


09/03/2021

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Per: jocelyn aguilar

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		Unit no.	Lot/con.
Municipality RICHMOND HILL	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities			
Name MICHAEL O'ROURKE		Firm HVAC DESIGNS LTD.	
Street address 375 FINLEY AVE		Unit no. 202	Lot/con. N/A
Municipality AJAX	Postal code L1S 2E2	Province ONTARIO	E-mail info@hvacdesigns.ca
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]			
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems			
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 2009 Project: CENTREFIELD (WEST GORMLEY)	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):	
<input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____			
<input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: <u>19669</u> Basis for exemption from registration and qualification: <u>O.B.C SENTENCE 3.2.4.1 (4)</u>			
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____			
I certify that:			
1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
April 21, 2021 Date		 Signature of Designer	

NOTE:

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d) of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

SITE NAME: CENTREFIELD (WEST GORMLEY) DATE: Apr-21 DATE: Apr-21 DATE: Apr-21
BUILDER: ROYAL PINE HOMES TYPE: 2009 GFA: 1660 LO# 87532 LO# 87532 LO# 87532
WINTER NATURAL AIR CHANGE RATE 0.236 SUMMER NATURAL AIR CHANGE RATE 0.072 HEAT LOSS AT °F. 78 HEAT GAIN AT °F. 13 CSA-F280-12 SB-12 PERFORMANCE

ROOM USE	MBR	ENS	KIB/G	BED-2	BED-3	BATH	FOY	PWD	KIB/G	ENS	MBR	GRS.WALL AREA	FACTORS
EXP. WALL CLG. HT.	14	6	23	10	10	15	30	12	23	6	14	126	21.8
GRS.WALL AREA	9	9	10	9	10	9	11	11	10	9	9	126	16.0
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
NET EXPOSED BSMT WALL ABOVE GR	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
EXPOSED CLG	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
NO ATTIC EXPOSED CLG	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
EXPOSED FLOOR	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	1524	488	232	1565	1637	232	2706	993	2576	488	1524	1524	21.8
SUB TOTAL HT GAIN	1455	451	232	1386	1726	67	1394	163	3580	451	1455	1455	16.0
LEVEL FACTOR / MULTIPLIER	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.20	0.20	0.20	0.20
AIR CHANGE HEAT LOSS	426	136	8	438	458	65	545	362	938	136	426	426	21.8
AIR CHANGE HEAT GAIN	81	25	174	78	97	4	25	9	199	25	81	81	24.9
DUCT LOSS	0	0	0	200	210	30	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	259	295	7	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	0	0	240	240	0	0	0	0	0	2	2	21.8
HEAT GAIN APPLIANCES/LIGHTS	889	0	0	889	889	0	0	0	0	0	889	889	41.6
TOTAL HT LOSS BTU/H	1950	624	3514	2204	2305	326	3691	1355	3514	624	1950	1950	101.2
TOTAL HT GAIN x 1.3 BTU/H	3778	619	6070	3708	4221	101	1914	224	6070	619	3778	3778	101.2

ROOM USE	MBR	ENS	KIB/G	BED-2	BED-3	BATH	FOY	PWD	KIB/G	ENS	MBR	GRS.WALL AREA	FACTORS
EXP. WALL CLG. HT.	14	6	23	10	10	15	30	12	23	6	14	126	21.8
GRS.WALL AREA	9	9	10	9	10	9	11	11	10	9	9	126	16.0
GLAZING	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
NET EXPOSED BSMT WALL ABOVE GR	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
EXPOSED CLG	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
NO ATTIC EXPOSED CLG	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
EXPOSED FLOOR	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
BASEMENT/CRAWL HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	1524	488	232	1565	1637	232	2706	993	2576	488	1524	1524	21.8
SUB TOTAL HT GAIN	1455	451	232	1386	1726	67	1394	163	3580	451	1455	1455	16.0
LEVEL FACTOR / MULTIPLIER	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.20	0.20	0.20	0.20
AIR CHANGE HEAT LOSS	426	136	8	438	458	65	545	362	938	136	426	426	21.8
AIR CHANGE HEAT GAIN	81	25	174	78	97	4	25	9	199	25	81	81	24.9
DUCT LOSS	0	0	0	200	210	30	0	0	0	0	0	0	0
DUCT GAIN	0	0	0	259	295	7	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	2	0	0	240	240	0	0	0	0	0	2	2	21.8
HEAT GAIN APPLIANCES/LIGHTS	889	0	0	889	889	0	0	0	0	0	889	889	41.6
TOTAL HT LOSS BTU/H	1950	624	3514	2204	2305	326	3691	1355	3514	624	1950	1950	101.2
TOTAL HT GAIN x 1.3 BTU/H	3778	619	6070	3708	4221	101	1914	224	6070	619	3778	3778	101.2

CITY OF RICHMOND HILL
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TOTAL HEAT GAIN BTU/H: 22891 TONS: 1.89 LOSS DUE TO VENTILATION LOAD BTU/H: 1336 STRUCTURAL HEAT LOSS: 23319 TOTAL COMBINED HEAT LOSS BTU/H: 24655
MICHAEL O'Rourke
INDIVIDUAL BCIN: 19669

SITE NAME: CENTREFIELD (WEST GORMLEY)
BUILDER: ROYAL PINE HOMES

TYPE: 2009 DATE: Apr-21 GFA: 1660 LO# 87532

HEATING CFM 820 COOLING CFM 820
TOTAL HEAT LOSS 23,319 TOTAL HEAT GAIN 22,471
AIR FLOW RATE CFM 35.16 AIR FLOW RATE CFM 36.49

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	8	5	3
R/A	0	0	4	1	1

All S/A diffusers 4"x10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	10	14	15	18	19	20	21	23	24
ROOM NAME	MBR	ENS	BED-3	BED-2	BED-3	BED-3	BATH	BED-2	MBR	K/B/G	K/B/G	PWD	FOY	FOY	BAS	BAS	BAS
RM LOSS MBH	0.98	0.62	1.10	1.15	1.15	1.15	0.33	1.10	0.98	1.76	1.76	1.35	1.85	1.85	2.45	2.45	2.45
CFM PER RUN HEAT	34	22	39	41	41	41	11	39	34	62	62	48	65	65	86	86	86
RM GAIN MBH	1.89	0.62	1.85	2.11	2.11	2.11	0.10	1.85	1.89	3.04	3.04	0.22	0.96	0.96	0.61	0.61	0.61
CFM PER RUN COOLING	69	23	68	77	77	77	4	68	69	111	111	8	35	35	22	22	22
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH	33	26	52	53	50	50	30	47	39	23	19	22	36	38	18	14	33
EQUIVALENT LENGTH	110	170	150	190	180	180	140	130	140	170	150	160	110	110	160	180	120
TOTAL EFFECTIVE LENGTH	143	196	202	243	230	230	170	177	179	193	169	182	146	148	178	194	153
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.08	0.09	0.09	0.12	0.12	0.09	0.08	0.11
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	6	6	5	5	5	6	6	6
HEATING VELOCITY (f/min)	250	252	286	209	209	209	126	286	250	316	316	352	477	477	438	438	438
COOLING VELOCITY (f/min)	507	264	499	393	393	393	46	499	507	566	566	59	257	257	112	112	112
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	C	C	A	A	A	A	B	B	C	C	C	B	A	A	C	C	A

RUN #	1	2	3	4	5	6	7	8	10	14	15	18	19	20	21	23	24
ROOM NAME	MBR	ENS	BED-3	BED-2	BED-3	BED-3	BATH	BED-2	MBR	K/B/G	K/B/G	PWD	FOY	FOY	BAS	BAS	BAS
RM LOSS MBH	0.98	0.62	1.10	1.15	1.15	1.15	0.33	1.10	0.98	1.76	1.76	1.35	1.85	1.85	2.45	2.45	2.45
CFM PER RUN HEAT	34	22	39	41	41	41	11	39	34	62	62	48	65	65	86	86	86
RM GAIN MBH	1.89	0.62	1.85	2.11	2.11	2.11	0.10	1.85	1.89	3.04	3.04	0.22	0.96	0.96	0.61	0.61	0.61
CFM PER RUN COOLING	69	23	68	77	77	77	4	68	69	111	111	8	35	35	22	22	22
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.17	0.17	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH	33	26	52	53	50	50	30	47	39	23	19	22	36	38	18	14	33
EQUIVALENT LENGTH	110	170	150	190	180	180	140	130	140	170	150	160	110	110	160	180	120
TOTAL EFFECTIVE LENGTH	143	196	202	243	230	230	170	177	179	193	169	182	146	148	178	194	153
ADJUSTED PRESSURE	0.12	0.09	0.09	0.07	0.07	0.07	0.1	0.1	0.1	0.08	0.09	0.09	0.12	0.12	0.09	0.08	0.11
ROUND DUCT SIZE	5	4	5	6	6	6	4	5	5	6	6	5	5	5	6	6	6
HEATING VELOCITY (f/min)	250	252	286	209	209	209	126	286	250	316	316	352	477	477	438	438	438
COOLING VELOCITY (f/min)	507	264	499	393	393	393	46	499	507	566	566	59	257	257	112	112	112
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	C	C	A	A	A	A	B	B	C	C	C	B	A	A	C	C	A

BUILDING DIVISION																	
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Per: Jocelyn Aguilar																	
SUPPLY AIR TRUNK SIZE										RETURN AIR TRUNK SIZE							
TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	298	0.07	9.2	10	536	TRUNK G	0	0.00	0	0	8	TRUNK O	0	0.05	0	0	8
TRUNK B	435	0.07	10.6	14	559	TRUNK H	0	0.00	0	0	8	TRUNK P	0	0.05	0	0	8
TRUNK C	386	0.08	9.8	12	579	TRUNK I	0	0.00	0	0	8	TRUNK Q	0	0.05	0	0	8
TRUNK D	0	0.00	0	0	0	TRUNK J	0	0.00	0	0	8	TRUNK R	0	0.05	0	0	8
TRUNK E	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	8	TRUNK S	0	0.05	0	0	8
TRUNK F	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	8	TRUNK T	0	0.05	0	0	8
RETURN AIR #																	
AIR VOLUME																	
0	0	2	3	4	5	BR											
95	115	0.15	75	75	340	0	0	0	0	0	0	0	0	0	0	0	120
0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
69	47	56	56	55	21	1	1	1	1	1	1	1	1	1	1	1	14
205	165	245	175	150	0	0	0	0	0	0	0	0	0	0	0	0	145
274	212	301	301	230	171	1	1	1	1	1	1	1	1	1	1	1	159
TOTAL EFFECTIVE LENGTH																	
ADJUSTED PRESSURE																	
0.05	0.07	0.05	0.05	0.06	0.09	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.09
6.5	6.5	6	6	5.7	9.1	0	0	0	0	0	0	0	0	0	0	0	6.2
ROUND DUCT SIZE																	
8	8	8	8	8	6	0	0	0	0	0	0	0	0	0	0	0	8
INLET GRILL SIZE																	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	0	0	14
INLET GRILL SIZE																	

CITY OF RICHMOND HILL
BUILDING DIVISION
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Michael Offord

TYPE: 2009
 SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87532

09/03/2021

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/> Other:	Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	2 @ 10.6 cfm	21.2 cfm
Kitchen & Bathrooms	5 @ 10.6 cfm	53 cfm
Other Rooms	2 @ 10.6 cfm	21.2 cfm
Table 9.32.3.A.	TOTAL	137.8 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4.(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL	63.6	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	137.8	cfm
Less Principal Ventil. Capacity	63.6	cfm
Required Supplemental Capacity	74.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
63.6 cfm	<input checked="" type="checkbox"/> HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION	
CFM	ΔT °F
63.6 CFM	78 F
X	X
FACTOR	% LOSS
1.08	x
	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR	
Location	Model	cfm	HVI
ENS	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>
BATH	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>
PWD	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>
B-BATH	BY INSTALLING CONTRACTOR	50	<input checked="" type="checkbox"/>

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/> HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER:	
ROYAL PINE HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	April-21

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																																				
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																																				
LO#: 87532		Model: 2009		Builder: ROYAL PINE HOMES		Date: 4/21/2021																																																																														
Volume Calculation				Air Change & Delta T Data																																																																																
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$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$																																																																																				
0.236	x	182.17	x	43 °C	x	1.2	=	2232 W																																																																												
								=	7617 Btu/h																																																																											
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$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																																				
64 CFM	x	78 °F	x	1.08	x	0.25	=	1336 Btu/h																																																																												
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<p>*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0</p>																																																																																				

09/03/2021

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Per: jocelyn.aguilar

HEAT LOSS AND GAIN SUMMARY SHEET

09/03/2021

MODEL: 2009

SFQT: 1660

LO# 87532

BUILDER: ROYAL PINE HOMES

SITE: CENTREFIELD (WEST GORMLEY)

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

BUILDING DATA

ATTACHMENT:	ATTACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft ³):	23159.4	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	4
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.85	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 52.0 ft	WIDTH: 20.0 ft	EXPOSED PERIMETER:	66.0 ft

2012 OBC - COMPLIANCE PACKAGE
Component
Compliance Package
SB-12 PERFORMANCE
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

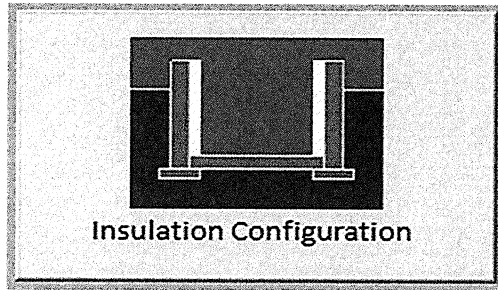
Michael O'Rourke

RECEIVED

Per: Jocelyn Aguilar

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	6.1	
Exposed Perimeter (m):	20.1	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	0.7	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		628

09/03/2021

RECEIVEDPer: jocelyn.aguilar

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description			
Province:	Ontario		
Region:	Richmond Hill		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	6.74		
Building Configuration			
Type:	Semi		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	655.8		
Air Leakage/Ventilation			
Air Tightness Type:	Energy Star Detached (2.5 ACH)		
Custom BDT Data:	ELA @ 10 Pa. 2.50		612.2 cm ² ACH @ 50 Pa
Mechanical Ventilation (L/s):	Total Supply 30.0	Total Exhaust 30.0	
Flue Size			
Flue #:	#1	#2	#3
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.236		
Cooling Air Leakage Rate (ACH/H):	0.072		

TYPE: 2009

LO# 87532

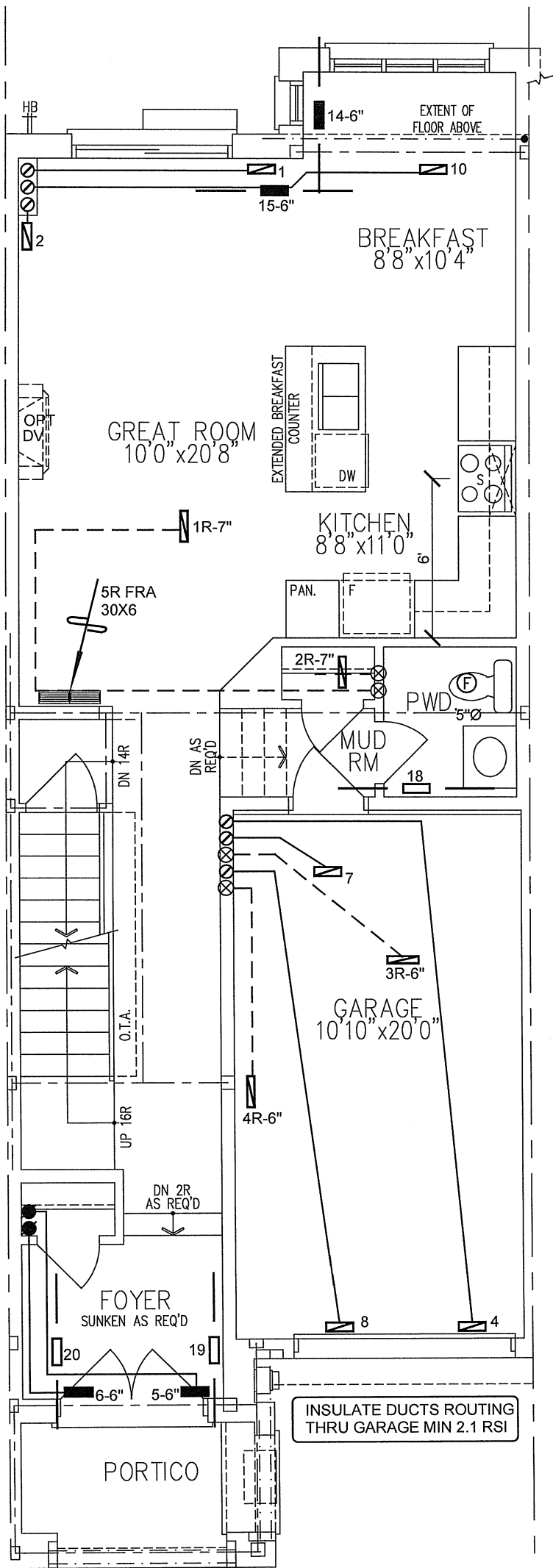
require air tightness
test as per energy
modelling

Client	<div><p>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacadesigns.ca Web: www.hvacadesigns.ca Specializing in Residential Mechanical Design Services</p></div> <div>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.</div>	HEAT LOSS 24655 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS	Sheet Title			
ROYAL PINE HOMES		MAKE CARRIER	3RD FLOOR			BASEMENT HEATING LAYOUT	
Project Name		MODEL 59TN6A-060-14V	2ND FLOOR	8	4		2
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO		INPUT 60 MBTU/H	1ST FLOOR	5	1		2
2009		1660 sqft	OUTPUT 58 MBTU/H	BASEMENT	3	1	0
		COOLING 2.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5'Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			Scale 3/16" = 1'-0"	
		FAN SPEED 820 cfm @ 0.6" w.c.				BCIN# 19669	
						LO# 87532	

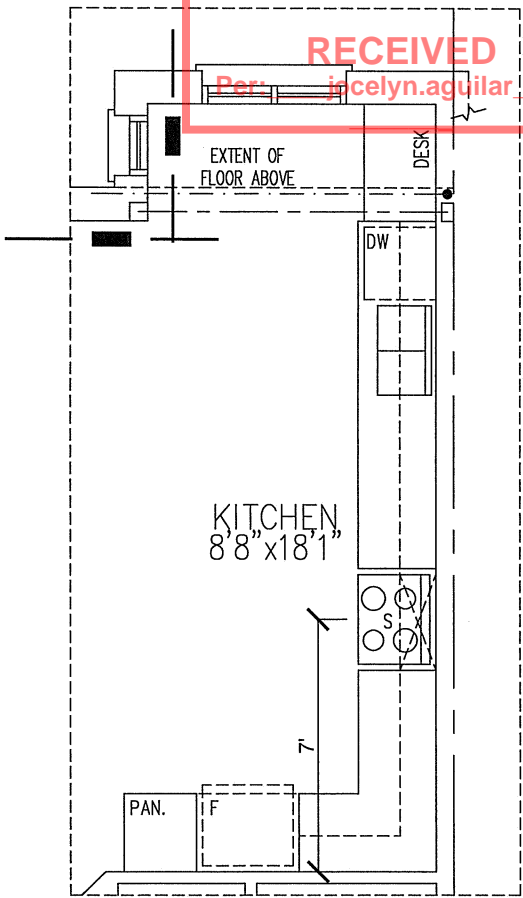
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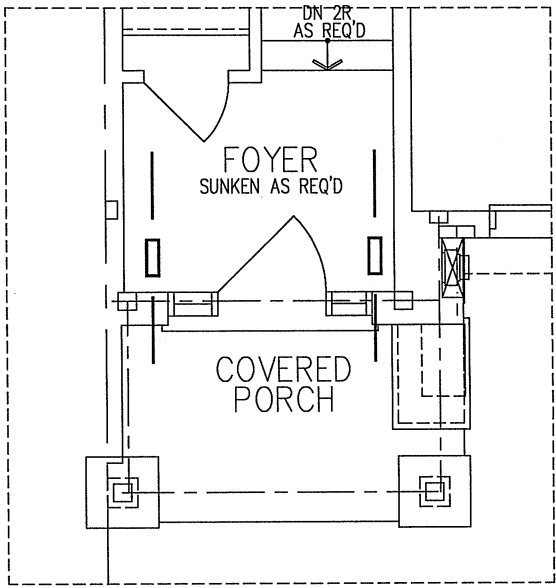


GROUND FLOOR PLAN, EL. 'A'



PART. GROUND FLOOR PLAN
- OPT. KITCHEN LAYOUT

Space between studs and joists used as return ducts shall be separated from unused portion as per OBC 2012 Div.B 6.2.4.7(6)



GROUND FLOOR PLAN, EL. 'B'

Kitchen hood exhaust duct shall be provided as per OBC 2012, Div.B 9.32.3.10, 9.32.3.5(2).

Exterior insulation effective R-Value for wall, roof or exposed floor shall be maintained at the respective location where duct or sanitary pipes are routed inside exterior envelope.

CSA-F280-12

SB-12 PERFORMANCE

I MICHAEL O'ROURKE HAVE REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

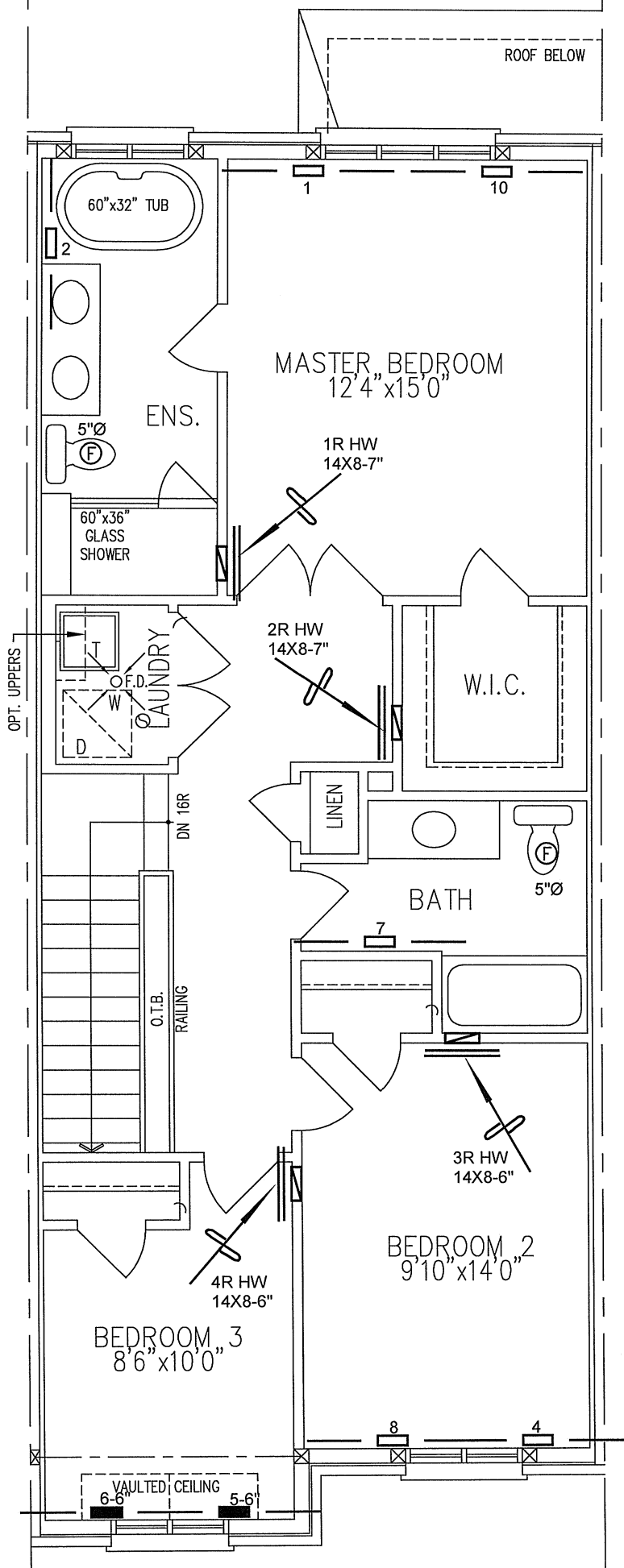
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Client		<div><div>HVACDESIGNS LTD.</div><div>375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services</div></div>	Sheet Title	
ROYAL PINE HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name		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.	Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
2009	1660 sqft		LO#	87532

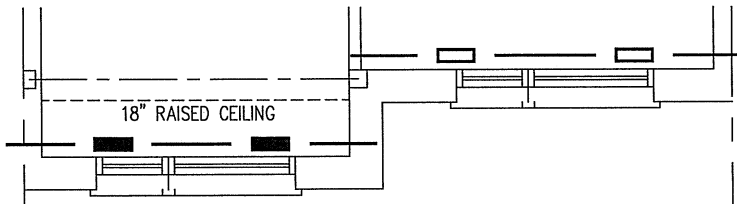
09/03/2021

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Per: jocelyn.aguilar



SECOND FLOOR PLAN, EL. 'A'



SECOND FLOOR PLAN, EL. 'B'

Space between studs and joists used as return ducts shall be separated from unused portion as per OBC 2012 Div.B 6.2.4.7(6)

Laundry dryer exhaust duct shall be provided as per OBC 2012 Div.B 6.2.3.8(7).

I MICHAEL O'ROURKE HAVE REVIEW
AND TAKE RESPONSIBILITY FOR THE
DESIGN WORK AND AM QUALIFIED
UNDER DIVISION C, 3.2.5 OF THE
BUILDING CODE.

Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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ROYAL PINE HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2020
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
2009	1660 sqft		LO#	87532