

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: 5011 TIMBERLAND Project: PINE VALLEY PH 2	
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.			
May 6, 2022			
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 PH 2										TIMBERLAND										DATE May-22										WINTER NATURAL AIR CHANGE RATE 0.340										HEAT LOSS ΔT °F. 76		CSA-F280-12											
BUILDER: GOLD PARK HOMES										TYPE: 5011										GFA: 4238										LO# 96514										SUMMER NATURAL AIR CHANGE RATE 0.114										HEAT GAIN ΔT °F. 13		SB-12 PACKAGE A1	
ROOM USE				PBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		ENS-3		WIC-E		ENS-4																															
EXP. WALL				40		13		8		13		15		44		10		16		12		7																															
CLG. HT.				9		9		9		9		9		9		9		9		9		9																															
FACTORS																																																					
GRS.WALL AREA				LOSS		GAIN		360		117		72		117		135		396		90		144		108		63																											
GLAZING				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	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0																								
SOUTH				21.3	24.9	0	0	0	17	362	423	0	0	0	0	0	0	0	0	0	0	0	0	0	6	128	149	9	192	224																							
WEST				21.3	41.6	53	1128	2202	0	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	8	279	762	0	0	0	0	0	0	8	279	762	8	279	762	8	279	762	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																								
NET EXPOSED WALL				4.5	0.8	307	1370	231	100	446	75	72	321	54	99	442	74	52	232	39	272	1214	204	90	402	68	111	495	83	102	455	77	54	241	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	0	0	0	0																		
EXPOSED CLG				1.3	0.6	393	504	231	205	263	120	204	262	120	330	423	194	203	260	119	232	297	136	67	86	39	72	92	42	90	116	53	154	198	90																		
NO ATTIC EXPOSED CLG				2.7	1.3	0	0	0	0	0	0	0	0	0	0	0	0	48	132	60	83	228	104	0	0	0	0	0	0	0	0	0	0	0	0																		
EXPOSED FLOOR				2.6	0.4	0	0	0	0	0	0	74	189	32	141	360	61	258	658	111	0	0	0	117	298	50	122	311	52	0	0	0	0	0	0																		
BASEMENT/CRAWL HEAT LOSS																																																					
SLAB ON GRADE HEAT LOSS																																																					
SUBTOTAL HT LOSS							3281			1071			772			1887			3327			4657			786			1601			698			630																			
SUB TOTAL HT GAIN								3425			619			206			1378			4310			6359			157			1549			279			355																		
LEVEL FACTOR / MULTIPLIER				0.20	0.30				0.20	0.30		0.20	0.30		0.20	0.30		0.20	0.30		0.20	0.30		0.20	0.30		0.20	0.30		0.20	0.30																						
AIR CHANGE HEAT LOSS							1000			326			235			575			1014			1419			240			488			213			192																			
AIR CHANGE HEAT GAIN								199			36			12			80			250			369			9			90			16			21																		
DUCT LOSS							0			0			101			246			434			0			103			209			0			0																			
DUCT GAIN							0			0			22			252			562			0			17			164			0			0																			
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																	
HEAT GAIN APPLIANCES/LIGHTS							820			0			0			820			820			820			0			0			0			0																			
TOTAL HT LOSS BTU/H							4281			1398			1108			2708			4776			6077			1128			2298			911			822																			
TOTAL HT GAIN x 1.3 BTU/H							6401			851			311			3600			8036			10125			238			2344			384			489																			

ROOM USE			GRT			DIN			KT/BF			LIB			LND						FOY			MUD									LOD			BAS			
EXP. WALL			46			28			63			24			8						22			28									53			216			
CLG. HT.			20			11			11			11			9						11			11									10			10			
FACTORS																																							
GRS.WALL AREA	LOSS	GAIN	920			308			693			264			72						242			308						530			1830						
GLAZING			LOSS	GAIN		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	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	41.6	0	0	0	0	0	0	0	0	0	71	1511	2950	0	0	0	0	0	0	25	532	1039	0	0	0	0	0	0	0	0	0	0	0	0				
SOUTH	21.3	24.9	0	0	0	50	1064	1245	10	213	249	0	0	0	9	192	224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
WEST	21.3	41.6	121	2575	5028	0	0	0	106	2256	4405	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	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	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	30	757	128	20	505	85	0	0	0	0	0	0	0	0	0					
NET EXPOSED WALL	4.5	0.8	799	3566	601	258	1151	194	577	2575	434	193	861	145	63	281	47	187	835	141	288	1285	216	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0					
EXPOSED CLG	1.3	0.6	303	389	178	0	0	0	0	0	0	0	0	0	163	209	96	0	0	0	0	0	0	0	0	0	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	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
BASEMENT/CRAWL HEAT LOSS																																							
SLAB ON GRADE HEAT LOSS																																							
SUBTOTAL HT LOSS						6529			2215			5043			2372			682			2124			1790															
SUB TOTAL HT GAIN																																							
LEVEL FACTOR / MULTIPLIER			0.30	0.44			0.30	0.44		0.30	0.44		0.30	0.44		0.20	0.30			0.30	0.44		0.30	0.44															
AIR CHANGE HEAT LOSS						2884			978			2228			1048			208			938			791															
AIR CHANGE HEAT GAIN									84			295			180			21			76			18															
DUCT LOSS						0			0			0			0			0			0			0															
DUCT GAIN						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														
HEAT GAIN APPLIANCES/LIGHTS						820			820			820			820			820			0			0															
TOTAL HT LOSS BTU/H						9413			3194			7271			3420			890			3062			2581															
TOTAL HT GAIN x 1.3 BTU/H						9052			3045			8063			5323			1571			1798			415															

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES

TIMBERLAND
TYPE: 5011

DATE: May-22

GFA: 4238 LO# 96514

FURNACE 1

HEATING CFM 1070 COOLING CFM 1070
TOTAL HEAT LOSS 54,623 TOTAL HEAT GAIN 30,031
AIR FLOW RATE CFM 19.59 AIR FLOW RATE CFM 35.63

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

FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 57701 BTUH

\$*LENNOX
ML196UH070XE48B
FAN SPEED 70
LOW 0
MEDLOW 1070
MEDIUM 1270
MEDIUM HIGH 1515
HIGH 1595

AFUE = 96 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = **63,900**

DESIGN CFM = **1070**
CFM @ .6" E.S.P.

TEMPERATURE RISE 55 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	0	11	5
R/A	0	0	0	3	1

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

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

RUN #	21	22	23	24
ROOM NAME	FOY	GRT	GRT	GRT
RM LOSS MBH.	3.06	3.14	3.14	3.14
CFM PER RUN HEAT	60	61	61	61
RM GAIN MBH.	1.80	3.02	3.02	3.02
CFM PER RUN COOLING	64	108	108	108
ADJUSTED PRESSURE	0.17	0.15	0.15	0.15
ACTUAL DUCT LGH.	53	62	58	52
EQUIVALENT LENGTH	150	120	120	150
TOTAL EFFECTIVE LENGTH	203	182	178	202
ADJUSTED PRESSURE	0.08	0.08	0.09	0.08
ROUND DUCT SIZE	5	6	6	6
HEATING VELOCITY (ft/min)	441	311	311	311
COOLING VELOCITY (ft/min)	470	551	551	551
OUTLET GRILL SIZE	3X10	4X10	4X10	4X10
TRUNK	E	D	D	D

RUN #	25	26	27	28	29	30	31	32	33	34	35	36
ROOM NAME	DIN	KT/BF	KT/BF	KT/BF	LIB	LIB	MUD	BAS	BAS	BAS	BAS	BAS
RM LOSS MBH.	3.19	2.42	2.42	2.42	1.71	1.71	2.58	5.14	5.14	5.14	5.14	5.14
CFM PER RUN HEAT	63	47	47	47	33	33	51	101	101	101	101	101
RM GAIN MBH.	3.04	2.69	2.69	2.69	2.66	2.66	0.41	0.47	0.47	0.47	0.47	0.47
CFM PER RUN COOLING	108	96	96	96	95	95	15	17	17	17	17	17
ADJUSTED PRESSURE	0.15	0.16	0.16	0.16	0.16	0.16	0.17	0.16	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	18	45	34	7	53	57	45	29	40	54	41	48
EQUIVALENT LENGTH	170	160	110	120	185	170	160	120	170	130	200	180
TOTAL EFFECTIVE LENGTH	188	205	144	127	238	227	205	149	210	184	241	228
ADJUSTED PRESSURE	0.08	0.08	0.11	0.13	0.07	0.07	0.08	0.11	0.08	0.09	0.07	0.07
ROUND DUCT SIZE	6	6	6	6	6	6	5	6	6	6	6	6
HEATING VELOCITY (ft/min)	321	240	240	240	168	168	374	515	515	515	515	515
COOLING VELOCITY (ft/min)	551	489	489	489	484	484	110	87	87	87	87	87
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	4X10	4X10	3X10	4X10	4X10	4X10	4X10	4X10
TRUNK	E	D	E	E	E	E	D	E	D	D	D	E

SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	0	0.00	0	0	x	8	0	TRUNK G	0	0.00	0	0
TRUNK B	0	0.00	0	0	x	8	0	TRUNK H	0	0.00	0	0
TRUNK C	0	0.00	0	0	x	8	0	TRUNK I	0	0.00	0	0
TRUNK D	584	0.07	11.9	16	x	8	657	TRUNK J	0	0.00	0	0
TRUNK E	1069	0.07	14.9	26	x	8	740	TRUNK K	0	0.00	0	0
TRUNK F	0	0.00	0	0	x	8	0	TRUNK L	0	0.00	0	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
TRUNK P	0	0.05	0	0	x	8
TRUNK Q	0	0.05	0	0	x	8
TRUNK R	0	0.05	0	0	x	8
TRUNK S	0	0.05	0	0	x	8
TRUNK T	0	0.05	0	0	x	8
TRUNK U	0	0.05	0	0	x	8
TRUNK V	0	0.05	0	0	x	8
TRUNK W	530	0.05	12.4	18	x	8
TRUNK X	1070	0.05	16.2	30	x	8
TRUNK Y	0	0.05	0	0	x	8
TRUNK Z	0	0.05	0	0	x	8
DROP	1070	0.05	16.2	24	x	10

RETURN AIR #

	7	8	9		BR
AIR VOLUME	0	0	0	0	240
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	1	1	1	1	14
EQUIVALENT LENGTH	0	0	0	0	185
TOTAL EFFECTIVE LH	1	1	1	1	199
ADJUSTED PRESSURE	14.80	14.80	14.80	14.80	0.07
ROUND DUCT SIZE	0	0	0	0	8.5
INLET GRILL SIZE	0	0	0	0	8
	X	X	X	X	X
INLET GRILL SIZE	0	0	0	0	24

SITE NAME: PINE VALLEY PH 2
BUILDER: GOLD PARK HOMES

TYPE: 5011

DATE: May-22

GFA: 4238 LO# 96514

FURNACE 2

HEATING CFM 1270 COOLING CFM 1270
TOTAL HEAT LOSS 26,396 TOTAL HEAT GAIN 34,350
AIR FLOW RATE CFM 48.11 AIR FLOW RATE CFM 36.97

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

**FURNACE HEAT LOSS +
HRV / ERV HEAT LOSS
= 29474 BTUH**
\$*LENNOX
ML196UH070XE48B

FAN SPEED

LOW 0

MEDLOW 1070

MEDIUM 1270

MEDIUM HIGH 1515

HIGH 1595

AFUE = 96 %
INPUT (BTU/H) = 66,000
OUTPUT (BTU/H) = **63,900**

DESIGN CFM = **1270**
CFM @ .6" E.S.P.

TEMPERATURE RISE 47 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	23	0	0
R/A	0	0	6	0	0

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
ROOM NAME	PBR	PBR	PBR	ENS	ENS	WIC	WIC-E	BED-2	BED-2	BED-3	BED-3	BED-3	BED-4	BED-4	BED-4	BED-4	ENS-2	ENS-3	ENS-4	LND
RM LOSS MBH.	1.43	1.43	1.43	0.70	0.70	1.11	0.91	1.35	1.35	1.19	1.19	1.19	1.22	1.22	1.22	1.22	1.13	1.15	0.82	0.89
CFM PER RUN HEAT	69	69	69	34	34	53	44	65	65	57	57	57	58	58	58	58	54	55	40	43
RM GAIN MBH.	2.13	2.13	2.13	0.43	0.43	0.31	0.38	1.80	1.80	2.01	2.01	2.01	2.02	2.02	2.02	2.02	0.24	1.17	0.49	1.57
CFM PER RUN COOLING	79	79	79	16	16	12	14	67	67	74	74	74	75	75	75	75	9	43	18	58
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	75	63	51	61	20	69	15	62	67	61	55	50	54	70	75	80	50	66	61	54
EQUIVALENT LENGTH	200	160	130	170	90	140	80	180	190	160	150	200	180	160	190	200	220	160	200	180
TOTAL EFFECTIVE LENGTH	275	223	181	231	110	209	95	242	257	221	205	250	234	230	265	280	270	226	261	234
ADJUSTED PRESSURE	0.06	0.08	0.1	0.07	0.16	0.08	0.18	0.07	0.07	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.06	0.08	0.07	0.07
ROUND DUCT SIZE	6	6	5	4	4	5	4	6	6	6	6	6	6	6	6	6	5	5	5	5
HEATING VELOCITY (ft/min)	352	352	507	390	390	389	505	331	331	291	291	291	296	296	296	296	396	404	294	316
COOLING VELOCITY (ft/min)	403	403	580	184	184	88	161	342	342	377	377	377	382	382	382	382	66	316	132	426
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10
TRUNK	C	C		C		C		B	B	B	B	A	A	A	A	A	B	B	A	C

RUN #	37	38	39
ROOM NAME	BED-3	BED-4	ENS-3
RM LOSS MBH.	1.19	1.22	1.15
CFM PER RUN HEAT	57	58	55
RM GAIN MBH.	2.01	2.02	1.17
CFM PER RUN COOLING	74	75	43
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	58	72	64
EQUIVALENT LENGTH	210	210	210
TOTAL EFFECTIVE LENGTH	268	282	274
ADJUSTED PRESSURE	0.06	0.06	0.06
ROUND DUCT SIZE	6	6	5
HEATING VELOCITY (ft/min)	291	296	404
COOLING VELOCITY (ft/min)	377	382	316
OUTLET GRILL SIZE	4X10	4X10	3X10
TRUNK	A	A	A

SUPPLY AIR TRUNK SIZE												RETURN AIR TRUNK SIZE														
		TRUNK	STATIC	ROUND	RECT			VELOCITY			TRUNK	STATIC	ROUND	RECT			VELOCITY			TRUNK	STATIC	ROUND	RECT			VELOCITY
		CFM	PRESS.	DUCT	DUCT			(ft/min)			CFM	PRESS.	DUCT	DUCT			(ft/min)			CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	499	0.06	11.6	18	x	8	499	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0			0
TRUNK B	852	0.06	14.2	24	x	8	639	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0			0
TRUNK C	1120	0.06	15.7	30	x	8	672	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0			0
TRUNK D	0	0.00	0	0	x	8	0	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0			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			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			0

RETURN AIR #	1	2	3	4	5	6															BR
AIR VOLUME	310	115	130	115	300	300	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	
ACTUAL DUCT LGH.	74	67	63	49	48	57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
EQUIVALENT LENGTH	215	215	190	225	205	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL EFFECTIVE LH	289	282	253	274	253	252	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
ADJUSTED PRESSURE	0.05	0.05	0.06	0.05	0.06	0.06	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	10.2	7	7	7	9.6	9.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
INLET GRILL SIZE	30	14	14	14	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TYPE: 5011
SITE NAME: PINE VALLEY PH 2

LO # 96514
TIMBERLAND

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>6</u> @ 10.6 cfm	<u>63.6</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		79.5 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>150</u>	cfm
Required Supplemental Capacity	<u>30.2</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANEE V150H	Location: BSMT
<u>150.0</u> cfm	☒ HVI Approved

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

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-3	BY INSTALLING CONTRACTOR	50	☒	3.5
ENS-4	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANEE V150H	INSTALL 2 HRV / ERV's	
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

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

BUILDER: GOLD PARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	May-22

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 96514	Model: 5011	Builder: GOLD PARK HOMES	Date: 2022-05-06																																																									
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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>1940</td> <td>10</td> <td>19400</td> </tr> <tr> <td>First</td> <td>1940</td> <td>11</td> <td>21340</td> </tr> <tr> <td>Second</td> <td>2575</td> <td>9</td> <td>23175</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>63,915.0 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>1809.9 m³</td> </tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1940	10	19400	First	1940	11	21340	Second	2575	9	23175	Third	0	9	0	Fourth	0	9	0	Total:			63,915.0 ft³	Total:			1809.9 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%;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.114</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>24</td> <td>31</td> <td>7</td> <td>13</td> </tr> </table>		WINTER NATURAL AIR CHANGE RATE	0.340	SUMMER NATURAL AIR CHANGE RATE	0.114	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																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 502.74 x 42 °C x 1.2 = 8662 W = 29554 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.114 x 502.74 x 7 °C x 1.2 = 490 W = 1673 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E) \times 2 \text{ HRV / ERV's}$ 300 CFM x 76 °F x 1.08 x 0.25 = 6156 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 300 CFM x 13 °F x 1.08 x 0.25 = 1,037 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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				Michael O'Rourke BCIN# 19669 																																																								

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: 5011	TIMBERLAND	BUILDER: GOLD PARK HOMES
SFQT: 4238	LO# 96514	SITE: PINE VALLEY PH 2

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
		WINDOW SHGC	0.50

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):	63915.0	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:	7.0 ft
LENGTH: 65.0 ft	WIDTH: 43.0 ft	EXPOSED PERIMETER:	216.0 ft

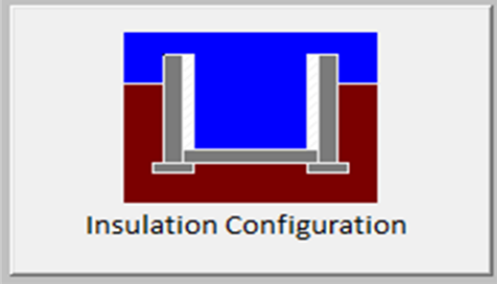
2012 OBC - COMPLIANCE PACKAGE		Compliance Package A1	
Component		Nominal	Min. Eff.
Ceiling with Attic Space Minimum RSI (R)-Value		60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value		31	27.65
Exposed Floor Minimum RSI (R)-Value		31	29.80
Walls Above Grade Minimum RSI (R)-Value		22	17.03
Basement 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):	19.8	 Insulation Configuration
Floor Width (m):	13.1	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.1	
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):		2190

TYPE: 5011
LO# 96514

TIMBERLAND

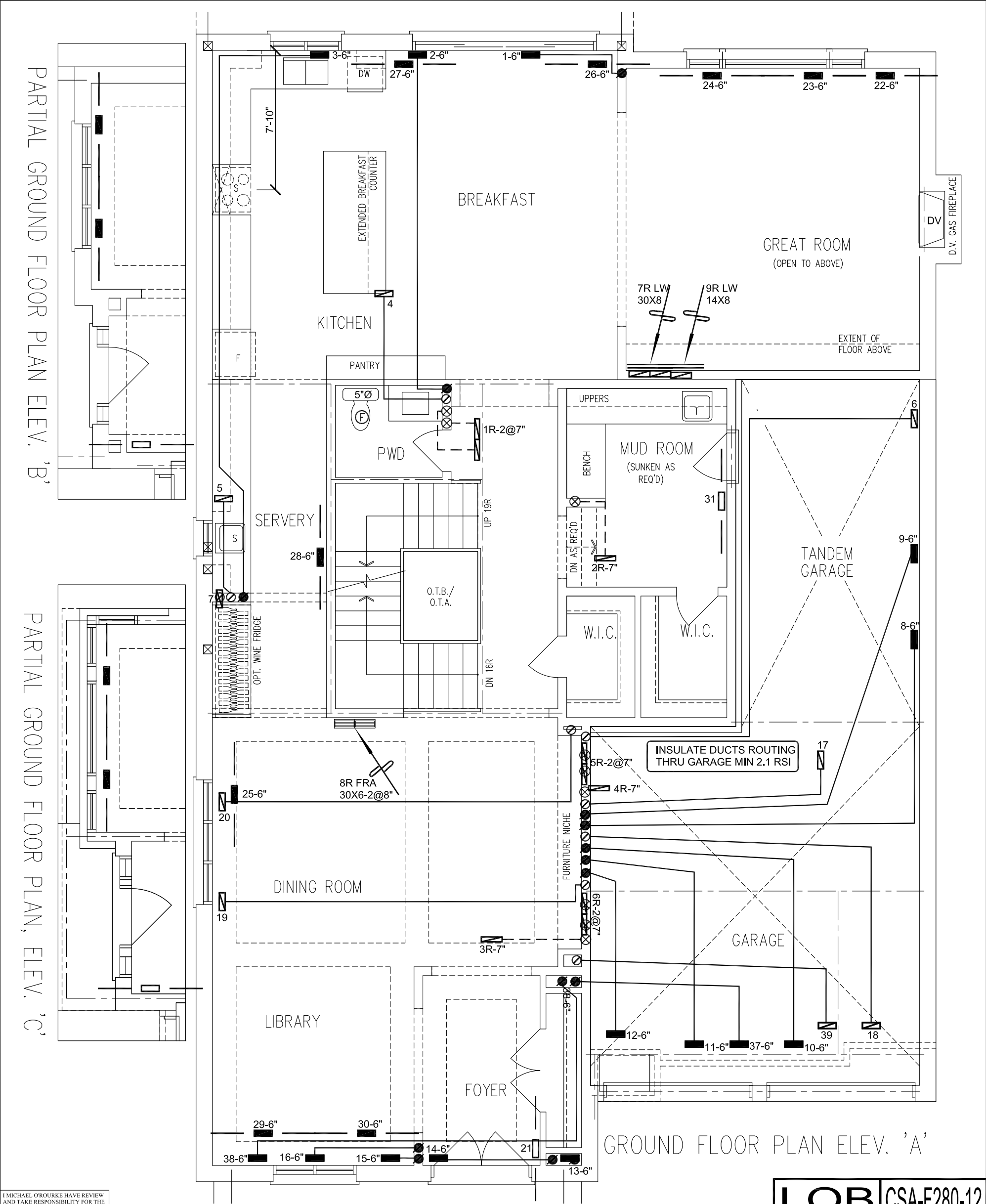
Air Infiltration Residential Load Calculator

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):	1809.9			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	2412.6 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	70.8	70.8		
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):	0.114			

TYPE: 5011
LO# 96514

TIMBERLAND



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.

LOB	CSA-F280-12
WOD	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 Date
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	

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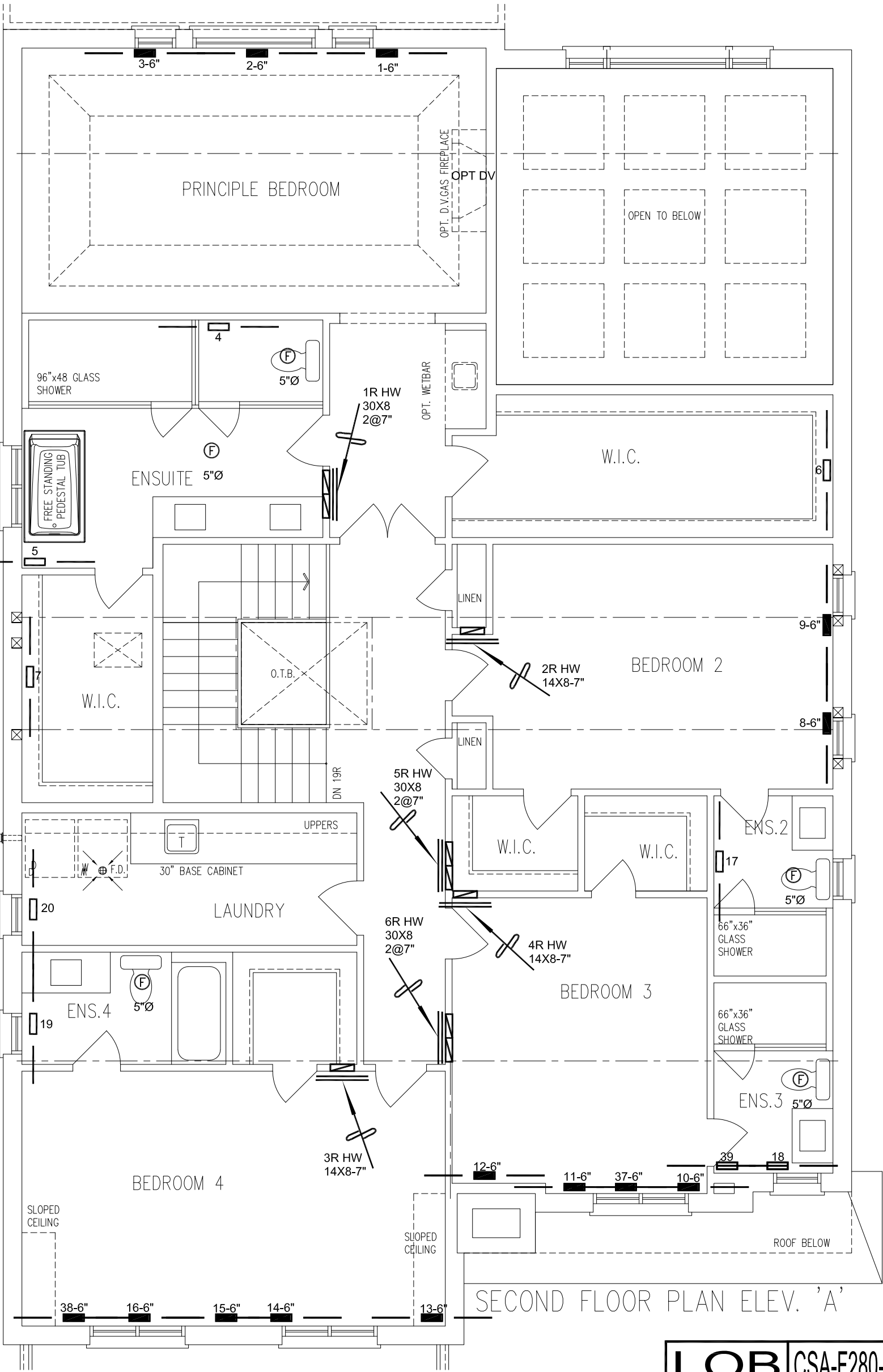
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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	MAY/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
TIMBERLAND			BCIN# 19669	
5011	4238 sqft		LO#	96514

PARTIAL SECOND FLOOR PLAN, ELEV. 'C'

PARTIAL SECOND FLOOR PLAN ELEV. '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, BCIN# 19669
HVAC DESIGNS LTD.



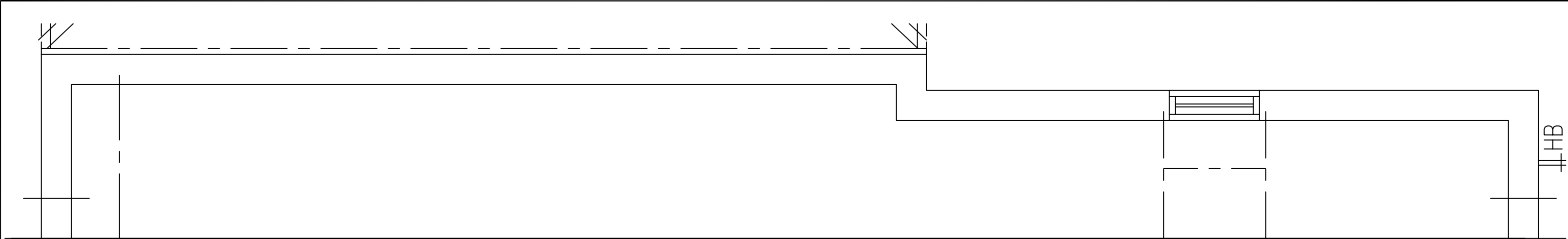
SECOND FLOOR PLAN ELEV. 'A'

LOB	CSA-F280-12
WOD	PACKAGE A1

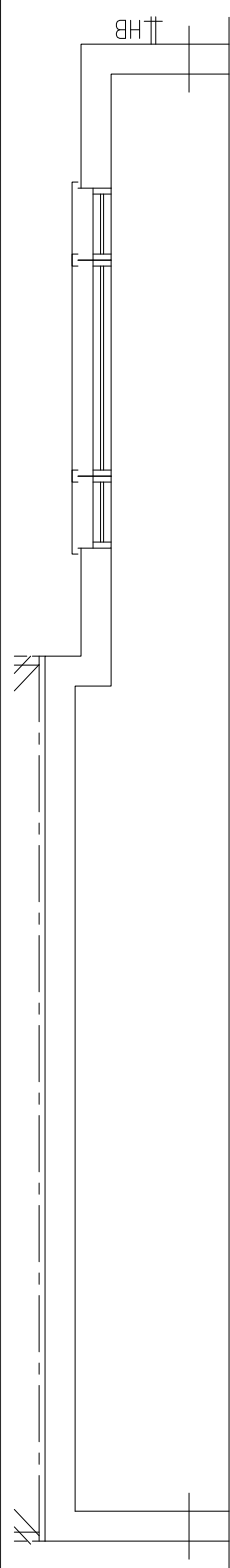
HVAC LEGEND								3.		
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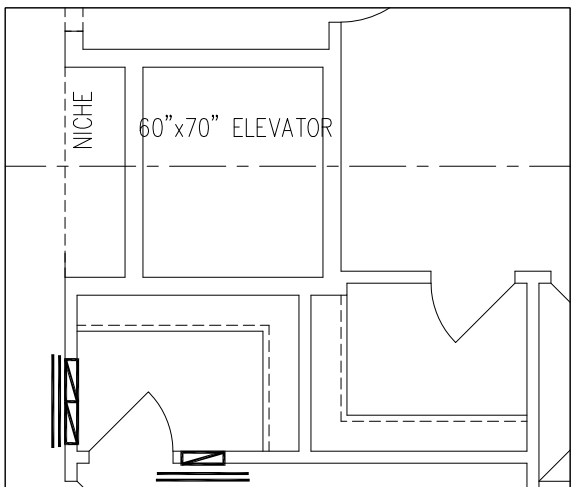
Client		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets 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	
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Project Name			Date	MAY/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
TIMBERLAND 5011			BCIN# 19669	
4238 sqft			LO#	96514



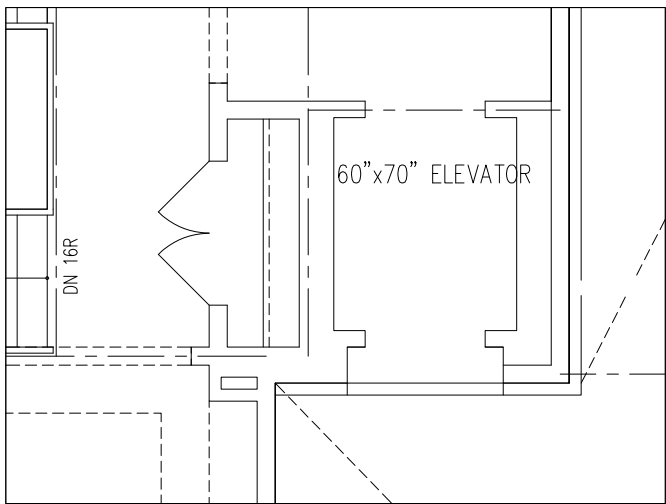
PART. BASEMENT PLAN ELEV. 'A', 'B' & 'C' – W.O.D. COND.



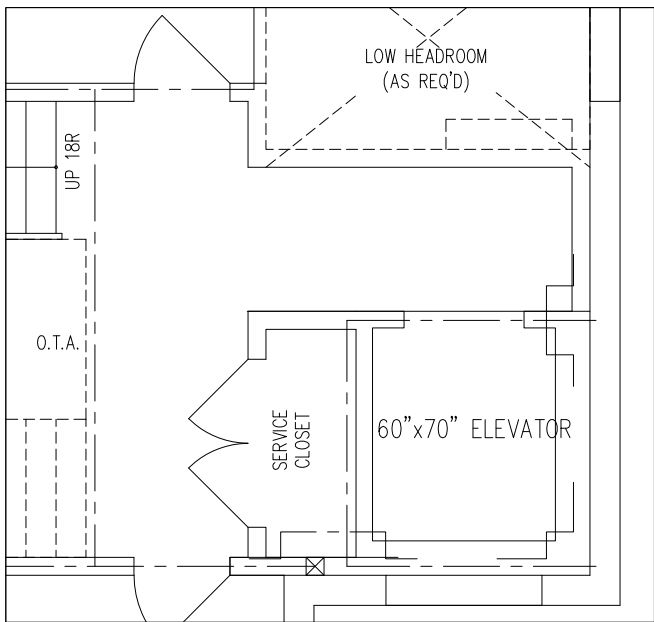
PART. BASEMENT PLAN ELEV. 'A', 'B' & 'C' – L.O.D. COND.



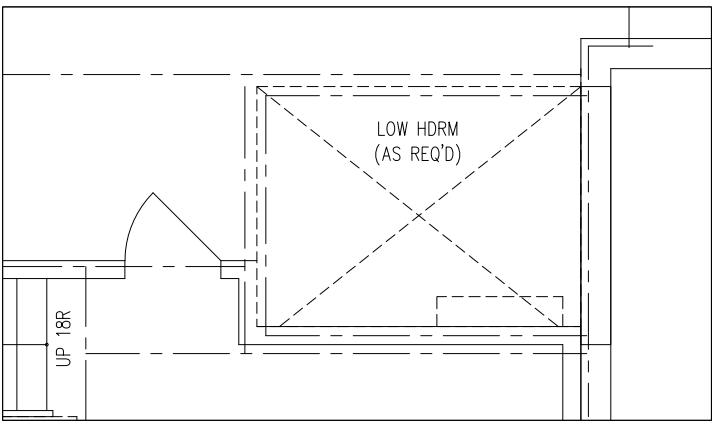
PARTIAL SECOND FLOOR PLAN
(W/ ELEVATOR) ELEV. 'A', 'B'&'C'



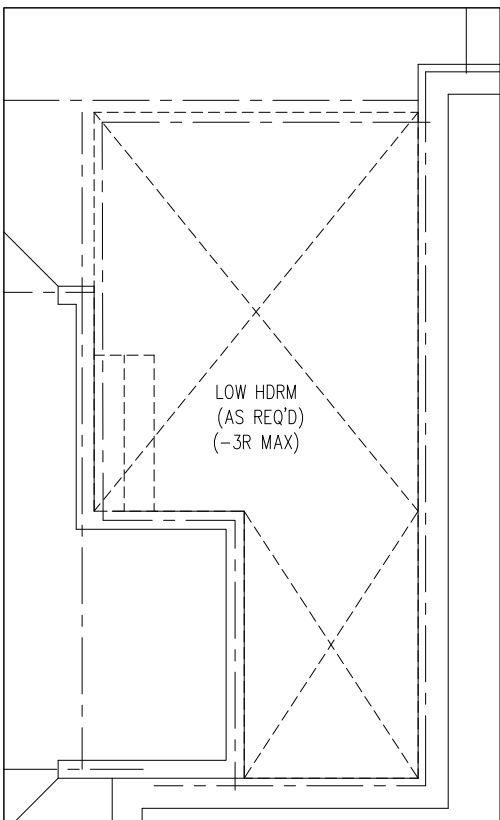
PARTIAL GROUND FLOOR PLAN
(W/ ELEVATOR) ELEV. 'A', 'B'&'C'



PARTIAL BASEMENT PLAN
(W/ ELEVATOR) ELEV. 'A', 'B'&'C'



PARTIAL BASEMENT PLAN
(W/ ELEVATOR) ELEV. 'A', 'B'&'C'
(OPT. SUNKEN MUD RM)



PARTIAL BASEMENT PLAN ELEV.
'A', 'B'&'C'
(OPT. SUNKEN MUD RM)

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.

LOB	CSA-F280-12
WOD	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	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			STRIP PLAN HEATING LAYOUT	
Project Name			Date	MAY/2022
PINE VALLEY PH 2 VAUGHAN, ONTARIO			Scale	3/16" = 1'-0"
TIMBERLAND 5011			BCIN# 19669	
4238 sqft			LO#	96514