MCCALLUM HVAC DESIGN INC

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 3804 - Elev. A,B and C		Lot: 3804	Lot/con.
Municipality: Brampton	Postal code	Plan number/ other description	

B. Individual who reviews and takes responsibility for design activities			
Name: **Doug McCallum**		Firm: **McCallum HVAC Design Inc.**	
Street address: **2 Dewside Drive Unit 208**		Unit no.	Lot/con.
Municipality: **Brampton**	Postal code: **L6R 3Y5**	Province: **Ontario**	E-mail: info@mccallumhvac.com
Telephone number: **(905) 840-8166**	Fax number		Cell number: **(647) 229-0380**

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]

House	☒ HVAC – House	Building Structural
Small Buildings	Building Services	Plumbing – House
Large Buildings	Detection, Lighting and Power	Plumbing – All Buildings
Complex Buildings	Fire Protection	On-site Sewage Systems

Description of designer's work	**Model Certification**		**Project #:** RP23049
Heating and Cooling Load Calculations Air System Design Residential mechanical ventilation Design Summary Residential System Design per CAN/CSA-F280-12 Residential New Construction - Forced Air		Builder	Roval Pine Homes
		Project	Forestside Estates
		Model	Unit 3804 - Elev. A,B and C
		SB-12	SB 12 Performance 28

D. Declaration of Designer

I Doug McCallum 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 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: **25896**

Firm BCIN: **102614**

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:

Basis for exemption from registration:

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.

2022-06-22

Date

Signature of Designer

NOTE:

1. 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 qualifications under Subsections 3.2.4 . and 3.2.5.of Division C.
2. Schedule 1 does not require to be completed a holder of a license, temporay license, or a certificate of authorization, issed by the Ontario Associstion of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

MCCALLUM HVAC DESIGN INC

2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Heat loss and gain calculation summary sheet

CSA-F280-M12 Standard Form No. 1

These documents issued for the use of Royal Pine Homes and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.

Project No. RP23049

Building Location

Address (Model):	Unit 3804 - Elev. A.B and C	Site:	Forestside Estates
Model:		Lot:	3804
City and Province:	Brampton	Postal code:	

Calculations based on

Dimensional information based on:			
Attachment:	Detached	Front facing:	East — Assumed? **Yes**
No. of Levels:	3 — Ventilated? **Included**	Air tightness:	-1 — Assumed? **Yes**
Weather location:	Brampton	Wind exposure:	**Shelterd**
HRV?	VanEE 65H	Internal shading:	**Light-translucent** — Occupants: 5
Sensible Eff. at -25C	60.0 % — Apparent Effect. at -0C 75.0 %	Units:	**Imperial**

Heating design conditions

Outdoor temp: -2.2°F Indoor temp: 72.0°F Mean soil temp: 48.2°F

Cooling design conditions

Outdoor temp: 86.0°F Indoor temp: 72.0°F Latitude: 43.68

Above grade walls

Style A:	**As per Selected OBC SB12** SB 1	**R**	22+1.
Style B:	**Existing Walls (When Applicable)**	**R**	12
Style C:			
Style D:			

Below grade walls

Style A:	**As per Selected OBC SB12** SB 1	**R**	20ci
Style B:			
Style C:			
Style D:			

Floors on soil

Style A:	**As per Selected OBC SB12** SB 12 F		
Style B:			

Exposed floors

Style A:	**As per Selected OBC SB12** SB 12	**R**	31
Style B:			

Windows

Style A:	**As per Selected OBC SB12** SB 12 I	**R**	3.57
Style B:	**Existing Windows (When Applicable)**	**R**	
Style C:			
Style D:			

Ceilings

Style A:	**As per Selected OBC SB12** SB 12 P	**R**	60.0
Style B:	**As per Selected OBC SB12** SB 12 P	**R**	31.0
Style C:			

Doors

Style A:	**As per Selected OBC SB12** SB 12	**R**	3.01
Style B:			
Style C:			

Skylights

Style A:	**As per Selected OBC SB12** SB 12	**R**	2.04
Style B:			

Attached documents: **As per Shedule 1**

Notes: **Residential New Construction - Forced Air**

Calculations performed by

Name:	**Doug McCallum**	Postal code:	**L6R 3Y5**
Company:	**McCallum HVAC Design Inc.**	Telephone:	**(905) 840-8166**
Address:	**2 Dewside Drive Unit 208**	Mobile:	**(647) 229-0380**
City:	**Brampton**	E-mail	**info@mccallumhvac.com**

MCCALLUM HVAC DESIGN INC

2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Project # RP2304

I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code.
I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: 25896 Firm BCIN: 102614 Doug McCallum

Project: Forestside Estates **Model:** Unit 3804 - Elev. A,B and C

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.geg 159/93

Location of Installation

Lot #	Plan #
Township	Brampton
Roll #	Permit #
Address	

Builder

Name	Roval Pine Homes
Address	
City	
Tel	Fax

Installing Contractor

Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)

a)	X	Direct vent (sealed combustion) only
b)		Positive venting induced draft (except fireplaces)
c)		Natural draft, B-vent or induced draft fireplaces
d)		Solid fuel (including fireplaces)
e)		No combustion Appliances

Heating System

X	Forced air
	Non forced air
	Electric space heat (if over 10% of heat load)

House Type 9.32.3.1(2)

I	X	Type a) or b) appliances only, no solid fuel
II		Type I except with solid fuel (including fireplace)
III		Any type c) appliance
IV		Type I or II either electric space heat
Other		Type I, II or IV no forced air

System Design Option

1		Exhaust only / forced air system
2		HRV WITH DUCTING / forced air system
3	X	HRV simplified connection to forced air system
4		HRV full ducting/not coupled to forced air system
		Part 6 design

Total Ventilation Capacity 9.32.3.3(1)

Bsmt & Master Bdrm	2	@ 21.2	cfm	42.4	cfm
Other Bedrooms	3	@ 10.6	cfm	31.8	cfm
Bathrooms & Kitchen	5	@ 10.6	cfm	53.0	cfm
Other rooms	6	@ 10.6	cfm	63.6	cfm
		Total		190.8	

Principal Ventilation Capacity 9.32.3.4(1)

Master bedroom	1	@ 31.8	cfm	31.8	cfm
Other bedrooms	3	@ 15.9	cfm	47.7	cfm
		Total		79.5	

Principal Exhaust Fan Capacity

Make	Model	Location
VanEE	65H	BASE

129 cfm 64 Sones

Heat Recovery Ventilator

Make	VanEE		
Model	65H		
	129 cfm high	64	cfm low
Sensible efficiency @ -25 deg C		60	%
Sensible efficiency @ 0 deg C		75	%

Supplemental Ventilation Capacity

Total ventilation capacity	190.8
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	111.3 cfm

Supplemental Fans 9.32.3.5.

Location	cfm	Model	Sones
ENSUITE	50	770	2.5
POWDER	50	770	2.5
		None	
		None	

all fans HVI listed Make Broan or Equiv.

Designer Certification

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name	Doug McCallum
Signature	
HRAI #	BCIN # 25896
Date	2022-06-22

MCCALLUM HVAC DESIGN INC
2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Project # RP23049

Project: Forestside Estates **Model:** Unit 3804 - Elev. A,B and C

Air Leakage Calculations

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.312	42506.0	74.2	17725.72

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.0980308	42505.999	14.00	1050.06

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air Leakage	Level Conductive Heat Loss (HLclevel)	Air Leakage Heat Loss Multiplier
1	0.5	17726	5325	1.66439
2	0.3		11904	0.44672
3	0.2		12707	0.27899
4	0		0	0.00000

Levels			
1	2	3	4
(LF)	(LF)	(LF)	(LF)
1.0	0.6	0.5	0.4
	0.4	0.3	0.3
		0.2	0.2
			0.1

		Air Leakage Heat Gain Multiplier
HG LEAK	1050.06	0.07026
BUILDING CONDUCTIVE HEAT GAIN	14946.00	

Levels this Dwelling
3

Ventilation Calculations

Vent

Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL^T	(1-E) HRV	HLbvent
1.08	79.5	74.20	0.250	1592.70

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG^T	HGbvent
1.08	79.5	14.00	1202.040

Case 1

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
1	0.5	1593	5325	0.15
2	0.3		11904	0.04
3	0.2		12707	0.03
4	0		0	0

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier
HGbvent	1202.040	0.08
Building Cond. HG	14946.00	

Case 2

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

			Multiplier
C	HL^T	(1-E) HRV	20.03
1.08	74.20	0.25	

Ventilation Heat Gain (Direct Ducted Systems)

		Multiplier
C	HG^T	15.12
1.08	14.00	

Case 3

Case 3

Ventilation Heat Loss (Forced Air Systems)

	HLbvent	Multiplier
Total Ventilation Load	1593	0.05

Ventilation Heat Gain (Forced Air Systems)

		Vent Heat Gain	Multiplier
HGbvent	HG*1.3	1202	0.08
1202.040	1		

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description

Province:	Brampton
Region:	ON
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10

Local Shielding

Building Site:	Suburban, forest
Walls:	Very heavy
Flue:	Heavy
Highest Ceiling Height (m):	6.25

Building Configuration

Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1204

Air Leakage/Ventilation

Air Tightness Type:	Custom - DBT values	
Custom BDT Data:	ELA @ 10 Pa.	1522.885
	3	ACH @ 50 Pa
Mechanical Ventilation (L/s):	**Total Supply:**	**Total Exhaust:**
	0	0

Flue Size

Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0

Envelope Air Leakage Rate

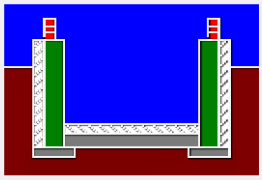
Heating Air Leakage Rate (ACH/H): 0.312

Cooling Air Leakage Rate (ACH/H): 0.098

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Brampton
Region:	ON
Site Description	
Soil Conductivity:	Normal conductivity: dry sand, loam, clay
Water Table:	Deep (>10 m, >33 Ft)
Foundation Dimensions	
Floor Length (m):	22.5
Floor Width (m):	5.62
Exposed Perimeter (m):	56.3
Wall Height (m):	3.05
Depth Below Grade (m):	2.59
Window Area (m^2):	1.49
Door Area (m^2):	0
Radiant Slab	
Heated Fraction of the Slab:	**0**
Fluid Temperature (°C):	**23**
Design Months	
Heating Month	**1**
Foundation Loads	
Heating Load (Watts):	**1463**



Insulation Configuration

BCIN_1

SYSTEM A

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION AND PRESSURE	
LEVEL 1 NET LOAD	14471 btu/h	**EQUIPMENT EXTERNAL STATIC PRESSURE**	0.500"W.C.
LEVEL 2 NET LOAD	17856 btu/h	**ADDITIONAL EQUIPMENT PRESSURE DROP**	0.250"W.C.
LEVEL 3 NET LOAD	17661 btu/h	**AVAILABLE DESIGN PRESSURE**	0.250"W.C.
LEVEL 4 NET LOAD	0 btu/h	**RETURN BRANCH LONGEST EFFECTIVE LENGTH**	300ft
SYSTEM HEATLOSS	49988 btu/h	**R/A PLENUM PRESSURE**	0.120"W.C.
SYSTEM HEATGAIN	31818 btu/h	**S/A PLENUM PRESSURE**	0.130"W.C.
BUILDING VOLUME Vb	42506.00 ft3	**HEATING AIR FLOW PROPORTIONING FACTOR**	0.0229 cfm/btuh
VENTILATION LOAD	1592.00 btu/h	**COOLING AIR FLOW PROPORTIONING FACTOR**	0.0360 cfm/btuh
VENTILATION PVC	79.50 cfm	**R/A TEMP. 70°F**	S/A TEMP. 121.75°F DIFFUSER LOSS 0.01°"w.c.

FURNACE/AIR HANDLER DATA				BLOWER DATA	
MAKE	LENNOX			HEATING CHECK	1145.00 CFM
MODEL	EL296UH070XE36B			SELECTED CFM	1145.00 CFM
HIGH INPUT btu/h	66000	LOW INPUT btu/h	0	COOLING CHECK	1145.00 CFM
HIGH OUTPUT btu/h	64000	LOW OUTPUT btu/h	0	COOLING AIR FLOW RATE	1145.00 CFM
E.S.P.	0.50			BLOWER TYPE ECM (BRUSHLESS DC OBC 12.3.1.5.(2))	
WATER TEMP.				A/C UNIT DATA	
AFUE	96.97%			MAKER	3.0 TON
AUX. HEAT	0			CONDENSER	3.0 TON
SB-12 PACKAGE	SB 12 Performance 28			COIL	3.0 TON
TEMP. RISE	51.75°F				

SUPPLY BRANCH AND GRILL SIZING

OUTLET #	ROOM USE	BTU/H OUTLET	HEATING AIR FLOW RATE CFM	COOLING AIR FLOW RATE CFM	DUCT DESIGN PRESSURE	ACTUAL DUCT LENGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	DUCT SIZE ROUND	OUTLET SIZE	TRUNK
8	MEDIA RM	2123	49	76	0.13	41	185	226	0.05	6.0	4x10	C1
9	MEDIA RM	2123	49	76	0.13	49	155	204	0.06	6.0	4x10	C1
2	PRI BED	1408	32	51	0.13	41	155	196	0.06	6	4x10	A1
3	PRI BED	1408	32	51	0.13	50	145	195	0.06	6	4x10	A1
22	LIV/DIN	1098	25	28	0.13	28	175	203	0.06	5	4x10	D1
23	LIV/DIN	1098	25	28	0.13	30	155	185	0.06	5	4x10	B1
19	FOYER	3603	83	44	0.13	43	155	198	0.06	6.0	4x10	C1
18	MUD/ CLOS	1011	23	7	0.13	9	115	124	0.10	5	4x10	F1
17	LAUND	1021	23	46	0.13	11	135	146	0.08	5.0	4x10	F1
16	DEN	1104	25	42	0.13	28	145	173	0.07	5.0	4x10	B1
13	FAMILY	3179	73	84	0.13	50	145	195	0.06	6.0	4x10	A1
12	MB WIC	431	10	5	0.13	39	165	204	0.06	5	4x10	B1
24	BASE	3618	83	41	0.13	43	175	218	0.06	6.0	4x10	A1
25	BASE	3618	83	41	0.13	37	115	152	0.08	6.0	4x10	B1
26	BASE	3618	83	41	0.13	46	145	191	0.06	6.0	4x10	C1
27	BASE	3618	83	41	0.13	20	160	180	0.07	6.0	4x10	B1
14	BREAK/ KIT	1917	44	74	0.13	41	165	206	0.06	6.0	4x10	A1
15	BREAK/ KIT	1917	44	74	0.13	52	175	227	0.05	6.0	4x10	A1
5	SHAR BATH	552	13	7	0.13	21	155	176	0.07	5	4x10	E1
10	ENS 2	576	13	14	0.13	26	175	201	0.06	5	4x10	D1
1	M BATH	1780	41	54	0.13	47	165	212	0.06	6	4x10	B1
21	PWD	537	12	10	0.13	34	145	179	0.07	5	4x10	D1
20	SIDE ENTR	1371	31	9	0.13	35	135	170	0.07	5	4x10	D1
4	BED 2	1580	36	36	0.13	8	130	138	0.09	6	4x10	PL
11	BD-4	1558	36	45	0.13	38	185	223	0.05	6	4x10	D1
6	BED-3	2062	47	60	0.13	50	155	205	0.06	6.0	4x10	D1
7	BED-3	2062	47	60	0.13	43	195	238	0.05	6.0	4x10	C1

RETURN BRANCH AND GRILL SIZING

R/A INLET #	INLET AIR VOLUME CFM	DUCT DESIGN PRESSURE	ACTUAL DUCT LENGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	DUCT SIZE ROUND	INLET SIZE	TRUNK
1R	70	0.12	23	160	183	0.05	6	14x8	Z1
2R	150	0.12	20	120	140	0.07	7.5	14x8	Z1
3R	145	0.12	39	120	159	0.06	7.5	14x8	Y1
4R	75	0.12	46	130	176	0.06	6	14x8	X1
5R	70	0.12	41	170	211	0.05	6	14x8	X1
6R	380	0.12	30	160	190	0.05	11.5	30x8	Z1
7R	145	0.12	37	160	197	0.05	8	14x8	Y1
8R	110	0.12	25	120	145	0.07	7	FLC	Y1

RETURN TRUNK DUCT SIZING

TRUNK	CFM	PRESSURE	ROUND	RECT. SIZE	SIZE ALTERNATE
DROP	1145	0.05		0	
Z1	1145	0.05	17	26x10	26x10
Y1	545	0.05	13	18x8	14x10
X1	145	0.05	8	8x8	10x6

SUPPLY TRUNK DUCT SIZING

TRUNK	CFM	PRESSURE	ROUND	RECT. SIZE	SIZE ALTERNATE
A1	308	0.05	10.5	12x8	16x6
B1	575	0.05	13	18x8	14x10
C1	311	0.05	10.5	12x8	16x6
D1	475	0.05	12	16x8	22x6
F1	1096	0.05	16.5	32x8	24x10
PL	36	0.09	4		

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

WEATHER DATA [Brampton] [43.68] [-2.20] [86.00] [51.80] [48.20] [74.20] [14.00]

LEVEL 1

BASE	TOTALS H.L.: 14471 btuh	H.G.: 4503 btuh	AREA: 1365 ft2	Above Grade: 1.5	GROSS EXP. WALL	NEW 277.5 ft	EXIST 0 ft

	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 185 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	21.12		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	3.5	0 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.7	173 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	166 btuh	37.3	0 btuh	0	0	0	0	20.8	166 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	225 btuh	14.9	0 btuh	0	0	0	0	21.7	174 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh

FUND. CONDUCTIVE HEATLOSS		4992 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE	LOSS	5325 btuh	LOSS	1.6644	8863 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	283.3 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	572 btuh	GAIN	0.0703	40 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	46 btuh	0	0 btuh	50%	2806 btuh	GAIN	0%	0 btuh

LEVEL 2

LIV/DIN	TOTALS H.L.: 2196 btuh	H.G.: 1577 btuh	AREA: 309 ft2	C.Height: 10	GROSS EXP. WALL	NEW 240 ft	EXIST 0 ft

	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 24 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	841 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	159 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 30.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	624 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	651 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE	LOSS	1464 btuh	LOSS	0.4467	654 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	77.9 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	810 btuh	GAIN	0.0703	57 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	65 btuh	0	0 btuh	5%	281 btuh	GAIN	0%	0 btuh

FOYER	TOTALS H.L.: 3603 btuh	H.G.: 1213 btuh	AREA: 144 ft2	C.Height: 10	GROSS EXP. WALL	NEW 370 ft	EXIST 0 ft

	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	1281 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	242 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 21 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	518 btuh	24.7	0 btuh	20.8	166 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	436 btuh	37.3	0 btuh
GAIN	4.7	98 btuh	4.7	0 btuh	28.2	225 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	246 btuh	14.9	0 btuh

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE	LOSS	2402 btuh	LOSS	0.4467	1073 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	127.8 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	811 btuh	GAIN	0.0703	57 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	65 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

MUD/CLOS	TOTALS H.L.: 1011 btuh	H.G.: 190 btuh	AREA: 41 ft2	C.Height: 10	GROSS EXP. WALL	NEW 60 ft	EXIST 0 ft

	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 6 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	156 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	29 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	518 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	98 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE	LOSS	674 btuh	LOSS	0.4467	301 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	35.9 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	127 btuh	GAIN	0.0703	9 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	10 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

LAUND	TOTALS H.L.: 1021 btuh	H.G.: 1286 btuh	AREA: 53 ft2	C.Height: 10	GROSS EXP. WALL	NEW 170 ft	EXIST 0 ft

	EXPOSED WALLS		EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT	
	NEW: 17 ft	EXIST: 0 ft	NEW: 0	EXIST: 0	NEW: 0	EXIST: 0	NEW: 0 ft2	EXIST: 0 ft2	NEW: 0.0 ft2	EXIST: 0.0 ft2
Eff. R-V	18.53	8.50	59.22	22.86	27.65	22.05	29.80	22.05	2.04	2.03

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

LOSS	4.0	681 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	128 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	681 btuh	LOSS	0.4467	304 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	36.2 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	128 btuh	GAIN	0.0703	9 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	10 btuh	0	0 btuh	15%	842 btuh	GAIN	0%	0 btuh

DEN	TOTALS H.L.: 1104 btuh			H.G.: 1171 btuh					AREA: 124 ft2		C.Height: 10		GROSS EXP. WALL		NEW 100 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 10 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	320 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	60 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 20 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	416 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	235 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	736 btuh	LOSS	0.4467	329 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	39.2 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	295 btuh	GAIN	0.0703	21 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	24 btuh	0	0 btuh	10%	561 btuh	GAIN	0%	0 btuh

FAMILY	TOTALS H.L.: 3179 btuh			H.G.: 2343 btuh					AREA: 295 ft2		C.Height: 10		GROSS EXP. WALL		NEW 370 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	1329 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	251 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 38.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	790 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	1071 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2119 btuh	LOSS	0.4467	947 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	112.7 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	1322 btuh	GAIN	0.0703	93 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	106 btuh	0	0 btuh	5%	281 btuh	GAIN	0%	0 btuh

BREAK/KIT	TOTALS H.L.: 3834 btuh			H.G.: 4138 btuh					AREA: 294 ft2		C.Height: 10		GROSS EXP. WALL		NEW 370 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	1225 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	231 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 64.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	1330 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	1803 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2556 btuh	LOSS	0.4467	1142 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	136.0 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	2034 btuh	GAIN	0.0703	143 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	164 btuh	0	0 btuh	15%	842 btuh	GAIN	0%	0 btuh

PWD	TOTALS H.L.: 537 btuh			H.G.: 286 btuh					AREA: 43 ft2		C.Height: 10		GROSS EXP. WALL		NEW 60 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 6 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	212 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	40 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 7.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	145 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	152 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh

TOTAL HEATLOSS: 49988 BTUH
TOTAL HEATGAIN: 31818 BTUH

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	358 btuh	LOSS	0.4467	160 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	19.0 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	192 btuh	GAIN	0.0703	13 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	15 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

SIDE ENTR	*TOTALS H.L.: 1371 btuh*		*H.G.: 257 btuh*		AREA: 67 ft2		C.Height: 10		GROSS EXP. WALL		*NEW 120 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 12 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80	
LOSS	4.0	*396 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*
GAIN	0.8	*75 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*
	DOORS				EAST/WEST WINDOWS		SE/SW WINDOWS		SOUTH WINDOWS		NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57	
LOSS	24.7	*518 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*
GAIN	4.7	*98 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	914 btuh	LOSS	0.4467	408 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	48.6 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	172 btuh	GAIN	0.0703	12 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	14 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

LEVEL 3

MEDIA RM	*TOTALS H.L.: 4246 btuh*		*H.G.: 4230 btuh*		AREA: 253 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 248 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 31 ft		EXIST: 0 ft		NEW: 253 ft2		EXIST: 0		NEW: 69 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80	
LOSS	4.0	*653 btuh*	8.7	*0 btuh*	1.3	*317 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*172 btuh*
GAIN	0.8	*123 btuh*	1.6	*0 btuh*	0.7	*175 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*19 btuh*
	DOORS				EAST/WEST WINDOWS		SE/SW WINDOWS		SOUTH WINDOWS		NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 68.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 17.0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*1413 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*353 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*1916 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*369 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	2908 btuh	LOSS	0.2790	811 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	154.7 btuh	239		5612		LOSS	10%	372 btuh
TOTAL CONDUCTIVE	GAIN	2602 btuh	GAIN	0.0703	183 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	209 btuh	0	0 btuh	0%	0 btuh	GAIN	10%	260 btuh

PRI BED	*TOTALS H.L.: 2815 btuh*		*H.G.: 2816 btuh*		AREA: 324 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 264 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 33 ft		EXIST: 0 ft		NEW: 324 ft2		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80	
LOSS	4.0	*905 btuh*	8.7	*0 btuh*	1.3	*406 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*12 btuh*
GAIN	0.8	*171 btuh*	1.6	*0 btuh*	0.7	*224 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*1 btuh*
	DOORS				EAST/WEST WINDOWS		SE/SW WINDOWS		SOUTH WINDOWS		NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 38.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*790 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*1071 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	2113 btuh	LOSS	0.2790	590 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	112.4 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	1467 btuh	GAIN	0.0703	103 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	118 btuh	2	478 btuh	0%	0 btuh	GAIN	0%	0 btuh

MB WIC	*TOTALS H.L.: 431 btuh*		*H.G.: 147 btuh*		AREA: 80 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 56 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 7 ft		EXIST: 0 ft		NEW: 80 ft2		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80	
LOSS	4.0	*224 btuh*	8.7	*0 btuh*	1.3	*100 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*
GAIN	0.8	*42 btuh*	1.6	*0 btuh*	0.7	*55 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*
	DOORS				EAST/WEST WINDOWS		SE/SW WINDOWS		SOUTH WINDOWS		NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	324 btuh	LOSS	0.2790	90 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	17.2 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	98 btuh	GAIN	0.0703	7 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	8 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

SHAR BATH	*TOTALS H.L.: 552 btuh*		*H.G.: 186 btuh*		AREA: 100 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 72 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

	NEW: 9 ft		EXIST: 0 ft		NEW: 100 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*288 btuh*	8.7	*0 btuh*	1.3	*125 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*54 btuh*	1.6	*0 btuh*	0.7	*69 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3		H.G. PEOPLE			APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	414 btuh	LOSS	0.2790	116 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	22.0 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	124 btuh	GAIN	0.0703	9 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	10 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

ENS 2	*TOTALS H.L.: 576 btuh*				*H.G.: 386 btuh*				AREA: 76 ft2				C.Height: 8				GROSS EXP. WALL		*NEW 48 ft*	*EXIST 0 ft*
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 6 ft		EXIST: 0 ft		NEW: 76 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 4 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*160 btuh*	8.7	*0 btuh*	1.3	*95 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*10 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*30 btuh*	1.6	*0 btuh*	0.7	*53 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*1 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*166 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*174 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3		H.G. PEOPLE			APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	432 btuh	LOSS	0.2790	121 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	23.0 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	258 btuh	GAIN	0.0703	18 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	21 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

M BATH	*TOTALS H.L.: 1780 btuh*				*H.G.: 1492 btuh*				AREA: 114 ft2				C.Height: 8				GROSS EXP. WALL		*NEW 168 ft*	*EXIST 0 ft*
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 21 ft		EXIST: 0 ft		NEW: 114 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*549 btuh*	8.7	*0 btuh*	1.3	*143 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*104 btuh*	1.6	*0 btuh*	0.7	*79 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 22.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 9.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*457 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*187 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*620 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*195 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3		H.G. PEOPLE			APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	1336 btuh	LOSS	0.2790	373 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	71.1 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	998 btuh	GAIN	0.0703	70 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	80 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

BED 2	*TOTALS H.L.: 1580 btuh*				*H.G.: 995 btuh*				AREA: 223 ft2				C.Height: 8				GROSS EXP. WALL		*NEW 152 ft*	*EXIST 0 ft*
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 19 ft		EXIST: 0 ft		NEW: 223 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*541 btuh*	8.7	*0 btuh*	1.3	*279 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*12 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*102 btuh*	1.6	*0 btuh*	0.7	*154 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*1 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 17 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*353 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*200 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3		H.G. PEOPLE			APP. LOAD			DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	1186 btuh	LOSS	0.2790	331 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	63.1 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	457 btuh	GAIN	0.0703	32 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	37 btuh	1	239 btuh	0%	0 btuh	GAIN	0%	0 btuh

BD-4	*TOTALS H.L.: 1558 btuh*				*H.G.: 1253 btuh*				AREA: 236 ft2				C.Height: 8				GROSS EXP. WALL		*NEW 144 ft*	*EXIST 0 ft*
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 18 ft		EXIST: 0 ft		NEW: 236 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*509 btuh*	8.7	*0 btuh*	1.3	*296 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*12 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*96 btuh*	1.6	*0 btuh*	0.7	*163 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*1 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 17.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

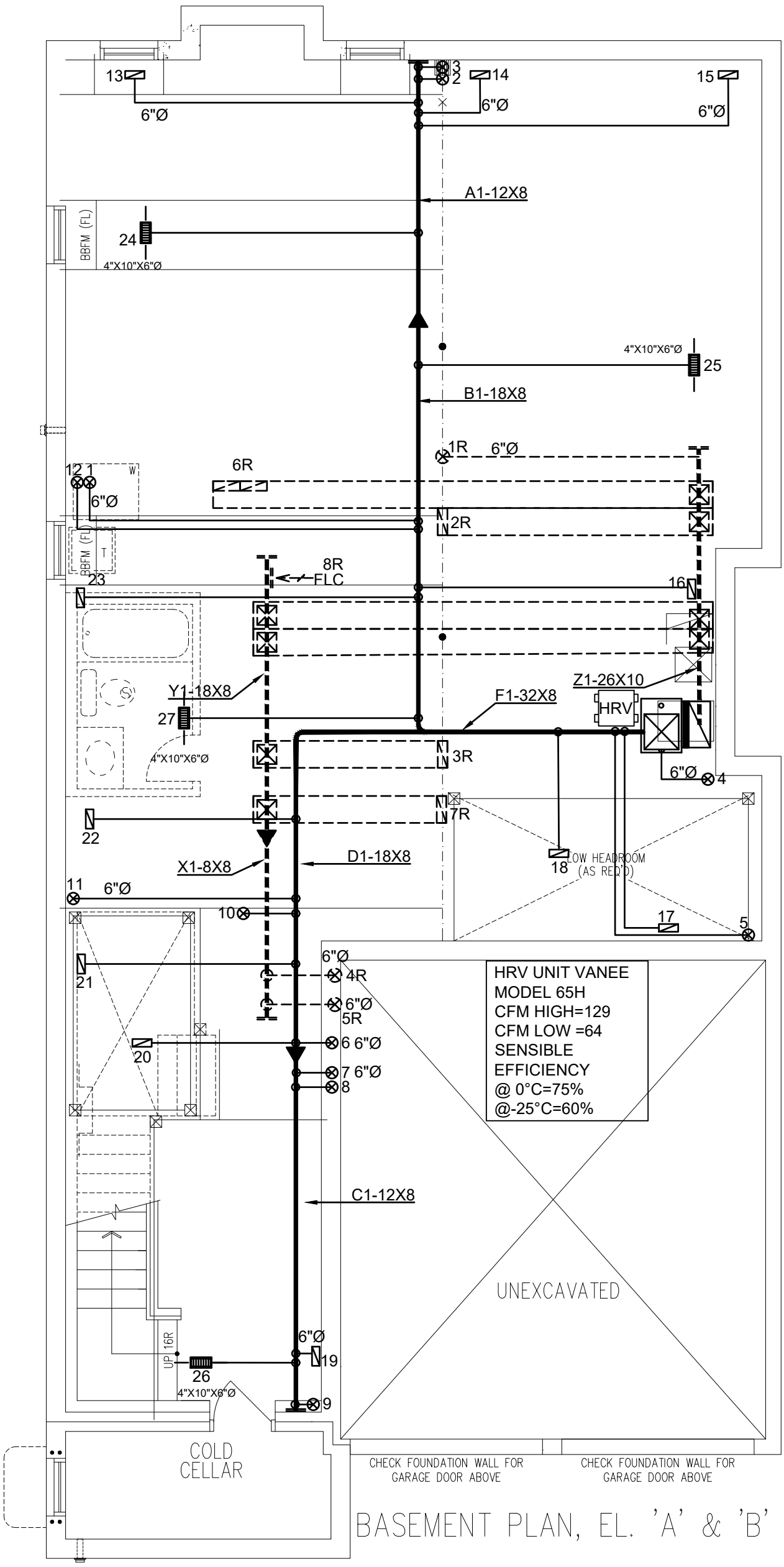
CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*353 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*369 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	1170 btuh	LOSS	0.2790	326 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	62.2 btuh	239		5612		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	630 btuh	GAIN	0.0703	44 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	51 btuh	1	239 btuh	0%	0 btuh	GAIN	0%	0 btuh

BED-3	*TOTALS H.L.: 4123 btuh*			*H.G.: 3349 btuh*				AREA: 278 ft2			C.Height: 8		GROSS EXP. WALL		*NEW 256 ft*		*EXIST 0 ft*		
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT		
	NEW: 32 ft		EXIST: 0 ft		NEW: 278 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 239 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03
LOSS	4.0	*821 btuh*	8.7	*0 btuh*	1.3	*348 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*595 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*155 btuh*	1.6	*0 btuh*	0.7	*192 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*64 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS		
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 51.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*1060 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*1437 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2824 btuh	LOSS	0.2790	788 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	150.2 btuh	239		5612		LOSS	10%	361 btuh
TOTAL CONDUCTIVE			GAIN	1849 btuh	GAIN	0.0703	130 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	149 btuh	1	239 btuh	0%	0 btuh	GAIN	10%	209 btuh

LEVEL 4



BASEMENT PLAN, EL. 'A' & 'B'

3RD	# S/A -	# R/A -	# FANS -
2ND	12	5	3
1ST	11	2	2
B	4	1	0
TOTAL	27	8	5

- DESIGNER TO BE NOTIFIED OF ALL & ANY CHANGES TO THE STRUCTURE AND/OR SYSTEM DESIGN BEFORE INSTALLATION BEGINS. INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
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PROPOSED BASEMENT

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

CONTRACTOR TO WORK FROM MUNICIPAL APPROVED DRAWINGS ONLY

The undersigned has reviewed and takes responsibility for this design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

NAME	SIGNATURE	BCIN / BCDN
Doug McCallum		102614

TOTAL LOSS	49,988 BTUH	
TOTAL GAIN	31,818 BTUH	
HEATING UNIT	LENNOX	
MODEL #	EL296UH070XE36B	3.0 TONS
OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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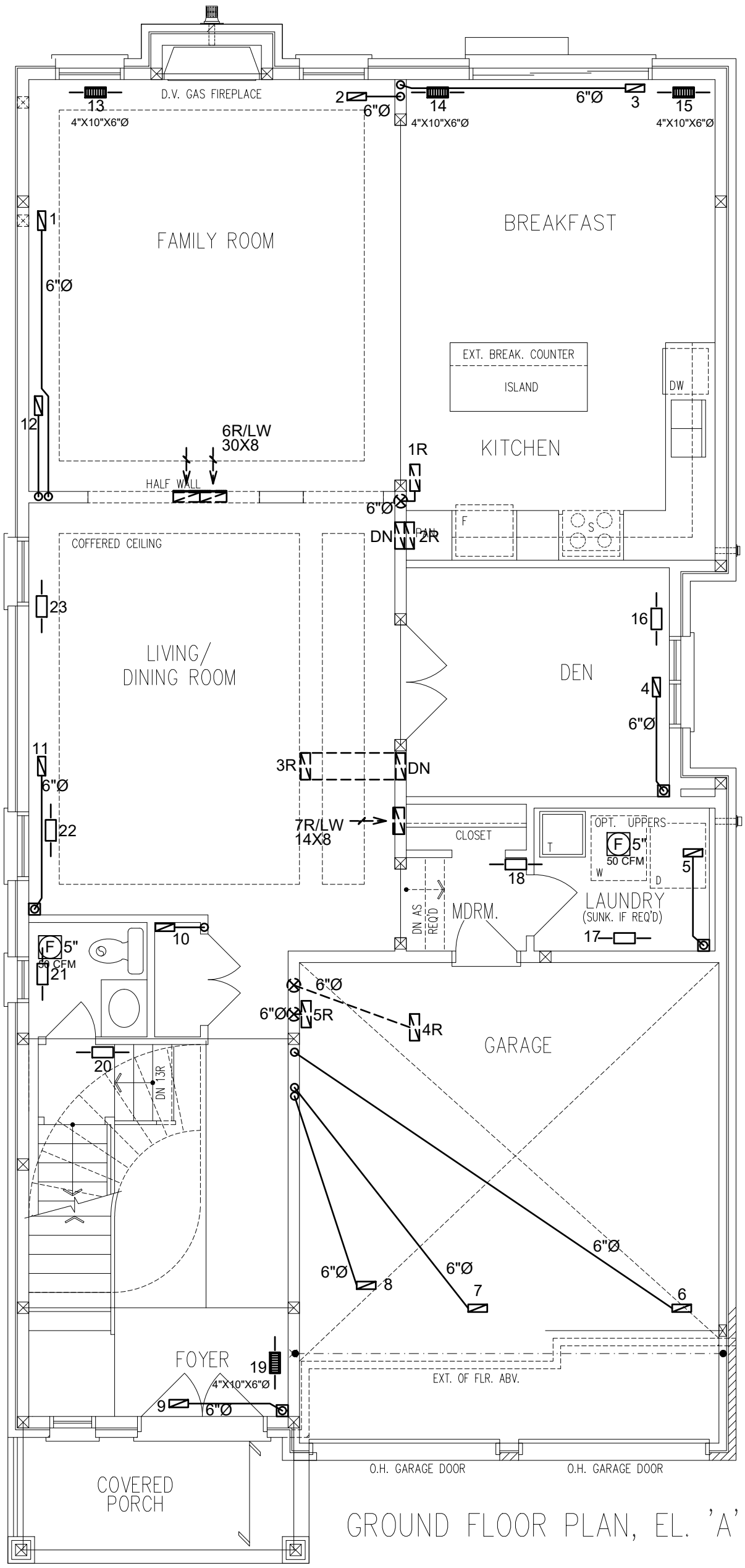
M1



GROUND FLOOR PLAN, EL. 'A'

3RD	# S/A -	# R/A -	# FANS -
2ND	12	5	3
1ST	11	2	2
B	4	1	0
TOTAL	27	8	5

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PROPOSED 1ST FLOOR

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

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CSA F280-12

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MODEL:	Unit 3804 - Elev. A,B and C		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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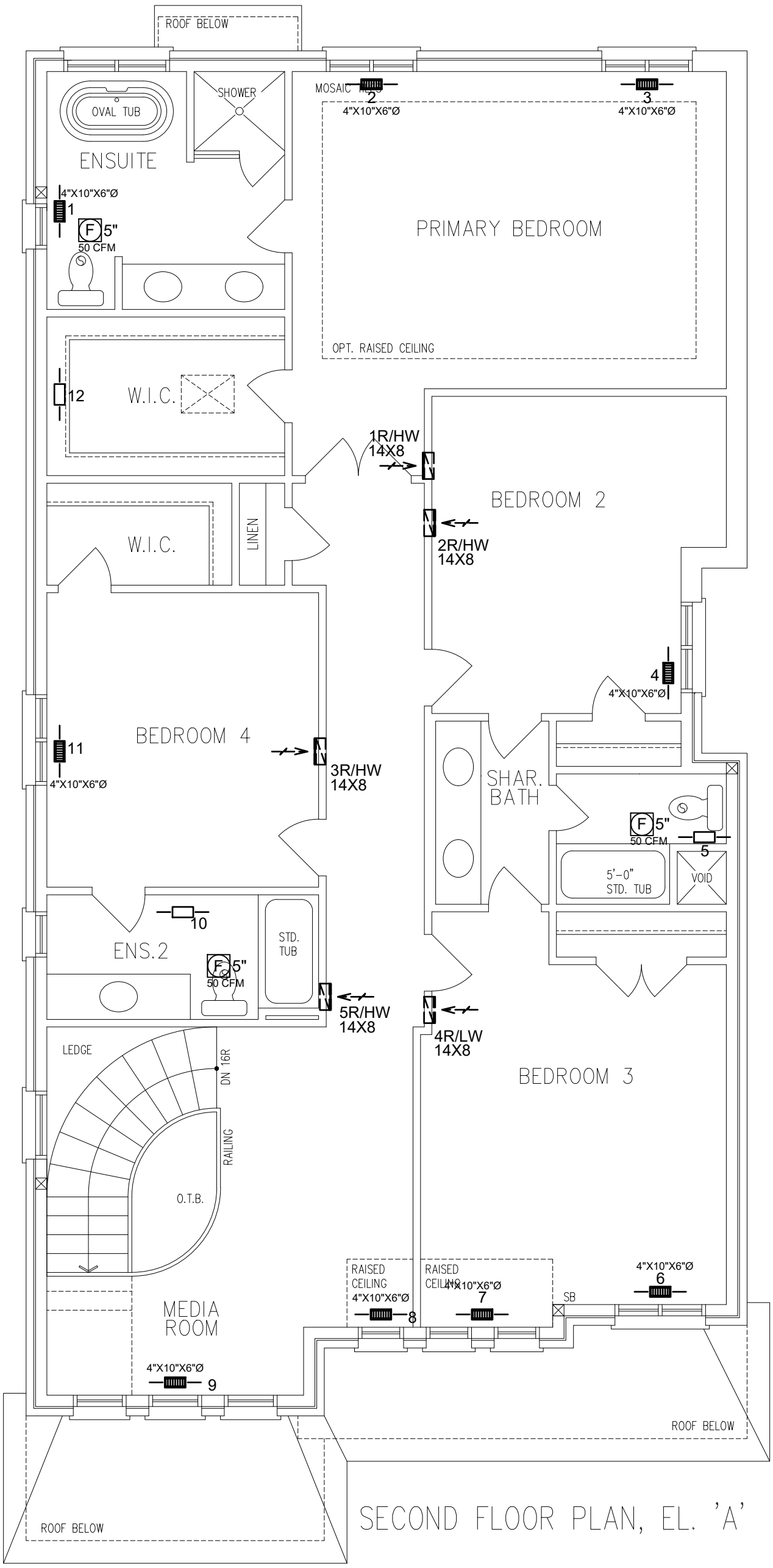
M2



SECOND FLOOR PLAN, EL. 'A'

3RD	# S/A -	# R/A -	# FANS -
2ND	12	5	3
1ST	11	2	2
B	4	1	0
TOTAL	27	8	5

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PROPOSED 2ND FLOOR

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

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OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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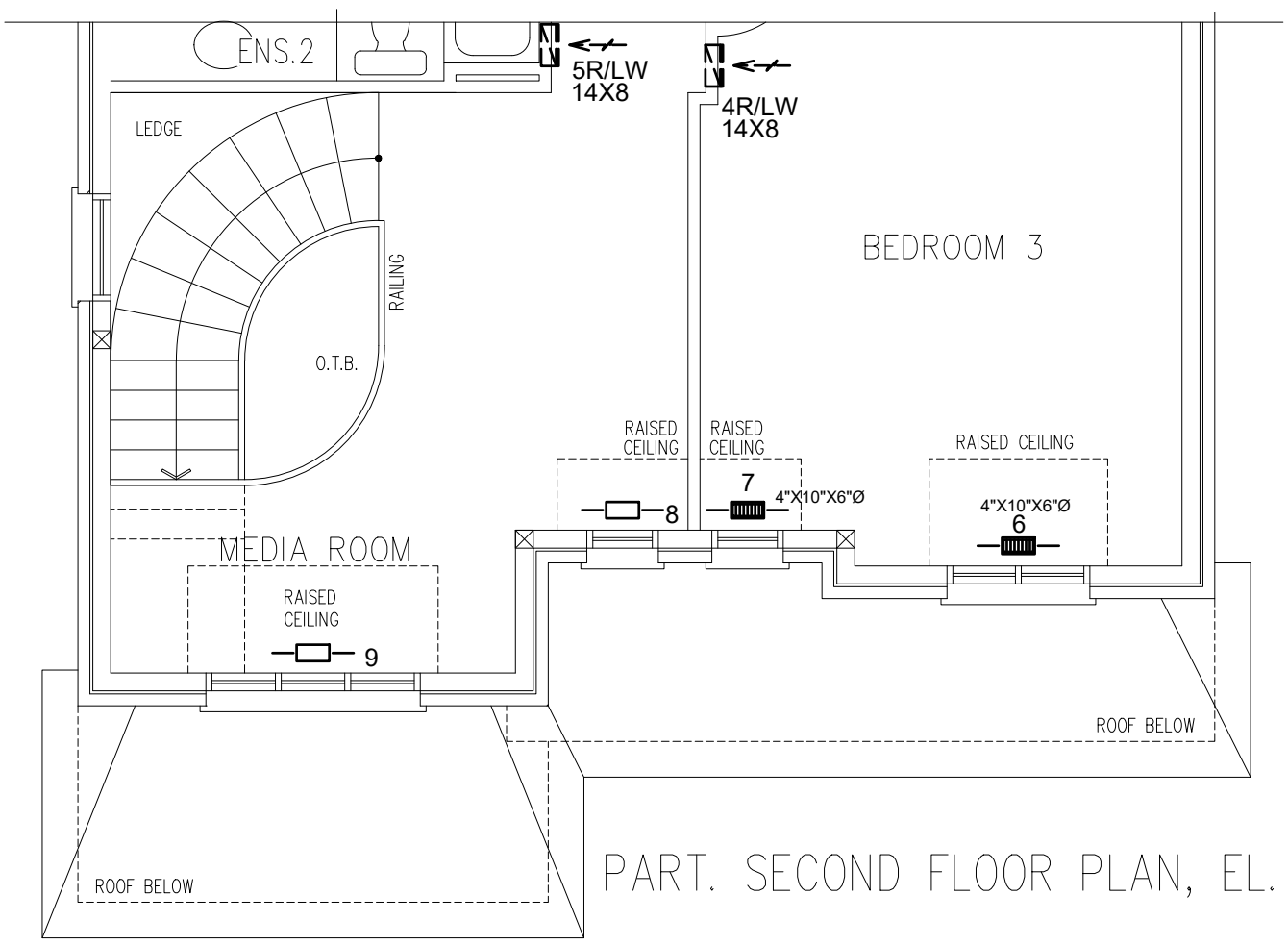
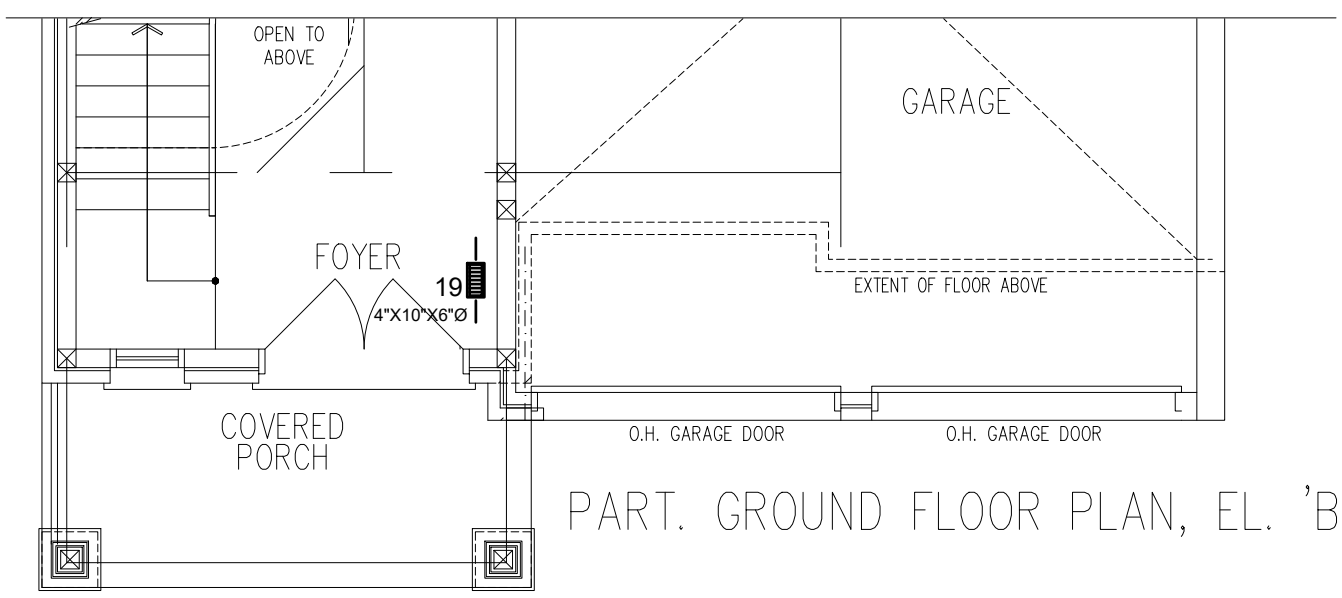
M3



PART. SECOND FLOOR PLAN, EL. 'B'



PART. GROUND FLOOR PLAN, EL. 'B'

3RD	# S/A -	# R/A -	# FANS -
2ND	12	5	3
1ST	11	2	2
B	4	1	0
TOTAL	27	8	5

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PARTIAL PLANS

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

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OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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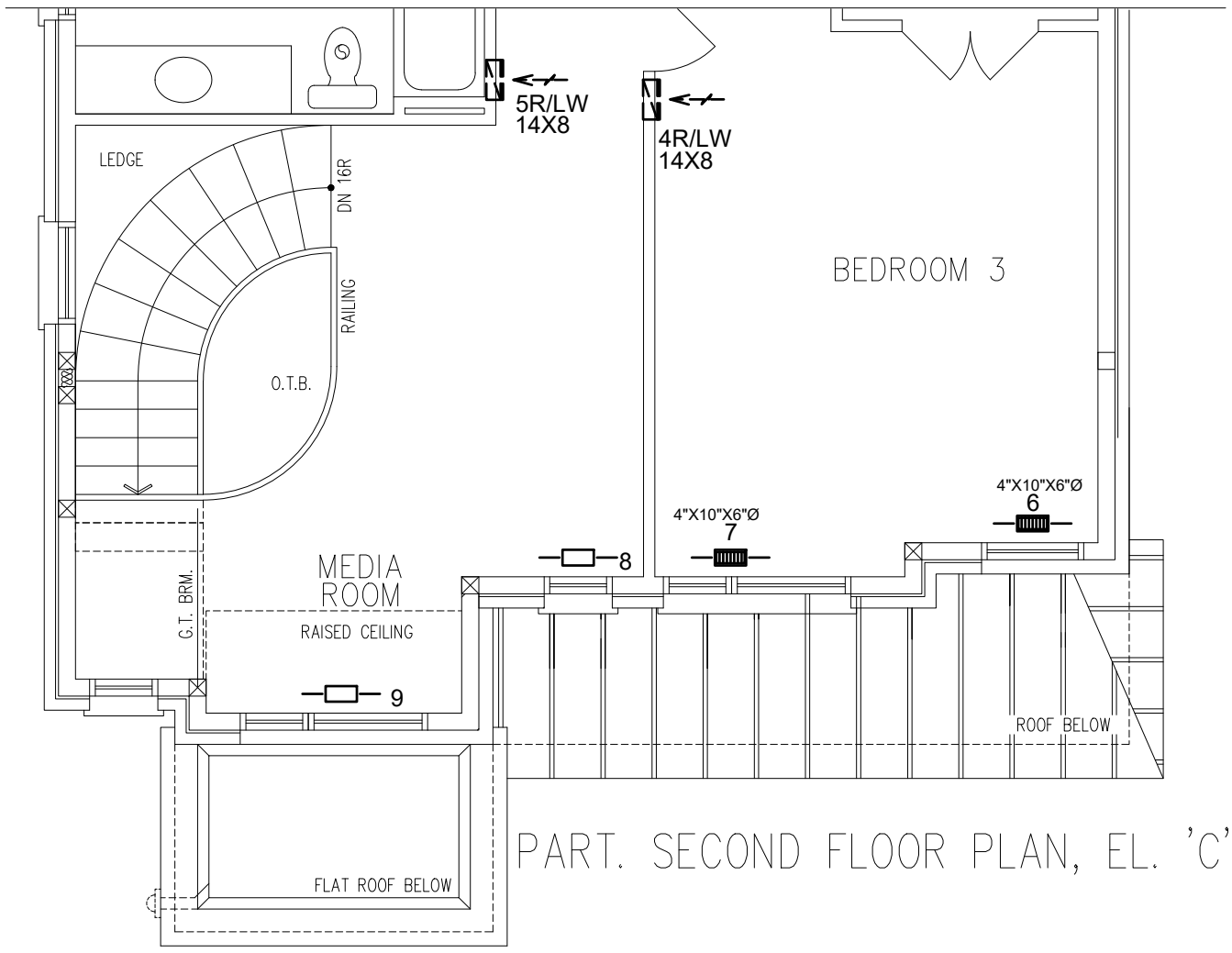
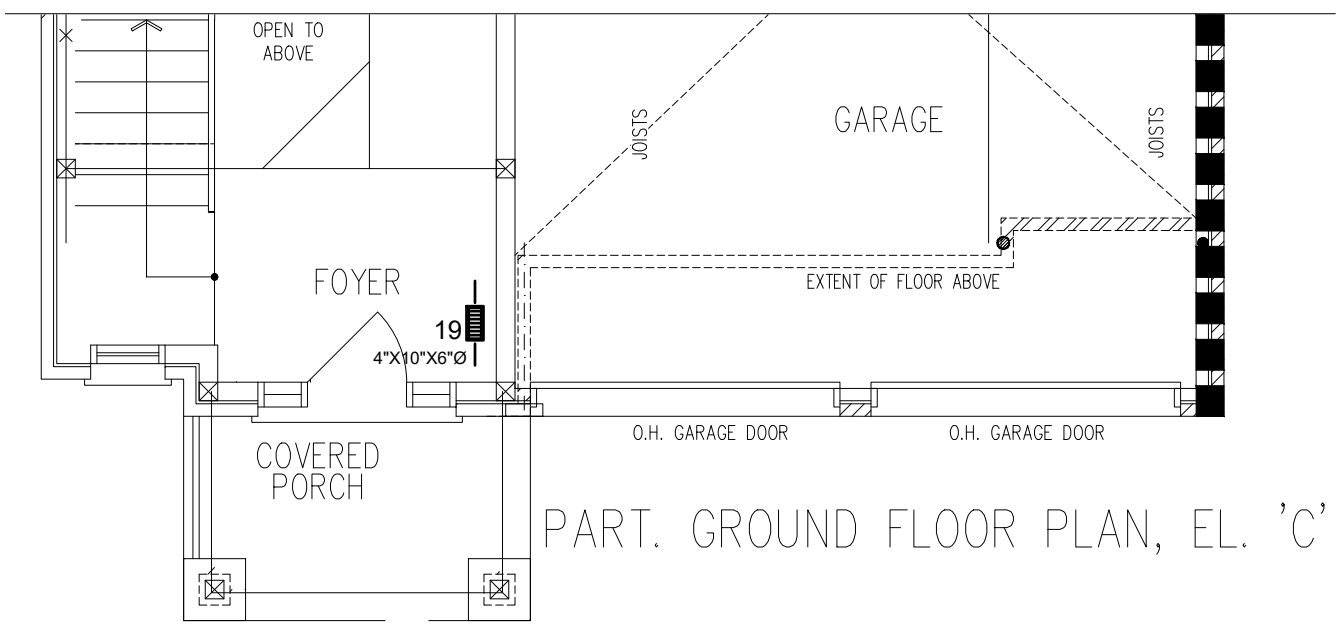
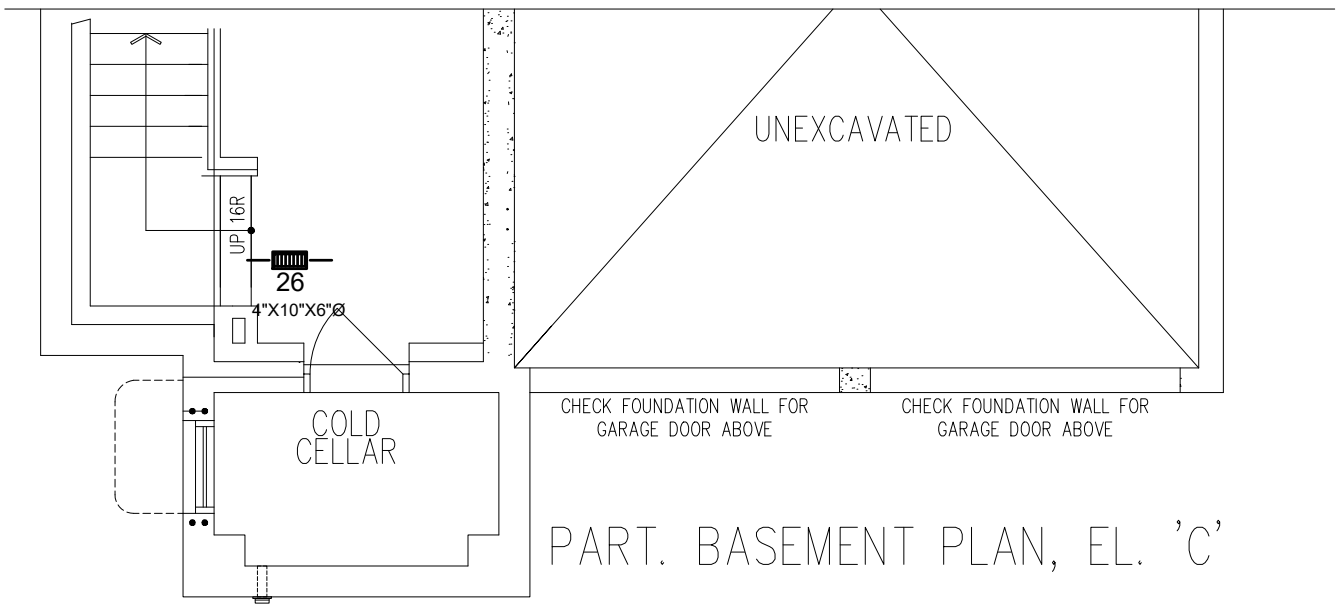
M4



PART. SECOND FLOOR PLAN, EL. 'C'



PART. GROUND FLOOR PLAN, EL. 'C'



PART. BASEMENT PLAN, EL. 'C'

3RD	# S/A -	# R/A -	# FANS -
2ND	12	5	3
1ST	11	2	2
B	4	1	0
TOTAL	27	8	5

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PARTIAL PLANS

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

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OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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Brampton, Ontario, 905-840-8166, info@mccallumhvac.com

M5

MCCALLUM HVAC DESIGN INC

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 3804 - Elev. A,B and C(OPT 2ND)		Lot: 3804	Lot/con.
Municipality: Brampton	Postal code	Plan number/ other description	

B. Individual who reviews and takes responsibility for design activities			
Name: **Doug McCallum**		Firm: **McCallum HVAC Design Inc.**	
Street address: **2 Dewside Drive Unit 208**		Unit no.	Lot/con.
Municipality: **Brampton**	Postal code: **L6R 3Y5**	Province: **Ontario**	E-mail: info@mccallumhvac.com
Telephone number: **(905) 840-8166**	Fax number		Cell number: **(647) 229-0380**

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]

House	☒ HVAC – House	Building Structural
Small Buildings	Building Services	Plumbing – House
Large Buildings	Detection, Lighting and Power	Plumbing – All Buildings
Complex Buildings	Fire Protection	On-site Sewage Systems

Description of designer's work	**Model Certification**		**Project #:** RP23049
Heating and Cooling Load Calculations Air System Design Residential mechanical ventilation Design Summary Residential System Design per CAN/CSA-F280-12 Residential New Construction - Forced Air		Builder	Roval Pine Homes
		Project	Forestside Estates
		Model	Unit 3804 - Elev. A,B and C(OPT 2ND)
		SB-12	SB 12 Performance 28

D. Declaration of Designer

I Doug McCallum 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 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: **25896**

Firm BCIN: **102614**

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:

Basis for exemption from registration:

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.

2023-06-07

Date

Signature of Designer

NOTE:

1. 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 qualifications under Subsections 3.2.4 . and 3.2.5.of Division C.
2. Schedule 1 does not require to be completed a holder of a license, temporay license, or a certificate of authorization, issed by the Ontario Associstion of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

MCCALLUM HVAC DESIGN INC

2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Heat loss and gain calculation summary sheet

CSA-F280-M12 Standard Form No. 1

These documents issued for the use of Royal Pine Homes and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.

Project No. RP23049

Building Location

Address (Model):	Unit 3804 - Elev. A.B and C(OPT 2	Site:	Forestside Estates
Model:		Lot:	3804
City and Province:	Brampton	Postal code:	

Calculations based on

Dimensional information based on:

Attachment:	Detached	Front facing:	East — Assumed? **Yes**
No. of Levels:	3 — Ventilated? **Included**	Air tightness:	-1 — Assumed? **Yes**
Weather location:	Brampton	Wind exposure:	**Shelterd**
HRV?	VanEE 65H	Internal shading:	**Light-translucent** — Occupants: 5
Sensible Eff. at -25C	60.0 % — Apparent Effect. at -0C 75.0 %	Units:	**Imperial**

Heating design conditions

Outdoor temp: -2.2°F Indoor temp: 72.0°F Mean soil temp: 48.2°F

Cooling design conditions

Outdoor temp: 86.0°F Indoor temp: 72.0°F Latitude: 43.68

Above grade walls

Style A:	**As per Selected OBC SB12** SB 1	**R**	22+1.
Style B:	**Existing Walls (When Applicable)**	**R**	12
Style C:			
Style D:			

Below grade walls

Style A:	**As per Selected OBC SB12** SB 1	**R**	20ci
Style B:			
Style C:			
Style D:			

Floors on soil

Style A:	**As per Selected OBC SB12** SB 12 F		
Style B:			

Exposed floors

Style A:	**As per Selected OBC SB12** SB 12	**R**	31
Style B:			

Windows

Style A:	**As per Selected OBC SB12** SB 12 I	**R**	3.57
Style B:	**Existing Windows (When Applicable)**	**R**	
Style C:			
Style D:			

Ceilings

Style A:	**As per Selected OBC SB12** SB 12 P	**R**	60.0
Style B:	**As per Selected OBC SB12** SB 12 P	**R**	31.0
Style C:			

Doors

Style A:	**As per Selected OBC SB12** SB 12	**R**	3.01
Style B:			
Style C:			

Skylights

Style A:	**As per Selected OBC SB12** SB 12	**R**	2.04
Style B:			

Attached documents: **As per Shedule 1**

Notes: **Residential New Construction - Forced Air**

Calculations performed by

Name:	**Doug McCallum**	Postal code:	**L6R 3Y5**
Company:	**McCallum HVAC Design Inc.**	Telephone:	**(905) 840-8166**
Address:	**2 Dewside Drive Unit 208**	Mobile:	**(647) 229-0380**
City:	**Brampton**	E-mail	**info@mccallumhvac.com**

MCCALLUM HVAC DESIGN INC

2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Project # RP2304

I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code.
I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: 25896 Firm BCIN: 102614 Doug McCallum

Project: Forestside Estates **Model:** Unit 3804 - Elev. A,B and C(OPT

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.geg 159/93

Location of Installation

Lot #	Plan #
Township	Brampton
Roll #	Permit #
Address	

Builder

Name	Roval Pine Homes
Address	
City	
Tel	Fax

Installing Contractor

Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)

a)	X	Direct vent (sealed combustion) only
b)		Positive venting induced draft (except fireplaces)
c)		Natural draft, B-vent or induced draft fireplaces
d)		Solid fuel (including fireplaces)
e)		No combustion Appliances

Heating System

X	Forced air
	Non forced air
	Electric space heat (if over 10% of heat load)

House Type 9.32.3.1(2)

I	X	Type a) or b) appliances only, no solid fuel
II		Type I except with solid fuel (including fireplace)
III		Any type c) appliance
IV		Type I or II either electric space heat
Other		Type I, II or IV no forced air

System Design Option

1		Exhaust only / forced air system
2		HRV WITH DUCTING / forced air system
3	X	HRV simplified connection to forced air system
4		HRV full ducting/not coupled to forced air system
		Part 6 design

Total Ventilation Capacity 9.32.3.3(1)

Bsmt & Master Bdrm	2	@ 21.2	cfm	42.4	cfm
Other Bedrooms	3	@ 10.6	cfm	31.8	cfm
Bathrooms & Kitchen	5	@ 10.6	cfm	53.0	cfm
Other rooms	6	@ 10.6	cfm	63.6	cfm
		Total		190.8	

Principal Ventilation Capacity 9.32.3.4(1)

Master bedroom	1	@ 31.8	cfm	31.8	cfm
Other bedrooms	3	@ 15.9	cfm	47.7	cfm
		Total		79.5	

Principal Exhaust Fan Capacity

Make	Model	Location
VanEE	65H	BASE

129 cfm 64 Sones

Heat Recovery Ventilator

Make	VanEE		
Model	65H		
	129 cfm high	64	cfm low
Sensible efficiency @ -25 deg C		60	%
Sensible efficiency @ 0 deg C		75	%

Supplemental Ventilation Capacity

Total ventilation capacity	190.8
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	111.3 cfm

Supplemental Fans 9.32.3.5.

Location	cfm	Model	Sones
ENSUITE	50	770	2.5
POWDER	50	770	2.5
		None	
		None	

all fans HVI listed Make Broan or Equiv.

Designer Certification

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name	Doug McCallum
Signature	
HRAI #	BCIN # 25896
Date	2023-06-07

MCCALLUM HVAC DESIGN INC

2 Dewside Drive Unit 208, Brampton, Ontario L6R 3Y5 Tel: 905-840-8166
e-mail - info@mccallumhvac.com

Project # RP23049

Project: Forestside Estates **Model:** Unit 3804 - Elev. A,B and C(OPT 2ND)

Air Leakage Calculations

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.314	42380.0	74.2	17753.03

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.0988092	42380	14.00	1055.26

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air Leakage	Level Conductive Heat Loss (HLclevel)	Air Leakage Heat Loss Multiplier
1	0.5	17753	5325	1.66695
2	0.3		11904	0.44740
3	0.2		13128	0.27046
4	0		0	0.00000

Levels			
1	2	3	4
(LF)	(LF)	(LF)	(LF)
1.0	0.6	0.5	0.4
	0.4	0.3	0.3
		0.2	0.2
			0.1

		Air Leakage Heat Gain Multiplier
HG LEAK	1055.26	0.06861
BUILDING CONDUCTIVE HEAT GAIN	15380.00	

Levels this Dwelling
3

Ventilation Calculations

Vent

Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL^T	(1-E) HRV	HLbvent
1.08	79.5	74.20	0.250	1592.70

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG^T	HGbvent
1.08	79.5	14.00	1202.040

Case 1

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
1	0.5	1593	5325	0.15
2	0.3		11904	0.04
3	0.2		13128	0.02
4	0		0	0

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier
HGbvent	1202.040	0.08
Building Cond. HG	15380.00	

Case 2

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

			Multiplier
C	HL^T	(1-E) HRV	20.03
1.08	74.20	0.25	

Ventilation Heat Gain (Direct Ducted Systems)

		Multiplier
C	HG^T	15.12
1.08	14.00	

Case 3

Case 3

Ventilation Heat Loss (Forced Air Systems)

	HLbvent	Multiplier
Total Ventilation Load	1593	0.05

Ventilation Heat Gain (Forced Air Systems)

		Vent Heat Gain	Multiplier
HGbvent	HG*1.3	1202	0.08
1202.040	1		

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description

Province:	Brampton
Region:	ON
Weather Station Location:	Open flat terrain, grass
Anemometer height (m):	10

Local Shielding

Building Site:	Suburban, forest
Walls:	Very heavy
Flue:	Heavy
Highest Ceiling Height (m):	6.25

Building Configuration

Type:	Detached
Number of Stories:	Two
Foundation:	Full
House Volume (m^3):	1200

Air Leakage/Ventilation

Air Tightness Type:	Custom - DBT values	
Custom BDT Data:	ELA @ 10 Pa.	1522.885
	3	ACH @ 50 Pa
Mechanical Ventilation (L/s):	**Total Supply:**	**Total Exhaust:**
	0	0

Flue Size

Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0

Envelope Air Leakage Rate

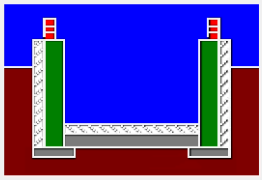
Heating Air Leakage Rate (ACH/H): 0.314

Cooling Air Leakage Rate (ACH/H): 0.099

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description	
Province:	Brampton
Region:	ON
Site Description	
Soil Conductivity:	Normal conductivity: dry sand, loam, clay
Water Table:	Deep (>10 m, >33 Ft)
Foundation Dimensions	
Floor Length (m):	22.5
Floor Width (m):	5.62
Exposed Perimeter (m):	56.3
Wall Height (m):	3.05
Depth Below Grade (m):	2.59
Window Area (m^2):	1.49
Door Area (m^2):	0
Radiant Slab	
Heated Fraction of the Slab:	**0**
Fluid Temperature (°C):	**23**
Design Months	
Heating Month	**1**
Foundation Loads	
Heating Load (Watts):	**1463**



Insulation Configuration

BCIN_1

SYSTEM A

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION AND PRESSURE	
LEVEL 1 NET LOAD	14481 btu/h	**EQUIPMENT EXTERNAL STATIC PRESSURE**	0.500"W.C.
LEVEL 2 NET LOAD	17856 btu/h	**ADDITIONAL EQUIPMENT PRESSURE DROP**	0.250"W.C.
LEVEL 3 NET LOAD	18084 btu/h	**AVAILABLE DESIGN PRESSURE**	0.250"W.C.
LEVEL 4 NET LOAD	0 btu/h	**RETURN BRANCH LONGEST EFFECTIVE LENGTH**	300ft
SYSTEM HEATLOSS	50421 btu/h	**R/A PLENUM PRESSURE**	0.120"W.C.
SYSTEM HEATGAIN	32361 btu/h	**S/A PLENUM PRESSURE**	0.130"W.C.
BUILDING VOLUME Vb	42380.00 ft3	**HEATING AIR FLOW PROPORTIONING FACTOR**	0.0227 cfm/btuh
VENTILATION LOAD	1593.00 btu/h	**COOLING AIR FLOW PROPORTIONING FACTOR**	0.0354 cfm/btuh
VENTILATION PVC	79.50 cfm	**R/A TEMP. 70°F**	S/A TEMP. 121.75°F DIFFUSER LOSS 0.01°"w.c.

FURNACE/AIR HANDLER DATA				BLOWER DATA	
MAKE	LENNOX			HEATING CHECK	1149.00 CFM
MODEL	EL296UH070XE36B			SELECTED CFM	1145.00 CFM
HIGH INPUT btu/h	66000	LOW INPUT btu/h	0	COOLING CHECK	1143.00 CFM
HIGH OUTPUT btu/h	64000	LOW OUTPUT btu/h	0	COOLING AIR FLOW RATE	1145.00 CFM
E.S.P.	0.50			BLOWER TYPE ECM (BRUSHLESS DC OBC 12.3.1.5.(2))	
WATER TEMP.				A/C UNIT DATA	
AFUE	96.97%			MAKER	3.0 TON
AUX. HEAT	0			CONDENSER	3.0 TON
SB-12 PACKAGE	SB 12 Performance 28			COIL	3.0 TON
TEMP. RISE	51.75°F				

SUPPLY BRANCH AND GRILL SIZING

OUTLET #	ROOM USE	BTU/H OUTLET	HEATING AIR FLOW RATE CFM	COOLING AIR FLOW RATE CFM	DUCT DESIGN PRESSURE	ACTUAL DUCT LENGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	DUCT SIZE ROUND	OUTLET SIZE	TRUNK
8	MEDIA RM	2303	52	76	0.13	41	185	226	0.05	6.0	4x10	C1
9	MEDIA RM	2303	52	76	0.13	49	155	204	0.06	6.0	4x10	C1
2	PRI BED	1386	31	49	0.13	41	155	196	0.06	6	4x10	A1
3	PRI BED	1386	31	49	0.13	50	145	195	0.06	6	4x10	A1
22	LIV/DIN	1097	25	28	0.13	28	175	203	0.06	5	4x10	D1
23	LIV/DIN	1097	25	28	0.13	30	165	195	0.06	5	4x10	B1
19	FOYER	3600	81	42	0.13	43	155	198	0.06	6.0	4x10	C1
18	MUD/ CLOS	1011	23	7	0.13	9	115	124	0.10	5	4x10	F1
17	LAUND	1021	23	45	0.13	11	135	146	0.08	5.0	4x10	F1
16	DEN	1103	25	41	0.13	28	155	183	0.07	5.0	4x10	B1
13	FAMILY	3176	71	82	0.13	50	155	205	0.06	6.0	4x10	A1
12	BED-5	1257	28	32	0.13	39	155	194	0.06	6	4x10	B1
24	BASE	3619	81	39	0.13	43	175	218	0.06	6.0	4x10	A1
25	BASE	3619	81	39	0.13	37	185	222	0.05	6.0	4x10	A1
26	BASE	3619	81	39	0.13	46	145	191	0.06	6.0	4x10	C1
27	BASE	3619	81	39	0.13	20	175	195	0.06	6.0	4x10	B1
14	BREAK/ KIT	1916	43	72	0.13	41	165	206	0.06	6.0	4x10	A1
15	BREAK/ KIT	1916	43	72	0.13	52	175	227	0.05	6.0	4x10	A1
5	SHAR BATH	514	12	7	0.13	21	145	166	0.07	5	4x10	F1
11	SH BATH-2	639	14	14	0.13	32	165	197	0.06	5	4x10	B1
21	PWD	536	12	10	0.13	34	145	179	0.07	5	4x10	D1
1	M BATH	1863	42	53	0.13	47	145	192	0.06	5.0	4x10	B1
20	SIDE ENTR	1370	31	9	0.13	35	135	170	0.07	5	4x10	D1
28	M.WIC	479	11	6	0.13	34	155	189	0.06	5	4x10	B1
6	BED-3	1918	43	57	0.13	50	155	205	0.06	6	4x10	D1
7	BED-3	1918	43	57	0.13	43	195	238	0.05	6.0	4x10	C1
4	BED 2	1537	34	34	0.13	8	130	138	0.09	6	4x10	PL

10	BD-4	1357	30	41	0.13	33	175	208	0.06	6	4x10	D1

RETURN BRANCH AND GRILL SIZING

R/A INLET #	INLET AIR VOLUME CFM	DUCT DESIGN PRESSURE	ACTUAL DUCT LENGTH	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	DUCT SIZE ROUND	INLET SIZE	TRUNK
1R	70	0.12	23	160	183	0.05	6	14x8	Z1
2R	150	0.12	20	120	140	0.07	7.5	14x8	Z1
3R	145	0.12	39	120	159	0.06	7.5	14x8	Y1
4R	75	0.12	46	130	176	0.06	6	14x8	X1
5R	70	0.12	41	170	211	0.05	6	14x8	X1
6R	380	0.12	30	160	190	0.05	11.5	30x8	Z1
7R	145	0.12	37	160	197	0.05	8	14x8	Y1
8R	110	0.12	25	120	145	0.07	7	FLC	Y1

RETURN TRUNK DUCT SIZING

TRUNK	CFM	PRESSURE	ROUND	RECT. SIZE	SIZE ALTERNATE
DROP	1145	0.05		0	
Z1	1145	0.05	17	26x10	26x10
Y1	545	0.05	13	18x8	14x10
X1	145	0.05	8	8x8	10x6

SUPPLY TRUNK DUCT SIZING

TRUNK	CFM	PRESSURE	ROUND	RECT. SIZE	SIZE ALTERNATE
A1	381	0.05	11.5	14x8	20x6
B1	607	0.05	13.5	20x8	16x10
C1	309	0.05	10.5	12x8	16x6
D1	450	0.05	12	16x8	22x6
F1	1115	0.05	17	26x10	26x10
PL	34	0.09	4		

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C(OPT 2ND)
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

WEATHER DATA [Brampton] [43.68] [-2.20] [86.00] [51.80] [48.20] [74.20] [14.00]

LEVEL 1

BASE		*TOTALS H.L.: 14481 btuh*					*H.G.: 4489 btuh*			AREA: 1365 ft2		Above Grade: 1.5		GROSS EXP. WALL			*NEW 277.5 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 185 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	21.12		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	3.5	*0 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.7	*173 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*166 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*166 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*225 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*174 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				4992 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	5325 btuh	LOSS	1.6670	8877 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	279.4 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	572 btuh	GAIN	0.0686	39 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	45 btuh	0	0 btuh	50%	2797 btuh	GAIN	0%	0 btuh

LEVEL 2

LIV/DIN		*TOTALS H.L.: 2196 btuh*					*H.G.: 1572 btuh*			AREA: 309 ft2		C.Height: 10		GROSS EXP. WALL			*NEW 240 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 24 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*841 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*159 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 30.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*624 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*651 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	1464 btuh	LOSS	0.4474	655 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	76.8 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	810 btuh	GAIN	0.0686	56 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	63 btuh	0	0 btuh	5%	280 btuh	GAIN	0%	0 btuh

FOYER		*TOTALS H.L.: 3603 btuh*					*H.G.: 1209 btuh*			AREA: 144 ft2		C.Height: 10		GROSS EXP. WALL			*NEW 370 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*1281 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*242 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 21 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*518 btuh*	24.7	*0 btuh*	20.8	*166 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*436 btuh*	37.3	*0 btuh*
GAIN	4.7	*98 btuh*	4.7	*0 btuh*	28.2	*225 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*246 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2402 btuh	LOSS	0.4474	1075 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	126.0 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	811 btuh	GAIN	0.0686	56 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	63 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

MUD/CLOS		*TOTALS H.L.: 1011 btuh*					*H.G.: 190 btuh*			AREA: 41 ft2		C.Height: 10		GROSS EXP. WALL			*NEW 60 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 6 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*156 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*29 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*518 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*98 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	674 btuh	LOSS	0.4474	302 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	35.4 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	127 btuh	GAIN	0.0686	9 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	10 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

LAUND		*TOTALS H.L.: 1022 btuh*					*H.G.: 1282 btuh*			AREA: 53 ft2		C.Height: 10		GROSS EXP. WALL			*NEW 170 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 17 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	

INDIVIDUAL BCIN NUMBER 25896
FIRM BCIN NUMBER 102614

Doug McCallum

TOTAL HEATLOSS: 50421 BTUH
TOTAL HEATGAIN: 32361 BTUH

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C(OPT 2ND)
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

LOSS	4.0	681 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	128 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	681 btuh	LOSS	0.4474	305 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	35.7 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	128 btuh	GAIN	0.0686	9 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	10 btuh	0	0 btuh	15%	839 btuh	GAIN	0%	0 btuh

DEN	TOTALS H.L.: 1104 btuh			H.G.: 1166 btuh					AREA: 124 ft2		C.Height: 10		GROSS EXP. WALL		NEW 100 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 10 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	320 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	60 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 20 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	416 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	235 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	736 btuh	LOSS	0.4474	329 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	38.6 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	295 btuh	GAIN	0.0686	20 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	23 btuh	0	0 btuh	10%	559 btuh	GAIN	0%	0 btuh

FAMILY	TOTALS H.L.: 3178 btuh			H.G.: 2335 btuh					AREA: 295 ft2		C.Height: 10		GROSS EXP. WALL		NEW 370 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	1329 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	251 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 38.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	790 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	1071 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2119 btuh	LOSS	0.4474	948 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	111.2 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	1322 btuh	GAIN	0.0686	91 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	103 btuh	0	0 btuh	5%	280 btuh	GAIN	0%	0 btuh

BREAK/KIT	TOTALS H.L.: 3834 btuh			H.G.: 4124 btuh					AREA: 294 ft2		C.Height: 10		GROSS EXP. WALL		NEW 370 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 37 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	1225 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	231 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 64.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	1330 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	1803 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE			LOSS	2556 btuh	LOSS	0.4474	1144 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	134.1 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	2034 btuh	GAIN	0.0686	140 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	159 btuh	0	0 btuh	15%	839 btuh	GAIN	0%	0 btuh

PWD	TOTALS H.L.: 537 btuh			H.G.: 286 btuh					AREA: 43 ft2		C.Height: 10		GROSS EXP. WALL		NEW 60 ft		EXIST 0 ft			
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 6 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	212 btuh	8.7	0 btuh	1.3	0 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	0 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	40 btuh	1.6	0 btuh	0.7	0 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	0 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 7.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	145 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	152 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh

TOTAL HEATLOSS: 50421 BTUH
TOTAL HEATGAIN: 32361 BTUH

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C(OPT 2ND)
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	358 btuh	LOSS	0.4474	160 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	18.8 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	192 btuh	GAIN	0.0686	13 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	15 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

SIDE ENTR	*TOTALS H.L.: 1371 btuh*		*H.G.: 256 btuh*		AREA: 67 ft2		C.Height: 10		GROSS EXP. WALL		*NEW 120 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 12 ft		EXIST: 0 ft		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*396 btuh*	8.7	*0 btuh*	1.3	*0 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*75 btuh*	1.6	*0 btuh*	0.7	*0 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 21.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*518 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*98 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	914 btuh	LOSS	0.4474	409 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	48.0 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	172 btuh	GAIN	0.0686	12 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	13 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

LEVEL 3

MEDIA RM	*TOTALS H.L.: 4449 btuh*		*H.G.: 4267 btuh*		AREA: 253 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 288 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 36 ft		EXIST: 0 ft		NEW: 253 ft2		EXIST: 0		NEW: 69 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*813 btuh*	8.7	*0 btuh*	1.3	*317 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*172 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*153 btuh*	1.6	*0 btuh*	0.7	*175 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*19 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 68.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 17.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*1413 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*353 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*1916 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*369 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	3068 btuh	LOSS	0.2705	830 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	161.0 btuh	239		5594		LOSS	10%	390 btuh
TOTAL CONDUCTIVE	GAIN	2632 btuh	GAIN	0.0686	181 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	206 btuh	0	0 btuh	0%	0 btuh	GAIN	10%	263 btuh

PRI BED	*TOTALS H.L.: 2640 btuh*		*H.G.: 2746 btuh*		AREA: 281 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 248 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 31 ft		EXIST: 0 ft		NEW: 281 ft2		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*841 btuh*	8.7	*0 btuh*	1.3	*352 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*12 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*159 btuh*	1.6	*0 btuh*	0.7	*195 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*1 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 38.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*790 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*1071 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	1995 btuh	LOSS	0.2705	540 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	104.7 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	1425 btuh	GAIN	0.0686	98 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	111 btuh	2	478 btuh	0%	0 btuh	GAIN	0%	0 btuh

BED-5	*TOTALS H.L.: 1209 btuh*		*H.G.: 893 btuh*		AREA: 155 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 96 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			
	NEW: 12 ft		EXIST: 0 ft		NEW: 155 ft2		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*304 btuh*	8.7	*0 btuh*	1.3	*194 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*57 btuh*	1.6	*0 btuh*	0.7	*107 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 20.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*416 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*434 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*

FUND. CONDUCTIVE HEATLOSS		0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST			VENTILATION CASE 3			H.G. PEOPLE		APP. LOAD		DUCT PIPE L.		
TOTAL CONDUCTIVE	LOSS	914 btuh	LOSS	0.2705	247 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	48.0 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE	GAIN	599 btuh	GAIN	0.0686	41 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	47 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

SHAR BATH	*TOTALS H.L.: 483 btuh*		*H.G.: 178 btuh*		AREA: 112 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 56 ft*		*EXIST 0 ft*	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC		EXPOSED CEILING NO ATTIC		EXPOSED FLOORS		SKYLIGHT			

HEATLOSS/GAIN CALCULATIONS CSA-F280-12

ADDRESS/MODEL: Unit 3804 - Elev. A,B and C(OPT 2ND)
PROJECT #: RP23049
COMPLIANCE PACKAGE: SB 12

CLIENT: Royal Pine Homes
GTA: 3354
LOT: 3804
SITE: Forestside Estates

MCCALLUM HVAC DESIGN INC

	NEW: 7 ft		EXIST: 0 ft		NEW: 112 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*224 btuh*	8.7	*0 btuh*	1.3	*140 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*42 btuh*	1.6	*0 btuh*	0.7	*78 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW		AIR LEAKAGE EXIST				VENTILATION CASE 3		H.G. PEOPLE		APP. LOAD		DUCT PIPE L.			
TOTAL CONDUCTIVE			LOSS	365 btuh	LOSS	0.2705	99 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	19.2 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	120 btuh	GAIN	0.0686	8 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	9 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

SH BATH-2	*TOTALS H.L.: 610 btuh*		*H.G.: 398 btuh*		AREA: 82 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 56 ft*		*EXIST 0 ft*							
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 7 ft		EXIST: 0 ft		NEW: 82 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*192 btuh*	8.7	*0 btuh*	1.3	*103 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*36 btuh*	1.6	*0 btuh*	0.7	*57 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 8.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*166 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*174 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW		AIR LEAKAGE EXIST				VENTILATION CASE 3		H.G. PEOPLE		APP. LOAD		DUCT PIPE L.			
TOTAL CONDUCTIVE			LOSS	461 btuh	LOSS	0.2705	125 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	24.2 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	267 btuh	GAIN	0.0686	18 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	21 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

M BATH	*TOTALS H.L.: 1774 btuh*		*H.G.: 1491 btuh*		AREA: 118 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 168 ft*		*EXIST 0 ft*							
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 21 ft		EXIST: 0 ft		NEW: 118 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*549 btuh*	8.7	*0 btuh*	1.3	*148 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*104 btuh*	1.6	*0 btuh*	0.7	*82 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 22.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 9.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*457 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*187 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*620 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*195 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW		AIR LEAKAGE EXIST				VENTILATION CASE 3		H.G. PEOPLE		APP. LOAD		DUCT PIPE L.			
TOTAL CONDUCTIVE			LOSS	1341 btuh	LOSS	0.2705	363 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	70.4 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	1000 btuh	GAIN	0.0686	69 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	78 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

M.WIC	*TOTALS H.L.: 447 btuh*		*H.G.: 156 btuh*		AREA: 91 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 56 ft*		*EXIST 0 ft*							
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 7 ft		EXIST: 0 ft		NEW: 91 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 0 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*224 btuh*	8.7	*0 btuh*	1.3	*114 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*0 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*42 btuh*	1.6	*0 btuh*	0.7	*63 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*0 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	
LOSS	24.7	*0 btuh*	24.7	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*	0	0	0	0	20.8	*0 btuh*	37.3	*0 btuh*	20.8	*0 btuh*	37.3	*0 btuh*
GAIN	4.7	*0 btuh*	4.7	*0 btuh*	28.2	*0 btuh*	14.9	*0 btuh*	0	0	0	0	21.7	*0 btuh*	14.9	*0 btuh*	11.7	*0 btuh*	14.9	*0 btuh*
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW		AIR LEAKAGE EXIST				VENTILATION CASE 3		H.G. PEOPLE		APP. LOAD		DUCT PIPE L.			
TOTAL CONDUCTIVE			LOSS	338 btuh	LOSS	0.2705	91 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	17.7 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	105 btuh	GAIN	0.0686	7 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	8 btuh	0	0 btuh	0%	0 btuh	GAIN	0%	0 btuh

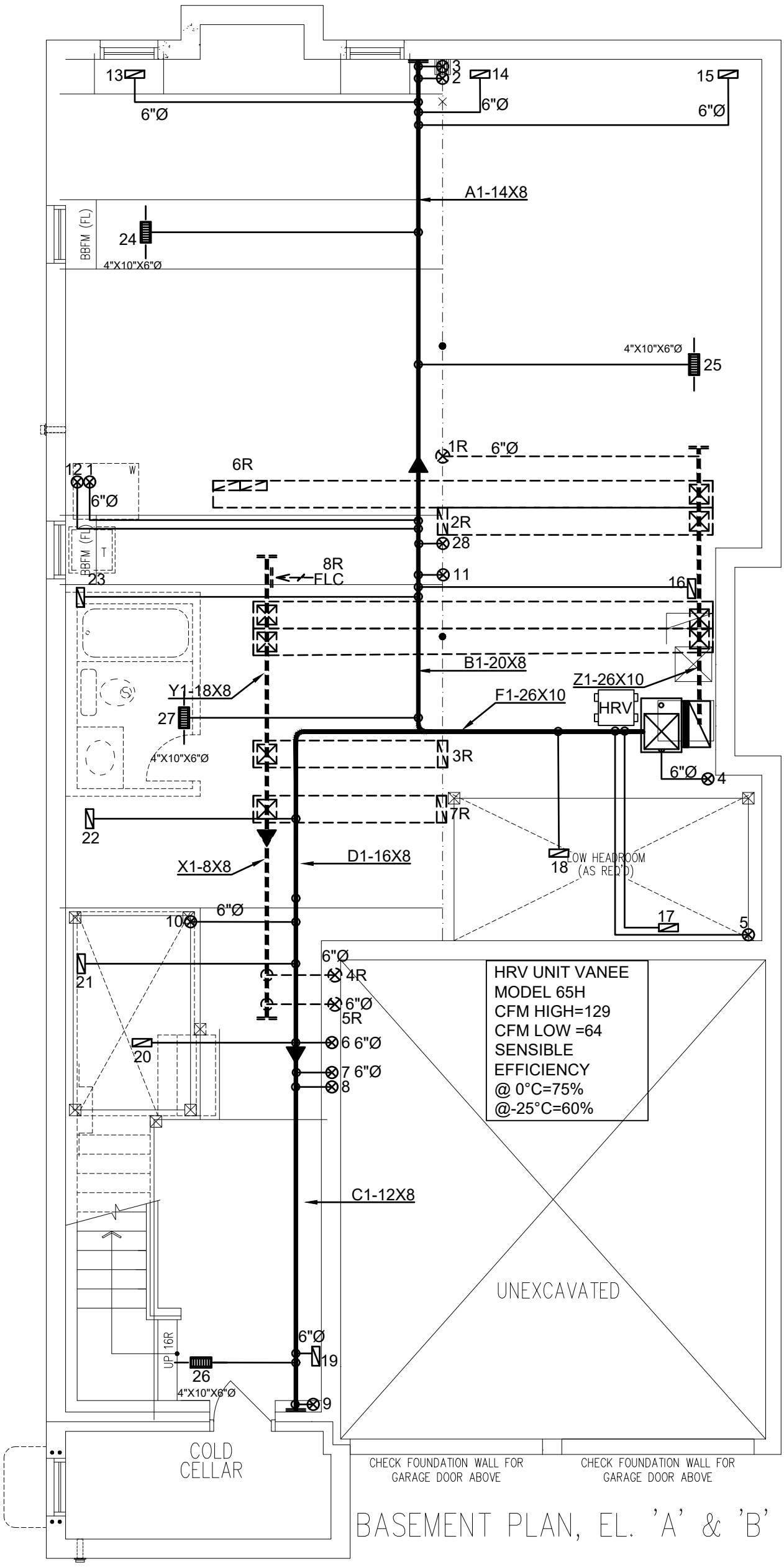
BED-3	*TOTALS H.L.: 3711 btuh*		*H.G.: 3216 btuh*		AREA: 207 ft2		C.Height: 8		GROSS EXP. WALL		*NEW 232 ft*		*EXIST 0 ft*							
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT			
	NEW: 29 ft		EXIST: 0 ft		NEW: 207 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 207 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2	
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03	
LOSS	4.0	*725 btuh*	8.7	*0 btuh*	1.3	*259 btuh*	3.2	*0 btuh*	2.7	*0 btuh*	3.4	*0 btuh*	2.5	*515 btuh*	3.4	*0 btuh*	36.4	*0 btuh*	37	*0 btuh*
GAIN	0.8	*137 btuh*	1.6	*0 btuh*	0.7	*143 btuh*	1.8	*0 btuh*	1.5	*0 btuh*	1.9	*0 btuh*	0.3	*56 btuh*	0.4	*0 btuh*	89.7	*0 btuh*	14.7	*0 btuh*
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS			
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 51.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2	
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99	

LOSS	24.7	0 btuh	24.7	0 btuh	20.8	1060 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	1437 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST		VENTILATION CASE 3			H.G. PEOPLE			APP. LOAD		DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	2560 btuh	LOSS	0.2705	692 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	134.3 btuh	239		5594		LOSS	10%	325 btuh
TOTAL CONDUCTIVE			GAIN	1773 btuh	GAIN	0.0686	122 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	139 btuh	1	239 btuh	0%	0 btuh	GAIN	10%	201 btuh

BED 2																			
	TOTALS H.L.: 1461 btuh				H.G.: 943 btuh				AREA: 183 ft2			C.Height: 8	GROSS EXP. WALL			NEW 144 ft		EXIST 0 ft	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT		
	NEW: 18 ft		EXIST: 0 ft		NEW: 183 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03
LOSS	4.0	509 btuh	8.7	0 btuh	1.3	229 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	12 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	96 btuh	1.6	0 btuh	0.7	127 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	1 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS		
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 17 ft2		EXIST: 0 ft2
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	0 btuh	37.3	0 btuh	20.8	353 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	0 btuh	14.9	0 btuh	11.7	200 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST		VENTILATION CASE 3			H.G. PEOPLE			APP. LOAD		DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	1104 btuh	LOSS	0.2705	299 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	57.9 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	424 btuh	GAIN	0.0686	29 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	33 btuh	1	239 btuh	0%	0 btuh	GAIN	0%	0 btuh

BD-4																			
	TOTALS H.L.: 1300 btuh				H.G.: 1164 btuh				AREA: 188 ft2			C.Height: 8	GROSS EXP. WALL			NEW 112 ft		EXIST 0 ft	
	EXPOSED WALLS				EXPOSED CEILING W/ATTIC				EXPOSED CEILING NO ATTIC				EXPOSED FLOORS				SKYLIGHT		
	NEW: 14 ft		EXIST: 0 ft		NEW: 188 ft2		EXIST: 0		NEW: 0		EXIST: 0		NEW: 5 ft2		EXIST: 0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2
Eff. R-V	18.53		8.50		59.22		22.86		27.65		22.05		29.80		22.05		2.04		2.03
LOSS	4.0	380 btuh	8.7	0 btuh	1.3	236 btuh	3.2	0 btuh	2.7	0 btuh	3.4	0 btuh	2.5	12 btuh	3.4	0 btuh	36.4	0 btuh	37	0 btuh
GAIN	0.8	72 btuh	1.6	0 btuh	0.7	130 btuh	1.8	0 btuh	1.5	0 btuh	1.9	0 btuh	0.3	1 btuh	0.4	0 btuh	89.7	0 btuh	14.7	0 btuh
	DOORS				EAST/WEST WINDOWS				SE/SW WINDOWS				SOUTH WINDOWS				NORTH WINDOWS		
	NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW: 0.0 ft2		EXIST: 0.0 ft2		NEW:		EXIST:		NEW: 17.0 ft2		EXIST: 0.0 ft2		NEW: 0 ft2		EXIST: 0 ft2
Eff. R-V	3.01		3.01		3.57		1.99		0		0		3.57		1.99		3.57		1.99
LOSS	24.7	0 btuh	24.7	0 btuh	20.8	0 btuh	37.3	0 btuh	0	0	0	0	20.8	353 btuh	37.3	0 btuh	20.8	0 btuh	37.3	0 btuh
GAIN	4.7	0 btuh	4.7	0 btuh	28.2	0 btuh	14.9	0 btuh	0	0	0	0	21.7	369 btuh	14.9	0 btuh	11.7	0 btuh	14.9	0 btuh
FUND. CONDUCTIVE HEATLOSS				0 btuh	AIR LEAKAGE NEW			AIR LEAKAGE EXIST		VENTILATION CASE 3			H.G. PEOPLE			APP. LOAD		DUCT PIPE L.	
TOTAL CONDUCTIVE			LOSS	982 btuh	LOSS	0.2705	266 btuh	LOSS	0.0000	0 btuh	LOSS	0.1	51.5 btuh	239		5594		LOSS	0%	0 btuh
TOTAL CONDUCTIVE			GAIN	572 btuh	GAIN	0.0686	39 btuh	GAIN	0.0000	0 btuh	GAIN	0.08	45 btuh	1	239 btuh	0%	0 btuh	GAIN	0%	0 btuh

LEVEL 4



BASEMENT PLAN, EL. 'A' & 'B'

3RD	# S/A -	# R/A -	# FANS -
2ND	13	5	3
1ST	11	2	2
B	4	1	0
TOTAL	28	8	5

- DESIGNER TO BE NOTIFIED OF ALL & ANY CHANGES TO THE STRUCTURE AND/OR SYSTEM DESIGN BEFORE INSTALLATION BEGINS. INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
- COORDINATE EXACT LOCATION OF GRILLES AND REGISTERS WITH OTHER TRADES, SITE CONDITIONS, OWNER BUILDER, AND/OR ARCHITECT BEFORE INSTALLATION.
- PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO S/A BRANCH OUTLETS, MAIN TAKE OFF'S & "Y" FITTINGS.
- ALL S/A RUNS TO BE 4"X10"X5" ROUND UNLESS OTHERWISE NOTED
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PROPOSED BASEMENT

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

CONTRACTOR TO WORK FROM MUNICIPAL APPROVED DRAWINGS ONLY

The undersigned has reviewed and takes responsibility for this design and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

NAME	SIGNATURE	BCIN / BCDN
Doug McCallum		102614

TOTAL LOSS	50,421 BTUH	
TOTAL GAIN	32,361 BTUH	
HEATING UNIT	LENNOX	
MODEL #	EL296UH070XE36B	3.0 TONS
OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C Opt. 2nd floor - 5 bed		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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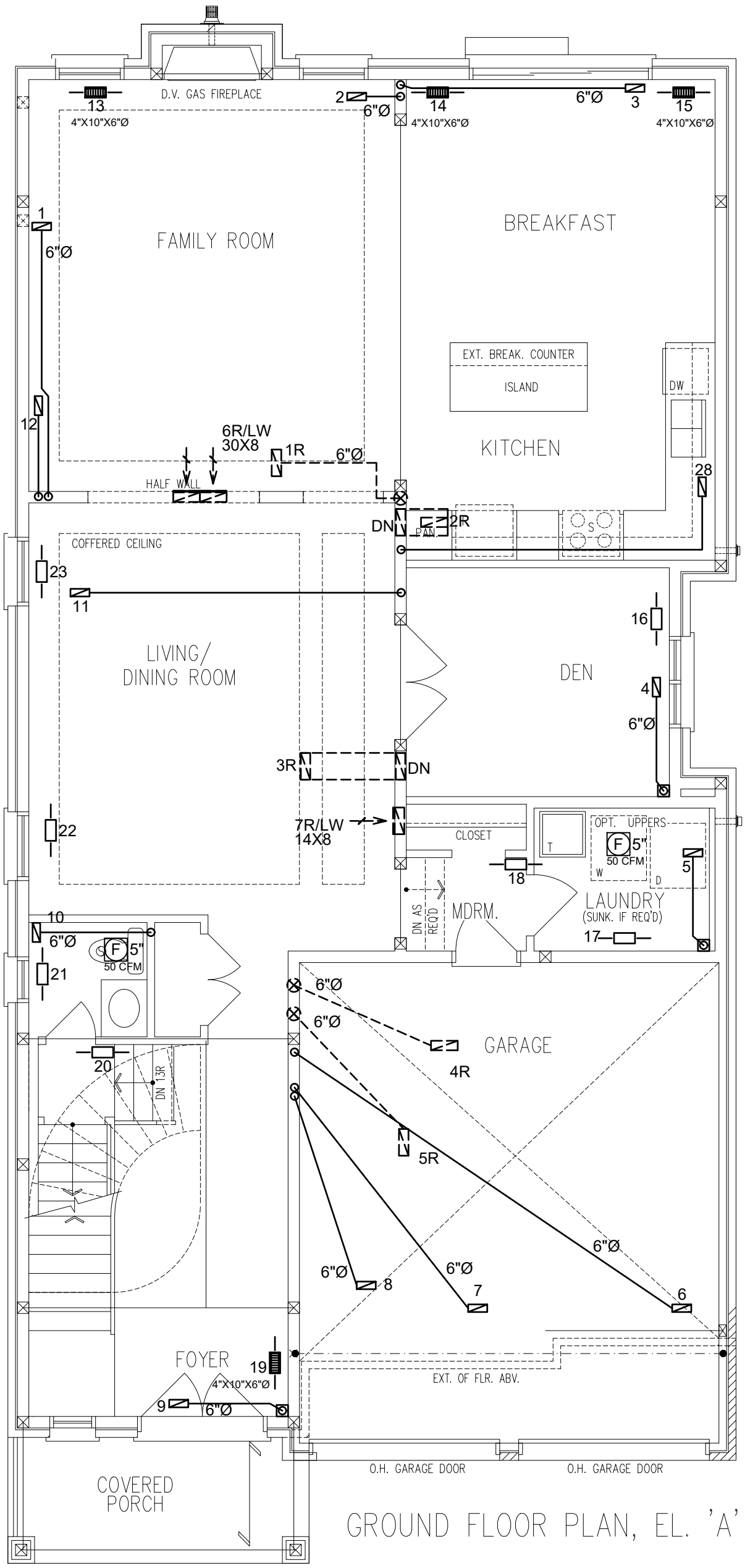
Brampton, Ontario, 905-840-8166, info@mccallumhvac.com

M1



GROUND FLOOR PLAN, EL. 'A'

3RD	# S/A -	# R/A -	# FANS -
2ND	13	5	3
1ST	11	2	2
B	4	1	0
TOTAL	28	8	5

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PROPOSED 1ST FLOOR

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SB-12 PERFORMANCE
CSA F280-12

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TOTAL GAIN	32,361 BTUH	
HEATING UNIT	LENNOX	
MODEL #	EL296UH070XE36B	3.0 TONS
OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C Opt. 2nd floor - 5 bed		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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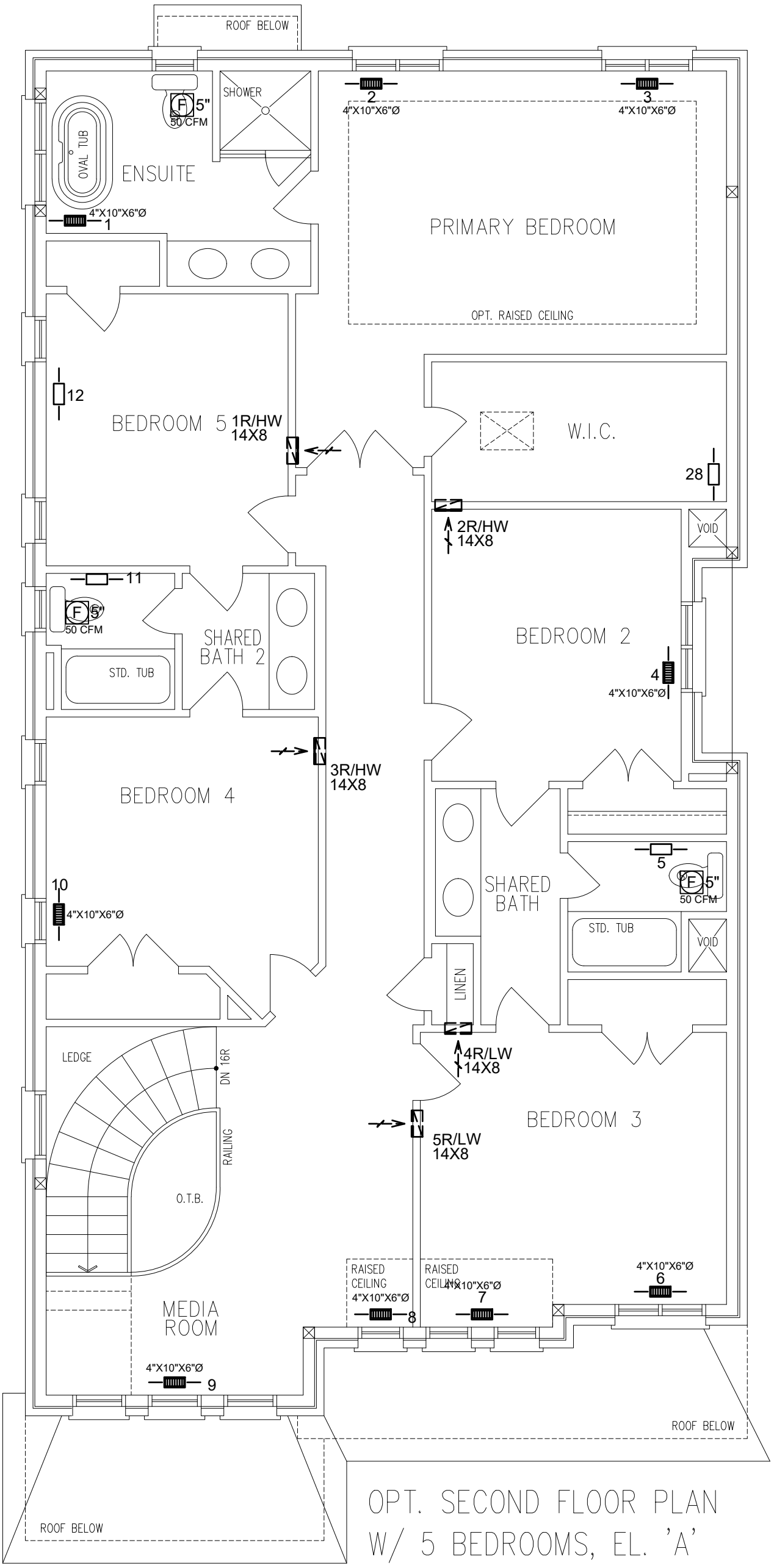
M2



OPT. SECOND FLOOR PLAN W/ 5 BEDROOMS, EL. 'A'

3RD	# S/A -	# R/A -	# FANS -
2ND	13	5	3
1ST	11	2	2
B	4	1	0
TOTAL	28	8	5

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PROPOSED 2ND FLOOR

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

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Doug McCallum		102614

TOTAL LOSS	50,421 BTUH	
TOTAL GAIN	32,361 BTUH	
HEATING UNIT	LENNOX	
MODEL #	EL296UH070XE36B	3.0 TONS
OUTPUT	64,000 BTUH	1145 CFM

MODEL:	Unit 3804 - Elev. A,B and C Opt. 2nd floor - 5 bed		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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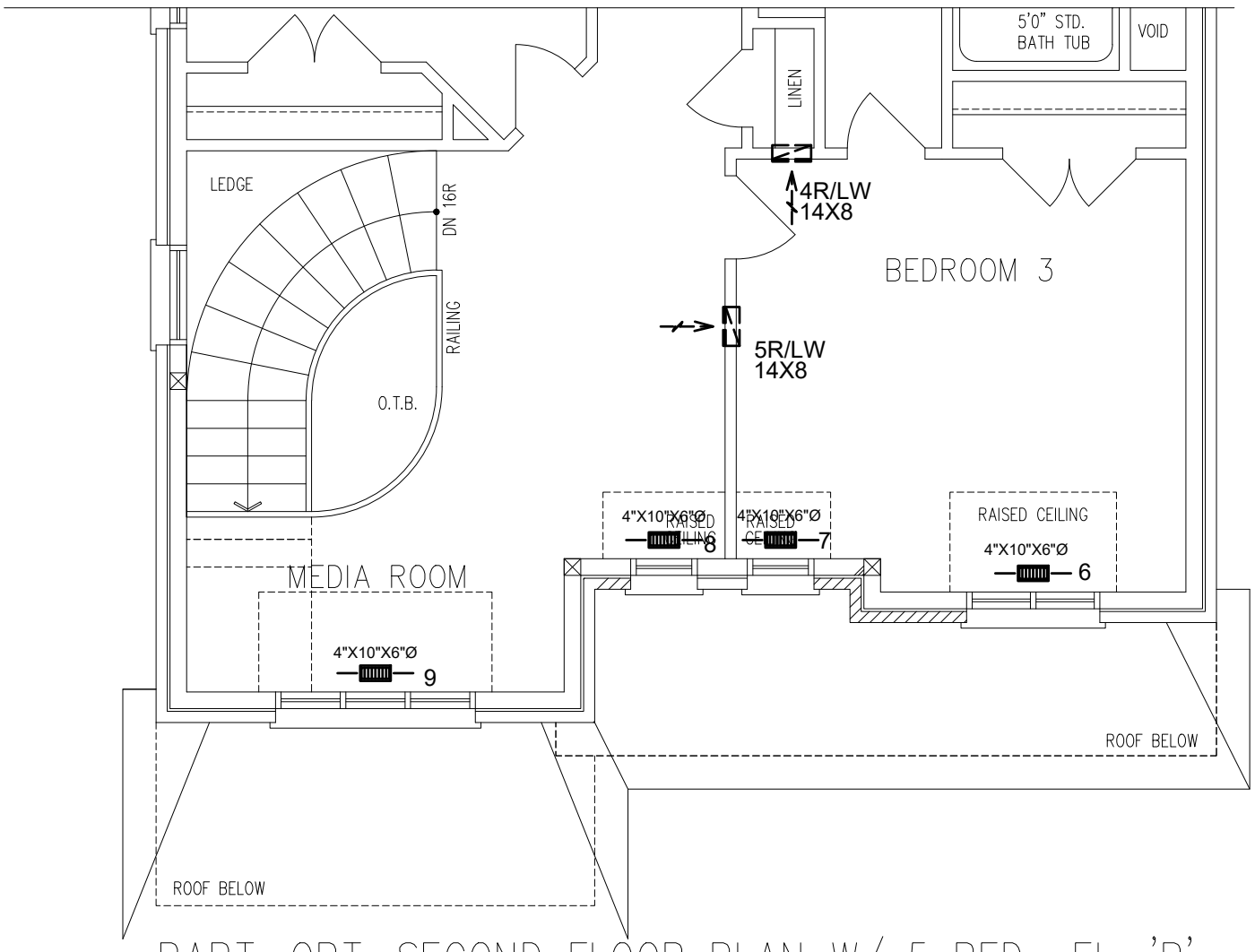
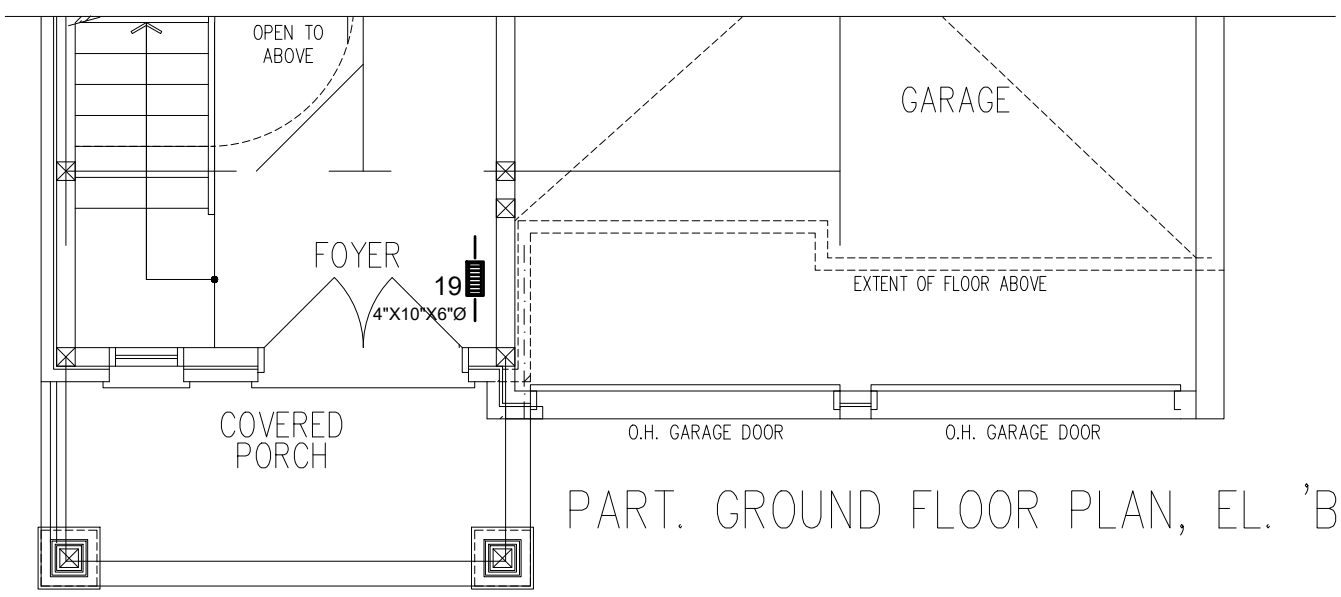
M3



PART. OPT. SECOND FLOOR PLAN W/ 5 BED., EL. 'B'



PART. GROUND FLOOR PLAN, EL. 'B'

3RD	# S/A -	# R/A -	# FANS -
2ND	13	5	3
1ST	11	2	2
B	4	1	0
TOTAL	28	8	5

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PARTIAL PLANS

DATE: JUN/2023 | SCALE: 3/16"=1'-0" | DRAWN BY: MMA/MP

SB-12 PERFORMANCE
CSA F280-12

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MODEL:	Unit 3804 - Elev. A,B and C Opt. 2nd floor - 5 bed		
PROJECT #:	RP23049	SQFT: 3,354	W%: 10.97
SITE:	Forestside Estates		
FOR:	Forestside Estates		
BUILDER:	Royal Pine Homes		

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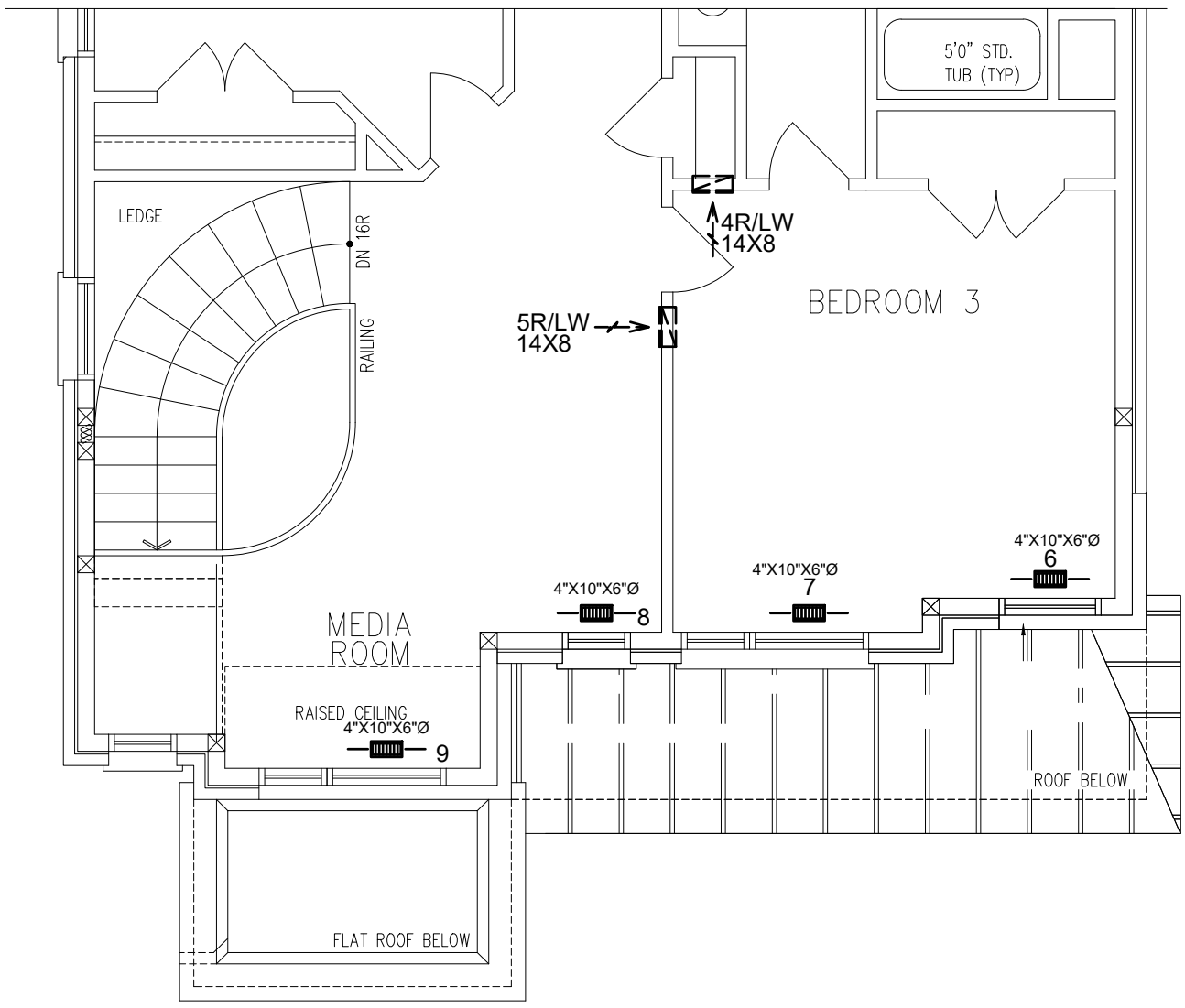
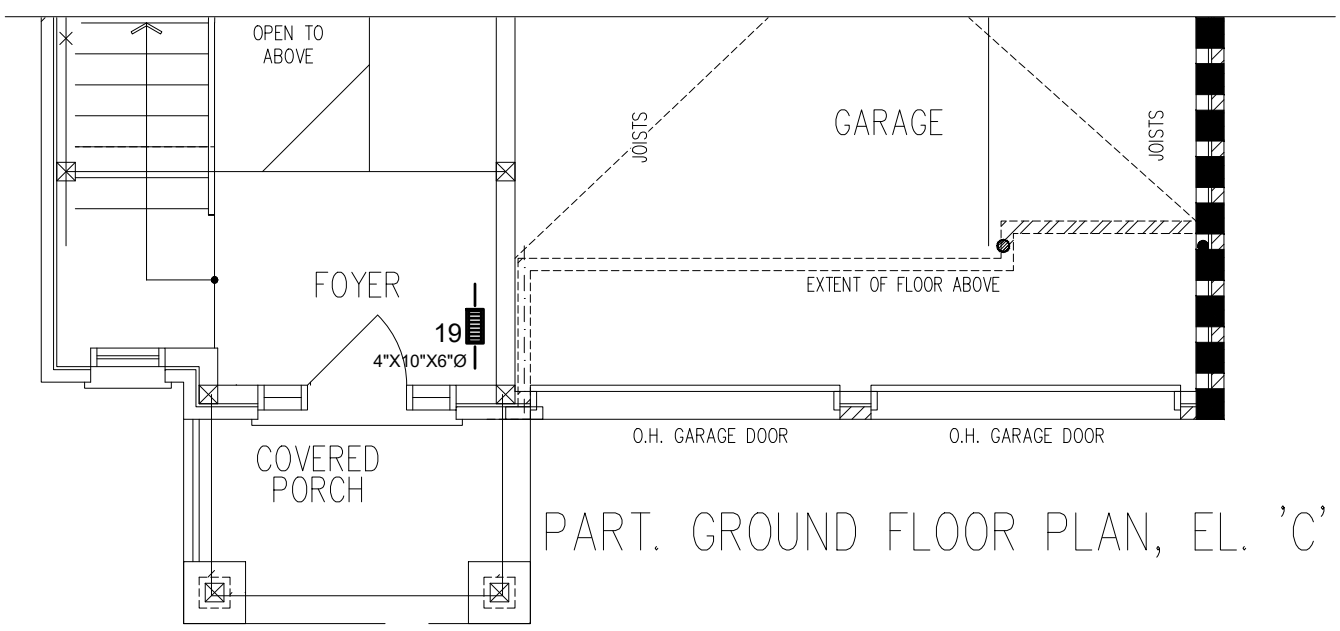
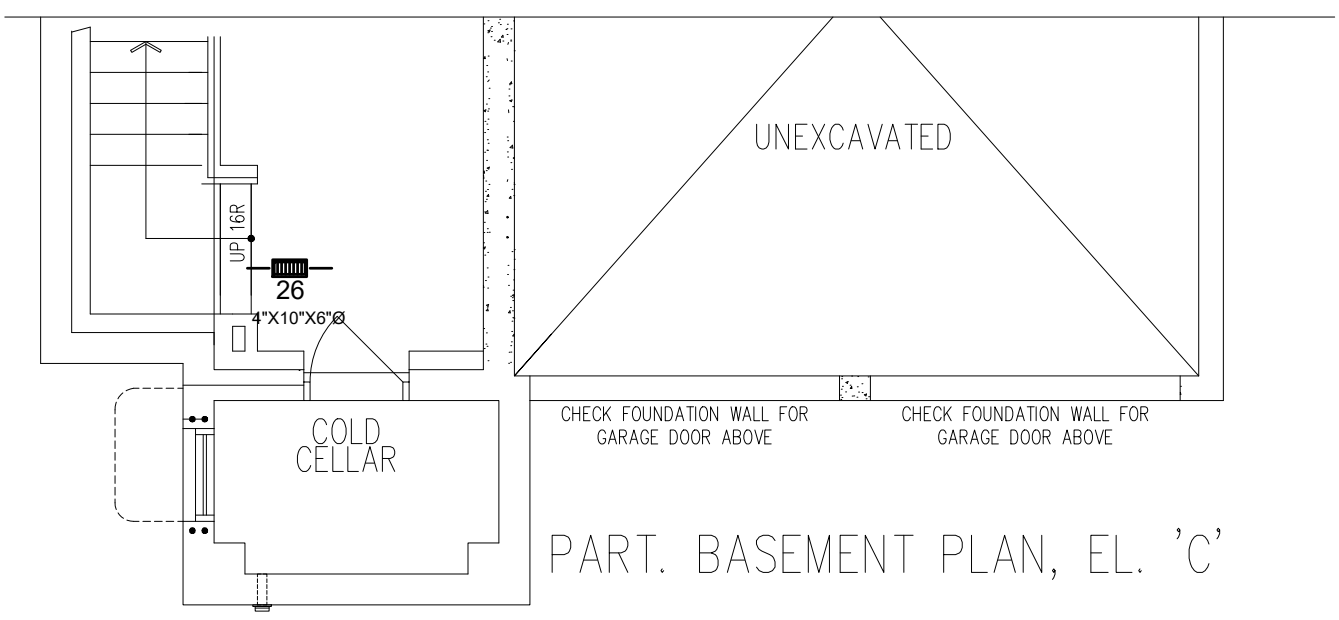
M4



PART. OPT. SECOND FLOOR PLAN W/ 5 BED., EL. 'C'



PART. GROUND FLOOR PLAN, EL. 'C'



PART. BASEMENT PLAN, EL. 'C'

3RD	# S/A -	# R/A -	# FANS -
2ND	13	5	3
1ST	11	2	2
B	4	1	0
TOTAL	28	8	5

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PARTIAL PLANS

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