


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.
Municipality VAUGHAN (WOODBIDGE)			Postal code
Plan number/ other description			Lot/con.
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]			
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings </div> <div style="width: 30%;"> <input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection </div> <div style="width: 30%;"> <input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems </div> </div>			
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12		Model: 5005 - LOT 93 - OPT. 5 BED ELEV. WOB THE KNIGHTSWOOD Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
<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.			
November 5, 2018		 Signature of Designer	
Date			

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.

THE KNIGHTSWOOD										DATE: Nov-18		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F.		CSA-F280-12		
TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. 1 GFA: 4405										LO# 80582		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F.		SB-12 PACKAGE A1		
BUILDER: GOLD PARK HOMES																		
ROOM USE	MBR	ENS	BED-5	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	ENS-4	WIC-3	HERS						
EXP. WALL CLG. HT.	46 11	30 10	13 10	36 11	36 10	19 10	6 10	3 10	4 10	7 10	14 10	6 10						
FACTORS																		
GRS.WALL AREA	483	285	124	378	342	181	57	29	38	67	133	57						
GLAZING																		
NORTH	21.3	15.3	0	0	0	0	0	0	0	0	0	0						
EAST	21.3	39.4	0	0	0	0	0	0	0	0	0	0						
SOUTH	21.3	23.7	0	0	0	0	0	0	0	0	0	0						
WEST	21.3	39.4	0	0	0	0	0	0	0	0	0	0						
SKYLT.	37.2	101.5	0	0	0	0	0	0	0	0	0	0						
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	0	0						
NET EXPOSED WALL	4.5	0.8	433	1932	325	251	1120	189	107	475	80	313	1397	235	282	1258	212	
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0.6	533	684	313	221	284	130	247	317	145	175	225	103	249	320	146	
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	78	214	98	18	46	23	
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	154	393	66	253	645	109	18	46	8	
BASEMENT/CRAWL HEAT LOSS																		
SLAB ON GRADE HEAT LOSS																		
SUBTOTAL HT LOSS	3680	2127	1658	551	2595	1467	619	281	288	566	998	308	63					
SUB TOTAL HT GAIN																		
LEVEL FACTOR / MULTIPLIER	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	0.35	0.20	
AIR CHANGE HEAT LOSS	1300	751	546	1365	1042	736	219	99	102	200	353	109	5					
AIR CHANGE HEAT GAIN																		
DUCT LOSS																		
DUCT GAIN																		
HEAT GAIN PEOPLE	240		1	240	240	1	0	0	0	0	0	0	0					
HEAT GAIN APPLIANCES/LIGHTS																		
TOTAL HT LOSS BTU/H	4981	2879	2303	5752	4392	2819	921	418	389	766	1350	417	94					

ROOM USE	LIB	DIN	KIT/IST	CAB	LAUN	PWD	FOY	MUD	HIS	WOB	BAS
EXP. WALL CLG. HT.	31 11	38 11	87 11	45 11	0 10	5 11	35 11	12 12	0 10	52 10	166 10
FACTORS											
GRS.WALL AREA	326	399	914	473	0	53	368	138	0	494	1245
GLAZING											
NORTH	21.3	15.3	0	0	0	9	192	0	0	0	6
EAST	56	1192	2205	0	0	0	0	0	0	0	0
SOUTH	21.3	23.7	0	0	0	0	0	0	0	0	0
WEST	21.3	39.4	0	0	0	0	11	234	0	532	592
SKYLT.	0	0	95	53	1128	2087	0	0	0	87	1851
DOORS	0	0	20	505	85	20	0	0	0	3426	0
NET EXPOSED WALL	0	0	20	505	85	20	45	1136	0	60	1515
NET EXPOSED BSMT WALL ABOVE GR	270	1203	203	347	1546	260	312	1390	0	322	1437
EXPOSED CLG	1.3	0.6	0	0	0	0	41	53	0	0	332
NO ATTIC EXPOSED CLG	0	0	0	203	558	255	0	0	60	0	1195
EXPOSED FLOOR	0	0	0	0	56	143	0	0	77	0	201
BASEMENT/CRAWL HEAT LOSS	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
SUBTOTAL HT LOSS	2394	2768	7200	4865	274	496	2813	1032	77	1146	5206
SUB TOTAL HT GAIN											
LEVEL FACTOR / MULTIPLIER	0.30	0.48	0.30	0.48	0.20	0.30	0.48	0.30	0.20	0.48	0.50
AIR CHANGE HEAT LOSS	1157	1337	3478	2350	97	239	1359	498	27	4515	17365
AIR CHANGE HEAT GAIN											
DUCT LOSS	0	0	0	0	37	0	0	0	3	0	386
DUCT GAIN											
HEAT GAIN PEOPLE	0	0	0	0	84	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS	747	4105	747	747	747	735	4172	1530	0	0	747
TOTAL HT LOSS BTU/H	3551	4105	10678	7215	407	735	4172	1530	104	7628	22570
TOTAL HT GAIN x 1.3 BTU/H	4337	2577	8733	6483	1197	308	1234	243	49	5870	2258

TOTAL HEAT GAIN BTU/H: 60877 TONS: 5.07 LOSS DUE TO VENTILATION LOAD BTU/H: 3181 STRUCTURAL HEAT LOSS: 90083 TOTAL COMBINED HEAT LOSS BTU/H: 93264

Michael O'Rourke

SITE NAME: PINE VALLEY & TESTON
BUILDER: GOLD PARK HOMES

THE KNIGHTSWOOD
TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. DATE: Nov-18

GFA: 4405 LO# 80582

HEATING CFM	1955	COOLING CFM	1955		
TOTAL HEAT LOSS	90,083	TOTAL HEAT GAIN	60,341		
AIR FLOW RATE CFM	21.7	AIR FLOW RATE CFM	32.4		
RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	13	8
R/A	0	0	5	3	1

AFUE = 96 %
INPUT (BTU/H) = 110,000
OUTPUT (BTU/H) = 106,000
DESIGN CFM = 1955
CFM @ .5" E.S.P.

LENNOX
EL296UH110XE60C 110
FAN SPEED
LOW 0
MEDIUM 1380
HIGH 1505
MEDIUM HIGH 1685
HIGH 1955

furnace pressure 0.6
furnace filter 0.08
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.32
plenum pressure s/a 0.17
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.15
r/a pressure 0.15
r/a grille press. loss 0.02
adjusted pressure r/a 0.13

All SIA diffusers 4"x10" unless noted otherwise on layout.

All SIA runs 5"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-5	BED-2	BED-3	BED-4	ENS-2	WIC-2	ENS-3	MBR	ENS-4	LIB	DIN	KIT/GT	KIT/GT	KIT/GT	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.49	2.24	2.30	1.92	1.41	1.41	0.92	0.42	0.39	2.49	0.77	1.78	4.11	2.67	2.67	2.67	0.41	0.74	4.17	1.53	3.77	3.77	3.77	3.77
CFM PER RUN HEAT	54	49	50	42	48	31	20	9	8	54	17	39	89	58	58	58	9	16	91	33	82	82	82	82
RM GAIN MBH	2.62	1.86	2.26	2.06	2.70	1.67	0.34	0.10	0.12	2.62	0.41	2.17	2.58	2.18	2.18	2.18	1.20	0.31	1.23	0.24	1.02	1.02	1.02	1.02
CFM PER RUN COOLING	85	60	73	67	87	54	11	3	4	85	13	70	84	71	71	71	39	10	40	8	33	33	33	33
ADJUSTED PRESSURE	0.15	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	70	70	53	49	70	48	47	48	53	64	59	57	29	52	69	54	36	73	40	47	67	60	54	38
EQUIVALENT LENGTH	190	200	170	160	160	160	160	150	170	170	150	140	103	120	140	110	200	170	210	160	150	120	103	90
TOTAL EFFECTIVE LENGTH	260	270	223	209	230	208	207	198	223	234	209	197	132	172	172	164	236	243	250	207	217	180	157	128
ADJUSTED PRESSURE	0.06	0.06	0.07	0.07	0.06	0.08	0.08	0.08	0.07	0.06	0.07	0.08	0.11	0.09	0.07	0.1	0.07	0.06	0.06	0.08	0.07	0.08	0.09	0.11
ROUND DUCT SIZE	6	5	6	5	6	5	4	4	4	6	4	5	6	5	5	5	4	4	6	4	6	5	5	5
HEATING VELOCITY (ft/min)	275	360	255	308	245	228	229	103	92	275	195	286	454	426	426	426	103	184	464	379	418	602	602	602
COOLING VELOCITY (ft/min)	433	441	372	492	444	396	126	34	46	433	149	514	428	521	521	521	447	115	204	92	168	242	242	242
OUTLET GRILL SIZE	4X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10
TRUNK	D	C	C	G	F	E	C	G	G	D	E	F	E	D	B	C	G	A	F	C	A	B	D	E

RUN #	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
ROOM NAME	BAS	BAS	BED-2	BED-2	BED-3	WIC-3	LIB	KIT/GT	CAB	CAB	CAB	HERS	ENS	BAS	BED-4	HIS	BAS
RM LOSS MBH	3.77	3.77	1.92	1.92	2.20	1.35	1.78	2.67	2.41	2.41	2.41	0.42	0.64	3.77	1.41	0.10	3.77
CFM PER RUN HEAT	82	82	42	42	48	29	39	58	52	52	52	9	14	82	31	2	82
RM GAIN MBH	1.02	1.02	2.06	2.06	2.70	1.26	2.17	2.18	2.16	2.16	2.16	0.09	0.46	1.02	1.67	0.05	1.02
CFM PER RUN COOLING	33	33	67	67	87	41	70	71	70	70	70	3	15	33	54	2	33
ADJUSTED PRESSURE	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.15
ACTUAL DUCT LGH	34	50	52	55	75	58	51	55	69	71	82	56	58	23	48	60	57
EQUIVALENT LENGTH	110	150	170	160	160	190	160	120	150	130	140	200	190	140	190	210	160
TOTAL EFFECTIVE LENGTH	144	200	222	215	235	248	211	175	219	201	222	256	248	163	238	270	217
ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.09	0.07	0.08	0.07	0.06	0.06	0.09	0.07	0.06	0.07
ROUND DUCT SIZE	5	6	5	5	6	5	5	5	5	5	5	4	4	5	5	4	6
HEATING VELOCITY (ft/min)	602	418	308	308	245	213	286	426	382	382	382	103	161	602	228	23	418
COOLING VELOCITY (ft/min)	242	168	492	492	444	301	514	521	514	514	514	34	172	242	396	23	168
OUTLET GRILL SIZE	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10
TRUNK	G	F	G	G	F	F	F	B	A	A	A	C	C	E	E	C	C

SUPPLY AIR TRUNK SIZE				RETURN AIR TRUNK SIZE			
TRUNK	STATIC PRESS.	ROUND DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	VELOCITY (ft/min)
TRUNK A	0.06	9	457	TRUNK G	0.06	12.5	8
TRUNK B	0.07	7.9	446	TRUNK H	0.06	19.4	10
TRUNK C	0.06	13.7	629	TRUNK I	0.00	0	8
TRUNK D	0.06	8.9	446	TRUNK J	0.00	0	8
TRUNK E	0.06	16.9	759	TRUNK K	0.00	0	8
TRUNK F	0.06	10.4	564	TRUNK L	0.00	0	8
TRUNK	CFM	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	RECT DUCT	VELOCITY (ft/min)
TRUNK A	254	10	457	TRUNK G	610	12.5	8
TRUNK B	198	8	446	TRUNK H	1955	19.4	10
TRUNK C	769	22	629	TRUNK I	0	0	8
TRUNK D	89	10	446	TRUNK J	0	0	8
TRUNK E	1349	32	759	TRUNK K	0	0	8
TRUNK F	376	12	564	TRUNK L	0	0	8

RETURN AIR #				RETURN AIR TRUNK SIZE			
TRUNK	STATIC PRESS.	ROUND DUCT	VELOCITY (ft/min)	TRUNK	STATIC PRESS.	ROUND DUCT	VELOCITY (ft/min)
TRUNK A	0.06	9	457	TRUNK G	0.06	12.5	8
TRUNK B	0.07	7.9	446	TRUNK H	0.06	19.4	10
TRUNK C	0.06	13.7	629	TRUNK I	0.00	0	8
TRUNK D	0.06	8.9	446	TRUNK J	0.00	0	8
TRUNK E	0.06	16.9	759	TRUNK K	0.00	0	8
TRUNK F	0.06	10.4	564	TRUNK L	0.00	0	8
TRUNK	CFM	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	RECT DUCT	VELOCITY (ft/min)
TRUNK A	254	10	457	TRUNK G	610	12.5	8
TRUNK B	198	8	446	TRUNK H	1955	19.4	10
TRUNK C	769	22	629	TRUNK I	0	0	8
TRUNK D	89	10	446	TRUNK J	0	0	8
TRUNK E	1349	32	759	TRUNK K	0	0	8
TRUNK F	376	12	564	TRUNK L	0	0	8

TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. WOB
SITE NAME: PINE VALLEY & TESTON

LO # 80582
THE KNIGHTSWOOD

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	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	6 @ 10.6 cfm	63.6 cfm
Table 9.32.3.A. TOTAL		222.6 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		95.4 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	222.6	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	67.6	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANE 65H	Location: BSMT		
155.0 cfm	3.0 sones <input checked="" type="checkbox"/> HVI Approved		
PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	76 F	1.08	0.25

SUPPLEMENTAL FANS		NUTONE	
Location	Model	cfm	HVI
ENS	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-2	QTXEN050C	50	<input checked="" type="checkbox"/>
ENS-4	QTXEN050C	50	<input checked="" type="checkbox"/>
PWD	QTXEN050C	50	<input checked="" type="checkbox"/>

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

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

BUILDER:		GOLD PARK 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:	November-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 80582		Model: 5005 - LOT 93 - OPT. 5 BED ELEV. WOB		Builder: GOLD PARK HOMES		Date: 05/11/2018																																																											
Volume Calculation					Air Change & Delta T Data																																																												
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6.2.6 Sensible Gain due to Air Leakage																																																																	
$HG_{satb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$					$= 0.135 \times 499.32 \times 7 \times 1.2 = 575 \text{ W}$																																																												
$0.402 \times 499.32 \times 42 \times 1.2 = 10179 \text{ W}$					$= 34729 \text{ Btu/h}$																																																												
6.2.7 Sensible heat Gain due to Ventilation																																																																	
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$					$155 \text{ CFM} \times 13 \text{ °F} \times 1.08 \times 0.25 = 536 \text{ Btu/h}$																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
$HL_{airrr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclvl} + HL_{bgclvl})\}$																																																																	
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HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 5005 - LOT 93 - OPT. 5 BED ELEV. \ THE KNIGHTSWOOD
SFQT: 4405 **LO#** 80582**BUILDER:** GOLD PARK HOMES
SITE: PINE VALLEY & TESTON**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-4	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	63480.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.5 ft
LENGTH: 77.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	166.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	72.0 ft

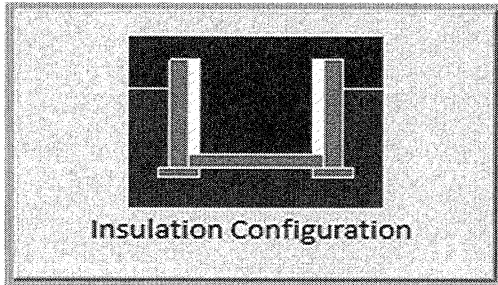
2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
A1****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	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	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE

Residential Foundation Thermal Load Calculator

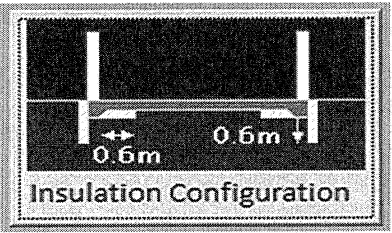
Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	7.6	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	50.6	
Wall Height (m):	2.9	
Depth Below Grade (m):	2.04	
Window Area (m ²):	1.1	
Door Area (m ²):	3.7	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		804

TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. W THE KNIGHTSWOOD
LO# 80582

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Length (m):	4.6	
Width (m):	12.8	
Exposed Perimeter (m):	21.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		336

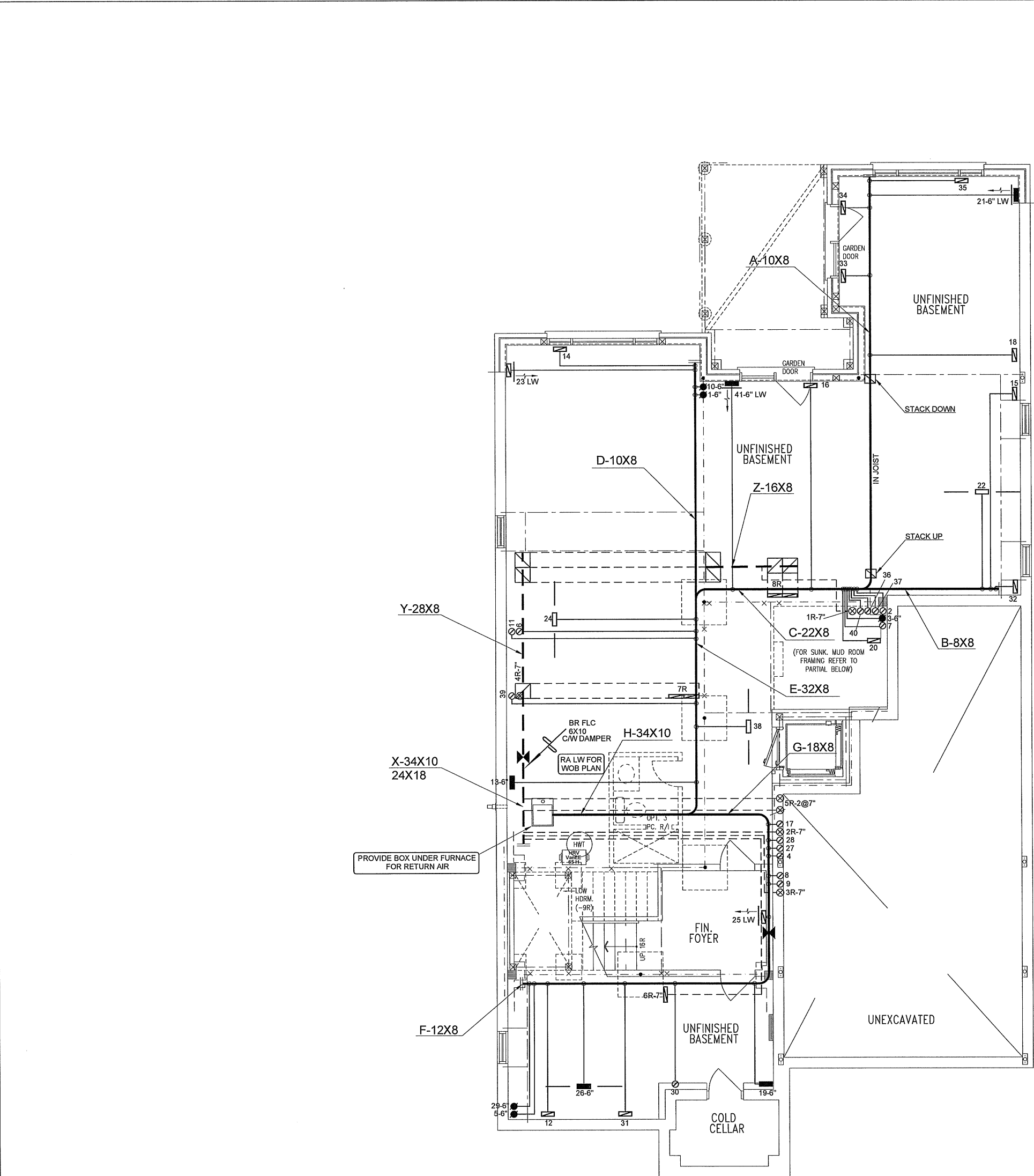
TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. WC THE KNIGHTSWOOD
LO# 80582

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
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):	8.99			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1797.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2396.2 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	73.2	73.2		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.402			
Cooling Air Leakage Rate (ACH/H):	0.135			

TYPE: 5005 - LOT 93 - OPT. 5 BED ELEV. V THE KNIGHTSWOOD
LO# 80582



BASEMENT PLAN ELEV. 'B' – LOT 93

WOB

LOT 93

CSA-F280-12

PACKAGE A1

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.

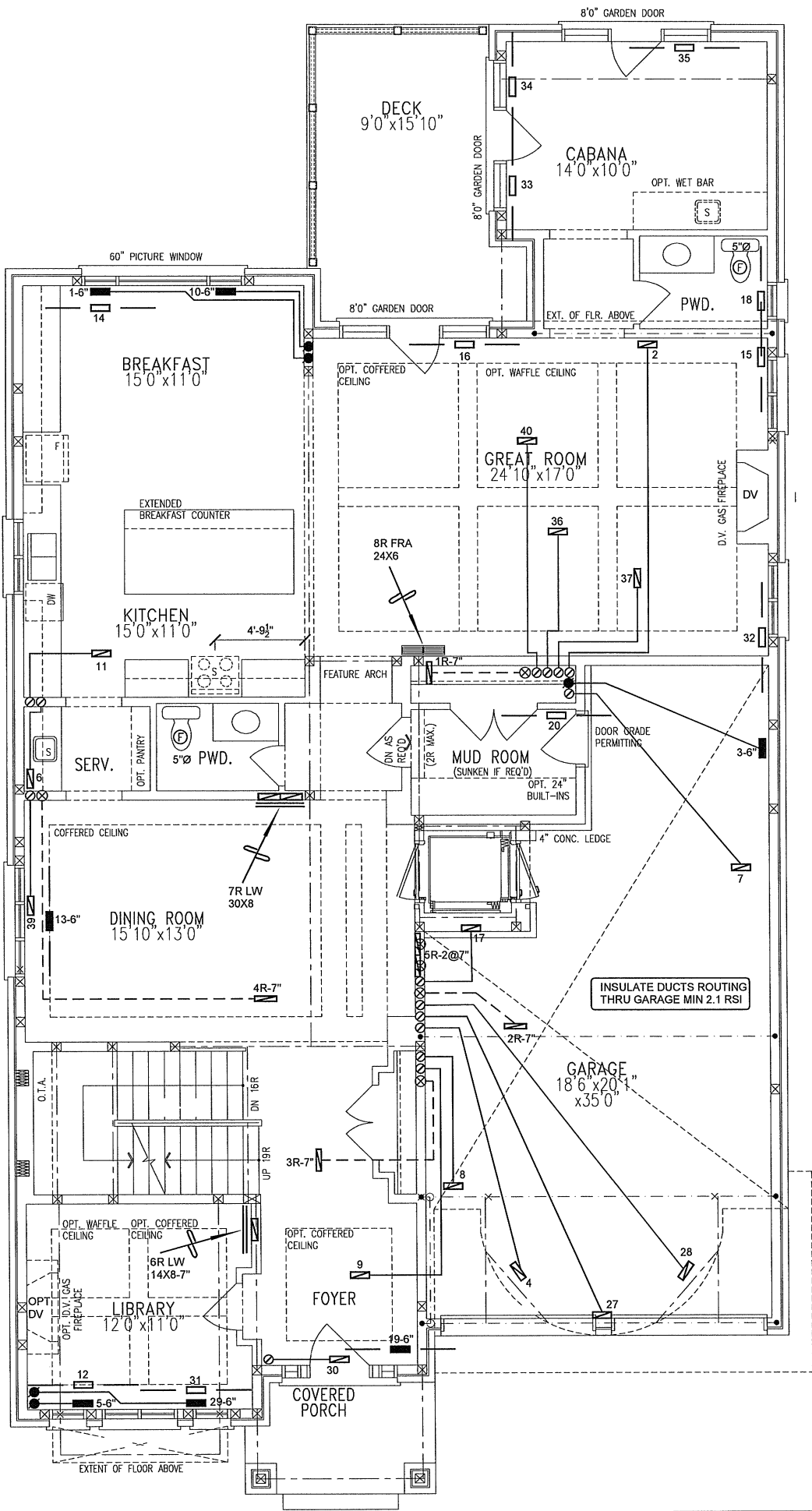
Michael O'Rourke

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

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	FLOOR 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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

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>		HEAT LOSS 93264 BTU/H UNIT DATA		# OF RUNS		S/A		R/A		FANS		Sheet Title			
GOLDPARK HOMES				MAKE LENNOX		3RD FLOOR								BASEMENT 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.		MODEL EL296UH110XE60C		2ND FLOOR		20		5		6		Date			
PINE VALLEY & TESTON VAUGHAN, ONTARIO				1ST FLOOR		13		3		3		NOV/2018					
KNIGHTSWOOD				INPUT		110		MBTU/H		BASEMENT		8		1		0	
OPT. 5 BED ELEVATOR				OUTPUT		106		MBTU/H		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		1/8" = 1'-0"			
5005 - LOT 93 WOB 4405 sqft		COOLING		5.0		TONS		BCIN# 19669									
				FAN SPEED		1955		cfm @ 0.6" w.c.				LO#		80582			



GROUND FLOOR PLAN ELEV. 'B' - LOT 93

WOB
LOT 93
CSA-F280-12
PACKAGE A1

I MICHAEL O'ROURKE HAVE REVIEWED 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.		
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Client GOLDPARK HOMES		<div><p>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</p></div>	Sheet Title FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO KNIGHTSWOOD OPT. 5 BED ELEVATOR 5005 - LOT 93 WOB 4405 sqft			Date NOV/2018	
		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.	Scale 1/8" = 1'-0"	
			BCIN# 19669	
			LO#	80582

