT	4	1	0
оитрит 5	i8	мвти/н	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE				
COOLING				A)(O) IT A			

cfm @ 0.6" w.c.

UNLESS NOTED OTHERWISE

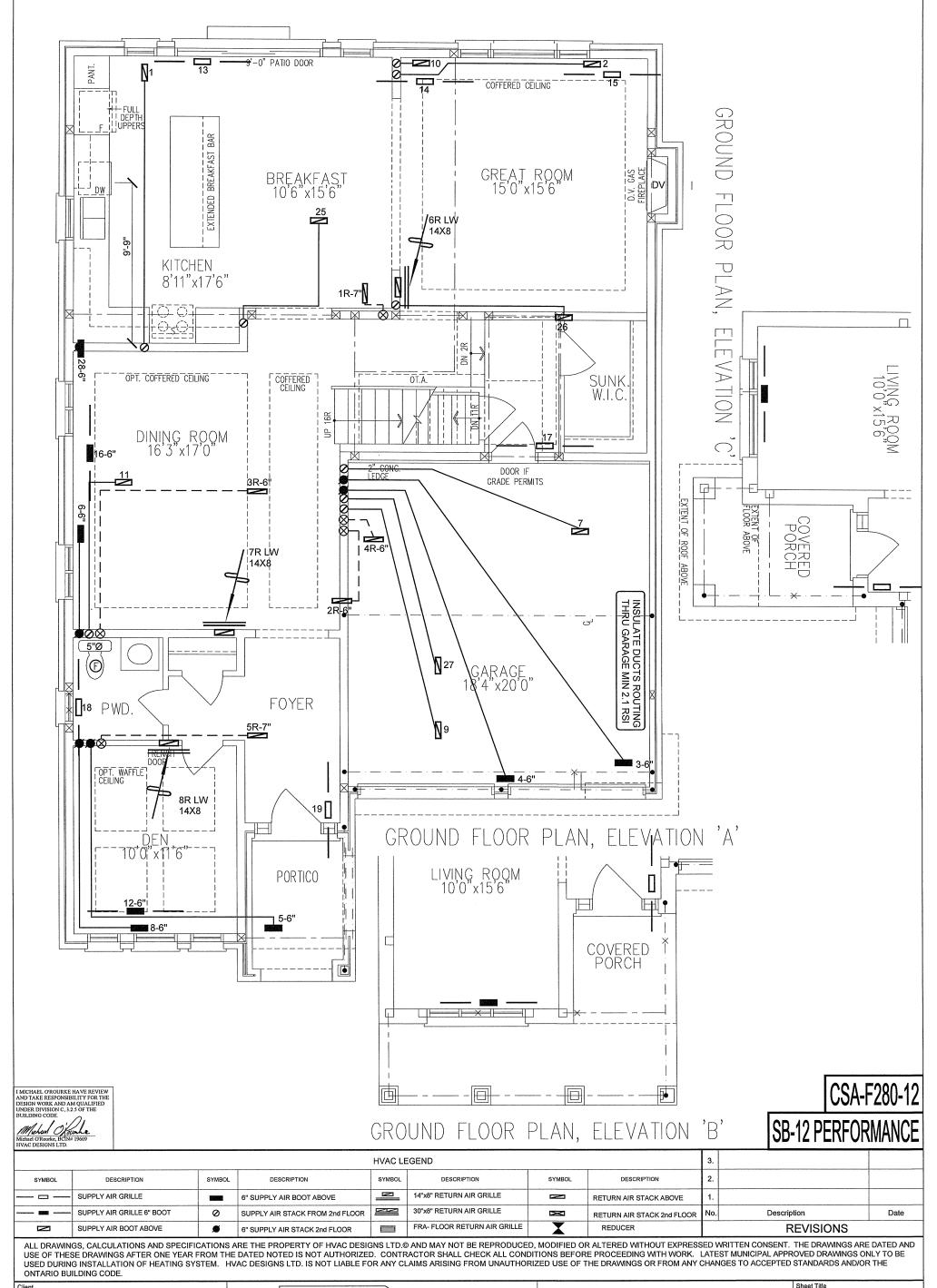
ON LAYOUT. UNDERCUT

DOORS 1" min. FOR R/A

3.0

1200

BASEMENT		
HEATING		
LAYOUT		
Date JUNE/2021		
Scale 3/16" = 1'-0"		
BCIN# 19669		
LO# 91155		



ROYAL PINE HOMES

CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO

OPT GROUND 5 BED 4 BATH 4505 3289 sqft

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

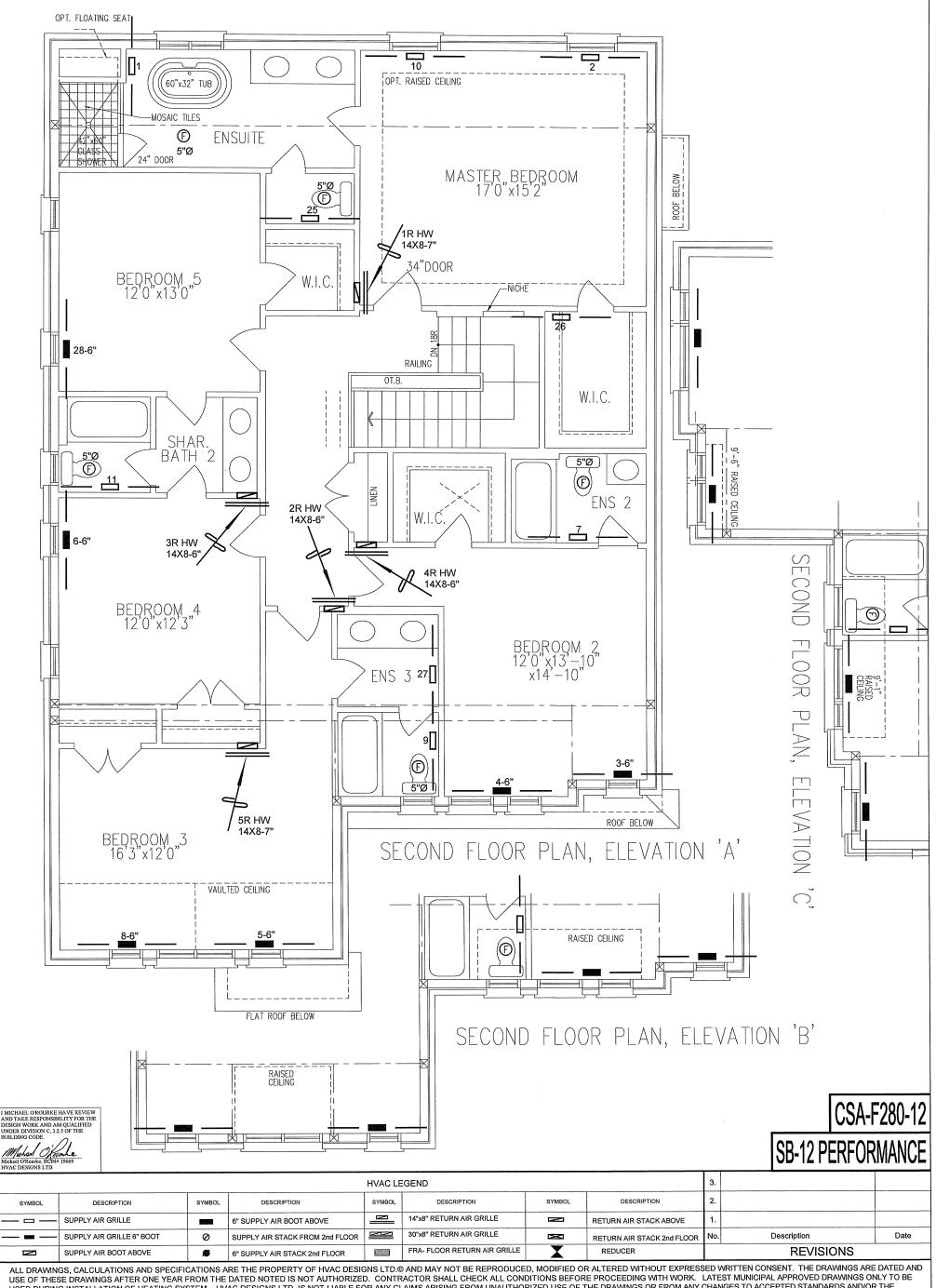
Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.

FIRST FLOOR **HEATING LAYOUT**

JUNE/2021 3/16" = 1'-0"

BCIN# 19669

LO# 91155



USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

ROYAL PINE HOMES

CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO

OPT GROUND 5 BED 4 BATH

3289 sqft 4505

375 Finley Ave. Suite 202 - Aiax, 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.

SECOND FLOOR **HEATING** LAYOUT

JUNE/2021 3/16" = 1'-0" Scale

BCIN# 19669

91155 LO#