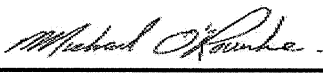


HVAC REVIEWED

Initials: **PXV**

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 RICHMOND HILL	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: 38-10 Beech OPT 2ND - FIN BSMT - WUB Project: CENTREFIELD (WEST GORMLEY)	
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.			
April 22, 2021 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.

HVAC REVIEWED

Initials: **PXV**

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 RICHMOND HILL	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: 38-10 Beech OPT 2ND Project: CENTREFIELD (WEST GORMLEY)	
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.			
April 22, 2021 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.

Schedule 1: Designer Information

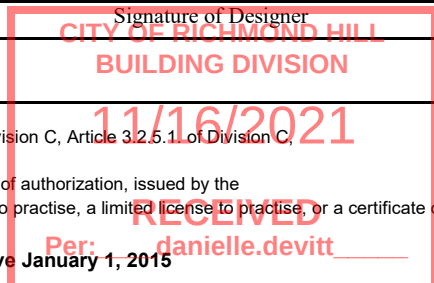
Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information			
Building number, street name		Unit no.	Lot/con.
Municipality RICHMOND HILL	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: 38-10 Beech Project: CENTREFIELD (WEST GORMLEY)	
D. Declaration of Designer			
I, MICHAEL O'ROURKE (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.			
April 19, 2021 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: CENTREFIELD (WEST GORMLEY)

BUILDER: ROYAL PINE HOMES

TYPE: 38-10

GFA: 2554

DATE: Apr-21

LO# 87612

WINTER NATURAL AIR CHANGE RATE 0.227

SUMMER NATURAL AIR CHANGE RATE 0.071

HEAT LOSS ΔT °F. 78

HEAT GAIN ΔT °F. 13

CSA-F280-12

SB-12 PERFORMANCE

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	ENS-2
			37	23	14	33	33	11	10	11
			9	9	9	9	9	9	9	9
FACTORS										
GRS.WALL AREA	LOSS	GAIN	333	207	126	297	297	99	90	99
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	21.8	16.0	0	0	0	0	0	0	0	0
EAST	21.8	41.6	0	0	0	0	0	0	0	0
SOUTH	21.8	24.9	0	0	0	0	0	0	0	0
WEST	21.8	41.6	44	958	1828	17	370	706	0	0
SKYLT.	35.8	101.2	0	0	0	0	0	0	0	0
DOORS	25.8	4.3	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.2	0.7	289	1215	200	181	761	125	126	530
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	276	363	162	126	166	74	112	147
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	30	84
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	229	598
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			2537		1493	677	2253	3124	879	810
SUB TOTAL HT GAIN				2190	1130	153	1975	2624	357	174
LEVEL FACTOR / MULTIPLIER	0.20	0.18							0.20	0.18
AIR CHANGE HEAT LOSS			447		263	119	397	551	155	143
AIR CHANGE HEAT GAIN				118	61	8	106	141	19	9
DUCT LOSS			0		0	0	0	0	95	18
DUCT GAIN			0		0	0	0	0	0	0
HEAT GAIN PEOPLE	240	2	480	0	0	0	1	240	1	240
HEAT GAIN APPLIANCES/LIGHTS			517	0	0	0	517	517	517	0
TOTAL HT LOSS BTU/H			2984		1756	796	2650	4043	1034	1048
TOTAL HT GAIN x 1.3 BTU/H			4297		1548	210	3689	5036	1473	262

ROOM USE			FAM			KT/BR			LV/DN			LAUN			FOY			MUD			BAS					
EXP. WALL			39			35			41			15			15			10			162					
CLG. HT.			10			10			10			11			10			11			10					
FACTORS																										
GRS.WALL AREA			LOSS			GAIN																				
GLAZING			394			354			414			167			152			111			1134					
			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	20	436	831	63	1372	2618	0	0	0	0	0	0	0	0	0	0	0	0	0	3	65	12	22	
SOUTH	21.8	24.9	16	349	398	0	0	0	12	261	299	0	0	0	0	0	0	0	0	0	9	196	22	22		
WEST	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	
SKYLT.	35.8	101.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS	25.8	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	517	85	85		
NET EXPOSED WALL	4.2	0.7	358	1505	248	291	1222	201	402	1691	278	167	700	115	100	418	69	91	383	63	0	0	0	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	486	1790	29	29		
EXPOSED CLG	1.3	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	
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	0	0	0	0	
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0			0			0	0	
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0			0			0	0	
SUBTOTAL HT LOSS			2289			2594			1952			700			1714			900			8030			72	72	
SUB TOTAL HT GAIN				1477		2819			577			115			738			148			0.50	0.69	5565	39	39	
LEVEL FACTOR / MULTIPLIER	0.30	0.33				0.30	0.33		0.30	0.33		0.30	0.33		0.30	0.33		0.30	0.33		0.50	0.69	5565	39	39	
AIR CHANGE HEAT LOSS			753			853			642			230			564			296			5565			39	39	
AIR CHANGE HEAT GAIN				79		151			31			6			40			8			0			39	39	
DUCT LOSS			0			0			0			0			0			0			0			39	39	
DUCT GAIN			0			0			0			0			0			0			0			39	39	
HEAT GAIN PEOPLE	240		0			0			0			0			0			0			0			39	39	
HEAT GAIN APPLIANCES/LIGHTS			517			517			517			517			517			517			517			39	39	
TOTAL HT LOSS BTU/H			3043			3448			2595			931			2278			1196			13596			167	167	
TOTAL HT GAIN x 1.3 BTU/H			2695			4533			1462			830			1010			203			1670			167	167	

CITY OF RICHMOND HILL
BUILDING DIVISION
11/16/2021
RECEIVED
Per: danielle.devitt

TOTAL HEAT GAIN BTU/H:

29935

TONS: 2.49

LOSS DUE TO VENTILATION LOAD BTU/H: 1670

STRUCTURAL HEAT LOSS: 42400

TOTAL COMBINED HEAT LOSS BTU/H: 44070

CITY OF RICHMOND HILL
BUILDING DIVISION
11/16/2021
RECEIVED
Per: danielle.devitt

SITE NAME: CENTREFIELD (WEST GORMLEY)
BUILDER: ROYAL PINE HOMES

TYPE: 38-10

DATE: Apr-21

GFA: 2554

LO# 87612

HEATING CFM 970 COOLING CFM 970
TOTAL HEAT LOSS 42,400 TOTAL HEAT GAIN 29,660
AIR FLOW RATE CFM 22.88 AIR FLOW RATE CFM 32.7

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

**CARRIER

59TN6A-060-14V

FAN SPEED

LOW 820

MEDLOW 0

MEDIUM 970

MEDIUM HIGH 0

HIGH 1520

AFUE = 97 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 58,000

DESIGN CFM = 970
CFM @ .6" E.S.P.

TEMPERATURE RISE 55 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	7	4
R/A	0	0	5	2	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	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	ENS-2	BATH	FAM	KT/BR	KT/BR	LV/DN	LAUN	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.49	1.76	0.80	1.33	2.02	1.03	0.52	1.33	2.02	1.49	1.00	0.52	3.04	1.72	1.72	2.59	0.93	2.28	1.20	3.40	3.40	3.40	3.40
CFM PER RUN HEAT	34	40	18	30	46	24	12	30	46	34	23	12	70	39	39	59	21	52	27	78	78	78	78
RM GAIN MBH.	2.15	1.55	0.21	1.84	2.52	1.47	0.13	1.84	2.52	2.15	0.74	0.13	2.70	2.27	2.27	1.46	0.83	1.01	0.20	0.42	0.42	0.42	0.42
CFM PER RUN COOLING	70	51	7	60	82	48	4	60	82	70	24	4	88	74	74	48	27	33	7	14	14	14	14
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	55	47	26	43	34	44	30	43	44	38	41	34	33	36	29	35	37	28	31	38	29	18	30
EQUIVALENT LENGTH	150	140	130	170	160	190	190	160	170	140	180	180	120	140	160	120	110	110	150	110	130	100	120
TOTAL EFFECTIVE LENGTH	205	187	156	213	194	234	220	203	214	178	221	214	153	176	189	155	147	138	181	148	159	118	150
ADJUSTED PRESSURE	0.08	0.09	0.11	0.08	0.08	0.07	0.08	0.08	0.08	0.1	0.08	0.08	0.11	0.1	0.09	0.11	0.12	0.12	0.1	0.12	0.11	0.15	0.11
ROUND DUCT SIZE	6	5	4	5	6	6	4	5	6	6	4	4	6	5	5	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	173	294	207	220	235	122	138	220	235	173	264	138	357	286	286	433	241	597	310	573	573	573	573
COOLING VELOCITY (ft/min)	357	374	80	441	418	245	46	441	418	357	275	46	449	543	543	352	310	379	80	103	103	103	103
OUTLET GRILL SIZE	4X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	A	C	E	E	B	E	E	E	A	E	E	A	B	B	D	B	D	B	B	A	E	D

RUN #	ROOM NAME	RM LOSS MBH.	CFM PER RUN HEAT	RM GAIN MBH.	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH.	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
1	MBR	1.49	34	2.15	70	0.17	55	150	205	0.08	6	173	357	4X10	B
2	ENS	1.76	40	1.55	51	0.17	47	140	187	0.09	5	294	374	3X10	A
3	WIC	0.80	18	0.21	7	0.17	26	130	156	0.11	4	207	80	3X10	C
4	BED-2	1.33	30	1.84	60	0.17	43	170	213	0.08	5	220	441	3X10	E
5	BED-3	2.02	46	2.52	82	0.16	34	160	194	0.08	6	235	418	4X10	E
6	BED-4	1.03	24	1.47	48	0.17	44	190	234	0.07	6	122	245	4X10	B
7	BATH	0.52	12	0.13	4	0.17	30	190	220	0.08	4	138	46	3X10	E
8	BED-2	1.33	30	1.84	60	0.17	43	160	203	0.08	5	220	441	3X10	E
9	BED-3	2.02	46	2.52	82	0.16	44	170	214	0.08	6	235	418	4X10	E
10	MBR	1.49	34	2.15	70	0.17	55	150	205	0.08	6	173	357	4X10	A
11	ENS-2	1.00	23	0.74	24	0.17	41	180	221	0.08	4	264	275	3X10	E
12	BATH	0.52	12	0.13	4	0.17	34	180	214	0.08	4	138	46	3X10	E
13	FAM	3.04	70	2.70	88	0.16	33	120	153	0.11	6	357	449	4X10	A
14	KT/BR	1.72	39	2.27	74	0.17	36	140	176	0.1	5	286	543	3X10	B
15	KT/BR	1.72	39	2.27	74	0.17	29	160	189	0.09	5	286	543	3X10	B
16	LV/DN	2.59	59	1.46	48	0.17	35	120	155	0.11	5	433	352	3X10	D
17	LAUN	0.93	21	0.83	27	0.17	37	110	147	0.12	4	241	310	3X10	B
19	FOY	2.28	52	1.01	33	0.17	28	110	138	0.12	4	597	379	3X10	D
20	MUD	1.20	27	0.20	7	0.17	31	150	181	0.1	4	310	80	3X10	B
21	BAS	3.40	78	0.42	14	0.17	38	110	148	0.12	5	573	103	3X10	B
22	BAS	3.40	78	0.42	14	0.17	29	130	159	0.11	5	573	103	3X10	A
23	BAS	3.40	78	0.42	14	0.17	18	100	118	0.15	5	573	103	3X10	E
24	BAS	3.40	78	0.42	14	0.17	30	120	150	0.11	5	573	103	3X10	D

SUPPLY AIR TRUNK SIZE													RETURN AIR TRUNK SIZE												
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		
	TRUNK A	222	0.09	7.7	8	x	8	500		TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
	TRUNK B	262	0.07	8.8	10	x	8	472		TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
	TRUNK C	502	0.07	11.2	14	x	8	645		TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
	TRUNK D	189	0.11	6.9	8	x	8	425		TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
	TRUNK E	466	0.08	10.5	14	x	8	599		TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	0	0	x	8	0
	TRUNK F	968	0.07	14.3	24	x	8	726		TRUNK L	0	0.00	0	0	x	8	0	TRUNK T	0	0.05	0	0	x	8	0

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24
AIR VOLUME	95	75	75	75	75	340	85	0	0	0	0	0	0	0	0	0	0	150	150	150	150	150	150
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
ACTUAL DUCT LGH.	50	46	41	37	31	23	28	1	1	1	1	1	1	1	1	1	1	14	14	14	14	14	14
EQUIVALENT LENGTH	155	255	235	235	255	150	215	0	0	0	0	0	0	0	0	0	0	135	135	135	135	135	135
TOTAL EFFECTIVE LH	205	301	276	272	286	173	243	1	1	1	1	1	1	1	1	1	1	149	149	149	149	149	149
ADJUSTED PRESSURE	0.07	0.05	0.05	0.05	0.05	0.09	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10	0.10	0.10	0.10	0.10	0.10
ROUND DUCT SIZE	6	6	6	6	6	9.1	6	0	0	0	0	0	0	0	0	0	0	6.5	6.5	6.5	6.5	6.5	6.5
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8	8
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
INLET GRILL SIZE	14	14	14	14	14	30	14	0	0	0	0	0	0	0	0	0	0	14	14	14	14	14	14

CITY OF RICHMOND HILL
BUILDING DIVISION
11/16/2021
Per: danielle.devitt

TYPE: 38-10
SITE NAME: CENTREFIELD (WEST GORMLEY)

LO # 87612

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>5</u> @ 10.6 cfm	<u>53.0</u> cfm
Table 9.32.3.A.	TOTAL	<u>180.2</u> cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED		9.32.3.4(1)
1 Bedroom	31.8	cfm
2 Bedroom	47.7	cfm
3 Bedroom	63.6	cfm
4 Bedroom	79.5	cfm
5 Bedroom	95.4	cfm
TOTAL	79.5	cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>180.2</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u>	cfm
Required Supplemental Capacity	<u>100.7</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE 65H
Location:	BSMT
<u>79.5</u> cfm	☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION				
CFM	ΔT °F	FACTOR	% LOSS	
79.5 CFM	X 78 F	X 1.08	X	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
ENS-2	BY INSTALLING CONTRACTOR	50	☒	3.5

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:	
ROYAL PINE 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 #	Per: danielle devitt 001820
Date:	April-21

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#: 87612		Model: 38-10		Builder: ROYAL PINE HOMES																																																								
				Date: 4/19/2021																																																								
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>1109</td><td>10</td><td>11090</td></tr> <tr><td>First</td><td>1109</td><td>10</td><td>11200.9</td></tr> <tr><td>Second</td><td>1445</td><td>9</td><td>13005</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>35,295.9 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>999.5 m³</td></tr> </tbody> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1109	10	11090	First	1109	10	11200.9	Second	1445	9	13005	Third	0	9	0	Fourth	0	9	0	Total:			35,295.9 ft³	Total:			999.5 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%;">0.227</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.071</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>-21</td> <td>43</td> <td>78</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	0.227	SUMMER NATURAL AIR CHANGE RATE	0.071	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-21	43	78	Summer DTDc	24	31	7	13
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																									
Bsmt	1109	10	11090																																																									
First	1109	10	11200.9																																																									
Second	1445	9	13005																																																									
Third	0	9	0																																																									
Fourth	0	9	0																																																									
Total:			35,295.9 ft³																																																									
Total:			999.5 m³																																																									
WINTER NATURAL AIR CHANGE RATE	0.227																																																											
SUMMER NATURAL AIR CHANGE RATE	0.071																																																											
Design Temperature Difference																																																												
	Tin °C	Tout °C	ΔT °C	ΔT °F																																																								
Winter DTDh	22	-21	43	78																																																								
Summer DTDc	24	31	7	13																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.227 x 277.63 x 43 °C x 1.2 = 3262 W = 11130 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.071 x 277.63 x 7 °C x 1.2 = 167 W = 571 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)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HL_{clevel})</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.5</td><td rowspan="5">11,130</td><td>8,030</td><td>0.693</td></tr> <tr><td>2</td><td>0.3</td><td>10,149</td><td>0.329</td></tr> <tr><td>3</td><td>0.2</td><td>12,627</td><td>0.176</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0.000</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0.000</td></tr> </tbody> </table> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0					Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})	1	0.5	11,130	8,030	0.693	2	0.3	10,149	0.329	3	0.2	12,627	0.176	4	0	0	0.000	5	0	0	0.000																														
Level	Level Factor (LF)	HLairbv Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HL _{clevel})																																																								
1	0.5	11,130	8,030	0.693																																																								
2	0.3		10,149	0.329																																																								
3	0.2		12,627	0.176																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								

CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED

Per: danielle.devitt

HEAT LOSS AND GAIN SUMMARY SHEET**MODEL:** 38-10**BUILDER:** ROYAL PINE HOMES**SFQT:** 2554**LO#** 87612**SITE:** CENTREFIELD (WEST GORMLEY)**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

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	2.50	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	TIGHT	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	35295.9	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:	7.0 ft
LENGTH: 49.0 ft	WIDTH: 32.0 ft	EXPOSED PERIMETER:	162.0 ft

2012 OBC - COMPLIANCE PACKAGE**Component****Compliance Package
SB-12 PERFORMANCE****Nominal Min. Eff.**

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.20
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.70
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22+1.5	18.50
Basement Walls Minimum RSI (R)-Value	20	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	1.6	-
Skylights Maximum U-Value	2.6	-
Space Heating Equipment Minimum AFUE	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	94%	-

CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED

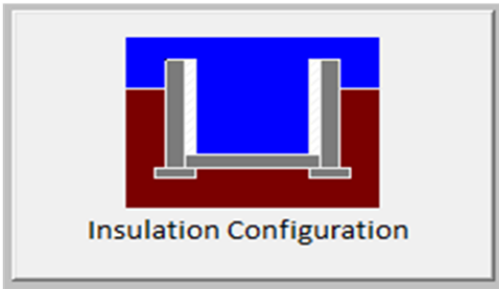
Per: danielle.devitt*Michael O'Rourke*

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

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):	14.9	 Insulation Configuration
Floor Width (m):	9.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	3.0	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.1	
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):	1600	

TYPE: 38-10
LO# 87612CITY OF RICHMOND HILL
BUILDING DIVISION

11/16/2021

RECEIVED

Per: danielle.devitt

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

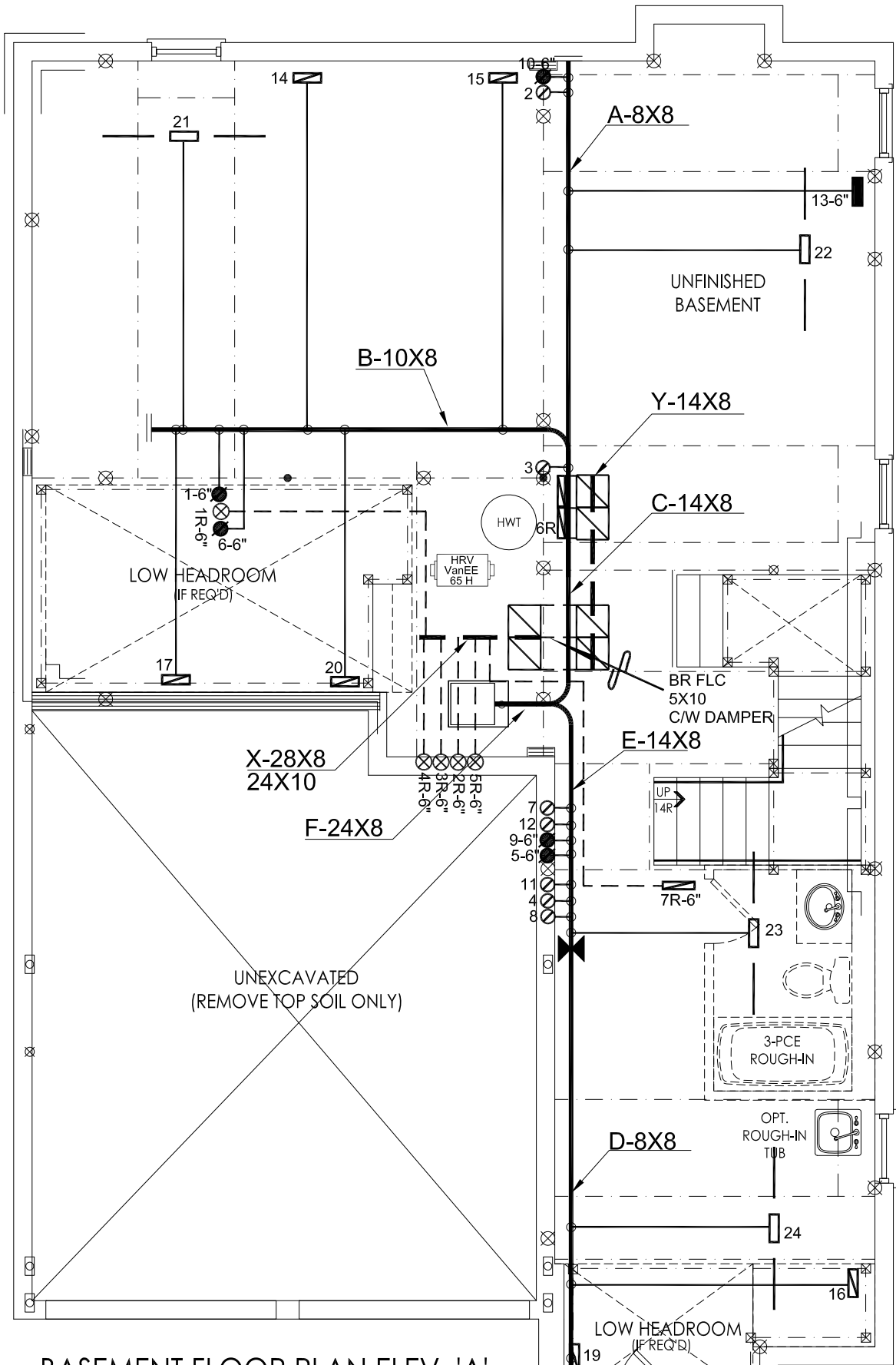
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.74			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	999.5			
Air Leakage/Ventilation				
Air Tightness Type:	Energy Star Detached (2.5 ACH)			
Custom BDT Data:	ELA @ 10 Pa.		933.0 cm ²	
	2.50		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):	0.227			
Cooling Air Leakage Rate (ACH/H):	0.071			

TYPE: 38-10
LO# 87612CITY OF RICHMOND HILL
BUILDING DIVISION

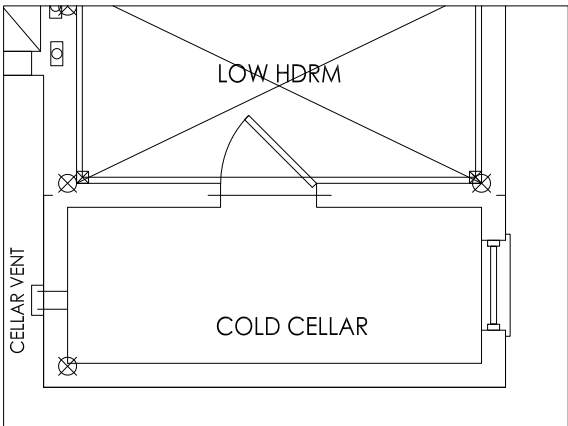
11/16/2021

RECEIVED

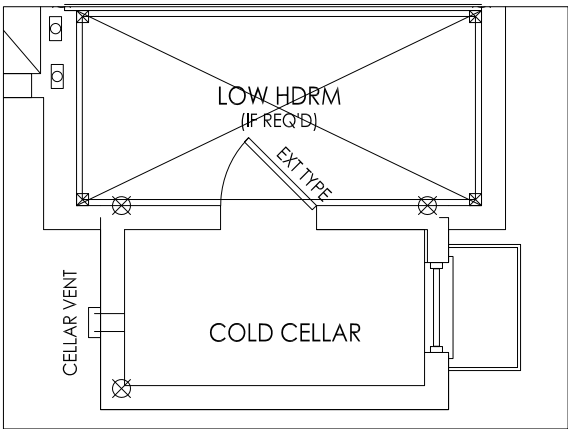
Per: danielle.devitt



BASEMENT FLOOR PLAN ELEV. 'A'



BASEMENT FLOOR PLAN ELEV. 'B'



BASEMENT FLOOR PLAN ELEV. 'C'

CSA-F280-12

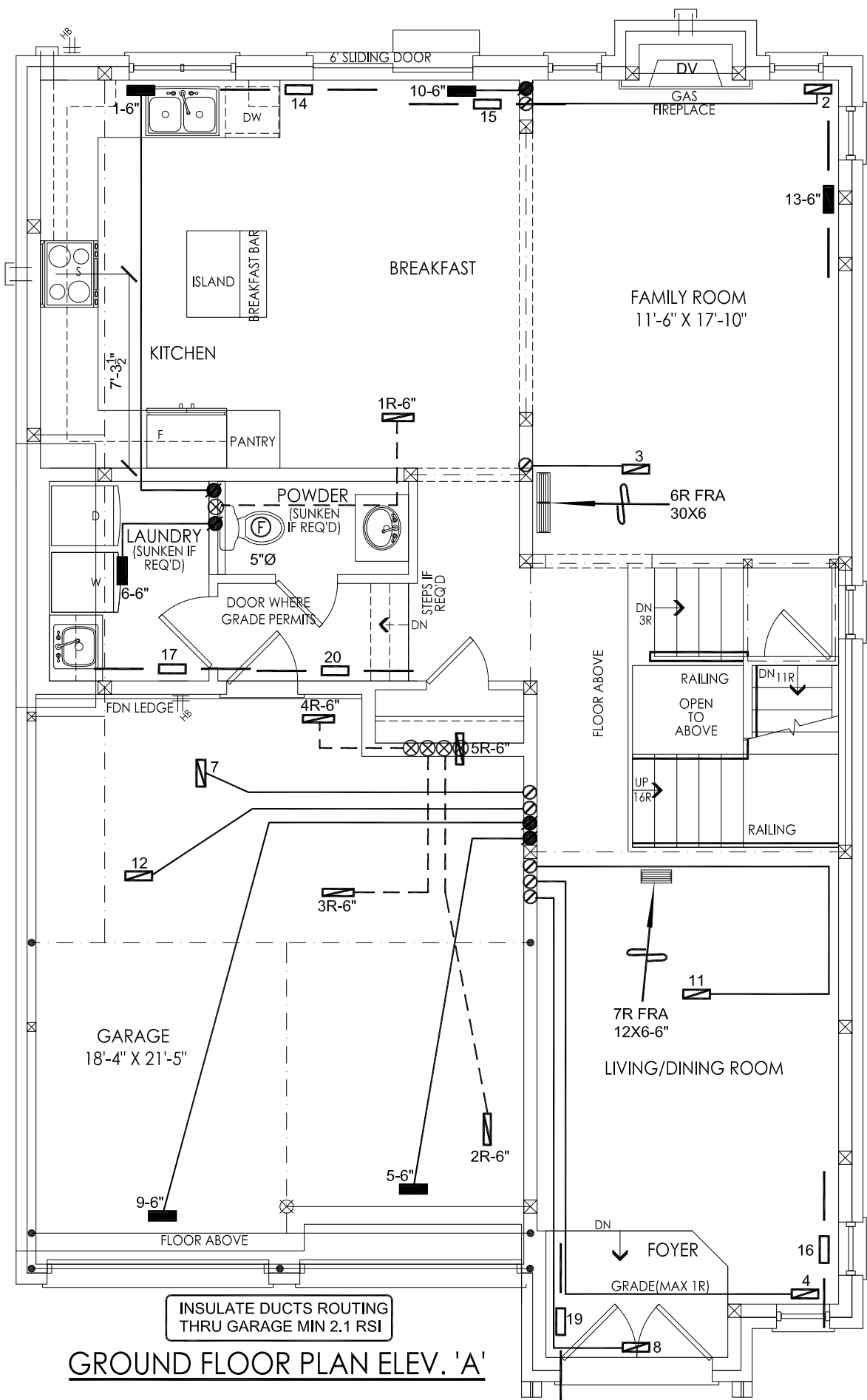
SB-12 PERFORMANCE

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

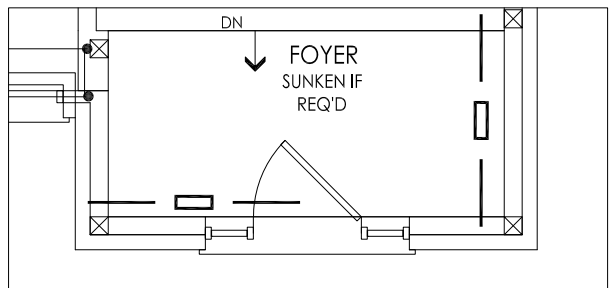
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	SUPPLY AIR GRILLE 6" BOOT		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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

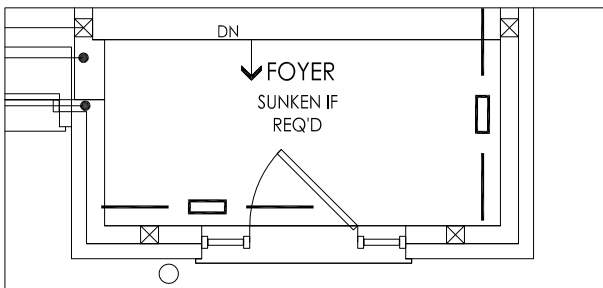
Client			HEAT LOSS 44070 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
ROYAL PINE HOMES	375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services		MAKE 59TN6A-060-14V		3RD FLOOR		BASEMENT	
MODEL CARRIER			2ND FLOOR		HEATING			
INPUT 60 MBTU/H			1ST FLOOR		LAYOUT			
OUTPUT 58 MBTU/H			BASEMENT		Date			
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.		COOLING 2.5 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		SEPT/2020	
CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO			FAN SPEED 970 cfm @ 0.6" w.c.		Scale		3/16" = 1'-0"	
38-10					BCIN# 19669			
2554 sqft					LO#		87612	



GROUND FLOOR PLAN ELEV. 'A'



GROUND FLOOR PLAN ELEV. 'B'



GROUND FLOOR PLAN ELEV. 'C'

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

CSA-F280-12

SB-12 PERFORMANCE

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client
ROYAL PINE HOMES

Project Name
**CENTREFIELD (WEST GORMLEY)
RICHMOND HILL, ONTARIO**

38-10 2554 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.

11/16/2021
RECEIVED
Per: danielle.devitt

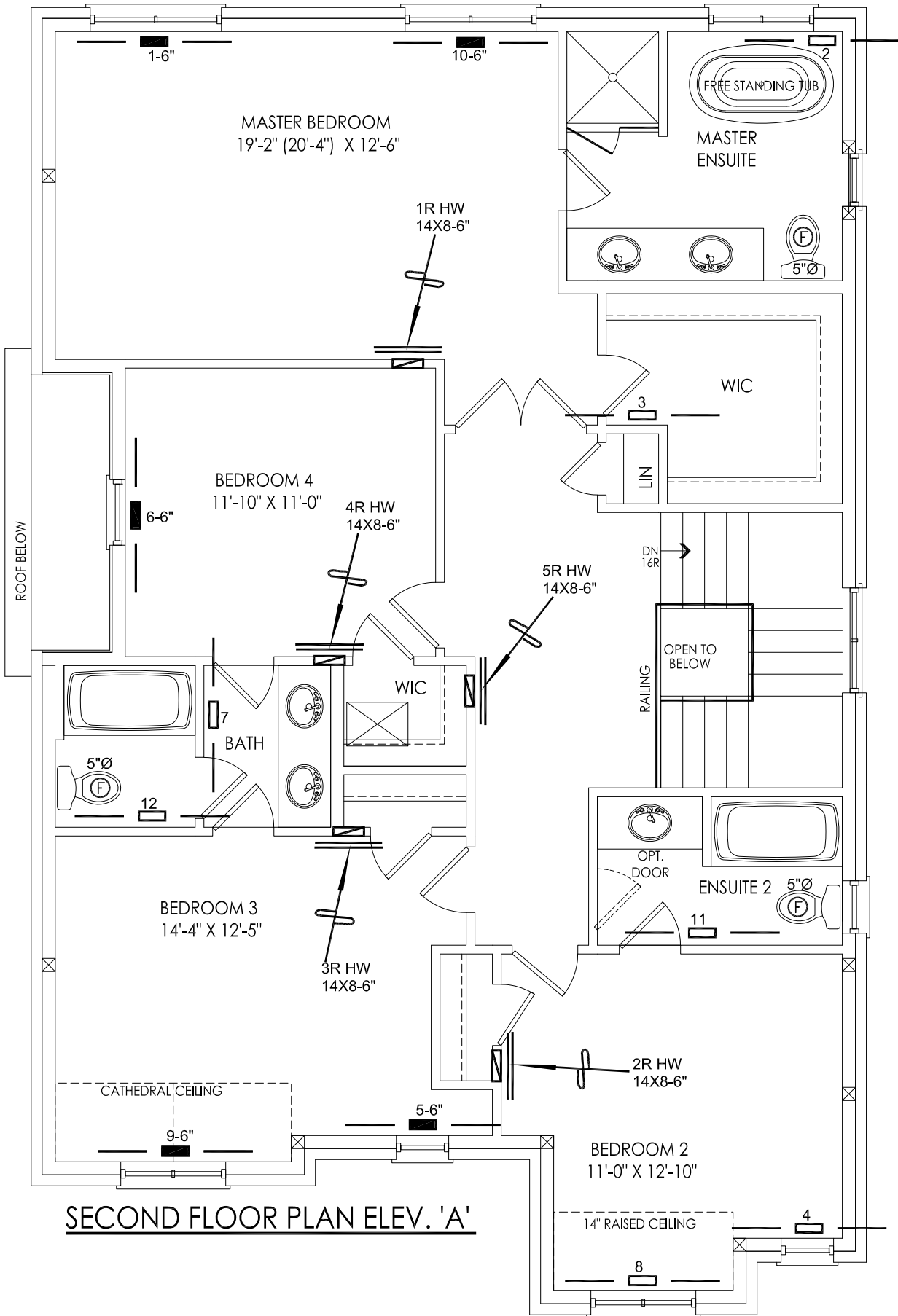
Sheet Title
**FIRST FLOOR
HEATING
LAYOUT**

Date
SEPT/2020

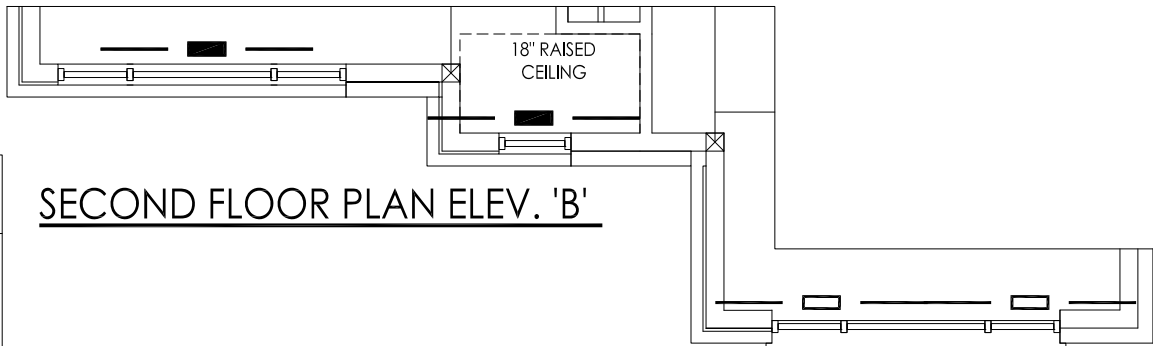
Scale
3/16" = 1'-0"

BCIN# 19669

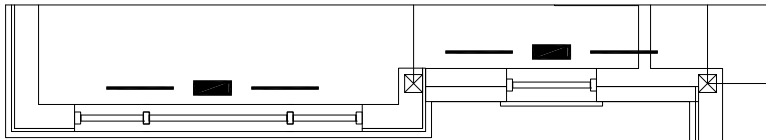
LO# **87612**



SECOND FLOOR PLAN ELEV. 'A'



SECOND FLOOR PLAN ELEV. 'B'



SECOND FLOOR PLAN ELEV. 'C'

CSA-F280-12

SB-12 PERFORMANCE

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

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	REVISED AS PER ARCHITECTURALS	APR/2021
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	REVISED TO PERFORMANCE	SEPT/2020
	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		

ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.

Client ROYAL PINE 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	11/16/2021 RECEIVED Per: <u>danielle.devitt</u>	Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name CENTREFIELD (WEST GORMLEY) RICHMOND HILL, ONTARIO				Date SEPT/2020	Scale 3/16" = 1'-0"
38-10		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		LO# 87612
2554 sqft					