

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@hvacdsgns.ca	
Telephone number (905) 619-2300	Fax number (905) 619-2375	Cell number ()		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 OF Division C]				
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems				
Description of designer's work HEAT LOSS / GAIN CALCULATIONS DUCT SIZING RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY RESIDENTIAL SYSTEM DESIGN per CSA-F280-12			Model: 5001 - THE HILLSBOROUGH ELEVATION A - WOB - LOT 112 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 11, 2020 Date			 Signature of Designer	

NOTE:

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

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

SITE NAME: PINE VALLEY & TESTON BUILDER: GOLD PARK HOMES										ELEVATION A - WOB - LOT 112		DATE: Jun-20		WINTER NATURAL AIR CHANGE RATE		HEAT LOSS AT °F		CSA-F280-42	
TYPE: 5001 - THE HILLSBOROUGH										GFA: 3188		LOW 86292		SUMMER NATURAL AIR CHANGE RATE		HEAT GAIN AT °F		SB-12 PACKAGE A1	
ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-4		LO#		BATH		HEAT LOSS AT °F		SB-12 PACKAGE A1	
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	410		410	225	90	99	333	180	63	6	54	20	9	7	9	6	9	6	54
NORTH	21.3	14.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	38.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	23.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	38.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0	0	0	0	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
NET EXPOSED WALL	4.5	0.8	372	1650	280	197	879	148	90	402	68	82	366	62	303	1352	228	154	687
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
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO A/TTC EXPOSED CLG	2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	2905		1938	1675	556	1038	3199	1780	880	395	111	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
SUB TOTAL HT GAIN																			
LEVEL FACTOR / MULTIPLIER	0.20	0.38																	
AIR CHANGE HEAT LOSS	1117			644	214	398	1230	684	338	152	9	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
AIR CHANGE HEAT GAIN	160			109	11	38	443	0	122	24	9	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
DUCT LOSS	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	625			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	4022			2319	769	1438	4873	2464	1340	547	155								
TOTAL HT GAIN x 1.3 BTU/H	4165			1851	194	1769	3887	2481	455										

TOTAL HEAT GAIN BTU/H:										43080		TONS: 3.59		LOSS DUE TO VENTILATION LOAD BTU/H: 3181		STRUCTURAL HEAT LOSS: 65883		TOTAL COMBINED HEAT LOSS BTU/H: 68763	
ROOM USE	EXP. WALL	CLG. HT.	LIB	KT/GT	DIN	LAUN	FOY	MUD	WOB	BAS		LO#		FOY		MUD		WOB	
FACTORS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
GRS.WALL AREA	480		480	890	200	0	465	286	468	846	846	20	9	465	465	286	286	468	468
NORTH	21.3	14.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.3	38.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.3	23.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST	21.3	38.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYL.T.	37.2	101.5	0	0	0	0	0	0	0	0	0	0	0	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
NET EXPOSED WALL	4.5	0.8	395	1763	741	125	413	1843	310	40	1010	40	1010	20	605	85	30	757	128
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
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO A/TTC EXPOSED CLG	2.7	1.3	182	500	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS	4072		3789	7619	1464	157	3108	1692	4485	808	2731	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
SUB TOTAL HT GAIN																			
LEVEL FACTOR / MULTIPLIER	0.30	0.40																	
AIR CHANGE HEAT LOSS	1646			3081	592	61	1257	684	2640	0.50	1.28	0.20	0.38	0.20	0.38	0.20	0.38	0.20	0.38
AIR CHANGE HEAT GAIN	314			574	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0
DUCT LOSS	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLANCES/LIGHTS	625			625	625	625	625	625	625	0	0	0	0	0	0	0	0	0	0
TOTAL HT LOSS BTU/H	5718			10700	2056	240	4365	2376	5303	17050	1835								
TOTAL HT GAIN x 1.3 BTU/H	6146			10571	2695	240	971	1213	3432										

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

ELEVATION A - WOB - LOT 112

TYPE: 5001 - THE HILLSBOROUGH

DATE: Jun-20

GFA: 3188 LO# 86252

HEATING CFM 1255
TOTAL HEAT LOSS 65,583
AIR FLOW RATE CFM 19.14furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35AFUE = 96 %
INPUT (BTU/H) = 88,000
OUTPUT (BTU/H) = 85,000All S/A diffusers 4"X10" unless noted otherwise on layout.
All S/A runs 5'Ø unless noted otherwise on layout.

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	6
R/A	0	0	5	2	1

ROOM NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
RM LOSS MBH	2.01	2.32	0.77	1.44	2.44	2.46	0.67	2.44	0.67	2.01	0.55	2.86	2.86	3.57	3.57	2.06	0.24	4.37	2.38	3.73	3.73	BAS	BAS
CFM PER RUN HEAT	38	44	15	28	47	47	13	47	13	38	10	55	55	68	68	39	5	84	45	71	71	71	71
RM GAIN MBH	2.08	1.85	0.19	1.77	1.94	2.48	0.23	1.94	0.23	2.08	0.16	3.07	3.07	3.52	3.52	2.09	0.97	1.32	1.21	0.88	0.88	0.88	0.88
CFM PER RUN COOLING	61	55	6	52	57	73	7	57	7	61	5	91	91	104	104	62	29	39	36	26	26	26	26
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	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17
EQUIVALENT LENGTH	64	37	35	19	49	53	26	45	26	51	43	50	45	50	37	29	24	31	20	40	28	29	47
TOTAL EFFECTIVE LENGTH	224	167	175	159	209	253	196	185	206	211	213	170	165	200	177	159	144	201	150	180	138	129	227
ADJUSTED PRESSURE	0.08	0.1	0.1	0.1	0.08	0.07	0.09	0.09	0.08	0.08	0.08	0.1	0.1	0.08	0.09	0.11	0.12	0.08	0.11	0.1	0.12	0.13	0.08
ROUND DUCT SIZE	5	4	4	6	5	6	4	5	4	5	4	5	5	6	6	5	4	6	4	5	5	5	5
HEATING VELOCITY (ft/min)	279	505	172	143	345	240	149	345	149	279	115	404	404	347	347	286	57	428	516	521	521	521	521
COOLING VELOCITY (ft/min)	448	631	69	265	419	372	80	419	80	448	57	668	668	530	530	455	333	199	413	191	191	191	191
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	E	C	E	E	B	E	E	E	A	C	B	B	A	A	C	D	B	D	A	C	E	B

ROOM NAME	25	26	27	BAS	KT/GT
RM LOSS MBH	3.73	3.57	3.73		
CFM PER RUN HEAT	71	68	71		
RM GAIN MBH	0.88	3.52	0.88		
CFM PER RUN COOLING	26	104	26		
ADJUSTED PRESSURE	0.17	0.16	0.17		
EQUIVALENT LENGTH	40	35	59		
TOTAL EFFECTIVE LENGTH	140	100	160		
ADJUSTED PRESSURE	0.1	0.12	0.08		
ROUND DUCT SIZE	5	6	5		
HEATING VELOCITY (ft/min)	521	347	521		
COOLING VELOCITY (ft/min)	191	530	191		
OUTLET GRILL SIZE	3X10	4X10	3X10		
TRUNK	B	D	A		

SUPPLY AIR TRUNK SIZE

TRUNK	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	354	0.08	9.5	10	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK B	383	0.07	10.1	12	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK C	518	0.07	11.3	16	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK D	990	0.07	14.4	24	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK E	263	0.08	8.5	8	0	0.00	0	0	0	0	0.00	0	0	0
TRUNK F	0	0.00	0	0	0	0.00	0	0	0	0	0.00	0	0	0

RETURN AIR

	1	2	3	4	5	6	7		
FAIR VOLUME	100	140	140	100	340	175	50	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0	0
ACTUAL DUCT LGH.	47	36	37	59	20	28	47	1	0
EQUVALENT LENGTH	205	180	185	160	135	170	165	1	1
TOTAL EFFECTIVE LH	252	226	222	219	155	198	212	1	1
ADJUSTED PRESSURE	0.06	0.07	0.07	0.07	0.10	0.07	0.07	1	1
ROUND DUCT SIZE	6.4	6.9	6.9	6.1	8.9	7.5	4.7	14.80	14.80
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0
	X	X	X	X	X	X	X	0	0
INLET GRILL SIZE	14	14	14	14	30	14	14	0	0
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TYPE: 5001 - THE HILLSBOROUGH
SITE NAME: PINE VALLEY & TESTON

LO # 86252
ELEVATION A - WOB - LOT 112

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY
COMBUSTION APPLIANCES 9.32.3.1(1)

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

HEATING SYSTEM

- ☒ Forced Air ☐ Non Forced Air
- ☐ Electric Space Heat

HOUSE TYPE 9.32.1(2)

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

SYSTEM DESIGN OPTIONS

O.N.H.W.P.

- ☐ 1 Exhaust only/Forced Air System
- ☐ 2 HRV with Ducting/Forced Air System
- ☒ 3 HRV Simplified/connected to forced air system
- ☐ 4 HRV with Ducting/non forced air system
- ☐ Part 6 Design

TOTAL VENTILATION CAPACITY 9.32.3.3(1)

Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	4	@ 10.6 cfm	42.4	cfm
Other Rooms	6	@ 10.6 cfm	63.6	cfm
Table 9.32.3.A.		TOTAL	180.2	cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED 9.32.3.4.(1)

1	Bedroom	31.8	cfm
2	Bedroom	47.7	cfm
3	Bedroom	63.6	cfm
4	Bedroom	79.5	cfm
5	Bedroom	95.4	cfm
	TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5.

Total Ventilation Capacity	180.2	cfm
Less Principal Ventil. Capacity	155	cfm
Required Supplemental Capacity	25.2	cfm

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEE 65H Location: BSMT
155.0 cfm 3.0 sones ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
155.0 CFM	X 76 F	X 1.08	X 0.25

SUPPLEMENTAL FANS

Location	Model	cfm	HVI	Sones
ENS	QTXEN050C	50	☒	0.3
BATH	QTXEN050C	50	☒	0.3
ENS-4	QTXEN050C	50	☒	0.3

HEAT RECOVERY VENTILATOR 9.32.3.11.

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

LOCATION OF INSTALLATION

Lot: Concession
Township: Plan:
Address:
Roll # Building Permit #

BUILDER: GOLD PARK HOMES

Name:
Address:
City:
Telephone #: Fax #:

INSTALLING CONTRACTOR

Name:
Address:
City:
Telephone #: Fax #:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed
in accordance with the Ontario Building Code.
Name: HVAC Designs Ltd.

Signature: *Michael O'Rourke*
HRAI # 001820

Date: June-20

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																					
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																					
LO#: 86252		Model: 5001 - THE HILLSBOROUGH		Builder: GOLD PARK HOMES		Date: 6/11/2020																																																															
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																																																															
$HL_{airb} = LR_{airb} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$						$HG_{satb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$																																																															
$0.389 \times 360.35 \times 42^\circ\text{C} \times 1.2 = 7093 \text{ W}$						$= 0.130 \times 360.35 \times 7^\circ\text{C} \times 1.2 = 401 \text{ W}$																																																															
$= 24202 \text{ Btu/h}$						$= 1369 \text{ Btu/h}$																																																															
5.2.3.2 Heat Loss due to Mechanical Ventilation						6.2.7 Sensible heat Gain due to Ventilation																																																															
$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$						$HL_{vaib} = PVC \times DTD_h \times 1.08 \times (1 - E)$																																																															
$155 \text{ CFM} \times 76^\circ\text{F} \times 1.08 \times 0.25 = 3181 \text{ Btu/h}$						$155 \text{ CFM} \times 13^\circ\text{F} \times 1.08 \times 0.25 = 536 \text{ Btu/h}$																																																															
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																					
$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{qgr} + HL_{bgcr}) \div (HL_{qgclvl} + HL_{bgclvl})\}$																																																																					
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairrv = 0																																																																					

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5001 - THE HILLSBOROUGH	ELEVATION A - WOB - LOT 112	BUILDER: GOLD PARK HOMES
SFQT: 3188	LO# 86252	SITE: PINE VALLEY & TESTON

DESIGN ASSUMPTIONS

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

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	45812.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	6.0 ft
LENGTH: 56.0 ft WIDTH: 42.0 ft		EXPOSED PERIMETER:	141.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	55.0 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	-

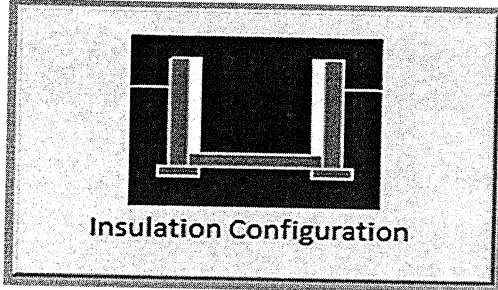
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

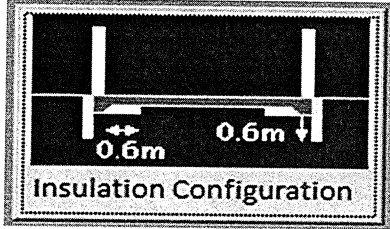
Weather Station Description		
Province:	Ontario	
Region:	Vaughan (Woodbridge)	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	4.6	
Floor Width (m):	12.8	
Exposed Perimeter (m):	43.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.58	
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):	800	

TYPE: 5001 - THE HILLSBOROUGH
LO# 86252

ELEVATION A - WOB - LOT 112

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	 Insulation Configuration
Width (m):	13.7	
Exposed Perimeter (m):	16.8	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		237

TYPE: 5001 - THE HILLSBOROUGH
LO# 86252

ELEVATION A - WOB - LOT 112

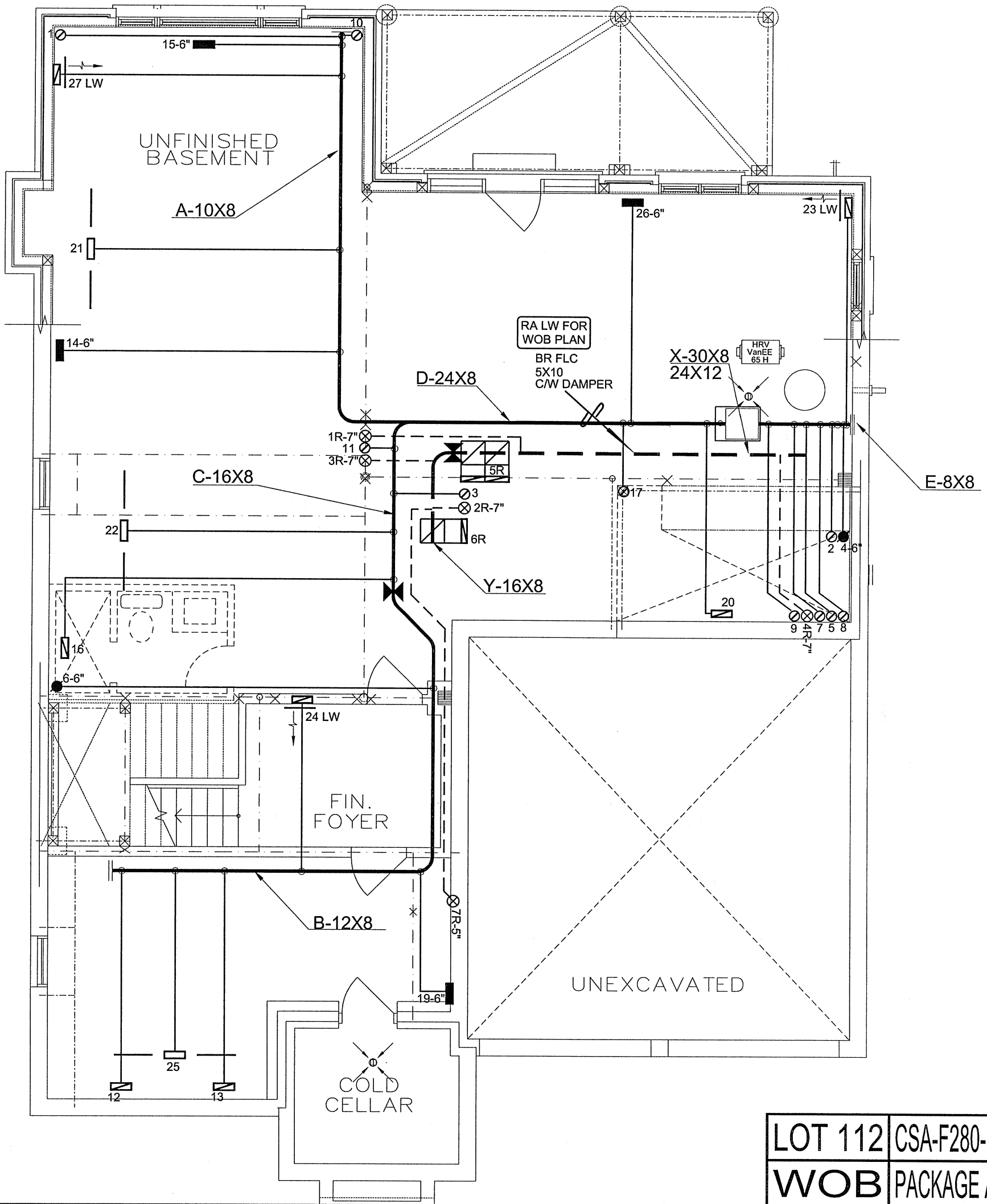
Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description			
Province:	Ontario		
Region:	Vaughan (Woodbridge)		
Weather Station Location:	Open flat terrain, grass		
Anemometer height (m):	10		
Local Shielding			
Building Site:	Suburban, forest		
Walls:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.53		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1297.3		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1729.3 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
Diameter (mm):	0	0	0
		#4	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.389		
Cooling Air Leakage Rate (ACH/H):	0.130		

TYPE: 5001 - THE HILLSBOROUGH
LO# 86252

ELEVATION A - WOB - LOT 112



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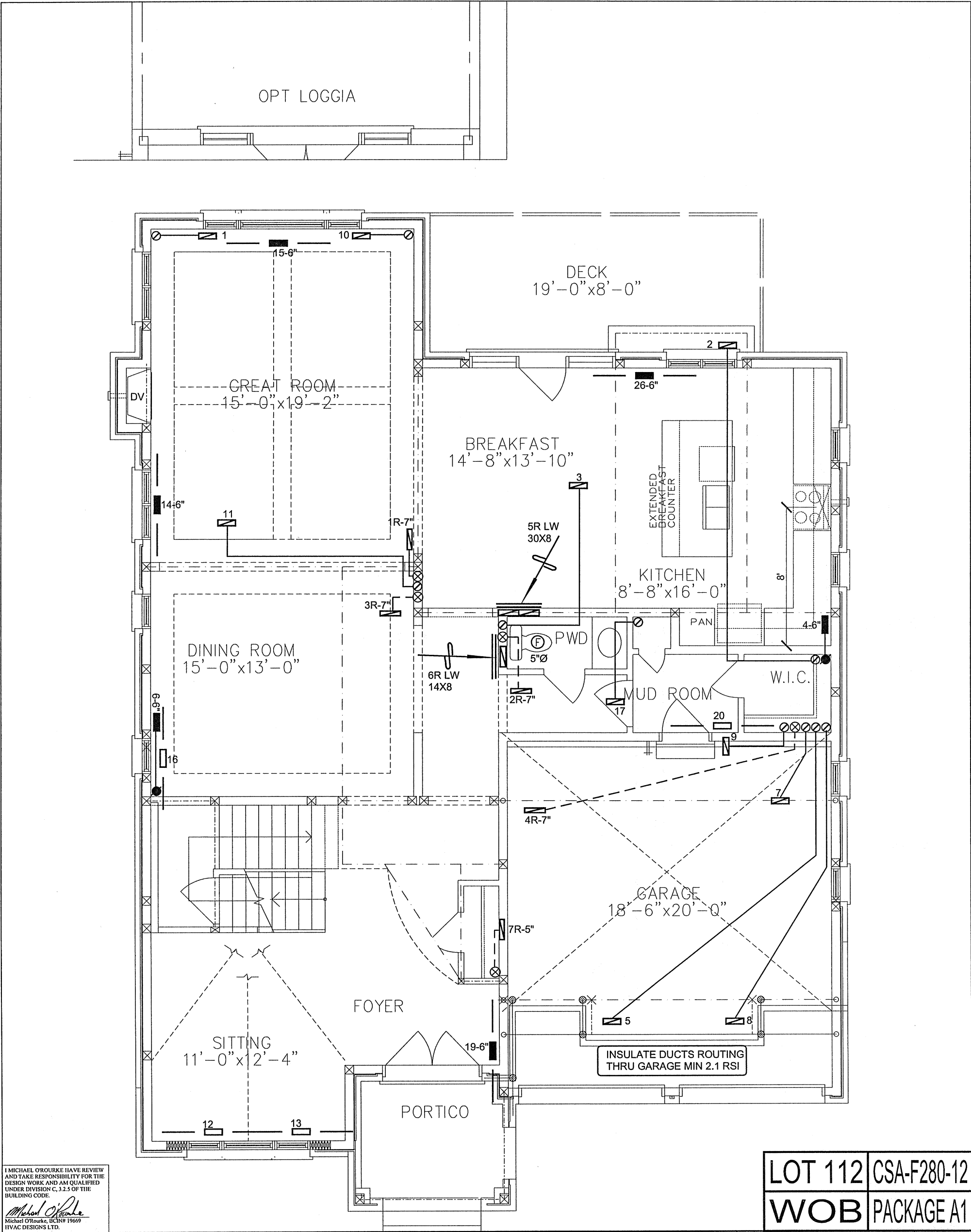
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 112	CSA-F280-12
WOB	PACKAGE A1

HVAC LEGEND								REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	No.	Description
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	3.	REVISED AS PER ARCHITECTURALS
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	2.	ADDED RETURN #7
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	1.	DECK CONDITIONS ADDED
								No.	Date

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Client		HVACDESIGNS LTD. 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	HEAT LOSS 68763 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	12	5	4	
PINE VALLEY & TESTON VAUGHAN, ONTARIO ELEVATION A - WOB THE HILLSBOROUGH			INPUT	88 MBTU/H	1ST FLOOR	8	2	2	
5001 - LOT 112 3188 sqft			OUTPUT	85 MBTU/H	BASEMENT	6	1	0	Date
		COOLING	3.5 TONS	ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A				Scale	3/16" = 1'-0"
		FAN SPEED	1255 cfm @ 0.6" w.c.					BCIN# 19669	
						LO# 86252			



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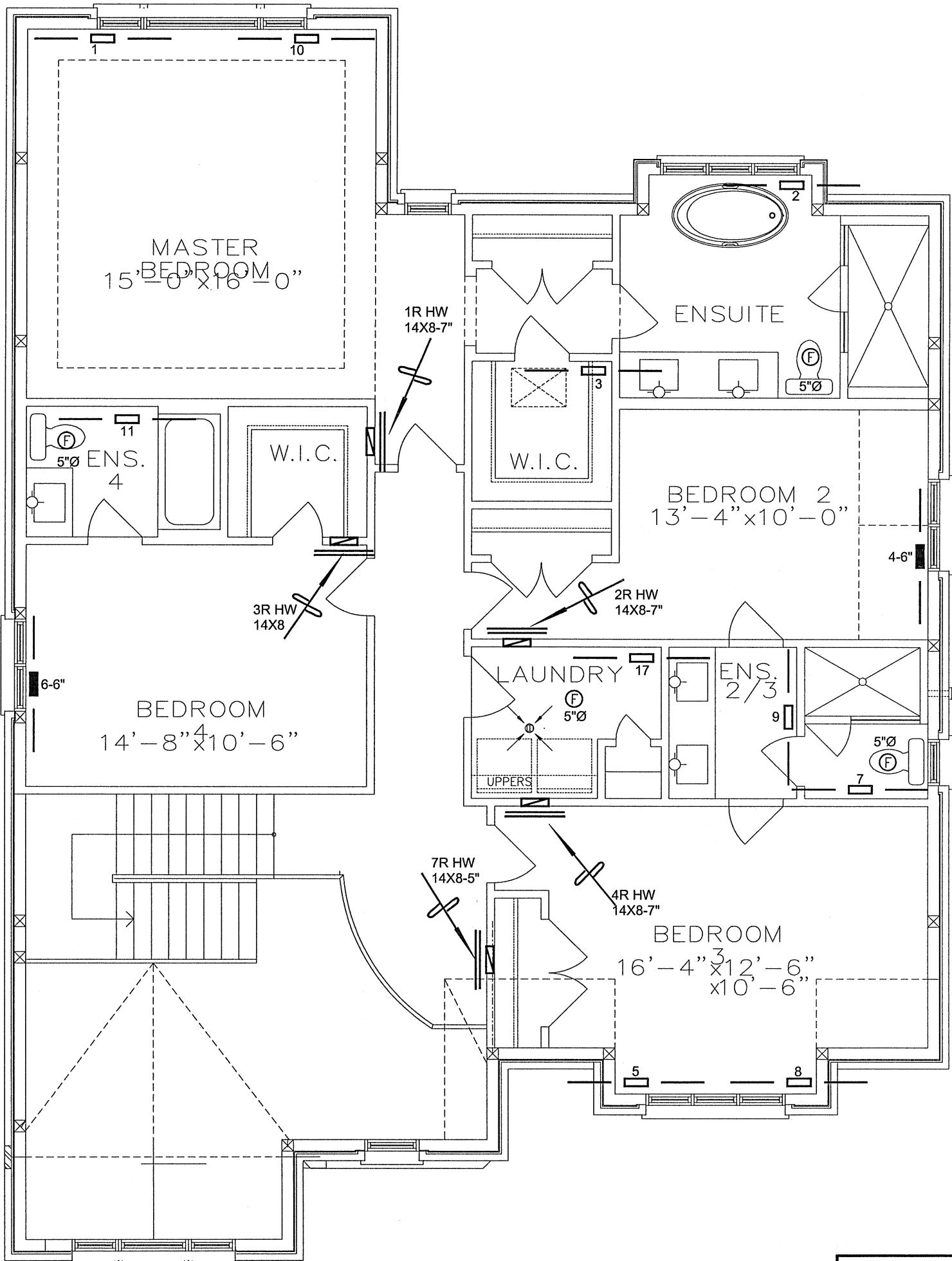
Michael O'Rourke
Michael O'Rourke, BCIN# 19669
HVAC DESIGNS LTD.

LOT 112	CSA-F280-12
WOB	PACKAGE A1

HVAC LEGEND								3.	REVISED AS PER ARCHITECTURALS	JUNE/2020
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	ADDED RETURN #7	NOV/2018
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	DECK CONDITIONS ADDED	OCT/2018
	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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GOLD PARK HOMES			FIRST FLOOR HEATING LAYOUT	
Project Name		Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.	Date	JUNE/2020
PINE VALLEY & TESTON VAUGHAN, ONTARIO ELEVATION A - WOB THE HILLSBOROUGH 5001 - LOT 112 3188 sqft			Scale	3/16" = 1'-0"
			BCIN# 19669	
			LO#	86252



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LOT 112	CSA-F280-12
WOB	PACKAGE A1

HVAC LEGEND								3.	REVISED AS PER ARCHITECTURALS	JUNE/2020
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								REVISIONS		

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GOLD PARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name			Date	JUNE/2020
PINE VALLEY & TESTON VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
ELEVATION A - WOB			BCIN# 19669	
THE HILLSBOROUGH			LO#	86252
5001 - LOT 112 3188 sqft				