House Additions

Construction Information

Permit requirements

All house additions require development and building permits.

A development permit establishes land use and confirms the structure is located on the property in accordance with the zoning bylaw and other City departments' requirements.

A building permit confirms the structure meets code requirements. Building permits must align with prior development permit approvals.

Electrical and plumbing work require separate permits. Visit winnipeg.ca/electricalinstallations and winnipeg.ca/plumbinginstallations for more information.

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Construction information

Windows

1. Windows are not permitted in walls that are located less than 1.2 m (4'-0") from the property line when facing a neighbouring property.
2. Each bedroom must have at least one outside window that provides an unobstructed opening of not less than 0.35 m² (3.77 sq. ft.) in area and no dimension less than 380 mm (15 in.).
3. Maximum window opening size is 1.2 m (4'-0") and openings not to exceed 25 per cent of the wall length.

Smoke alarms

Smoke alarms conforming to CAN/ULC-S531 (smoke alarms) must be installed in each dwelling. They must be installed on or near the ceiling per manufacturer's installation instructions.

There must be at least one smoke alarm on each floor level, including lower levels and one in each bedroom.

Smoke alarms shall be supplied from a lighting circuit or a circuit with a mix of lighting and receptacles. Smoke alarms shall not be installed on a circuit that is protected by a ground-fault circuit interrupter (GFCI) or an arc-fault circuit interrupter (AFCI) unless the alarms have integral battery backup. Note that heat sensors installed in attached garages are not designed with battery backup. Where a dwelling has a heat sensor installed, the smoke alarms cannot be installed on a circuit that is protected by GFCI or AFCI.

Smoke alarms must be interconnected – wired so that the activation of one alarm will cause all alarms within the dwelling to sound.

For existing dwellings that did not require interconnected alarms at the time the home was originally constructed, an additional smoke alarm may be required to be installed adjacent to the addition and in accordance with the requirements of this section.

Carbon monoxide alarms

Carbon monoxide alarms conforming to CAN/CSA-6.19 (residential carbon monoxide alarming devices) must be installed in every dwelling that also contains any fuel burning appliance or has an attached garage.

Carbon monoxide alarms must be installed within 5 m (16'-0") of every bedroom door measured following corridors and doorways and in each room that contains a solid fuel-burning appliance.

Carbon monoxide alarms must be hardwired and interconnected with all smoke alarms.

Carbon monoxide alarms shall be supplied from a lighting circuit or a circuit with a mix of lighting and receptacles and shall not be installed on a circuit that is protected by a GFCI or an AFCI unless the alarms have integral battery backup. Note that heat sensors installed in attached garages are not designed with battery backup. Where a dwelling has a heat sensor installed, the carbon monoxide alarms cannot be installed on a circuit that is protected by GFCI or AFCI.

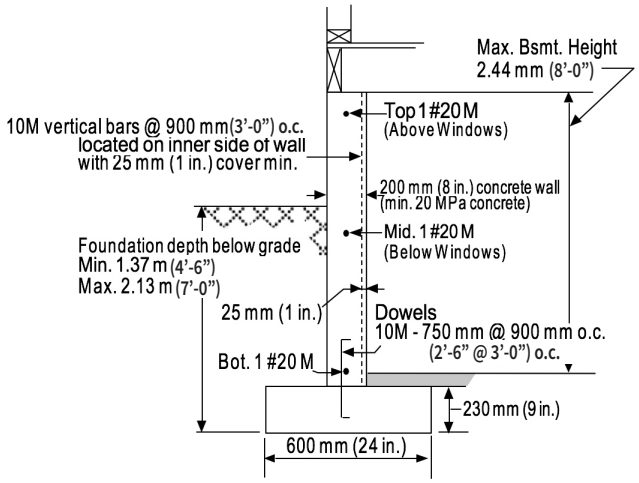
For existing dwellings that did not require interconnected alarms at the time the home was originally constructed, an additional carbon monoxide alarm will be required to be installed on the floor above the lower level in accordance with the requirements of this section.

Foundations

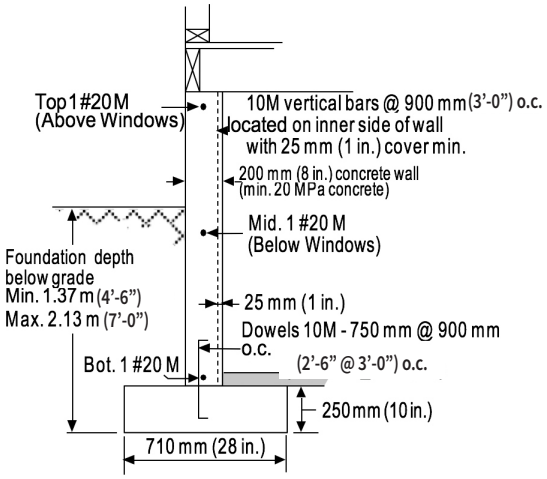
The two basic types of foundations that can be used when constructing an addition are a full basement and a pile/pier and footing foundation.

1. Full basement foundation
    a. A wood basement must be designed and sealed by an engineer, and the engineer must be retained to inspect and certify the installation.
    b. A concrete basement must meet the minimum code standards for wall thickness and reinforcement as shown in the following figures.

Figure 1 - Laterally supported foundation walls

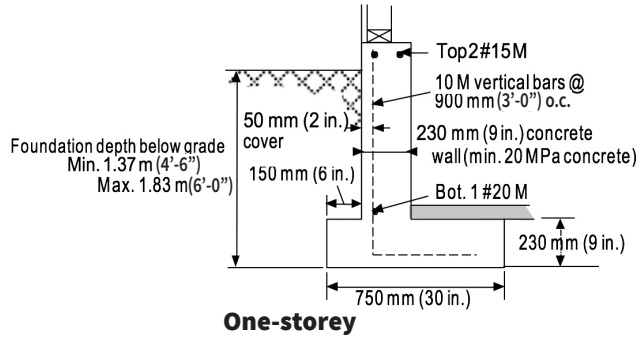


One-storey



Two-storey

Figure 2 - Laterally unsupported foundation walls



One-storey
(bi-level type)

Notes to Figures 1 and 2:

1. Length of supported joists shall not exceed 4.9 m (16'-0").
2. Top of foundation shall be at least 150 mm (6 in.) above finished ground level.
3. Walls over 12 m (40'-0") in length shall be designed by an engineer.

Interior footing sizes

One-storey

750 mm x 750 mm x 250 mm deep @ 3.05 m o.c.
(30 in. x 30 in. x 10 in. deep @ 10 ft. o.c.)

Two-storey

900 mm x 900 mm x 300 mm deep @ 2.74 m o.c.
(36 in. x 36 in. x 12 in. deep @ 9 ft. o.c.)

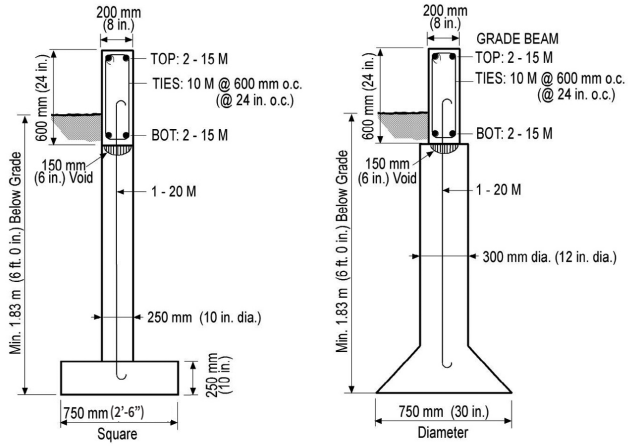
2. Pile/pier and footing foundation

   a. A one-storey addition foundation must meet the minimum standards as shown; or it must be designed and sealed by an engineer.

   b. For a two-storey addition, a grade beam and pile foundation must be designed and sealed by an engineer.

   c. A wood beam can be used instead of a concrete grade beam. Pile spacing and size would still be the same as illustrated below.

Figure 3 - Pile/pier and footing foundation standards



Max. spacing 2.44 m o.c. (8'-0" o.c.)

Note:

1. Length of supported joists shall not exceed 4.9 m (16'-0")
2. Top of foundation shall be at least 150 mm (6 in.) above finished ground level
3. Pile/pier and footing shall be of sulphate resistant concrete
4. Wood beam may be substituted

Insulation requirements

Insulation values are determined based on whether or not an HRV is being installed (see Figure 10).

Figure 4 – Insulation requirements

Minimum effective thermal resistance (R-Value)			
	Building assembly	HRV	No HRV
Above ground	Ceilings below attics	48.3	59.2
	Vaulted ceilings and flat roofs	28.5	28.5
	Walls	15.9	17.5
	Floors over unheated spaces	28.5	28.5
Below ground	Foundation walls	15.9	19.6
	Unheated floors below frost line	-	-
	Unheated floors above frost line	11.1	11.1
	Slabs-on-grade with an integral footing	16.1	21.1

Note: The values in the above table are cumulative for the entire assembly. Example – a wall assembly that includes 2 X 6 wood studs at 16 in. on center, R22 batt insulation, 1/2 in. drywall interior finish, 7/16 OSB exterior sheathing and 5/8 in. thick stucco has an effective R-Value of 16.5.

Heat recovery ventilator (HRV) requirements

An HRV is required when:

- a secondary suite is being created
- the renovation and/or addition affects 50 per cent or more of the final total exterior wall or ceiling area
- the authority having jurisdiction deems it to be necessary

Material specifications

The material specification tables contained in this document are only a guide and do not cover all structural limitations available in the code. An engineer may be required for any variation from the minimum standards contained within these tables and in the Manitoba Building Code (MBC).

Minimum thickness of roof sheathing – MBC 9.23.16.7.A					
Maximum spacing of supports	Plywood		Waferboard and strandboard		Lumber
	Edges supported	Edges unsupported	Edges supported	Edges unsupported	
mm	mm	mm	mm	mm	mm
300	7.5	7.5	9.5	9.5	17.0
400	7.5	9.5	9.5	11.1	17.0
600	9.5	12.5	11.1	12.7	19.0

in.	in.	in.	in.	in.	in.
12	5/16	5/16	3/8	3/8	11/16
16	5/16	3/8	3/8	7/16	11/16
24	3/8	1/2	7/16	1/2	3/4
Column 1	2	3	4	5	6

Thickness of wall sheathing * MBC 9.23.17.2.A				
Type of sheathing	Minimum thickness			
	Supports @ 16 in. o.c.	Supports @ 24 in. o.c.	Supports @ 400 mm o.c.	Supports @ 600 mm o.c.
	in.	in.	mm	mm
Lumber	11/16	11/16	17.0	17.0
Fibreboard	3/8	7/16	9.5	11.1
Plywood	1/4	5/16	6.0	7.5
Waferboard/ strandboard	1/4	5/16	6.35	7.9
Column 1	2	3	4	5

Thickness of subflooring – MBC 9.23.15.5.A			
Maximum spacing of supports	Plywood	Waferboard and strandboard	Lumber
mm	mm	mm	mm
400	15.5	15.9	17.0
500	15.5	15.9	19.0
600	18.5	19.0	19.0

in.	in.	in.	in.
16	5/8	5/8	11/16
20	5/8	5/8	3/4
24	3/4	3/4	3/4
Column 1	2	3	4

Ceiling joist spans – MBC 9.23.4.2.(1): Table A-3									
Commercial designation	Grade	Member size (in)	Joist spacing			Member size (mm)	Joist spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce-pine-fir	No.1 and No. 2	2 x 4	10 - 3	9 - 3	8 - 1	38 x 89	3.11	2.83	2.47
		2 x 6	16 - 1	14 - 7	12 - 9	38 x 140	4.90	4.45	3.89
		2 x 8	21 - 1	19 - 2	16 - 9	38 x 184	6.44	5.85	5.11
		2 x 10	27 - 0	24 - 6	21 - 5	38 x 235	8.22	7.47	6.52
Col. 1	2	3	4	5	6	7	8	9	10

Roof rafter spans – MBC 9.23.4.2.(1): Table A-6 Rafter not supporting ceiling (Design roof snow loads for 1.5 kPa (30 psf)									
Rafter not supporting ceiling	Grade	Member size (in)	Rafter spacing			Member size (mm)	Rafter spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce-pine-fir	No.1 and No. 2	2 x 4	8 - 11	8 - 1	7 - 1	38 x 89	2.72	2.47	2.16
		2 x 6	14 - 0	12 - 9	11 - 2	38 x 140	4.28	3.89	3.40
		2 x 8	18 - 5	16 - 9	14 - 6	38 x 184	5.62	5.11	4.41
		2 x 10	23 - 7	21 - 5	17 - 8	38 x 235	7.18	6.52	5.39
Col. 1	2	3	4	5	6	7	8	9	10

Roof joist spans – MBC 9.23.4.2.(1): Table A-4 (Design roof snow loads for 1.5 kPa (30 psf)									
Rafter not supporting ceiling	Grade	Member size (in)	Rafter spacing			Member size (mm)	Rafter spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce-pine-fir	No.1 and No. 2	2 x 4	7 - 1	6 - 5	5 - 7	38 x 89	2.16	1.96	1.71
		2 x 6	11 - 2	10 - 1	8 - 10	38 x 140	3.40	3.08	2.69
		2 x 8	14 - 8	13 - 4	11 - 7	38 x 184	4.46	4.05	3.54
		2 x 10	18 - 8	17 - 0	14 - 10	38 x 235	5.70	5.18	4.52
Col. 1	2	3	4	5	6	7	8	9	10

Built-up floor beam spans – MBC 9.23.4.2.(3): Table A-8 Supporting one floor in houses											
Spruce-pine-fir Grade No. 1 & 2											
Size of beam	Supported joist length					Size of beam	Supported joist length				
	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.		2.4 m	3.0 m	3.6 m	4.2 m	4.8 m
	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.		m	m	m	m	m
3 - 2 x 8	10 - 7	9 - 5	8 - 8	8 - 0	7 - 6	3 - 38 x 184	3.25	2.90	2.65	2.45	2.30
4 - 2 x 8	12 - 2	10 - 11	10 - 0	9 - 3	8 - 8	4 - 38 x 184	3.75	3.35	3.06	2.83	2.65
3 - 2 x10	12 - 11	11 - 7	10 - 7	9 - 9	9 - 2	3 - 38 x 235	3.97	3.55	3.24	3.00	2.81
4 - 2 x10	14 - 11	13 - 4	12 - 2	11 - 3	10 - 7	4 - 38 x 235	4.59	4.10	3.74	3.47	3.24
3 - 2 x12	15 - 0	13 - 5	12 - 3	11 - 4	10 - 7	3 - 38 x 286	4.61	4.12	3.76	3.48	3.26
4 - 2 x12	17 - 4	15 - 6	14 - 2	13 - 1	12 - 3	4 - 38 x 286	5.32	4.76	4.34	4.02	3.76
1	2	3	4	5	6	7	8	9	10	11	12

Built-up floor beam spans – MBC 9.23.4.2.(3): Table A-8 Supporting two floors in houses											
Spruce-pine-fir Grade No. 1 & 2											
Size of beam	Supported joist length					Size of beam	Supported joist length				
	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.		2.4 m	3.0 m	3.6 m	4.2 m	4.8 m
	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.		m	m	m	m	m
3 - 2 x 8	8 - 0	7 - 2	6 - 7	6 - 1	5 - 8	3 - 38 x 184	2.46	2.20	2.01	1.86	1.74
4 - 2 x 8	9 - 3	8 - 3	7 - 7	7 - 0	6 - 7	4 - 38 x 184	2.85	2.55	2.32	2.15	2.01
3 - 2 x 10	9 - 10	8 - 9	8 - 0	7 - 5	6 - 10	3 - 38 x 235	3.01	2.70	2.46	2.28	2.11
4 - 2 x 10	11 - 4	10 - 2	9 - 3	8 - 7	8 - 0	4 - 38 x 235	3.48	3.11	2.84	2.63	2.46
3 - 2 x 12	11 - 5	10 - 2	9 - 4	8 - 7	7 - 9	3 - 38 x 286	3.50	3.13	2.85	2.64	2.38
4 - 2 x 12	13 - 2	11 - 9	10 - 9	9 - 11	9 - 4	4 - 38 x 286	4.04	3.61	3.30	3.05	2.85
1	2	3	4	5	6	7	8	9	10	11	12

Floor joist spans – 9.23.4.2.(1): Table A-1												
Commercial designation	Grade	Member size (in)	Joist spacing with strapping			Joist spacing with bridging			Joist spacing with strapping & bridging			
			12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	
			ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	
Spruce-pine-fir	No.1and No. 2	(in.)	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	
			ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	
		2 x 4	6 - 1	5 - 8	5 - 2	6 - 6	5 - 11	5 - 2	6 - 6	5 - 11	5 - 2	
		2 x 6	9 - 7	8 - 11	8 - 2	10 - 4	9 - 4	8 - 2	10 - 4	9 - 4	8 - 2	
		2 x 8	11 - 7	11 - 0	10 - 6	12 - 5	11 - 9	10 - 9	13 - 1	12 - 2	10 - 9	
		2 x 10	13 - 8	13 - 0	12 - 4	14 - 6	13 - 8	12 - 10	15 - 1	14 - 1	13 - 2	
		2 x 12	15 - 7	14 - 10	14 - 1	16 - 4	15 - 5	14 - 6	17 - 0	15 - 10	14 - 9	
		(mm)	300mm	400mm	600mm							
			m	m	m	m	m	m	m	m	m	
		38 x 89	1.86	1.72	1.58	1.99	1.81	1.58	1.99	1.81	1.58	
		38 x 140	2.92	2.71	2.49	3.14	2.85	2.49	3.14	2.85	2.49	
		38 x 184	3.54	3.36	3.20	3.79	3.57	3.27	3.99	3.72	3.27	
		38 x 235	4.17	3.96	3.77	4.41	4.16	3.92	4.61	4.30	4.01	
		38 x 286	4.75	4.52	4.30	4.99	4.70	4.42	5.17	4.82	4.50	
Col. 1	2	3	4	5	6	7	8	9	10	11	12	

Inspections

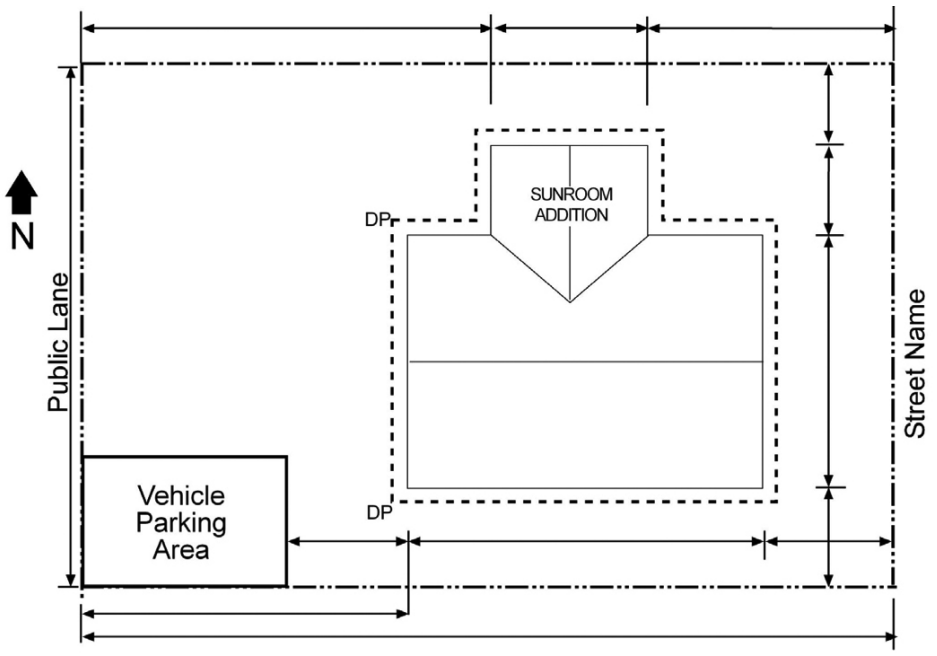
The Housing Inspections Branch regulates construction for compliance with applicable codes, standards and bylaws. This monitoring is carried out through the permit approval process and periodic site inspections.

The responsibility for compliance rests with the property owner.

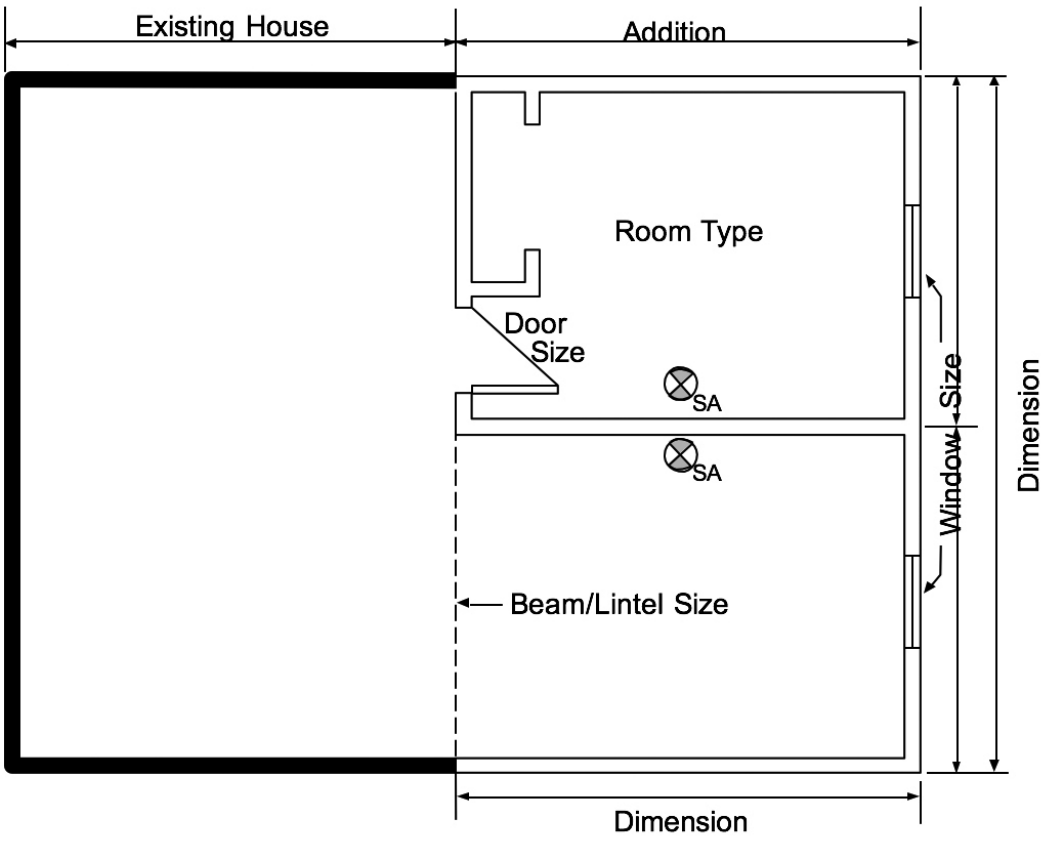
Prior to covering any new work, you must schedule an inspection by submitting the housing inspection request form at winnipeg.ca/housinginspection.

Sample drawings

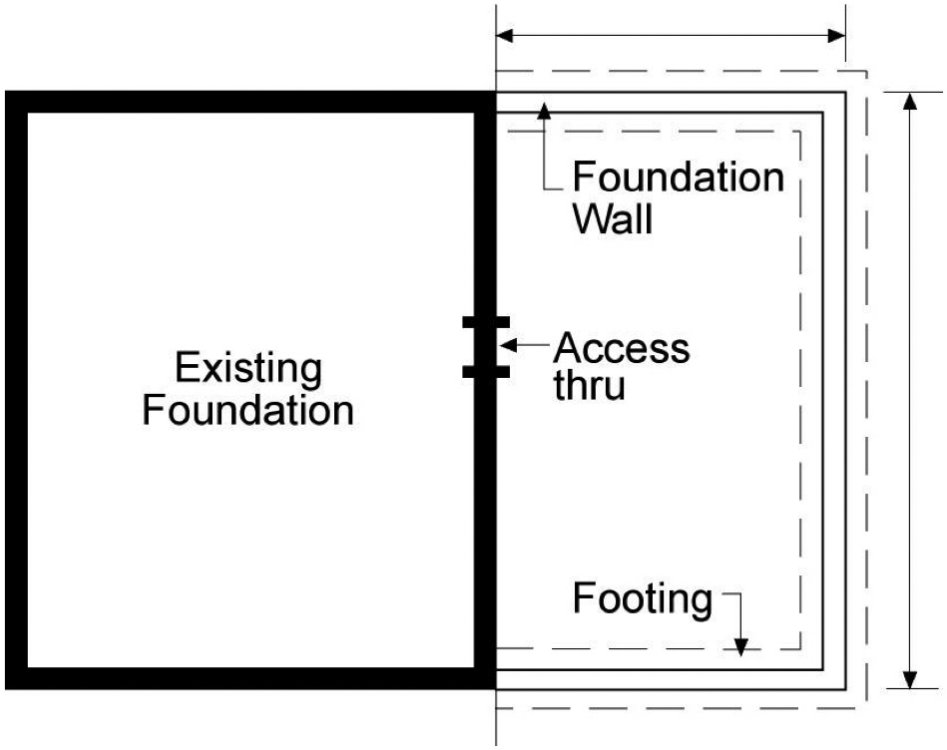
Site plan



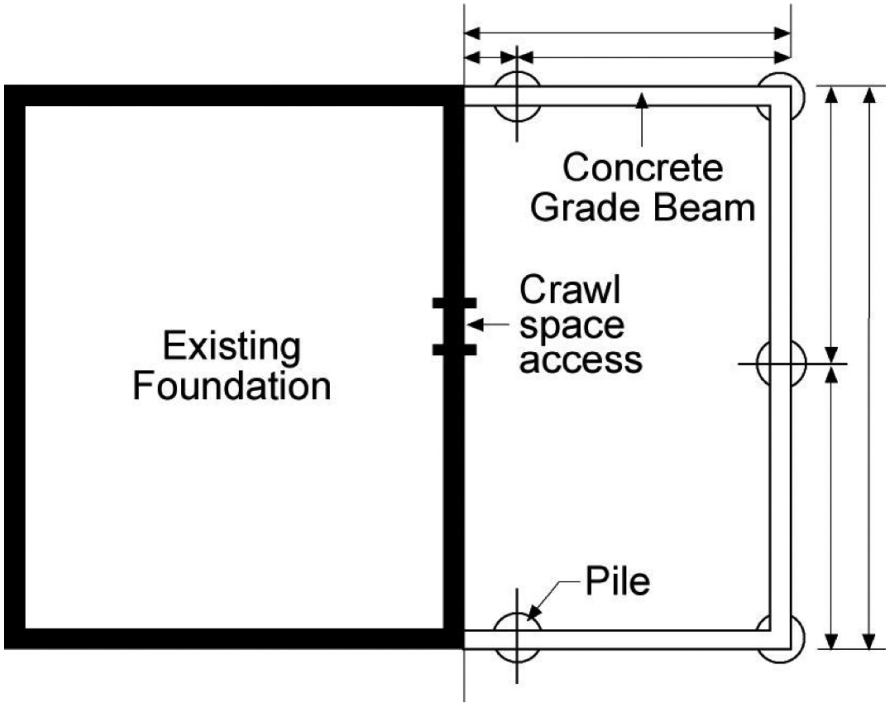
Floor plan



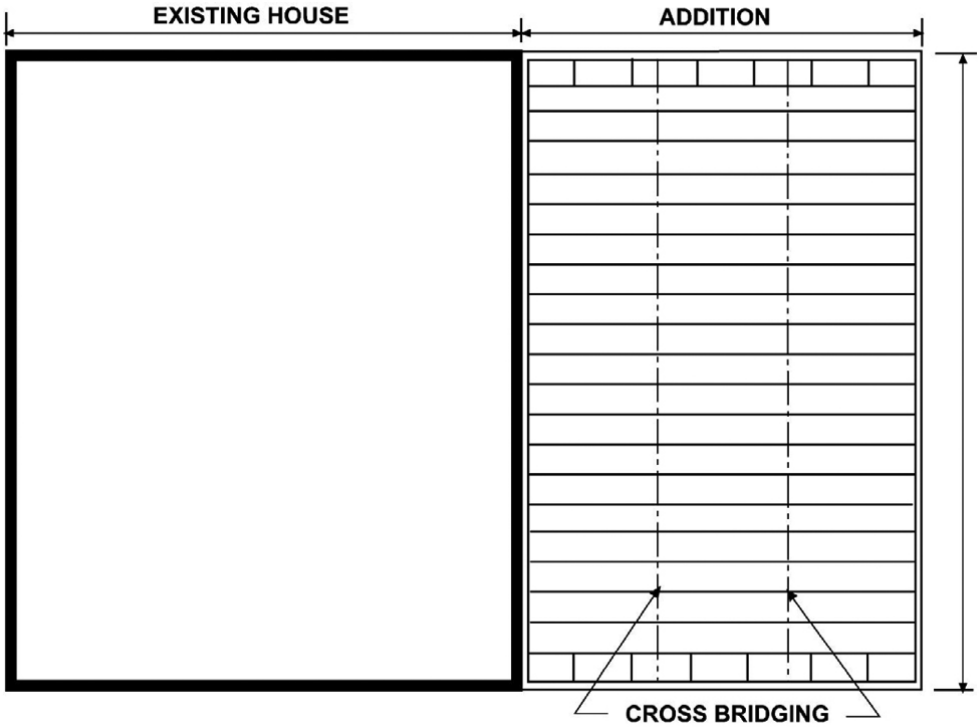
Foundation plan



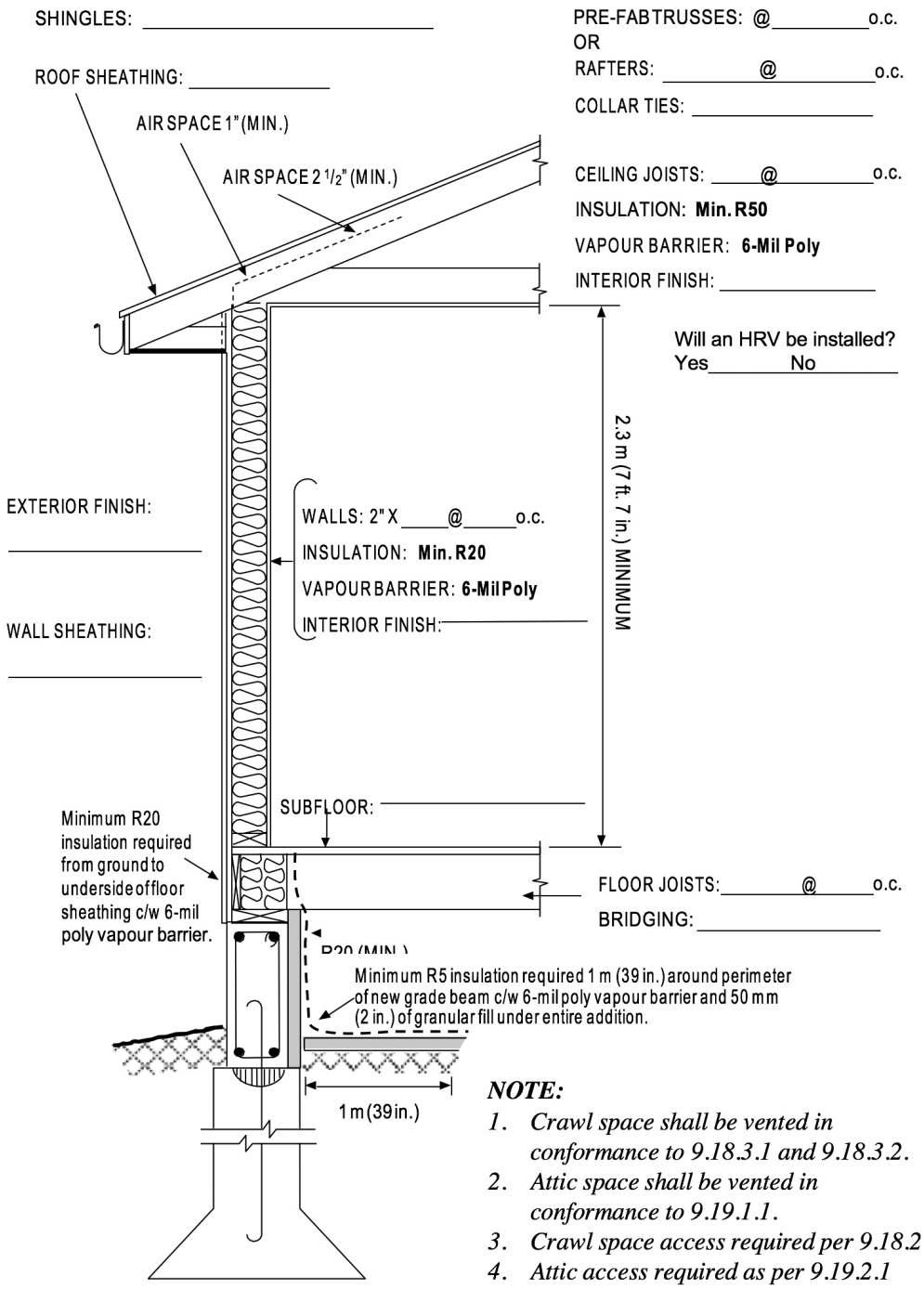
Pile and grade beam foundation plan



Floor framing plan



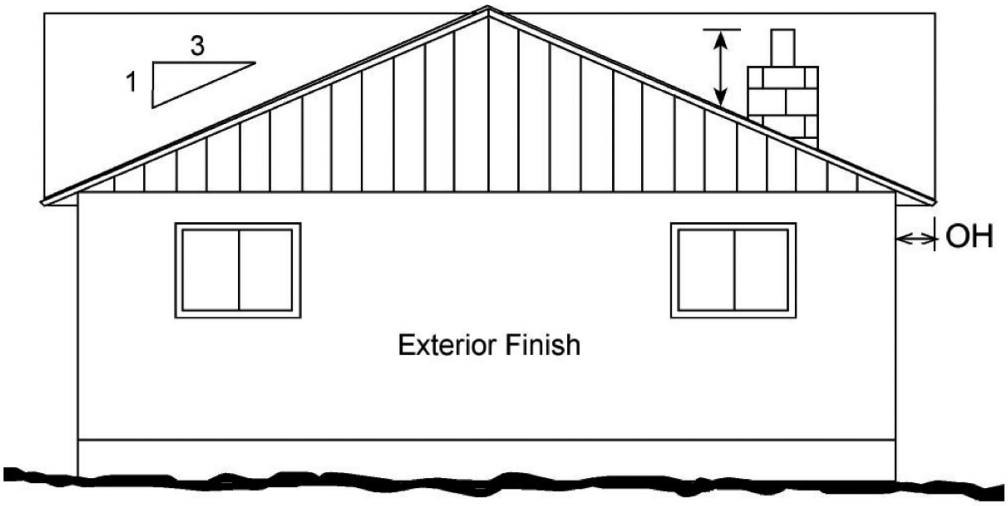
Section drawing



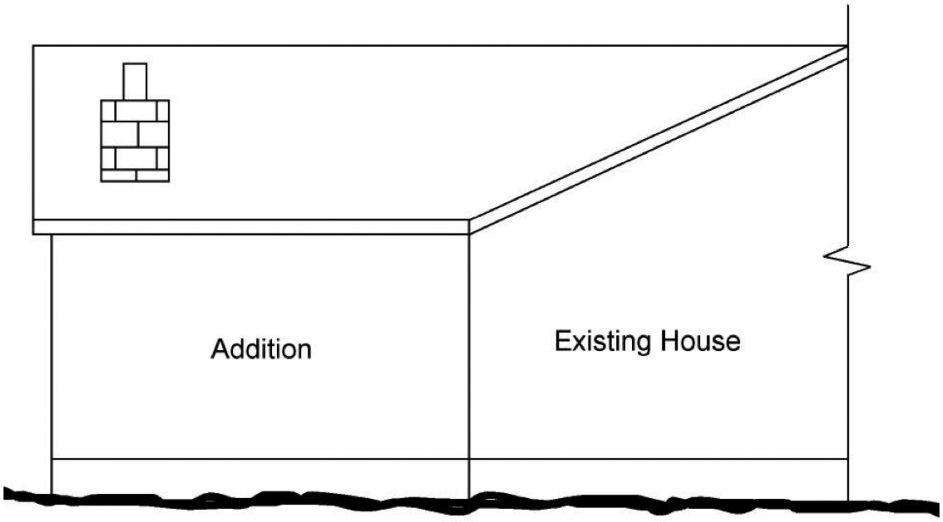
NOTE:

1. *Crawl space shall be vented in conformance to 9.18.3.1 and 9.18.3.2.*
2. *Attic space shall be vented in conformance to 9.19.1.1.*
3. *Crawl space access required per 9.18.2.1*
4. *Attic access required as per 9.19.2.1*

Elevations



Rear elevation



Side elevation

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