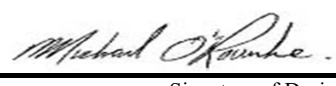


Schedule 1: Designer Information

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: 5006 CNR THE SILVERWOOD - OPT LOFT - 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 10, 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										THE SILVERWOOD - OPT LOFT - WOB										DATE: Jun-20				WINTER NATURAL AIR CHANGE RATE 0.407										HEAT LOSS ΔT °F. 76				CSA-F280-12													
BUILDER: GOLD PARK HOMES										TYPE: 5006 CNR										GFA: 3622				LO# 85446				SUMMER NATURAL AIR CHANGE RATE 0.148										HEAT GAIN ΔT °F. 16				SB-12 PACKAGE A1									
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				BED-4				BATH				WIC-2				LOFT				ENS-2											
EXP. WALL				46				10				0				13				31				34				13				9				10				16											
CLG. HT.				11				11				11				11				9				9				9				9				9				11											
FACTORS																																																			
GRS.WALL AREA				506				110				0				143				279				306				117				81				90				176											
GLAZING				LOSS GAIN				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	30	638	480	0	0	0	20	426	320	17	362	272	9	192	144	8	170	128	0	0	0	0	0	0	0	0	0	0	0														
EAST				21.3	39.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	468	877	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
SOUTH				21.3	24.3	30	638	730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	489	559	0	0	0	0															
WEST				21.3	39.9	54	1149	2152	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														
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	0	0														
DOORS				25.2	5.2	10	252	52	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	412	1839	382	80	357	74	0	0	0	123	549	114	262	1169	243	275	1227	255	109	486	101	81	361	75	67	299	62	176	785	163																
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	0	0	0	0	0													
EXPOSED CLG				1.3	0.6	269	345	172	117	150	75	63	81	40	0	0	0	204	262	130	174	223	111	152	195	97	39	50	25	567	728	362	0	0	0	0	0	0													
NO ATTIC EXPOSED CLG				2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	35	96	48	55	151	75	0	0	0	15	41	21	0	0	0	0	0	0	0	0	0													
EXPOSED FLOOR				2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	584	121	60	153	32	54	138	29	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							
SLAB ON GRADE HEAT LOSS				0				0				0				0				0				0				0				0				0				0				0				0			
SUBTOTAL HT LOSS				4224				1146				81				975				1889				2845				1005				590				1516				785											
SUB TOTAL HT GAIN				3488				629				40				434				693				1584				358				149				983				163											
LEVEL FACTOR / MULTIPLIER				0.30	0.41				0.30	0.41		0.30	0.41		0.30	0.41		0.20	0.89		0.20	0.89		0.20	0.89		0.20	0.89		0.20	0.89		0.30	0.41																	
AIR CHANGE HEAT LOSS				1732				470				33				400				1675				2523				891				524				1344				322											
AIR CHANGE HEAT GAIN				473				85				5				59				94				215				48				20				133				22											
DUCT LOSS				0				0				0				0				0				537				190				111				0				0				0							
DUCT GAIN				0				0				0				0				0				291				41				17				0				0				0							
HEAT GAIN PEOPLE				240	2	480	0	0	0	0	0	0	1	240	1	240	1	240	1	240	1	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
HEAT GAIN APPLIANCES/LIGHTS				875				0				0				875				875				875				0				0				875				0											
TOTAL HT LOSS BTU/H				5956				1615				114				1374				3564				5905				2085				1225				2860				1107											
TOTAL HT GAIN x 1.3 BTU/H				6911				928				59				2090				2472				4166				581				242				2589				241											

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

THE SILVERWOOD - OPT LOFT - WOB
TYPE: 5006 CNR DATE: Jun-20

GFA: 3622 LO# 85446

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 78,536 TOTAL HEAT GAIN 48,137
AIR FLOW RATE CFM 19.42 AIR FLOW RATE CFM 31.68

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
LOW 0
MEDLOW 0
MEDIUM 1105
MEDIUM HIGH 1255
HIGH 1525

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

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

TEMPERATURE RISE 52 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	7	18	6
R/A	0	0	3	5	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	WIC-2	LOFT	MBR	ENS-2	ENS	BED-4	K/B/F	K/B/F	DIN	LIB	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.98	0.81	0.11	1.37	3.56	2.95	2.09	1.23	1.43	2.98	1.11	0.81	2.95	2.61	2.61	2.38	2.71	0.42	3.36	1.34	4.50	4.50	4.50	4.50
CFM PER RUN HEAT	58	16	2	27	69	57	40	24	28	58	22	16	57	51	51	46	53	8	65	26	87	87	87	87
RM GAIN MBH	3.46	0.46	0.06	2.09	2.47	2.08	0.58	0.24	1.29	3.46	0.24	0.46	2.08	2.54	2.54	1.70	2.78	0.09	0.82	0.29	1.25	1.25	1.25	1.25
CFM PER RUN COOLING	109	15	2	66	78	66	18	8	41	109	8	15	66	81	81	54	88	3	26	9	40	40	40	40
ADJUSTED PRESSURE	0.15	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	52	30	33	14	33	49	23	50	37	42	6	21	56	63	46	55	76	20	55	11	37	55	43	29
EQUIVALENT LENGTH	150	130	190	180	180	160	170	150	160	150	160	140	180	140	150	220	200	180	160	130	170	130	100	110
TOTAL EFFECTIVE LENGTH	202	160	223	194	213	209	193	200	197	192	166	161	236	203	196	275	276	200	215	141	207	185	143	139
ADJUSTED PRESSURE	0.08	0.11	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.08	0.1	0.11	0.07	0.08	0.08	0.06	0.06	0.09	0.08	0.12	0.08	0.09	0.11	0.12
ROUND DUCT SIZE	6	4	4	5	6	5	4	4	5	6	4	4	5	5	5	5	6	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	296	184	23	198	352	419	459	275	206	296	252	184	419	374	374	338	270	92	477	298	444	444	444	444
COOLING VELOCITY (ft/min)	556	172	23	485	398	485	207	92	301	556	92	172	485	595	595	396	449	34	191	103	204	204	204	204
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	C	B	C	C	E	C	E	E	C	C	C	E	A	B	D	D	E	E	E	B	A	C	C

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BAS	K/B/F	K/B/F	LIB	DIN	LOFT
RM LOSS MBH	4.50	4.50	2.61	2.61	2.71	2.38	1.43
CFM PER RUN HEAT	87	87	51	51	53	46	28
RM GAIN MBH	1.25	1.25	2.54	2.54	2.78	1.70	1.29
CFM PER RUN COOLING	40	40	81	81	88	54	41
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17	0.17
ACTUAL DUCT LGH	29	65	53	17	70	60	62
EQUIVALENT LENGTH	140	170	150	150	160	160	160
TOTAL EFFECTIVE LENGTH	169	235	203	167	230	220	222
ADJUSTED PRESSURE	0.1	0.07	0.08	0.1	0.07	0.08	0.08
ROUND DUCT SIZE	6	6	5	5	6	5	5
HEATING VELOCITY (ft/min)	444	444	374	374	270	338	206
COOLING VELOCITY (ft/min)	204	204	595	595	449	396	301
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	4X10	3X10	3X10
TRUNK	A	D	A	B	D	D	D

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	276	0.08	8.7	10	x 8 497
TRUNK B	525	0.08	11	14	x 8 675
TRUNK C	947	0.08	13.7	22	x 8 775
TRUNK D	313	0.06	9.8	12	x 8 470
TRUNK E	578	0.06	12.3	18	x 8 578
TRUNK F	0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(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
TRUNK X	1525	0.05	18.5	32	x 10 686
TRUNK Y	625	0.05	13.2	20	x 8 563
TRUNK Z	0	0.05	0	0	x 8 0
DROP	1525	0.05	18.5	24	x 14 654

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	130	135	155	255	235	115	115	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	30	63	45	26	39	42	68	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	185	185	225	225	205	245	250	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	215	248	270	251	244	287	318	275	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.05	0.06	0.06	0.05	0.05	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
ROUND DUCT SIZE	6.8	7	7.5	7.5	9	9.2	7	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	30	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5006 CNR
SITE NAME: PINE VALLEY & TESTON

LO # 85446
THE SILVERWOOD - OPT LOFT - 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>5</u> @ 10.6 cfm <u>53</u> cfm	
Other Rooms	<u>6</u> @ 10.6 cfm <u>63.6</u> cfm	
Table 9.32.3.A.	TOTAL <u>190.8</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	79.5 cfm	

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>190.8</u> cfm	
Less Principal Ventil. Capacity	<u>155</u> cfm	
Required Supplemental Capacity	<u>35.8</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	☒
BATH	QTXEN050C	50	☒
ENS-2	QTXEN050C	50	☒
PWD	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#: 85446		Model: 5006 CNR		Builder: GOLD PARK HOMES																																																								
				Date: 6/10/2020																																																								
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>2351</td> <td>10</td> <td>23510</td> </tr> <tr> <td>First</td> <td>2351</td> <td>11</td> <td>25861</td> </tr> <tr> <td>Second</td> <td>1499</td> <td>9</td> <td>13491</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="2" style="text-align: right;">Total:</td> <td></td> <td>62,862.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1780.1 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	2351	10	23510	First	2351	11	25861	Second	1499	9	13491	Third	0	9	0	Fourth	0	9	0	Total:			62,862.0 ft³	Total:			1780.1 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%;">0.407</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.148</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>22</td> <td>-20</td> <td>42</td> <td>76</td> </tr> <tr> <td>Summer DTDc</td> <td>22</td> <td>31</td> <td>9</td> <td>16</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.407	SUMMER NATURAL AIR CHANGE RATE	0.148	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	22	31	9	16
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
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Summer DTDc	22	31	9	16																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.407 x 494.46 x 42 °C x 1.2 = 10193 W = 34779 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.148 x 494.46 x 9 °C x 1.2 = 772 W = 2633 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 _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)																																																								
1	0.5	34,779	8,884	1.957																																																								
2	0.3		25,448	0.410																																																								
3	0.2		7,846	0.887																																																								
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: 5006 CNR	THE SILVERWOOD - OPT LOFT - W	BUILDER: GOLD PARK HOMES
SFQT: 3622	LO# 85446	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):	62862.0	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:	7.5 ft
LENGTH: 76.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	184.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	52.0 ft

2012 OBC - COMPLIANCE PACKAGE

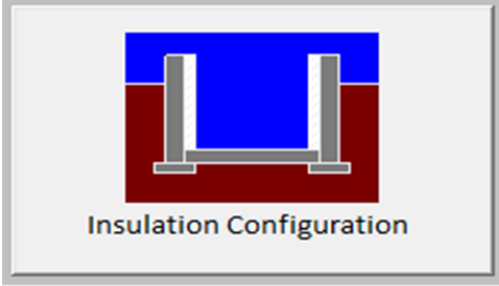
Component	Compliance Package A1	
	Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20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

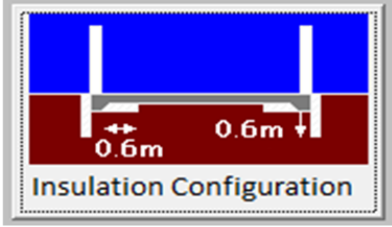
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	56.1	
Wall Height (m):	3.0	
Depth Below Grade (m):	1.97	
Window Area (m ²):	0.8	
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):		825

TYPE: 5006 CNR
LO# 85446

THE SILVERWOOD - OPT LOFT - 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):	12.8	
Exposed Perimeter (m):	15.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		217

TYPE: 5006 CNR
LO# 85446

THE SILVERWOOD - OPT LOFT - WOB

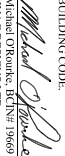
Air Infiltration Residential Load Calculator

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):	9.14			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1780.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2372.9 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):	0.407			
Cooling Air Leakage Rate (ACH/H):	0.148			

TYPE: 5006 CNR
LO# 85446

THE SILVERWOOD - OPT LOFT - WOB

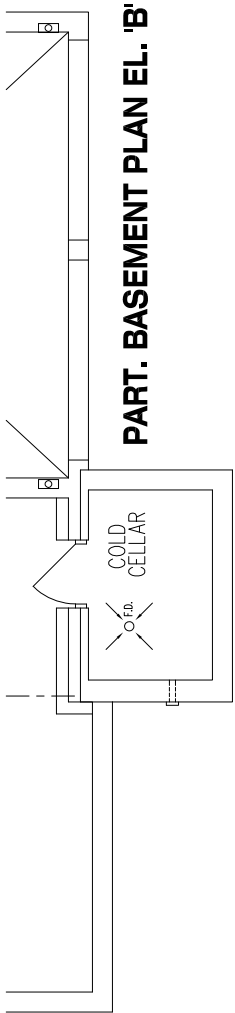
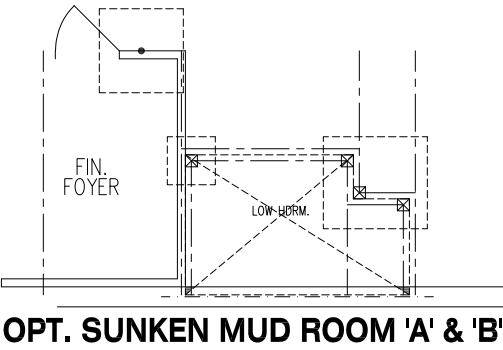
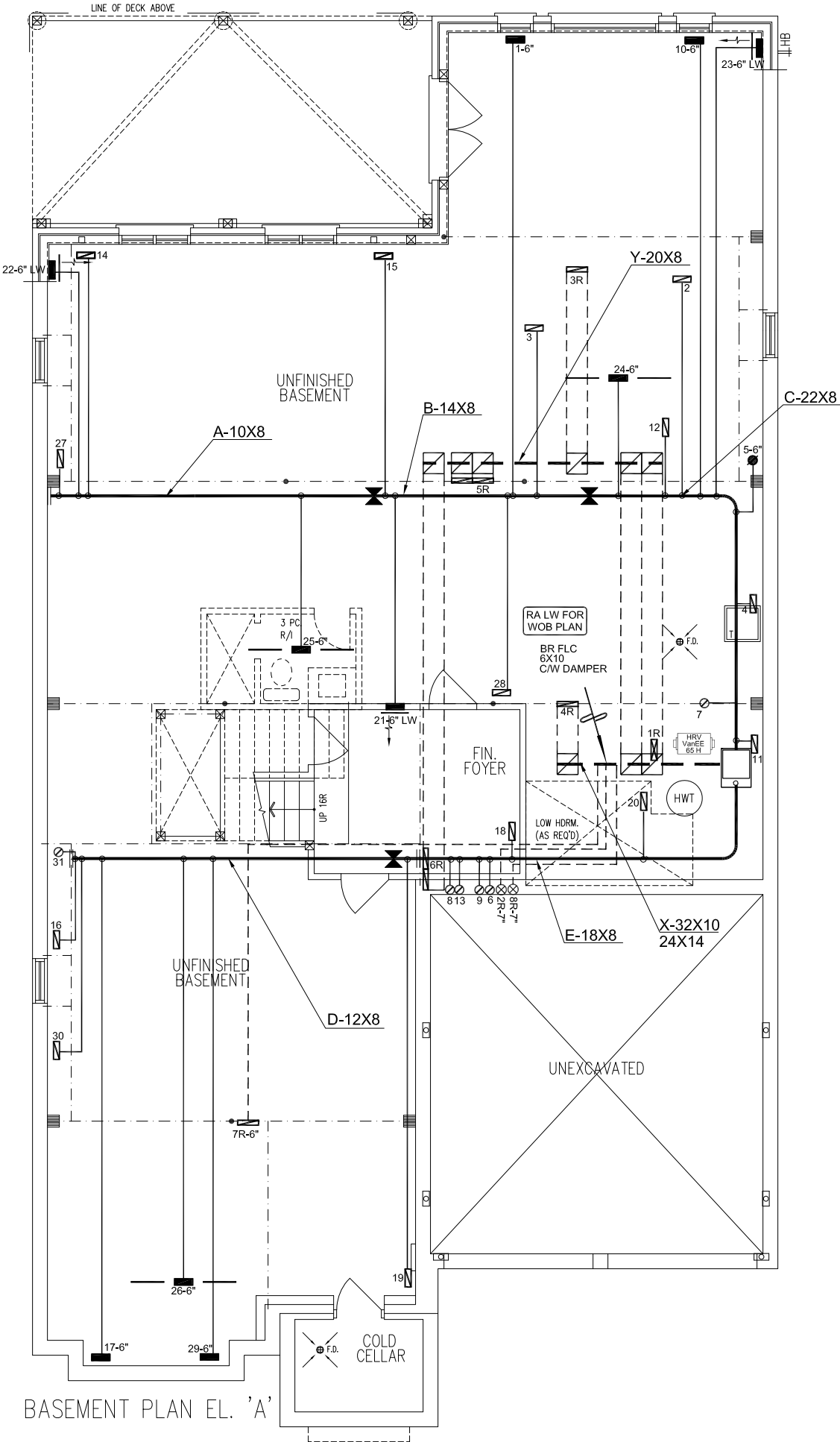
I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.

 MICHAEL OROURKE
 HVAC DESIGNS LTD.

WOB
 PACKAGE A1

CSA-F280-12

HVAC LEGEND						3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE	2.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE	1.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	No.	REVISIONS
					RETURN AIR STACK ABOVE		Description
					REDUCER		Date

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Client	GOLD PARK HOMES
Project Name	PINE VALLEY & TESTON VAUGHAN, ONTARIO
	OPT LOFT THE SILVERWOOD
	5006 CNR - WOB 3622 sqft

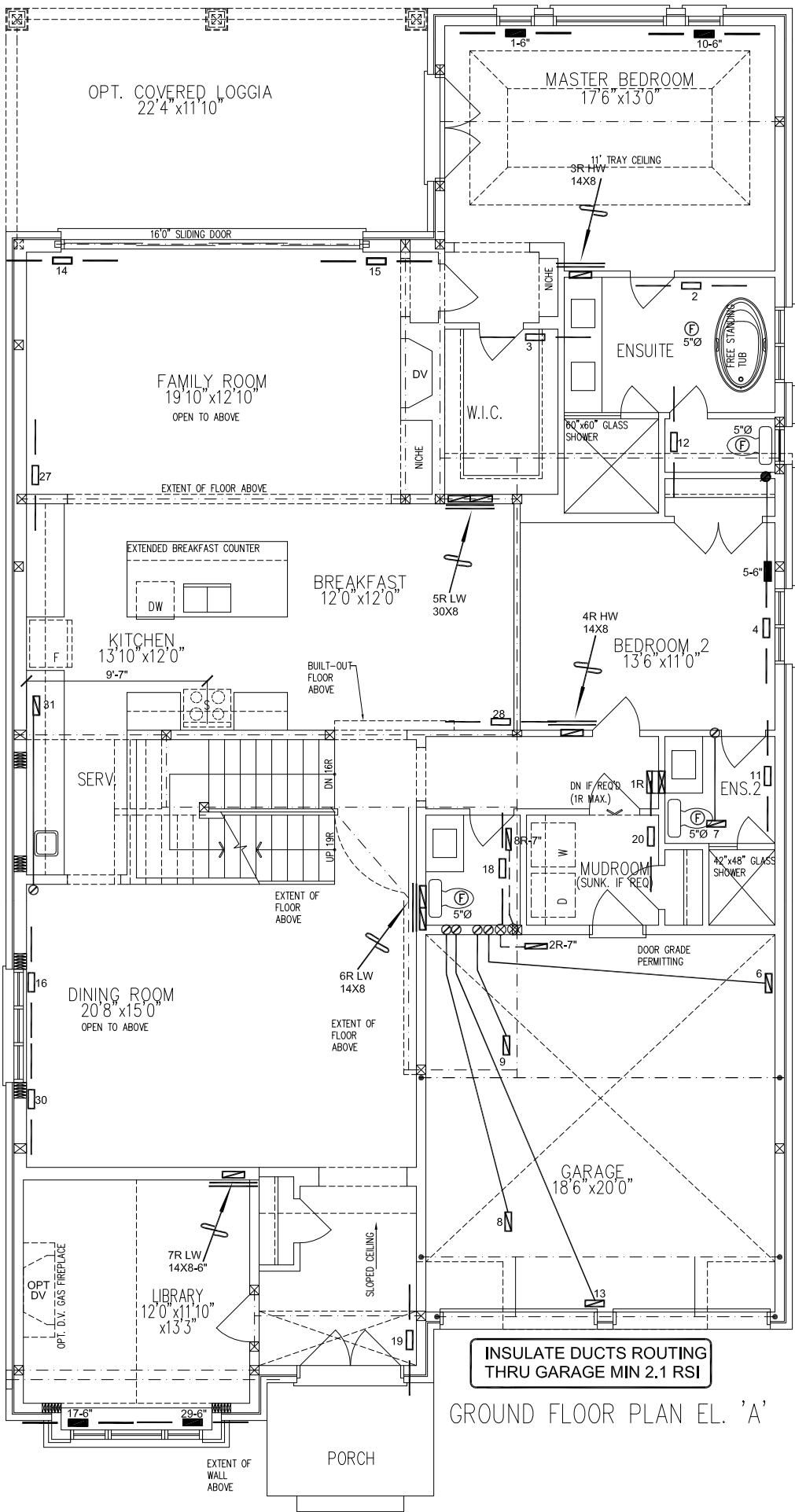
 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	HEAT LOSS 81717 BTU/H	# OF RUNS	S/A	R/A	FANS	Sheet Title
	UNIT DATA	3RD FLOOR				BASEMENT HEATING LAYOUT
	MAKE LENNOX	2ND FLOOR	7	3	1	Date FEB/2020
	MODEL EL296UH090XE48C	1ST FLOOR	18	5	5	Scale 1/8" = 1'-0"
	INPUT 88 MBTU/H	BASEMENT	6	1	0	BCIN# 19669
	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				LO# 85446
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.	COOLING 4.0 TONS					
	FAN SPEED 1525 cfm @ 0.6" w.c.					

WOB PACKAGE A1

CSA-F280-12

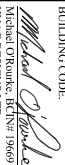
HVAC LEGEND									
								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x6" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x6" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA-FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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PART. GROUND FLOOR PLAN EL. 'B'

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		Date	FEB/2020
PINE VALLEY & TESTON VAUGHAN, ONTARIO		Scale	1/8" = 1'-0"
OPT LOFT THE SILVERWOOD	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.	BCIN# 19669	
5006 CNR - WOB 3622 sqft		LO#	85446

I MICHAEL OROURKE HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.3 OF THE BUILDING CODE.

 MICHAEL OROURKE
 HVAC DESIGNS LTD. 19669

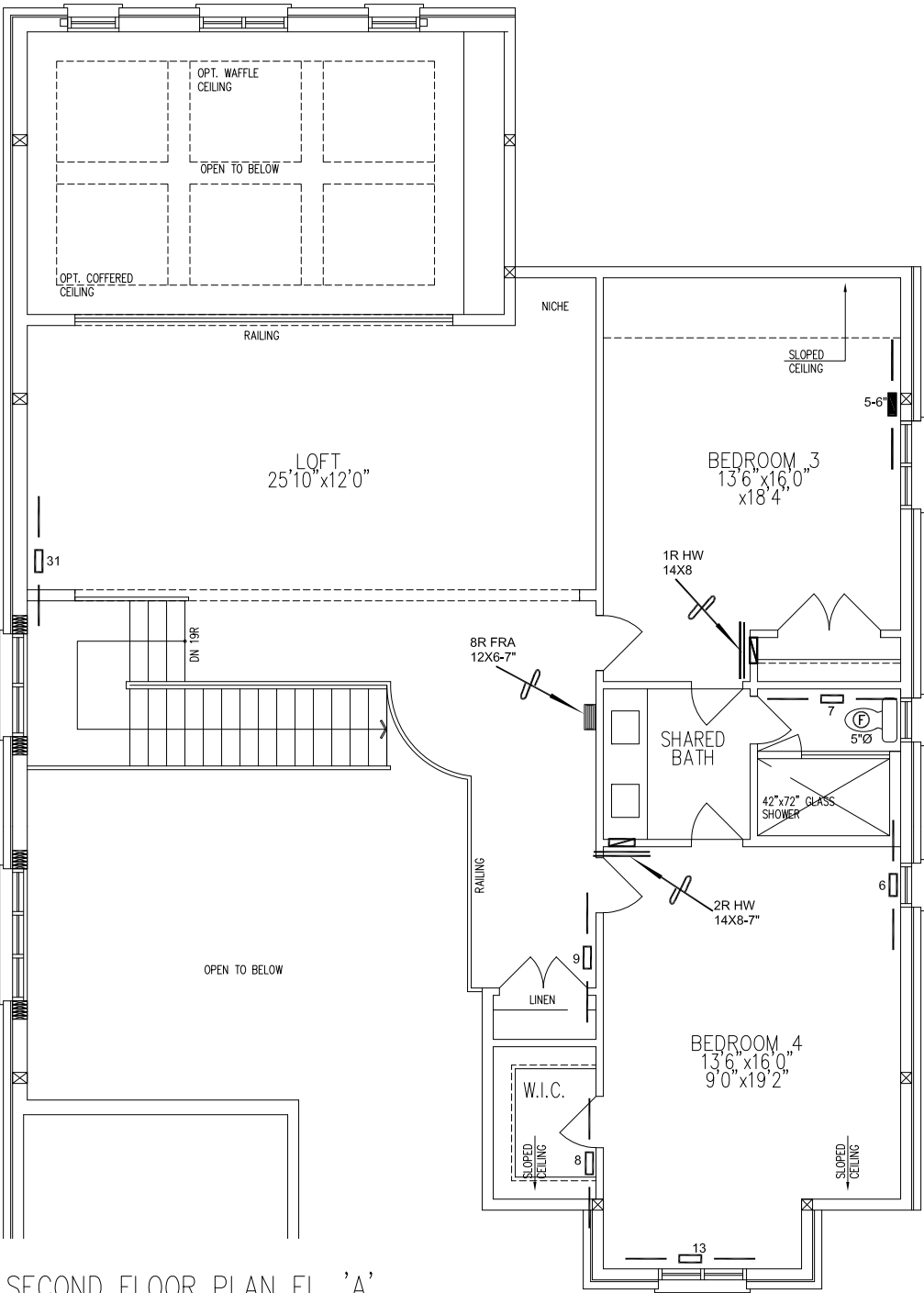
WOB

PACKAGE A1

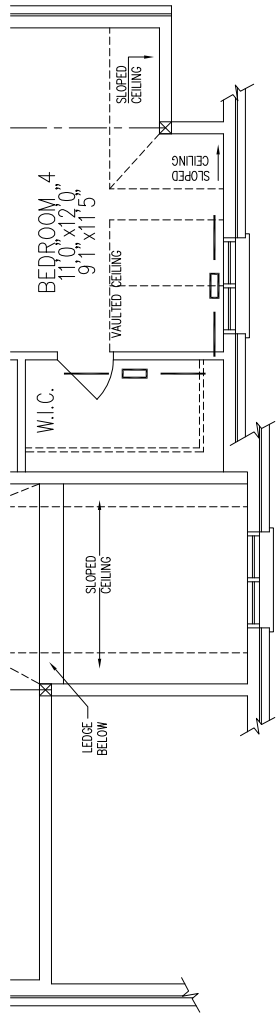
CSA-F280-12

HVAC LEGEND						3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		1.
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		No.
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER
						REVISIONS	
						Description	Date

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SECOND FLOOR PLAN EL. 'A'



PART. SECOND FLOOR PLAN EL. 'B'

Client	GOLD PARK HOMES
Project Name	PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT LOFT THE SILVERWOOD 5006 CNR - WOB 3622 sqft



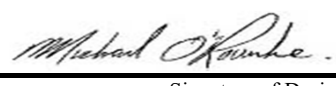
375 Finley Ave. Suite 202 - Ajax, Ontario
 L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
 Email: info@hvacdsgns.ca
 Web: www.hvacdsgns.ca
 Specializing in Residential Mechanical Design Services

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	FEB/2020
Scale	1/8" = 1'-0"
BCIN#	19669
LO#	85446

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: 5006 CNR THE SILVERWOOD - OPT LOFT 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 10, 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										THE SILVERWOOD - OPT LOFT										DATE: Jun-20				WINTER NATURAL AIR CHANGE RATE 0.340										HEAT LOSS ΔT °F. 76				CSA-F280-12									
BUILDER: GOLD PARK HOMES										TYPE: 5006 CNR										GFA: 3622				LO# 85445				SUMMER NATURAL AIR CHANGE RATE 0.124										HEAT GAIN ΔT °F. 16				SB-12 PACKAGE A1					
ROOM USE				MBR				ENS				WIC				BED-2				BED-3				BED-4				BATH				WIC-2				LOFT				ENS-2							
EXP. WALL				46				10				0				13				31				34				13				9				10				16							
CLG. HT.				11				11				11				11				9				9				9				9				9				11							
FACTORS																																															
GRS.WALL AREA				506				110				0				143				279				306				117				81				90				176							
GLAZING				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN				LOSS GAIN											
NORTH				21.3	16.8	0	0	0	30	638	504	0	0	0	20	426	336	17	362	286	9	192	151	8	170	135	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	22	468	933	0	0	0	0	0	0	0	0	0	0	0	0												
SOUTH				21.3	25.7	30	638	772	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	489	592	0	0	0												
WEST				21.3	42.4	54	1149	2289	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												
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	10	252	52	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	412	1839	382	80	357	74	0	0	0	123	549	114	262	1169	243	275	1227	255	109	486	101	81	361	75	67	299	62	176	785	163												
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	0	0	0											
EXPOSED CLG				1.3	0.6	269	345	172	117	150	75	63	81	40	0	0	0	204	262	130	174	223	111	152	195	97	39	50	25	567	728	362	0	0	0	0											
NO ATTIC EXPOSED CLG				2.7	1.4	0	0	0	0	0	0	0	0	0	0	0	0	35	96	48	55	151	75	0	0	0	15	41	21	0	0	0	0	0	0	0											
EXPOSED FLOOR				2.6	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	584	121	60	153	32	54	138	29	0	0	0	0	0	0	0	0										
BASEMENT/CRAWL HEAT LOSS				0				0				0				0				0				0				0				0				0				0							
SLAB ON GRADE HEAT LOSS				0				0				0				0				0				0				0				0				0				0				0			
SUBTOTAL HT LOSS				4224				1146				81				975				1889				2845				1005				590				1516				785							
SUB TOTAL HT GAIN				3668				653				40				450				707				1647				364				149				1016				163							
LEVEL FACTOR / MULTIPLIER				0.30	0.34	0.30 0.34				0.30	0.34	0.30 0.34				0.20	0.74	0.20 0.74				0.20	0.74	0.20 0.74				0.20	0.74	0.20 0.74				0.30	0.34												
AIR CHANGE HEAT LOSS				1450				393				28				334				1400				2108				745				438				1123				270							
AIR CHANGE HEAT GAIN				455				81				5				56				88				204				45				19				126				20							
DUCT LOSS				0				0				0				0				0				495				175				103				0				0				0			
DUCT GAIN				0				0				0				0				0				312				41				17				0				0				0			
HEAT GAIN PEOPLE				240	2	480	0	0	0	0	0	0	1	240	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				1034				0				0				1034				1034				1034				0				1034				0				0				0			
TOTAL HT LOSS BTU/H				5674				1539				109				1309				3289				5449				1924				1131				2639				1055							
TOTAL HT GAIN x 1.3 BTU/H				7327				955				59				2314				2689				4468				586				240				2828				239							

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

THE SILVERWOOD - OPT LOFT
TYPE: 5006 CNR

DATE: Jun-20

GFA: 3622 LO# 85445

HEATING CFM 1525 COOLING CFM 1525
TOTAL HEAT LOSS 75,072 TOTAL HEAT GAIN 47,881
AIR FLOW RATE CFM 20.31 AIR FLOW RATE CFM 31.85

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	7	18	6
R/A	0	0	3	5	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

plenium pressure s/a 0.18
max s/a dif press. loss 0.03
min adjusted pressure s/a 0.15
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

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	WIC-2	LOFT	MBR	ENS-2	ENS	BED-4	K/B/F	K/B/F	DIN	LIB	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	2.84	0.77	0.11	1.31	3.29	2.72	1.92	1.13	1.32	2.84	1.06	0.77	2.72	2.47	2.47	2.26	2.58	0.40	3.20	1.28	4.42	4.42	4.42	4.42
CFM PER RUN HEAT	58	16	2	27	67	55	39	23	27	58	21	16	55	50	50	46	52	8	65	26	90	90	90	90
RM GAIN MBH	3.66	0.48	0.06	2.31	2.69	2.23	0.59	0.24	1.41	3.66	0.24	0.48	2.23	2.82	2.82	1.83	2.97	0.09	0.81	0.29	0.68	0.68	0.68	0.68
CFM PER RUN COOLING	117	15	2	74	86	71	19	8	45	117	8	15	71	90	90	58	95	3	26	9	22	22	22	22
ADJUSTED PRESSURE	0.15	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.15	0.17	0.17	0.17	0.16	0.16	0.17	0.16	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	52	30	33	14	33	49	23	50	37	42	6	21	56	63	46	55	76	20	55	11	37	55	43	29
EQUIVALENT LENGTH	150	130	190	180	180	160	170	150	160	150	160	140	180	140	150	220	200	180	160	130	170	130	100	110
TOTAL EFFECTIVE LENGTH	202	160	223	194	213	209	193	200	197	192	166	161	236	203	196	275	276	200	215	141	207	185	143	139
ADJUSTED PRESSURE	0.08	0.11	0.08	0.09	0.08	0.08	0.09	0.09	0.09	0.08	0.1	0.11	0.07	0.08	0.08	0.06	0.06	0.09	0.08	0.12	0.08	0.09	0.11	0.12
ROUND DUCT SIZE	6	4	4	5	6	5	4	4	5	6	4	4	5	6	6	5	6	4	5	4	6	6	6	6
HEATING VELOCITY (ft/min)	296	184	23	198	342	404	447	264	198	296	241	184	404	255	255	338	265	92	477	298	459	459	459	459
COOLING VELOCITY (ft/min)	597	172	23	543	438	521	218	92	330	597	92	172	521	459	459	426	484	34	191	103	112	112	112	112
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	3X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	B	C	B	C	C	E	C	E	E	C	C	C	E	A	B	D	D	E	E	E	B	A	C	C

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BAS	K/B/F	K/B/F	LIB	DIN	LOFT
RM LOSS MBH	4.42	4.42	2.47	2.47	2.58	2.26	1.32
CFM PER RUN HEAT	90	90	50	50	52	46	27
RM GAIN MBH	0.68	0.68	2.82	2.82	2.97	1.83	1.41
CFM PER RUN COOLING	22	22	90	90	95	58	45
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.16	0.17	0.17
ACTUAL DUCT LGH	29	65	53	17	70	60	62
EQUIVALENT LENGTH	140	170	150	150	160	160	160
TOTAL EFFECTIVE LENGTH	169	235	203	167	230	220	222
ADJUSTED PRESSURE	0.1	0.07	0.08	0.1	0.07	0.08	0.08
ROUND DUCT SIZE	6	6	6	5	6	5	5
HEATING VELOCITY (ft/min)	459	459	255	367	265	338	198
COOLING VELOCITY (ft/min)	112	112	459	661	484	426	330
OUTLET GRILL SIZE	4X10	4X10	4X10	3X10	4X10	3X10	3X10
TRUNK	A	D	A	B	D	D	D

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(ft/min)
TRUNK A	280	0.08	8.7	10	x 8 504
TRUNK B	530	0.08	11.1	14	x 8 681
TRUNK C	954	0.08	13.8	22	x 8 781
TRUNK D	313	0.06	9.8	12	x 8 470
TRUNK E	572	0.06	12.2	18	x 8 572
TRUNK F	0	0.00	0	0	x 8 0

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT	VELOCITY
	CFM	PRESS.	DUCT	DUCT	(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
TRUNK X	1525	0.05	18.5	32	x 10 686
TRUNK Y	625	0.05	13.2	20	x 8 563
TRUNK Z	0	0.05	0	0	x 8 0
DROP	1525	0.05	18.5	24	x 14 654

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	130	135	155	255	235	115	115	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	30	63	45	26	39	42	68	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	185	185	225	225	205	245	250	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	215	248	270	251	244	287	318	275	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.05	0.06	0.06	0.05	0.05	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
ROUND DUCT SIZE	6.8	7	7.5	7.5	9	9.2	7	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	14	14	14	14	30	30	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: 5006 CNR
SITE NAME: PINE VALLEY & TESTON

LO # 85445
THE SILVERWOOD - OPT LOFT

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>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>6</u> @ 10.6 cfm	<u>63.6</u> cfm
Table 9.32.3.A.	TOTAL	<u>190.8</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>190.8</u>	cfm
Less Principal Ventil. Capacity	<u>155</u>	cfm
Required Supplemental Capacity	<u>35.8</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
BATH	QTXEN050C	50	☒	0.3
ENS-2	QTXEN050C	50	☒	0.3
PWD	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#: 85445	Model: 5006 CNR	Builder: GOLD PARK HOMES	Date: 6/10/2020																																																									
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>2351</td> <td>10</td> <td>23510</td> </tr> <tr> <td>First</td> <td>2351</td> <td>11</td> <td>25861</td> </tr> <tr> <td>Second</td> <td>1499</td> <td>9</td> <td>13491</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="2" style="text-align: right;">Total:</td> <td></td> <td>62,862.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1780.1 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	2351	10	23510	First	2351	11	25861	Second	1499	9	13491	Third	0	9	0	Fourth	0	9	0	Total:			62,862.0 ft³	Total:			1780.1 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;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td style="text-align: center;">0.124</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	0.340	SUMMER NATURAL AIR CHANGE RATE	0.124	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-20	42	76	Summer DTDc	22	31	9	16
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
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5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 494.46 x 42 °C x 1.2 = 8519 W = 29067 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.124 x 494.46 x 9 °C x 1.2 = 646 W = 2204 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	29,067	11,977	1.213																																																								
2	0.3		25,408	0.343																																																								
3	0.2		7,846	0.741																																																								
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: 5006 CNR	THE SILVERWOOD - OPT LOFT	BUILDER: GOLD PARK HOMES
SFQT: 3622	LO# 85445	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):	62862.0	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:	7.0 ft
LENGTH: 76.0 ft	WIDTH: 42.0 ft	EXPOSED PERIMETER:	236.0 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	-

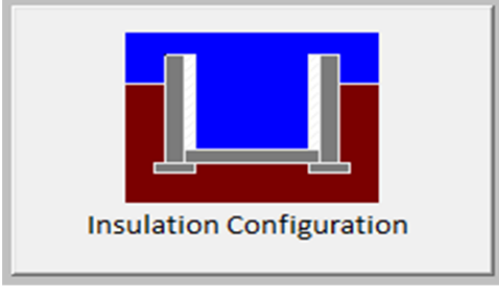
INDIVIDUAL BCIN: 19669

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):	23.2	 Insulation Configuration
Floor Width (m):	12.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.2	
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):		2429

TYPE: 5006 CNR
LO# 85445

THE SILVERWOOD - OPT LOFT

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):	7.01			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1780.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2372.9 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):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.124			

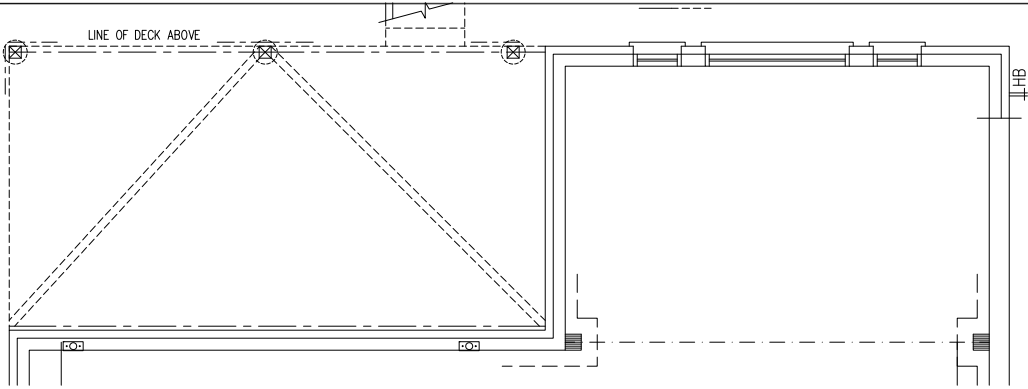
TYPE: 5006 CNR
LO# 85445

THE SILVERWOOD - OPT LOFT

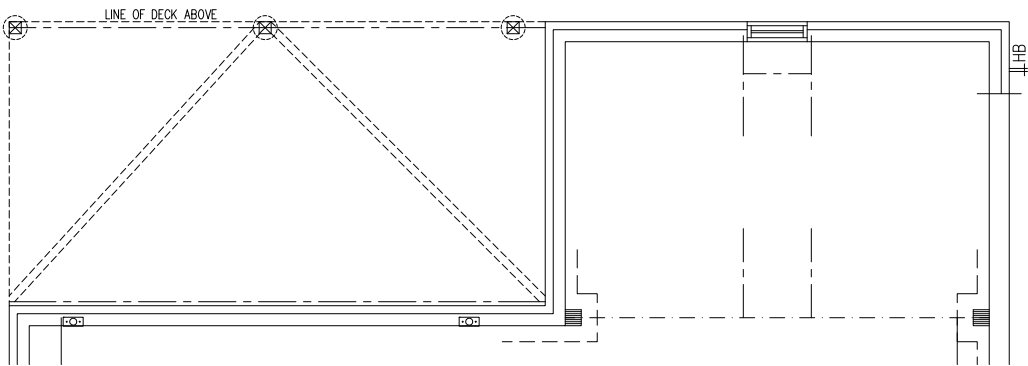
I MICHAEL O'Rourke HAVE REVIEWED AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

Michael O'Rourke

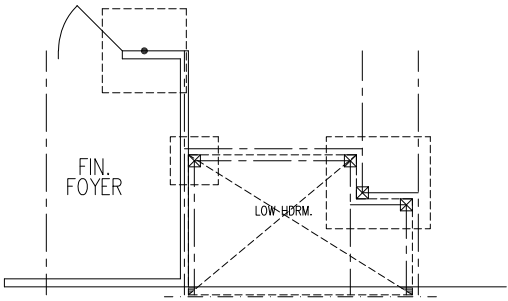
Michael O'Rourke, BCIN# 19669
HYAC DESIGNS LTD.



PART. BASEMENT PLAN ELEV. 'A', & 'B' - L.O.D. COND.

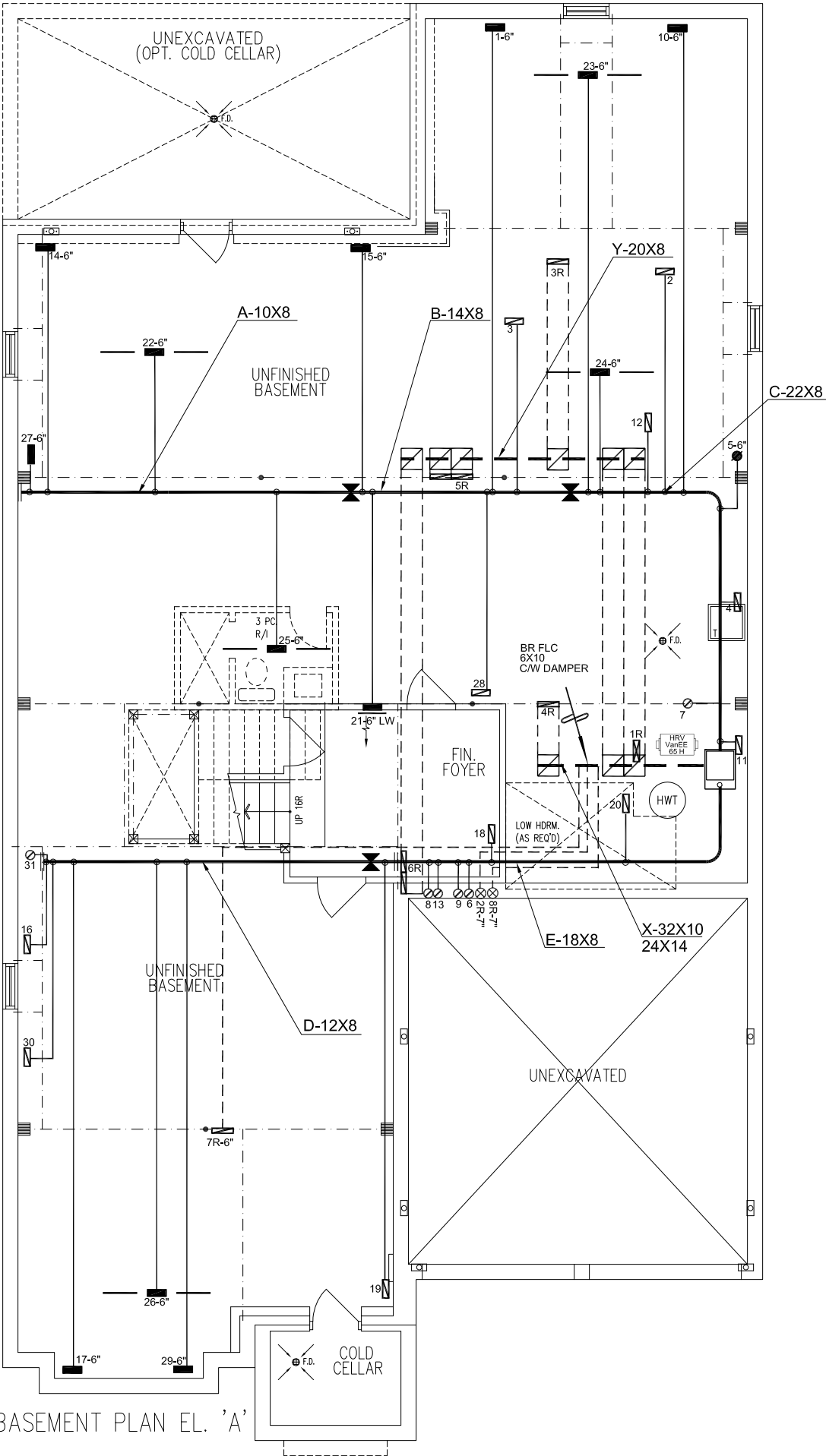


PART. BASEMENT PLAN ELEV. 'A', & 'B' - W.O.D. COND.

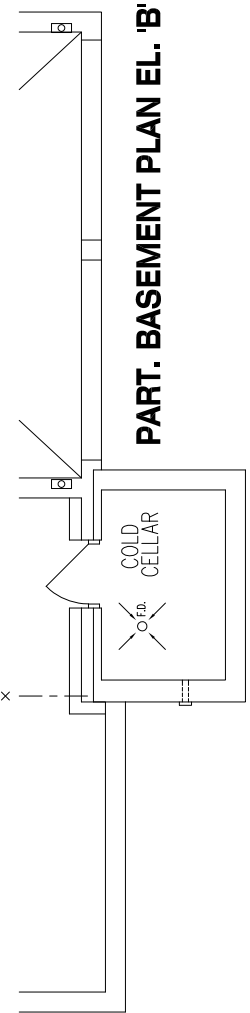


OPT. SUNKEN MUD ROOM 'A' & 'B'

HVAC LEGEND									
								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER		Date
REVISIONS									
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PART. BASEMENT PLAN EL. 'B'



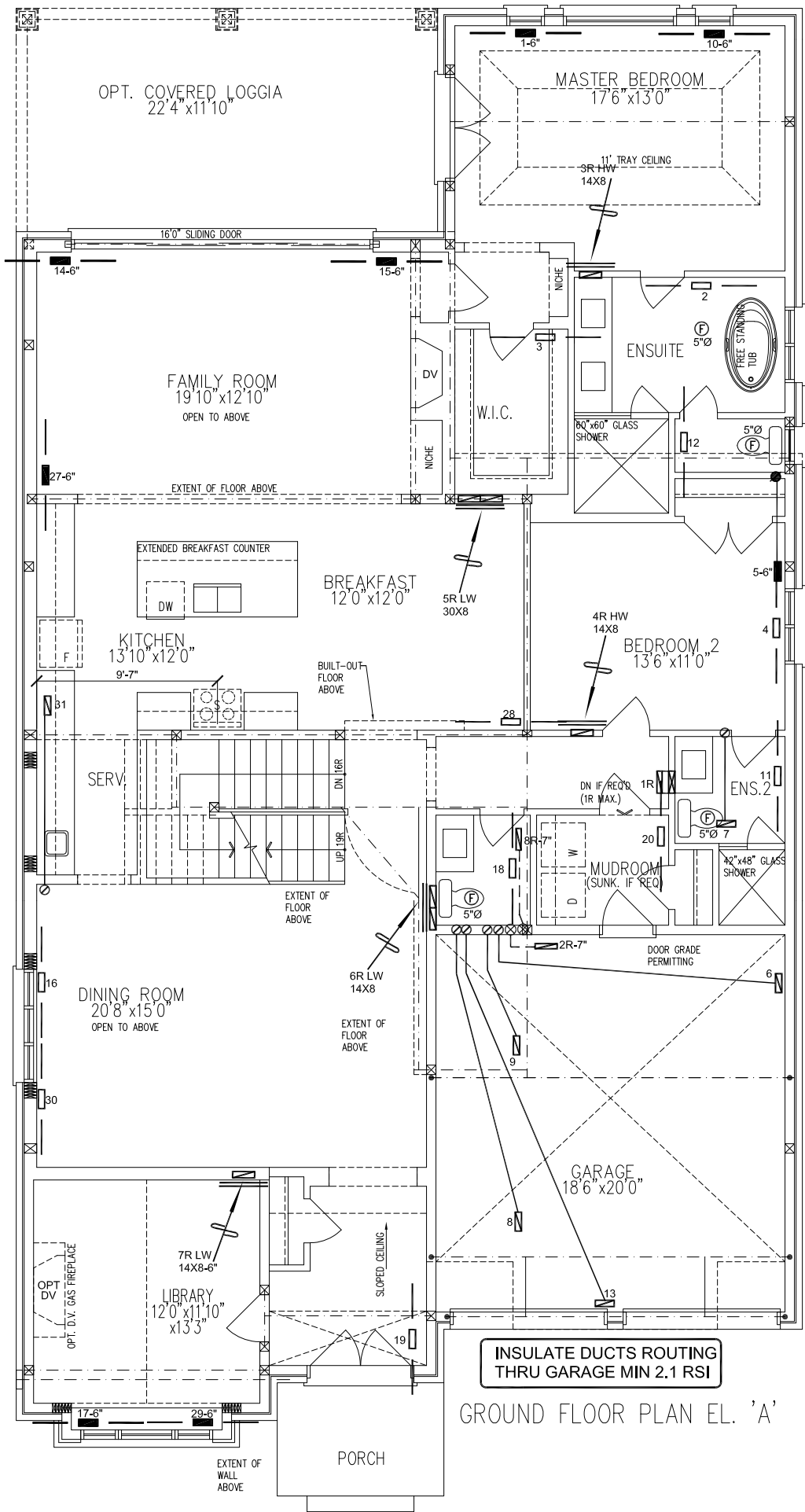
Client	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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.	HEAT LOSS 78252 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS			Sheet Title		
GOLD PARK HOMES		MAKE LENNOX	3RD FLOOR				BASEMENT HEATING LAYOUT		
Project Name		MODEL EL296UH090XE48C	2ND FLOOR	7	3	1			
PINE VALLEY & TESTON VAUGHAN, ONTARIO		INPUT 88 MBTU/H	1ST FLOOR	18	5	5			
OPT LOFT THE SILVERWOOD		OUTPUT 85 MBTU/H	BASEMENT			6	1	0	Date FEB/2020
5006 CNR		COOLING 4.0 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			Scale 1/8" = 1'-0"			
3622 sqft		FAN SPEED 1525 cfm @ 0.6" w.c.				BCIN# 19669			
					LO#	85445			

WOD	CSA-F280-12
LOD	PACKAGE A1

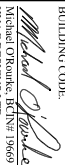
HVAC LEGEND								3.	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER		

REVISIONS

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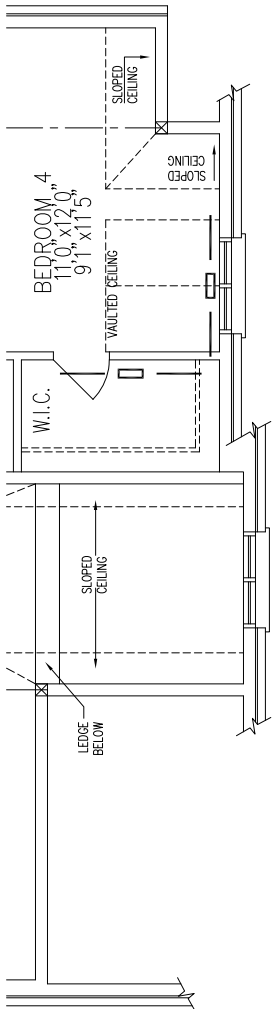
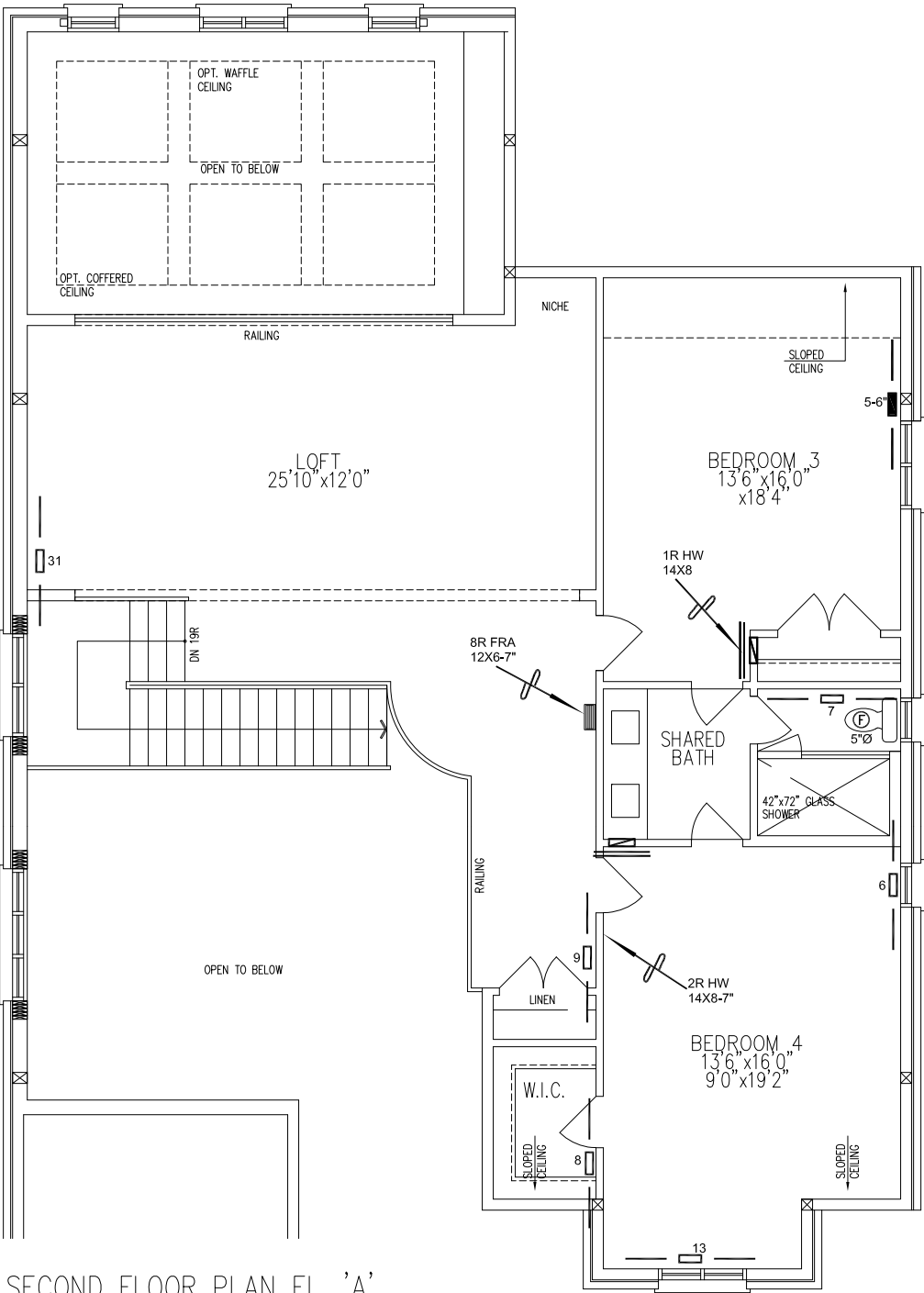


Client	 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdsgns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title	
GOLD PARK HOMES		FIRST FLOOR HEATING LAYOUT	
Project Name		Date	FEB/2020
PINE VALLEY & TESTON VAUGHAN, ONTARIO		Scale	1/8" = 1'-0"
OPT LOFT THE SILVERWOOD		BCIN# 19669	
5006 CNR 3622 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.	LO#	85445

MICHAEL OROURKE HAVE REVIEWED
 AND TAKE RESPONSIBILITY FOR THE
 DESIGN WORK AND AM QUALIFIED
 UNDER DIVISION C, 3.2.3 OF THE
 BUILDING CODE.

 MICHAEL OROURKE
 HVAC DESIGNS LTD.

WOD
 LOD
 CSA-F280-12
 PACKAGE A1

HVAC LEGEND									
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		REDUCER	No.	Description
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR						Date
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REVISIONS									



Client GOLD PARK HOMES Project Name PINE VALLEY & TESTON VAUGHAN, ONTARIO OPT LOFT THE SILVERWOOD 5006 CNR 3622 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	FEB/2020	
			Scale	1/8" = 1'-0"	
				BCIN# 19669	
			LO#	85445	