

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)			Lot/con.
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@hvacdsgns.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]			
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ 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: 5005 - KNIGHTSWOOD LOT 158 Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> (print name)		declare that (choose one as appropriate):	
☐ 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: _____			
☒ 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>			
☐ 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.			
August 23, 2018 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.

Application for a Permit Construct or Demolish – Effective January 1, 2015

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES										LOT 158		DATE: Aug-18		WINTER NATURAL AIR CHANGE RATE 0.350		HEAT LOSS AT °F. 76		CSA-F280-12 SB-12 PACKAGE A1											
ROOM USE		EXP. WALL		CLG. HT.		MBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		WIC-2		ENS-3		ENS-4		WIC-3		FAM	
FACTORS		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN	
GRS.WALL AREA		21.3		16.0		0		0		130		352		385		180		60		90		40		70		150		429	
GLAZING		21.3		41.6		0		0		6		0		0		0		8		0		0		0		0		46	
NORTH		21.3		41.6		0		0		128		0		0		0		170		0		0		0		0		0	
EAST		21.3		24.9		0		0		0		66		1383		50		0		0		0		0		0		0	
SOUTH		21.3		24.9		0		0		0		0		12		255		45		0		0		0		0		0	
WEST		21.3		41.6		57		1213		0		0		0		0		0		0		0		0		0		0	
SKYL.T.		37.2		101.5		0		0		0		0		0		0		0		0		0		0		0		64	
DOORS		25.2		4.3		0		0		0		0		0		0		0		0		0		0		0		0	
NET EXPOSED WALL		4.5		0.8		433		1932		325		287		1281		145		52		39		179		30		62		277	
NET EXPOSED BSMT WALL ABOVE GR		3.6		0.6		0		0		0		0		0		0		0		0		0		0		0		0	
EXPOSED CLG		1.3		0.6		533		684		313		254		326		149		60		77		140		180		82		105	
NO A TTIC EXPOSED CLG		2.7		1.3		0		0		0		24		66		30		0		0		28		140		82		105	
EXPOSED FLOOR		2.6		0.4		0		0		0		278		709		119		0		60		48		122		21		24	
BASEMENT/CRAWL HEAT LOSS		0		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		0	
SUBTOTAL HT LOSS		4170		3406		0		2569		1391		3765		3537		1970		532		586		419		592		1075		3764	
SUB TOTAL HT GAIN		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
LEVEL FACTOR / MUL TIPLIER		0.20		0.31		0.20		0.31		0.20		0.20		0.31		0.20		0.20		0.31		0.20		0.31		0.20		0.31	
AIR CHANGE HEAT LOSS		1281		240		0		786		427		1157		1087		605		194		180		129		179		330		1830	
AIR CHANGE HEAT GAIN		0		0		0		0		28		492		204		0		83		77		55		0		0		0	
DUCT LOSS		0		0		0		0		182		0		0		0		0		0		0		0		0		0	
DUCT GAIN		2		480		0		0		107		432		398		1		0		12		55		0		0		0	
HEAT GAIN PEOPLE		641		0		0		0		641		240		641		240		0		0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS		5451		0		0		3346		2000		5414		5086		2576		909		842		603		760		1405		5395	
TOTAL HT LOSS BTU/H		6195		2457		0		2457		1529		6181		6594		3089		349		178		188		428		1336		5889	
TOTAL HT GAIN x 1.3 BTU/H		8053		3194		0		3194		3934		6181		6594		3089		349		178		188		428		1336		5889	

ROOM USE		EXP. WALL		CLG. HT.		LIB		DIN		KIT		CAB		LAUN		PWD		FOY		MUD		LOD		BAS	
FACTORS		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN	
GRS.WALL AREA		385		16.0		0		396		550		495		0		55		385		216		700		2100	
GLAZING		21.3		41.6		0		0		0		0		0		0		0		0		0		16	
NORTH		21.3		41.6		0		0		0		0		0		0		0		0		0		0	
EAST		21.3		24.9		0		0		0		0		0		0		0		0		0		0	
SOUTH		21.3		24.9		0		34		426		53		1341		0		0		0		0		0	
WEST		21.3		41.6		0		0		51		63		1341		0		0		0		0		0	
SKYL.T.		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		329		1468		479		369		1647		0		62		1566		0		0	
NET EXPOSED BSMT WALL ABOVE GR		3.6		0.6		0		0		0		0		0		0		323		1441		0		0	
EXPOSED CLG		1.3		0.6		0		0		0		0		0		0		0		0		0		0	
NO A TTIC EXPOSED CLG		2.7		1.3		0		0		0		0		0		0		0		0		0		0	
EXPOSED FLOOR		2.6		0.4		0		0		0		0		0		0		0		0		0		0	
BASEMENT/CRAWL HEAT LOSS		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	
SUBTOTAL HT LOSS		2660		2574		0		2339		3649		4886		274		507		3120		1380		2289		10257	
SUB TOTAL HT GAIN		0		0		0		0		0		0		0		0		0		0		0		0	
LEVEL FACTOR / MUL TIPLIER		0.30		0.43		0.30		0.43		0.30		0.43		0.20		0.30		0.30		0.30		2056		0.50	
AIR CHANGE HEAT LOSS		1152		181		0		1013		1580		2116		84		219		1351		588		0		16100	
AIR CHANGE HEAT GAIN		0		0		0		0		0		0		6		0		0		16		0		0	
DUCT LOSS		0		0		0		0		0		0		36		0		0		0		0		0	
DUCT GAIN		0		0		0		0		0		0		73		0		0		0		0		0	
HEAT GAIN PEOPLE		240		0		0		641		641		641		641		0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS		641		0		0		0		641		641		641		0		0		0		0		0	
TOTAL HT LOSS BTU/H		3812		4415		0		3352		5229		7002		394		726		4471		1977		2289		26357	
TOTAL HT GAIN x 1.3 BTU/H		8332		5739		0		4339		6841		7399		1045		318		776		1155		2673		1748	

TOTAL HEAT GAIN BTU/H:										60945		TONS: 5.08		LOSS DUE TO VENTILATION LOAD BTU/H: 3181		STRUCTURAL HEAT LOSS: 89396		TOTAL COMBINED HEAT LOSS BTU/H: 92576	
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Michael O'Rourke

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

HEATING CFM	1955	COOLING CFM	1955
TOTAL HEAT LOSS	89,396	TOTAL HEAT GAIN	60,409
AIR FLOW RATE CFM	21.87	AIR FLOW RATE CFM	32.36

LOT 158

TYPE: 5005 - KNIGHTSWOOD

DATE: Aug-18

GFA: 4478 LO# 79733

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

AFUE = 96 %

INPUT (BTU/H) = 110,000

OUTPUT (BTU/H) = 106,000

DESIGN CFM = 1955

CFM @ 6" E.S.P.

TEMPERATURE RISE 50 °F

RUN #	ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	MBR	2.72	2.00	2.71	2.54	2.54	1.29	0.91	0.84	0.60	1.82	0.76	1.91	3.35	2.61	2.61	2.70	0.39	0.73	FOY	MUD	BAS	BAS	BAS	BAS
2	RM LOSS MBH	40	59	44	59	56	58	20	18	13	40	17	42	73	57	57	59	9	16	98	43	89	89	89	89
3	CFM PER RUN HEAT	2.07	2.22	1.53	3.09	2.85	1.54	0.35	0.18	0.19	2.07	0.43	2.21	2.39	2.49	2.49	2.94	1.04	0.32	0.78	1.16	0.63	0.63	0.63	0.63
4	RM GAIN MBH	67	72	49	100	92	50	11	6	6	67	14	71	77	81	81	95	34	10	25	37	20	20	20	20
5	CFM PER RUN COOLING	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
6	ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
7	EQUIVALENT LENGTH	70	70	53	49	75	48	47	48	53	64	59	57	29	52	44	54	36	73	40	47	67	60	54	38
8	TOTAL EFFECTIVE LENGTH	260	270	223	209	245	208	247	198	223	234	209	197	159	182	184	164	236	243	250	207	217	210	157	128
9	ADJUSTED PRESSURE	0.06	0.06	0.07	0.07	0.06	0.08	0.06	0.08	0.07	0.07	0.07	0.08	0.1	0.08	0.08	0.09	0.07	0.06	0.06	0.08	0.07	0.07	0.09	0.11
10	ROUND DUCT SIZE	5	5	5	6	6	5	4	4	4	5	4	5	5	5	5	6	4	4	6	4	6	6	6	5
11	HEATING VELOCITY (ft/min)	294	301	323	301	286	206	229	207	149	294	195	308	536	419	419	301	103	184	500	493	454	454	454	653
12	COOLING VELOCITY (ft/min)	492	367	360	510	469	367	126	69	69	492	161	521	565	595	595	484	390	115	127	424	102	102	102	147
13	OUTLET GRILL SIZE	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	3X10

RUN #	ROOM NAME	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
1	BAS	4.09	4.09	1.82	2.71	2.54	1.41	1.91	2.70	2.33	2.33	2.33	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
2	RM LOSS MBH	89	89	40	59	56	31	42	59	51	51	51	7	7	89	28	28	28	28	28	28	28	28	28	28	28	28
3	CFM PER RUN HEAT	0.63	0.63	0.27	3.09	2.85	1.34	2.21	2.94	2.47	2.47	2.47	0.12	0.12	0.63	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
4	RM GAIN MBH	20	20	67	100	92	43	71	95	80	80	80	4	4	20	50	50	50	50	50	50	50	50	50	50	50	50
5	CFM PER RUN COOLING	0.15	0.15	0.16	0.15	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
6	ADJUSTED PRESSURE	0.15	0.15	0.16	0.15	0.15	0.16	0.16	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
7	EQUIVALENT LENGTH	34	50	57	55	80	63	51	55	69	71	82	56	58	23	28	28	28	28	28	28	28	28	28	28	28	28
8	TOTAL EFFECTIVE LENGTH	144	200	217	215	250	263	211	215	221	222	256	248	163	193	193	193	193	193	193	193	193	193	193	193	193	193
9	ADJUSTED PRESSURE	0.1	0.07	0.07	0.07	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
10	ROUND DUCT SIZE	5	6	5	6	6	5	5	6	6	6	6	4	4	6	5	5	5	5	5	5	5	5	5	5	5	5
11	HEATING VELOCITY (ft/min)	653	454	294	301	286	228	308	301	260	260	260	80	80	454	206	206	206	206	206	206	206	206	206	206	206	206
12	COOLING VELOCITY (ft/min)	147	102	492	510	469	316	521	484	408	408	408	46	46	102	367	367	367	367	367	367	367	367	367	367	367	367
13	OUTLET GRILL SIZE	3X10	4X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10

SUPPLY 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	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	258	0.06	9.1	10	8	TRUNK G	661	0.06	12.9	20	8	TRUNK I	1953	0.06	19.4	34	827	TRUNK M	1630	0.05	18.9	34	8	TRUNK O	0	0.05	0	0	8
TRUNK B	0	0.00	0	0	0	TRUNK H	0	0.00	0	0	0	TRUNK J	0	0.00	0	0	0	TRUNK N	0	0.05	0	0	8	TRUNK P	0	0.05	0	0	8
TRUNK C	581	0.06	12.3	18	8	TRUNK I	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK L	0	0.05	0	0	8	TRUNK Q	0	0.05	0	0	8
TRUNK D	283	0.06	10	10	8	TRUNK J	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK M	0	0.05	0	0	8	TRUNK R	0	0.05	0	0	8
TRUNK E	1264	0.06	16.5	26	10	TRUNK K	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK N	0	0.05	0	0	8	TRUNK S	0	0.05	0	0	8
TRUNK F	414	0.06	10.8	14	8	TRUNK L	0	0.00	0	0	0	TRUNK M	0	0.00	0	0	0	TRUNK O	0	0.05	0	0	8	TRUNK T	0	0.05	0	0	8

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	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK	CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	258	0.06	9.1	10	8	TRUNK G	661	0.06	12.9	20	8	TRUNK I	1953	0.06	19.4	34	827	TRUNK M	1630	0.05	18.9	34	8	TRUNK O	0	0.05	0	0	8
TRUNK B	0	0.00	0	0	0	TRUNK H	0	0.00	0	0	0	TRUNK J	0	0.00	0	0	0	TRUNK N	0	0.05	0	0	8	TRUNK P	0	0.05	0	0	8
TRUNK C	581	0.06	12.3	18	8	TRUNK I	0	0.00	0	0	0	TRUNK K	0	0.00	0	0	0	TRUNK L	0	0.05	0	0	8	TRUNK Q	0	0.05	0	0	8
TRUNK D	283	0.06	10	10	8	TRUNK J	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK M	0	0.05	0	0	8	TRUNK R	0	0.05	0	0	8
TRUNK E	1264	0.06	16.5	26	10	TRUNK K	0	0.00	0	0	0	TRUNK L	0	0.00	0	0	0	TRUNK N	0	0.05	0	0	8	TRUNK S	0	0.05	0	0	8
TRUNK F	414	0.06	10.8	14	8	TRUNK L	0	0.00	0	0	0	TRUNK M	0	0.00	0	0	0	TRUNK O	0	0.05	0	0	8	TRUNK T	0	0.05	0	0	8

TYPE: 5005 - KNIGHTSWOOD
SITE NAME: PINE VALLEY & TESTON

LO # 79733
LOT 158

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	☒ Direct vent (sealed combustion) only	
b)	☐ Positive venting induced draft (except fireplaces)	
c)	☐ Natural draft, B-vent or induced draft gas fireplace	
d)	☐ Solid Fuel (including fireplaces)	
e)	☐ No Combustion Appliances	

HEATING SYSTEM	
☒ Forced Air	☐ Non Forced Air
☐ Electric Space Heat	

HOUSE TYPE		9.32.1(2)
☒ I	Type a) or b) appliance only, no solid fuel	
☐ II	Type I except with solid fuel (including fireplaces)	
☐ III	Any Type c) appliance	
☐ IV	Type I, or II with electric space heat	
☐	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
☐ 1	Exhaust only/Forced Air System	
☐ 2	HRV with Ducting/Forced Air System	
☒ 3	HRV Simplified/connected to forced air system	
☐ 4	HRV with Ducting/non forced air system	
☐	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Kitchen & Bathrooms	7 @ 10.6 cfm	74.2 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	233.2 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	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	233.2	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	78.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE 65H	Location: BSMT
155.0 cfm	3.0 sones
☒ HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
155.0 CFM	X 76 F	X 1.08	X	0.25

SUPPLEMENTAL FANS		NUTONE		
Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	☒	0.3
ENS-2	QTXEN050C	50	☒	0.3
ENS-4	QTXEN050C	50	☒	0.3
PWD	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
155 cfm high	64 cfm low	
75 % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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:	August-18

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																					
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																					
LO#: 79733			Model: 5005 - KNIGHTSWOOD			Builder: GOLD PARK HOMES		Date: 2018-08-23																																																													
Volume Calculation					Air Change & Delta T Data																																																																
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6.2.6 Sensible Gain due to Air Leakage																																																																					
$HC_{salb} = LR_{aire} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																																					
$= 0.118 \times 532.07 \times 7^\circ\text{C} \times 1.2 = 534 \text{ W}$																																																																					
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6.2.7 Sensible heat Gain due to Ventilation																																																																					
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																																					
$155 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 536 \text{ Btu/h}$																																																																					
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																					
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5005 - KNIGHTSWOOD	LOT 158	BUILDER: GOLD PARK HOMES
SFQT: 4478	LO# 79733	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):	67644.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	7.0 ft
LENGTH: 75.0 ft	WIDTH: 45.0 ft	EXPOSED PERIMETER:	240.0 ft

2012 OBC - COMPLIANCE PACKAGE

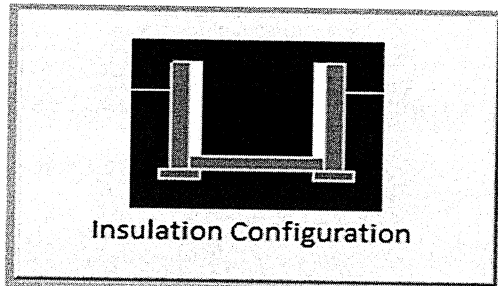
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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):	22.9	 Insulation Configuration
Floor Width (m):	13.7	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	5.6	
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):		2441

TYPE: 5005 - KNIGHTSWOOD
LO# 79733

LOT 158

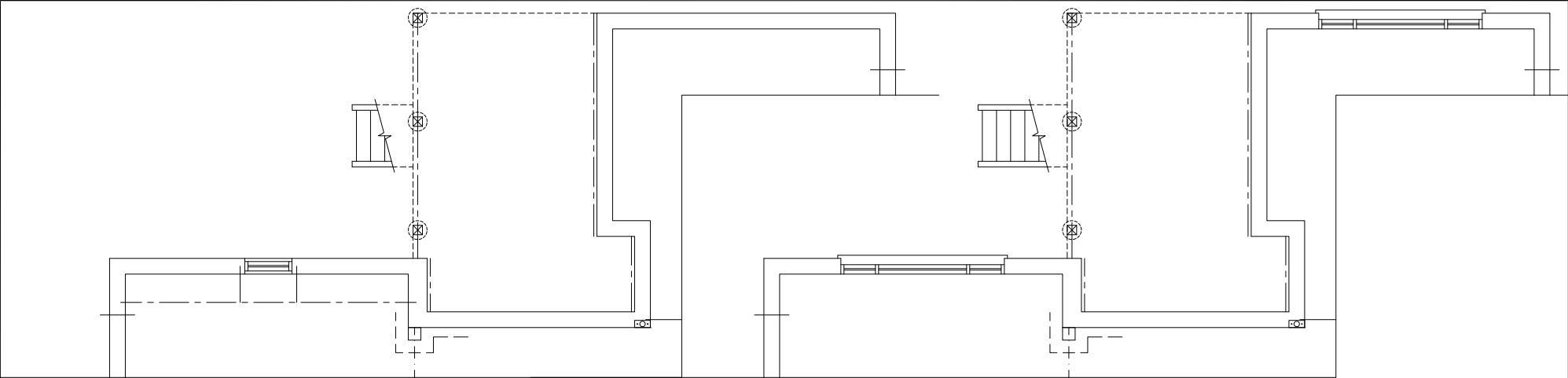
Air Infiltration Residential Load Calculator

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):	7.32			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1915.5			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2553.4 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):	0.350			
Cooling Air Leakage Rate (ACH/H):	0.118			

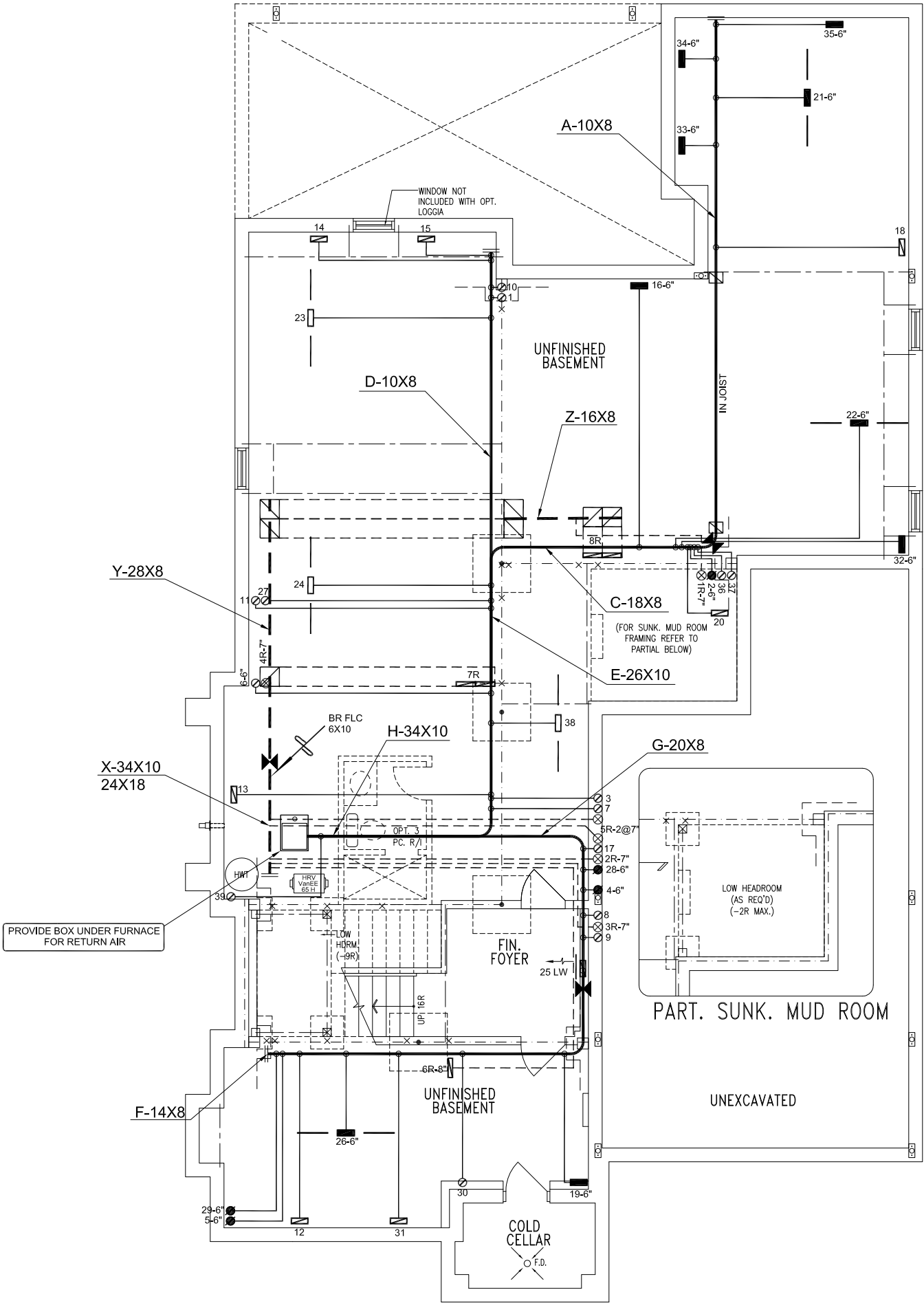
TYPE: 5005 - KNIGHTSWOOD
LO# 79733

LOT 158



PART. BASEMENT PLAN ELEV. 'B' - LOT 158 - W.O.D. COND.

PART. BASEMENT PLAN ELEV. 'B' - LOT 158 - L.O.D. COND.



BASEMENT PLAN, EL.'B' - LOT 158

LOT 158

CSA-F280-12

PACKAGE A1

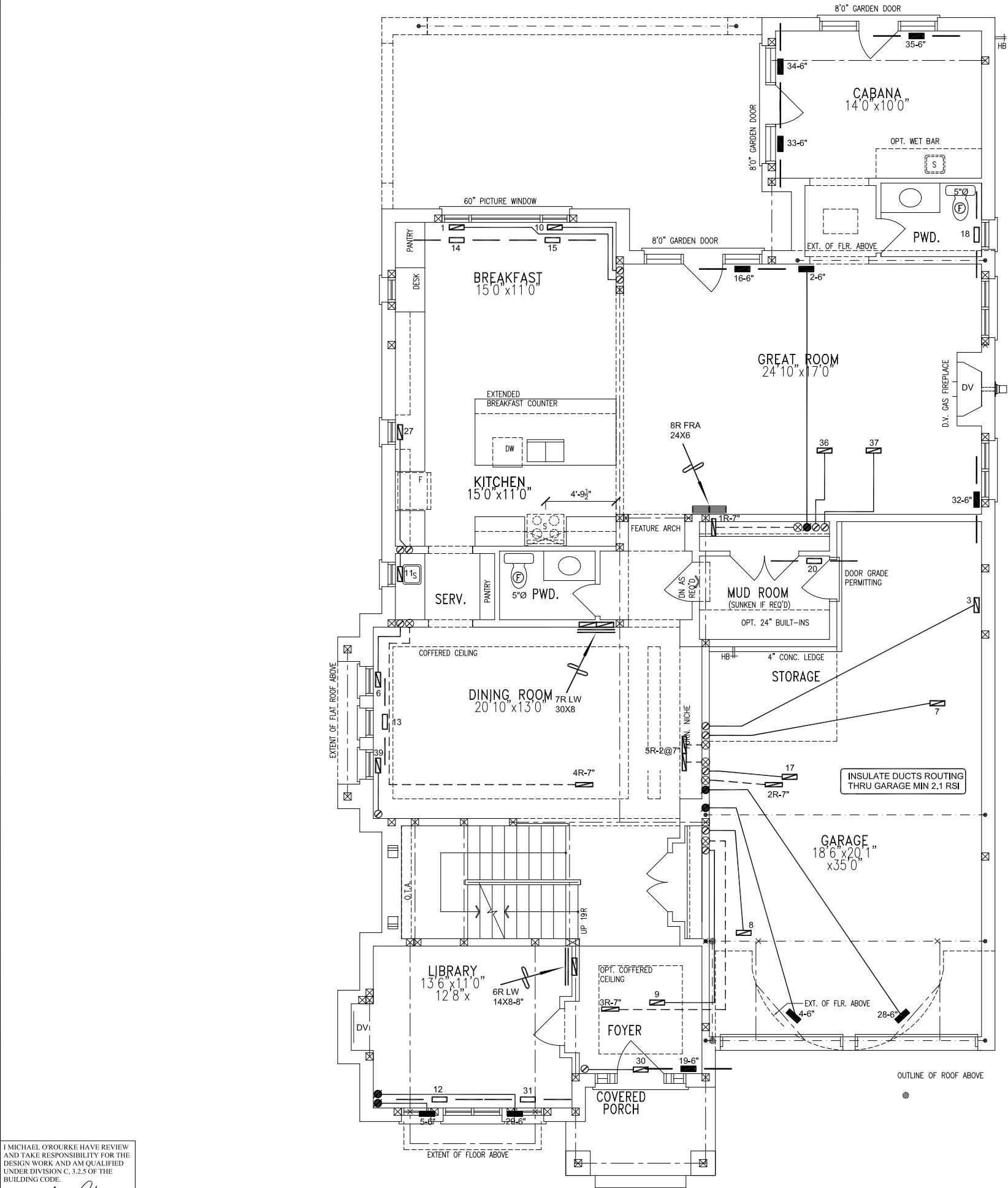
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

HVAC LEGEND								3.		
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.	3R RELOCATED	NOV/2018
	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		

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Client	HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	HEAT LOSS 92576 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title	
GOLDPARK HOMES		MAKE LENNOX	3RD FLOOR					BASEMENT HEATING LAYOUT
Project Name		MODEL EL296UH110XE60C	2ND FLOOR		19	5	7	
PINE VALLEY & TESTON VAUGHAN, ONTARIO		INPUT 110 MBTU/H	1ST FLOOR		13	3	3	
KNIGHTSWOOD - LOT 158 5005 4478 sqft		OUTPUT 106 MBTU/H	BASEMENT 7 1 0					Date AUG/2018
	COOLING 5.0 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 1/8" = 1'-0"	
	FAN SPEED 1955 cfm @ 0.6" w.c.						BCIN# 19669	
						LO#	79733	



GROUND FLOOR PLAN, EL.'B' – LOT 158

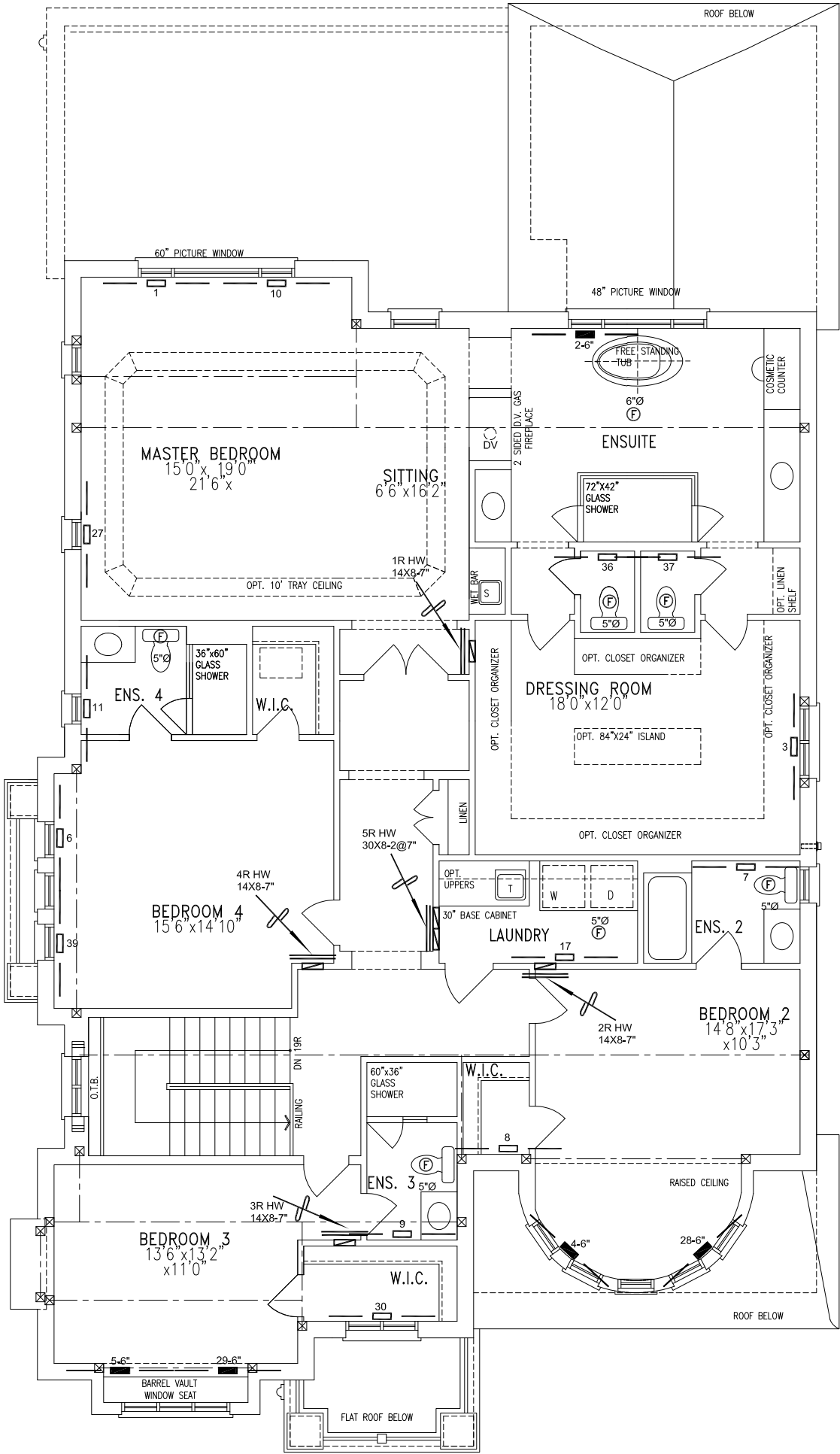
LOT 158
CSA-F280-12
PACKAGE A1

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

HVAC LEGEND								3.		
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	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
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Client		 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	Sheet Title	
GOLDPARK 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	AUG/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
KNIGHTSWOOD - LOT 158		4478 sqft	BCIN# 19669	
5005			LO#	79733



SECOND FLOOR PLAN, EL.'B' – LOT 158

LOT 158
CSA-F280-12
PACKAGE A1

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

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
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	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
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GOLDPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	AUG/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	1/8" = 1'-0"
KNIGHTSWOOD - LOT 158			BCIN# 19669	
5005	4478 sqft		LO#	79733