

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:	
Model 3250			Lot/con.	
Richmond Hill	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design	n activities			
Name David DaCosta		Firm	gtaDesigns Inc.	
Street address 2985 Drew Road	l, Suite 202		Unit no.	Lot/con.
Municipality Mississauga	Postal code L4T 0A4	Province Ontario	E-mail hvac@gtades	ions ca
Telephone number	Fax number	Ontario	Cell number	igno.oa
(905) 671-9800	ation D. [Duil	dina Cada Tabla 2	F 2.4 of Division C1	
C. Design activities undertaken by individual identified in Se	ction B. [Buil	ding Code Table 3	.5.2.1 of Division Cj	
☐ House ☑ HVAC – Ho			Building Structural	
☐ Small Buildings ☐ Building Ser			☐ Plumbing – House	
	ighting and Pow	er	☐ Plumbing – All Building	
☐ Complex Buildings ☐ Fire Protecti			On-site Sewage System	
Description of designer's work Mod	el Certification		Project #: Layout #:	PJ-00267 JB-09092
Heating and Cooling Load Calculations Main	Х	Builder	EM Air Systems	
Air System Design Alternate		Project	King East Developm	
Residential mechanical ventilation Design Summary O.D. GFA Residential System Design per CAN/CSA-F280-12	3237	Model	Model 3250 WOE	3
Residential New Construction - Forced Air		SB-12	Energy Star	,
D. Declaration of Designer			g ,	
I David DaCosta (print name)	declare that (c	choose one as appro	opriate):	
☐ I review and take responsibility for th Division C of the Building Code. I am classes/categories. Individual BCIN:				
Firm BCIN:			=	
☑ I review and take responsibility for t designer" under subsection 3.2.5 of	•	•	• opriate category as an "other	
Individual BCIN:	3296	64		
Basis for exemption	on from registra	tion:	Division C 3.2.4.1. (4)	
☐ The design work is exempt from the	registration and	qualification requireme	ents of the Building Code.	
Basis for exemption	on from registra	tion and qualification:		
I certify that:				
The information contained in this schedule is true to the best of my	knowledge.			
I have submitted this application with the knowledge and consent of	of the firm.			
July 31, 2023		Mare 14	Contract of the contract of th	
Date		Signature of De	signer	

NOTE:

Page 1

- 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 Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to
 practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.



2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

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These documents issued for the use of sund may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red. Building Location	Heat loss and gain calcula	tion summary sheet CSA-F280-M12 Standard
Building Location	These documents issued for the use of	
Address (Model): Model 3250 WOB Site: King East Developments	and may not be used by any other persons without authorization. Documents	for permit and/or construction are signed in red. JB-09092
Address (Model): Model 3250 WOB Site: King East Developments	Building L	ocation
Postal code: Calculations based on		
Calculations based on: Architectural Design Inc.Mar/2023 Attachment: Detached Front facing: East/West Assumed? Yest No. of Levels: 3 Ventilated? Included Air lightness: 1961-Present (ACH=3.57) Assumed? Yest Weather location: Richmond Hill Wind exposure: Sheltered HRV? VanEE V150E75NS Imbernal shading: Light-translucent Occupants: 5 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Units: Imperial Area Sq ft: 3237 Style B: Style C: Style B: Style C: Style B: Style D:	Model:	Lot:
Dimensional information based on: Architectural Design Inc.Mar/2023	City and Province: Richmond Hill	Postal code:
Attachment: Detached	Calculations	based on
No. of Levels: 3 Ventilated? Included Air tightness: 1961-Present (ACH=3.57) Assumed? Yes	Dimensional information based on:	chitectural Design Inc.Mar/2023
Weather location: Richmond Hill	Attachment: Detached	Front facing: East/West Assumed? Yes
HRV?	No. of Levels: 3 Ventilated? Included	Air tightness: 1961-Present (ACH=3.57) Assumed? Yes
Sensible Eff. at -25C 60% Apparent Effect. at -0C 80% Units: Imperial Area Sq ft: 3237 Sensible Eff. at -0C 75% Heating design conditions Cuddoor temp -5.8 Indoor temp: 72 Mean soil temp: 50 Outdoor temp 88 Indoor temp: 75 Latitude: 44 Above grade walls Style A: As per OBC SB12 Energy Star R 22 + 5ci Style A: As per OBC SB12 Energy Star R 20 Style B: Style C: Style D: Style D: Floors on soil Ceilings Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Style B: Sty	Weather location: Richmond Hill	Wind exposure: Sheltered
Sensible Eff. at -0C 75% Heating design conditions Cooling design conditions	HRV? VanEE V150E75NS	Internal shading: Light-translucent Occupants: 5
Heating design conditions Cutdoor temp	Sensible Eff. at -25C 60% Apparent Effect. at -0C 80%	Units: Imperial Area Sq ft: 3237
Outdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50 Outdoor temp 88 Indoor temp: 75 Latitude: 44 Above grade walls Style A: As per OBC SB12 Energy Star R 22 + 5ci Style A: As per OBC SB12 Energy Star R 20 Style B: Style B: Style C: Style C: Style A: As per Selected OBC SB12 Energy Star R 20 Style B: Style C: Style C: Style B: Style C: Style A: As per Selected OBC SB12 Energy Star R 20 Style B: As per Selected OBC SB12 Energy Star R 21 Exposed floors Style B: S	Sensible Eff. at -0C 75%	
Above grade walls Style A: As per OBC SB12 Energy Star R 22 + 5ci Style A: As per OBC SB12 Energy Star R 20 Style B: Style C: Style D: Style D: Floors on soil Ceilings Style A: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style	Heating design conditions	Cooling design conditions
Style A:	Outdoor temp -5.8 Indoor temp: 72 Mean soil temp: 50	Outdoor temp 88 Indoor temp: 75 Latitude: 44
Style B: Style C: Style D: Style A: As per Selected OBC SB12	Above grade walls	Below grade walls
Style C: Style D: Style D: Style D: Style D: Style A: As per Selected OBC SB12	Style A: As per OBC SB12 Energy Star R 22 + 5ci	Style A: As per OBC SB12 Energy Star R 20ci
Style D: Floors on soil Style A: As per Selected OBC SB12 Energy Star Style B: Style B: Style A: As per Selected OBC SB12 Energy Star R Style B: Style A: As per Selected OBC SB12 Energy Star R Exposed floors Style C: Style A: As per Selected OBC SB12 Energy Star R Style B: Style C: Style B: Style B: Style B: Style B: Style B: Style C: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air	Style B:	Style B:
Floors on soil Style A: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Exposed floors Style C: Style A: As per Selected OBC SB12 Energy Star R Style A: As per Selected OBC SB12 Energy Star R Windows Style B: Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: Style B: Style B: Skylights Style B: Style C: Style B: Skylights Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R As per Selected OBC SB12 Energy Star R As per Selected OBC SB12 Energy Star R Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air	Style C:	Style C:
Style A: As per Selected OBC SB12 Energy Star Style A: As per Selected OBC SB12 Energy Star R Style B: Style B: As per Selected OBC SB12 Energy Star R Exposed floors Style C: Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4. Windows Style B: Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Skylights Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R 2. Style B: Style B: Style B: Style B: Style C: Style B: Style B: Style C: Style C: Style B: Style C: Style C: Style B: Style C: Style B: Style C: Style B: Style C: Sty	Style D:	Style D:
Style B: Style B: As per Selected OBC SB12 Energy Star R Exposed floors Style C: Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4. Windows Style B: Style B: Skylights Style B: Skylights Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R 2. Style B: Style A: As per Selected OBC SB12 Energy Star R 2. Style B:	Floors on soil	Ceilings
Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4. Windows Style B: St	Style A: As per Selected OBC SB12 Energy Star	Style A: As per Selected OBC SB12 Energy Star R 60
Style A: As per Selected OBC SB12 Energy Star R 31 Doors Style B: Style A: As per Selected OBC SB12 Energy Star R 4. Windows Style B: Style B: Skylights Style B: Skylights Style C: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Skylights Style B: Style A: As per Selected OBC SB12 Energy Star R 2. Style B: Style B: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style B:	Style B: As per Selected OBC SB12 Energy Star R 31
Style B: Windows Style A: As per Selected OBC SB12 Energy Star R 4.00 Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style B: Style C: Style C: Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Exposed floors	Style C:
Windows Style B: Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Skylights Style C: Style A: As per Selected OBC SB12 Energy Star R 2. Style D: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style A: As per Selected OBC SB12 Energy Star R 31	Doors
Style A: As per Selected OBC SB12 Energy Star R 4.00 Style C: Style B: Style A: As per Selected OBC SB12 Energy Star R 2. Style D: Style B: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style B:	Style A: As per Selected OBC SB12 Energy Star R 4.00
Style B: Style C: Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Windows	Style B:
Style C: Style A: As per Selected OBC SB12 Energy Star R 2. Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style A: As per Selected OBC SB12 Energy Star R 4.00	Style C:
Style D: Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style B:	Skylights
Attached documents: As per Shedule 1 Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values Notes: Residential New Construction - Forced Air Calculations performed by	Style C:	Style A: As per Selected OBC SB12 Energy Star R 2.03
Notes: Residential New Construction - Forced Air Calculations performed by	Style D:	Style B:
Calculations performed by	Attached documents: As per Shedule 1 Heat Loss/G	ain Caculations based on CSA-F280-12 Effective R-Values
·	Notes: Residential New C	onstruction - Forced Air
Nome: Devid DeCeste	Calculations p	erformed by
Postal code: L41 0A4	Name: David DaCosta	Postal code: L4T 0A4
Company: gtaDesigns Inc. Telephone: (905) 671-9800	Company: gtaDesigns Inc.	Telephone: (905) 671-9800
Address: 2985 Drew Road, Suite 202 Fax:	Address: 2985 Drew Road, Suite 202	Fax:
City: Mississauga E-mail hvac@gtadesigns.ca	City: Mississauga	E-mail hvac@gtadesigns.ca



EM Air Systems

Builder:

Air System Design

SB-12 **Energy Star** 2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

July 31, 2023

Date:

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

Individual BCIN: 32964 Plane Alex

Project #

PJ-00267 Layout # JB-09092

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Project: King East I	Developm	nents		Model:		N	lodel 32	50 WOB				Sy	stem 1			Building Co ndividual I		32964	Man	u 14	A	1	David DaCo	osta		oject # yout #		-00267 -09092
DESIGN LOAD SPECIFICATION	NS .		7	AIR DISTR	IBUTION -	& PRESSU	JRE				F	URNACE/	AIR HAND	LER DAT	Ά:		E	BOILER/M	ATER HEA	TER DA	ГА:			,	A/C UNIT D	ATA:		
		-	_							-	-					-	_							-				-
Level 1 Net Load	22,727 b			Equipment					0.5 "			lake		Carri				Make			Ty	ype			Carrier		3.0 T	on
Level 2 Net Load	17,550 b			Additional			e Drop		0.225 "			lodel		9SC5B080				Model							Cond		3.0	
Level 3 Net Load	19,076 b	tu/h	- 1	Available [Design Pro	essure			0.275 "	w.c.	Ir	nput Btu/h		8000	0		I	nput Btu/	h					(Coil		3.0	
Level 4 Net Load	0 b	tu/h	F	Return Bra	ınch Long	est Effect	ive Lengtl	h	300 ft		c	Output Btu	h 'h	7800	00		(Output Bt	u/h									
Total Heat Loss	59,353 b	tu/h	F	R/A Plenur	n Pressur	е			0.138 "	w.c.	E	.s.p.		0.50	"	W.C.	<u> </u>	Min.Outpւ	t Btu/h		A'	WH						
Total Heat Gain	33,552 b	tu/h		S/A Plenur	n Pressur	е			0.14 "	w.c.	V	Vater Temp)		d	leg. F.						Blo	ower DATA					
			H	Heating Ai	r Flow Pro	portionin	g Factor		0.0200 c	fm/btuh	Α	FUE		98%	6		E	Blower Sp	eed Selecte	ed:	Blue	•			Blower Typ	e E	СМ	
Building Volume Vb	40235 f	t³	(Cooling Ai	r Flow Pro	portionin	g Facter		0.0353 c	fm/btuh	A	ux. Heat													(Brushle	ess DC OI	3C 12.3.1.	5.(2))
Ventilation Load	1,336 E	Btuh.				F	R/A Temp		70 d	eg. F.	S	B-12 Pack	age	Energy	Star		(Check	1185 cf	m (Cool. Checl	k _	1185 c	fm				
Ventilation PVC	79.5 c	fm:				5	S/A Temp		131 d	eg. F.																		
Supply Branch and Grill Sizing			I	Diffuser lo	ss _	0.01	w.c.				т	emp. Rise	>>> =	<u>61</u> d	leg. F.		H	leat.	1185 cf	m (Cooling	=	1185 c	fm I	Design Airf	low _	1185 c	fm
							Leve	el 1													Level	2						
S/A Outlet No.	1	2	3	4	5										6	7	8	9	10	11	12	13	25					
Room Use	BASE	BASE	BASE	BASE	BASE										KIT	KIT	FAM	LIV	WR	FOY	LAUN	DIN	STAIR					
Btu/Outlet	4545	4545	4545	4545	4545										1775	1775	2528	1778	596	3687	2041	1522	1848					
Heating Airflow Rate CFM	91	91	91	91	91										35	35	50	35	12	74	41	30	37					
Cooling Airflow Rate CFM	29	29	29	29	29										76	76	85	93	12	49	45	81	10					
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	44	37	44	22	36										52	47	52	31	26	40	5	33	25					
Equivalent Length	140	110	80	100	110	70	70	70	70	70	70	70	70	70	100	90	120	80	110	90	90	70	150	70	70	70	70	70
Total Effective Length	184	147	124	122	146	70	70	70	70	70	70	70	70	70	152	137	172	111	136	130	95	103	175	70	70	70	70	70
Adjusted Pressure	0.07	0.09	0.10	0.11	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.09	0.09	0.08	0.12	0.10	0.10	0.14	0.13	0.07	0.19	0.19	0.19	0.19	0.19
Duct Size Round	6	6	6	6	6	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	6	6	6	6	3	5	0.14	5	4	0.19	0.19	0.19	0.19	0.19
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10
Trunk	4x10	4x10	4x10	4x10	4X10	44.10	47.10	4210	4210	4410	4310	43.10	4210	4210	4X10	4x10 D	4X10	4x10 B	SX IU	3X10 F	PTO	SX IU	5X10 F	4210	44.10	4810	4210	4410
TUIK					F		Leve	13												F	Level							
S/A Outlet No.	14	15	16	17	18	19	20	21	22	23	24										Level	-						
Room Use	MAST	MAST	ENS	BED 4	BATH2	MEDIA	MEDIA	BED 3	BED 3	BATH	BED 2																	
Btu/Outlet	1815	1815	1748		771	2773		1976	1976	859	1437																	
				1135			2773				29																	
Heating Airflow Rate CFM Cooling Airflow Rate CFM	36	36 60	35	23	15	55 68	55	39 55	39 55	17																		
•	60		50	36	16		68			12	31	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
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	75	83	56	47	36	60	47	50	54	49	24																	
Equivalent Length	130	120	150	110	140	120	110	120	130	140	100	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Total Effective Length	205	203	206	157	176	180	157	170	184	189	124	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Adjusted Pressure	0.06	0.06	0.06	80.0	0.07	0.07	80.0	0.08	0.07	0.07	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Duct Size Round	5	5	5	4	3	6	6	5	5	3	4																	
Outlet Size	3x10	3x10	3x10	3x10	3x10	4x10	4x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	С	С	D	В	В	F	E	E	E	E	PTO																	
												R	eturn Tru	nk Duct S	izing					;	Supply Trui	nk Duct	Sizing					
Return Branch And Grill Sizing		(Grill Press	ure Loss		0.02 "	w.c																				Size	
Return Branch And Grill Sizing R/A Inlet No.	1R	2R	Grill Press	ure Loss 4R	5R	0.02 " 6R	w.c 7R	8R	9R	10R	11R	Ti	runk	C	FM F	ress. R	ound	Rect.	Size	-	Trunk C	.CFM	H.CFM P	ress.	Round	Rect. S		
					5R 150			8R	9R	10R	11R	Ti	runk	c	FM F	ress. R	lound	Rect.	Size	-	Trunk C	.CFM	H.CFM P	ress. I	Round	Rect. 8		
R/A Inlet No. Inlet Air Volume CFM	1R 227	2R 393	3R 105	4R 150	150	6R 160	7R							C					Size									
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure	1R 227 0.12	2R 393 0.12	3R 105 0.12	4R 150 0.12	150 0.12	6R 160 0.12		8R 0.12	9R 0.12	10R 0.12	11R 0.12	D	rop	C	1185	0.05	17.0	24x12		,	A	1108	1116	0.06	16.0	30x8	22x10	
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length	1R 227 0.12 19	2R 393 0.12 33	3R 105 0.12 58	4R 150 0.12 39	150 0.12 53	6R 160 0.12 35	7R 0.12	0.12	0.12	0.12	0.12	D Z	rop	C	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	, I	A B	1108 762	1116 708	0.06 0.06	16.0 14.0	30x8 22x8	22x10 18x10	
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length	1R 227 0.12 19 115	2R 393 0.12 33 175	3R 105 0.12 58 115	4R 150 0.12 39 160	150 0.12 53 200	6R 160 0.12 35 175	7R 0.12 50	0.12 50	0.12 50	0.12 50	0.12 50	D Z Y	rop	C	1185	0.05	17.0	24x12		!	А В С	1108 762 523	1116 708 592	0.06 0.06 0.06	16.0 14.0 13.0	30x8 22x8 18x8	22x10 18x10 14x10	
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length	1R 227 0.12 19 115 134	2R 393 0.12 33 175 208	3R 105 0.12 58 115 173	4R 150 0.12 39 160 199	150 0.12 53 200 253	6R 160 0.12 35 175 210	7R 0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	D Z Y X	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	, ! (A B C	1108 762 523 345	1116 708 592 338	0.06 0.06 0.06 0.06	16.0 14.0 13.0 10.5	30x8 22x8 18x8 12x8	22x10 18x10 14x10 10x10	
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure	1R 227 0.12 19 115 134 0.09	2R 393 0.12 33 175 208 0.06	3R 105 0.12 58 115 173 0.07	4R 150 0.12 39 160 199 0.06	150 0.12 53 200 253 0.05	6R 160 0.12 35 175 210 0.06	7R 0.12 50	0.12 50	0.12 50	0.12 50	0.12 50	D Z Y X W	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	, ! (А В С	1108 762 523 345 346	1116 708 592 338 408	0.06 0.06 0.06 0.06 0.07	16.0 14.0 13.0 10.5 11.0	30x8 22x8 18x8 12x8 14x8	22x10 18x10 14x10 10x10 10x10	
R/A Inlet No. Inlet Air Volume CFM Duct Design Pressure Actual Duct Length Equivalent Length Total Effective Length Adjusted Pressure Duct Size Round	1R 227 0.12 19 115 134 0.09 8.0	2R 393 0.12 33 175 208 0.06 11.0	3R 105 0.12 58 115 173 0.07 6.0	4R 150 0.12 39 160 199 0.06 8.0	150 0.12 53 200 253 0.05 8.0	6R 160 0.12 35 175 210 0.06 8.0	7R 0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	D Z Y X W	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	1	A B C D E	1108 762 523 345	1116 708 592 338	0.06 0.06 0.06 0.06	16.0 14.0 13.0 10.5	30x8 22x8 18x8 12x8	22x10 18x10 14x10 10x10	
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	1R 227 0.12 19 115 134 0.09 8.0 FLC	2R 393 0.12 33 175 208 0.06 11.0	3R 105 0.12 58 115 173 0.07	4R 150 0.12 39 160 199 0.06 8.0	150 0.12 53 200 253 0.05 8.0	6R 160 0.12 35 175 210 0.06 8.0	7R 0.12 50 50 0.24	0.12 50 50 0.24	0.12 50 50	0.12 50 50 0.24	0.12 50 50 0.24	D Z Y X W V	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	1	A B C	1108 762 523 345 346	1116 708 592 338 408	0.06 0.06 0.06 0.06 0.07	16.0 14.0 13.0 10.5 11.0	30x8 22x8 18x8 12x8 14x8	22x10 18x10 14x10 10x10 10x10	
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	1R 227 0.12 19 115 134 0.09 8.0 FLC OR	2R 393 0.12 33 175 208 0.06 11.0 8	3R 105 0.12 58 115 173 0.07 6.0 8	4R 150 0.12 39 160 199 0.06 8.0 8	150 0.12 53 200 253 0.05 8.0 8	6R 160 0.12 35 175 210 0.06 8.0 8	7R 0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	0.12 50 50	D Z Y X W V U	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	1	A B C D E	1108 762 523 345 346	1116 708 592 338 408	0.06 0.06 0.06 0.06 0.07	16.0 14.0 13.0 10.5 11.0	30x8 22x8 18x8 12x8 14x8	22x10 18x10 14x10 10x10 10x10	
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	1R 227 0.12 19 115 134 0.09 8.0 FLC	2R 393 0.12 33 175 208 0.06 11.0	3R 105 0.12 58 115 173 0.07 6.0	4R 150 0.12 39 160 199 0.06 8.0	150 0.12 53 200 253 0.05 8.0	6R 160 0.12 35 175 210 0.06 8.0	7R 0.12 50 50 0.24	0.12 50 50 0.24	0.12 50 50	0.12 50 50 0.24	0.12 50 50 0.24	D Z Y X W V U T S	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	1	A B C D E	1108 762 523 345 346	1116 708 592 338 408	0.06 0.06 0.06 0.06 0.07	16.0 14.0 13.0 10.5 11.0	30x8 22x8 18x8 12x8 14x8	22x10 18x10 14x10 10x10 10x10	
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	1R 227 0.12 19 115 134 0.09 8.0 FLC OR	2R 393 0.12 33 175 208 0.06 11.0 8	3R 105 0.12 58 115 173 0.07 6.0 8	4R 150 0.12 39 160 199 0.06 8.0 8	150 0.12 53 200 253 0.05 8.0 8	6R 160 0.12 35 175 210 0.06 8.0 8	7R 0.12 50 50 0.24	0.12 50 50 0.24	0.12 50 50	0.12 50 50 0.24	0.12 50 50 0.24	D Z Y X W V U	rop	c	1185 1185	0.05 0.05	17.0 17.0	24x12 26x10	22x12	1	A B C D E	1108 762 523 345 346	1116 708 592 338 408	0.06 0.06 0.06 0.06 0.07	16.0 14.0 13.0 10.5 11.0	30x8 22x8 18x8 12x8 14x8	22x10 18x10 14x10 10x10 10x10	



Total Heat Loss

Total Heat Gain

59,353 btu/h

33,552 btu/h

Heatloss/Gain Calculations CSA-F280-12

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

e-mail hvac@gtadesigns.ca

Man 16Cot 2

32964

David DaCosta

Energy Star

	В	Builder:	EM Air Syst	:1115	_	Date:		July 31, 2	2023					Weathe	er Data	Richn	nond Hill	44	-5.8 8	38 20	50				Pa
012 OBC	Pı	Project:	King East Devel	pments	_ N	odel:		Model 3250	WOB			System	1	Heat L	oss ^T	77.8 deg. F		Ht gain ^T	12.8	deg. F				ject # yout #	PJ-00 JB-09
Le	Level 1			BASI	 :	<u> </u>																			
Run ft. exposed				146 A		Α		Α		Α		Α		Α		Α		Α		Α		Α		Α	
Run ft. exposed				35 B		В		В		В		В		В		В		В		В		В		В	
	ing height			6.0 AG		6.0 AG		6.0 AG		6.0 AG		6.0 AG	6.	0 AG		6.0 AG		6.0 AG		6.0 AG		6.0 AG		6.0 AG	
	Floor area			1335 Area		Area		Area		Area		Area		Area		Area		Area		Area		Area		Area	а
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Exposed Ceili				В		В		В		В		В		В		В		В		В		В		В	
Exposed I				Flr		Fir		Flr		Flr		Flr		Flr		Fir		Fir		Flr		Fir		Fir	
Gross Exp				876				- "										- "		- "		- "		- "	
Gross Exp \				315																					
	mponents R-\	Value I or	ss Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss G	ain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	s Ga
	th Shaded	4.00	19.45 11.73	5 97		LUSS	Gaiii	LU33	Gaiii	LUSS	Gain	L035 G	aiii	LUSS	Gaiii	LUSS	Gaiii	LUSS	Gaiii	LUSS	Gain		Gaiii	LUSS	13 Ga
		4.00	19.45 29.66	3 31	35																				
	East/West			40 40	226																				
	South	4.00		10 195																					
WOB Windows Including		4.00	19.45 27.86	64 1245	1783																				
	Skylight	2.03	38.33 89.12																						
	Doors	4.00	19.45 3.20	21 408																					
Net exposed w		20.84	3.73 0.61	840	516																				
Net exposed w		21.40	3.64 0.60	251 913	150																				
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Exposed I	sed Floors	29.80	2.61 0.23																						
undation Conductive Heatle	eatloss			8544	ı																				
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Hea	Heat Gain				2801																				
r Leakage Heat Loss		-	0.9556 0.0603	10895																					
	Case 1		0.06 0.07																						
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Heat Gain F	!	4 05																							
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Appliances Duct and Pip	Pipe loss		10%	2070																					
Appliances Duct and Pip vel HL Total 22,72 vel HG Total 4,101	Pipe loss 2,727 ,101 Level 2	Total		22727 KIT 36 A	4101	DI 14 A	N	LAUI	N	FOY 40 A		STAIR 18 A		WR 6 A		LIV 20 A		FAN 29 A		A					
Appliances Duct and Pip vel HL Total 22,72 vel HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floo	Level 2 sed wall A sed wall B ing height	Total	10% I HL for per room	KIT 36 A B 10.0 292 Area		14 A B 10.0 178 Area	N	19 A B 11.0 82 Area	N	40 A B 10.0 152 Area	1	18 A B 2.0 90 Area	10.	6 A B 0 1 Area		20 A B 10.0 286 Area		29 A B 10.0 200 Area	1	A B 10.0 Area		A B 10.0 Area		A B 10.0 Area	a
Appliances Duct and Pip vel HL Total 22,72 vel HG Total 4,101 Let Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil	Pipe loss 2,727 ,101 Level 2 sed wall A sed wall B ing height Floor area Ceilings A	Total	10% I HL for per room	KIT 36 A B 10.0 292 Area A		14 A B 10.0 178 Area A	N	19 A B 11.0 82 Area A	N	40 A B 10.0 152 Area A	1	18 A B 2.0 90 Area A	10.	6 A B 0 1 Area A		20 A B 10.0 286 Area A		29 A B 10.0 200 Area A	1	B 10.0 Area A		B 10.0 Area A		B 10.0 Area A	a
Appliances Duct and Pip yel HL Total 22,72 yel HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Ceil	Pipe loss 2,727 4,101 Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B	Total	10% I HL for per room	KIT 36 A B 10.0 292 Area A B		14 A B 10.0 178 Area A B	N	19 A B 11.0 82 Area A B	N	40 A B 10.0 152 Area A B	1	18 A B 2.0 90 Area A B	10.	6 A B 0 1 Area A B		20 A B 10.0 286 Area A B		29 A B 10.0 200 Area A B	1	B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B	a
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floo Exposed Ceil Exposed Ceil Exposed Ceil	Pipe loss 2,727 ,101 Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors	Total	10% I HL for per room	KIT 36 A B 10.0 292 Area A B Fir		14 A B 10.0 178 Area A B Fir	N	19 A B 11.0 82 Area A B FIr	N	40 A B 10.0 152 Area A B Fir		18 A B 2.0 90 Area A B Fir	10. 4	6 A B O 1 Area A B Fir		20 A B 10.0 286 Area A B Fir		29 A B 10.0 200 Area A B FIr	1	B 10.0 Area A		B 10.0 Area A		B 10.0 Area A	a
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Le' Run ft. exposed Run ft. exposed Ceili Exposed Ceili Exposed Ceil Exposed I Exposed I Gross Exp	Level 2 sed wall A sed wall A sed will A sed will A sed will B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall A	Total	10% I HL for per room	KIT 36 A B 10.0 292 Area A B		14 A B 10.0 178 Area A B	N	19 A B 11.0 82 Area A B	N	40 A B 10.0 152 Area A B		18 A B 2.0 90 Area A B	10. 4	6 A B 0 1 Area A B		20 A B 10.0 286 Area A B		29 A B 10.0 200 Area A B	1	B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B	a
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Gross Exp I	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall A Exp Wall B	Total Ho	HL for per room G per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140		19 A B 11.0 82 Area A B Flr 209		40 A B 10.0 152 Area A B Fir 400	:	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B O 1 Area A B Fir		20 A B 10.0 286 Area A B Fir 200		29 A B 10.0 200 Area A B FIr 290		B 10.0 Area A B Fir		B 10.0 Area A B Fir		B 10.0 Area A B Fir	
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floo Exposed Ceil Exposed Ceil Exposed Ceil Gross Exp \ Gross Exp \ Gross Exp \	Level 2 sed wall A sing height Floor area Cellings A Cellings B sed Floors Exp Wall B mponents R-1	Total H6	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir		14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209	Gain	40 A B 10.0 152 Area A B Fir 400		18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B O 1 Area A B Fir		20 A B 10.0 286 Area A B Fir	Gain	29 A B 10.0 200 Area A B FIr	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B	
Appliances Duct and Pip el HL Total 22,72: el HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceili Exposed Ceili Exposed Ceili Gross Exp Gross Exp Gross Exp North \$\$ North \$\$	Level 2 sed wall A sed wall B sing height Floor area Ceilings A Ceilings B sed Floors xxx Wall B mponents R-t	Total H0 Total H0	10% 10% 1HL for per room G per room x 1.3	36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140		19 A B 11.0 82 Area A B Flr 209	Gain	40 A B 10.0 152 Area A B Fir 400 Loss	Gain	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B O 1 Area A B Fir		20 A B 10.0 286 Area A B Fir 200		29 A B 10.0 200 Area A B Fir 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip al HL Total 22,72 bl HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Gross Exp I Compc	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors xp Wall B mponents R-N th Shaded East/West	Total HO Total HO -Values Los 4.00 4.00	10% HL for per room G per room x 1.3 See Gain	KIT 36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209	Gain	40 A B 10.0 152 Area A B Fir 400	Gain	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B 0 1 Area A B FIr 0	Gain	20 A B 10.0 286 Area A B Fir 200	Gain	29 A B 10.0 200 Area A B FIr 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72 H HG Total 4,101 Let Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Gross Exp I Compc	Level 2 sed wall A sed wall B sing height Floor area Ceilings A Ceilings B sed Floors xxx Wall B mponents R-t	Total H0 Total H0	10% 10% 1HL for per room G per room x 1.3	36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209	Gain	40 A B 10.0 152 Area A B Fir 400 Loss	Gain	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B O 1 Area A B Fir		20 A B 10.0 286 Area A B Fir 200	Gain	29 A B 10.0 200 Area A B Fir 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip N HL Total 22,72 I HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Compc North S Easi	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents th Shaded East/West South	Total HO Total HO -Values Los 4.00 4.00	10% HL for per room G per room x 1.3 See Gain	36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209	Gain	40 A B 10.0 152 Area A B Fir 400 Loss	Gain	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B 0 1 Area A B FIr 0	Gain	20 A B 10.0 286 Area A B Fir 200	Gain	29 A B 10.0 200 Area A B Fir 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72* I HG Total 4,101 Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Geil Compc Gross Exp Gross Exp North S East	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents th Shaded East/West South	Total Ho	10% 10% 1HL for per room x 1.3	36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209	Gain	40 A B 10.0 152 Area A B Fir 400 Loss	Gain	18 A B 2.0 90 Area A B Fir 216	10. 4	6 A B 0 1 Area A B FIr 0	Gain	20 A B 10.0 286 Area A B Fir 200	Gain	29 A B 10.0 200 Area A B Fir 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72* I HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floo Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Compc North S East	Level 2 sed wall A sed wall B sing height Floor area Ceilings A Ceilings B sex Floors Exp Wall A Exp Wall B mponents The Shaded East/West South Windows	Total H0 Total H0 -Values Los 4.00 4.00 4.00 4.00 1.99	HL for per room HL for per room X 1.3	36 A B 10.0 292 Area A B Fir 360	4101	14 A B 10.0 178 Area A B Fir 140	Gain	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4	6 A B 0 1 Area A B FIr 0	Gain	20 A B 10.0 286 Area A B Fir 200	Gain	29 A B 10.0 200 Area A B Fir 290	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72 I HG Total 4,101 Le' Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Ceil Gross Exp \ Gross Exp\ North S East	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall A xp Wall B mponents R-1 th Shaded East/West South Windows Skylight Doors	Total H0 Total H0 -Values Los 4.00 4.00 4.00 1.99 2.03	HL for per room x 1.3	36 A B 10.0 292 Area A B Fir 360	Gain 1572	14 A B 10.0 178 Area A B Fir 140	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 ain	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip I HL Total 22,72 I HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Gross Exp I Gross Exp I Compc North S East	Level 2 sed walls A sed Floors Early West East Wall A sed Floor area Ceilings A Ceilings B sed Floors Exp Wall A Exp Wall B mponents R-1 Whindows Skylight Doors ed walls A	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 6 67	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200 Loss 22 424	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72* I HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floo Exposed Ceil Exposed Ceil Exposed Geil Exposed Sep Gross Exp Gross Exp Compc North S East Existing Win SI	Level 2 sed wall A sed Wall B mponents R-V th Shaded East/West South Windows Skylight Doors ed walls A ed walls A ed walls B	Total H0 Total H0 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00 2.03 4.00	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 6 67	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200 Loss 22 424	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72 I HG Total 4,101 Le* Run ft. exposed Run ft. exposed Ceiling Floo Exposed Ceil Exposed Ceil Exposed Ceil Gross Exp \ Gross Exp\ Comp North S East Existing Win Si Net exposed w Net exposed w Exp	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents R-1 th Shaded East/West South Windows Skylight Doors ed walls B Ceilings A	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 8.50 59.22	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 6 67	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200 Loss 22 424	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72* H HG Total 4,101 Lee Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Ceil Exposed Sep Gross Exp Gross Exp Compc North S East Existing Win Net exposed We Exposed Ceil	Level 2 sed wall A sed will B sing height Floor area Ceilings B sed Floors EXE Wall A EXE Wall B mponents R-1 Whistory Will B myone South Windows Skylight Doors ed walls A ed walls A Ceilings A Ceilings A Ceilings A Ceilings B Ceilings B Ceilings B Ceilings B	Total Ho Total Ho Values Los 4.00 4.00 4.00 4.00 4.00 2.03 4.00 2.140 8.50 59.22 27.65	SS Gain 19.45 11.73 19.45 22.60 19.45 22.60 19.45 32.00 19.45 3.20 19.45 3.	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 6 67	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200 Loss 22 424	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Exposed Ceil	Level 2 sed wall A sed wall B ing height Floor area Cellings A Cellings B sed Floors Exp Wall B mponents South Windows South Windows Skylight Doors ed walls B Cellings A Cellings B	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 8.50 59.22	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53	Gain 1572	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305	19 A B 11.0 82 Area A B Fir 209 Loss 9 175	Gain 5 106 8 67	40 A B 10.0 152 Area A B Fir 400 Loss 22 428	Gain 653	18 A B 2.0 90 Area A B Fir 216 Loss G	10. 4 6 6 67	6 A B 0 0 1 1 Area A B Fir 00 0 Loss 0 9 175	Gain 203	20 A B 10.0 286 Area A B Fir 200 Loss 22 424	Gain 497	29 A B 10.0 200 Area A B Fir 290 Loss 30 584	Gain 4 890	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
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Appliances Duct and Pip H HL Total 22,72 I HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Exposed Ceil Exposed Ceil Exposed Compc North S East Existing Win S Net exposed Ceil	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents South Windows Skylight Doors ed walls A ceilings A Ceilings A Sed Floors Exp Wall B Ceilings A Ceilings B sed Floors Exp Wall B mponents South Windows Skylight Doors ed walls A ed walls A ceilings A Ceilings A Ceilings A Ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Coss	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031	Gain 1572 184	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305 14 68	19 A B 11.0 82 Area A B Fir 209 Loss 9 175 21 400 179 656	Gain 5 106 8 67 1 107	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276	Gain 653 86 210 949	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709	10. 4 6 6 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360	Gain 203 31	20 A B B 10.0 286 Area A B Fir 200 Loss 22 424 178 641	Gain 3 497 7 106	29 A B 10.0 200 Area A B Fir 290 Loss 260 948	Gain 890 5 156 156 1045	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip H HL Total 22,72: H HG Total 4,101 Run ft. exposed Run ft. exposed Ceiling Floc Exposed Ceil Exposed Ceil Exposed Ceil Exposed System Gross Exp Gross Exp Gross Exp System System North S Easi Existing Win St Net exposed veil Exposed Ceil	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents South Windows Skylight Doors ed walls B Ceilings B Sed Floors Exp Wall B South Windows Skylight Doors ed walls A Ceilings B Sed Floors ed walls B Ceilings B Sed Floors eatloss Heat Loss Heat Loss Heat Gain Loss/Gain	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 1031	Gain 1572 184	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305 14 68	19 A B 11.0 82 Area A B Fir 209 Loss 9 17!	Gain 5 106 8 67 1 107	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276	Gain 653 86 210 949	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709	10. 4 6 ain 67 117 5	6 A B 0 0 11 Area A B Fir 0 10 175 175 175 185 185 185 185 185 185 185 185 185 18	203 31	20 A B 10.0 286 Area A B Fir 200 Loss 22 421	Gain 3 497 7 106	29 A B 10.0 200 Area A B Fir 290 Loss 260 948	Gain 890 5 156 156 1045	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip al HL Total 22,72 bl HG Total 4,101 Le Run ft. exposed Run ft. exposed Ceiling Exposed Ceil	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents R-N th Shaded East/West South Windows Skylight Doors ed walls B ceilings A Ceilings B sed Floors Skylight Level B Ceilings A Ceilings B sed Floors Exp Wall A Exp Wall B mponents R-N th Shaded East/West South Windows Skylight Doors ed walls A ed walls B ceilings A Ceilings B sed Floors eatloss Heat Loss Heat Coss Heat Coss Heat Gain Loss/Gain Case 1	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	SS Gain 19.45 11.73 19.45 22.60 39.10 24.56 19.45 3.20 3.64 0.60 3.64 0.60 3.11 0.67 2.81 1.31 0.67 2.81 0.23 x 0.6160 0.0603 0.04 0.07	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031	Gain 1572 184	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305 14 68	19 A B 11.0 82 Area A B Fir 209 Loss 9 175 21 400 179 656	Gain 5 106 8 67 1 107	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276	Gain 653 86 210 949	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709	10. 4 6 ain 67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360	Gain 203 31	20 A B B 10.0 286 Area A B Fir 200 Loss 22 424 178 641	Gain 3 497 7 106	29 A B 10.0 200 Area A B Fir 290 Loss 260 948	Gain 890 5 156 156 1045	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents South Windows Skylight Doors ed walls A Ceilings A Ceilings B sed Floors Exp Wall B mponents Sup Wall B Ceilings B sed Floors ed walls A Ceilings B sed Floors eatloss Heat Loss Heat Loss Heat Gain Loss/Gain Case 1 Case 2	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031 307 1116	Gain 1572 184 1756 106	14 A B 10.0 178 Area A B Fir 140 Loss 5 114 4	Gain 06 305 14 68 20 373 67 23	19 A B 11.0 82 Area A B Fir 209 Loss 9 179 21 400 179 659	Gain 5 106 8 67 1 107 4 280 0 17	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276 2229 1373	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709 11117 688	67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360 222	203 31 234 14	20 A B B 10.0 286 Area A B Fir 200 Loss 22 424 178 643	Gain 3 497 7 106 6 604 2 36	29 A B 10.0 200 Area A B Fir 290 Loss 260 94:	Gain 4 890 5 156 9 1045 2 63	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall A syn Wall B mponents South Windows Skylight Doors ed walls A ed walls A ceilings B sed Floors Exp Wall A sped Floors Exp Wall A sped Floors Exp Wall B Castle Floors Exp Wall B Collings B sed Floors Exp Wall B Ceilings B sed Floors Exp Wall S Exp	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031	Gain 1572 184 1756 106	14 A B 10.0 178 Area A B Fir 140 Loss 5 114 4	Gain 06 305 14 68	19 A B 11.0 82 Area A B Fir 209 Loss 9 179 21 400 179 659	Gain 5 106 8 67 1 107 4 280 0 17	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709	10. 4 6 ain 67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360	Gain 203 31	20 A B B 10.0 286 Area A B Fir 200 Loss 22 424 178 641	Gain 3 497 7 106 6 604 2 36	29 A B 10.0 200 Area A B Fir 290 Loss 260 948	Gain 4 890 5 156 9 1045 2 63	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip el HL Total 22,72 el HG Total 4,101 Le' Run ft. exposed Run ft. exposed Ceiling Exposed Ceiling Exposed Ceiling Exposed Coiling Expos	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors Exp Wall B mponents R-N th Shaded East/West South Windows Skylight Doors ed walls A ed walls B Ceilings B sed Floors Heat Case Leilings B sed Floors Skylight Ceilings A Ceilings B sed Floors Ceilings B sed Walls A ed walls A ed walls A ed walls A ed walls A ceilings B	Total Ho Total Ho 4.00 4.00 4.00 2.03 4.00 21.40 21.40 22.7.85 22.80	SS Gain 19.45 11.73 19.45 22.60 39.10 24.56 19.45 3.20 3.64 0.60 3	Signature KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031 1116 2147 1322 81	Gain 1572 184 1756 106 116 116	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 06 305 14 68 20 373 67 23 35 25	19 A B 11.0 82 Area A B Fir 209 Loss 9 173 21 400 179 651 179 651	Gain 5 106 8 67 1 107 4 280 0 17	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276 2229 1373	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709 11117 688	67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360 222	203 31 234 14	20 A B 10.0 286 Area A B Fir 200 Loss 178 643	Gain 3 497 7 106 5 604 2 36	29 A B 10.0 200 Area A B Fir 290 Loss 260 944 1524 945	Gain 8 890 5 156 1045 2 63 8 69	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances Duct and Pip	Level 2 sed wall A sed wall B ing height Floor area Ceilings A Ceilings B sed Floors EXP Wall B mponents South Windows Skylight Doors ed walls B Ceilings A Ceilings B sed Floors EXP Wall B EX WALL B EX WALL	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 8.50 59.22 27.65 29.80	HL for per room x 1.3	KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031 307 1116	Gain 1572 184 1756 106	14 A B 10.0 178 Area A B Fir 140 Loss 5 114 4	Gain 06 305 14 68 20 373 67 23	19 A B 11.0 82 Area A B Fir 209 Loss 9 179 21 400 179 659	Gain 5 106 8 67 1 107 4 280 0 17	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276 2229 1373	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709 11117 688	67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360 222	203 31 234 14	20 A B B 10.0 286 Area A B Fir 200 Loss 22 424 178 643	Gain 3 497 7 106 6 604 2 36	29 A B 10.0 200 Area A B Fir 290 Loss 260 944 1524 945	Gain 4 890 5 156 9 1045 2 63	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances	Level 2 sed wall A sed wall B ing height Floor area Cellings A Cellings B sed Floors xxy Wall B mponents R-1 th Shaded East/West South Windows Skylight Doors ed walls B cellings A	Total Ho Total Ho Values Los 4.00 4.00 4.00 1.99 2.03 4.00 2.140 8.50 59.22 27.65 29.80	SS Gain 19.45 11.73 19.45 22.60 19.45 22.60 38.33 89.12 19.45 3.20 3.64 0.67 1.31 0.67 2.81 1.44 2.61 0.23 x 0.6160 0.0603 0.04 0.07 16.80 13.82 0.04 0.07 16.80 13.82 0.04 0.07 239 ent 5398	36 A B 10.0 292 Area A B Fir 360 Loss 1031 1116 2147 1322 81	Gain 1572 1756 106 116 11349	14 A B 10.0 178 Area A B Fir 140 Loss 26 5 114 4	Gain 14 68 20 373 37 23 35 25 1349	19 A B 11.0 82 Area A B Fir 209 Loss 9 173 21 400 179 657 41 0.5	Gain 5 106 8 67 1 107 4 280 0 17 7 18 675	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276 2229 1373	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709 11117 6688	67 117 5	6 A B 0 0 1 1 Area A B Fir 0 0 Loss 1 1 1 185 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	203 31 234 14	20 A B 10.0 286 Area A B Fir 200 Loss 22 421 178 64:	Gain 3 497 7 106 6 604 2 36 1 40 1349	29 A B 10.0 200 Area A B Fir 290 Loss 260 944 152 945	Gain 4 890 5 156 6 156 9 1045 2 63 8 69 675	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	
Appliances	Level 2 sed wall A sed wall B ing height Floor area Cellings A cellings B sed Floors xp Wall A smponents The Shaded East/West South Windows Skylight Doors de walls A cellings B sed Floors skylight Loss Heat Gain Loss/Gain Case 1 Case 2 Case 3 ain People ces Loads Pipe loss 7,550	Values Los 4.00 4.00 4.00 1.99 2.03 4.00 21.40 2.7.65 29.80 x 1 = .25 perc	HL for per room x 1.3	Signature KIT 36 A B 10.0 292 Area A B Fir 360 Loss 53 1031 1116 2147 1322 81	Gain 1572 1756 106 116 11349	14 A B 10.0 178 Area A B Fir 140 Loss 26 5	Gain 14 68 20 373 37 23 35 25 1349	19 A B 11.0 82 Area A B Fir 209 Loss 9 173 21 400 179 651 179 651	Gain 5 106 8 67 1 107 4 280 0 17 7 18 675	40 A B 10.0 152 Area A B Fir 400 Loss 22 428 27 525 351 1276 2229 1373	Gain 653 86 210 949 57	18 A B 2.0 90 Area A B Fir 216 Loss G 21 408 195 709 11117 688	67 117 5	6 A B 0 0 11 Area A B Fir 10 0 Loss 9 175 11 185 1360 222	203 31 234 14	20 A B 10.0 286 Area A B Fir 200 Loss 178 643	Gain 3 497 7 106 6 604 2 36 1 40 1349	29 A B 10.0 200 Area A B Fir 290 Loss 30 584 260 944 510 945 510 945	Gain 4 890 5 156 6 156 9 1045 2 63 8 69 675	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	

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



59,353

33,552

btu/h

Total Heat Loss

Total Heat Gain

Heatloss/Gain Calculations CSA-F280-12

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

e-mail hvac@gtadesigns.ca

	Builder:	EM Air Systems	Date:	.lulv	31, 2023		Weather Data	Richmond Hill	44 -5.8	38 20 50		Page 5
	-		_			System 1						ject # PJ-00267
2012 OBC	Project:	King East Developments	Model:	Model	3250 WOB	System i	Heat Loss ^T	77.8 deg. F H	t gain ^T 12.8	deg. F	Lay	out # JB-09092
Run ft. exposed wall / Run ft. exposed wall f Ceiling heigh Floor are Exposed Ceilings / Exposed Ceilings I Exposed Ceilings I	A 3 a tt a A 3	MAS 41 A B 9.0 425 Area 425 A B Fir	T 17 A E 9.0 185 A 185 A E	6 A B 9.0 rea 109 A 109 A B	B 11.0 rea 183 Area 183 A	3 MEDIA 46 A B 11.0 390 Area 390 A B 117 Fir	BATH2 9 A B 9.0 97 Area 97 A B Fir	165 Area	ENS 21 A B 9.0 102 Area 102 A B Fir	A B 9.0 Area A B Fir	A B 9.0 Area A B Fir	A B 9.0 Area A B Fir
Gross Exp Wall		369	153	54	319	506	81	108	189			
Gross Exp Wall E	s R-Values L	oss Gain Loss	Gain L	oss Gain L	oss Gain Loss	Gain Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain
North Shade East/Wes Sout Existing Window Skyligh	d 4.00 h 4.00 h 4.00 s 1.99	19.45 11.73 19.45 29.66 48 934 19.45 22.60 39.10 24.56 38.33 89.12	16	311 188 9	175 106 48 934			14 272 316	20 389 593 9 175 203			
Net exposed walls Net exposed walls Exposed Cellings Exposed Cellings	4.00 A 21.40 B 8.50 A 59.22	19.45 3.20 3.64 0.60 321 1167 9.15 1.51 1.31 0.67 425 550 2.81 1.44		498 82 45 243 124 109	164 27 271 985 143 73 183 240				160 582 96 102 134 69			
Foundation Conductive Heatloss Total Conductive Heat Loss Heat Cair Heat Gair	s 29.80 s	2.61 0.23	1901	1052 394	91 8 183 478 573 2637 214 188 13 864	3701 1751 2411	564	831 484	1280 961 419 58			
Ventilation Case Case Heat Gain People	1 2 2 3 x e	0.02 0.07 16.80 13.82 0.04 0.07 10 ⁷ 239 2		345 24 40 26 239	22 14 100 1			272 29 31 32 1 239	419 58 48 63			
Appliances Load	s To	10% tal HL for per room HG per room x 1.3	3405	1437 887	76 21 1 350 859 3951		771	1135	1748 1407			
Level 4 Run ft. exposed wall a	4	A B	A E		A B	A B	A B	A B	A B	A B	A B	A B
Ceiling heigh Floor are Exposed Ceilings I Exposed Ceilings I Exposed Floor	ut a A 3 s	Area A B Fir		rea A . A	rea Area A B	Area A B Fir	Area A B Fir	Area A B Fir	Area A B Fir	Area A B Fir	Area A B Fir	Area A B Flr
Gross Exp Wall I Gross Exp Wall I Component North Shade	3 s R-Values L	oss Gain Loss 19.45 11.73	Gain L	oss Gain L	oss Gain Loss	Gain Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain
East/Wes South	t 4.00	19.45 29.66										
Existing Window Skyligh Door Net exposed walls	s 1.99 at 2.03 s 4.00	19.45 22.60 39.10 24.56 38.33 89.12 19.45 3.20 3.64 0.60										
Skyligh Door:	s 1.99 tt 2.03 s 4.00 A 21.40 B 8.50 A 59.22 B 27.65	39.10 24.56 38.33 89.12 19.45 3.20										
Skyligh Door: Net exposed walls s Net exposed ceilings : Exposed Ceilings ! Exposed Floor:	s 1.99 tt 2.03 s 4.00 A 21.40 B 8.50 A 59.22 B 27.65 s 29.80	39.10 24.56 38.33 89.12 19.45 3.20 3.64 0.60 9.15 1.51 1.31 0.67 2.81 1.44										
Skyligh Door: Net exposed walls x Net exposed Ceilings x Exposed Ceilings t Exposed Collings t Exposed Floor: Foundation Conductive Heatloss Total Conductive Heat Los Heat Los	s 1.99 tt 2.03 A 4.00 A 21.40 B 8.50 A 59.22 C 9.80 S 1.99	39.10 24.56 38.33 89.12 19.45 3.20 3.64 0.60 9.15 1.51 1.31 0.67 2.81 1.44 2.61 0.23										

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

Mane Maleta

David DaCosta

Energy Star



2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

System Design Option
Exhaust only / forced air system

HRV WITH DUCTING / forced air system

Part 6 design

HRV simplified connection to forced air system HRV full ducting/not coupled to forced air system

2

3 x

Project # Layout # Page 6 PJ-00267 JB-09092

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 for David DaCosta

Package: Project:	Energy Star Richmond Hill	Model:	Model 3250 WO	R
T TOJECT.				Б
	RESIDENTIAL MECHANICAL			
	For systems serving one dwelling unit & cor	norming to the Ontario Buildin	g Code, O.reg 332/12	
	Location of Installation	Total V	/entilation Capacity 9.32.3.3(1	1)
Lot #	Plan #	Bsmt & Master Bdrm	2 @ 21.2 cfm	42.4 cfm
Township	Richmond Hill	Other Bedrooms Bathrooms & Kitchen	3 @ 10.6 cfm 5 @ 10.6 cfm	31.8 cfm 53 cfm
Roll #	Permit #	Other rooms	6 @ 10.6 cfm Total	63.6 cfm 190.8
Address				
		Principal	I Ventilation Capacity 9.32.3.4	4(1)
Name	Builder	Master bedroom	1 @ 31.8 cfm	31.8 cfm
IName	EM Air Systems	Other bedrooms	3 @ 15.9 cfm	47.7 cfm
Address	2,711		Total	79.5
City				
Tal	Fav		cipal Exhaust Fan Capacity Model	Location
Tel	Fax	Make		Location
	Installing Contractor	VanEE	V150E75NS	Base
Name	instaining Contractor	127 cfm	80.0	Sones or Equiv.
				·
Address			leat Recovery Ventilator	
City		Make	VanEE V150E75NS	
City		Model	127 cfm high	80 cfm low
Tel	Fax	Sensible efficiency @	2 -25 deg C	60%
		Sensible efficiency @		<u>75%</u>
	Osmikas (ism Amelianas a 0.00 0.4(4)		lance HRV/ERV to within 10 pe	
a) x	Combustion Appliances 9.32.3.1(1) Direct vent (sealed combustion) only	Suppi	lemental Ventilation Capacity	
b)	Positive venting induced draft (except fireplaces)	Total ventilation capa	city	190.8
c)	Natural draft, B-vent or induced draft fireplaces	Less principal exhaus		79.5
d)	Solid fuel (including fireplaces)	REQUIRED supplement	ental vent. Capacity	111.3 cfm
e)	No combustion Appliances			
		Su	ipplemental Fans 9.32.3.5.	
	Heating System	Location	cfm Model	Sones
X	Forced air	Ens	50 XB50	0.3
	Non forced air	Bath	50 XB50	0.3
	Electric space heat (if over 10% of heat load)	Bath 2	50 XB50	0.3
	House Type 9.32.3.1(2)			
l x	Type a) or b) appliances only, no solid fuel	all fans HVI listed	Make Broan	or Equiv.
II	Type I except with solid fuel (including fireplace)			•
III	Any type c) appliance		Designer Certification	
IV	Type I or II either electric space heat	, ,	nis ventilation system has been	designed
Other	Type I, II or IV no forced air	in accordance with the	e Ontario Building Code.	

Designer Certification									
I hereby certify that this ventilation system has been designed									
in accordance w	rith the Ontario B	uilding Code.							
		_							
Name	David D	aCosta							
	47	1600							
Signature	7 6 20100	. 400	•						
HRAI#	5190	BCIN #	32964						
Date	July 31	, 2023							



Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca (Building Code Part 9, Residential)

Project # PJ-00267 Layout # JB-09092

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the Performance or Other Acceptable Compliance Methods described in Subsections 3.1.2. and 3.1.3. of SB-12,

This form must accurately reflect the information contained on the drawings and specifications being submitted. Refer to Supplementary Standard SB-12 for details about building code compliance requirements. Further information about energy efficiency requirements for new buildings is available from the provincial building code website or the municipal building department.

			For use by Princip	al Authority							
Application I	No:			Model/Certification Nur	mher						
Application	NO.			Wode/Certification Nut	ilibei						
Α.	Project Information										
	mber, street name				Unit numbe	er	Lot/Con				
Danian g . iai		Made	el 3250 WOB		011101111111111111111111111111111111111		200 00				
Municipality			Postal code	Reg. Plan number / other description							
wuriicipality	Richmond Hill	-ostal code	rteg. Flan number / ou	iei descript	ЮП						
В.	Prescriptive Compliance [indicate the built	dina code d	compliance option	Leing emploved in the	house des	sian1					
	•			<u> </u>		<u> </u>					
SB-12 Performance* [SB-12 - 3.1.2.] *Attach energy performance results using an approved softw							re (see g	uide)			
[7]	✓ ENERGY STAR®* [SB-12 - 3.1.3.] *Attach Builder Option Package [BOP] form										
Ů.	The transfer of the tensor of the transfer of										
	□ R-2000®* [SB-12 - 3.1.3.] *Attach R-2000 HOT2000 Report										
	• •										
C.	Project Building Design Conditions										
	Climatic Zone (SB-1):	Heat. Eq	quip. Efficiency		Space	Heating Fu	uel Sourc	е			
✓	Zone 1 (< 5000 degree days)	≥ 92%	% AFUE	✓ Gas		Propane		Solid Fuel			
	Zone 2 (≥ 5000 degree days)	□ ≥ 84	1% < 92% AFUE	Oil		Electric		Earth Energy			
R	atio of Windows, Skylights & Glass (W, S	& G) to W	all Area		Other E	Building Cha	ıracterist	ics			
Area of	Walls = 450.1 m² or 4844.9 ft²			☐ Log/Post&Beam		ICF Above 0	3rade	☐ ICF Basement			
Alea oi	Walls - 450.1 III 01 4844.9 II			☐ Slab-on-ground		Walkout Bas	sement				
		W,S &	kG % = <u>10%</u>	☑ Air Conditioning	1.1	Combo Unit					
Area of W	$I, S \& G = 45.43 \text{ m}^2 \text{ or } 489.0 \text{ ft}^2$			☐ Air Sourced Heat	t Pump (AS	SHP)					
				☐ Ground Source H	leat Pump	(GSHP)					
SB-12 Per	rformance Reference Building Design Pac	kage indi	icating the pres	criptive package to	be comp	ared for co	mpliance				
SB-1	2 Referenced Building Package (input desi	ian packade	e):								
D.	Building Specifications [provide values an	nd ratings o	f the energy efficie	ncy components propo	osed, or at	tach ENERG	/ STAR BC)P form]			

Building Component	Minimum RSI/R-Values or Maximum U-Value ¹ Bu		Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value (1) or ER rating	
Ceiling with Attic Space	60	59.22	Windows/Sliding Glass Doors	1.4
Ceiling without Attic Space	31	27.65	Skylights	2.8
Exposed Floor	31	29.80	Mechanicals	
Walls Above Grade	22 +5.0ci	21.40	Heating Equip.(AFUE)	96%
Basement Walls	20.0ci	20.84	HRV Efficiency (SRE% at 0°C)	75%
Slab (all >600mm below grade)	х	х	DHW Heater (EF)	0.95
Slab (edge only ≤600mm below grade)	10	11.13	DWHR (CSA B55.1 (min. 42% efficiency))	42.0% #Showers 2
Slab (all ≤600mm below grade, or heated)	10	11.13	Combined Heating System	

⁽¹⁾ U value to be provided in either W/(m²-K) or Btu/(h·ft·F) but not both.



Energy Efficiency Design Summary: Performance & Other Acceptable Compliance Methods

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643 e-mail dave@gtadesigns.ca (Building Code Part 9, Residential)

Page 8
Project # PJ-00267
Layout # JB-09092

E. Project Design Verification [Subsection 3.1.2. Performance Compliance]

The ar	nnual energy consumption using Subsection 3.1.1. SB-12 Re	ference Building Pa	ckage is	GJ (1J=1000MJ)
The	annual energy consumption of this house as designed is		_GJ	
The	software used to simulate the annual energy use of the build	ing is:		
The build	ling is being designed using an air tightness baseline of:			
	OBC reference ACH, NLA or NLR default values (no depres	ssurization test requ	uired)	
	Targeted ACH, NLA or NLR. Depressurization test to meet		ACH50 or NLR or NLA	
	Reduction of overall thermal performance of the proposed bis compared against (3.1.2.1.(6)).	ouilding envelope is	not more than 25% of t	he envelope of the compliance package it
	Standard Operating Conditions Applied (A-3.1.2.1 - 4.6.2)			
	Reduced Operating Conditions for Zero-rated homes Applie	ed (A-3.1.2.1 - 4.6.2	.5)	
	On Site Renewable(s): Solar:			
	Other Types:		_	
F.	ENERGY STAR or R-2000 Performance Design Ver	fication [Subsection	n 3.1.3. Other Acceptable	Compliance Methods]
	The NRCan "ENERGY STAR for New Homes Standard Verbuilding performance meeting or exceeding the prescriptive			
	The NRCan, "2012 R-2000 Standard" technical requirement exceeding the prescriptive performance requirements of the		0 0	0.
Perform	ance Energy Modeling Professional			
Energy Ev	/aluator/Advisor/Rater/CEM Name and company:	Accreditation or Eva	luator/Advisor/Rater Licer	nse #
	BUILDING KNOWLEDGE CANADA		5506	
ENERG'	Y STAR or R-2000			
Energy Ev	/aluator/Advisor/Rater/Name and company:	Evaluator/Advisor/R	ater License #	
	ANGELA BUSTAMANTE		5506	
G.	Designer(s) [name(s) & BCIN(s), if applicable, of person(s) pro	viding information her		esign meets building code]
Name		BCIN	Signature	
	David DaCosta	32964		ane 16Cit

Form authorized by OHBA, OBOA, LMCBO. Revised December 1, 2016.



В 0.018

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 e-mail hvac@gtadesigns.ca

0.387

Page 8 Project # PJ-00267 Layout # JB-09092

Package: **Energy Star** System: System 1

Model 3250 WOB Project: Richmond Hill Model: Air Leakage Calculations **Building Air Leakage Heat Loss Building Air Leakage Heat Gain** LRairh Vb HL^T HLleak LRairh Vb HG^T HG Leak

21789

	Air Leakage Heat Loss/Gain Multiplier Table (Section 11)									
Level	Level	Building	Level Conductive	Air Leakage Heat Loss						
Levei	Factor (LF)	Air	Heat Loss (HLclevel)	Multiplier						
Level 1	0.5		11401	0.9556						
Level 2	0.3	21789	10612	0.6160						
Level 3	0.2	21/09	13297	0.3277						
Level 4	0		0	0.0000						

40235

77.8

		Air Leakage Heat Gain
HG LEAK	1005	0.0603
BUILDING CONDUCTIVE HEAT GAIN	16652	0.0603
•		
Highost Coiling Hoight	20.0	ET 9.52 M

Levels				
1	2	3	4	
(LF)	(LF)	(LF)	(LF)	
1.0	0.6	0.5	0.4	
	0.4	0.3	0.3	
		0.2	0.2	
			0.1	

12.8

1005

40235

В

0.018

0.108

Levels this Dwelling	
3	

David DaCosta

Ventilation Calculation	S

	Ventilation Calculations				
	Ventilation Heat Loss	Ventilation Heat Gain			
Vent	Ventilation Heat Loss C PVC HL^T (1-E) HRV HLbvent 1.08 79.5 77.8 0.20 1336	Ventilation Heat Gain			
	Case 1	Case 1			
	Ventilation Heat Loss (Exhaust only Systems)	Ventilation Heat Gain (Exhaust Only Systems)			
Case 1	Case 1 - Exhaust Only Level LF HLbvent LVL Cond. HL Multiplier Level 1 0.5 11401 0.06 Level 2 0.3 10612 0.04 Level 3 0.2 13297 0.02 Level 4 0 0 0.00	Case 1 - Exhaust Only Multiplier HGbvent 1099 Building 16652 0.07			
	Case 2	Case 2			
2	Ventilation Heat Loss (Direct Ducted Systems)	Ventilation Heat Gain (Direct Ducted Systems)			
Case 2	C HL^T (1-E) HRV 1.08 77.8 0.20 16.80	Multiplier 00 00 00 00 00 00 00			
Case 3		Case 3			
3	Ventilation Heat Loss (Forced Air Systems)	Ventilation Heat Gain (Forced Air Systems)			
Case	Total Ventilation Load 1336 0.04	HGbvent HG*1.3 1099 0.07			

Foundation Conductive Heatloss Level 1	Level 1	2347	Watts	8008	Btu/h	
Foundation Conductive Heatloss Level 2	Level 2		Watts		Btu/h	
Clab on Crada Faundation Conductive Heatless			141.44		D: #	
Slab on Grade Foundation Conductive Heatloss			Watts		Btu/h	
Walk Out Basement Foundation Conductive Heatless		157	Watte	536	Rtu/h	



50 Fleming Drive, Unit # 6, Cambridge, ON, N1T 2B1

ENERGY STAR® for New Homes Version Ontario 17.1 Revision 2 BOP Form Zone 1 Ontario



T | 1-800-267-6830 F | 519-658-6103 E | nfo@buildingknowledge.ca

General Details		House Details	
Performance or Prescriptive :	Prescriptive	ESEnrolment ID:	
Attached or Detached or MURB:	Detached	Site/Phase:	KING EAST PH 2&3
Province / Territory :	ON	LOT :	
Zone :	Zone 1 Heating Degree Days	Street # and Name:	
Service Organization (SO) number :	55 - Enerquality	Street Type:	
Builder number :	TBD	City:	RICHMOND HILL
Builder Name:	PLAZACORP	Postal Code (or FSA) :	
		Model:	ALL MODELS
		Third Party Evaluator:	BUILDING KNOWLEDGE CANADA
Supplementa	ry Information	Evaluator Name:	ANGELA BUSTAMANTE
		Evaluator Number:	5506

Building Component	Option Description		BOP Option Credits	Measure Selected (Check) √	Nominal Efficiency Values (Optional)	Notes (Optional)
Ceilings Below Attic	Ceilings Below Attic		Core Minimum	√	R60	
3	Option	N/A	n/a			
Cathedral Ceilings and Flat Roofs	Core	RSI 4.87 (R 27.7)	Core Minimum	√	R31	
	Option	N/A	n/a			
Ceilings Below Attic and Cathedral Ceilings/Flat Roofs	Option	N/A	n/a			
Walls Above Grade	Core	RSI 3.08 (R 17.5)	Core Minimum			
walls Above Grade	Option	RSI 3.72 (R 21.1)	0.7	√	R22+R5	
Floors Over Unheated Spaces	Core	RSI 5.25 (29.8)	Core Minimum	√	R31	
Foundation Walls Below or in Contact	Core	RSI 3.72 (R 21.1) below grade	Core Minimum	√	R20 blanket	
with the Ground	Option	N/A	n/a			
Unheated Floors on Ground Above Frost Line	Core	RSI 1.96 (R 11.1)	Core Minimum	√	R10 if applicable	
Unheated Floors on Ground Below Frost Line	Option	N/A	n/a			
Heated Floors on Ground	s on Ground Core N/A		n/a			
Slabs on Grade with Integral Footing	Core	N/A	n/a			
	Core	ENERGY STAR Zone 2 UV1.4 and/or ER29	Core Minimum	√	Zone 2	
Windows (Fenestrations)	Option	N/A	n/a			
Williams (Tellestrations)	Core	Total area of all windows to max. 20% of above grade wall area.	Core Minimum	√		
Fireplace	Core	Gas fireplace spak ignition if installed	#N/A	√		
Space Heating Core Min. 96% AFUE ENERGY STAR fuel fired furnace		Core Minimum	√			
	Reg'd	Supply ducts and 1m return sealed	Required	√		
Domestic Water Heating	Core	Instantaneous min. EF or UEF 0.80 Tank EF or UEF 0.80 (direct vent (sealed))	Core Minimum	,		
	Option	Instantaneous condensing min. UEF 0.95	0.4	√		
Drain Water Heat Recovery	Option	≥ 42% to ≤ 54% - two showers	0.3	√	42%	
Airtightness	Airtightness Core Level 1 (DT 2.5ach / 0.18 nlr) (AT 3.0ach/0.26nlr)		Core Minimum	√		
Option N/A		n/a				
Ventilation (HRV / ERV) Core Option Reg'd		65% SRE @0 °C and 55% SRE @ -25 °C ≥75% SRE @ 0 °C	Core Minimum 0,2	√		
		Interconnected to the Furnace Fan	0.2 Required	v V		
Rea'd HRV balanced		HRV balanced	Required	V		
	Electrical	SRE ≥75% SRE @ 0 °C, ≥ 0.57 L/s/W	0.1	√		
Electrical Savings		75% ENERGY STAR lighting	Core Minimum			
Licetical Savings	Option	100% ENERGY STAR lighting	0.1	√		
ENERGY STAR Certified Appliances Option N/A		n/a				

NOTE: Thermal resistance values under "BOP Selection Description" are listed in effective values, unless indicated with "nominal".

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather S	tation Description
Province:	Ontario ▼
Region:	Richmond Hill ▼
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10
Loca	al Shielding
Building Site:	Suburban, forest ▼
Walls:	Heavy ▼
Flue:	Heavy ▼
Highest Ceiling Height (m):	8.53
Building	g Configuration
Type:	Detached
Number of Stories:	Two
Foundation:	Shallow
House Volume (m ³):	1139.46
Air Leak	age/Ventilation
Air Tightness Type:	Present (1961-) (ACH=3.57)
	ELA @ 10 Pa. 322,44 cm ²
Custom BDT Data:	3.57 ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply: Total Exhaust:
	39.75
Flue #:	#1 #2 #3 #4
Diameter (mm):	0 0 0 0
Heating Air Leakage Rate (ACH	/H): 0.387
Cooling Air Leakage Rate (ACH,	/H): 0.108

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weat	her Sta	tion Description				
Province:		Ontario				
Region:	Richmond Hill					
	Site D	escription				
Soil Conductivity:		High conductivity: moist soil ▼				
Water Table:		Normal (7-10 m, 23-33 Ft) ▼				
Fou	Foundation Dimensions					
Floor Length (m):	21.26					
Floor Width (m):	5.56					
Exposed Perimeter (m):	44.50					
Wall Height (m):	2.74	annum I				
Depth Below Grade (m):	0.91	Insulation Configuration				
Window Area (m²):	1.39					
Door Area (m²):	1.95					
	Radi	ant Slab				
Heated Fraction of the Slab:	0					
Fluid Temperature (°C):	33					
	Desig	n Months				
Heating Month	1					
	Founda	ation Loads				
Heating Load (Watts):		2347				

Residential Slab on Grade Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weat	her Sta	tion Description			
Province:		Ontario			
Region:		Richmond Hill			
	Site D	escription			
Soil Conductivity:		High conductivity: moist soil ▼			
Water Table:		Normal (7-10 m, 23-33 Ft)			
	Floor Dimensions				
Length (m):	9.29				
Width (m):	0.62				
Exposed Perimeter (m):	10.67	Insulation Configuration			
	Radi	ant Slab			
Heated Fraction of the Slab:	0				
Fluid Temperature (°C):					
	Desig	n Months			
Heating Month					
	Founda	ation Loads			
Heating Load (Watts):		157			



2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

Tel: 905-671-9800 email: hvac@gtadesigns.ca

Effective R-Value Calculations

Effective R-Value -	Above Grade Walls	
Insulation	R22+5ci	
Exterior Air Film	0.17	
Hollow Vinyl Siding 0.62		
Continuous Insulation 5.00		
Effective Cavity Insulation 14.49		
Drywall	0.44	
Interior Air Film	0.68	
Effective R-Value 21.40		

Effective R-Value - Below Grade Walls			
Insulation	R20ci		
Concrete Foundation	0.44		
Interior Air Film	0.68		
Continuous Insulation	20.0		
Effective R-Value 21.12			

Effective R-Value	Exposed Floors
Insulation	R31
Exterior Air Film	0.17
Effective Cavity Insulation	28.72
Interior Air Film	0.91
Continuous Insulation	0.00
Effective R-Value	29.80

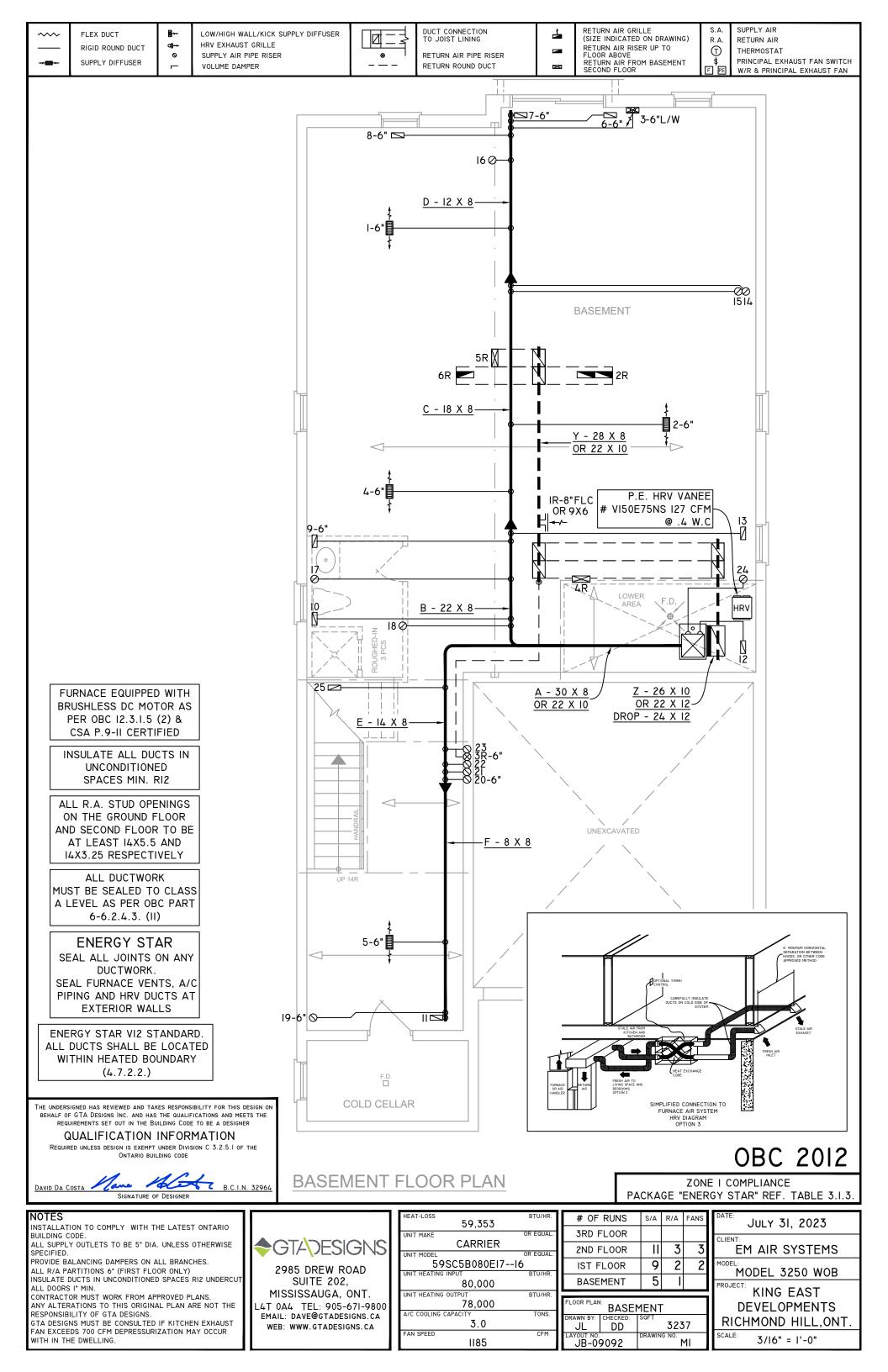


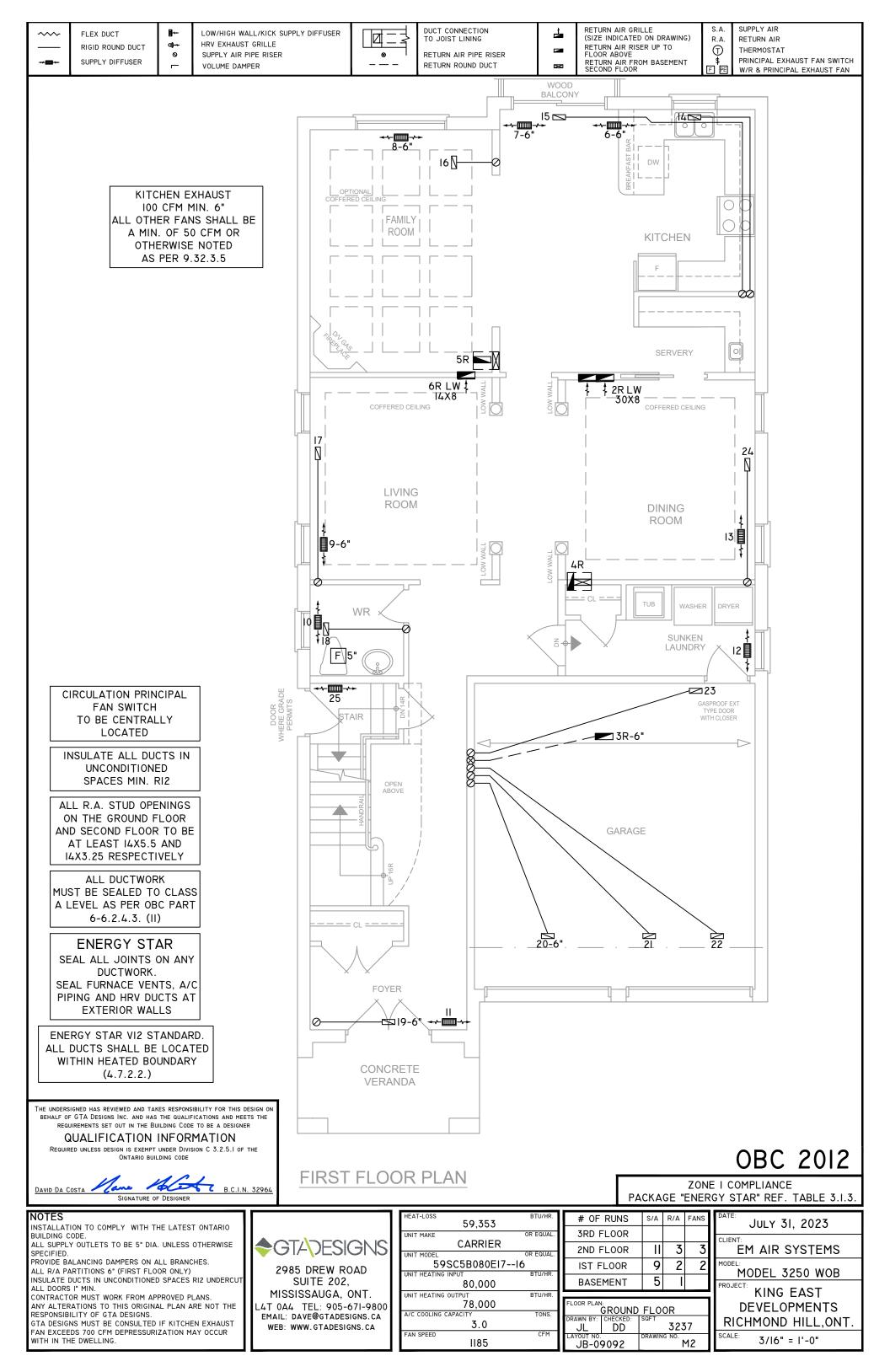
2985 Drew Road, Suite 202 Mississauga, Ontario L4T 0A4

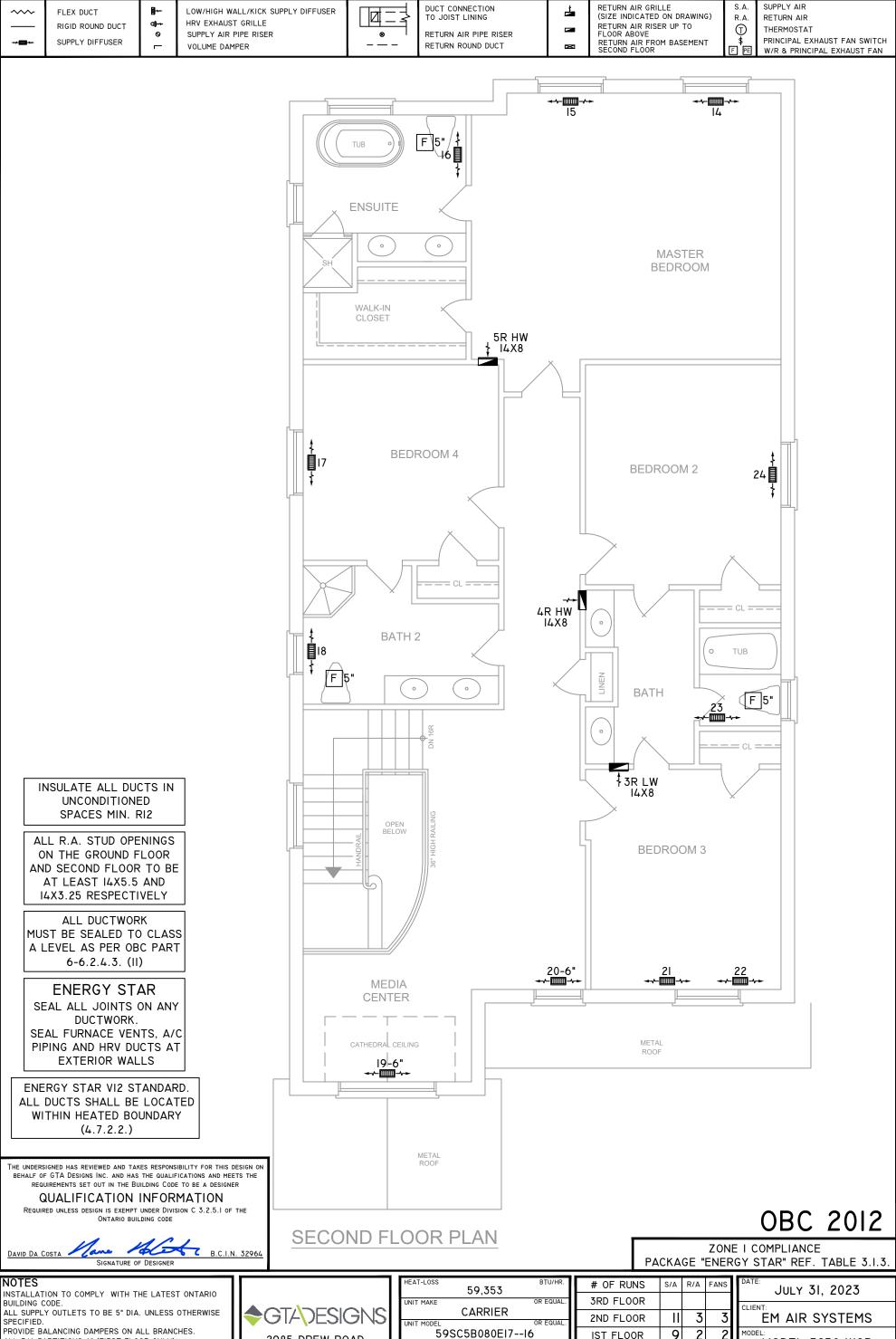
Tel: 905-671-9800 email: hvac@gtadesigns.ca

Effective R-Value – Ex	posed Ceiling with Attic
Insulation	R60
Exterior Air Film	0.17
Effective Insulation	58.61
Drywall	0.44
Effective R-Value	59.22

Effective R-Value – Expos	sed Ceiling with Flat Roofs
Insulation	R31
Exterior Air Film	0.17
Effective Insulation	27.04
Drywall	0.44
Effective R-Value	27.65







ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY) INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT

ALL DOORS I" MIN. CONTRACTOR MUST WORK FROM APPROVED PLANS. ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.

2985 DREW ROAD

SUITE 202,
MISSISSAUGA, ONT.
4T 0A4 TEL: 905-67I-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

HEAT-LOSS	BTU/HR.
59,353	·
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B080EI7	-16
UNIT HEATING INPUT	BTU/HR.
80,000	
UNIT HEATING OUTPUT	BTU/HR.
78,000	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1185	

	• • • •	-		
# OF RUNS	S/A	R/A	FANS	Ī
3RD FLOOR				
2ND FLOOR	Ш	3	3	
IST FLOOR	9	2	2	
BASEMENT	5	-		
FLOOR PLAN:	<u> </u>	0 D		i
SECOND	FLO	UR		11

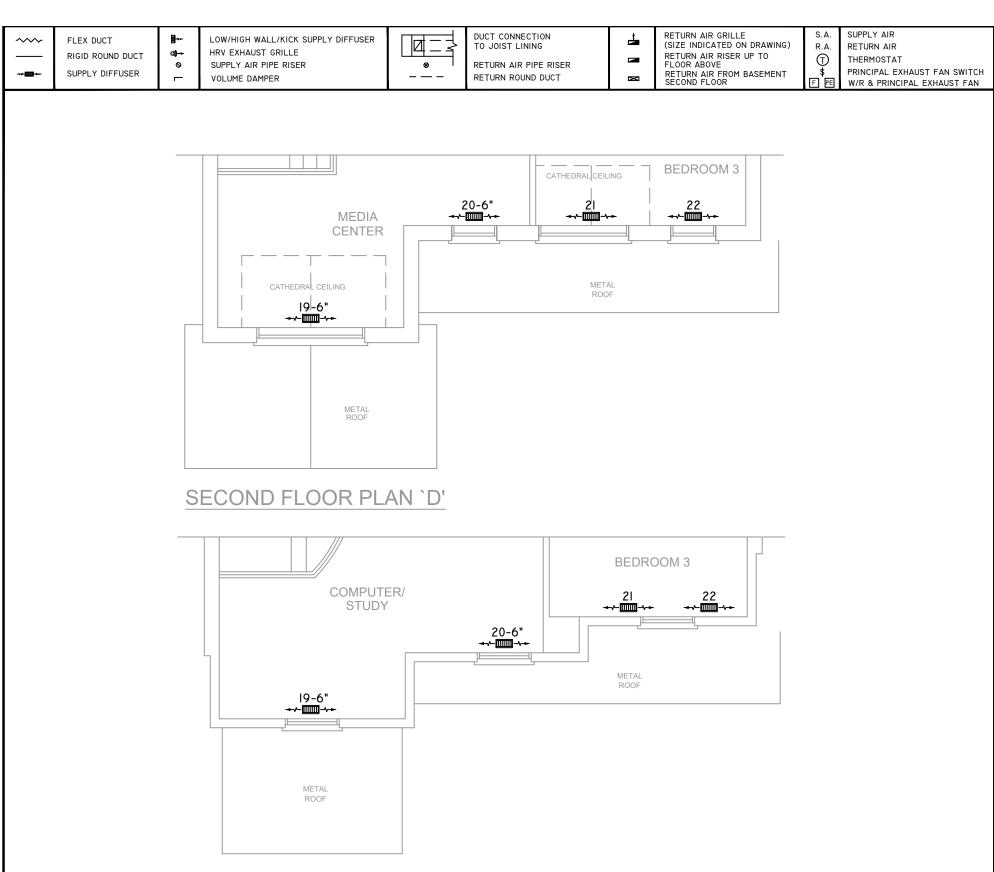
DD

JB-09092

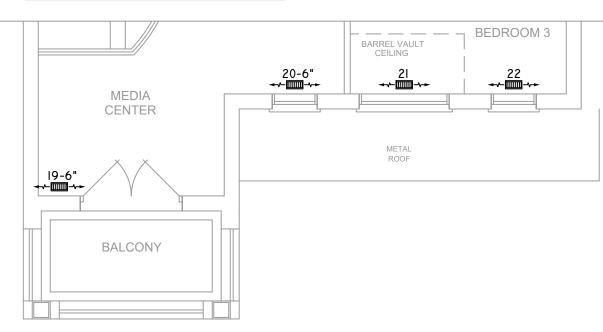
3237

M3

MODEL 3250 WOB PROJECT: KING EAST **DEVELOPMENTS** RICHMOND HILL, ONT. 3/16" = 1'-0"



SECOND FLOOR PLAN 'C'



SECOND FLOOR PLAN 'B'

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 $$\operatorname{\textsc{Ontario}}$$ building code

Ane 166 B.C.I.N. 32964 SIGNATURE OF DESIGNER

OBC 2012

ZONE I COMPLIANCE PACKAGE "ENERGY STAR" REF. TABLE 3.1.3.

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE. ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

PROVIDE BALANCING DAMPERS ON ALL BRANCHES. ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY) INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT ALL DOORS I" MIN.

CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE

RESPONSIBILITY OF GTA DESIGNS. GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



SUITE 202, MISSISSAUGA, ONT. L4T 0A4 TEL: 905-671-9800 EMAIL: DAVE@GTADESIGNS.CA

WEB: WWW.GTADESIGNS.CA

HEAT-LOSS	BTU/HR.
59,353	
UNIT MAKE	OR EQUAL.
CARRIER	
UNIT MODEL	OR EQUAL.
59SC5B080EI7	
UNIT HEATING INPUT	BTU/HR.
80,000	
UNIT HEATING OUTPUT	BTU/HR.
78,000	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1185	

# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				
2ND FLOOR	Ш	3	3	
IST FLOOR	9	2	2	l
BASEMENT	5	I		
FLOOR PLAN: PARTIAL	PLAN	l(S)		

JL

JB-09092

DD

3237

M4

DATE.	JULY 31, 2023
CLIENT:	M AIR SYSTEMS
MODEL:	10DEL 3250 WOB
PROJEC	TE KING EAST
[DEVELOPMENTS
RIC	CHMOND HILL,ONT.
SCALE:	3/16" = 1'-0"