COLUMBIA SHUSWAP REGIONAL DISTRICT

PO Box 978, 555 Harbourfront Drive NE, Salmon Arm, BC V1E 4P1
T: 250.832.8194 | F: 250.832.3375 | TF: 1.888.248.2773 | E: buildingpermit@csrd.bc.ca | www.csrd.bc.ca

BUILDING PERMIT APPLICATION FORM Application No:_____

Applicants are advised to consult with Building Department staff before submitting a Building Permit Application to the CSRD. Fees are non-refundable unless otherwise noted.

Personal information is collected by the CSRD under the authority of the Local Government Act and/or CSRDs' Bylaws and will only be used for the purpose of evaluating this application. Disclosure of personal information by the CSRD is subject to the requirements of the Freedom of Information and protection of Privacy Act. If you have any questions about collection, use or disclosure of personal information by CSRD, Please contact us at by phone at 250.832.8194 or by email at inquiries@csrd.bc.ca

IMPORTANT: An application is considered incomplete and pending until all required documentation is received; applications are only placed in the queue for processing once all required documentation is received.

Application Type (check all that apply). **Fees outlined in Building Bylaw No. 660**	
Permit Type	☐ Building Permit ☐ Plumbing Permit ☐ Solid Fuel (Wood) Burning Permit ☐ After the Fact **
Type of Building	☐ Residential ☐ Manufactured Home ☐ CSA-Z240 MH ☐CSA-A277 ☐ Industrial ☐ Commercial
Type of Work	☐ New ☐Addition ☐Alteration ☐Demolition (with Declaration) *** ☐Relocation

** Please check off both the application type(s) and the 'After the Fact' boxes if Development / Construction has started before issued permit

*** When completing a Demolition you will need to sign an Owner's Declaration of Site Conditions

Owner Information (Registered owner(s) information required). ☐ Additional page(s) attached.

Full Name(s):			
Mailing Address:			
Phone:	Cell Phone:	E-mail:	Preferred method: ☐ Email ☐ Phone ☐ Cell Phone

Applicant Information (If the **applicant is not the owner(s)** or if one registered owner is assigned to act as Agent on behalf of all registered owners, **complete this and the Authorization of Agent section**).

Company Name:		Contact Name:	
Mailing Address:			
Phone:	Cell Phone:	E-mail:	Preferred method: ☐ Email ☐ Phone ☐ Cell Phone

Property and Building Information (Complete all property information of land under application, if available).

Legal Description (Lot, Block, Section, Township, Range, District Lot, Land District, Plan):				Parcel Identifier (PID):	
Property Address:					
Construction Value:		Manufactured Home Value:		Number of Units Created:	
Building Set Backs:	Front	Interior Side(s)	Exterior Side(s)	Rear	Number of Storeys
Use of Building/Occupancy:		Building Dimensions:		Total Building Area: Area of Largest Floor (ft^2):	

Type of Heating/ Mechanical Systems: ☐ Electric ☐ Solid Fuel (wood) ☐Propane ☐Natural Gas ☐ Other _____

☐ Forced Air ☐ Baseboard ☐ Hydronic ☐Radiant ☐ Geothermal ☐ HRV ☐ Other _____

Plumbing Permit Application (please complete if adding or altering any plumbing fixtures or rough-ins)

Plumbing Contractor: Certified Tradesman? ☐ Yes ☐ No	Contractor Name: Certification No: _____	Phone: Cell Phone: Email:
Use of Building:	Number of fixtures:	Number of Storeys:

Describe Work:

☐New ☐ Addition ☐ Alteration/Repair

Fixtures to be Installed

Water Closets	Bathtubs/Showers	Wash Basins	Sinks	Wash Tubs	Floor Drains	Urinals
Automatic Washers	Hot Water Tanks and/or Boilers	Dishwashers	Interceptors and/or Catch Basins	Backflow Prevention Devices	Fire Sprinkler Heads	Other Fixtures

Solid Fuel (Wood) Burning Appliance Permit Application (please complete if installing a Solid Fuel Appliance (i.e. fireplace, wood stove)

Description of Appliance: ☐ Wood ☐ Pellet ☐ Other:_____	Installation Contractor: WETT Certification No:	
Make:	Model:	Serial #:

Authorization of Agent (Complete only if the applicant is not the owner(s) or if one registered owner is assigned to act as Agent on behalf of all registered owners). ☐ Additional page(s) attached.

NOTE: In order to use an **Agent** to work on the owners' behalf, **all registered owners** on Title must sign to grant authorization. If the property is owned by a corporation, a designated person with signing authority for the company must sign the form and provide documentation of signing authority. Attach a separate page with additional signatures if necessary.

As owner(s) of the land described in this application, I/we hereby authorize _____ to act as Agent in regard to this Building Permit application. In authorizing the above listed agent to act as applicant on my/our behalf, I/we understand that the CSRD will only maintain communication with the agent. I/we understand that any decisions by the CSRD or the CSRD Board of Directors will be based on information from the agent and that it is my/our responsibility to encourage two-way communication with the agent.

Print name of Owner	Signature of Owner	Date (mm/dd/yy)
Print name of Owner	Signature of Owner	Date (mm/dd/yy)

Declaration (If no Agent has been authorized as the applicant, all registered owners must sign this declaration. If more than two individual owners, attach a separate page with additional signatures). ☐ Additional page(s) attached.

I, the undersigned, being the owner, or the agent of the owner, of the parcel herein described, apply for a permit to construct the work detailed in this application. I acknowledge that I have obtained, read and understand Columbia Shuswap Regional District Building Bylaw No. 660. I further acknowledge that this permit is issued in accordance with the provisions of Building Bylaw No. 660 and in reliance on the representations and aforementioned acknowledgements made by the undersigned.

Print name of Owner/ Agent	Signature of Owner/ Agent	Date (mm/dd/yy)
Print name of Owner/ Agent	Signature of Owner/ Agent	Date (mm/dd/yy)

Columbia Shuswap Regional District

BUILDING BYLAW NO. 660

Appendix C – Owner's Undertaking

Property Address:_____ PID:_____

Legal Description:_____

Building Permit Application Number:_____

1. This undertaking is given by the undersigned, as the owner of the property described above, with the intention that it be binding on the owner and that the Regional District will rely on same.

2. I confirm that I have applied for a building permit pursuant to "Building Bylaw No. 660" (the "Bylaw") and that I have carefully reviewed and fully understand all of the provisions of the Bylaw and in particular, understand, acknowledge and accept the provisions describing the purpose of the Bylaw, the conditions under which permits are issued, the disclaimer of warranty or representation and the limited extent of the scope of the Bylaw and inspections thereunder.

3. Without in any way limiting the foregoing, I acknowledge fully that it is my responsibility, whether or not any work to be performed pursuant to the permit applied for is done by me, a contractor or a registered professional, to ensure compliance with the Building Code and the Bylaw.

4. I am not in any way relying on the Regional District or its building officials, as defined under the Bylaw, to protect the owner or any other persons as set out in Part 3 of the Bylaw and I will not make any claim alleging any such responsibility or liability on the part of the Regional District or its building officials.

5. I hereby agree to indemnify and save harmless the Regional District and its employees from all claims, liability, judgments, costs and expenses of every kind which may result from negligence or from the failure to comply fully with all bylaws, statutes and regulations relating to any work or undertaking in respect of which this application is made.

6. I am authorized to give these representations, warranties, assurance and indemnities to the Regional District.

Owner or Owner's Authorized Agent Information:

Name: _____

(PRINT)

Mailing Address: _____

_____

Tel. No.: _____ Cell No.: _____ Fax No.: _____

Email: _____

This undertaking is executed by the owner this _____ day of _____ , _____ .

(Day) (Month) (Year)

1. Where owner is an individual:

Owner's Signature

_____

Owner's Name

_____

(PRINT)

Signed, sealed and delivered in the presence of:

Witness's Signature

_____

Witness's Name

_____

(PRINT)

Witness's Address

_____

2. Where owner is a corporation

Name of Corporation

_____

Per:

Authorized Signatory

_____

Name

_____

(PRINT)

Signed, sealed and delivered in the presence of:

Witness's Signature

_____

Witness's Name

_____

(PRINT)

Witness's Address

_____

3. Where owner is a <u>partnership:</u>

_____

Name of Partnership

_____

Per:

Authorized Signatory

_____

Name

_____

(PRINT)

Signed, sealed and delivered in the presence of:

Witness's Signature

_____

Witness's Name

_____

(PRINT)

Witness's Address

_____

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Building Permit Application Process

1. **Application -** The applicant will submit a **complete application** that details the type of construction, alteration or repair and the value of the proposed work. A member of the Building Department will ensure that the appropriate number and type of plans and fees accompany the Building Permit Application. The Building Permit Application Fee of $72.00 must be paid at time of permit application.
   - accessory buildings
   - building height
   - building setbacks
   - building size
   - density
   - off-street parking
   - off-street loading
   - parcel coverage
   - proposed use
   - landscaping
   - screening and fencing
   - watercourse setbacks

2. **Application Review** - The application and plans will be reviewed for compliance with the Zoning Bylaw and Development Permit guidelines related to the applicable OCP. If it is found that a development permit is necessary then the applicant will be contacted. Compliance with other agency approval processes will also be reviewed. Items reviewed include but are not limited to the following:

3. **Building Plan Review** - The Building Inspector performs a technical review of the plans for compliance with the Building Bylaw, BC Building Code. Any deficiencies noted during the application review will be conveyed to the applicant in as timely a manner as possible. The applicant is required to address and correct all deficiencies prior to issuance of a building permit. **Permit Issuance**: Once the review is complete the applicant will be contacted to pick up their permit and pay the applicable Building Permit Fee. The Building Permit and Placard is to be posted conspicuously on the site and legible from the road during the entire execution of the work. All plans, specifications, supporting documents, inspection certificates and professional field reviews are to be available on site during normal working hours.

4. **Inspections** - The CSRD will perform six (6) on-site building inspections, with forty eight (48) hours' notice from the property owner or agent, at key points of construction. Refer to Inspection List for details on 6 inspections.

5. **Occupancy** - Once the Final Inspection is completed with no deficiencies all relevant and outstanding documentation has been provided, as required by the Building Bylaw, then the building official may issue a final inspection notice authorizing *occupancy – Final Occupancy Permit.*

ADDITIONAL PERMITS:

- **Plumbing Permit** - A plumbing permit is required for the installation or relocation of any plumbing fixtures. With the exception of a homeowner doing his own plumbing work and the acceptance of a plumbing schematic drawing, plumbing permits will only be issued to qualified tradesmen.

- **Demolition Permit** - A demolition permit is required for the demolition of any buildings within the Regional District. Permit approval is required prior to any demolition being undertaken. The permit requires a signed Owner's Declaration of Site Conditions.

- **Solid Fuel (Wood) Burning Permit** - This includes wood stoves, pellet stoves, factory built chimneys, factory-built fireplaces, masonry chimneys and fireplaces. The owner is responsible for providing a WETT Inspection Report by an individual with a WETT Certification Number.

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A GUIDE TO BUILDING PERMITS

THIS GUIDE EXPLAINS:

- Building Permit Application Process
- Additional Permits (Plumbing, Demolition and Solid Fuel (Wood) Burning Appliances)
- A Guide to Building Plans
- Building Permit Application Checklist
- Building Code Changes and Energy Worksheets
- Ventilation Design Checklist
- Regional District Climatic Data Table
- Types of Inspections

WHEN A BUILDING PERMIT IS REQUIRED:

- Construct a new home;
- Construct, repair or alter an existing building (only when structural components are repaired or altered), structure, manufactured home or retaining wall;
- Demolish a building or structure;
- Occupy a new building or structure;
- Construct a masonry fireplace or installing a solid fuel (wood) appliance or chimney, whether attached to, part of or detached from a building;
- Install plumbing systems related to the inspections per the building bylaw;
- Move a building or structure into or within the Regional District;
- Construct a new accessory building such as a garage or storage shed greater than 10 square meters (107.6 square feet) in size;
- Undertake any interior work such as partitions, etc. that may alter the original building or structure;
- Construct a sundeck over 600mm (23.6 inches) above the ground or landing below;

This guide has been prepared for convenience only. It is not a bylaw or a legal document. If there is any discrepancy between this guide and relevant Regional District bylaws, the bylaws shall be the legal authority.

Please Contact the CSRD Building Department if you have any questions at 1.888.248.2773 or 250.832.8194 Buildingpermit@csrd.bc.ca

Last Updated: March 2018

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Building Permit Application Document Checklist

the documents listed below are the basic minimum requirement to obtain a permit but the CSRD reserves the right to request further documentation if the project requires it before issuing the building permit

	Single Family Dwelling	Accessory Building	Decks	Manufactured/ Mobile Home	Renovation/ Addition	RV Parks	Demolition	Complex Buildings
Building Permit Application Fee - $72.00 non-refundable application fee. This may be deducted from the total building permit fee upon issuance	☐	☐	☐	☐	☐	☐	☐	☐
Building Permit Application Form – complete with every registered owners signature or Authorized Agent Signature	☐	☐	☐	☐	☐	☐	☐	☐
Plumbing Permit Application Form (if applicable) – complete with every registered owners Signature or Authorized Agent Signature	☐	☐		☐	☐	☐		☐
Authorization of Agent (if applicable) – to be signed by all registered property owners if there is going to be one (1) acting agent (ex. Contractor) with which the CSRD will be communicating that is not a property owner, or if multiple property owners – one (1) person which will be the main point of contact for the entire application process	☐	☐	☐	☐	☐	☐	☐	☐
Site Plan – showing the location of the structure on the parcel complete with dimensioning showing the distances from the front, rear, and sides of the parcel, also noting proximity to creeks, ravines, and lakes (if applicable)	☐	☐	☐	☐	☐	☐	☐	☐
Drawings – two (2) Sets of ¼" scaled drawings for plan review and permit issuance to include Foundation Plan, Floor Plan, Elevations and Cross Sections (refer to 'A Guide to Building Plans for a more detailed list of requirements) (only include for demolition permit if it is a partial demolition)	☐	☐	☐	☐	☐	☐	☐	☐
Engineered Shop Drawings (if applicable) – original engineered signed and sealed by shop drawings and certificates required for all engineered products (trusses, floor/roof joists, beams, lintels, and heavy timber) **must be** on-site prior to framing inspection. Point loads shall be noted on the drawings.	☐	☐	☐	☐	☐	☐		☐
Letters of Assurance (if applicable) – Schedules necessary are A and/or B accompanied by C-A and/or C-B if more than one (1) certified professional is working on the project then a Schedule A will be needed from the Coordinating Professional. (this is required anytime engineering is done)	☐	☐	☐	☐	☐	☐		☐
BC Housing Authorization – With new habitable space or a substantial renovation of existing (75% or more) Owner/Builder Approval or Licensed Residential Builder Number is required with Home Warranty Insurance	☐			☐				☐

Building Permit Application Document Checklist ***the documents listed below are the basic minimum requirement to obtain a permit but the CSRD reserves the right to request further documentation if the project requires it before issuing the building permit***	Single Family Dwelling	Accessory Building	Decks	Manufactured/ Mobile Home	Renovation/ Addition	RV Parks	Demolition	Complex Buildings
Land Title Search –obtained through BC Land Title & Survey (www.ltsa.ca) dated within 30 days of application	☐	☐	☐	☐	☐	☐	☐	☐
Covenants, Statutory Right of Ways, Easements – copies of all documents registered on title to be provided by the applicant and can be purchased through BC Land Title and Survey Office (www.ltsa.ca)	☐	☐	☐	☐	☐	☐	☐	☐
Estimated Construction Value – if this is not provided by the applicant it will be calculated as described in Appendix B of Building Regulation Bylaw No.660	☐	☐	☐	☐	☐	☐		☐
Approval by Board, Strata Assoc. or park owner (if applicable) – letter and initialed construction drawings	☐	☐	☐	☐	☐	☐	☐	☐
BCBC 9.36 Energy Efficiency Checklist - to be used to show the Effective R-Value (RSI) of proposed wall assemblies when the drawings do not specify them	☐	☐		☐	☐			☐
Ministry of Health/Septic Approval/Proof of Septic (if new SFD, or any renovation that may put strain on the septic system)	☐			☐	☐	☐		☐
Owners Undertaking – to be completed with all registered owners' signatures	☐	☐	☐	☐	☐	☐	☐	☐
Geotechnical Report (if applicable) – may be required by Building Official if slopes or unstable soils are onsite	☐	☐	☐	☐	☐	☐	☐	☐
Mechanical Ventilation Checklist – To be completed and submitted with the building permit application	☐			☐				☐
Solid Fuel Burning Appliance Permit (if applicable) – complete with every registered owners Signature or Authorized Agent Signature	☐	☐		☐	☐			☐
A Map of RV Park or Campground (if applicable) **-** must detail where specific construction is located within the grounds						☐		
Permanent Affixed Manufacturer Labels – confirming certification body, manufacturer, SN/product code/part #				☐				
Manufacturer letter and/or Dealer Invoice – complete with clients name, site address, plan numbers, unit SN, unit model no. and CSA-Z240 or CSA-Z277 compliance with snow load (refer to CSRD Climatic Data Table)				☐				
Blocking Plan and Footing/foundation Schedule – provide manufacturer footing/foundation schedules that match submittal house drawings. (if installing above frost line the schedules must be engineered)				☐				

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A Guide to Building Plans

To apply for a Building Permit, two (2) sets of building plans are to be submitted with a completed Building Permit Application and applicable fee. These plans shall show all details necessary to complete the project including, but are not limited to, the following:

Site Plan

- Suggested Scale 1/4" = 1'-0"
- North Arrow
- Lot Area and Elevations at Lot Corners and Building Locations
- Legal description and civic address
- Location and dimensions of existing and proposed parcel boundaries
- Location and dimensions of existing statutory rights of way, covenants, easements
- Location and centerline of public roads and any adjoining roads
- Setbacks to physical features (i.e. embankments, creeks, streams, lake)
- Location of domestic water source
- Location of site services; sewer, power, natural gas, etc.
- Location of existing and proposed structures (dimensions, setbacks)
- Location of all retaining walls
- Location, size and number of parking spaces

Foundation Plan

- Suggested Scale 1/4" = 1'-0" & Building Area
- Showing exterior & interior footings & footing pads including landings & decks
- Location and dimensions of structural elements, point loads and soil bearing information (where applicable)

Basement & Floor Plans

- Suggested Scale 1/4" = 1'-0" & Building Area
- Show dimension and use of all rooms
- Location, size and swing of doors
- Location and size of all windows
- Location of plumbing fixtures
- Location of smoke and CO alarms
- Location of attic and/or crawlspace access
- Location of stairs & Width of Hallways
- Location of solid fuel burning appliance(s)
- Location of Cross Section Detail Callouts

Cross Sections

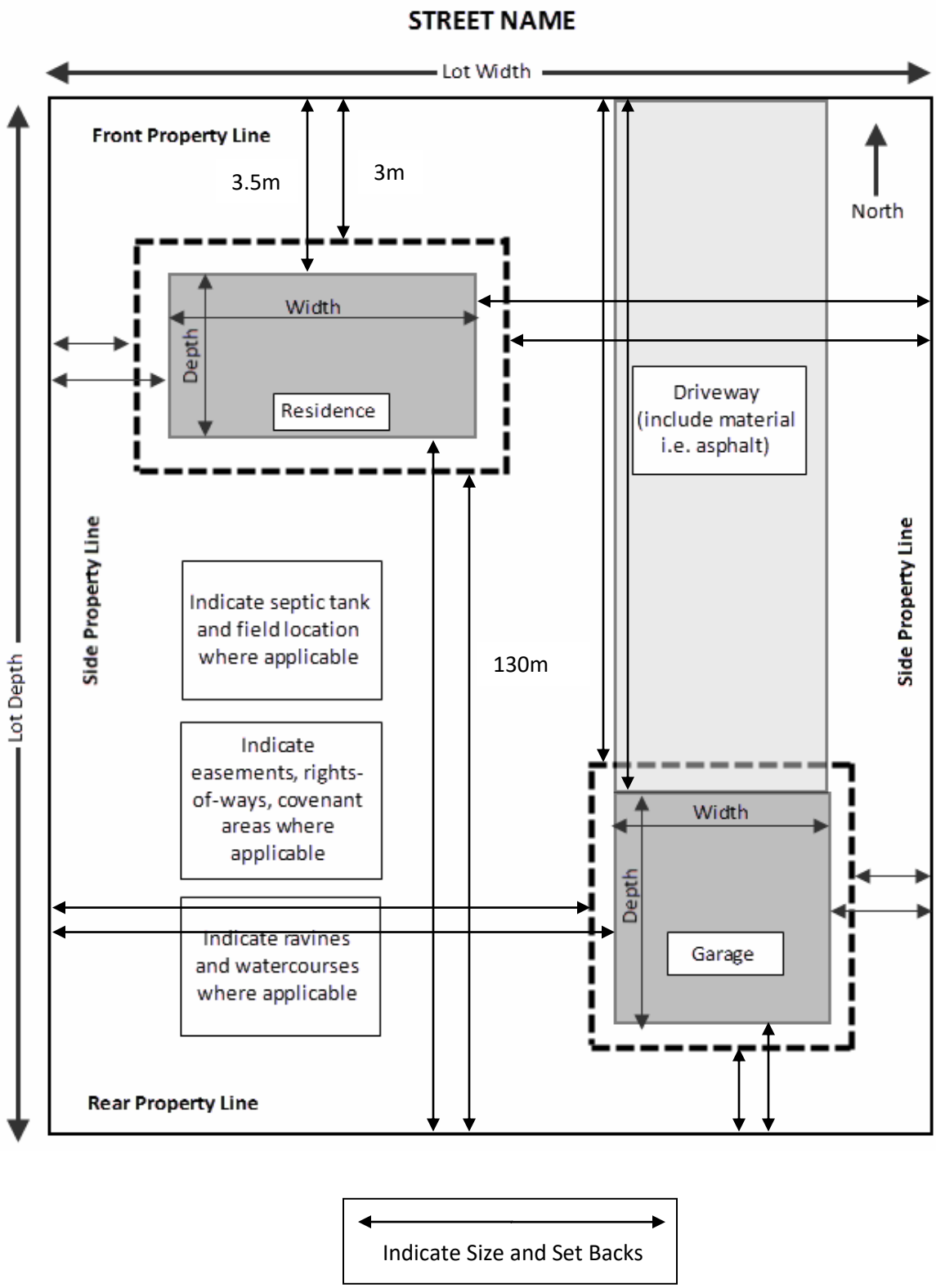
- Suggested Scale 1/4" = 1'-0"
- Sectional details including cross sections of the building taken at sufficient locations to adequately illustrate all structural details
- Details with dimensions showing foundations, crawlspaces, walls, floors, joists, beams, columns, rafters or trusses
- Stair Details with rise and run
- Show proposed finished grade and roof slope
- List of construction materials (below grade and above grade for walls, floors & roof) with relevant design RSI Values
- Dimension of frost protection cover

Elevations

- Suggested Scale 1/4" = 1'-0"
- Show Front, Rear and Side Views of Building
- Exterior finishes legend (roof and wall)
- Location of windows
- Provide Building Heights
- Show finished grades with road elevations
- Show deck and guard (railing) heights

NOTE: If, in the opinion of the Building Inspector, specialized technical knowledge is required to ensure that the proposed works will be structurally sound or based upon good engineering practice, then it may be necessary that an architect or professional engineer prepare and seal the drawings, specifications, and carry out supervision of the project. ADDITIONAL INFORMATION MAY ALSO BE REQUIRED FOR COMPLEX OR COMMERCIAL BUILDINGS.

Sample Site Plan



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CODE CHANGE BULLETIN – DECEMBER 19, 2014 REVISED

On December 19, 2014 a number of new BC Building Code requirements take effect. These include:

1. BCBC Revision 5 – Energy Efficiency: Housing & Small Buildings
2. BCBC Revision 7 – Ventilation, Radon, Daycares, NFPA, and editorial revisions

Any building permit application received after December 18, 2014 must comply with these new requirements.

1) Energy Efficiency: Housing & Small Buildings:

New energy efficiency requirements apply to all buildings that are required to contain *conditioned* space (i.e.: heating and/or air conditioning).

Part 9 buildings that exceed 300 m2 and all Part 3 buildings, that contain *conditioned* space, must comply with the National Energy Code for Buildings (NECB). All other buildings that contain *conditioned* space, including all Part 9 buildings, that include any residential occupancy, must comply with the new Section 9.36 of the current BC Building Code. This new Section 9.36 and the corresponding Appendix for 9.36 are comprised of 103 pages and replace the previous Part 10 that was comprised of 5 pages. The previous Section 9.36 (Secondary Suites) will be renumbered to 9.37.

The major changes in 9.36 for simple Part 9 buildings in the Columbia Shuswap Regional District Area F Climate Zone (Zone 5) are:

A) Code required minimum insulation values are now based on effective R value, not nominal R value. The effective R value is less than the nominal R value of the insulation in framed assemblies because of thermal bridging that occurs at the framing members. The minimum effective R values are: above grade walls: R17.5, below grade walls: R16.9, attics: R49.2 (or R39.5 if an HRV is installed). To achieve these effective R value minimums with traditional wood framing at 24" on centre, will require R22 batt insulation in above and below grade framed walls and R 50 insulation (or R40 if an HRV is installed) in attics.

B) Insulation must be continuous. For example: items such as plumbing pipes, ducts or electrical panels in exterior walls must not reduce the insulation value below the code required minimum. Pipes and Ducts in unheated spaces must have the same R value of insulation as required for walls. Basement and Crawlspace walls must be fully insulated.

C) Unheated slabs on grade above frost level require vertical R11 insulation down to the top of the footing, or 4 ft. horizontally. All heated slabs on grade require R13 insulation under the entire slab. A thermal break of at least R6 is required around the perimeter of all slabs above frost level.

D) Air barriers, must be continuous and have backing at all joints, all joints must have a minimum 2" overlap and be sealed using caulking or approval air seal tape. This means that, if interior poly is being used as the air barrier in wood frame walls, wood backing is required at ALL interior poly joints (this includes poly boot joints, joist ends, etc.). It may be advantageous to install a fully sealed exterior air seal membrane instead of interior poly, such as Tyvek, so that the exterior sheathing can act as the joint backing. If an exterior air seal is used, an additional inspection will be required, prior to the air seal membrane being covered with cladding, trim, soffits, etc.

E) All wall, ceiling and floor assemblies between a dwelling unit and attached garage must meet the code requirements for exterior assemblies regardless of whether the garage is heated or not.

Please refer to the "illustrated Guide: Energy Efficiency Requirements for Houses in British Columbia" for more in depth information and typical construction details.
Energy Efficiency Requirements Guides | Homeowner Protection Office

2) Ventilation, Radon, Daycares, NFPA, and editorial revisions:

2(A) Ventilation:

New Ventilation requirements, for *dwelling units*, will be contained in Sections 9.32 and 9/36.3.9. Ventilation air must now be distributed to each bedroom and a common area on each floor. *Dwelling units* with ducted, forced air, heat and/or cooling systems will require some changes, such as an exhaust fan that runs continuously. *Dwelling units* without ducted heating or cooling systems will now require a ducted ventilation system such as an independently distributed Heat Recovery Ventilator (HRV) or a Central Recirculation Ventilator (CRV). Heated crawlspaces will now require ventilation.

Please refer to the "Building and Safety Standards Branch; Information Bulletin No. B14-05" for more in depth information and typical construction details. Note that passive ventilation options explain in bulletin B14-05 do not apply in Salmon Arm (Jan 2.5%design temp = -19^{o}C).
http://www.housing.gov.bc.ca/building/B14-05_9%2032%20_Ventilation.pdf

2(B) Radon:

New requirements have been added to 9.13.4.3 that now require the rough in radon exhaust pipe to exhaust to outside air. Clearances are required from the radon exhaust to opening windows and air intakes equivalent to clearances from plumbing vents (min 11.5 ft. horizontal clearance or minimum 3 ft. vertical clearance above opening).
Please refer to the "Building and Safety Standards Branch: Information Bulletin No. B14-07" for more in depth information.
http://www.housing.gov.bc.ca/building/B14-07%20New_Radon_Rough-in_Requirements.pdf

3) Building Permit Applications:

In order to ensure compliance with the new building code requirements, all building permit applications for conditioned Part 9 buildings, submitted after December 18, 2014, will require the following additional information:

A) Provide a construction detail, drawn to scale, of each above grade exterior wall assembly, below grade exterior wall assembly, roof assembly and floor assembly. Indicate the effective R value of the assembly, the type and nominal R value of the insulation, the type and location of the air barrier and the type and location of the vapor barrier.

B) Indicate whether or not a Heat Recovery Ventilator (HRV) is proposed to be installed.

C) Show the type and location of mechanical ventilation systems on the submitted drawings.

D) Show the location of the Radon Exhaust outlet pipes(s) on the submitted drawings.

DISCLAIMER: The summarized and condensed information contained in this bulletin and other referenced information has been provided for convenience only. Refer to the 2012 BC Building Code for complete information.

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BC Building Code Section 9.36 Energy Efficiency
Design Calculation Worksheet

**** This form is to be completed and submitted with the building permit application when the drawings do not specify the design criteria ****

Site Address_____

Design Data for CSRD Building Regulation Locations **(as per CSRD Climatic Data Sheet):** **ZONE 5 or 6** (circle)

Construction Assemblies

HRV: Y / N (circle)

Roof Assembly – Ceiling Below Attic			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**8.67**	
Effective Value (with HRV Zone 5)	**6.91**	
Effective Value (with HRV Zone 6)	**8.67**	

Roof Assembly – Cathedral ceiling and flat roof Assembly			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**4.67**	
Effective Value (with HRV Zone 5)	**4.67**	
Effective Value (with HRV Zone 6)	**4.67**	

Exterior Wall Assembly			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**3.08**	
Effective Value (with HRV Zone 5)	**2.97**	
Effective Value (with HRV Zone 6)	**2.97**	

Exterior Wall Assembly (if applicable – i.e. different cladding)			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**3.08**	
Effective Value (with HRV Zone 5)	**2.97**	
Effective Value (with HRV Zone 6)	**2.97**	

Exterior Wall Assembly (if applicable – i.e. different cladding)			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**3.08**	
Effective Value (with HRV Zone 5)	**2.97**	
Effective Value (with HRV Zone 6)	**2.97**	

Garage/Dwelling Wall Assembly		
	Building Material R Value = RSI x 5.678	**RSI**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

	Required RSI	Proposed RSI
Effective Value (3.08 - 0.16) without HRV	**2.92**	
Effective Value (2.97 - 0.16) with HRV Zone 5	**2.81**	
Effective Value (2.97 - 0.16) with HRV Zone 6	**2.81**	

Garage / Dwelling Floor Assembly		
	Building Material R Value = RSI x 5.678	**RSI**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

	Required RSI	Proposed RSI
Effective Value (4.67 - 0.16) without HRV	**4.51**	
Effective Value (4.67 - 0.16) with HRV Zone 5	**4.51**	
Effective Value (4.67 - 0.16) with HRV Zone 6	**4.51**	

Floors over Unheated Space Assembly		
	Building Material R Value = RSI x 5.678	**RSI**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

	Required RSI	Proposed RSI
Effective Value (without HRV)	**4.67**	
Effective Value (with HRV Zone 5)	**4.67**	
Effective Value (with HRV Zone 6)	**4.67**	

Floors over Unheated Space Assembly			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

	Required RSI	Proposed RSI
Effective Value (without HRV)	**4.67**	
Effective Value (with HRV Zone 5)	**4.67**	
Effective Value (with HRV Zone 6)	**4.67**	

Foundation Wall Assembly			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			

	Required RSI	Proposed RSI
Effective Value (with or without HRV) Zone 5 & Zone 6	**2.98**	

Foundation Wall Assembly			
	Building Material	R Value = RSI x 5.678	**RSI**
1			
2			
3			
4			
5			
6			
7			
8			
9			

	Required RSI	Proposed RSI
Effective Value (with or without HRV) Zone 5 & Zone 6	**2.98**	

- **Min RSI 2.6 (R14.75) - Access Hatches**
- **Min RSI 1.1 (R6) - Doors separating a conditioned space from unconditioned space (i.e. Interior Garage Door)**
- **Min RSI 0.75 (R4.25) - Exhaust ducts that passes through or adjacent to conditioned spaces (i.e. bath fan)**
- **Min RSI 3.08 (R17.5) - HVAC equipment and ducts, Heating and Cooling Piping outside the plane of insulation or in an unconditioned space.**
- **Min RSI 2.11 (R12) - underside of rectangular ducts under an insulated floor over an unconditioned space (crawlspace)**
- **Min RSI 3.08 (R17.5) - Mechanical ducts, plumbing pipes, conduits for electrical services or communication cables are placed within the insulated portion of a floor or ceiling assembly.**

Thermal Resistance (RSI) Values of Common Building Materials *See Table A-9.36.2.4.(1)D for a complete list of building materials*	
Building Element	**RSI**
Exterior Air Film (n/a t o foundations)	0.03
Interior Air Film - ceiling	0.11
Interior Air Film – floor	0.16
Interior Air Film – walls	0.12
13mm air cavity – walls	0.16
21mm Stucco	0.019
Hollow backed vinyl siding over sheathing	0.11
200mm 13mm thick wood bevel siding	0.14
Hardiplank (fiber-cement) siding	0.026
Stone	0.0004/mm
Asphalt roll roofing	0.03
Asphalt shingles	0.08
Built up roofing	0.06
3/8 plywood	0.083
7/16 plywood	0.096
½ plywood	0.109
3/8 OSB	0.093
7/16 OSB	0.108
½ OSB	0.123
Permeable felt	0.011
Seal, plastic film	0.00
R12	2.11
R14	2.46
R19 (R20 compressed)	3.34
R22	3.87
R24	4.23
R28	4.93
R40	7.04
EPS (expanded polystyrene) T ype 1 – 25mm	0.65
EPS (expanded polystyrene) T ype 2 – 25mm	0.71
XPS (extruded polysty rene) – 25mm	0.88
Loose fill cellulose	0.025/mm
Loose fill glass fibre for attics	0.01875/mm
Concrete	0.0004/mm
Structural framing SPF (0.0085/mm) 2x4	0.76
Structural framing SPF (0.0085/mm) 2x6	1.19
Structural framing SPF (0.0085/mm) 2x8	1.56
Structural framing SPF (0.0085/mm) 2x10	2.00
GWB (0.0061/mm) ½"	0.076
Plywood	0.0087/mm
Carpet and fibrous pad	0.370
Cork tile – 3.2mm	0.049
Tile (linoleum, vinyl, rubber)	0.009
R value = RSI x 5.678	

Framing and Cavity Percentages *See Table A-9.36.2.4.(1)A for a complete list of typical wood frame assemblies*	
Ceilings with typical t russes 24" o/c	11% framing 89% cavity
Roofs with lumber rafters 24" o/c	10% framing 90% cavity
Wood frame walls 16" o/c	23% framing 77% cavity
Wood frame walls 24 " o/c	20% framing 80% cavity

Effective RSI Values for Cavities *See Table A-9.36.2.6.(1)B for a complete list of framing/cavity values*			
2x4 16" o/c R12	1.49	2x6 16" o/c R19	2.36
2x4 16" o/c R14	1.62	2x6 16" o/c R22	2.55
2x4 24" o/c R12	1.55	2x6 24" o/c R19	2.45
2x4 24" o/c R14	1.70	2x6 24" o/c R22	2.67

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1 Ventilation Checklist 1—Forced Air Systems SENTENCE 9.32.3.4(6)

Use this Checklist where **forced air heating system ducts intake and distribute** ventilation air.

Civic Address_____ Permit No._____

Climate Zone: ____ Number of Bedrooms [ ] (A) A bedroom is a room with an openable window (minimum dimensions apply), a closet and a closing interior door.

Total Floor area of conditioned space [ ] ft^2 (B)

Total Interior Volume of Dwelling [ ] ft^3 Total volume includes all heated interior spaces

.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 = [ ] cfm (C) Exhaust appliances exceeding .5 ACH may require make-up air.

1. Principal Ventilation System Exhaust Fan Minimum Air-flow Rate

Use the bedroom count from Box (A) and Total square footage from Box (B) above and Table 9.32.3.5. to determine

Minimum Required Prinicpal Exhaust System Capacity [ ] cfm (D)

2. Principal System Fan Choice

a) Exhaust Fan continuous running Make_____Model_____ Sone Rating ____

Location: _____ **Capacity at 0.2 ESP** [ ] cfm (E) Must be ≥ than Box (D)

If CEV, capacity @0.4ESP

3. Fan Duct Size and Equivalent Length

Use actual fan cfm in Box(E) above and Table 9.32.3.8 (3) [See note at bottom of page for larger fan duct sizing].

a) Length of duct_____ft + Exterior hood 30ft + number of 90° elbows ____X 10 ft = _____**Equivalent Length**

Maximum Equivalent Length allowed in Table 9.32.3.8(3) = _____

b) Fan Duct size: _____inches Ø Duct type: ___Rigid ___Flex

4. Required Kitchen and Bathroom Exhaust Fans: Re-list below if Principal Exhaust Fan meets all or part of Kitchen/Bathroom spot Exhaust requirements.

ROOM	Required Exhaust Rate **Table 9.32.3.6**	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						Ex.Fan/CEV
		Fan Make & Model	CFM @ 0.2 ESP Manf. Rated	*Duct Sizing per Table 9.32.3.8.(3)				Principal System CFM
				Duct Dia (in Ø) rigid	Duct Dia (in Ø) flex	Max. Equiv. Length per table	Installed Equiv. Length	
						TOTAL (must = Box E)		

* For fan capacities **exceeding** 175cfm in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct.

See *Ventilation Guidelines* Appendix page 16-A

Checklist 1, pg1of2

5. Fresh Air must be ducted from outside to Return Air of furnace for distribution.

a) Duct length from this connection to furnace cabinet must be 15 ft maximum and 10 ft minimum unless a flow control device is used. Duct length confirmed at _____ feet.

b) Duct Size for Fresh Air intake to RA:

4" Ø minimum for Rigid Duct. Must be insulated & vapour barriered for full length. ___ confirmed.

5"Ø minimum for insulated, vapour barriered Flex Duct ___ confirmed.

6. Forced Air Furnace system ducted to supply air to every bedroom and any level without a bedroom___ confirmed.

7. If Heated Crawlspace present, state method of ventilating_____

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) **or radon present in dwelling unit? Sentence 9.32.4.1**

Yes, Proceed to Step 2 **No**, Omit Steps 2 & 3

2. Exhaust Appliance present which exceeds Box C 0.5 ACH:

Yes, Proceed to Step 3 **Yes, Commit to Depressurization Test** (See **CAUTION**, TECA Vent Manual pg 24) **No such appliance**. Omit Step 3

3. Use Active Make-up Air for Exhaust Appliance.

Make-up Air Fan required: **Exhaust Appliance Actual Installed Cfm** _____

Fan Make _____ Model _____ **Make-up Air Fan Cfm** _____

Duct diameter _____inches

Fan Location _____ Fan ducted to _____

a) Active Make-up Air delivered to an Unoccupied Area first (not directly to room containing the appliance).

i) Tempering Required per 9.32.4.1.(4)(a):

Show calculation & describe how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

_____

ii) **Transfer Grill Required:** Size 1 sq in of gross area per 2 cfm):

Transfer grill size _____ sq. in. Location _____

iii) **Additional Tempering Required per 9.32.4.1.(4)(b) before transfer to occupied area:** Show calculation and describe how make-up air will be further tempered to at least 54°F (12°C).

_____

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

_____

Installer Certification:

Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment.

2014 TECA Ventilation Certification Stamp

Print Name_____

Signature_____

Company_____

Phone _____

Checklist 1, page2of2

2 Ventilation Checklist 2—HRV Systems SENTENCE 9.32.3.4 (3) & (4)

Use this checklist when a centrally ducted HRV (heat recovery ventilator) is used alone or in combination with a Forced Air furnace to meet principal ventilation system requirements.

Civic Address_____ Permit No._____

Climate Zone: ____ Number of Bedrooms _____ (A) A bedroom is a room with an openable window (minimum dimensions apply), a closet and a closing interior door.

Total Floor area of conditioned space _____ ft^2 (B)

Total Interior Volume of Dwelling _____ ft^3 Total volume includes all heated interior spaces

.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 = _____ cfm (C) Exhaust appliances exceeding .5 ACH may require make-up air.

1. Use the bedroom count (Box A above) and total square footage (Box B above) to determine the minimum principal Air Flow rate required by Table 9.32.3.5

Minimum Required Rate _____ cfm (D)

2. HRV Make _____ Model _____

3. HRV Capacity: CFM @ 0.4 ESP. Box E must meet Box D requirement. _____ cfm (E)

4. List Exhaust Grilles Locations: 1 minimum @ 6ft or higher from floor of uppermost level.

_____

_____

_____

5. Required Kitchen and Bathroom Exhaust

If HRV used to meet all or part of Kitchen/Bathroom spot exhuast requirements list below.

ROOM	REQUIRED EXHAUST RATE **Table 9.32.3.6**	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						HRV
		Fan Make & Model	CFM @ 0.2 ESP Manf. Rated	*Duct Sizing per Table 9.32.3.8.(3)				Principal System CFM
				Duct Dia (in Ø)		Max. Equiv. Length per table	Installed Equiv. Length	
				rigid	flex			
							TOTAL (must = Box E)	

* For fan capacities **exceeding** 175cfm in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct.

See *Ventilation Guidelines* Appendix page 16-A

6. HRV Fresh Air Distribution (choose A or B option)

A) Supply Air from HRV direct connect to Return Air of a Forced Air Furnace system:
Furnace Fan continuous operation: yes and Forced Air system ducted to supply air to every bedroom and any level without a bedroom: yes and heated crawlsapce: yes

B) Supply Air from HRV distrubuted independently to every bedroom and any level without a bedroom and to a heated crawlspace. **List distribution grille locations:** _____

_____

_____

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) **or radon present in dwelling unit? Sentence 9.32.4.1**

Yes, Proceed to Step 2 **No**, Omit Steps 2 & 3

2. Exhaust Appliance present which exceeds Box C 0.5 ACH:

Yes, Proceed to Step 3 **Yes, Commit to Depressurization Test** (See **CAUTION**, TECA Vent Manual pg 24) **No such appliance**. Omit Step 3

3. Use Active Make-up Air for Exhaust Appliance.

Make-up Air Fan required: **Exhaust Appliance Actual Installed Cfm** _____

Fan Make _____ Model _____ **Make-up Air Fan Cfm** _____

Duct diameter _____inches

Fan Location _____ Fan ducted to _____

a) Active Make-up Air delivered to an Unoccupied Area first (not directly to room containing the appliance).

i) Tempering Required per 9.32.4.1.(4)(a):
Show calculation & describe how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

_____

ii) **Transfer Grill Required:** Size 1 sq in of gross area per 2 cfm):

Transfer grill size _____ sq. in. Location _____

iii) **Additional Tempering Required per 9.32.4.1.(4)(b) before transfer to occupied area:** Show calculation and describe how make-up air will be further tempered to at least 54°F (12°C).

_____

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

_____

Installer Certification: Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment.

2014 TECA Ventilation Certification Stamp

Print Name_____

Signature_____

Company_____

Phone _____

Checklist 2, pg2of2

3 Ventilation Checklist 3—Distributed CRV Systems SENTENCE 9.32.3.4(5)

Use this Checklist when a ducted Central Recirculating Ventilator (CRV) is used to meet the fresh air intake and distribution requirements and a Principal Exhaust fan meets the exhaust requirements.

Civic Address_____ Permit No._____

Climate Zone: ____ Number of Bedrooms [ ] (A) — A bedroom is a room with an openable window (minimum dimensions apply), a closet and a closing interior door.

Total Floor area of conditioned space [ ] ft^2 (B)

Total Interior Volume of Dwelling [ ] ft^3 — Total volume includes all heated interior spaces

.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 = [ ] cfm (C) — Exhaust appliances exceeding .5 ACH may require make-up air.

1. Principal Ventilation System Exhaust Fan Minimum Air-flow Rate

Use the bedroom count from Box (A) and Total square footage from Box (B) above and Table 9.32.3.5. to determine

Minimum Required Prinicpal Exhaust System Capacity [ ] cfm (D)

2. Principal System Fan Choice

a) Exhaust Fan continuous running Make_____Model_____ Sone Rating ____

Location: _____ Must be ≥ than Box (D)

Capacity at 0.2 ESP [ ] cfm (E) Must be ≥ than Box (D)

If CEV, capacity @0.4ESP

3. Fan Duct Size and Equivalent Length

Use actual fan cfm in Box(E) above and Table 9.32.3.8 (3) [See note at bottom of page for larger fan duct sizing].

a) Length of duct_____ft + Exterior hood 30ft + number of 90° elbows ____X 10 ft = _____**Equivalent Length**

Maximum Equivalent Length allowed in Table 9.32.3.8(3) = _____

b) Fan Duct size: _____inches Ø Duct type:___Smooth___Flex

4. Required Kitchen and Bathroom Exhaust Fans: Re-list below if Principal Exhaust Fan meets all or part of Kitchen/Bathroom spot Exhaust requirements.

ROOM	Required Exhaust Rate **Table 9.32.3.6**	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						Ex.Fan/CEV
		Fan Make & Model	CFM @ 0.2 ESP Manf. Rated	*Duct Sizing per Table 9.32.3.8.(3)				Principal System CFM
				Duct Dia (in Ø) rigid	Duct Dia (in Ø) flex	Max. Equiv. Length per table	Installed Equiv. Length	

TOTAL (must = Box E) [ ]

* For fan capacities **exceeding** 175cfm in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct.

See *Ventilation Guidelines* Appendix page 16-A

5. CRV Recirculation and Fresh Air Intake Fan

Capacity @ 0.4 ESP ____ cfm (F)

Make_____ Model_____

Box F CFM: minimum 2 times Box D cfm for +5°F and warmer winter design temperature. Confirmed ☐
minimum 3 times Box D for less than +5°F winter design temperature. Confirmed ☐

Duct Size for Fresh Air intake into return air of CRV: Min 4"Ø rigid duct___, or 5", flex duct_____.

6. CRV Fresh Air circulation (Choose option a or b)

a) Draw air from bedrooms and Supply air to common area.
List location of supply grille _____ and location of each bedroom return grille

_____

b) Draw air from common area and Supply air to bedrooms.
List location of return grille _____ and location of each bedroom supply grille

_____

_____

7. If Heated Crawlspace present, state method of ventilating_____

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) **or radon present in dwelling unit? Sentence 9.32.4.1**

Yes, Proceed to Step 2 **No**, Omit Steps 2 & 3

2. Exhaust Appliance present which exceeds Box C 0.5 ACH:

Yes, Proceed to Step 3 **Yes, Commit to Depressurization Test** (See **CAUTION**, TECA Vent Manual pg 24) **No such appliance**. Omit Step 3

3. Use Active Make-up Air for Exhaust Appliance.

Make-up Air Fan required: **Exhaust Appliance Actual Installed Cfm** _____

Fan Make _____ Model _____ **Make-up Air Fan Cfm** _____

Duct diameter _____inches

Fan Location _____ Fan ducted to _____

a) Active Make-up Air delivered to an Unoccupied Area first (not directly to room containing the appliance).

i) Tempering Required per 9.32.4.1.(4)(a):

Show calculation & describe how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

_____

ii) **Transfer Grill Required:** Size 1 sq in of gross area per 2 cfm):

Transfer grill size _____ sq. in. Location _____

iii) **Additional Tempering Required per 9.32.4.1.(4)(b) before transfer to occupied area:** Show calculation and describe how make-up air will be further tempered to at least 54°F (12°C).

_____

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

_____

Installer Certification: Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment.

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Print Name_____

Signature_____

Company_____

Phone _____

Checklist 3, pg2of2

4 Ventilation Checklist 4—Exhaust Fan & Passive Inlets SENTENCE 9.32.3.4(6)

Use this checklist for small (≤ 1800 sqft), single level, non-forced air heated dwellings located in coastal climate areas where winter design temperature is warmer than -13°F.

Civic Address_____ Permit No._____

Climate Zone: ____ Number of Bedrooms [ ] (A) A bedroom is a room with an openable window (minimum dimensions apply), a closet and a closing interior door.

Total Floor area of conditioned space [ ] ft^2 (B)

Total Interior Volume of Dwelling [ ] ft^3 Total volume includes all heated interior spaces

.5 ACH (air changes/hr) = Volume x 0.5 ÷ 60 = [ ] cfm (C) Exhaust appliances exceeding .5 ACH may require make-up air.

1. Principal Ventilation System Exhaust Fan Minimum Air-flow Rate

Use the bedroom count from Box (A) and Total square footage from Box (B) above and Table 9.32.3.5. to determine

Minimum Required Prinicpal Exhaust System Capacity [ ] cfm (D)

2. Principal System Fan Choice

a) Exhaust Fan continuous running Make_____Model_____ Sone Rating ____

Location: _____ **Capacity at 0.2 ESP** [ ] cfm (E) Must be ≥ than Box (D)

If CEV, capacity @0.4ESP

3. Fan Duct Size and Equivalent Length

Use actual fan cfm in Box(E) above and Table 9.32.3.8 (3) [See note at bottom of page for larger fan duct sizing].

a) Length of duct_____ft + Exterior hood 30ft + number of 90° elbows ____X 10 ft = _____**Equivalent Length**

Maximum Equivalent Length allowed in Table 9.32.3.8(3) = _____

b) Fan Duct size: _____inches Ø Duct type:___Smooth___Flex

4. Required Kitchen and Bathroom Exhaust Fans: Re-list below if Principal Exhaust Fan meets all or part of Kitchen/Bathroom spot Exhaust requirements.

ROOM	REQUIRED EXHAUST RATE **Table 9.32.3.6**	EXHAUST EQUIPMENT						
		Spot Exhaust Kitchen & Bath WALL/CEILING FANS						Ex.Fan/CEV
		Fan Make & Model	CFM @ 0.2 ESP Manf. Rated	*Duct Sizing per Table 9.32.3.8.(3)				Principal System CFM
				Duct Dia (in Ø) rigid	Duct Dia (in Ø) flex	Max. Equiv. Length per table	Installed Equiv. Length	

TOTAL (must = Box E) [ ]

* For fan capacities **exceeding** 175cfm in Table 9.32.3.8(3), follow manufacturer's installation instructions or use good engineering practice to size duct.

See *Ventilation Guidelines* Appendix page 16-A

5. Required Inlets for passive Ventilation Air Supply

a) Location: High wall (minimum 6 ft above floor) ____

List all rooms with inlets: Required in each bedroom, and at least one common area

_____

_____

b) Inlet Size: Free Area must be greater than or equal to 4 Sq In

6. If Heated Crawlspace present, state method of ventilating_____

MAKE-UP AIR Requirements

1. NAFFVA (Naturally Aspirated Fuel Fired Vented Appliance) **or radon present in dwelling unit? Sentence 9.32.4.1**

Yes, Proceed to Step 2 **No**, Omit Steps 2 & 3

2. Exhaust Appliance present which exceeds Box C 0.5 ACH:

Yes, Proceed to Step 3 **Yes, Commit to Depressurization Test** (See **CAUTION**, TECA Vent Manual pg 24) **No such appliance**. Omit Step 3

3. Use Active Make-up Air for Exhaust Appliance.

Make-up Air Fan required: **Exhaust Appliance Actual Installed Cfm** _____

Fan Make _____ Model _____ **Make-up Air Fan Cfm** _____

Duct diameter _____inches

Fan Location _____ Fan ducted to _____

a) Active Make-up Air delivered to an Unoccupied Area first (not directly to room containing the appliance).

i) Tempering Required per 9.32.4.1.(4)(a):

Show calculation & describe how make-up air will be tempered to at least 34°F (1°C) before entering unoccupied area.

_____

ii) **Transfer Grill Required:** Size 1 sq in of gross area per 2 cfm):

Transfer grill size _____ sq. in. Location _____

iii) **Additional Tempering Required per 9.32.4.1.(4)(b) before transfer to occupied area:** Show calculation and describe how make-up air will be further tempered to at least 54°F (12°C).

_____

OR b) Active Make-up Air delivered to an Occupied Area: Tempering Required. Show calculation and describe how make-up air will be tempered to at least 54°F (12°C).

_____

_____

Installer Certification: Date _____

I hereby certify that the design and installation of the ventilation system complies with the 2012 B.C. Building Code, 2014 Section 9.32 Amendment.

2014 TECA Ventilation Certification Stamp

Print Name_____

Signature_____

Company_____

Phone _____

Checklist 4, pg2 of 2

COLUMBIA Shuswap Regional District

PO Box 978, 555 Harbourfront Drive NE, Salmon Arm, BC V1E 4P1

T: 250.832.8194 | F: 250.832.3375 | TF: 1.888.248.2773 | buildingpermit@csrd.bc.ca | www.csrd.bc.ca

Climatic Data Sheet Specific to CSRD Building Regulation Locations

Location	BCBC Zone	Elev., m	Design Temperature				Degree-Days Below 18°C	15 Min. Rain, mm	One Day Rain, 1/50, mm	Ann. Rain, mm	Moist. Index	Ann. Tot. Ppn., mm	Driving Rain Wind Pressures, Pa, 1/5	Snow Load, kPa, 1/50		Hourly Wind Pressures, kPa	
			January		July 2.5%												
			2.5% °C	1% °C	Dry °C	Wet °C								S_s	S_r	10-Jan	Jan-50
Anglemont	6	647m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Annis Bay	5	370m	-19	-23	33	21	3650	13	48	400	0.47	525	80	4.2	0.1	0.3	0.39
Arrowhead	6	469m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Beaton	6	493m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Begbie Bench	6	469m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Canyon Hotsprings	6	702m	-24	-27	28	17	4400	12	65	550	0.7	900	80	6.1	0.1	0.25	0.33
Celista	6	368m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Craigellachie	5	402m	-20	-23	32	20	3950	13	62	560	0.75	830	80	4	0.1	0.27	0.35
Crazy Creek	5	393m	-20	-23	32	20	3950	13	62	560	0.75	830	80	4	0.1	0.27	0.35
Downie Creek	6	575m	-22	-26	30	18	4550	13	60	820	0.95	1375	80	12	0.2	0.27	0.35
Ferguson	6	928m	-25	-28	27	17	4800	12	65	550	0.7	1100	80	9	0.1	0.25	0.33
Five Mile	6	954m	-25	-28	27	17	4800	12	65	550	0.7	1100	80	9	0.1	0.25	0.33
Galena Bay	6	441m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Greenslide	6	464m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Halcyon Hotsprings	5	471m	-18	-22	31	20	3800	11	57	560	0.7	780	70	5.3	0.1	0.25	0.33
Lee Creek	6	360m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Magna Bay	6	467m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Malakwa	5	380m	-19	-22	32	20	3900	13	65	560	0.75	830	80	4.2	0.1	0.3	0.39
Mica Dam	6	579m	-22	-26	30	18	4550	13	60	820	0.95	1375	80	12	0.2	0.27	0.35
Mt. Revelstoke	6	855m	-25	-28	27	17	4800	12	65	550	0.7	1100	80	9	0.1	0.25	0.33
North Revelstoke	6	575m	-24	-27	28	17	4400	12	65	550	0.7	900	80	6.1	0.1	0.25	0.33
Pete Martin Bay	6	402m	-20	-23	31	19	4100	13	40	570	0.62	710	80	4.1	0.1	0.3	0.39
Quartzite Point	6	395m	-20	-23	31	19	4100	13	40	570	0.62	710	80	4.1	0.1	0.3	0.39
Queest Village	6	394m	-20	-23	31	19	4100	13	40	570	0.62	710	80	4.1	0.1	0.3	0.39
St. Ives	6	397m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Scotch Creek	6	349m	-23	-26	29	18	4300	13	50	520	0.57	750	80	5	0.1	0.29	0.38
Shelter Bay	6	457m	-18	-22	30	18	4000	12	55	590	0.73	860	80	5.5	0.1	0.25	0.33
Solsqua	5	371m	-19	-22	32	20	3900	13	65	560	0.75	830	80	4.2	0.1	0.3	0.39
Swansea Point	5	377m	-19	-23	33	21	3650	13	48	400	0.47	525	80	4.2	0.1	0.3	0.39
Taft	5	514m	-19	-22	32	20	3900	13	65	560	0.75	830	80	4.2	0.1	0.3	0.39
Three Valley Gap	5	515m	-20	-23	32	20	3950	13	62	560	0.75	830	80	4	0.1	0.27	0.35
Trout Lake	6	730m	-24	-27	28	17	4400	12	65	550	0.7	900	80	6.1	0.1	0.25	0.33

*** This sheet is for information purposes only and contains information compiled from Environment Canada. Under certain circumstances the inspector may require higher or allow lower values than what are shown in this chart. If you have any questions or need confirmation please contact the Building Department for clarification.

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COLUMBIA SHUSWAP REGIONAL DISTRICT

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Inspections

It is the Responsibility of the owner or owners' agent to give a minimum of 48hrs notice to the CSRD Building Department to make an inspection request. At the time of booking you must have the Permit Number, the Electoral Area B, E or F, type of inspection necessary and whether it is a re-inspection or not. All plans and specifications and supporting documents on which a permit was based, all inspection certificates, and all professional field reviews must be kept on site and the Building Permit is to be posted conspicuously as per Section 7.4(b) of Building Bylaw No. 660. If this is not in place the Official may choose not to complete the inspection. **IF AN INSPECTION IS REQUESTED AND INCOMPLETE OR THE PROPER DOCUMENTATION IS NOT AVAILABLE A RE-INSPECTION FEE WILL BE REQUIRED BEFORE A RE-INSPECTION WILL BE DONE.**

1. **FOOTING CONSTRUCTION** (before concrete)
   - (i) site preparation and excavation to good native bearing;
   - (ii) footing forms, before concrete is poured;
   - (iii) prior to inspection under section 10.31 (c) of Building Bylaw No. 660, plumbing located below the finished slab level.

2. **PRE-BACKFILL**
   - (i) installation of perimeter drainage pipe and drain rock (if required)
   - (ii) the preparation of ground, including ground cover when required, perimeter insulation of concrete foundation walls, and damp proofing if required.

3. **UNDER SLAB PLUMBING ROUGH-IN**
   - (i) installation of a sanitary or storm sewer and any part of the plumbing system and building services prior to backfilling or covering;
   - (ii) installation of subfloor depressurization system and rough-in for soil gas control;
   - (iii) after inspection under section 10.31 (a) of this Part, hydronic heating pipes and below slab insulation.

4. **FRAMING CONSTRUCTION**
   - (i) framing, sheathing, fire stopping (including drywall in fire separations), bracing, chimney and ductwork, rough-in of factory built chimneys and fireplaces and solid fuel burning appliances, rough wiring, rough plumbing, rough heating, gas venting, exterior doors and windows, but prior to the installation of insulation, interior finishes, sheathing paper or exterior finishes which would conceal such work;
   - (ii) decking where a deck serves as a roof.

5. **INSULATION AND VAPOUR BARRIER AND AIR BARRIER**
   - (i) the installation of wall sheathing membrane;
   - (ii) internally and externally applied vapour or air barrier, stucco wire or lath, and flashings, but prior to the installation of interior and exterior finishes which could conceal such work.

6. **FINAL INSPECTION**
   - (i) the health and safety aspects of the work when the building or structure is substantially complete, ready for *occupancy* but prior to *occupancy*.