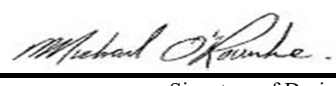


Schedule 1: Designer Information

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 VAUGHAN (WOODBIDGE)	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]			
☐ 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: 4005 THE EDGEBROOK Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
☐ 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.			
June 4, 2020		 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.

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

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES										TYPE: 4005 THE EDGEBROOK				GFA: 3516		DATE: Jun-20 LO# 77461		WINTER NATURAL AIR CHANGE RATE 0.351 SUMMER NATURAL AIR CHANGE RATE 0.128				HEAT LOSS ΔT °F. 76 HEAT GAIN ΔT °F. 16				CSA-F280-12 SB-12 PACKAGE A1															
ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			ENS-3/4						MEDIA			BATH											
EXP. WALL			37			28			8			13			13			13			8						32			6											
CLG. HT.			10			9			9			9			9			9			9						9			9											
FACTORS																																									
GRS.WALL AREA			LOSS			GAIN			374			255			73			118			118			118			73			291			55								
GLAZING			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN			LOSS			GAIN					
NORTH			21.3	16.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
EAST			21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
SOUTH			21.3	25.7	0	0	0	0	16	340	412	0	0	0	0	0	0	0	19	404	489	19	404	489	8	170	206	0	0	0	0	0	0	0	0						
WEST			21.3	42.4	34	724	1441	16	340	678	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
SKYLT.			37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
DOORS			25.2	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
NET EXPOSED WALL			4.5	0.9	340	1516	315	223	994	207	73	325	68	99	443	92	99	443	92	99	443	92	65	289	60			200	893	186	55	244	51								
NET EXPOSED BSMT WALL ABOVE GR			3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0	0							
EXPOSED CLG			1.3	0.6	375	481	239	192	246	123	88	113	56	208	267	133	208	267	133	208	267	133	128	164	82			295	379	188	84	108	54								
NO ATTIC EXPOSED CLG			2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			20	55	27	0	0	0								
EXPOSED FLOOR			2.6	0.5	0	0	0	0	0	0	0	0	0	13	33	7	22	56	12	0	0	0	0	0	0			315	803	167	84	214	45								
BASEMENT/CRAWL HEAT LOSS					0			0			0		0			0			0			0					0		0												
SLAB ON GRADE HEAT LOSS					0			0			0		0			0			0			0					0		0												
SUBTOTAL HT LOSS					2721			1922			438		1148			1171			1114			624					4067			566											
SUB TOTAL HT GAIN						1996		1419			124		551			726			714			348					4017			149											
LEVEL FACTOR / MULTIPLIER					0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36		0.20	0.36											
AIR CHANGE HEAT LOSS					974			688			157		411			419			399			223					1456			203											
AIR CHANGE HEAT GAIN						211		150			13		58			77			75			37					424			16											
DUCT LOSS					0			0			0		156			159			0			0					552			77											
DUCT GAIN					0			0			0		163			182			0			0					522			94											
HEAT GAIN PEOPLE			240		2		480	0	0	0	0	1	240	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
HEAT GAIN APPLIANCES/LIGHTS							776	0	0	0	0	776		776		776		776		776		776		776		776		776		776		776		776							
TOTAL HT LOSS BTU/H					3695			2610			595		1714			1748			1513			847					6075			845											
TOTAL HT GAIN x 1.3 BTU/H						4501		2040			178		2324			2600			2347			500					7460			1345											

ROOM USE	EXP. WALL	CLG. HT.	GRDN	K/M/G	LAUN	W/R	FOY																			
			31	76	23	8	61																			
			12	12	12	12	12																			
FACTORS																										
GRS.WALL AREA	LOSS	GAIN	372	912	276	96	732																			
GLAZING	LOSS	GAIN																								
NORTH	21.3	16.8	0	0	0	0	0	0	0	9	192	151	0	0	0	21	447	353								
EAST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	0	0	0	44	936	1865								
SOUTH	21.3	25.7	46	979	1184	0	0	0	7	149	180	0	0	0	0	0	0	0								
WEST	21.3	42.4	0	0	0	138	2937	5850	0	0	0	0	0	0	0	0	0	0								
SKYLT.	37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
DOORS	25.2	5.2	0	0	0	0	0	0	0	20	505	105	0	0	0	40	1010	210								
NET EXPOSED WALL	4.5	0.9	326	1455	302	774	3454	718	247	1102	229	89	397	83	627	2798	582									
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	172	221	110								
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	80	220	109								
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0						6674		
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0								
SUBTOTAL HT LOSS			2434			6391			1799			546			5632											
SUB TOTAL HT GAIN				1486		6568			485			263			3229											
LEVEL FACTOR / MULTIPLIER			0.30	0.44		0.30	0.44		0.30	0.44		0.30	0.44		0.30	0.44										
AIR CHANGE HEAT LOSS			1071			2812			792			240			2478											
AIR CHANGE HEAT GAIN				157		693			51			28			341											
DUCT LOSS			0			0			0			0			0											
DUCT GAIN			0			0			0			0			0											
HEAT GAIN PEOPLE	240		0			0			0			0			0											
HEAT GAIN APPLIANCES/LIGHTS						776			776			776			776											
TOTAL HT LOSS BTU/H			3505			9203			2590			786			8110											
TOTAL HT GAIN x 1.3 BTU/H				3145		10448			1706			378			4641											

TOTAL HEAT GAIN BTU/H: 48011

TONS: 4.00

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 66134

TOTAL COMBINED HEAT LOSS BTU/H: 69315

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

TYPE: 4005 THE EDGEBROOK

DATE: Jun-20

GFA: 3516 LO# 77461

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 66,134 TOTAL HEAT GAIN 47,349
AIR FLOW RATE CFM 23.06 AIR FLOW RATE CFM 32.21

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

EL296UH090XE48C
^LENNOX 90

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = **85,000**

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	5
R/A	0	0	5	2	1

plenium pressure s/a 0.18 r/a pressure 0.17
max s/a dif press. loss 0.02 r/a grille press. Loss 0.02
min adjusted pressure s/a 0.16 adjusted pressure r/a 0.15

FAN SPEED
LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

DESIGN CFM = **1525**
CFM @ 6" E.S.P.

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	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	MEDIA	MEDIA	MBR	BATH	GRDN	K/M/G	K/M/G	K/M/G	LAUN	W/R	FOY	FOY	MEDIA	K/M/G	BAS	BAS
RM LOSS MBH	1.85	2.61	0.59	1.71	1.75	1.51	0.85	2.02	2.02	1.85	0.85	3.50	2.30	2.30	2.30	2.59	0.79	4.06	4.06	2.02	2.30	4.46	4.46
CFM PER RUN HEAT	43	60	14	40	40	35	20	47	47	43	19	81	53	53	53	60	18	94	94	47	53	103	103
RM GAIN MBH	2.25	2.04	0.18	2.32	2.60	2.35	0.50	2.49	2.49	2.25	1.34	3.14	2.61	2.61	2.61	1.71	0.38	2.32	2.32	2.49	2.61	0.75	0.75
CFM PER RUN COOLING	72	66	6	75	84	76	16	80	80	72	43	101	84	84	84	55	12	75	75	80	84	24	24
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.17	0.16	0.16	0.16
ACTUAL DUCT LGH	64	42	87	52	15	38	22	40	43	79	31	12	42	48	57	67	6	36	25	46	63	36	54
EQUIVALENT LENGTH	150	130	190	170	180	140	170	165	150	130	180	165	140	130	100	180	180	100	120	160	120	150	140
TOTAL EFFECTIVE LENGTH	214	172	277	222	195	178	192	205	193	209	211	177	182	178	157	247	186	136	145	206	183	186	194
ADJUSTED PRESSURE	0.08	0.1	0.06	0.08	0.08	0.1	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.1	0.07	0.09	0.12	0.11	0.08	0.09	0.09	0.08
ROUND DUCT SIZE	5	5	4	5	6	5	4	5	5	5	4	6	5	5	5	5	4	5	5	5	5	6	6
HEATING VELOCITY (ft/min)	316	441	161	294	204	257	229	345	345	316	218	413	389	389	389	441	207	690	690	345	389	525	525
COOLING VELOCITY (ft/min)	529	485	69	551	428	558	184	587	587	529	493	515	617	617	617	404	138	551	551	587	617	122	122
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	C	A	D	C	C	C	D	D	A	D	C	B	B	B	A	C	D	D	D	A	B	A

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH	4.46	4.46	4.46
CFM PER RUN HEAT	103	103	103
RM GAIN MBH	0.75	0.75	0.75
CFM PER RUN COOLING	24	24	24
ADJUSTED PRESSURE	0.16	0.16	0.16
ACTUAL DUCT LGH	44	11	39
EQUIVALENT LENGTH	110	130	160
TOTAL EFFECTIVE LENGTH	154	141	199
ADJUSTED PRESSURE	0.11	0.11	0.08
ROUND DUCT SIZE	6	6	6
HEATING VELOCITY (ft/min)	525	525	525
COOLING VELOCITY (ft/min)	122	122	122
OUTLET GRILL SIZE	4X10	4X10	4X10
TRUNK	B	C	D

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	273	0.06	9.3	10	x	8	491	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	681	0.06	13.1	20	x	8	613	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	1038	0.06	15.3	28	x	8	667	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	491	0.08	10.7	14	x	8	631	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	7																	
AIR VOLUME	135	135	130	130	130	345	275	0	0	0	0	0	0	0	0	0	0	0	0	245				
PLENUM PRESSURE	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	0.15	0.15				
ACTUAL DUCT LGH	79	59	46	35	36	41	45	1	1	1	1	1	1	1	1	1	1	1	1	14				
EQUIVALENT LENGTH	230	225	190	145	185	185	225	0	0	0	0	0	0	0	0	0	0	0	0	135				
TOTAL EFFECTIVE LH	309	284	236	180	221	226	270	1	1	1	1	1	1	1	1	1	1	1	1	149				
ADJUSTED PRESSURE	0.05	0.05	0.06	0.08	0.07	0.07	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10				
ROUND DUCT SIZE	7.5	7.5	7	6.5	6.8	9.7	9.7	0	0	0	0	0	0	0	0	0	0	0	0	7.8				
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	8				
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
INLET GRILL SIZE	14	14	14	14	14	30	30	0	0	0	0	0	0	0	0	0	0	0	0	24				

TYPE: 4005 THE EDGEBROOK
SITE NAME: PINE VALLEY & TESTON

LO # 77461

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A. TOTAL		<u>159.0</u> 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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>159</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>4.0</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 65H		
Location:	BSMT		
<u>155.0</u> cfm	<u>3.0</u> 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
ENS	QTXEN050C	50	☒
ENS-3/4	QTXEN050C	50	☒
BATH	QTXEN050C	50	☒
W/R	QTXEN050C	50	☒

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % Sensible Efficiency @ 32 deg F (0 deg C)	☒ 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:	June-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 77461	Model: 4005 THE EDGEBROOK	Builder: GOLD PARK HOMES	Date: 6/4/2020																																																									
Volume Calculation			Air Change & Delta T Data																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.351 x 406.09 x 42 °C x 1.2 = 7223 W = 24645 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.128 x 406.09 x 9 °C x 1.2 = 548 W = 1869 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h			$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 16 °F x 1.08 x 0.25 = 661 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	24,645	9,975	1.235																																																								
2	0.3		16,801	0.440																																																								
3	0.2		13,769	0.358																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 4005 THE EDGEBROOK**BUILDER:** GOLD PARK HOMES**SFQT:** 3516**LO#** 77461**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)	72

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 (ft ³):	51626.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.1 ft
LENGTH: 67.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	198.0 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	-

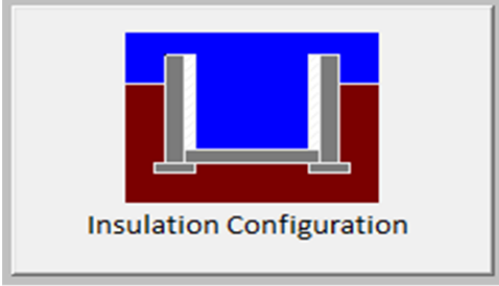
INDIVIDUAL BCIN: 19669

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):	20.4	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.86	
Window Area (m ²):	3.3	
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):		1955

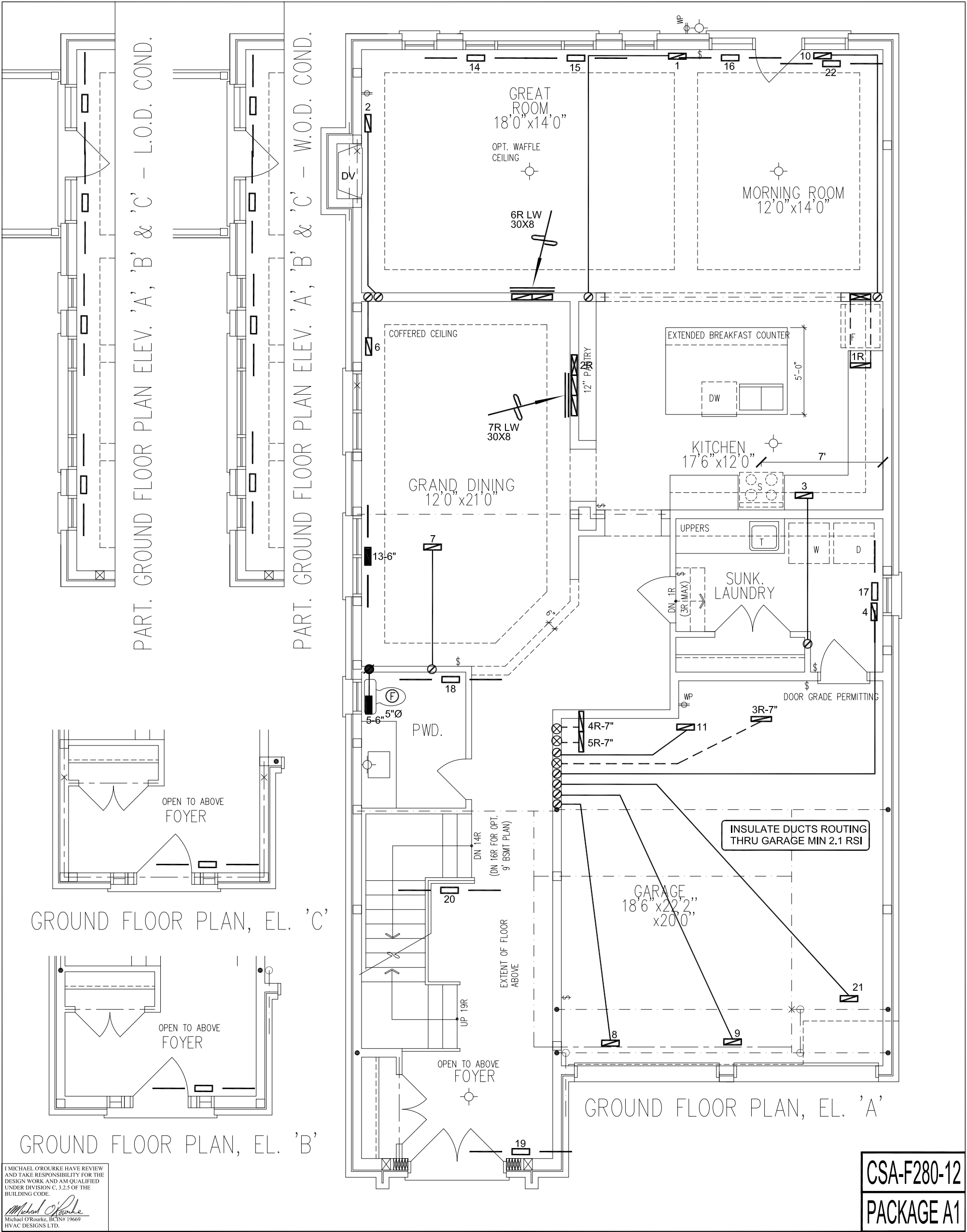
TYPE: 4005 THE EDGEBROOK
LO# 77461

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):	7.35			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1461.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1948.8 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):	0.351			
Cooling Air Leakage Rate (ACH/H):	0.128			

TYPE: 4005 THE EDGEBROOK
LO# 77461



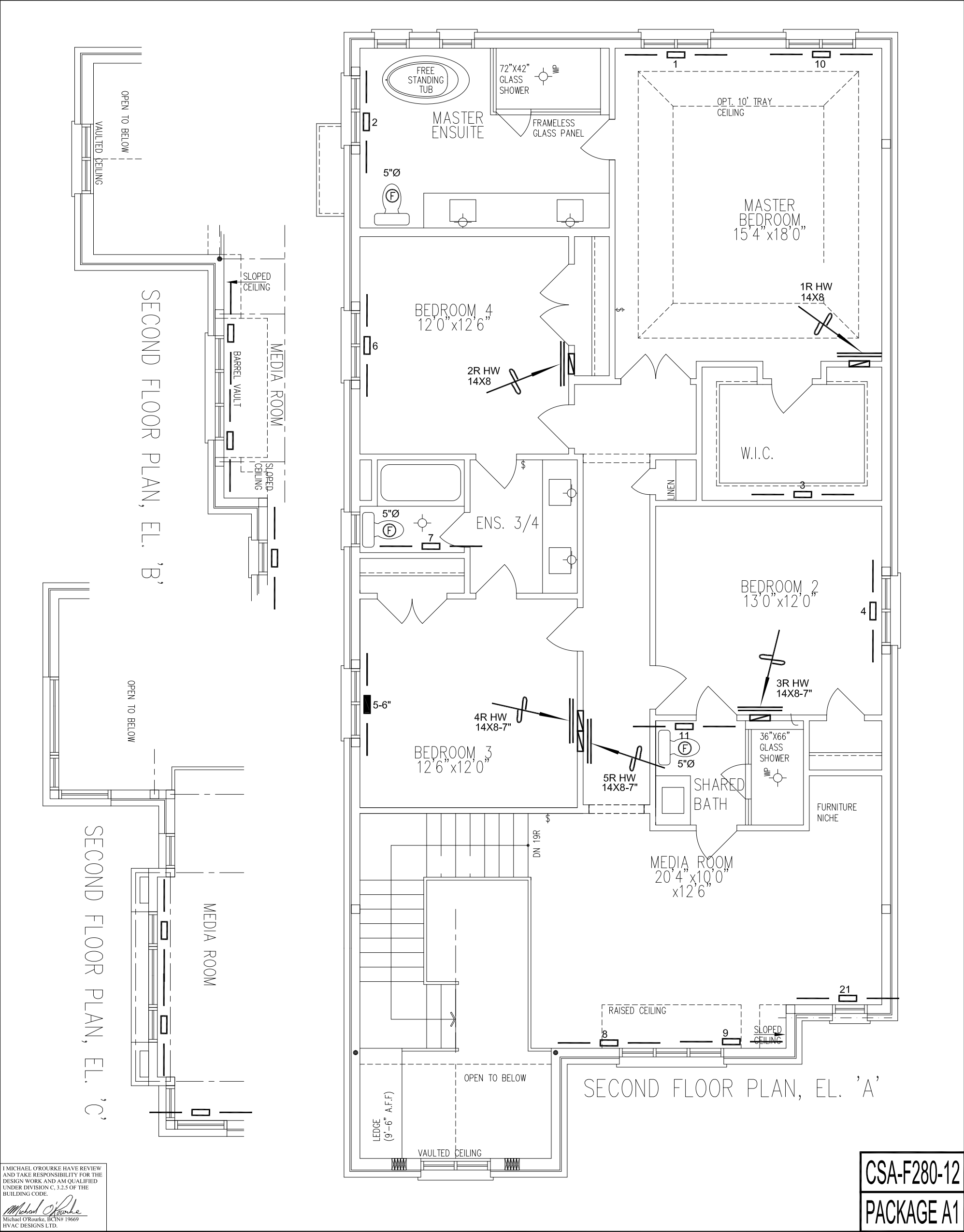
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

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

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	JUNE/2020
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED	SEPT/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		 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.	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
			BCIN# 19669	
THE EDGEBROOK 4005			LO#	77461
3516 sqft				



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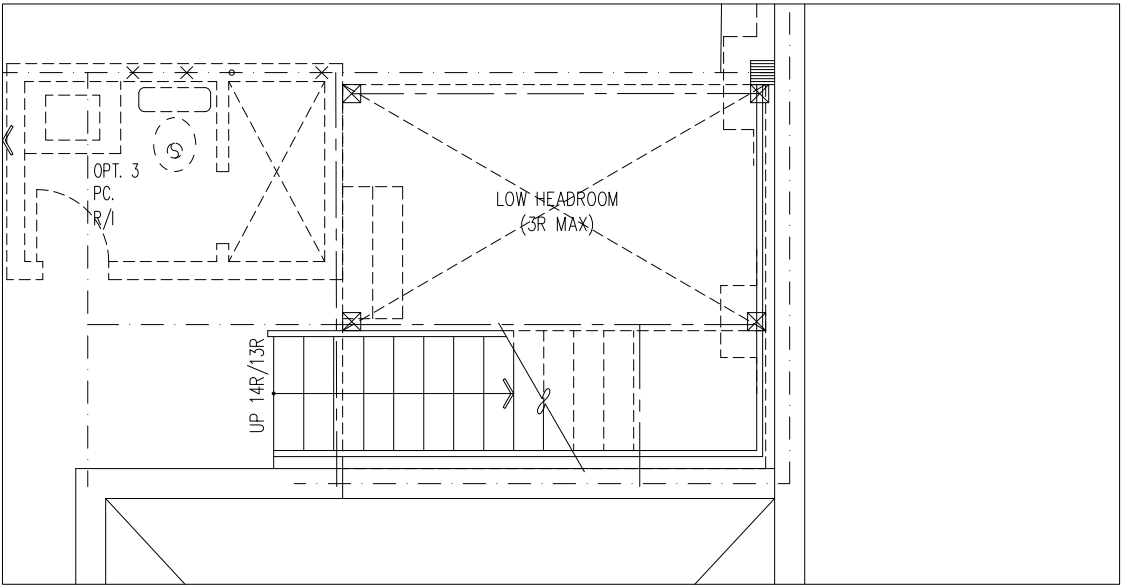
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
PACKAGE A1

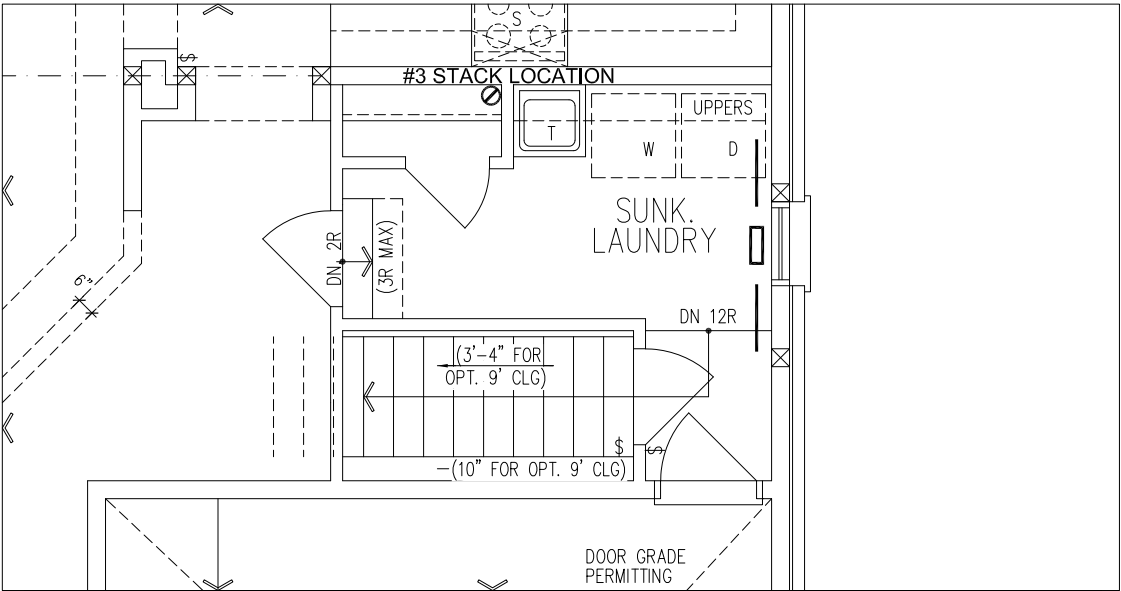
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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK 4005			BCIN# 19669	
3516 sqft			LO#	77461



PART. OPT. BASEMENT FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'



PART. OPT. GROUND FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'

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

PACKAGE A1

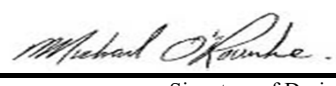
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GOLD PARK HOMES			SERV STAIR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK 4005			BCIN# 19669	
3516 sqft			LO#	77461

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 VAUGHAN (WOODBIDGE)	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]			
☐ 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: 4005 THE EDGEBROOK OPT 5 BED Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
☐ 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.			
June 4, 2020		 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.

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

SITE NAME: PINE VALLEY & TESTON		OPT 5 BED		TYPE: 4005 THE EDGE BROOK		GFA: 3516		DATE: Jun-20		WINTER NATURAL AIR CHANGE RATE 0.351		HEAT LOSS ΔT °F. 76		CSA-F280-12	
BUILDER: GOLD PARK HOMES								LO# 77462		SUMMER NATURAL AIR CHANGE RATE 0.128		HEAT GAIN ΔT °F. 16		SB-12 PACKAGE A1	
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	BED-5	BATH				
			37	28	8	13	13	13	8	32	6				
			10	9	9	9	9	9	9	9	9				
FACTORS															
GRS.WALL AREA	LOSS	GAIN	374	255	73	118	118	118	73	291	55				
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	21.3	16.8	0	0	0	0	0	0	0	0	0	0	16	340	269
EAST	21.3	42.4	0	0	0	0	0	0	0	0	0	0	75	1596	3179
SOUTH	21.3	25.7	0	0	0	16	340	412	0	0	0	0	0	0	0
WEST	21.3	42.4	34	724	1441	16	340	678	0	0	0	0	0	0	0
SKYLT.	37.2	103.0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.2	5.2	0	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.5	0.9	340	1516	315	223	994	207	73	325	68	99	443	92	65
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	375	481	239	192	246	123	88	113	56	208	267	133	128
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	13	33	7	22	56	12	0
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			2721		1922	438	1148	1171	1114	624			4067		566
SUB TOTAL HT GAIN				1996	1419	124	551	726	714	348			4017		149
LEVEL FACTOR / MULTIPLIER	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20	0.36	0.20
AIR CHANGE HEAT LOSS			974		688	157	411	419	399	223			1456		203
AIR CHANGE HEAT GAIN				211	150	13	58	77	75	37			424		16
DUCT LOSS			0	0	0	0	156	159	0	0			552		77
DUCT GAIN			0	0	0	0	171	190	0	0			554		16
HEAT GAIN PEOPLE	240	2	480	0	0	0	1	240	1	240	0	0	1	240	0
HEAT GAIN APPLIANCES/LIGHTS			862	0	0	0	862	862	0	862	0	0	862	0	0
TOTAL HT LOSS BTU/H			3695		2610	595	1714	1748	1513	847			6075		845
TOTAL HT GAIN x 1.3 BTU/H			4613		2040	178	2447	2723	2459	500			7926		235

ROOM USE	EXP. WALL	CLG. HT.	GRDN	K/M/G	LAUN	W/R	FOY	LOD	BAS
			31	76	23	8	61	42	198
			12	12	12	12	12	9	9
FACTORS									
GRS.WALL AREA	LOSS	GAIN	372	912	276	96	732	382	1460
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS
NORTH	21.3	16.8	0	0	0	0	21	447	353
EAST	21.3	42.4	0	0	0	0	44	936	1865
SOUTH	21.3	25.7	46	979	1184	0	0	0	0
WEST	21.3	42.4	0	0	0	0	0	0	0
SKYLT.	37.2	103.0	0	0	0	0	0	0	0
DOORS	25.2	5.2	0	0	0	0	40	1010	210
NET EXPOSED WALL	4.5	0.9	326	1455	302	774	3454	718	247
NET EXPOSED BSMT WALL ABOVE GR	3.6	0.7	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.7	1.4	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.5	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0
SUBTOTAL HT LOSS			2434	6391	1799	546	5632	1437	8537
SUB TOTAL HT GAIN				1486	485	263	3229	1438	462
LEVEL FACTOR / MULTIPLIER	0.30	0.44	0.30	0.44	0.30	0.44	0.30	0.44	0.50
AIR CHANGE HEAT LOSS			1071	2812	792	240	2478		12323
AIR CHANGE HEAT GAIN				157	693	51	28		200
DUCT LOSS			0	0	0	0	0		0
DUCT GAIN			0	0	0	0	0		0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			862	0	862	0	0	0	862
TOTAL HT LOSS BTU/H			3505	9203	2590	786	8110	1437	20860
TOTAL HT GAIN x 1.3 BTU/H			3257	10560	1818	378	4641	1869	1981

TOTAL HEAT GAIN BTU/H:

48287

TONS: 4.02

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 66134

TOTAL COMBINED HEAT LOSS BTU/H: 69315

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

OPT 5 BED
TYPE: 4005 THE EDGEBROOK

DATE: Jun-20

GFA: 3516 LO# 77462

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 66,134 TOTAL HEAT GAIN 47,625
AIR FLOW RATE CFM 23.06 AIR FLOW RATE CFM 32.02

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

*LENNOX
EL296UH090XE48C
FAN SPEED 90

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	5
R/A	0	0	6	2	1

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

DESIGN CFM = 1525
CFM @ 6" E.S.P.

TEMPERATURE RISE 52 °F

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	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	BED-5	BED-5	MBR	BATH	GRDN	K/M/G	K/M/G	K/M/G	LAUN	W/R	FOY	FOY	BED-5	K/M/G	BAS	BAS
RM LOSS MBH	1.85	2.61	0.59	1.71	1.75	1.51	0.85	2.02	2.02	1.85	0.85	3.50	2.30	2.30	2.30	2.59	0.79	4.06	4.06	2.02	2.30	4.46	4.46
CFM PER RUN HEAT	43	60	14	40	40	35	20	47	47	43	19	81	53	53	53	60	18	94	94	47	53	103	103
RM GAIN MBH	2.31	2.04	0.18	2.45	2.72	2.46	0.50	2.64	2.64	2.31	0.24	3.26	2.64	2.64	2.64	1.82	0.38	2.32	2.32	2.64	2.64	0.77	0.77
CFM PER RUN COOLING	74	65	6	78	87	79	16	85	85	74	8	104	85	85	85	58	12	74	74	85	85	25	25
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	64	42	87	52	15	38	22	40	43	79	31	12	42	48	57	67	6	36	25	46	63	36	54
EQUIVALENT LENGTH	150	130	190	170	180	140	170	165	150	130	180	165	140	130	100	180	180	100	120	160	120	150	140
TOTAL EFFECTIVE LENGTH	214	172	277	222	195	178	192	205	193	209	211	177	182	178	157	247	186	136	145	206	183	186	194
ADJUSTED PRESSURE	0.08	0.1	0.06	0.08	0.08	0.1	0.09	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.1	0.07	0.09	0.12	0.11	0.08	0.09	0.09	0.08
ROUND DUCT SIZE	5	5	4	5	6	5	4	6	6	5	4	6	5	5	5	5	4	6	6	6	5	6	6
HEATING VELOCITY (ft/min)	316	441	161	294	204	257	229	240	240	316	218	413	389	389	389	441	207	479	479	240	389	525	525
COOLING VELOCITY (ft/min)	543	477	69	573	444	580	184	433	433	543	92	530	624	624	624	426	138	377	377	433	624	127	127
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10
TRUNK	B	C	A	D	C	C	C	D	D	A	D	C	B	B	B	A	C	D	D	D	A	B	A

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH	4.46	4.46	4.46
CFM PER RUN HEAT	103	103	103
RM GAIN MBH	0.77	0.77	0.77
CFM PER RUN COOLING	25	25	25
ADJUSTED PRESSURE	0.16	0.16	0.16
ACTUAL DUCT LGH	44	11	39
EQUIVALENT LENGTH	110	130	160
TOTAL EFFECTIVE LENGTH	154	141	199
ADJUSTED PRESSURE	0.11	0.11	0.08
ROUND DUCT SIZE	6	6	6
HEATING VELOCITY (ft/min)	525	525	525
COOLING VELOCITY (ft/min)	127	127	127
OUTLET GRILL SIZE	4X10	4X10	4X10
TRUNK	B	C	D

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	273	0.06	9.3	10	x	8	491	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	681	0.06	13.1	20	x	8	613	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	1038	0.06	15.3	28	x	8	667	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	491	0.08	10.7	14	x	8	631	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	0	0.00	0	0	x	8	0	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	135	135	120	120	120	330	275	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	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	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	79	59	46	35	46	41	45	44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	230	225	190	145	185	185	225	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	309	284	236	180	231	226	270	209	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.05	0.06	0.08	0.06	0.07	0.05	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	7.5	6.8	6.3	6.8	9.6	9.7	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 4005 THE EDGEBROOK
SITE NAME: PINE VALLEY & TESTON

LO # 77462
OPT 5 BED

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	<u>2</u> @ 21.2 cfm <u>42.4</u> cfm	
Other Bedrooms	<u>4</u> @ 10.6 cfm <u>42.4</u> cfm	
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm <u>53</u> cfm	
Other Rooms	<u>4</u> @ 10.6 cfm <u>42.4</u> cfm	
Table 9.32.3.A.	TOTAL <u>180.2</u> 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	<u>180.2</u> cfm	
Less Principal Ventil. Capacity	<u>155</u> cfm	
Required Supplemental Capacity	<u>25.2</u> cfm	

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 65H		
Location:	BSMT		
<u>155.0</u> cfm	<u>3.0</u> 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-3/4	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
W/R	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % Sensible Efficiency @ 32 deg F (0 deg C)	☒ 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:	June-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 77462	Model: 4005 THE EDGEBROOK	Builder: GOLD PARK HOMES	Date: 6/4/2020																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1573</td> <td>9</td> <td>14314.3</td> </tr> <tr> <td>First</td> <td>1573</td> <td>12</td> <td>18876</td> </tr> <tr> <td>Second</td> <td>2026</td> <td>9</td> <td>18436.6</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>51,626.9 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1461.9 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1573	9	14314.3	First	1573	12	18876	Second	2026	9	18436.6	Third	0	9	0	Fourth	0	9	0	Total:			51,626.9 ft³	Total:			1461.9 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%; text-align: center;">0.351</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.128</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-20</td> <td style="text-align: center;">42</td> <td style="text-align: center;">76</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">22</td> <td style="text-align: center;">31</td> <td style="text-align: center;">9</td> <td style="text-align: center;">16</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.351	SUMMER NATURAL AIR CHANGE RATE	0.128	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	22	31	9	16
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.351 x 406.09 x 42 °C x 1.2 = 7223 W = 24645 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.128 x 406.09 x 9 °C x 1.2 = 548 W = 1869 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h			$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 16 °F x 1.08 x 0.25 = 661 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{level})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	24,645	9,975	1.235																																																								
2	0.3		16,801	0.440																																																								
3	0.2		13,769	0.358																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4005 THE EDGEBROOK	OPT 5 BED	BUILDER: GOLD PARK HOMES
SFQT: 3516	LO# 77462	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)	72

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 (ft ³):	51626.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.1 ft
LENGTH: 67.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	198.0 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	-

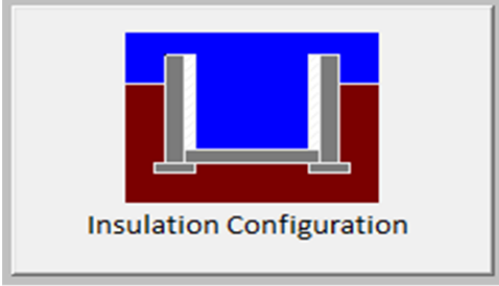
INDIVIDUAL BCIN: 19669

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):	20.4	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.86	
Window Area (m ²):	3.3	
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):		1955

TYPE: 4005 THE EDGEBROOK
LO# 77462

OPT 5 BED

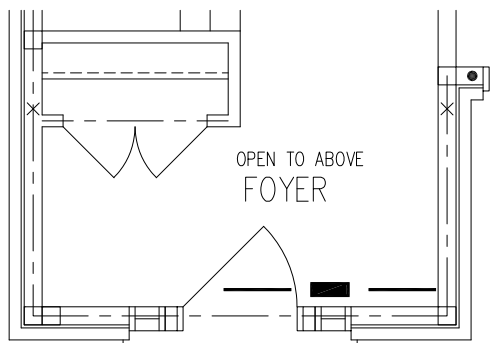
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

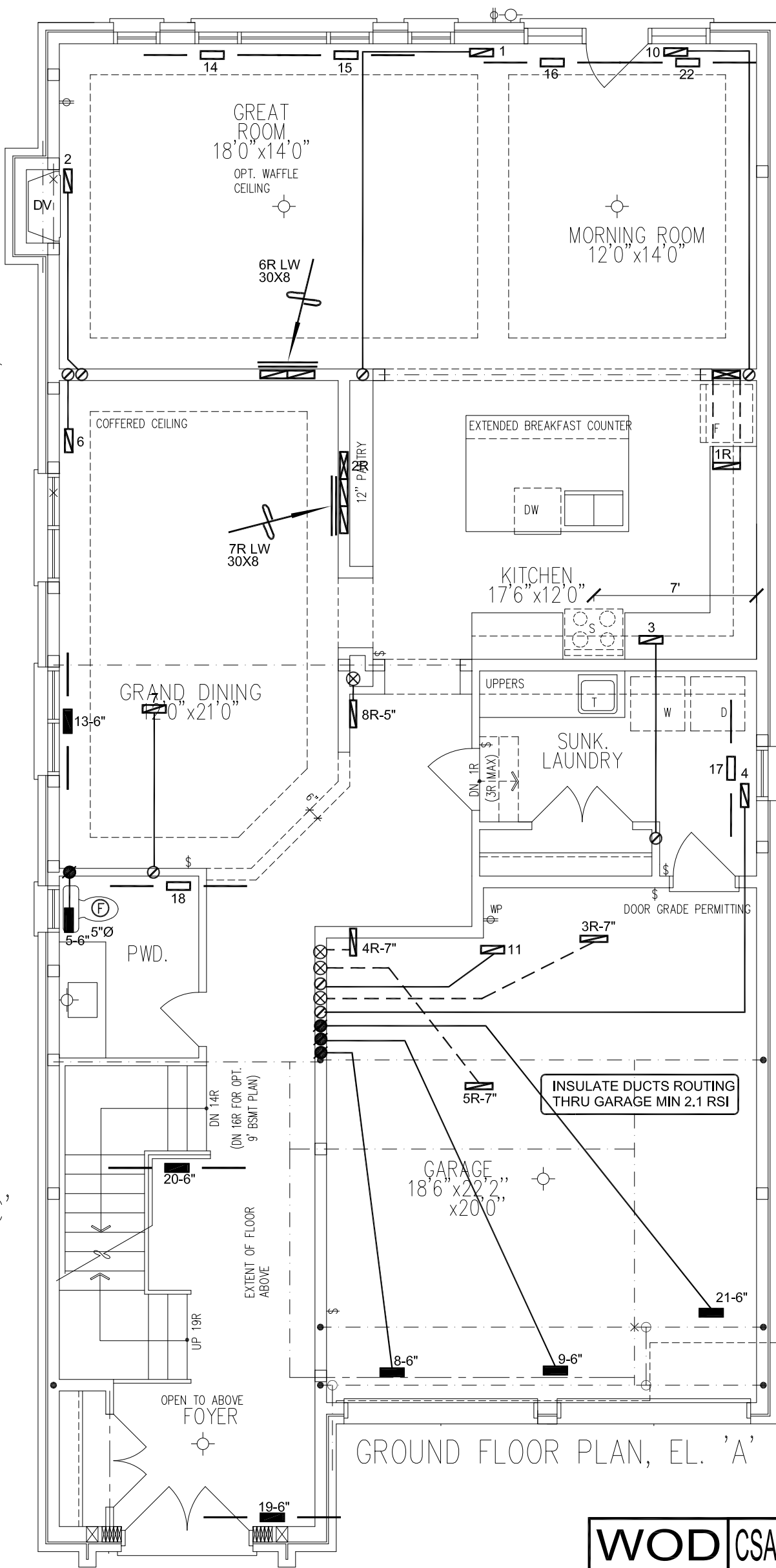
Weather Station Description				
Province:	Ontario			
Region:	Vaughan (Woodbridge)			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.35			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1461.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1948.8 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):	0.351			
Cooling Air Leakage Rate (ACH/H):	0.128			

TYPE: 4005 THE EDGEBROOK
LO# 77462

OPT 5 BED



GROUND FLOOR PLAN, EL. 'B'



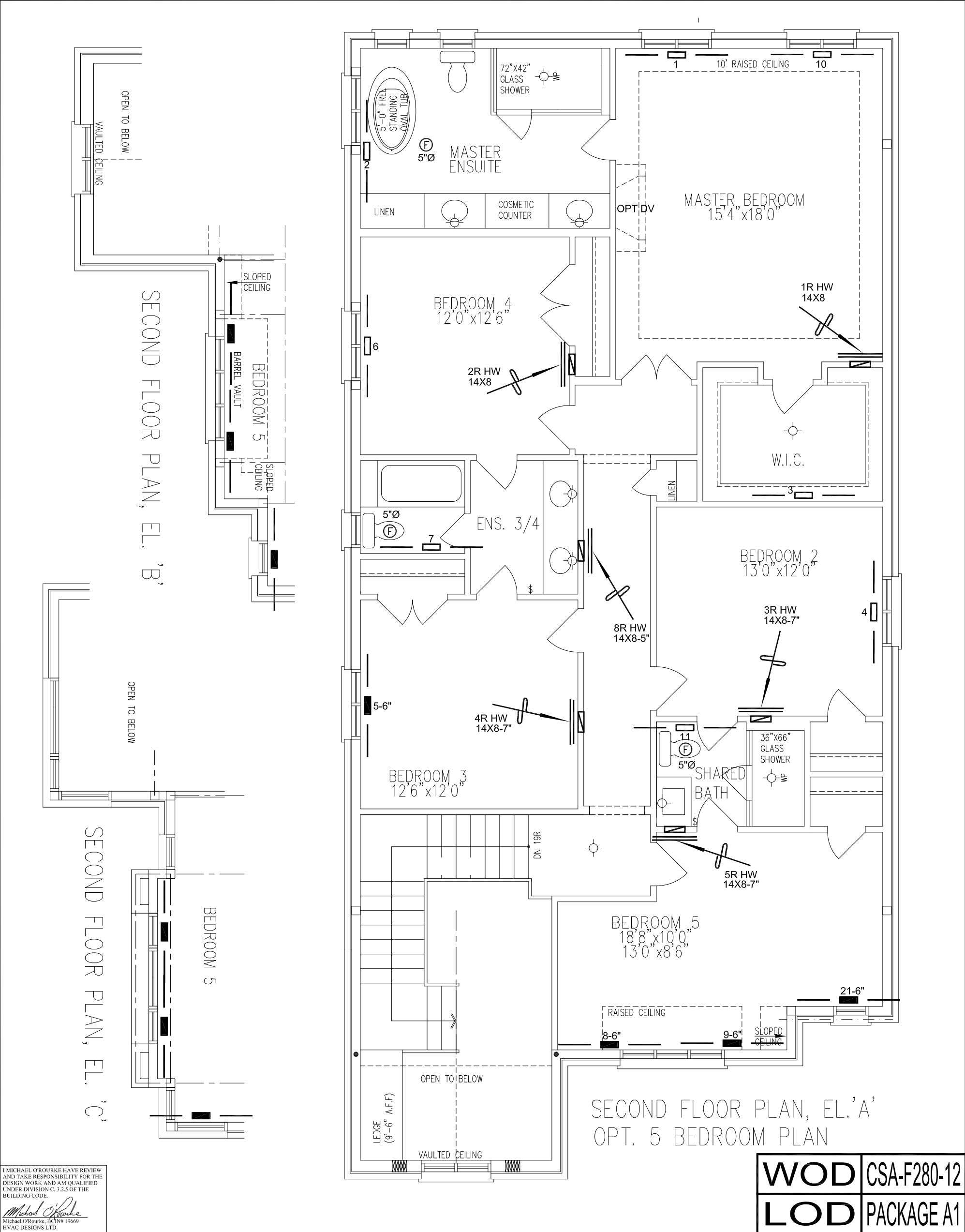
GROUND FLOOR PLAN, EL. 'A

WOD	CSA-F280-12
LOD	PACKAGE A1

HVAC LEGEND								4.	REVISED AS PER ARCHITECTURALS	JUNE/2020
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	3.	RETURN #8 ADDED TO HALL	NOV/2018
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	DECK CONDITIONS ADDED	SEPT/2018
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	REVISED AS PER CAD	JULY/2018
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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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@hvacdsgns.ca Web: www.hvacdsgns.ca Specializing in Residential Mechanical Design Services	Sheet Title	
GOLD PARK HOMES		FIRST FLOOR HEATING LAYOUT	
Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO		Date	JAN/2018
THE EDGEBROOK 4005 OPT 5 BED 3516 sqft	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	3/16" = 1'-0"
		BCIN# 19669	
		LO#	77462



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.

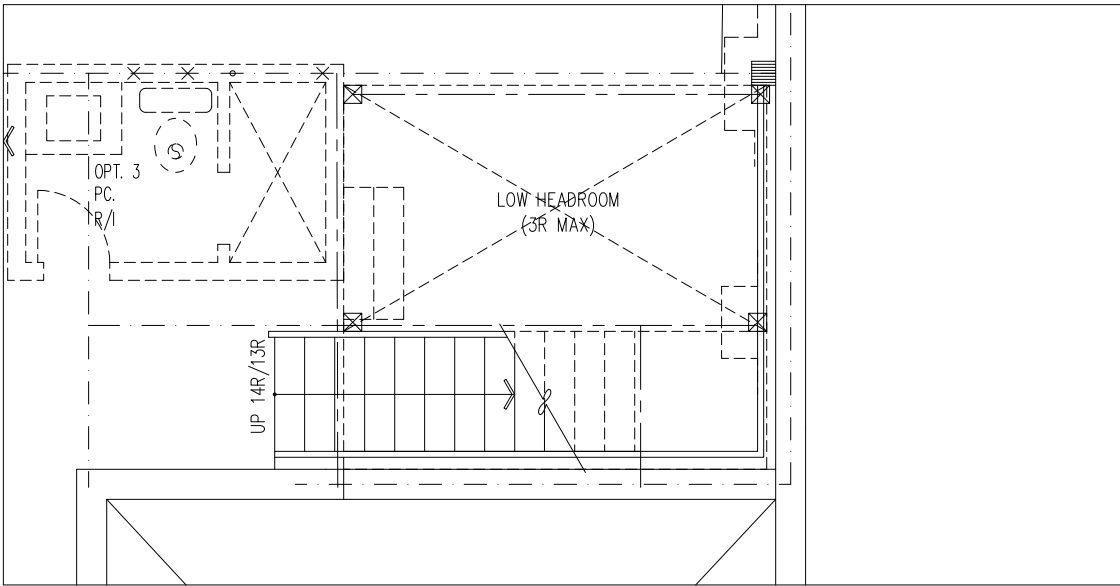
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

WOD	CSA-F280-12
LOD	PACKAGE A1

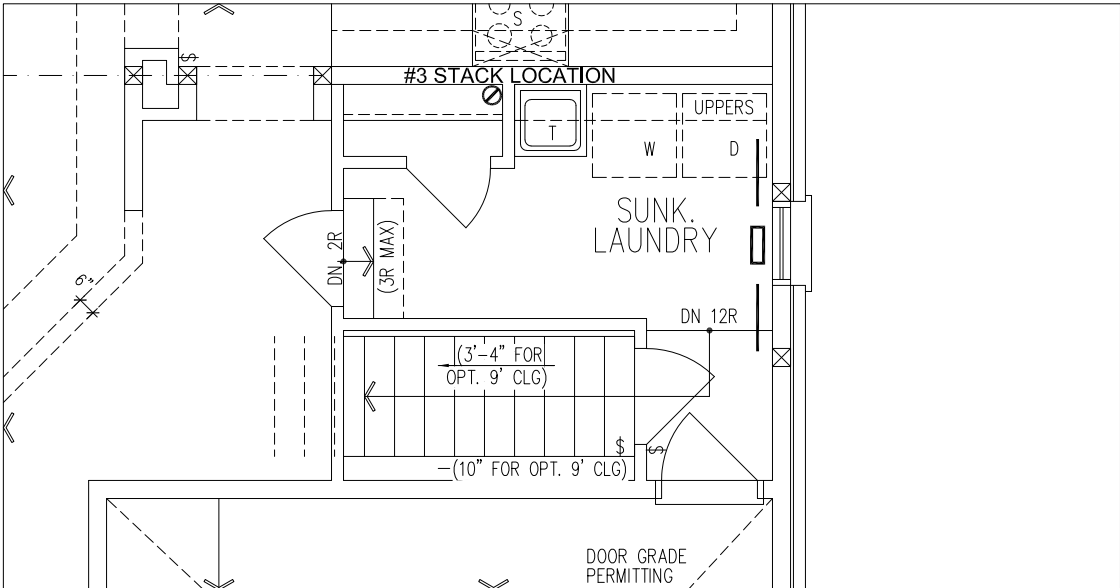
HVAC LEGEND								4.	REVISED AS PER ARCHITECTURALS	JUNE/2020
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	3.	RETURN #8 ADDED TO HALL	NOV/2018
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	DECK CONDITIONS ADDED	SEPT/2018
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	REVISED AS PER CAD	JULY/2018
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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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 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.	Sheet Title		SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018		
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"		
THE EDGEBROOK 4005 OPT 5 BED 3516 sqft			BCIN# 19669			
			LO#	77462		



PART. OPT. BASEMENT FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'



PART. OPT. GROUND FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'

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.

WOD	CSA-F280-12
LOD	PACKAGE A1

HVAC LEGEND								4.	REVISED AS PER ARCHITECTURALS	JUNE/2020
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	3.	RETURN #8 ADDED TO HALL	NOV/2018
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	2.	DECK CONDITIONS ADDED	SEPT/2018
	FLOOR SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	1.	REVISED AS PER CAD	JULY/2018
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GOLD PARK HOMES			THIRD FLOOR HEATING LAYOUT	
Project Name			Date	JAN/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK 4005 OPT 5 BED 3516 sqft			BCIN# 19669	
			LO#	77462

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 VAUGHAN (WOODBIDGE)	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]			
☐ 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: 4005 THE EDGEBROOK OPT 5 BED - WOB 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.			
June 4, 2020		 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.

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

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES						OPT 5 BED - WOB TYPE: 4005 THE EDGEBROOK						GFA: 3516		DATE: Jun-20 LO# 79972		WINTER NATURAL AIR CHANGE RATE 0.409 SUMMER NATURAL AIR CHANGE RATE 0.137						HEAT LOSS ΔT °F. 76 HEAT GAIN ΔT °F. 13		CSA-F280-12 SB-12 PACKAGE A1					
ROOM USE			MBR			ENS			WIC			BED-2			BED-3			BED-4			ENS-3/4			BED-5			BATH		
EXP. WALL			37			28			8			13			13			13			8			32			6		
CLG. HT.			10			9			9			9			9			9			9			9			9		
FACTORS																													
GRS.WALL AREA			LOSS GAIN			374			255			73			118			118			73			291			55		
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN		
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	0	19	404	304	0	0	0	0	0	0	0	0	16	340	256	0	0	0	
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	1596	3116	0	0	0		
SOUTH	21.3	24.9	0	0	0	16	340	398	0	0	0	0	0	0	19	404	473	19	404	473	8	170	199	0	0	0	0	0	
WEST	21.3	41.6	34	724	1413	16	340	665	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL	4.5	0.8	340	1516	255	223	994	167	73	325	55	99	443	75	99	443	75	99	443	75	65	289	49	200	893	150	55	244	41
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	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG	1.3	0.6	375	481	220	192	246	113	88	113	52	208	267	122	208	267	122	208	267	122	128	164	75	295	379	173	84	108	49
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	55	25	0	0	0	
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	13	33	6	22	56	9	0	0	0	0	0	315	803	135	84	214	36	
BASEMENT/CRAWL HEAT LOSS																													
SLAB ON GRADE HEAT LOSS																													
SUBTOTAL HT LOSS						2721						438			1148			1171			624			4067			566		
SUB TOTAL HT GAIN					1888			1344			106			506			679			670		323			3856			126	
LEVEL FACTOR / MULTIPLIER			0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42		0.20	0.42	
AIR CHANGE HEAT LOSS					1134			801			182			478			488			464		260			1695			236	
AIR CHANGE HEAT GAIN						162		115			9			43			58			57		28			331			11	
DUCT LOSS					0			0			0			163			166			0		0			576			80	
DUCT GAIN						0		0			0			157			175			0		0			520			91	
HEAT GAIN PEOPLE	240		2		480	0		0	0		0	1		240	1		240	1		240	0	0	1		240	0		0	
HEAT GAIN APPLIANCES/LIGHTS					776			0			0			776			776			776		0			776			776	
TOTAL HT LOSS BTU/H					3855			2722			620			1788			1824			1579		884			6338			882	
TOTAL HT GAIN x 1.3 BTU/H					4298			1896			150			2238			2507			2266		456			7440			1306	

ROOM USE			GRDN				K/M/G			LAUN			W/R			FOY							WOB			BAS			
EXP. WALL			31				76			23			8			61							42			156			
CLG. HT.			12				12			12			12			12							9			9			
GRS.WALL AREA	LOSS	GAIN																											
GLAZING			372				912				276		96		732								382		952				
			LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN				LOSS		GAIN		LOSS		GAIN		
NORTH	21.3	16.0	0	0	0		0	0	0		9	192	144	0	0	0	21	447	335			0	0	0	6	128	96		
EAST	21.3	41.6	0	0	0		0	0	0		0	0	0	0	0	0	44	936	1828			0	0	0	0	0	0		
SOUTH	21.3	24.9	46	979	1145		0	0	0		0	0	0	7	149	174	0	0	0			0	0	0	0	0	0		
WEST	21.3	41.6	0	0	0		138	2937	5734		0	0	0	0	0	0	0	0	0			85	1809	3532	0	0	0		
SKYLT.	37.2	101.5	0	0	0		0	0	0		0	0	0	0	0	0	0	0	0			0	0	0	0	0	0		
DOORS	25.2	4.3	0	0	0		0	0	0		20	505	85	0	0	0	40	1010	170			15	379	64	20	505	85		
NET EXPOSED WALL	4.5	0.8	326	1455	245		774	3454	582		247	1102	186	89	397	67	627	2798	471			282	1259	212	0	0	0		
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			0	0	0	468	1684	284		
EXPOSED CLG	1.3	0.6	0	0	0		0	0	0		0	0	0	0	0	0	172	221	101			0	0	0	0	0	0		
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0		0	0	0		0	0	0	0	0	0	80	220	101			0	0	0	0	0	0		
EXPOSED FLOOR	2.6	0.4	0	0	0		0	0	0		0	0	0	0	0	0	0	0	0			0	0	0	0	0	0		
BASEMENT/CRAWL HEAT LOSS					0				0				0						0										
SLAB ON GRADE HEAT LOSS					0				0				0						0										
SUBTOTAL HT LOSS					2434				6391				1799					5632											
SUB TOTAL HT GAIN						1390									241				3007										
LEVEL FACTOR / MULTIPLIER			0.30	0.51			0.30	0.51		0.30	0.51		0.30	0.51		0.30	0.51								0.50	1.64			
AIR CHANGE HEAT LOSS					1247				3274				921					2885											
AIR CHANGE HEAT GAIN						119							36		21				258										
DUCT LOSS					0				0				0					0								0			
DUCT GAIN						0							0						0										
HEAT GAIN PEOPLE	240		0		0		0		0		0		0		0		0		0			0		0	0	0	0		
HEAT GAIN APPLIANCES/LIGHTS					776				776				776						0						0				
TOTAL HT LOSS BTU/H					3680				9665				2720					8517											
TOTAL HT GAIN x 1.3 BTU/H						2971							1594						4244										

TOTAL HEAT GAIN BTU/H: 49206

TONS: 4.10

LOSS DUE TO VENTILATION LOAD BTU/H: 3181

STRUCTURAL HEAT LOSS: 69543

TOTAL COMBINED HEAT LOSS BTU/H: 72724

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

OPT 5 BED - WOB
TYPE: 4005 THE EDGE BROOK

DATE: Jun-20

GFA: 3516 LO# 79972

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 69,543 TOTAL HEAT GAIN 48,671
AIR FLOW RATE CFM 21.93 AIR FLOW RATE CFM 31.33

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

*LENNOX
EL296UH090XE48C
FAN SPEED 90

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	5
R/A	0	0	6	2	1

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

DESIGN CFM = 1525
CFM @ 6" E.S.P.

TEMPERATURE RISE 52 °F

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	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	BED-5	BED-5	MBR	BATH	GRDN	K/M/G	K/M/G	K/M/G	LAUN	W/R	FOY	FOY	BED-5	K/M/G	BAS	BAS
RM LOSS MBH	1.93	2.72	0.62	1.79	1.82	1.58	0.88	2.11	2.11	1.93	0.88	3.68	2.42	2.42	2.42	2.72	0.83	4.26	4.26	2.11	2.42	4.73	4.73
CFM PER RUN HEAT	42	60	14	39	40	35	19	46	46	42	19	81	53	53	53	60	18	93	93	46	53	104	104
RM GAIN MBH	2.15	1.90	0.15	2.24	2.51	2.27	0.46	2.48	2.48	2.15	1.31	2.97	2.48	2.48	2.48	1.59	0.34	2.12	2.12	2.48	2.48	1.41	1.41
CFM PER RUN COOLING	67	59	5	70	79	71	14	78	78	67	41	93	78	78	78	50	11	66	66	78	78	44	44
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16
ACTUAL DUCT LGH	64	42	87	52	15	38	22	40	43	79	31	12	42	48	57	67	6	36	25	46	63	51	69
EQUIVALENT LENGTH	150	130	190	170	180	140	170	165	150	130	180	165	140	130	100	180	180	100	120	160	120	180	170
TOTAL EFFECTIVE LENGTH	214	172	277	222	195	178	192	205	193	209	211	177	182	178	157	247	186	136	145	206	183	231	239
ADJUSTED PRESSURE	0.08	0.1	0.06	0.08	0.09	0.1	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.1	0.11	0.07	0.09	0.12	0.11	0.08	0.09	0.07	0.07
ROUND DUCT SIZE	5	5	4	5	6	5	4	5	5	5	4	6	5	5	5	5	4	6	6	6	5	6	6
HEATING VELOCITY (ft/min)	308	441	161	286	204	257	218	338	338	308	218	413	389	389	389	441	207	474	474	235	389	530	530
COOLING VELOCITY (ft/min)	492	433	57	514	403	521	161	573	573	492	470	474	573	573	573	367	126	337	337	398	573	224	224
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10
TRUNK	B	C	A	D	C	C	C	D	D	A	D	C	B	B	B	A	C	D	D	D	A	B	A

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH	4.73	4.73	4.73
CFM PER RUN HEAT	104	104	104
RM GAIN MBH	1.41	1.41	1.41
CFM PER RUN COOLING	44	44	44
ADJUSTED PRESSURE	0.16	0.16	0.16
ACTUAL DUCT LGH	44	11	39
EQUIVALENT LENGTH	110	130	160
TOTAL EFFECTIVE LENGTH	154	141	199
ADJUSTED PRESSURE	0.11	0.11	0.08
ROUND DUCT SIZE	6	6	6
HEATING VELOCITY (ft/min)	530	530	530
COOLING VELOCITY (ft/min)	224	224	224
OUTLET GRILL SIZE	4X10	4X10	4X10
TRUNK	B	C	D

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	273	0.06	9.3	10	x 8 491
TRUNK B	682	0.06	13.1	20	x 8 614
TRUNK C	1039	0.06	15.3	28	x 8 668
TRUNK D	486	0.08	10.7	14	x 8 625
TRUNK E	0	0.00	0	0	x 8 0
TRUNK F	0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8 0
TRUNK P	0	0.05	0	0	x 8 0
TRUNK Q	0	0.05	0	0	x 8 0
TRUNK R	0	0.05	0	0	x 8 0
TRUNK S	0	0.05	0	0	x 8 0
TRUNK T	0	0.05	0	0	x 8 0
TRUNK U	0	0.05	0	0	x 8 0
TRUNK V	0	0.05	0	0	x 8 0
TRUNK W	0	0.05	0	0	x 8 0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	135	135	120	120	120	330	275	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	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	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	79	59	46	35	46	41	45	44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	230	225	190	145	185	185	225	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	309	284	236	180	231	226	270	209	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.05	0.06	0.08	0.06	0.07	0.05	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	7.5	6.8	6.3	6.8	9.6	9.7	4.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUNK X	1165	0.05	16.7	32	x 8 655
TRUNK Y	545	0.05	12.6	18	x 8 545
TRUNK Z	875	0.05	15	26	x 8 606
DROP	1525	0.05	18.5	24	x 14 654

TYPE: 4005 THE EDGEBROOK
SITE NAME: PINE VALLEY & TESTON

LO # 79972
OPT 5 BED - WOB

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</u> 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		<u>95.4</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>25.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model:	VANEE 65H		
Location:	BSMT		
<u>155.0</u> cfm	<u>3.0</u> 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-3/4	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
W/R	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE 65H	
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % Sensible Efficiency @ 32 deg F (0 deg C)	☒ 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:	June-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 79972	Model: 4005 THE EDGEBROOK	Builder: GOLD PARK HOMES	Date: 6/4/2020																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1573</td> <td>9</td> <td>14314.3</td> </tr> <tr> <td>First</td> <td>1573</td> <td>12</td> <td>18876</td> </tr> <tr> <td>Second</td> <td>2026</td> <td>9</td> <td>18436.6</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>51,626.9 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1461.9 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1573	9	14314.3	First	1573	12	18876	Second	2026	9	18436.6	Third	0	9	0	Fourth	0	9	0	Total:			51,626.9 ft³	Total:			1461.9 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.409</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.137</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>T_{in} °C</th> <th>T_{out} °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTD_h</td> <td>22</td> <td>-20</td> <td>42</td> <td>76</td> </tr> <tr> <td>Summer DTD_c</td> <td>24</td> <td>31</td> <td>7</td> <td>13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.409	SUMMER NATURAL AIR CHANGE RATE	0.137	Design Temperature Difference						T _{in} °C	T _{out} °C	ΔT °C	ΔT °F	Winter DTD _h	22	-20	42	76	Summer DTD _c	24	31	7	13
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.409 x 406.09 x 42 °C x 1.2 = 8409 W = 28690 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.137 x 406.09 x 7 °C x 1.2 = 475 W = 1621 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h			$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 13 °F x 1.08 x 0.25 = 536 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
Level	Level Factor (LF)	HL _{airve} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{clevel})																																																								
1	0.5	28,690	8,765	1.637																																																								
2	0.3		16,801	0.512																																																								
3	0.2		13,769	0.417																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HL_{airbv} = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HL_{airve} = 0																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4005 THE EDGEBROOK	OPT 5 BED - WOB	BUILDER: GOLD PARK HOMES
SFQT: 3516	LO# 79972	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 (ft ³):	51626.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.1 ft
LENGTH: 67.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	156.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	42.0 ft

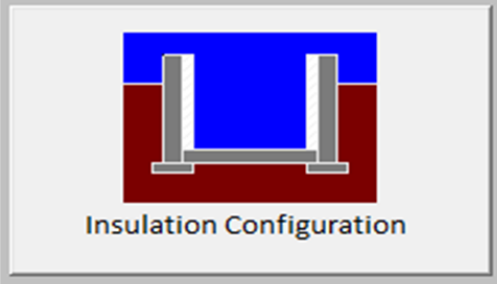
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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

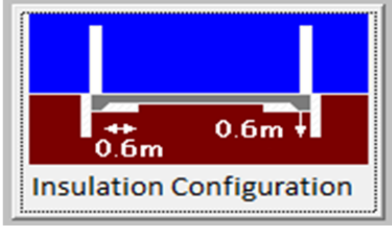
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	47.5	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.56	
Window Area (m ²):	0.6	
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):		723

TYPE: 4005 THE EDGEBROOK
LO# 79972

OPT 5 BED - WOB

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):	1.5	
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		156

TYPE: 4005 THE EDGEBROOK
LO# 79972

OPT 5 BED - WOB

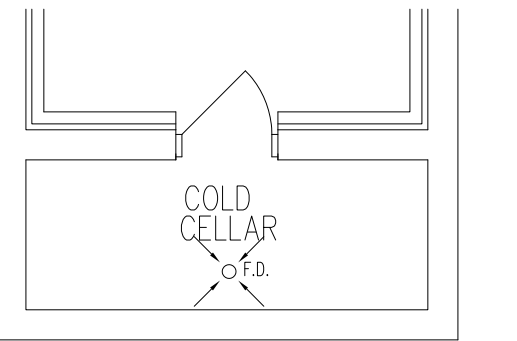
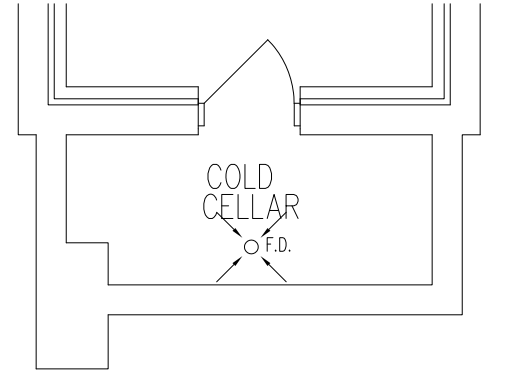
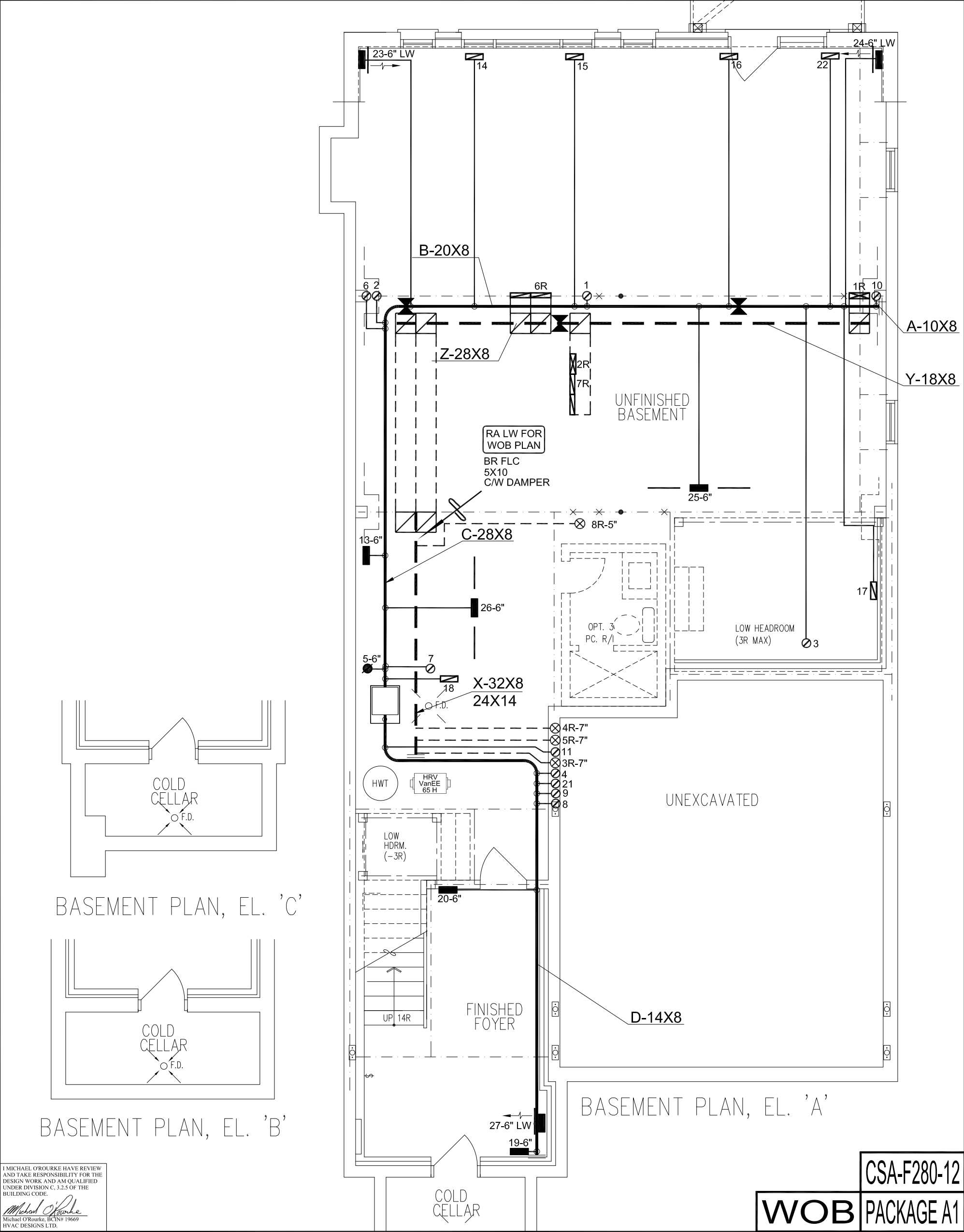
Air Infiltration Residential Load Calculator

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):	9.20			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1461.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1948.8 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):	0.409			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 4005 THE EDGEBROOK
LO# 79972

OPT 5 BED - WOB



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.

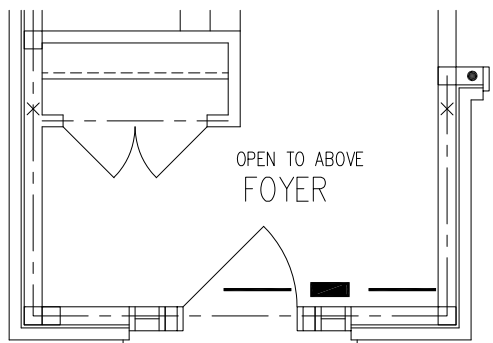
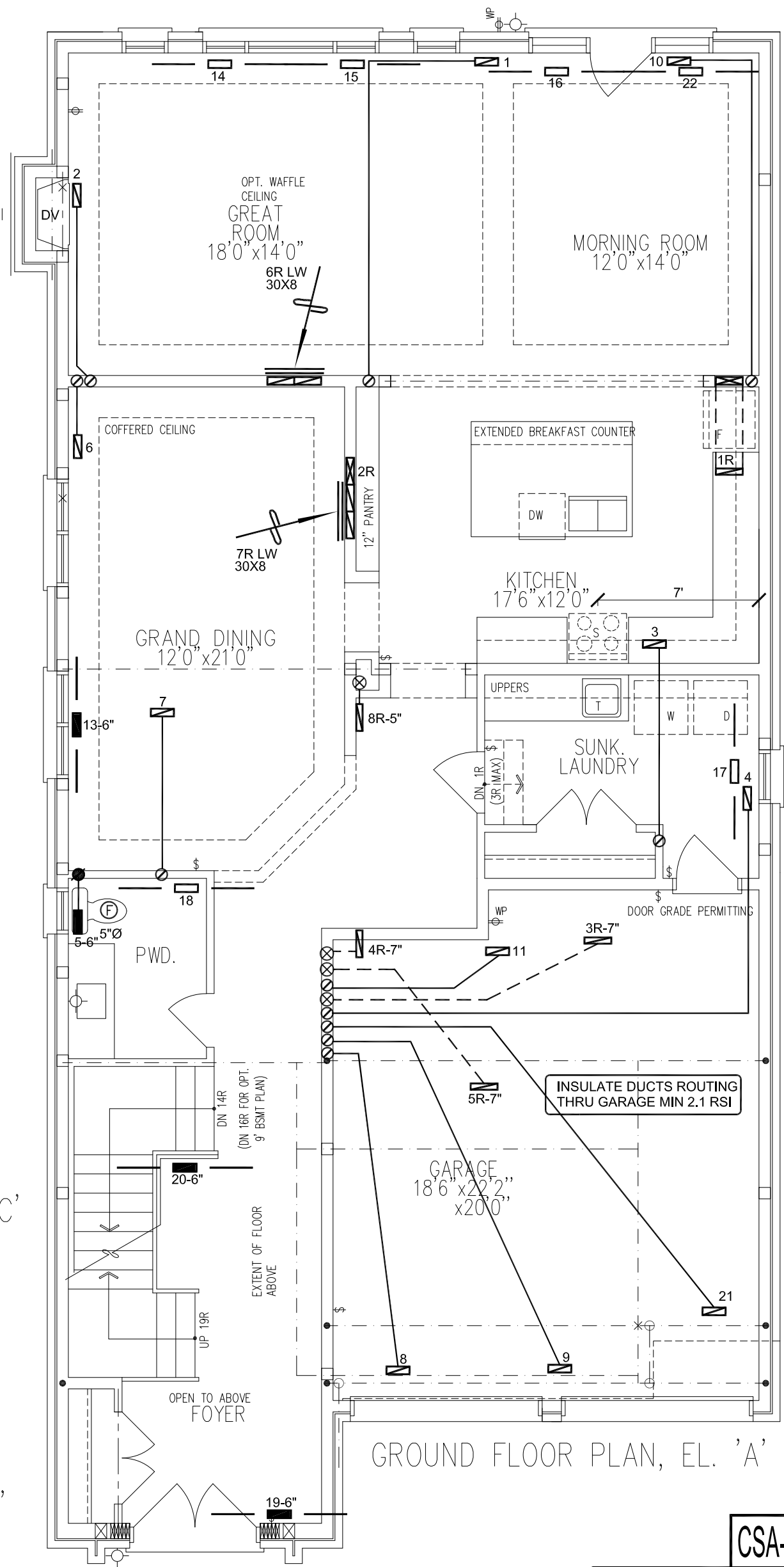
CSA-F280-12

WOB PACKAGE A1

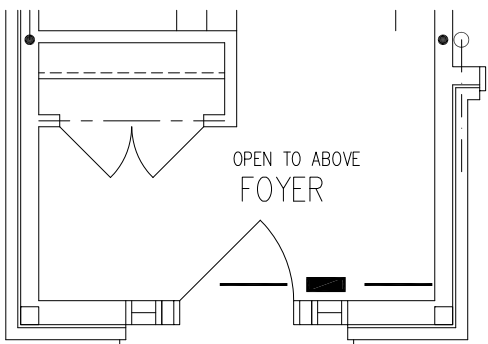
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	JUNE/2020
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	ADDED RETURN #8 TO HALL	NOV/2018
	FLOOR SUPPLY AIR GRILLE 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	 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	HEAT LOSS 72724 BTU/H		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT		
GOLD PARK HOMES		UNIT DATA		3RD FLOOR						
Project Name		MAKE LENNOX		2ND FLOOR		12	6			3
PINE VALLEY & TESTON VAUGHAN, ONTARIO		MODEL EL296UH090XE48C		1ST FLOOR		9	2	2	Date	SEPT/2018
		INPUT 88 MBTU/H		BASEMENT		5	1	0	Scale	3/16" = 1'-0"
	OUTPUT 85 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						BCIN# 19669	
	COOLING 4.0 TONS								LO# 79972	
THE EDGEBROOK - WOB 4005 OPT 5 BED 3516 sqft	Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.		FAN SPEED 1525 cfm @ 0.6" w.c.							



GROUND FLOOR PLAN, EL. 'C'



GROUND FLOOR PLAN, EL. 'B'

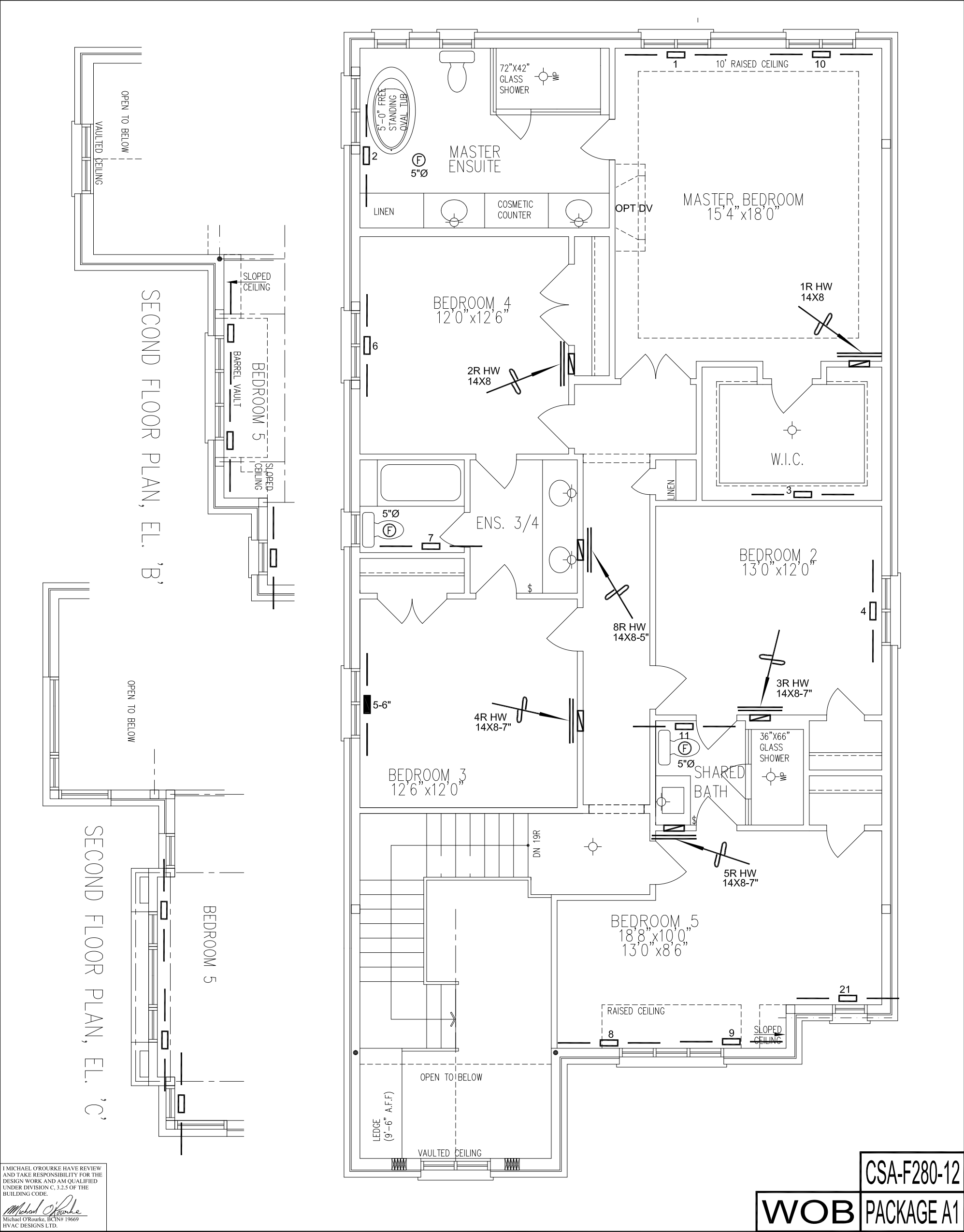
I MICHAEL O'ROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

CSA-F280-12
WOB PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	JUNE/2020
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	ADDED RETURN #8 TO HALL	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		 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.	Sheet Title	
GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB			BCIN# 19669	
4005 OPT 5 BED 3516 sqft			LO#	79972



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

CSA-F280-12

WOB

PACKAGE A1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	JUNE/2020
	FLOOR SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	ADDED RETURN #8 TO HALL	NOV/2018
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS		

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Client

GOLD PARK HOMES

Project Name

PINE VALLEY & TESTON VAUGHAN, ONTARIO

THE EDGEBROOK - WOB

4005 OPT 5 BED 3516 sqft

375 Finley Ave - Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdesigns.ca
Web: www.hvacdesigns.ca
Specializing in Residential Mechanical Design Services

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

Sheet Title

SECOND FLOOR HEATING LAYOUT

Date

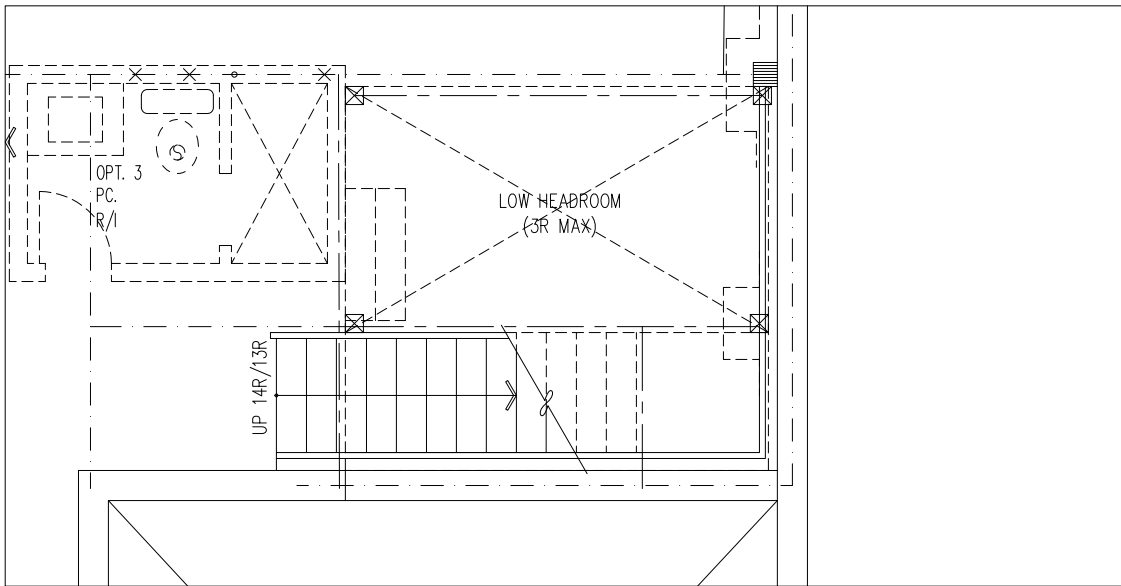
SEPT/2018

Scale

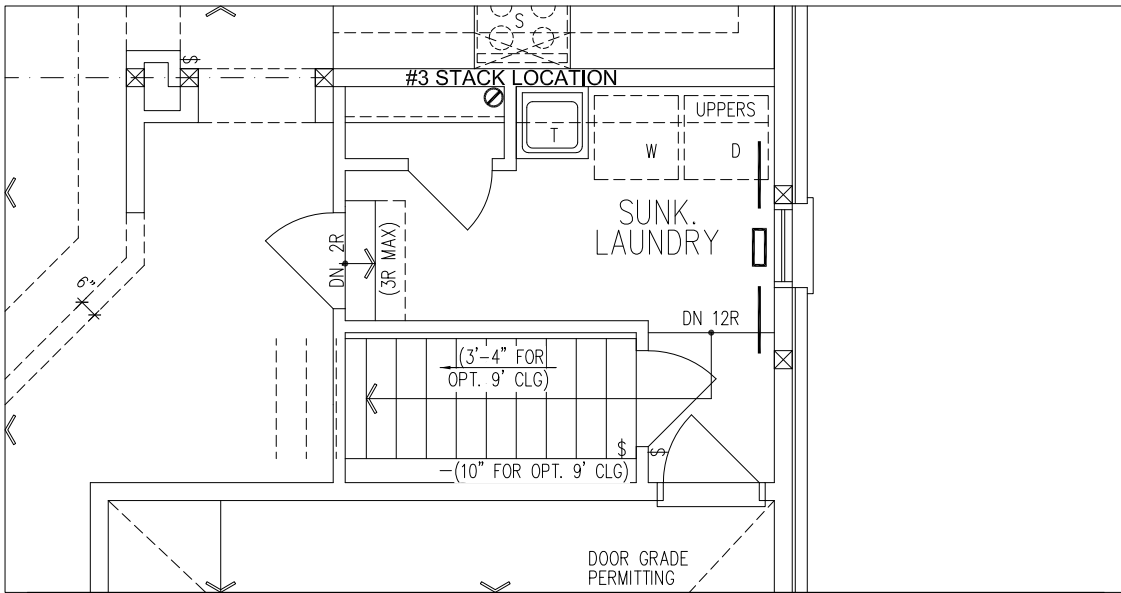
3/16" = 1'-0"

BCIN# 19669

LO# 79972



PART. OPT. BASEMENT FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'



PART. OPT. GROUND FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'

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

WOB

PACKAGE A1

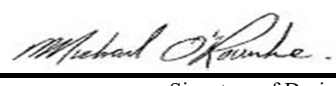
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	JUNE/2020
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GOLD PARK HOMES			SERV STAIR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB			BCIN# 19669	
4005 OPT 5 BED 3516 sqft			LO#	79972

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 VAUGHAN (WOODBIDGE)	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]			
☐ 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: 4005 THE EDGEBROOK WOB Project: PINE VALLEY & TESTON	
D. Declaration of Designer			
I, <u>MICHAEL O'ROURKE</u> declare that (choose one as appropriate): (print name)			
☐ 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.			
June 4, 2020		 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.

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

SITE NAME: PINE VALLEY & TESTON										WOB				DATE: Jun-20				WINTER NATURAL AIR CHANGE RATE 0.409				HEAT LOSS ΔT °F. 76				CSA-F280-12															
BUILDER: GOLD PARK HOMES										TYPE: 4005 THE EDGEBROOK				GFA: 3516				LO# 79971				SUMMER NATURAL AIR CHANGE RATE 0.137				HEAT GAIN ΔT °F. 13				SB-12 PACKAGE A1											
ROOM USE		MBR				ENS				WIC				BED-2				BED-3				BED-4				ENS-3/4				MEDIA				BATH							
EXP. WALL		37				28				8				13				13				13				8				32				6							
CLG. HT.		10				9				9				9				9				9				9				9				9							
FACTORS																																									
GRS.WALL AREA		LOSS		GAIN		374		255		73		118		118		118		73		291		55																			
GLAZING						LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		LOSS		GAIN		LOSS		GAIN															
NORTH		21.3	16.0	0	0	0	0	0	0	0	0	0	19	404	304	0	0	0	0	0	0	16	340	256	0	0	0														
EAST		21.3	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	1596	3116	0	0	0															
SOUTH		21.3	24.9	0	0	0	16	340	398	0	0	0	0	0	0	19	404	473	19	404	473	8	170	199	0	0	0														
WEST		21.3	41.6	34	724	1413	16	340	665	0	0	0	0	0	0	0	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	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0															
NET EXPOSED WALL		4.5	0.8	340	1516	255	223	994	167	73	325	55	99	443	75	99	443	75	99	443	75	65	289	49	200	893	150	55	244	41											
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	0	0	0	0	0	0	0	0	0														
EXPOSED CLG		1.3	0.6	375	481	220	192	246	113	88	113	52	208	267	122	208	267	122	208	267	122	128	164	75	295	379	173	84	108	49											
NO ATTIC EXPOSED CLG		2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	55	25	0	0	0											
EXPOSED FLOOR		2.6	0.4	0	0	0	0	0	0	0	0	0	13	33	6	22	56	9	0	0	0	0	0	0	315	803	135	84	214	36											
BASEMENT/CRAWL HEAT LOSS						0				0				0				0				0				0				0											
SLAB ON GRADE HEAT LOSS						0				0				0				0				0				0				0											
SUBTOTAL HT LOSS						2721				1922				438				1148				1171				1114				624				4067				566			
SUB TOTAL HT GAIN						1888				1344				106				506				679				670				323				3856				126			
LEVEL FACTOR / MULTIPLIER		0.20		0.42		0.20		0.42		0.20		0.42		0.20		0.42		0.20		0.42		0.20		0.42		0.20		0.42													
AIR CHANGE HEAT LOSS						1134				801				182				478				488				464				260				1695				236			
AIR CHANGE HEAT GAIN						161				114				9				43				58				57				28				328				11			
DUCT LOSS						0				0				0				163				166				0				0				576				80			
DUCT GAIN						0				0				0				145				163				0				0				484				79			
HEAT GAIN PEOPLE		240	2	480		0	0	0	0	0	0	1	240		1	240		1	240		0	0	0	0	0	0	0	0													
HEAT GAIN APPLIANCES/LIGHTS						657				0				0				657				657				657				0				657				657			
TOTAL HT LOSS BTU/H						3855				2722				620				1788				1824				1579				884				6338				882			
TOTAL HT GAIN x 1.3 BTU/H						4142				1895				150				2068				2337				2111				456				6923				1136			

ROOM USE			GRDN				K/M/G				LAUN		W/R		FOY										WOB		BAS	
EXP. WALL			31				76				23		8		61										42		156	
CLG. HT.			12				12				12		12		12										9		9	
FACTORS		LOSS		GAIN																								
GRS.WALL AREA	LOSS		GAIN				912				276		96		732										382		952	
GLAZING			LOSS		GAIN		LOSS		GAIN		LOSS		GAIN		LOSS		GAIN								LOSS		GAIN	
NORTH	21.3	16.0	0	0	0	0	0	0	0	0	9	192	144	0	0	0	21	447	335	0	0	0	6	128	96			
EAST	21.3	41.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	936	1828	0	0	0	0	0	0			
SOUTH	21.3	24.9	46	979	1145	0	0	0	0	0	0	0	0	7	149	174	0	0	0	0	0	0	0	0	0			
WEST	21.3	41.6	0	0	0	0	138	2937	5734	0	0	0	0	0	0	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	0	0	0	0	0	0	0	90	1915	3740	0	0	0			
DOORS	25.2	4.3	0	0	0	0	0	0	0	0	20	505	85	0	0	0	40	1010	170	0	0	0	0	0	0			
NET EXPOSED WALL	4.5	0.8	326	1455	245	774	3454	582	247	1102	186	89	397	67	627	2798	471	282	1259	212	0	0	0	0	0			
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	0	0	0	0	0	468	1684	284			
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	172	221	101	0	0	0	0	0	0	0	0			
NO ATTIC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	80	220	101	0	0	0	0	0	0	0	0			
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	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		2468			
SLAB ON GRADE HEAT LOSS			0		0		0		0		0		0		0		0		0		0		0		533			
SUBTOTAL HT LOSS			2434		6391		1799		546		5632								3960		4785							
SUB TOTAL HT GAIN			1390		6316		414		241		3007								3994		465							
LEVEL FACTOR / MULTIPLIER	0.30	0.51			0.30		0.51		0.30		0.51		0.30		0.51				0.50		1.64							
AIR CHANGE HEAT LOSS			1247		3274		921		280		2885										14345							
AIR CHANGE HEAT GAIN			118		538		35		21		256										380							
DUCT LOSS			0		0		0		0		0										0							
DUCT GAIN			0		0		0		0		0										0							
HEAT GAIN PEOPLE	240	0	0		0		0		0		0		0		0		0		0		0							
HEAT GAIN APPLIANCES/LIGHTS			657		657		657		0		0								0		657							
TOTAL HT LOSS BTU/H			3680		9665		2720		826		8517								4493		19130							
TOTAL HT GAIN x 1.3 BTU/H			2815		9764		1439		340		4242								5193		195							

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

WOB
TYPE: 4005 THE EDGE BROOK

DATE: Jun-20

GFA: 3516 LO# 79971

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 69,523 TOTAL HEAT GAIN 46,961
AIR FLOW RATE CFM 21.94 AIR FLOW RATE CFM 32.47

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure
for s/a & r/a 0.35

^LENNOX
EL296UH090XE48C

AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	9	5
R/A	0	0	5	2	1

plenium pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

FAN SPEED 90
LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

DESIGN CFM = 1525
CFM @ 6" E.S.P.

TEMPERATURE RISE 52 °F

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	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-3/4	MEDIA	MEDIA	MBR	BATH	GRDN	K/M/G	K/M/G	K/M/G	LAUN	W/R	FOY	FOY	MEDIA	K/M/G	BAS	BAS
RM LOSS MBH	1.93	2.72	0.62	1.79	1.82	1.58	0.88	2.11	2.11	1.93	0.88	3.68	2.42	2.42	2.42	2.72	0.83	4.26	4.26	2.11	2.42	4.72	4.72
CFM PER RUN HEAT	42	60	14	39	40	35	19	46	46	42	19	81	53	53	53	60	18	93	93	46	53	104	104
RM GAIN MBH	2.07	1.90	0.15	2.07	2.34	2.11	0.46	2.31	2.31	2.07	1.14	2.82	2.44	2.44	2.44	1.44	0.34	2.12	2.12	2.31	2.44	1.43	1.43
CFM PER RUN COOLING	67	62	5	67	76	69	15	75	75	67	37	91	79	79	79	47	11	69	69	75	79	46	46
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16
ACTUAL DUCT LGH	64	42	87	52	15	38	22	40	43	79	31	12	42	48	57	67	6	36	25	46	63	36	54
EQUIVALENT LENGTH	150	130	190	170	180	140	170	165	150	130	180	165	140	130	100	180	180	100	120	160	120	190	160
TOTAL EFFECTIVE LENGTH	214	172	277	222	195	178	192	205	193	209	211	177	182	178	157	247	186	136	145	206	183	226	214
ADJUSTED PRESSURE	0.08	0.1	0.06	0.08	0.09	0.1	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.1	0.11	0.07	0.09	0.12	0.11	0.08	0.09	0.07	0.08
ROUND DUCT SIZE	5	5	4	5	5	5	4	5	5	5	4	6	5	5	5	5	4	5	5	5	5	6	6
HEATING VELOCITY (ft/min)	308	441	161	286	294	257	218	338	338	308	218	413	389	389	389	441	207	683	683	338	389	530	530
COOLING VELOCITY (ft/min)	492	455	57	492	558	507	172	551	551	492	424	464	580	580	580	345	126	507	507	551	580	235	235
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10
TRUNK	B	C	A	D	C	C	C	D	D	A	D	C	B	B	B	A	C	D	D	D	A	B	A

RUN #	25	26	27
ROOM NAME	BAS	BAS	BAS
RM LOSS MBH	4.72	4.72	4.72
CFM PER RUN HEAT	104	104	104
RM GAIN MBH	1.43	1.43	1.43
CFM PER RUN COOLING	46	46	46
ADJUSTED PRESSURE	0.16	0.16	0.16
ACTUAL DUCT LGH	44	11	39
EQUIVALENT LENGTH	110	130	160
TOTAL EFFECTIVE LENGTH	154	141	199
ADJUSTED PRESSURE	0.11	0.11	0.08
ROUND DUCT SIZE	6	6	6
HEATING VELOCITY (ft/min)	530	530	530
COOLING VELOCITY (ft/min)	235	235	235
OUTLET GRILL SIZE	4X10	4X10	4X10
TRUNK	B	C	D

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	273	0.06	9.3	10	x 8 491
TRUNK B	682	0.06	13.1	20	x 8 614
TRUNK C	1039	0.06	15.3	28	x 8 668
TRUNK D	486	0.08	10.7	14	x 8 625
TRUNK E	0	0.00	0	0	x 8 0
TRUNK F	0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8 0
TRUNK P	0	0.05	0	0	x 8 0
TRUNK Q	0	0.05	0	0	x 8 0
TRUNK R	0	0.05	0	0	x 8 0
TRUNK S	0	0.05	0	0	x 8 0
TRUNK T	0	0.05	0	0	x 8 0
TRUNK U	0	0.05	0	0	x 8 0
TRUNK V	0	0.05	0	0	x 8 0
TRUNK W	0	0.05	0	0	x 8 0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	135	135	130	130	130	345	275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	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	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH	79	59	46	35	36	41	45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	230	225	190	145	185	185	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	309	284	236	180	221	226	270	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.05	0.06	0.08	0.07	0.07	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	7.5	7.5	7	6.5	6.8	9.7	9.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
TRUNK X	1265	0.05	17.2	28	x	10	651																	
TRUNK Y	545	0.05	12.6	18	x	8	545																	
TRUNK Z	890	0.05	15.1	26	x	8	616																	
DROP	1525	0.05	18.5	24	x	14	654																	

TYPE: 4005 THE EDGEBROOK
SITE NAME: PINE VALLEY & TESTON

LO # 79971
WOB

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	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A. TOTAL		<u>169.6</u> 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		<u>79.5</u> cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>14.6</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY			
Model: VANEE 65H	Location: BSMT		
<u>155.0</u> cfm	<u>3.0</u> 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-3/4	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
W/R	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE 65H		
<u>155</u> cfm high	<u>64</u> cfm low	
<u>75</u> % Sensible Efficiency @ 32 deg F (0 deg C)	☒ 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:	June-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 79971	Model: 4005 THE EDGEBROOK	Builder: GOLD PARK HOMES	Date: 6/4/2020																																																									
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House Volume <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr> <td>Bsmt</td> <td>1573</td> <td>9</td> <td>14314.3</td> </tr> <tr> <td>First</td> <td>1573</td> <td>12</td> <td>18876</td> </tr> <tr> <td>Second</td> <td>2026</td> <td>9</td> <td>18436.6</td> </tr> <tr> <td>Third</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td>Fourth</td> <td>0</td> <td>9</td> <td>0</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>51,626.9 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1461.9 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1573	9	14314.3	First	1573	12	18876	Second	2026	9	18436.6	Third	0	9	0	Fourth	0	9	0	Total:			51,626.9 ft³	Total:			1461.9 m³	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%; text-align: center;">0.409</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.137</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td style="text-align: center;">22</td> <td style="text-align: center;">-20</td> <td style="text-align: center;">42</td> <td style="text-align: center;">76</td> </tr> <tr> <td>Summer DTDc</td> <td style="text-align: center;">24</td> <td style="text-align: center;">31</td> <td style="text-align: center;">7</td> <td style="text-align: center;">13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.409	SUMMER NATURAL AIR CHANGE RATE	0.137	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	24	31	7	13
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.409 x 406.09 x 42 °C x 1.2 = 8409 W = 28690 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.137 x 406.09 x 7 °C x 1.2 = 475 W = 1621 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 76 °F x 1.08 x 0.25 = 3181 Btu/h			$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 155 CFM x 13 °F x 1.08 x 0.25 = 536 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5</td> <td rowspan="5" style="text-align: center;">28,690</td> <td style="text-align: center;">8,745</td> <td style="text-align: center;">1.640</td> </tr> <tr> <td>2</td> <td>0.3</td> <td style="text-align: center;">16,801</td> <td style="text-align: center;">0.512</td> </tr> <tr> <td>3</td> <td>0.2</td> <td style="text-align: center;">13,769</td> <td style="text-align: center;">0.417</td> </tr> <tr> <td>4</td> <td>0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>5</td> <td>0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0					Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	28,690	8,745	1.640	2	0.3	16,801	0.512	3	0.2	13,769	0.417	4	0	0	0.000	5	0	0	0.000																														
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HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 4005 THE EDGEBROOK	WOB	BUILDER: GOLD PARK HOMES
SFQT: 3516	LO# 79971	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 (ft ³):	51626.9	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.1 ft
LENGTH: 67.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	156.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	42.0 ft

2012 OBC - COMPLIANCE PACKAGE

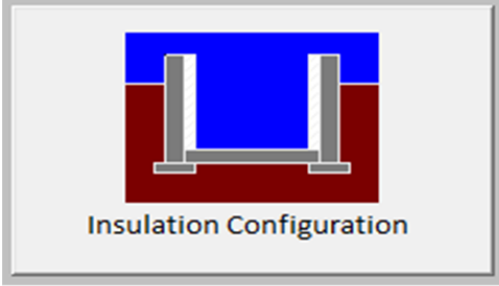
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 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

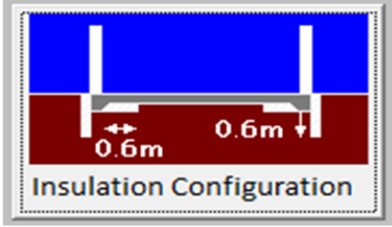
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	47.5	
Wall Height (m):	2.8	
Depth Below Grade (m):	1.56	
Window Area (m ²):	0.6	
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):		723

TYPE: 4005 THE EDGEBROOK
LO# 79971

WOB

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):	1.5	
Width (m):	9.8	
Exposed Perimeter (m):	12.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		156

TYPE: 4005 THE EDGEBROOK
LO# 79971

WOB

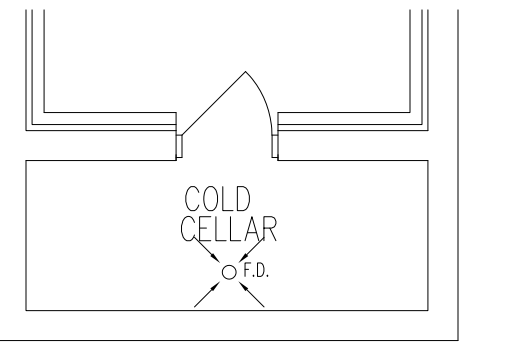
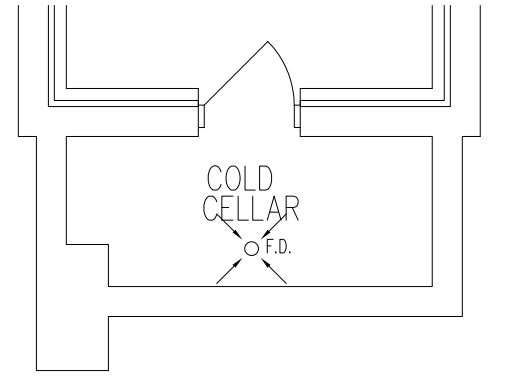
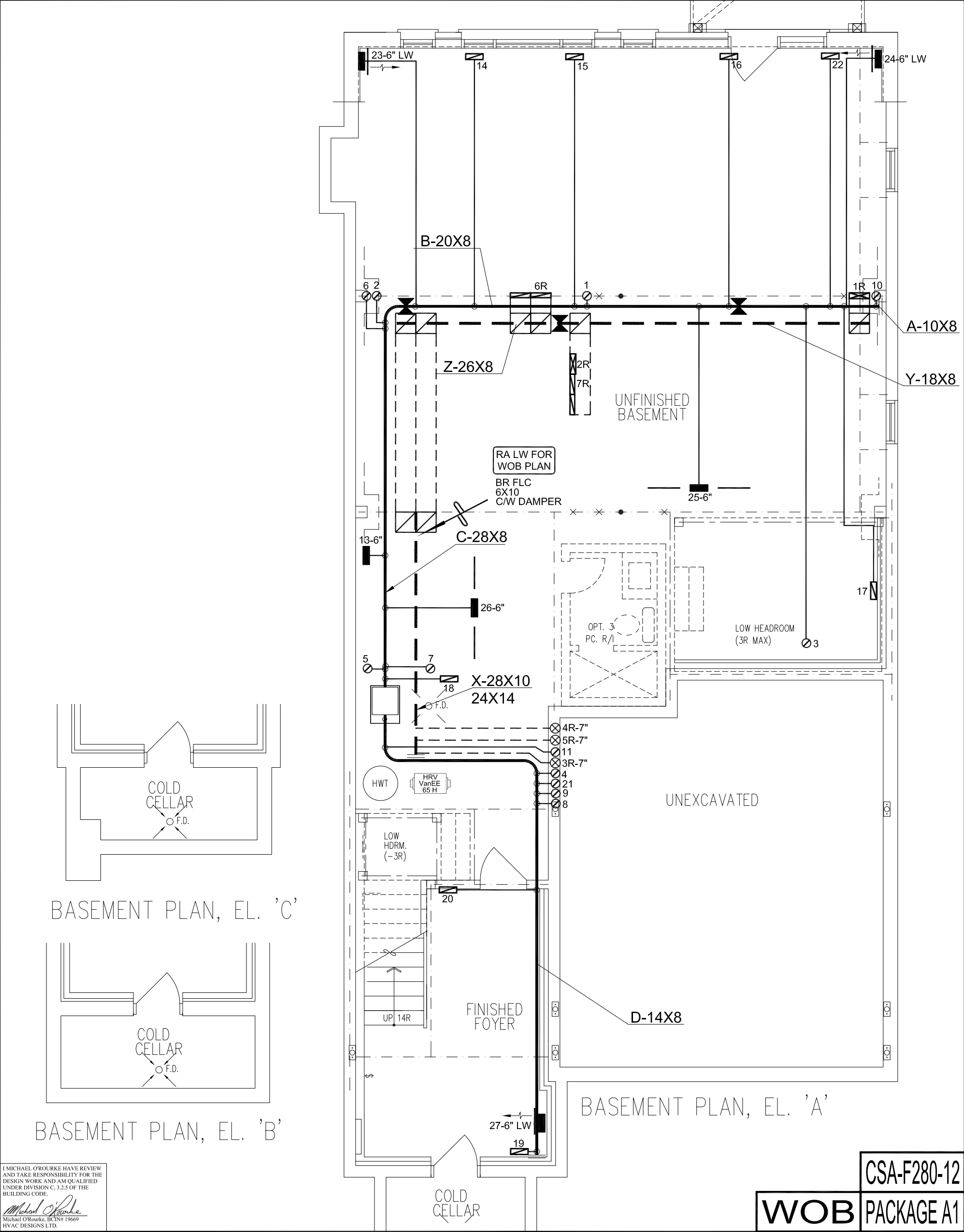
Air Infiltration Residential Load Calculator

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):	9.20			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1461.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1948.8 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):	0.409			
Cooling Air Leakage Rate (ACH/H):	0.137			

TYPE: 4005 THE EDGEBROOK
LO# 79971

WOB



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.

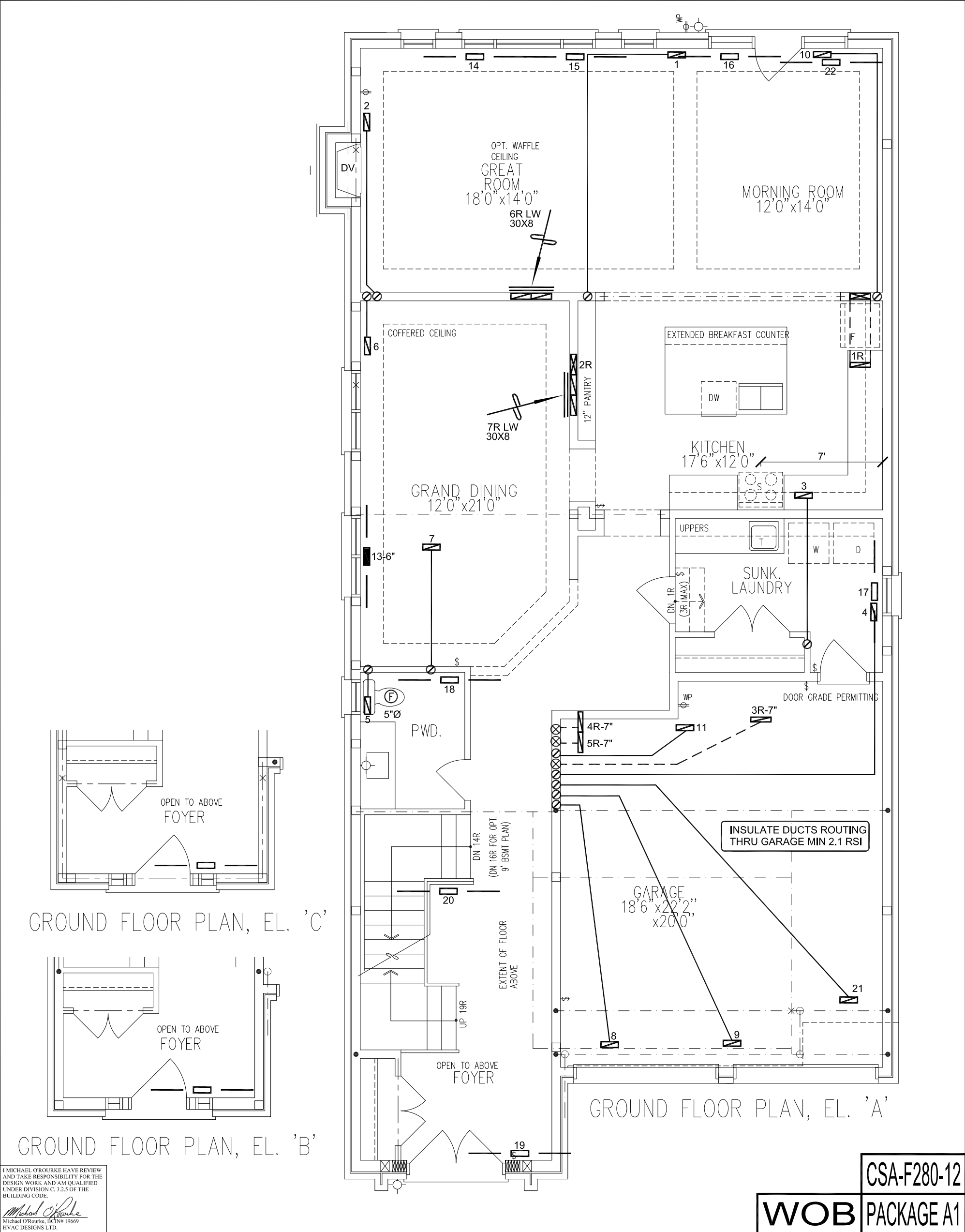
CSA-F280-12

WOB PACKAGE A1

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.	REVISED AS PER ARCHITECTURALS	JUNE/2020
	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	 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	HEAT LOSS 72704 BTU/H		# OF RUNS S/A R/A FANS				Sheet Title BASEMENT HEATING LAYOUT			
GOLD PARK HOMES		UNIT DATA		3RD FLOOR							
Project Name		PINE VALLEY & TESTON VAUGHAN, ONTARIO	MAKE LENNOX		2ND FLOOR		12	5	3	Date SEPT/2018	
			MODEL EL296UH090XE48C		1ST FLOOR		9	2	2		
			INPUT 88 MBTU/H		BASEMENT		5	1	0		Scale 3/16" = 1'-0"
			OUTPUT 85 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						
	THE EDGEBROOK - WOB 4005 3516 sqft	COOLING 4.0 TONS		BCIN# 19669							
		FAN SPEED 1525 cfm @ 0.6" w.c.		LO# 79971							



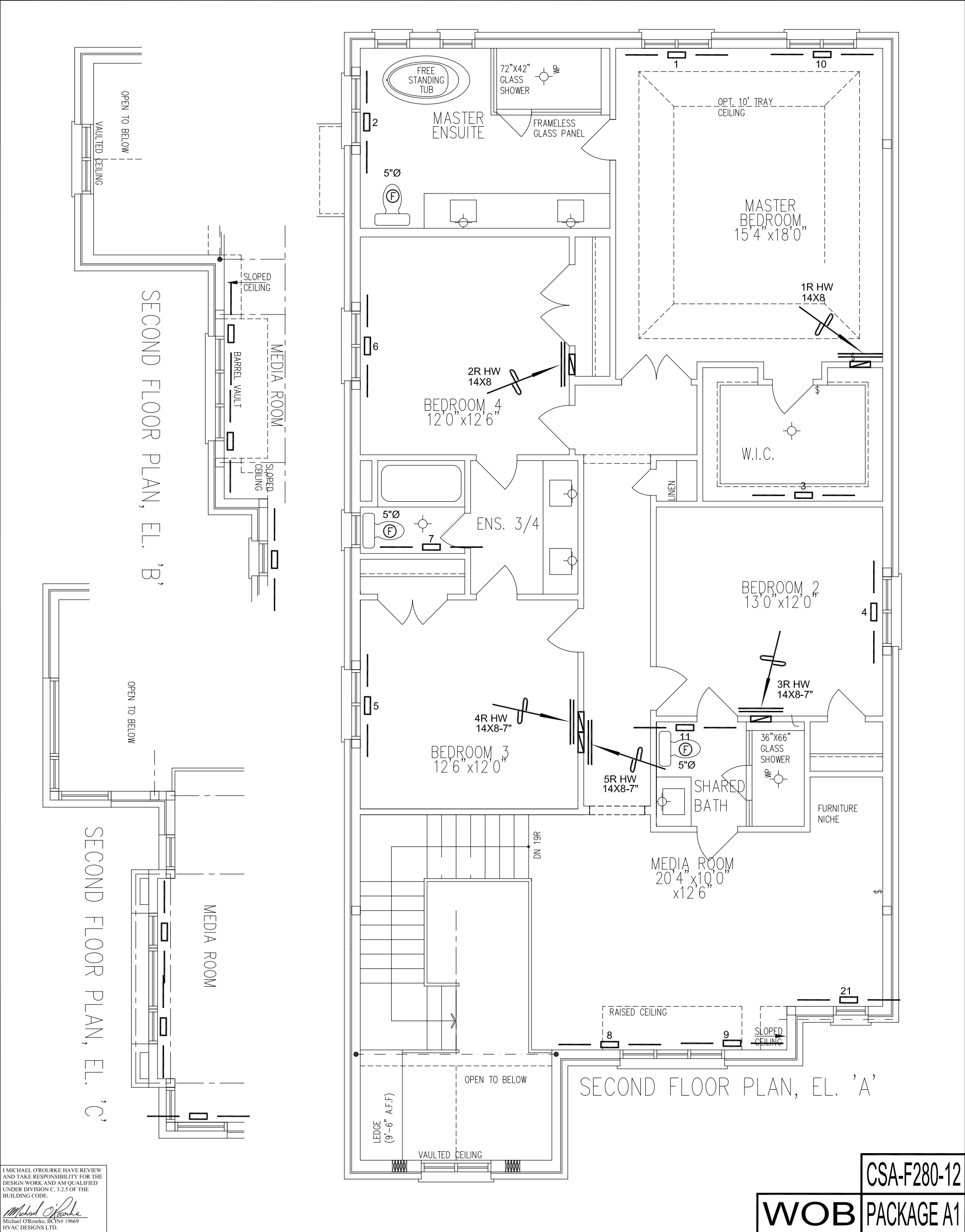
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GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB			BCIN# 19669	
4005	3516 sqft		LO#	79971



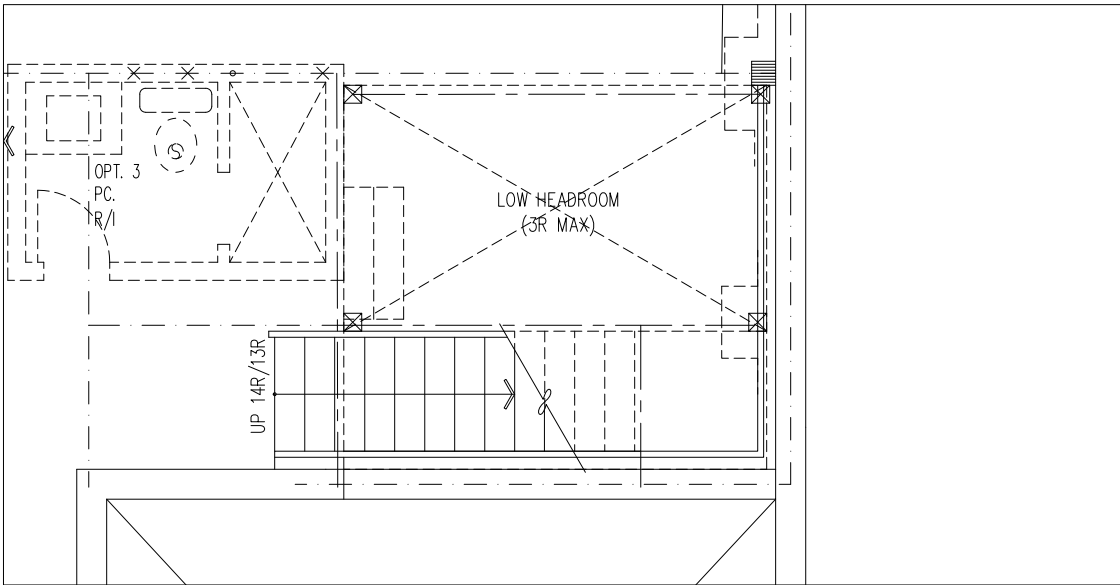
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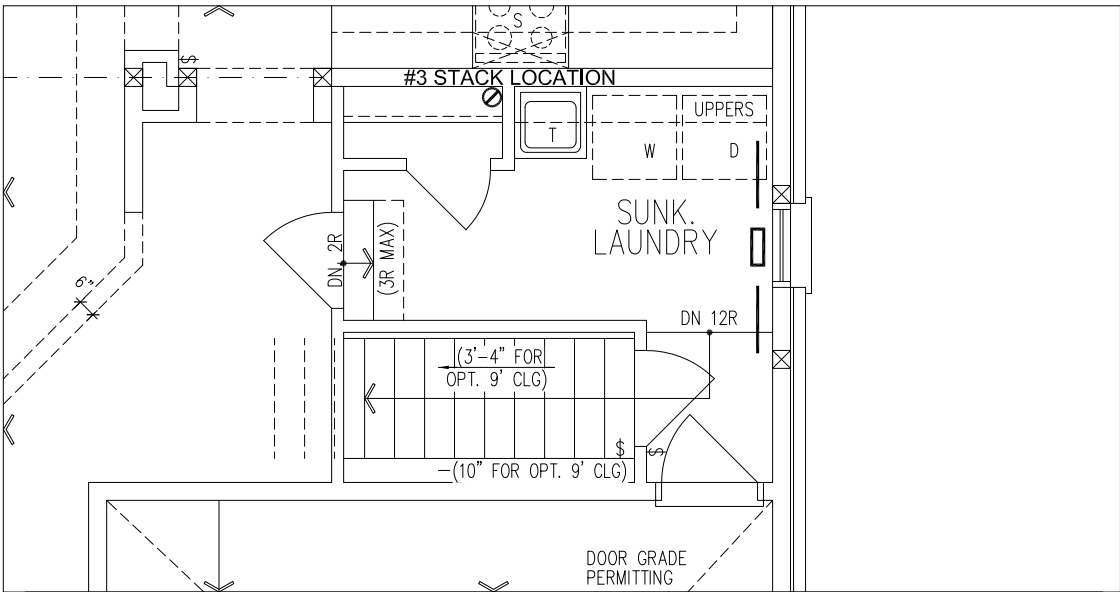
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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB 4005		BCIN# 19669		
3516 sqft		LO#	79971	



PART. OPT. BASEMENT FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'



PART. OPT. GROUND FLOOR PLAN W/
SERVICE STAIRS, EL. 'A', 'B', 'C'

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GOLD PARK HOMES			SERV STAIR HEATING LAYOUT	
Project Name			Date	SEPT/2018
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
THE EDGEBROOK - WOB			BCIN# 19669	
4005			LO#	79971
3516 sqft				