

SITE NAME: ROUNDEL PH 2

BUILDER: GREENPARK HOMES

TYPE: PINETREE 11

GFA: 2706

DATE: Mar-23

LO# 100620

WINTER NATURAL AIR CHANGE RATE 0.322

SUMMER NATURAL AIR CHANGE RATE 0.101

HEAT LOSS ΔT °F. 78

HEAT GAIN ΔT °F. 13

CSA-F280-12

SB-12 PACKAGE A1

SOLAR GREEN PART HOMES										SUMMER NATURAL AIR CHANGE RATE 0.70										HEAT GAIN BY PEOPLE		GEOTEACHING					
ROOM USE			MBR			ENS			BED-2			BED-3			BED-4			BATH			HALL						
EXP. WALL			39			29			32			42			14			9			14						
CLG. HT.			9			9			9			9			9			9			9						
FACTORS																											
GRS.WALL AREA			351			261			288			378			126			81			126						
LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN						
GLAZING			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN						
NORTH			21.8	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
EAST			21.8	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
SOUTH			21.8	24.9	56	1220	1394	0	0	0	0	0	0	52	1133	2161	0	0	0	0	0	0	0	0	0	0	0
WEST			21.8	41.6	20	436	831	15	327	623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SKYLT.			38.1	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS			20.5	3.4	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			4.6	0.8	275	1256	207	246	1124	185	232	1060	174	274	1252	206	108	493	81	72	329	54	115	525	86	0	0
NET EXPOSED BSMT WALL ABOVE GR			3.7	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
EXPOSED CLG			1.3	0.6	326	428	192	196	257	115	180	236	106	0	0	0	200	263	118	106	139	62	191	251	112	0	0
NO ATTIC EXPOSED CLG			2.8	1.3	31	87	39	0	0	0	30	84	38	226	636	284	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR			2.6	0.4	0	0	0	0	0	0	210	548	90	11	29	5	22	57	9	0	0	0	90	235	39	0	0
BASEMENT/CRAWL HEAT LOSS					0	0	0	0	0	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	0	0	0	0	0	
SUBTOTAL HT LOSS					3427			1708		3149		4182		1206		664		340		694		1251		694		0	
SUB TOTAL HT GAIN						2663		923			2735		3951		656												
LEVEL FACTOR / MULTIPLIER			0.20	0.21			0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21		0.20	0.21				
AIR CHANGE HEAT LOSS					705		351			648		860		248		137		16		33		151		33			
AIR CHANGE HEAT GAIN						126		44			130		187		31												
DUCT LOSS					0		0			380		504		145		0											
DUCT GAIN						0		0			365		493		148		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
HEAT GAIN APPLIANCES/LIGHTS					548		0				548		548		548		548		548		548		548		548		
TOTAL HT LOSS BTU/H					4133		2060			4176		5547		1599		801		464		1040		1659		1040			
TOTAL HT GAIN x 1.3 BTU/H					4962		1257			5223		7044		2110													

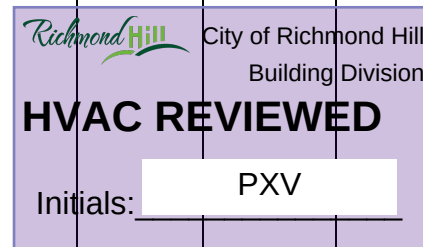


City of Richmond
Building

HVAC REVIEW

Initials:

PXV



ROOM USE			LV/DN		KT/BF		FAM		LND		PWD		FOY		MUD						BAS	
EXP. WALL			63		36		36		0		10		8		28						174	
CLG. HT.			10		10		10		9		10		10		10						9	
GRS.WALL AREA	FACTORS		630		360		360		0		100		80		280						1044	
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	21.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.8	41.6	48	1046	1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	65	12
SOUTH	21.8	24.9	60	1307	1494	0	0	0	51	1111	1270	0	0	0	12	261	299	31	675	772	0	0
WEST	21.8	41.6	0	0	0	62	1351	2576	24	523	997	0	0	0	0	0	0	0	0	0	0	0
SKYLT.	38.1	101.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	20.5	3.4	0	0	0	10	205	34	0	0	0	0	0	0	20	411	68	20	411	68	20	411
NET EXPOSED WALL	4.6	0.8	522	2385	392	288	1316	216	285	1302	214	0	0	0	88	402	66	29	132	22	260	1188
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	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	15	20	9	0	0	0	21	28	12	44	58	26	0	0	0	0	0	0	0	0
NO ATTIC EXPOSED CLG	2.8	1.3	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	44	115	19	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS				0			0			0			0			0			0			
SLAB ON GRADE HEAT LOSS				0			0			0			0			0			0			
SUBTOTAL HT LOSS				4757			2872			2963			173			663			1218			1598
SUB TOTAL HT GAIN					3890			2826			2494		45			365			861			263
LEVEL FACTOR / MULTIPLIER	0.30	0.35				0.30	0.35		0.30	0.35		0.20	0.21		0.30	0.35		0.30	0.35			0.50
AIR CHANGE HEAT LOSS				1644			992			1024			36			229			421			552
AIR CHANGE HEAT GAIN					184			134			118		2			17			41			12
DUCT LOSS				0			0			0			21			0			0			0
DUCT GAIN				0			0			0			59			0			0			0
HEAT GAIN PEOPLE	240		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS				548			548			548			548			0			0			0
TOTAL HT LOSS BTU/H				6401			3864			3988			229			893			1639			2151
TOTAL HT GAIN x 1.3 BTU/H				6008			4561			4108			850			497			1173			358

CITY OF RICHMOND
BUILDING DIVISION
05/02/2015

TOTAL HEAT GAIN BTU/H:

41503

TONS: 3.46

LOSS DUE TO VENTILATION LOAD BTU/H: 1670

STRUCTURAL HEAT LOSS: 55670

TOTAL COMBINED HEAT LOSS BTU/H: 57340

21.18

05/24/2023

CITY OF RICHMOND HILL
BUILDING DIVISION

16531

1574

SITE NAME: ROUNDEL PH 2
BUILDER: GREENPARK HOMES

0.16

TYPE: PINETREE 11

DATE: Mar-23

GFA: 2706 LO# 100620

HEATING CFM 1504 COOLING CFM 1504
TOTAL HEAT LOSS 55,670 TOTAL HEAT GAIN 41,228
AIR FLOW RATE CFM 27.02 AIR FLOW RATE CFM 36.48

#*GOODMAN

AFUE = 96 %

GMEC960804CNA

INPUT (BTU/H) = 80,000

FAN SPEED

OUTPUT (BTU/H) = 76,800

LOW 868

DESIGN CFM = 1504

MEDLOW 978

CFM @ .6" E.S.P.

MEDIUM 1112

MEDIUM HIGH 1504

TEMPERATURE RISE 47 °F

HIGH 1615

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	10	5
R/A	0	0	5	3	1

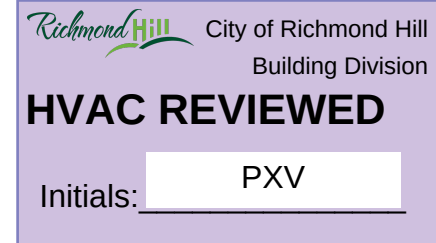
All S/A diffusers 4"x10" unless noted otherwise on layout.

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

RUN #	1	2	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	HALL	MBR	LV/DN	LV/DN	LV/DN	KT/BF	KT/BF	FAM	LND	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH	1.38	1.54	2.09	1.85	1.60	0.80	1.66	1.38	2.13	2.13	2.13	1.93	1.93	1.99	0.23	0.89	1.64	2.15	3.31	3.31	3.31	3.31
CFM PER RUN HEAT	37	42	56	50	43	22	45	37	58	58	58	52	52	54	6	24	44	58	89	89	89	89
RM GAIN MBH	1.65	0.94	2.61	2.35	2.11	0.46	1.04	1.65	2.00	2.00	2.00	2.28	2.28	2.05	0.85	0.50	1.17	0.36	0.31	0.31	0.31	0.31
CFM PER RUN COOLING	60	34	95	86	77	17	38	60	73	73	73	83	83	75	31	18	43	13	11	11	11	11
ADJUSTED PRESSURE	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH	45	60	68	64	60	50	58	52	55	65	59	22	16	54	54	43	30	12	15	12	32	30
EQUIVALENT LENGTH	150	170	170	160	190	200	150	190	120	120	130	120	140	120	160	220	130	180	130	110	140	180
TOTAL EFFECTIVE LENGTH	195	230	238	224	250	250	208	242	175	185	189	142	156	174	214	263	160	192	145	122	172	210
ADJUSTED PRESSURE	0.09	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.1	0.09	0.09	0.11	0.1	0.1	0.08	0.07	0.11	0.09	0.11	0.13	0.09	0.08
ROUND DUCT SIZE	5	5	6	6	6	4	5	5	5	5	5	6	6	5	4	4	4	5	6	6	6	6
HEATING VELOCITY (ft/min)	272	308	286	255	219	252	330	272	426	426	426	265	265	396	69	275	505	426	454	454	454	454
COOLING VELOCITY (ft/min)	441	250	484	438	393	195	279	441	536	536	536	423	423	551	356	207	493	95	56	56	56	56
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	D	D	B	B	A	B	B	C	A	A	A	D	D	C	B	B	C	D	D	D	C	B

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BED-2	BED-3	BED-3	MBR	ENS	FAM
RM LOSS MBH	3.31	2.09	1.85	1.85	1.38	0.51	1.99
CFM PER RUN HEAT	89	56	50	50	37	14	54
RM GAIN MBH	0.31	2.61	2.35	2.35	1.65	0.31	2.05
CFM PER RUN COOLING	11	95	86	86	60	11	75
ADJUSTED PRESSURE	0.16	0.16	0.16	0.16	0.17	0.17	0.17
ACTUAL DUCT LGH	53	73	74	66	41	46	40
EQUIVALENT LENGTH	120	170	150	200	150	140	150
TOTAL EFFECTIVE LENGTH	173	243	224	266	191	186	190
ADJUSTED PRESSURE	0.09	0.07	0.07	0.06	0.09	0.09	0.09
ROUND DUCT SIZE	6	6	6	6	5	4	5
HEATING VELOCITY (ft/min)	454	286	255	255	272	161	396
COOLING VELOCITY (ft/min)	56	484	438	438	441	126	551
OUTLET GRILL SIZE	4X10	4X10	4X10	4X10	3X10	3X10	3X10
TRUNK	A	B	B	A	C	D	C

0.064, 6" dia OK



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	356	0.06	10.2	14	x 8	458	TRUNK G	0	0.00	0	0 x 8 0
TRUNK B	754	0.06	13.6	24	x 8	566	TRUNK H	0	0.00	0	0 x 8 0
TRUNK C	315	0.07	9.4	10	x 8	567	TRUNK I	0	0.00	0	0 x 8 0
TRUNK D	1502	0.06	17.6	28	x 10	772	TRUNK J	0	0.00	0	0 x 8 0
TRUNK E	0	0.00	0	0	x 8	0	TRUNK K	0	0.00	0	0 x 8 0
TRUNK F	0	0.00	0	0	x 8	0	TRUNK L	0	0.00	0	0 x 8 0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8 0
TRUNK P	0	0.05	0	0	x 8 0
TRUNK Q	0	0.05	0	0	x 8 0
TRUNK R	0	0.05	0	0	x 8 0
TRUNK S	0	0.05	0	0	x 8 0
TRUNK T	0	0.05	0	0	x 8 0
TRUNK U	0	0.05	0	0	x 8 0
TRUNK V	0	0.05	0	0	x 8 0
TRUNK W	395	0.05	11.1	14	x 8 508
TRUNK X	1504	0.05	18.4	32	x 10 677
TRUNK Y	996	0.05	15.8	28	x 8 640
TRUNK Z	660	0.05	13.5	22	x 8 540
DROP	1504	0.05	18.4	32	x 10 645

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	135	135	130	130	130	135	336	150	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	46	43	76	44	75	55	41	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	165	215	245	265	250	250	130	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	211	258	321	309	325	305	171	171	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.07	0.06	0.05	0.05	0.05	0.05	0.09	0.09	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	7.3	7.3	7.3	7.5	9	6.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CITY OF RICHMOND HILL
BUILDING DIVISION

05/24/2023

RECEIVED

Per: joshua.nabua

TYPE: PINETREE 11
SITE NAME: ROUNDEL PH 2

LO # 100620

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

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

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

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

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

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Other Rooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Table 9.32.3.A.	TOTAL	<u>148.4</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>148.4</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>68.9</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	78 F	1.08	0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

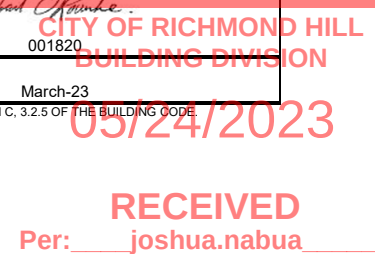
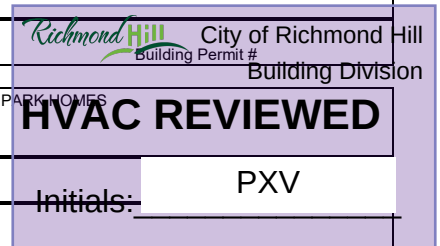
HEAT RECOVERY VENTILATOR		9.32.3.11.
Model:	VANEE V150H	
<u>150</u> cfm high	<u>35</u> cfm low	
<u>75</u> % Sensible Efficiency	☒ HVI Approved	
@ 32 deg F (0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	
BUILDER:	GREENPARK 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:	March-23

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.
INDIVIDUAL BCIN: 19669 MICHAEL O'ROURKE

Michael O'Rourke


CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																												
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 100620		Model: PINETREE 11		Builder: GREENPARK HOMES																																																								
				Date: 2023-03-16																																																								
Volume Calculation			Air Change & Delta T Data																																																									
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$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.322 x 284.07 x 43 °C x 1.2 = 4752 W = 16212 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.101 x 284.07 x 7 °C x 1.2 = 244 W = 832 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to Ventilation																																																									
$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 78 °F x 1.08 x 0.25 = 1670 Btu/h			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 13 °F x 1.08 x 0.25 = 275 Btu/h																																																									
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																												
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												

Michael O'Rourke
BCIN# 19669

CITY OF RICHMOND HILL
BUILDING DIVISION

05/24/2023

RECEIVED

Per: joshua.nabua

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: PINETREE 11	BUILDER: GREENPARK HOMES
SFQT: 2706	SITE: ROUNDEL PH 2
LO# 100620	

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	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 (ft³):	36114.0	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: 53.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	174.0 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	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

INDIVIDUAL BCIN: 19669
MICHAEL O'ROURKE



CITY OF RICHMOND HILL
BUILDING DIVISION

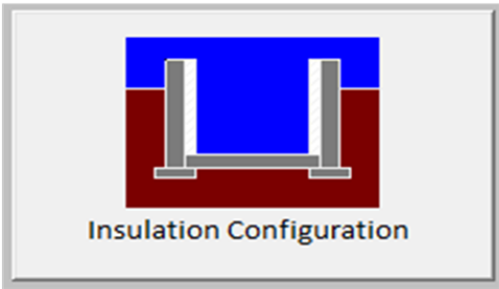
05/24/2023

RECEIVED

Per: joshua.nabua

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	16.2	 Insulation Configuration
Floor Width (m):	10.4	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.7	
Depth Below Grade (m):	1.83	
Window Area (m ²):	0.6	
Door Area (m ²):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1747

TYPE: PINETREE 11
LO# 100620

Michael O'Rourke BCIN #19669

CITY OF RICHMOND HILL
BUILDING DIVISION

05/24/2023


RECEIVEDPer: joshua.nabua

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
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):	6.71			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1022.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1363.2 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.322			
Cooling Air Leakage Rate (ACH/H):	0.101			

TYPE: PINETREE 11

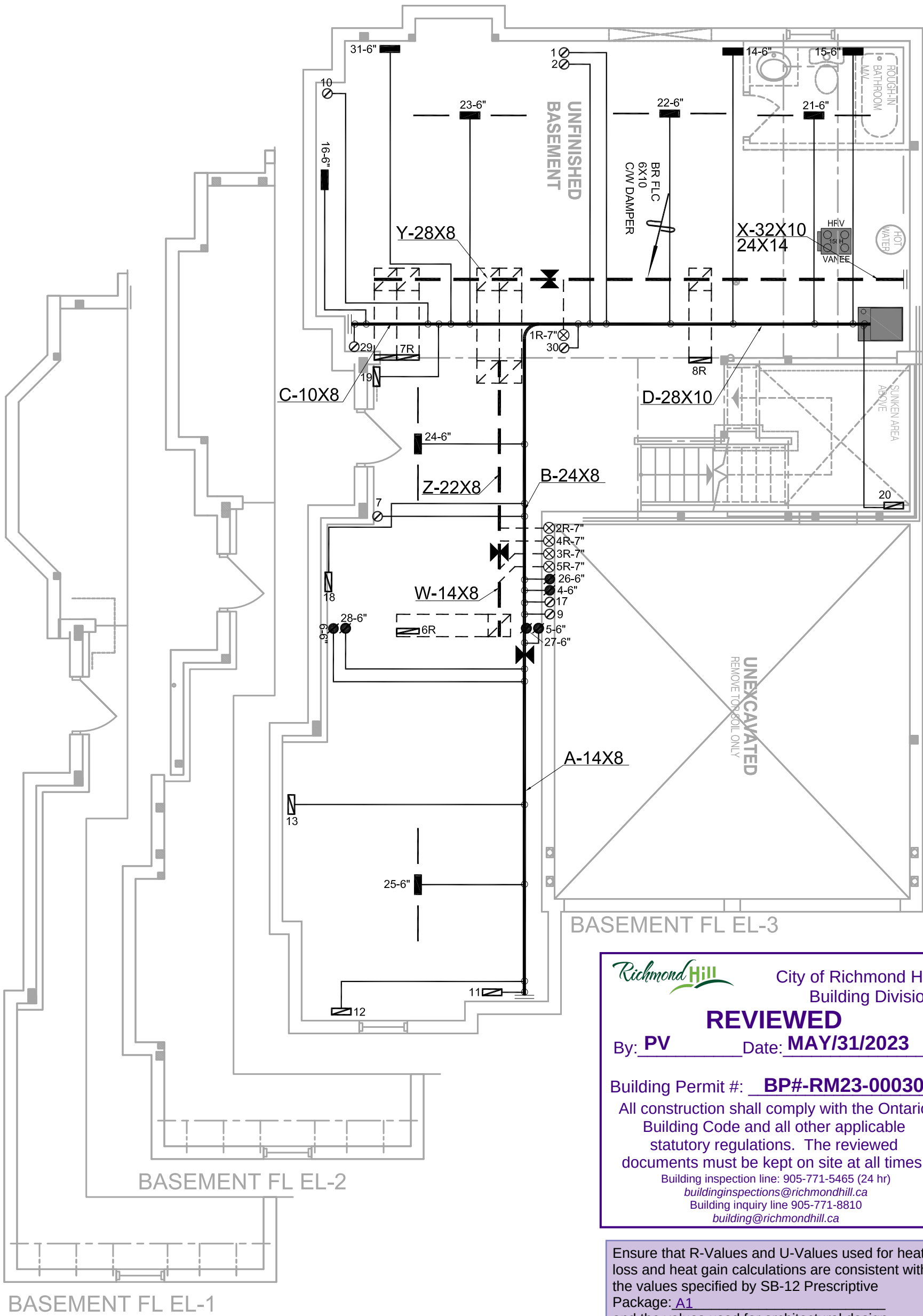
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Michael O'Rourke BCIN# 19669

CITY OF RICHMOND HILL
BUILDING DIVISION

05/24/2023

RECEIVED
Per: joshua.nabua



City of Richmond Hill
Building Division

REVIEWED

By: **PV** Date: **MAY/31/2023**

Building Permit #: **BP#-RM23-00030**

All construction shall comply with the Ontario Building Code and all other applicable statutory regulations. The reviewed documents must be kept on site at all times.

Building inspection line: 905-771-5465 (24 hr)

buildinginspections@richmondhill.ca

Building inquiry line 905-771-8810

building@richmondhill.ca

Ensure that R-Values and U-Values used for heat loss and heat gain calculations are consistent with the values specified by SB-12 Prescriptive Package: **A1** and the values used for architectural design

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

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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.

PACKAGE A1

Client GREENPARK HOMES	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 57340 BTU/H UNIT DATA	# OF RUNS S/A R/A FANS	Sheet Title BASEMENT HEATING LAYOUT		
Project Name ROUNDEL PH 2 RICHMOND HILL, ONTARIO		MAKE GOODMAN	3RD FLOOR			
PINETREE 11 2706 sqft		MODEL GMEC960804CNA	2ND FLOOR	14	5	4
		INPUT 80 MBTU/H	1ST FLOOR	10	3	2
		OUTPUT 76 MBTU/H	BASEMENT	5	1	0
		COOLING 3.5 TONS	ALL S/A DIFFUSERS 4" x 10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5" Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A			
	FAN SPEED 1504 cfm @ 0.6" w.c.					

CITY OF RICHMOND HILL
BUILDING DIVISION

Date **MAR/2023**

Scale **3/16" = 1'-0"**

BCIN# 19669

LO# 100620

Per: **joshua.nabua**

7. Combustion air supply shall be provided to the furnace and hot water tank.

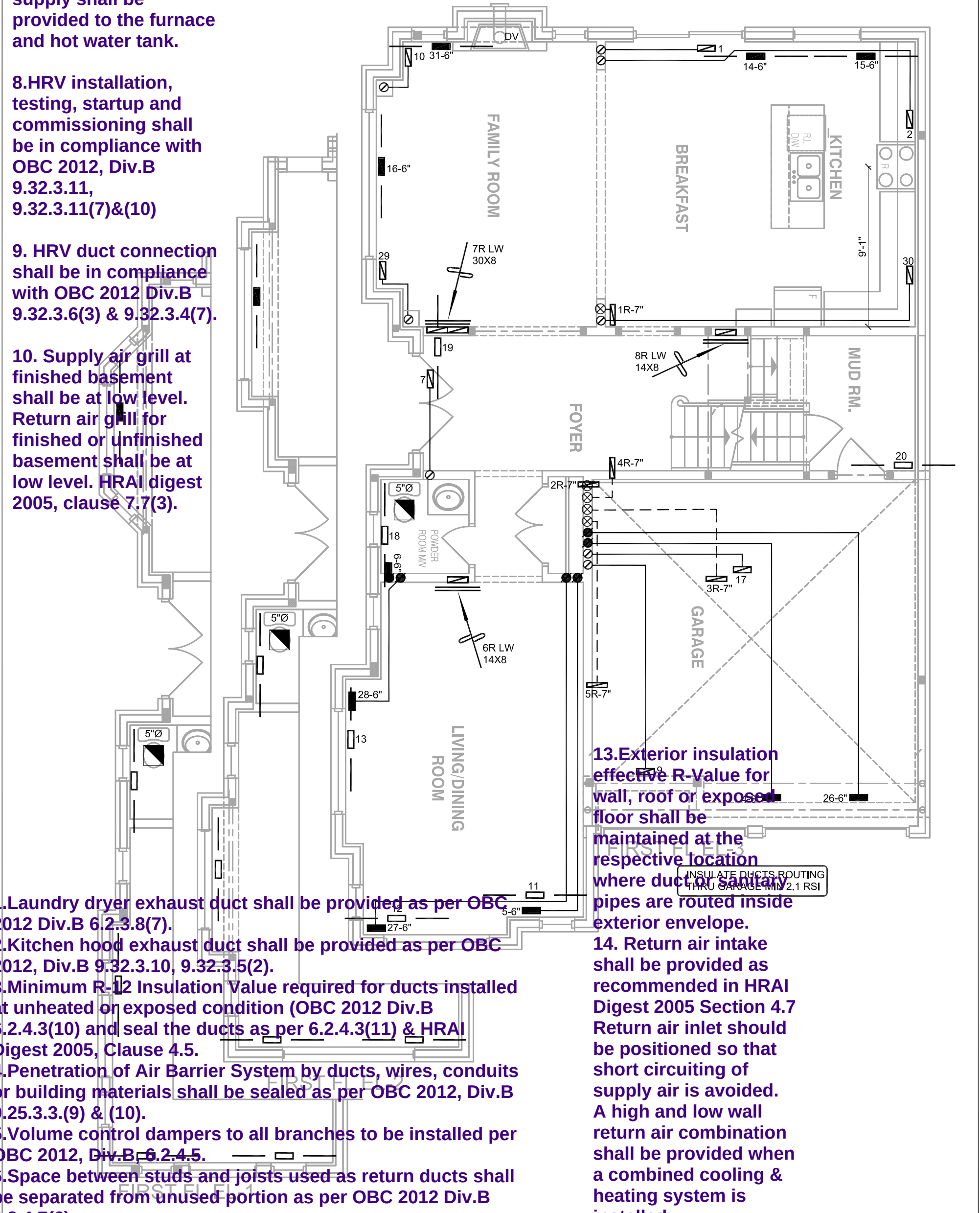
8.HRV installation, testing, startup and commissioning shall be in compliance with OBC 2012, Div.B 9.32.3.11, 9.32.3.11(7)&(10)

9. HRV duct connection shall be in compliance with OBC 2012 Div.B 9.32.3.6(3) & 9.32.3.4(7).

10. Supply air grill at finished basement shall be at low level. Return air grill for finished or unfinished basement shall be at low level. HRAI digest 2005, clause 7.7(3).

- 1.Laundry dryer exhaust duct shall be provided as per OBC 2012 Div.B 6.2.3.8(7).
- 2.Kitchen hood exhaust duct shall be provided as per OBC 2012, Div.B 9.32.3.10, 9.32.3.5(2).
- 3.Minimum R-12 Insulation Value required for ducts installed at unheated or exposed condition (OBC 2012 Div.B 6.2.4.3(10) and seal the ducts as per 6.2.4.3(11) & HRAI Digest 2005, Clause 4.5.
- 4.Penetration of Air Barrier System by ducts, wires, conduits or building materials shall be sealed as per OBC 2012, Div.B 9.25.3.3.(9) & (10).
- 5.Volume control dampers to all branches to be installed per OBC 2012, Div.B 6.2.4.5.
- 6.Space between studs and joists used as return ducts shall be separated from unused portion as per OBC 2012 Div.B 6.2.4.7(6)

- 13.Exterior insulation effective R-Value for wall, roof or exposed floor shall be maintained at the respective location where duct or sanitary pipes are routed inside exterior envelope.
14. Return air intake shall be provided as recommended in HRAI Digest 2005 Section 4.7 Return air inlet should be positioned so that short circuiting of supply air is avoided. A high and low wall return air combination shall be provided when a combined cooling & heating system is installed.
15. For simplified HRV/ERV installation, with stale air and fresh air connected to return air plenum, stale air intake and fresh air supply shall be separated minimum 3' or as recommended by HRV/ERV Manufacturer.



HVAC LEGEND						REVISIONS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	NO.	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	2.	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE	3.	

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Client

GREENPARK HOMES

Project Name

ROUNDEL PH 2
RICHMOND HILL, ONTARIO

PINETREE 11 2706 sqft

HVAC DESIGNS LTD.

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.

3.

2.

1.

DESCRIPTION

DATE

REVISIONS

PACKAGE A1

FIRST FLOOR HEATING LAYOUT

CITY OF RICHMOND HILL BUILDING DIVISION

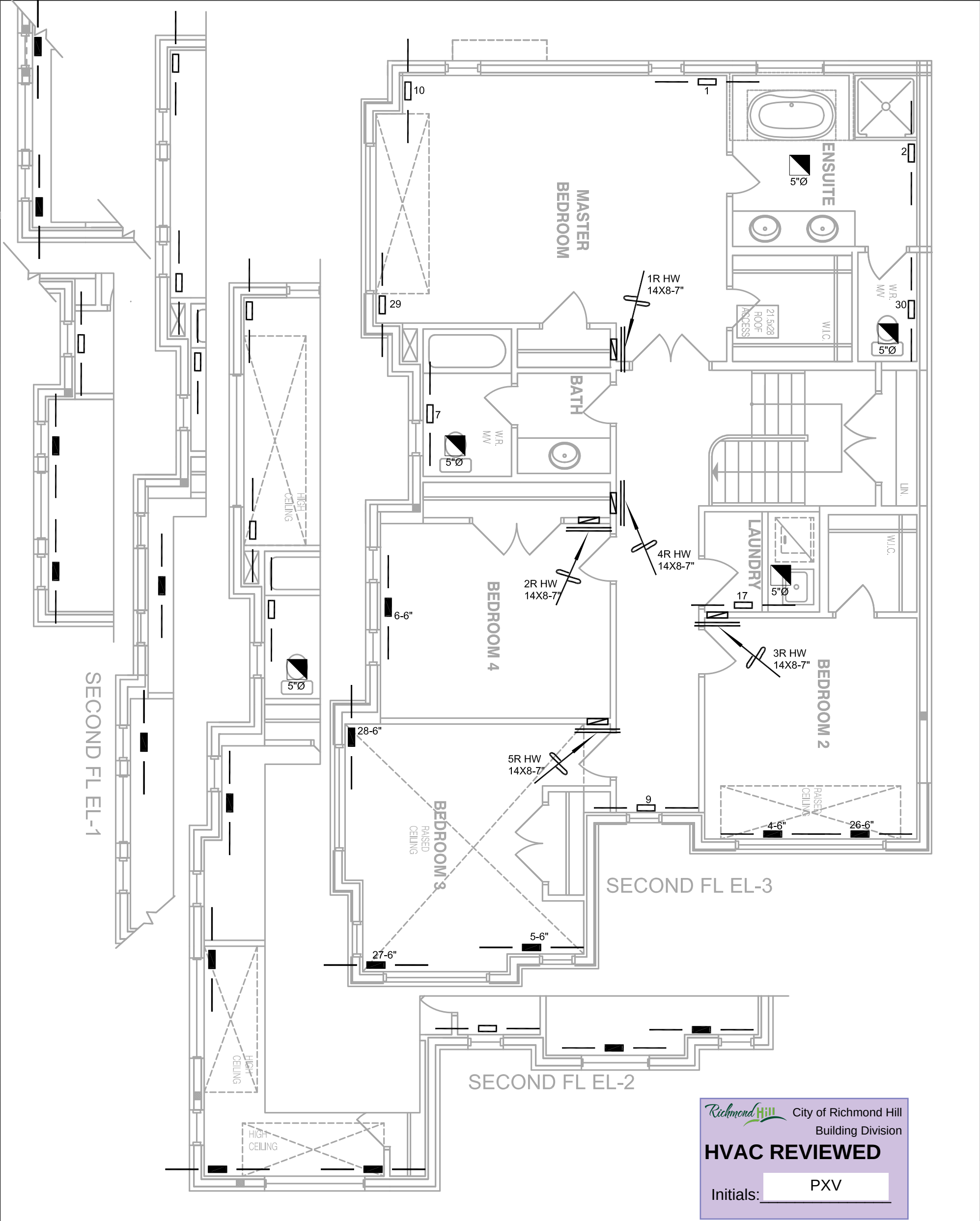
Date MAR/2023

Scale 3/16" = 1'-0"

BCIN# 19669

LO# 100620

Per: joshua.nabua



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.
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							REVISIONS	

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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.

PACKAGE A1

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	
Project Name			SECOND FLOOR HEATING LAYOUT	
GREENPARK HOMES			CITY OF RICHMOND HILL BUILDING DIVISION	
ROUND EL PH 2			Date	MAR/2023
RICHMOND HILL, ONTARIO			Scale	3/16" = 1'-0"
PINETREE 11			BCIN#	19669
2706 sqft		LO# 100620		
		Per: joshua.nabua		