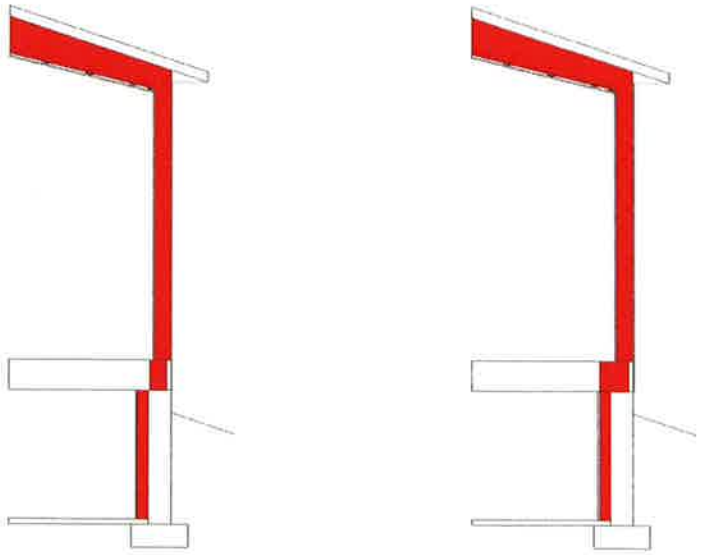
TOWN OF QUISPAMSIS ASSEMBLY GUIDE

Town of Quispamsis Assembly Guide

This document details the R values of various standard assemblies when calculated in conformance with the methods laid out in the National Building Code of Canada. The order of the materials in the assembly is irrelevant, as the calculation to determine the overall R value of an assembly only takes into account the contribution of each material. The calculations are done to allow the use of the least amount of materials possible. Should someone wish to use more insulation than the amount listed on the spec sheet they are not required to submit new calculations. The Town of Quispamsis does not endorse or require the use of the assemblies detailed in this document, they are simply variations of typical assemblies used by local contractors. Other types of assemblies not detailed in this document are permitted provided they are shown to be code compliant.

The calculations preformed in the production of this document used the methods described in 9.36.2.4. Framing percentages were taken from Table A-9.36.2.4.(1)A and values for insulating materials were taken from Table A-9.36.2.4.(1)D. More accurate RSI values may be available from the manufacturer of your selected insulation, and can be taken advantage of by submitting calculations for the assembly and specifications from the manufacturer that the product was tested using ASTM C177 or ASTM C518 at a temperature of 22 ±2˚C.

Please note this document is subject to changes without notice. Please refer to the Town website to reference the most up to date version.



Simply selecting assemblies from this guide may not result in compliance with the energy code. Other provisions of the energy code including, but not limited to, continuity of insulation must also be taken into account when selecting your assemblies. As you can see in the image to the left, the building section on the left has a break in the continuity of insulation between the basement wall and the floor joist header area. The building section on the right has applied enough insulation in this area so as to maintain the continuity of insulation.

The final page of this document has a blank assembly form that can be used if the materials you are using have increased insulation values from those depicted in the code, or if you are using an assembly that has not been calculated.

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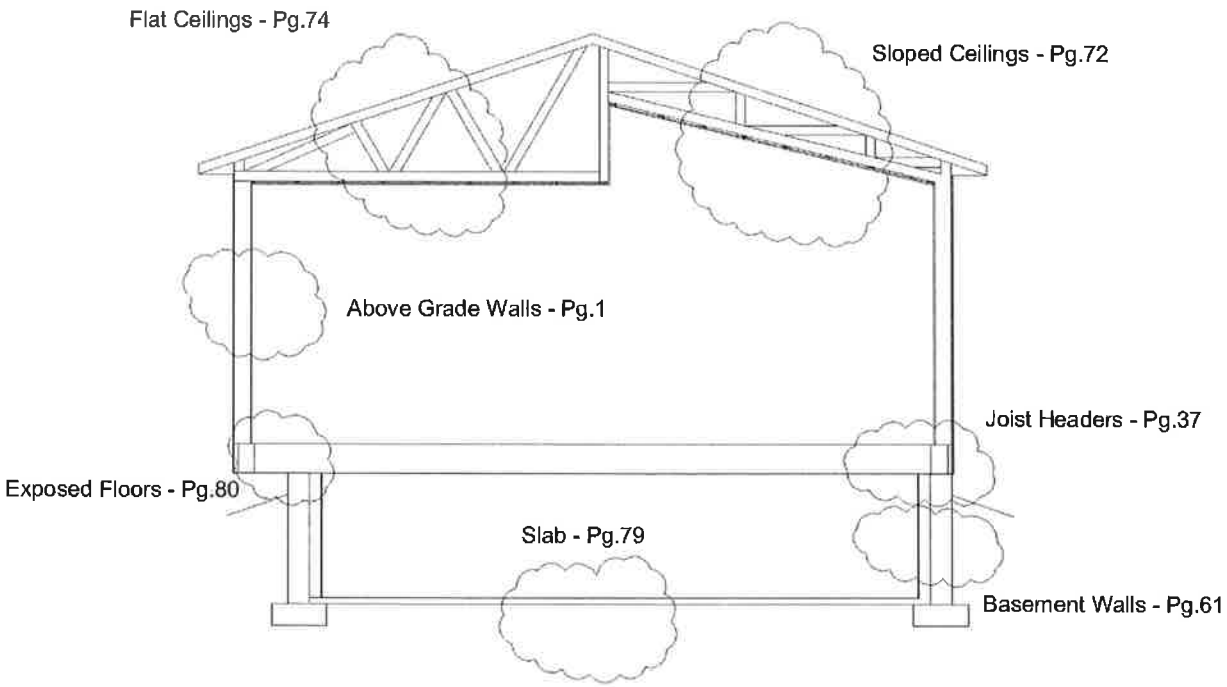

Exposed floors include floors over garages in addition to cantilevered floors.

Demising wall assemblies for walls separating conditioned space from interior unconditioned spaces, such as: garages or enclosed porches, start on Pg. 30.

Above Grade Wall Assembly

Assembly #TOQ-W01

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

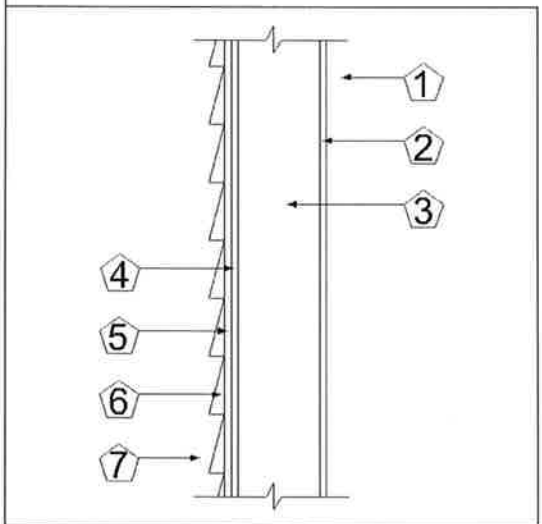
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.384808
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.13	17.8



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22	Actual R Value: R17.8	Actual U Value: 0.0562
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W02

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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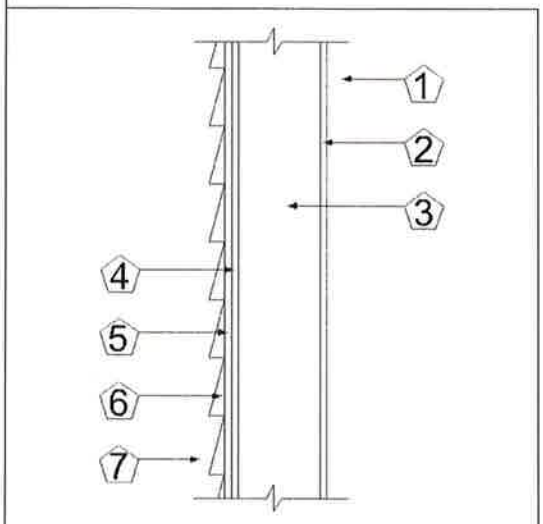
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.384828
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.25	18.5



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22.5	Actual R Value: R18.5	Actual U Value: 0.0541
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

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Above Grade Wall Assembly

Assembly #TOQ-W04

Description: 2x6 studs at 16" on center with 4.5" 2lb sprayed polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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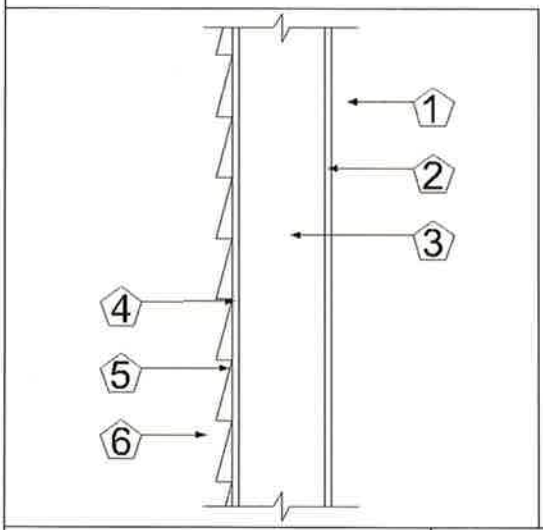
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with 4.5" min. 2lb foam
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.529854	14.365176
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	2.98	16.9



Parallel Heat Flow Calculation

Framing %	23	
Cavity %	77	
RSI Framing	0.97155	0.2159
RSI Cavity	4.05	0.18
RSI Total	2.529854	

Nominal R Value: R27	Actual R Value: R16.9	Actual U Value: 0.0592
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✗	

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Above Grade Wall Assembly

Assembly #TOQ-W05

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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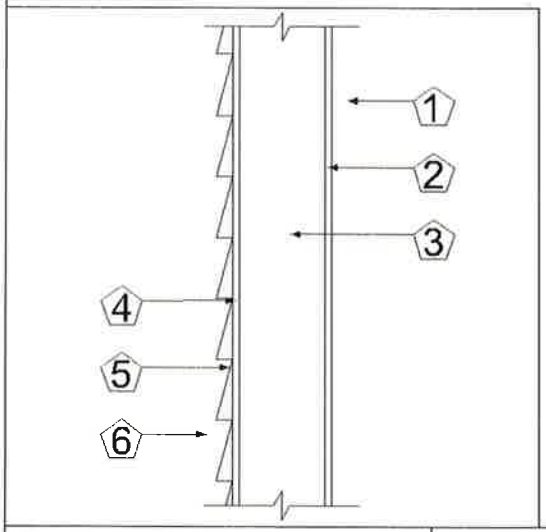
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 4	0.3302	1.874962
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.02	17.1



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22	Actual R Value: R17.1	Actual U Value: 0.0585
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

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Above Grade Wall Assembly

Assembly #TOQ-W06

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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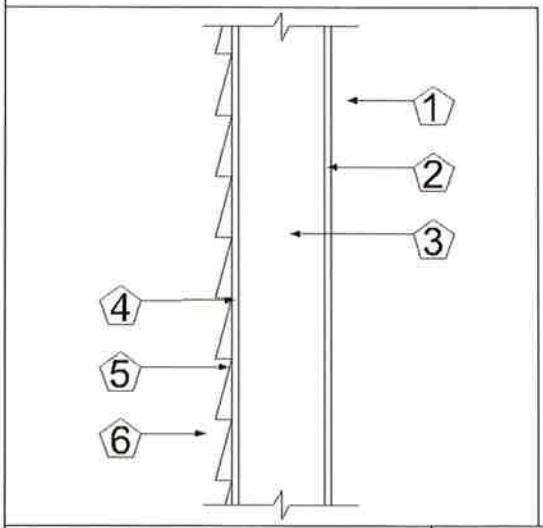
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.14	17.8



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22.5	Actual R Value: R17.8	Actual U Value: 0.0562
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

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Above Grade Wall Assembly

Assembly #TOQ-W08

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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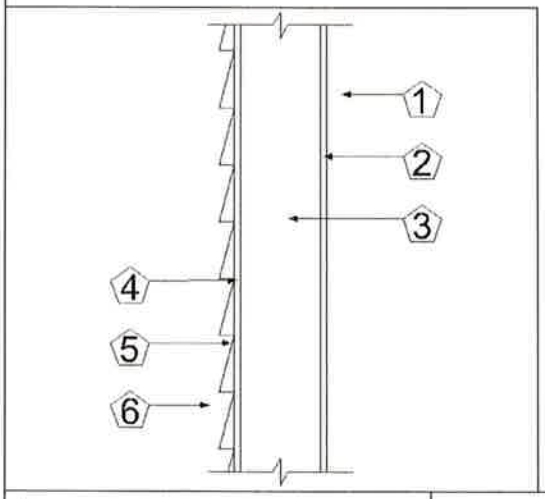
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.02	17.1



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22	Actual R Value: R17.1	Actual U Value: 0.0585
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

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Above Grade Wall Assembly

Assembly #TOQ-W09

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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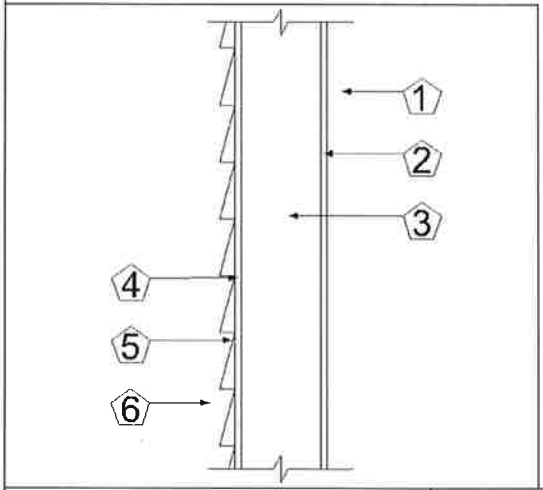
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.03	0.170348
Total	3.14	17.8



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22.5	Actual R Value: R17.8	Actual U Value: 0.0562
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

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Above Grade Wall Assembly

Assembly #TOQ-W11

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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12 Landing Court
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E2E 4Z4

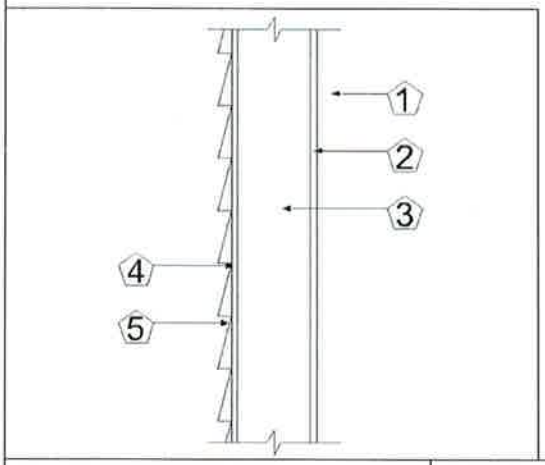
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1" min. expanded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 4	0.6604	3.749925
Layer 5	0.03	0.170348
Total	3.25	18.5



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R24	Actual R Value: R18.5	Actual U Value: 0.0541
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W12

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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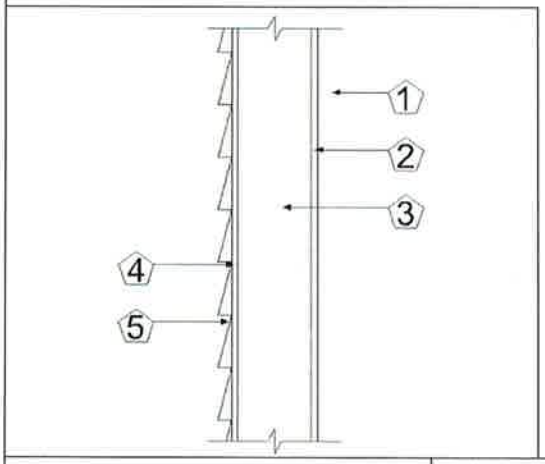
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.39794
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.03	17.2



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22.5	Actual R Value: R17.2	Actual U Value: 0.0581
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W14

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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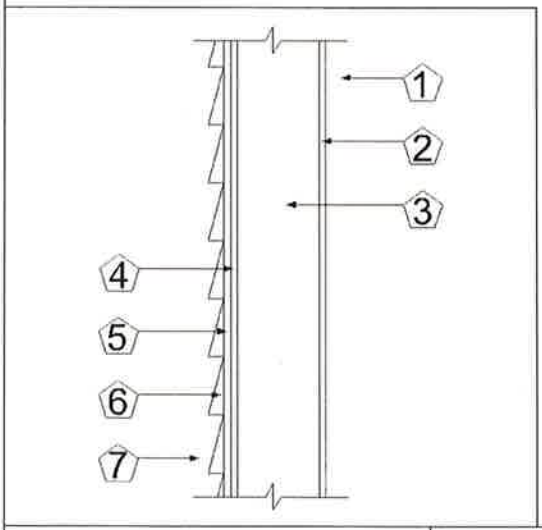
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.23	18.3



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22	Actual R Value: R18.3	Actual U Value: 0.0546
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W15

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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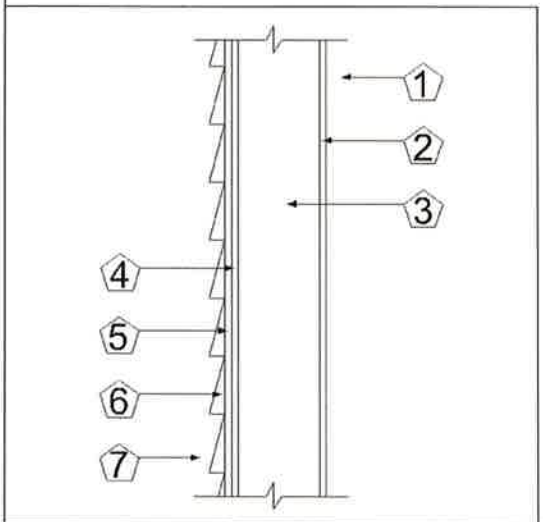
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.34	19.0



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22.5	Actual R Value: R19.0	Actual U Value: 0.0526
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W17

Description: 2x6 studs at 24" on center with 4.5" 2lb sprayed polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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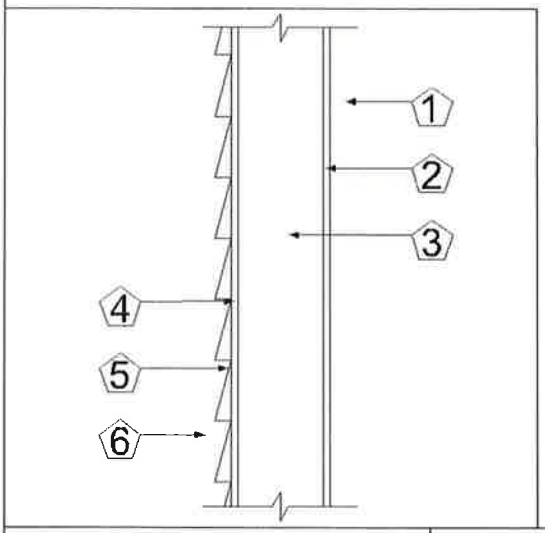
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with 4.5" min. 2lb foam
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.665198	15.133695
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.11	17.7



Parallel Heat Flow Calculation

Framing %	20	
Cavity %	80	
RSI Framing	0.97155	0.2159
RSI Cavity	4.05	0.18
RSI Total	2.665198	

Nominal R Value: R27	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W18

Description: 2x6 studs at 24" on center with 5.5" 1/2lb sprayed polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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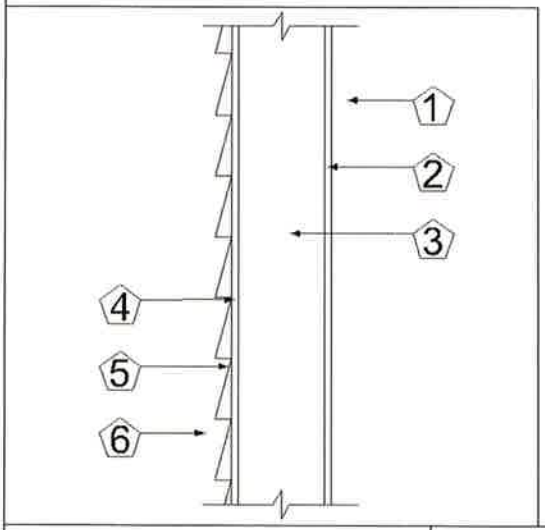
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with 5.5" min. 1/2lb foam
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.549691	14.62266
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.00	17.0



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.575
RSI Total	2.549691

Nominal R Value: R27	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W19

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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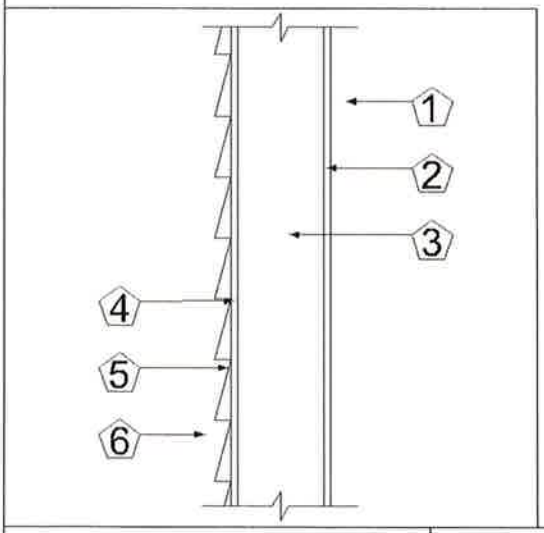
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.3302	1.874962
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.12	17.7



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W20

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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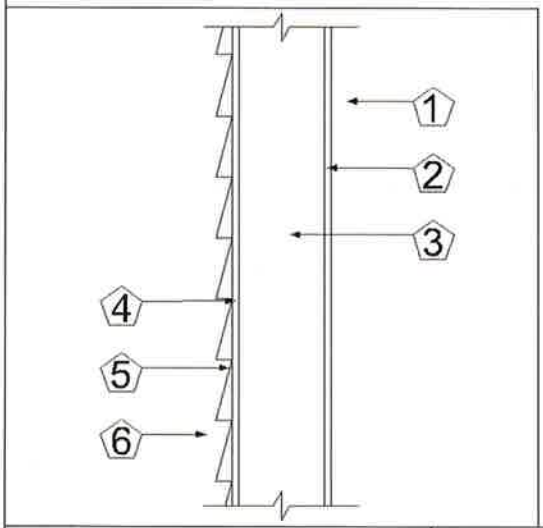
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.23	18.3



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22.5	Actual R Value: R18.3	Actual U Value: 0.0546
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W22

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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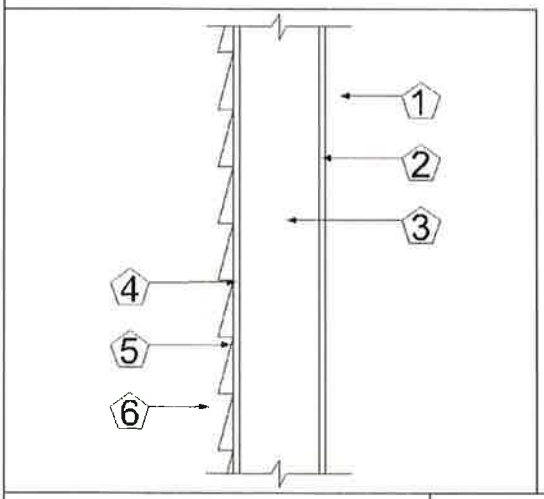
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.12	17.7



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W23

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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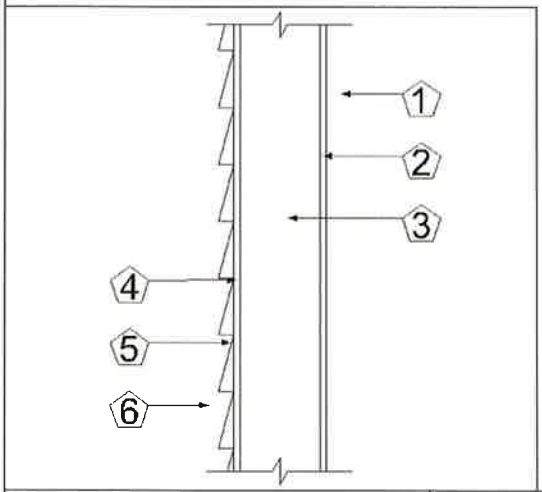
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.03	0.170348
Total	3.23	18.3



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22.5	Actual R Value: R18.3	Actual U Value: 0.0546
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W25

Description: 2x6 studs at 24" on center with 4.5" 2lb sprayed polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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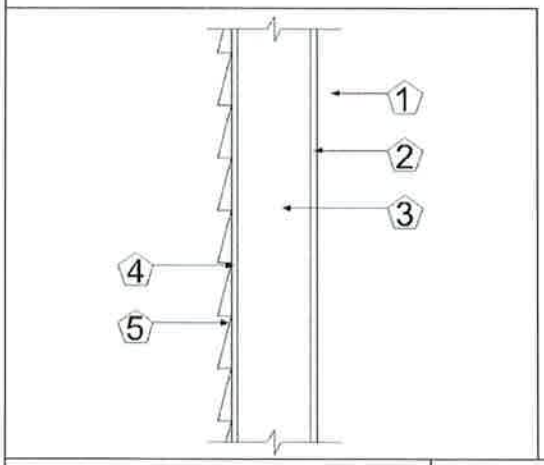
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with 4.5" min. 2lb foam
Layer 4.	7/16" min. OSB
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.665198	15.133695
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	3.00	17.0



Parallel Heat Flow Calculation

Framing %	20	
Cavity %	80	
RSI Framing	0.97155	0.2159
RSI Cavity	4.05	0.18
RSI Total	2.665198	

Nominal R Value: R27	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W26

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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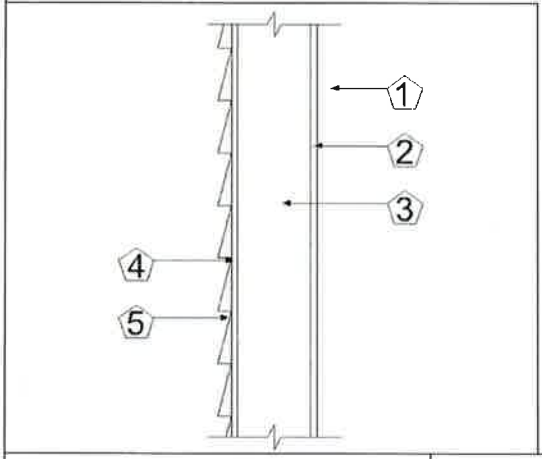
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X6 @ 24" o/c with R20 fiberglass batt
Layer 4. 1/2" min. expanded polystyrene
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.3302	1.874962
Layer 5	0.03	0.170348
Total	3.01	17.1



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R24	Actual R Value: R17.1	Actual U Value: 0.0585
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W27

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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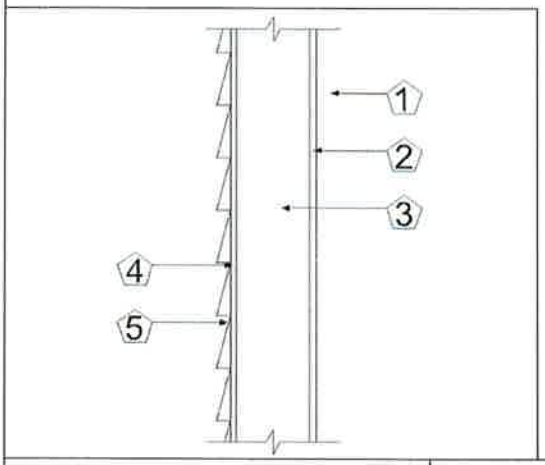
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.12	17.7



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22.5	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W29

Description: 2x6 studs at 16" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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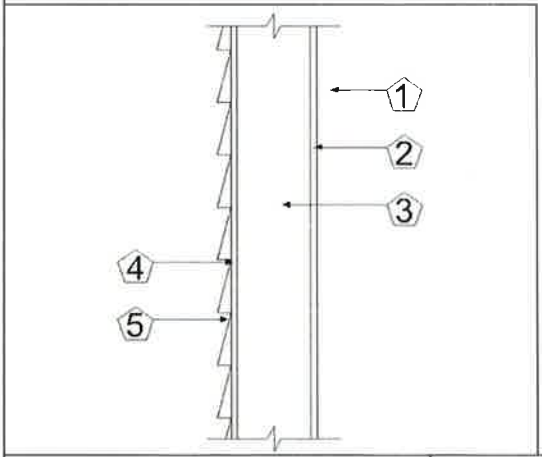
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R22 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.546740	14.461062
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	2.99	17.0



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.87
RSI Total	2.546740

Nominal R Value: R22	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W30

Description: 2x6 studs at 24" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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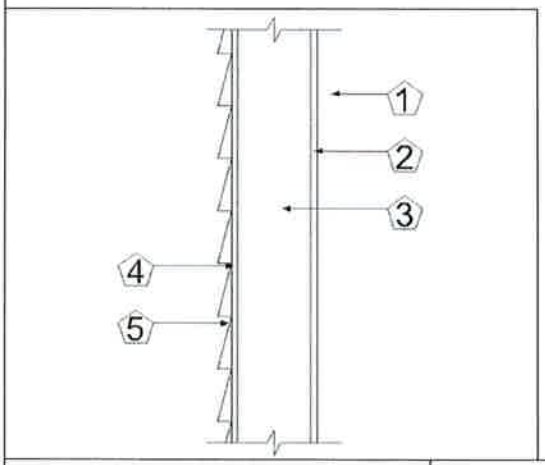
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R22 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.665625	15.136120
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.11	17.7



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.87
RSI Total	2. 665625

Nominal R Value: R22	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W31

Description: 2x6 studs at 24" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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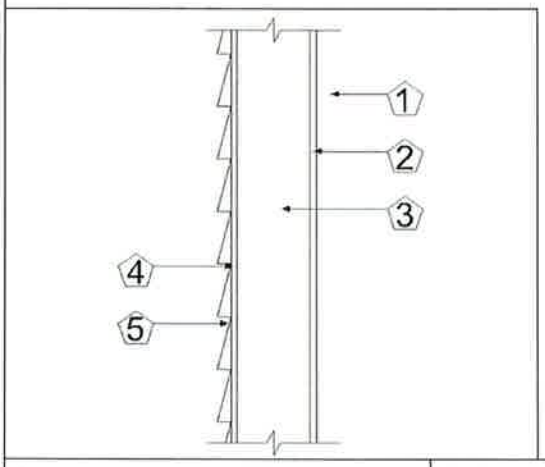
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R22 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.665625	15.136120
Layer 4	0.108903	0.618377
Layer 5	0.03	0.170348
Total	3.00	17.0



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.87
RSI Total	2. 665625

Nominal R Value: R22	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W32

Description: 2x6 studs at 16" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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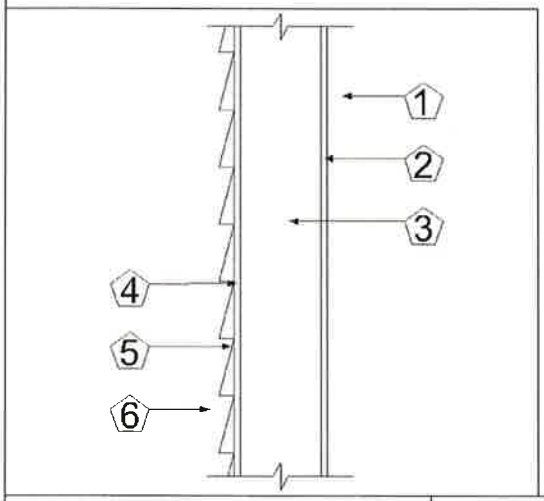
Layers listed from interior to exterior:

Layer 7. Inside air film
Layer 8. 1/2" min. gyprock
Layer 9. 2X6 @ 16" o/c with R24 fiberglass batt
Layer 10. 7/16" OSB
Layer 11. Non-insulating vinyl siding
Layer 12. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.661518	15.112798
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.11	17.7



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2.661518

Nominal R Value: R24	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W33

Description: 2x6 studs at 16" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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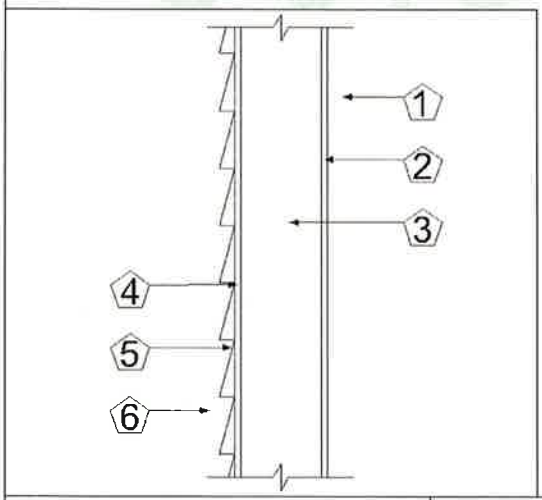
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R24 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.661518	15.112798
Layer 4	0.108903	0.618377
Layer 5	0.03	0.170348
Total	3.00	17.0



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2.661518

Nominal R Value: R24	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W34

Description: 2x6 studs at 24" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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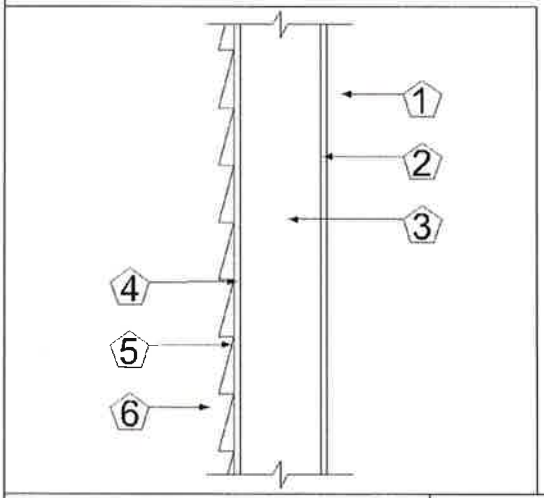
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R24 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.796785	15.880879
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.24	18.4



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2.796785

Nominal R Value: R24	Actual R Value: R18.4	Actual U Value: 0.0543
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W35

Description: 2x6 studs at 24" on center with fiberglass batt cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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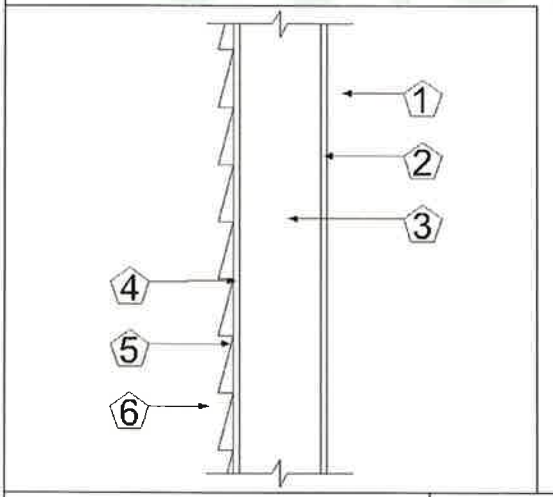
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R24 fiberglass batt
Layer 4.	7/16" OSB
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.796785	15.880879
Layer 4	0.108903	0.618377
Layer 5	0.03	0.170348
Total	3.13	17.8



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2.796785

Nominal R Value: R24	Actual R Value: R17.8	Actual U Value: 0.0562
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W36

Description: ICF wall consisting of 4" minimum concrete core with 2.5" minimum expanded polystyrene each side. Exterior finished with back-ventilated cladding such as masonry or wood, inside with 1/2" gypsum board.

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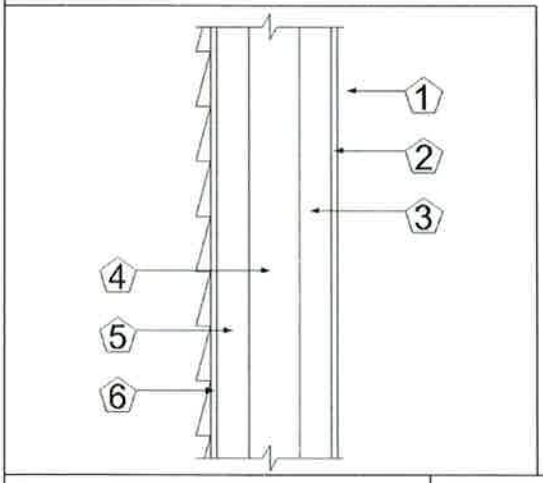
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2.5" min. expanded polystyrene
Layer 4.	4" min. concrete
Layer 5.	2.5" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.651	9.374812
Layer 4	0.04064	0.230765
Layer 5	1.651	9.374812
Layer 7	0.03	0.170348
Total	3.57	20.3



Nominal R Value: R20	Actual R Value: R20.3	Actual U Value: 0.0493
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-W37

Description: ICF wall consisting of 4" minimum concrete core with 2.5" minimum expanded polystyrene each side. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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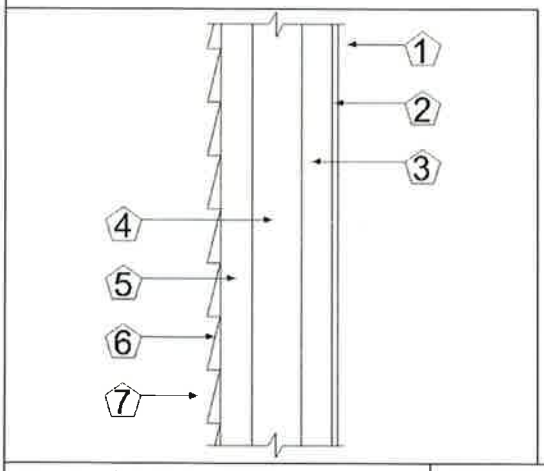
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2.5" min. expanded polystyrene
Layer 4.	4" min. concrete
Layer 5.	2.5" min. expanded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.651	9.374812
Layer 4	0.04064	0.230765
Layer 5	1.651	9.374812
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.68	20.9



Nominal R Value: R20	Actual R Value: R20.9	Actual U Value: 0.0478
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D01

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1/2" expanded polystyrene continuous insulation. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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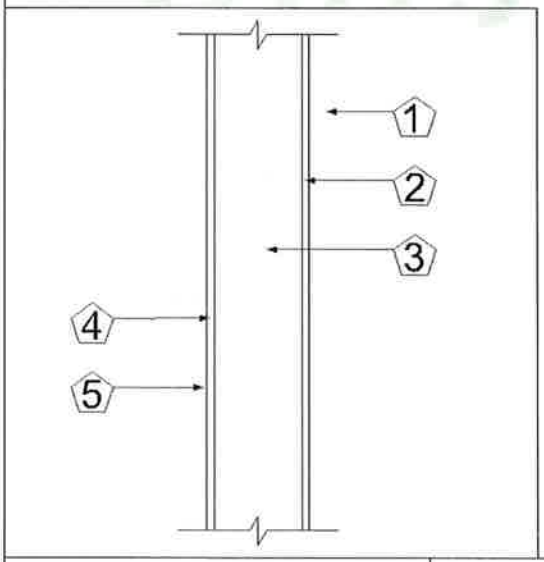
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here



Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.384808
Layer 4	0.3302	1.874962
Layer 5	0.03	0.170348
Total	2.91	16.5

Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22	Actual R Value: R16.5	Actual U Value: 0.0606
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 X
Vented Assembly	Required R Value with HRV: R16.9 X	Required R Value Without HRV: R17.5 X

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D02

Description: 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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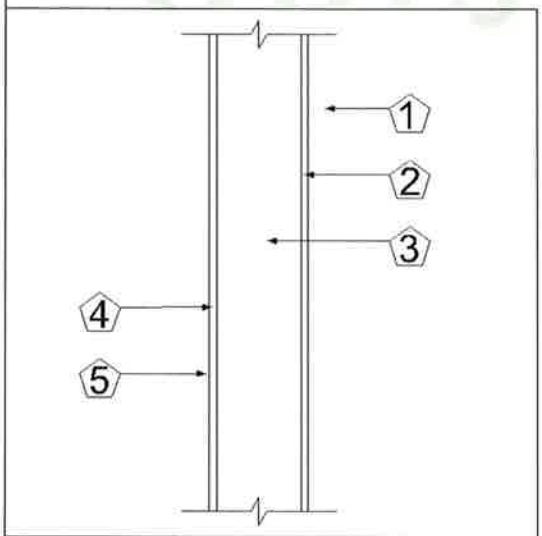
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 16" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here



Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.357205	13.384828
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.03	17.2

Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.357205

Nominal R Value: R22.5	Actual R Value: R17.2	Actual U Value: 0.0581
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 ✓
Vented Assembly	Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✗

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D03

Description: 2x6 studs at 16" on center with fiberglass batt cavity insulation. Interior finished with 1/2" gypsum board.
Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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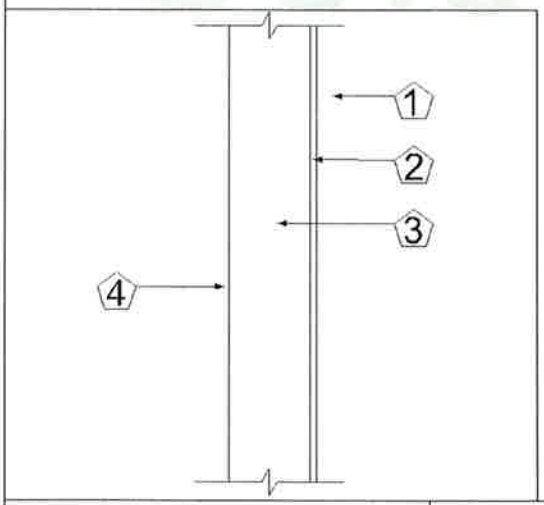
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X6 @ 16" o/c with R24 fiberglass batt
Layer 4. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.661518	15.880879
Layer 4	0.03	0.170348
Total	2.89	16.4



Parallel Heat Flow Calculation

Framing %	23
Cavity %	77
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2. 661518

Nominal R Value: R24	Actual R Value: R16.4	Actual U Value: 0.0610
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 X
Vented Assembly	Required R Value with HRV: R16.9 X	Required R Value Without HRV: R17.5 X

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D04

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" expanded polystyrene continuous insulation. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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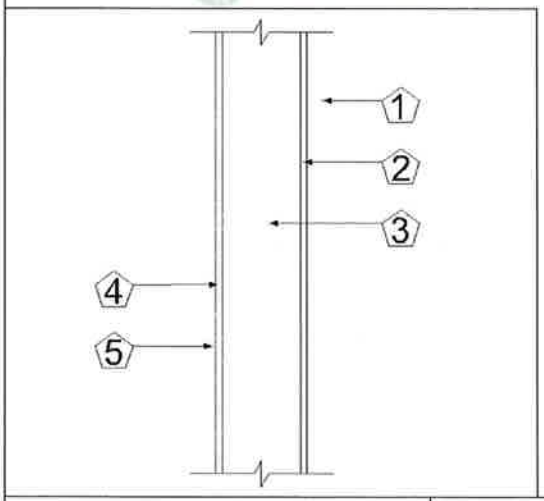
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.3302	1.874962
Layer 5	0.03	0.170348
Total	3.01	17.1



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22	Actual R Value: R17.1	Actual U Value: 0.0585
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 ✓
Vented Assembly	Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✗

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D05

Description: 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. 1/2" extruded polystyrene continuous insulation. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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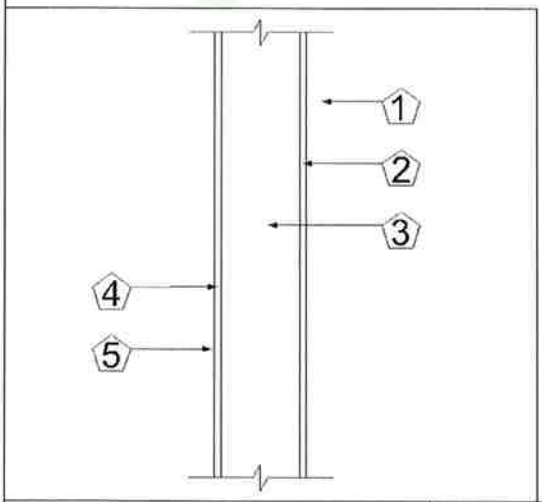
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.451286	13.93137
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.12	17.7



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.451286

Nominal R Value: R22.5	Actual R Value: R17.7	Actual U Value: 0.0565
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 ✓
Vented Assembly	Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D06

Description: 2x6 studs at 24" on center with fiberglass batt cavity insulation. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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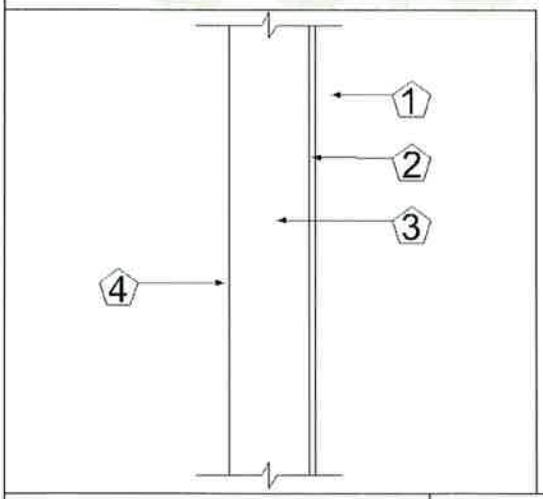
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X6 @ 24" o/c with R24 fiberglass batt
Layer 4. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2. 796785	15.880879
Layer 4	0.03	0.170348
Total	3.02	17.1



Parallel Heat Flow Calculation

Framing %	20
Cavity %	80
RSI Framing	1.18745
RSI Cavity	4.23
RSI Total	2. 796785

Nominal R Value: R24	Actual R Value: R17.1	Actual U Value: 0.0585
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 ✓
Vented Assembly	Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✗

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Above Grade Wall Assembly

Assembly #TOQ-D07

Description: ICF wall consisting of 4" minimum concrete core with 2.5" minimum expanded polystyrene each side. Interior finished with 1/2" gypsum board.

Note: Enclosed assemblies receive a reduction in the required RSI value by 0.16. Typical examples of where this would apply would be enclosed porches or attached garages. Vented assemblies such as attics and crawlspaces are not eligible for this reduction.

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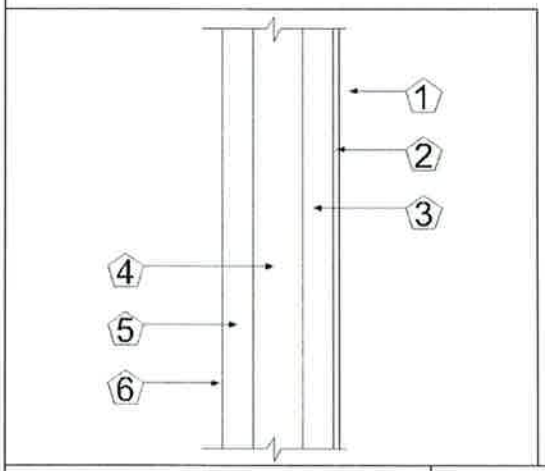
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2.5" min. expanded polystyrene
Layer 4.	4" min. concrete
Layer 5.	2.5" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.651	9.374812
Layer 4	0.04064	0.230765
Layer 5	1.651	9.374812
Layer 7	0.03	0.170348
Total	3.57	20.3



Nominal R Value: R20	Actual R Value: R20.3	Actual U Value: 0.0493
Enclosed Assembly	Required R Value with HRV: R16.0 ✓	Required R Value Without HRV: R16.6 ✓
Vented Assembly	Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H01

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

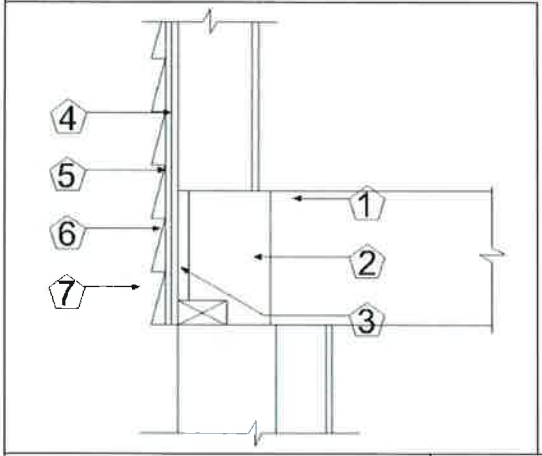
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. I joist@ 12" o/c with R20 fiberglass batt
Layer 3. 1-1/8" min. rim joist
Layer 4. 7/16" min. OSB
Layer 5. 1/2" min. expanded polystyrene
Layer 6. Non-insulating vinyl siding
Layer 7. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.68	20.9



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.9	Actual U Value: 0.0478
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H02

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

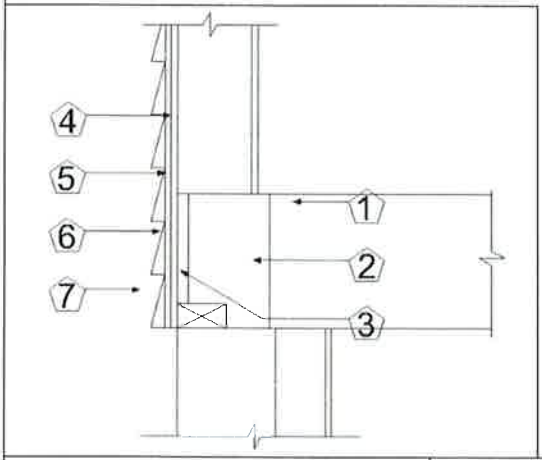
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.90	22.1



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R22.1	Actual U Value: 0.0452
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H04

Description: I joists at 12" minimum on center with 4" 2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding.

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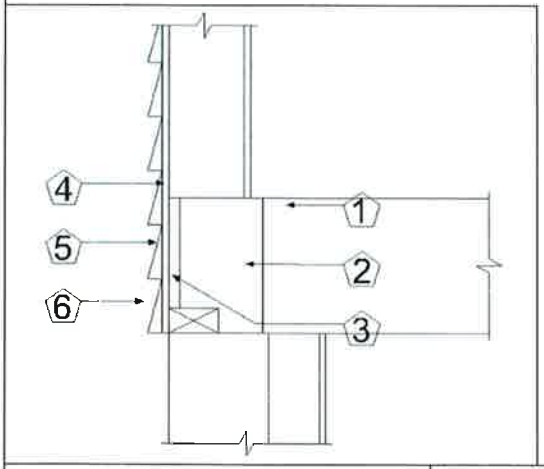
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with 4" min. 2lb foam
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.701278	15.338567
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.01	17.1



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	0.8636
RSI Cavity	3.6
RSI Total	2.701278

Nominal R Value: R22.5	Actual R Value: R19.0	Actual U Value: 0.0526
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H05

Description: I joists at 12" minimum on center with 4.5" 1/2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding.

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Building Inspection Department
12 Landing Court
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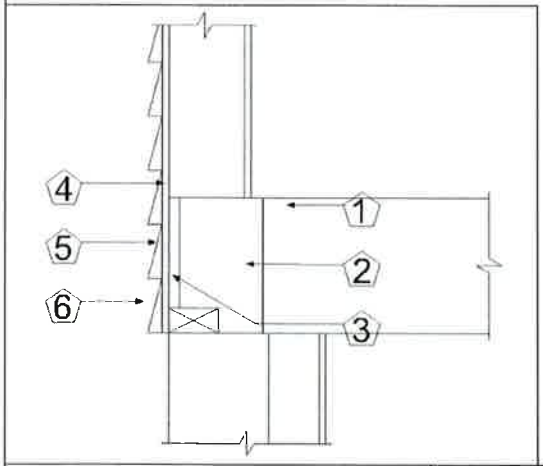
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with 4.5" min. 1/2lb foam
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.415123	13.7137
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.06	17.4



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	0.97155
RSI Cavity	2.925
RSI Total	2.415123

Nominal R Value: R22.5	Actual R Value: R17.4	Actual U Value: 0.0575
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H06

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
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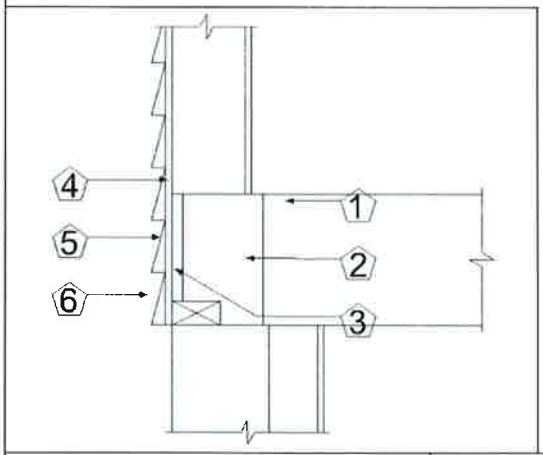
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.68	20.9



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.9	Actual U Value: 0.0478
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H07

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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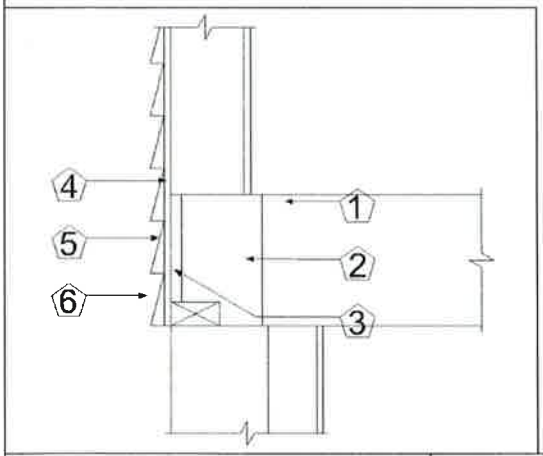
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.03	0.170348
Total	3.79	21.5



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R21.5	Actual U Value: 0.0465
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H09

Description: I joists at 12" minimum on center with 3.5" minimum 2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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Building Inspection Department
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P.O. Box 21085
Quispamsis, NB
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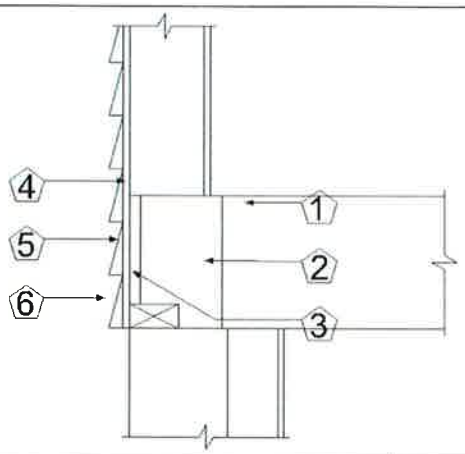
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with 3.5" min. 2lb foam
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.363618	13.42125
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.23	18.3



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	0.75565
RSI Cavity	3.15
RSI Total	2.363618

Nominal R Value: R22.5	Actual R Value: R18.3	Actual U Value: 0.0546
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H10

Description: I joists at 12" minimum on center with 5"1/2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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Building Inspection Department
12 Landing Court
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Quispamsis, NB
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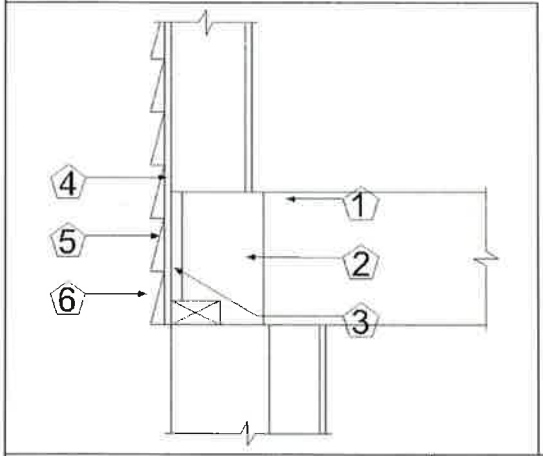
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with 5" min. 1/2lb foam
Layer 3.	1-1/8" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.68347	15.93277
Layer 3	0.280035	1.590112
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.55	20.2



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.0795
RSI Cavity	3.25
RSI Total	2.68347

Nominal R Value: R22.5	Actual R Value: R20.2	Actual U Value: 0.0495
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H11

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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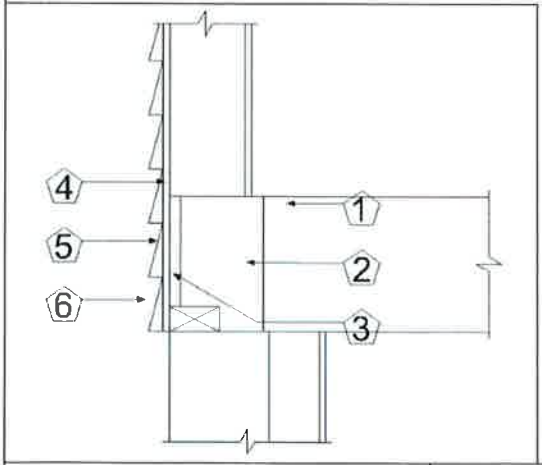
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.3302	1.874962
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.68	20.9



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.9	Actual U Value: 0.0478
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H12

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding, inside with 1/2" gypsum board.

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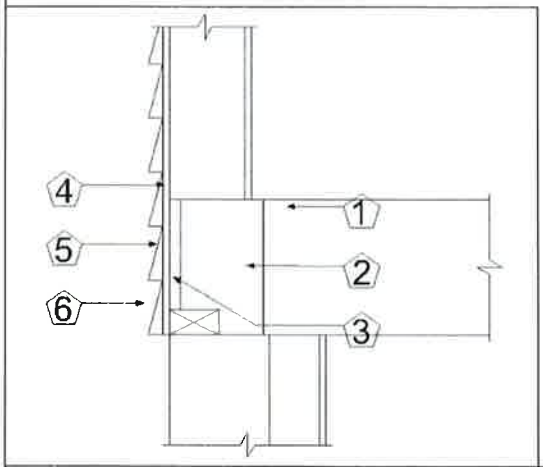
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.4445	2.523988
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.79	21.5



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R21.5	Actual U Value: 0.0465
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H14

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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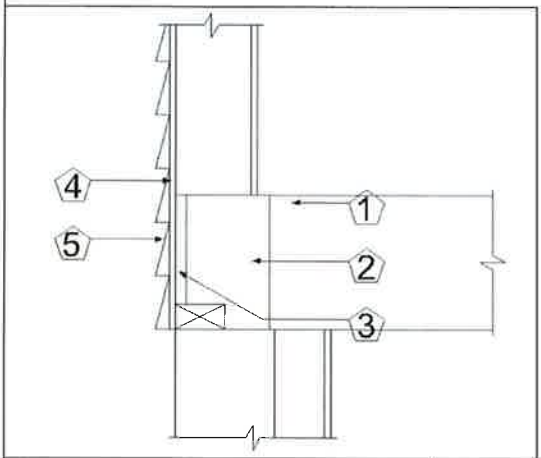
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.3302	1.874962
Layer 5	0.03	0.170348
Total	3.57	20.3



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.3	Actual U Value: 0.0493
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H15

Description: I joists at 12" minimum on center with fiberglass cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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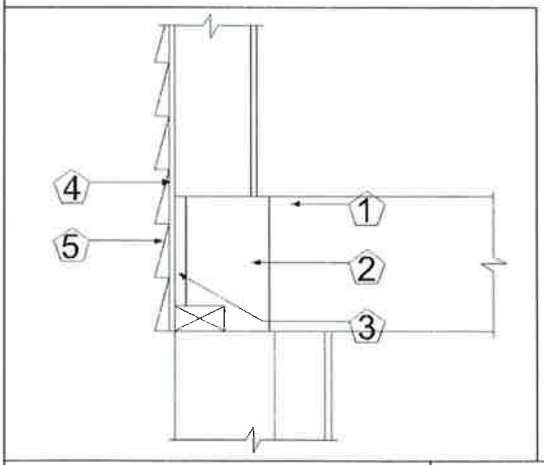
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	I joist@ 12" o/c with R20 fiberglass batt
Layer 3.	1-1/8" min. rim joist
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	15.932774
Layer 3	0.280035	1.590112
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.68	20.9



Parallel Heat Flow Calculation

Framing %	10.5
Cavity %	89.5
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.9	Actual U Value: 0.0478
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H17

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding.

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Building Inspection Department
12 Landing Court
P.O. Box 21085
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E2E 4Z4

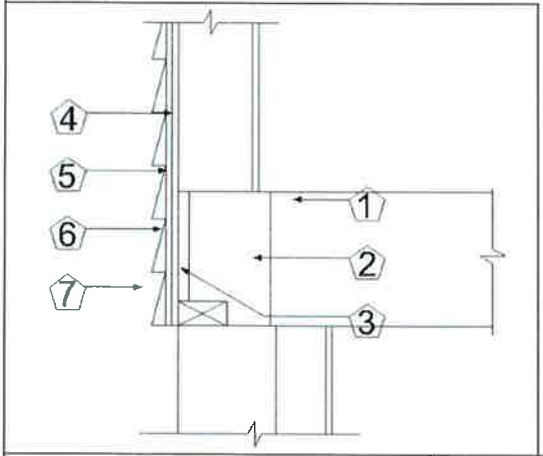
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.58	20.3



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.3	Actual U Value: 0.0493
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H18

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
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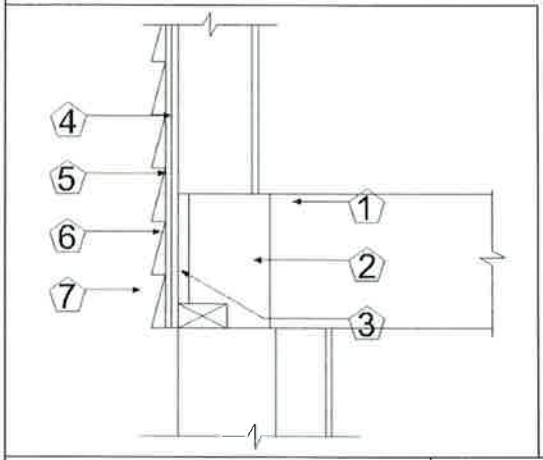
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.69	21.0



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R21.0	Actual U Value: 0.0476
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H20

Description: Wood joists at 12" minimum on center with 4" 2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding.

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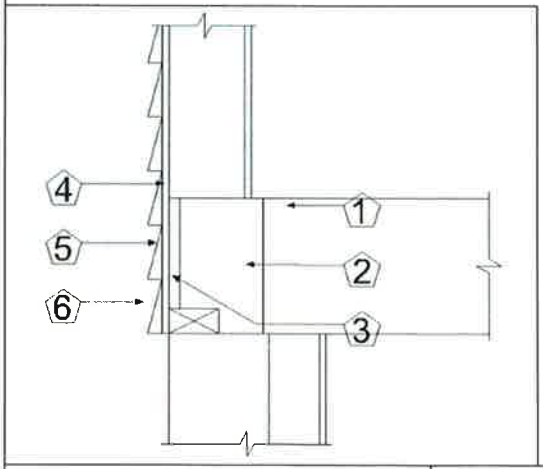
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with 4" min. 2lb foam
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Non-insulating vinyl siding
Layer 7.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.339696	13.28541
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.11	0.624609
Layer 7	0.03	0.170348
Total	3.36	19.1



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	0.8636
RSI Cavity	3.6
RSI Total	2.339696

Nominal R Value: R22.5	Actual R Value: R19.1	Actual U Value: 0.0524
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H21

Description: Wood joists at 12" minimum on center with 5.5" 1/2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with vinyl siding.

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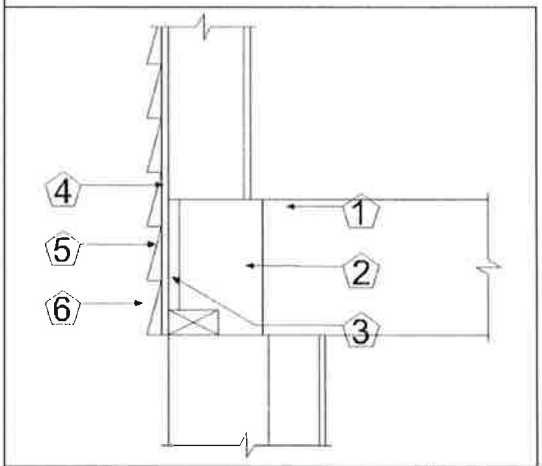
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with 5.5" min. 1/2lb foam
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.397879	13.615788
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.09	17.5



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.068705
RSI Cavity	3.2175
RSI Total	2.17989

Nominal R Value: R22.5	Actual R Value: R17.5	Actual U Value: 0.0571
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H22

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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Quispamsis, NB
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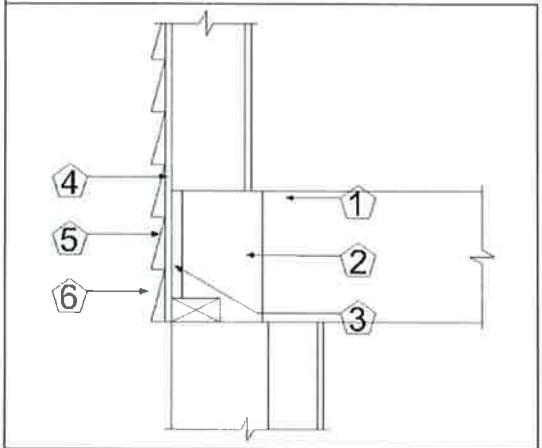
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.47	19.7



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R19.7	Actual U Value: 0.0508
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H23

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 7/16" OSB sheathing and 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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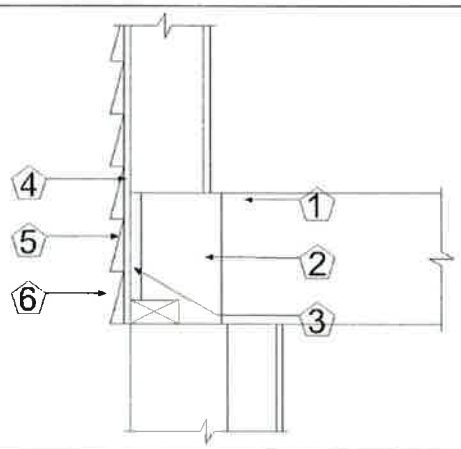
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. extruded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.4445	2.523988
Layer 6	0.03	0.170348
Total	3.58	20.3



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.3	Actual U Value: 0.0493
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H25

Description: Wood joists at 12" minimum on center with 4" 2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding.

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Building Inspection Department
12 Landing Court
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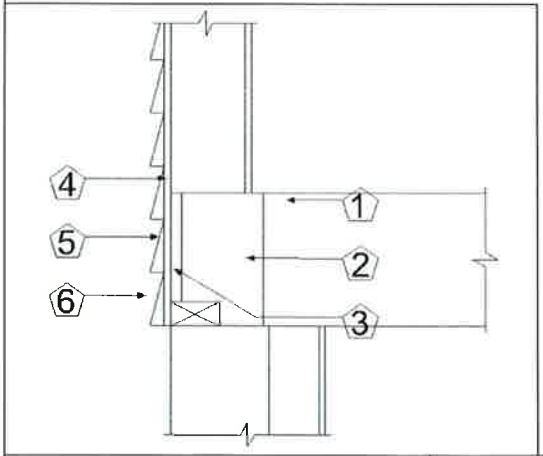
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with 4" min. 2lb foam
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	1/2" min. Expanded polystyrene
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.339696	16.74904
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 5	0.3302	1.874962
Layer 6	0.03	0.170348
Total	3.25	18.5



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	0.8636
RSI Cavity	3.6
RSI Total	2.339696

Nominal R Value: R22.5	Actual R Value: R18.5	Actual U Value: 0.0541
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H26

Description: Wood joists at 12" minimum on center with 4" 1/2lb spray polyurethane foam cavity insulation. 7/16" OSB sheathing. Exterior finished with back-ventilated cladding such as wood or masonry.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

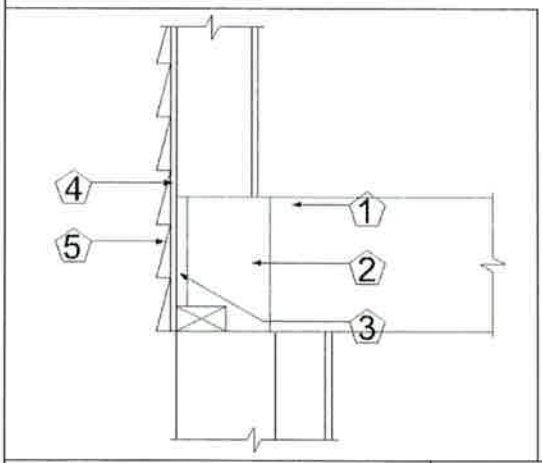
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with 4" min. 1/2lb foam
Layer 3.	1-1/2" min. rim joist
Layer 4.	7/16" min. OSB
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.4221	13.75332
Layer 3	0.32385	1.838905
Layer 4	0.108903	0.618377
Layer 6	0.03	0.170348
Total	3.00	17.0



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.0795
RSI Cavity	3.25
RSI Total	2.4221

Nominal R Value: R22.5	Actual R Value: R17.0	Actual U Value: 0.0588
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 X	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H27

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with vinyl siding.

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Building Inspection Department
12 Landing Court
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Quispamsis, NB
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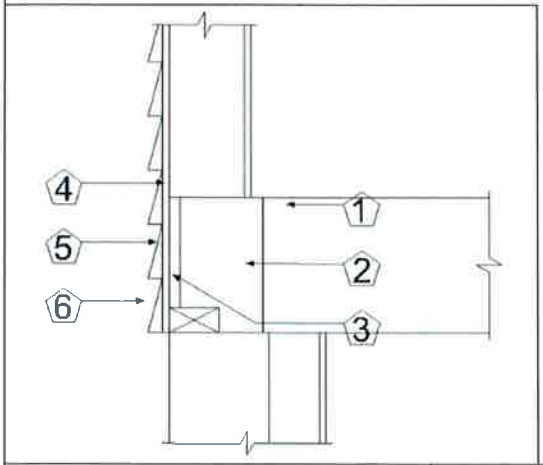
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.3302	1.874962
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.47	19.7



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R19.7	Actual U Value: 0.0508
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H28

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with vinyl siding.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
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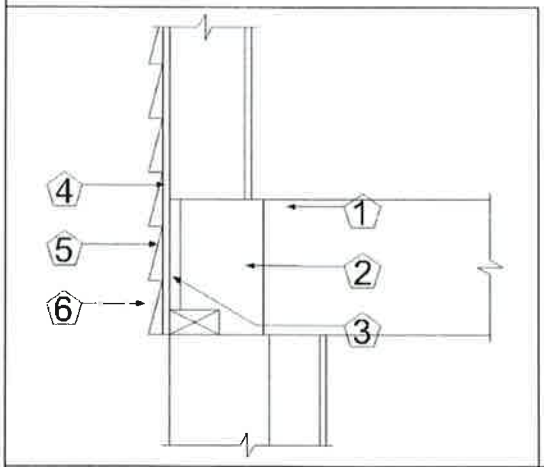
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Non-insulating vinyl siding
Layer 6.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.4445	2.523988
Layer 5	0.11	0.624609
Layer 6	0.03	0.170348
Total	3.58	20.3



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R20.3	Actual U Value: 0.0493
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H30

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 1/2" expanded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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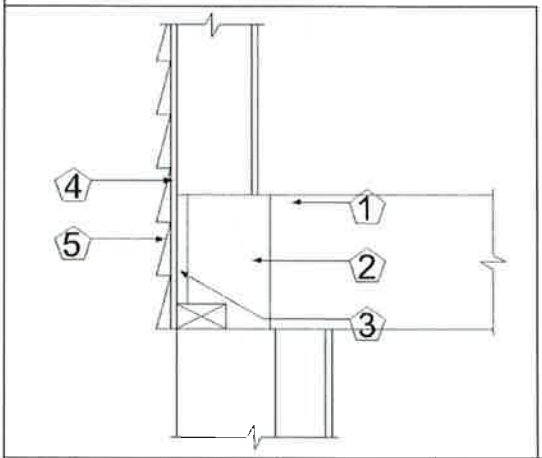
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.3302	1.874962
Layer 5	0.03	0.170348
Total	3.36	19.1



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R19.1	Actual U Value: 0.0524
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Joist Header Assembly

Assembly #TOQ-H31

Description: Wood joists at 12" minimum on center with fiberglass cavity insulation. 1/2" extruded polystyrene continuous insulation. Exterior finished with back-ventilated cladding such as wood or masonry.

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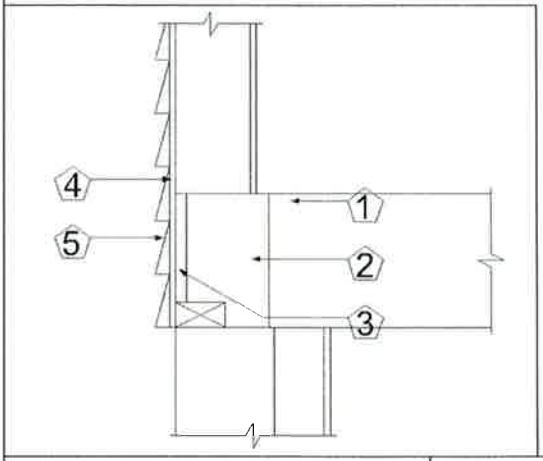
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	Wood joists @ 12" o/c with R20 fiberglass
Layer 3.	1-1/2" min. rim joist
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.805924	14.49768
Layer 3	0.32385	1.838905
Layer 4	0.4445	2.523988
Layer 5	0.03	0.170348
Total	3.47	19.7



Parallel Heat Flow Calculation

Framing %	17
Cavity %	83
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.805924

Nominal R Value: R22.5	Actual R Value: R19.7	Actual U Value: 0.0508
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R17.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B01

Description: 8" concrete wall with 1.5" expanded polystyrene continuous insulation and 2x4 studs at 24" on center with fiberglass or cellulose cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

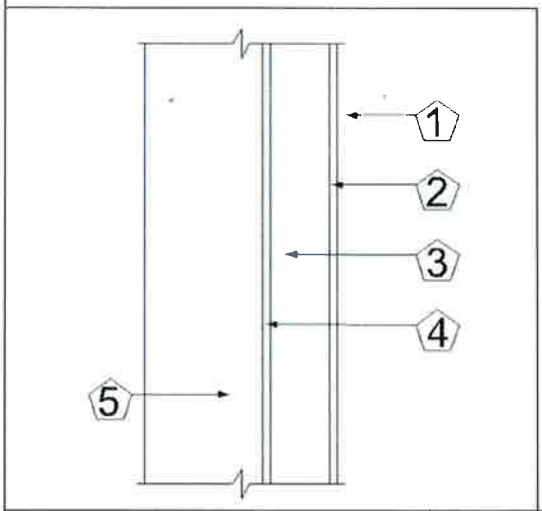
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X4 @ 24" o/c with R12 fiberglass batt
Layer 4. 1.5" min. expanded polystyrene
Layer 5. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.711275	9.71707
Layer 4	0.9906	5.624887
Layer 5	0.08128	0.461529
Total	2.98	16.9



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	0.75565
RSI Cavity	2.11
RSI Total	1.711275

Nominal R Value: R18	Actual R Value: R16.9	Actual U Value: 0.0592
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B02

Description: 8" concrete wall with 1.5" extruded polystyrene continuous insulation and 2x4 studs at 24" on center with fiberglass or cellulose cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

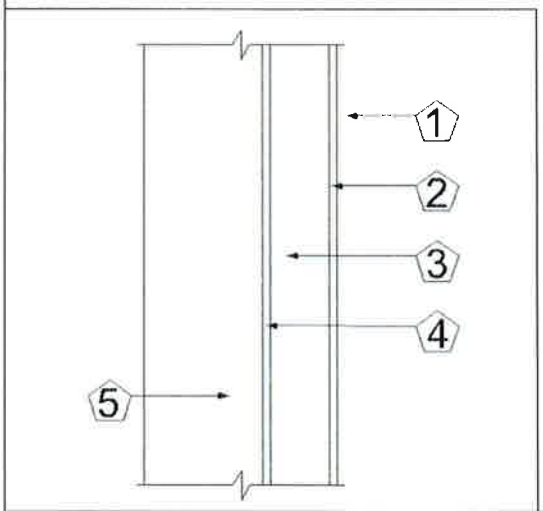
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X4 @ 24" o/c with R12 fiberglass batt
Layer 4.	1.5" min. extruded polystyrene
Layer 5.	8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.711275	9.71707
Layer 4	1.3335	7.571964
Layer 5	0.08128	0.461529
Total	3.32	18.9



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	0.75565
RSI Cavity	2.11
RSI Total	1.711275

Nominal R Value: R19.5	Actual R Value: R18.9	Actual U Value: 0.0529
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B03

Description: 8" concrete wall with 1/2" expanded polystyrene continuous insulation and 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
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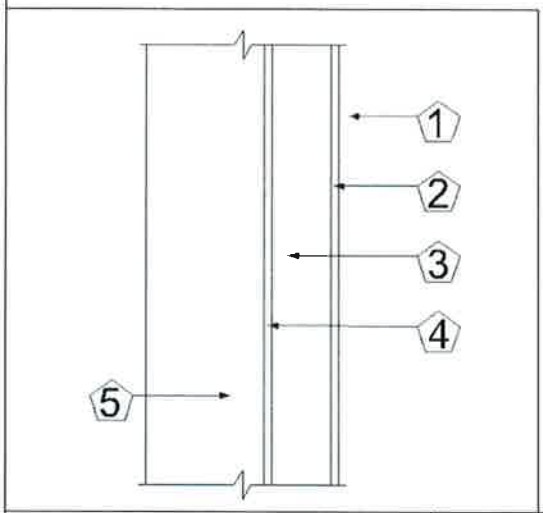
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. expanded polystyrene
Layer 5.	8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.703014	15.34843
Layer 4	0.3302	1.874962
Layer 5	0.08128	0.461529
Total	3.31	18.8



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2.703014

Nominal R Value: R22	Actual R Value: R18.8	Actual U Value: 0.0532
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B04

Description: 8" concrete wall with 1/2" extruded polystyrene continuous insulation and 2x6 studs at 24" on center with fiberglass or cellulose cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
12 Landing Court
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Quispamsis, NB
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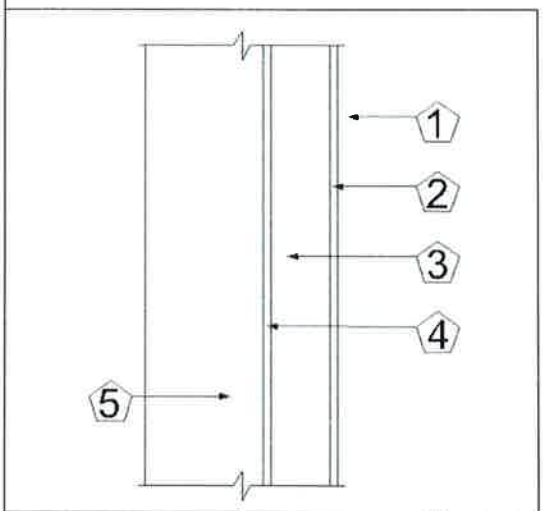
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	2X6 @ 24" o/c with R20 fiberglass batt
Layer 4.	1/2" min. extruded polystyrene
Layer 5.	8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.703014	15.34843
Layer 4	0.4445	2.523988
Layer 5	0.08128	0.461529
Total	3.43	19.5



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.18745
RSI Cavity	3.34
RSI Total	2. 703014

Nominal R Value: R22.5	Actual R Value: R19.5	Actual U Value: 0.0513
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B05

Description: 8" concrete wall with 2x6 studs at 24" on center with 4.5" 2lb sprayed polyurethane foam cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

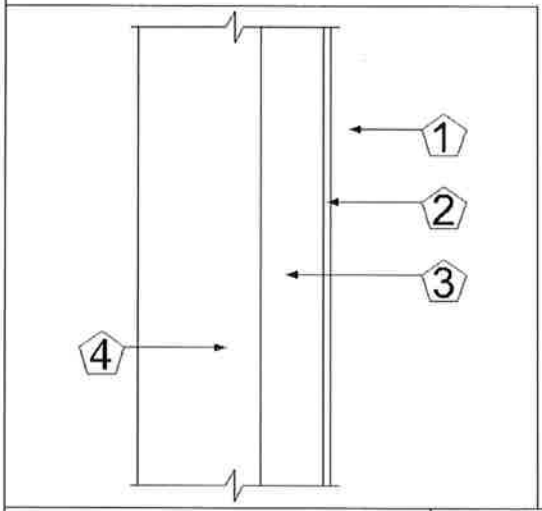
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X6 @ 24" o/c with 4.5" min. 2lb foam
Layer 4. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.887186	16.394201
Layer 4	0.08128	0.461529
Total	3.17	18.0



Parallel Heat Flow Calculation

Framing %	13	
Cavity %	87	
RSI Framing	0.97155	0.2159
RSI Cavity	3.6476	0.18
RSI Total	2.887186	

Nominal R Value: R24.5	Actual R Value: R18.0	Actual U Value: 0.0555
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B06

Description: 8" concrete wall with 2x6 studs at 24" on center with 5.5" 1/2lb sprayed polyurethane foam cavity insulation. Interior finished with 1/2" gypsum board.

Town of Quispamsis
Building Inspection Department
12 Landing Court
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Quispamsis, NB
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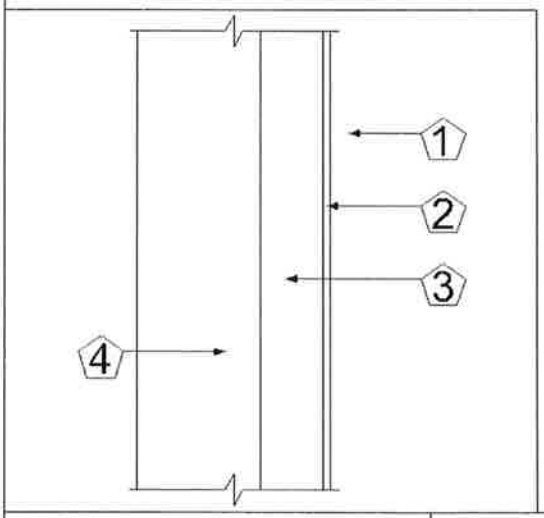
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2X6 @ 24" o/c with 5.5" min. 1/2lb foam
Layer 4. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	2.834186	16.28092
Layer 4	0.08128	0.461529
Total	3.11	17.7



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.18745
RSI Cavity	3.575
RSI Total	2.834186

Nominal R Value: R20.4	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B07

Description: 8" Concrete wall with 3.5" 2lb sprayed polyurethane foam insulation.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

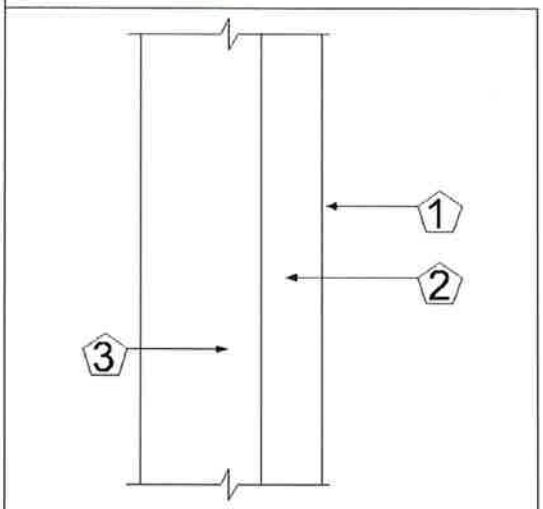
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 3.5" min. 2lb foam
Layer 3. 8" concrete wall

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	3.15	17.88653
Layer 3	0.08128	0.461529
Total	3.35	19.0



Nominal R Value: R18	Actual R Value: R19.0	Actual U Value: 0.0526
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B08

Description: 8" Concrete wall with 4.5" 1/2lb sprayed polyurethane foam insulation.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

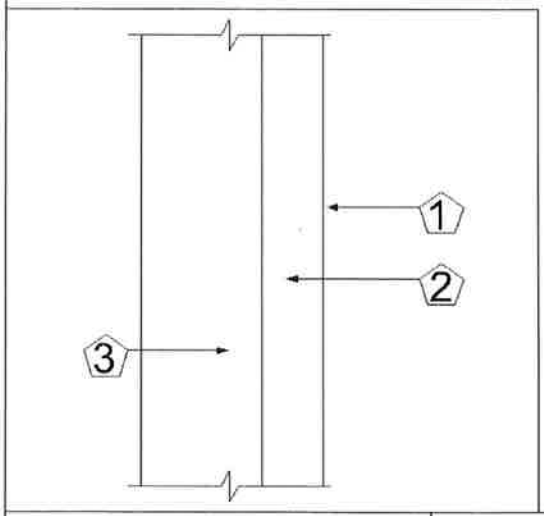
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 4.5" min 1/2lb foam
Layer 3. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.925	16.60892
Layer 3	0.08128	0.461529
Total	3.12	17.7



Nominal R Value: R16.7	Actual R Value: R17.7	Actual U Value: 0.0565
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B09

Description: 8" concrete wall with 2x4 studs placed 2" from concrete wall at 24" on center with fiberglass or cellulose cavity insulation.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

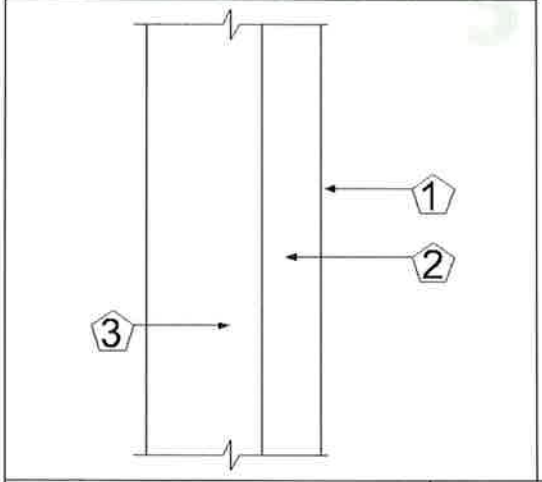
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 2X4 @ 24" o/c with R24 fiberglass batt
Layer 3. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.765645	15.704060
Layer 3	0.08128	0.461529
Total	2.97	16.9



Parallel Heat Flow Calculation

Framing %	13	
Cavity %	87	
RSI Framing	0.75567	0.18
RSI Cavity	2.69	1.54
RSI Total	2.765645	

Nominal R Value: R24	Actual R Value: R16.9	Actual U Value: 0.0591
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B10

Description: 8" concrete wall with 2x6 studs at 16" on center with fiberglass or cellulose cavity insulation.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

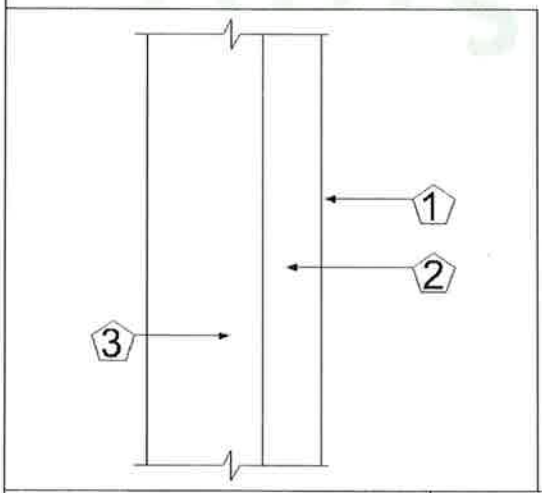
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 2X6 @ 16" o/c with R22 fiberglass batt
Layer 3. 8" min. concrete

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	2.84255	16.140746
Layer 3	0.08128	0.461529
Total	3.04	17.3



Parallel Heat Flow Calculation

Framing %	16
Cavity %	84
RSI Framing	1.18745
RSI Cavity	3.87
RSI Total	2.84255

Nominal R Value: R24	Actual R Value: R17.3	Actual U Value: 0.0578
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Below Grade Assembly

Assembly #TOQ-B11

Description: Description: ICF wall consisting of 4" concrete core with 2.5" expanded polystyrene each side. Interior finished with 1/2" gypsum board.

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Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

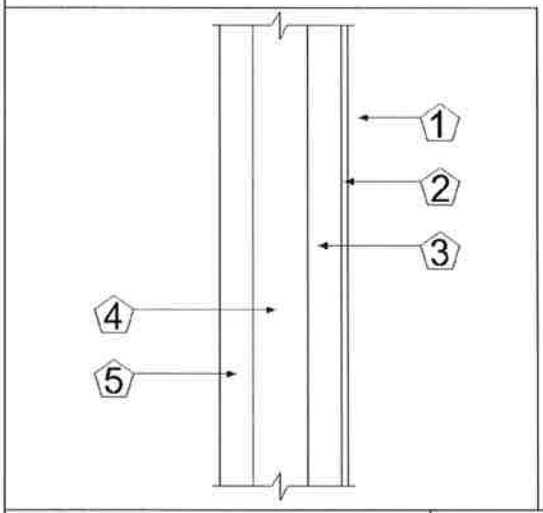
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. 2.5" min. expanded polystyrene
Layer 4. 4" min. concrete
Layer 5. 2.5" min. expanded polystyrene

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.12	0.681392
Layer 2	0.07747	0.439895
Layer 3	1.651	9.374812
Layer 4	0.04064	0.230765
Layer 5	1.651	9.374812
Total	3.54	20.1



Nominal R Value: R20	Actual R Value: R20.1	Actual U Value: 0.0498
Required R Value with HRV: R16.9 ✓	Required R Value Without HRV: R16.9 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Cathedral Ceiling Assembly

Assembly #TOQ-C01

Description: Cathedral ceiling with 2x4 trusses spaced at 24" o/c with 7.5" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

Town of Quispamsis
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12 Landing Court
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Quispamsis, NB
E2E 4Z4

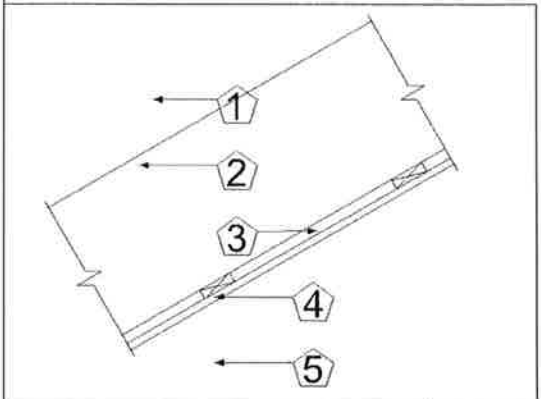
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2X4 trusses @ 24" o/c with 7.5" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.1619	0.91945
Layer 4	4.496629	25.53304
Layer 5	0.03	0.17035
Total	4.88	27.7



Parallel Heat Flow Calculation

Framing %	7
Cavity %	93
RSI Framing	0.75565
RSI Cavity	2.2225
RSI Total	1.956629

Nominal R Value: R27	Actual R Value: R27.7	Actual U Value: 0.0361
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Cathedral Ceiling Assembly

Assembly #TOQ-C02

Description: Cathedral ceiling with 2x12 roof joists at 16" on center with R31 fiberglass batt. Ceiling finished with 1/2" gypsum board over strapping.

Town of Quispamsis
Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

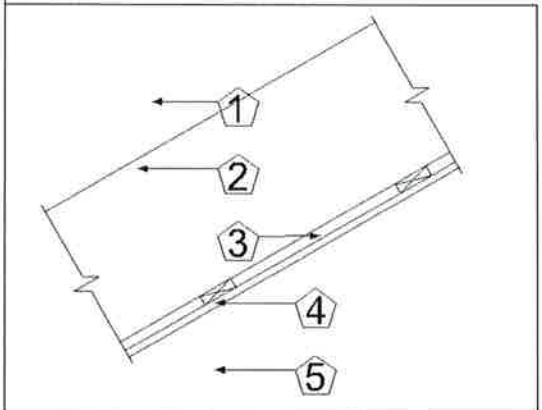
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	1/2" min. gyprock
Layer 3.	Strapping
Layer 4.	2X10 roof joist @ 16" with R31 fiberglass batt
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.1619	0.91945
Layer 4	4.455616	26.85
Layer 5	0.03	0.17035
Total	4.83	27.4



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.997075
RSI Cavity	5.46
RSI Total	4.455616

Nominal R Value: R37.7	Actual R Value: R27.4	Actual U Value: 0.0365
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Flat Ceiling Assembly

Assembly #TOQ-F01

Description: Flat ceiling with 2x4 trusses spaced at 24" o/c with 14" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

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12 Landing Court
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E2E 4Z4

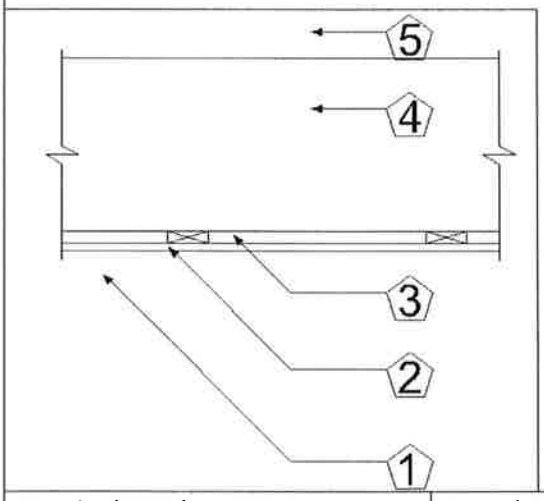
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2X4 trusses @ 24" o/c with 14" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.15	0.851739
Layer 4	8.498935	48.259188
Layer 5	0.03	0.170348
Total	8.87	50.4



Parallel Heat Flow Calculation

Framing %	11
Cavity %	89
RSI Framing	0.75565
RSI Cavity	2.2225
RSI Total	1.956629

Nominal R Value: R50.5	Actual R Value: R50.4	Actual U Value: 0.0198
Required R Value with HRV: R49.2 ✓	Required R Value Without HRV: R49.2 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Flat Ceiling Assembly

Assembly #TOQ-F02

Description: Flat ceiling with 2x6 ceiling joist spaced at 16" o/c with 14.5" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

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Building Inspection Department
12 Landing Court
P.O. Box 21085
Quispamsis, NB
E2E 4Z4

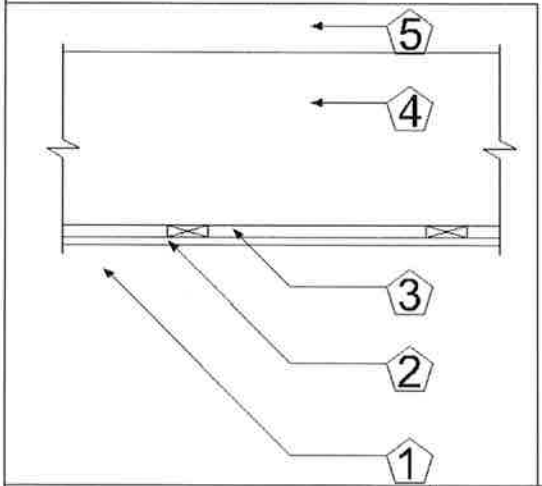
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2x6 joist @ 16" o/c with 14.5" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.15	0.851739
Layer 4	8.503751	48.28653
Layer 5	0.03	0.170348
Total	8.87	50.4



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.18745
RSI Cavity	3.4925
RSI Total	2.788751

Nominal R Value: R52.2	Actual R Value: R50.4	Actual U Value: 0.0198
Required R Value with HRV: R49.2 ✓	Required R Value Without HRV: R49.2 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Flat Ceiling Assembly

Assembly #TOQ-F03

Description: Flat ceiling with 2x8 ceiling joist spaced at 16" o/c with 15" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

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Building Inspection Department
12 Landing Court
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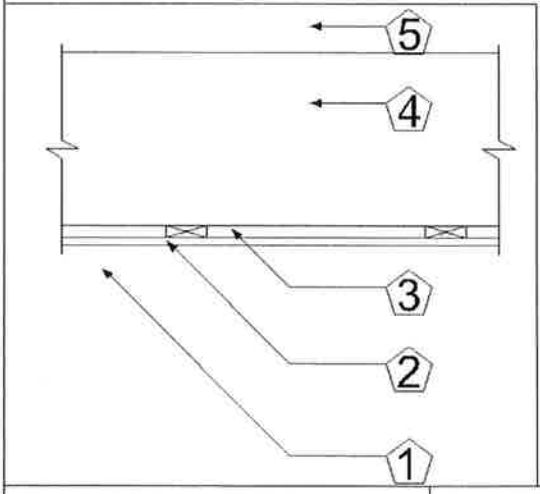
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2x8 joist @ 16" o/c with 15" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.15	0.91945
Layer 4	8.59733	48.8179
Layer 5	0.03	0.170348
Total	8.96	50.9



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.565275
RSI Cavity	4.60375
RSI Total	3.67608

Nominal R Value: R52.2	Actual R Value: R50.9	Actual U Value: 0.0196
Required R Value with HRV: R49.2 ✓	Required R Value Without HRV: R49.2 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Flat Ceiling Assembly

Assembly #TOQ-F04

Description: Flat ceiling with 2x6 ceiling joist spaced at 24" o/c with 14.5" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

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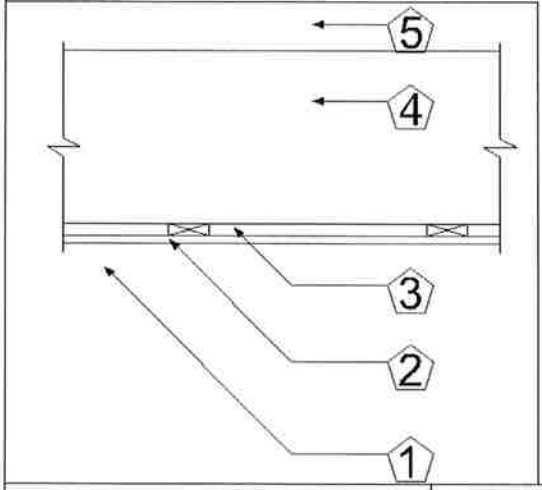
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2x6 joist @ 24" o/c with 14.5" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.15	0.851739
Layer 4	8.592969	48.79314
Layer 5	0.03	0.170348
Total	8.96	50.9



Parallel Heat Flow Calculation

Framing %	11
Cavity %	89
RSI Framing	1.18745
RSI Cavity	3.4925
RSI Total	2.877969

Nominal R Value: R50.4	Actual R Value: R50.9	Actual U Value: 0.0196
Required R Value with HRV: R49.2 ✓	Required R Value Without HRV: R49.2 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Flat Ceiling Assembly

Assembly #TOQ-F05

Description: Flat ceiling with 2x8 ceiling joist spaced at 24" o/c with 14.5" blown cellulose or fiberglass. Ceiling finished with 1/2" gypsum board over strapping.

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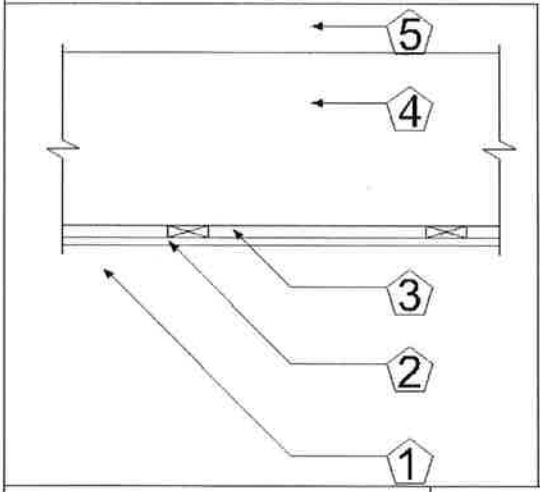
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 1/2" min. gyprock
Layer 3. Strapping
Layer 4. 2x8 joist @ 24" o/c with 14.5" min. blown cellulose
Layer 5. Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.11	0.624609
Layer 2	0.07747	0.439895
Layer 3	0.15	0.851739
Layer 4	8.397436	47.68285
Layer 5	0.03	0.170348
Total	8.76	49.7



Parallel Heat Flow Calculation

Framing %	11
Cavity %	89
RSI Framing	1.565275
RSI Cavity	4.60375
RSI Total	3.793686

Nominal R Value: R52.3	Actual R Value: R49.7	Actual U Value: 0.0201
Required R Value with HRV: R49.2 ✓	Required R Value Without HRV: R49.2 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Basement Slab Assembly

Assembly #TOQ-S01

Description: 3" concrete slab over 2" extruded polystyrene.

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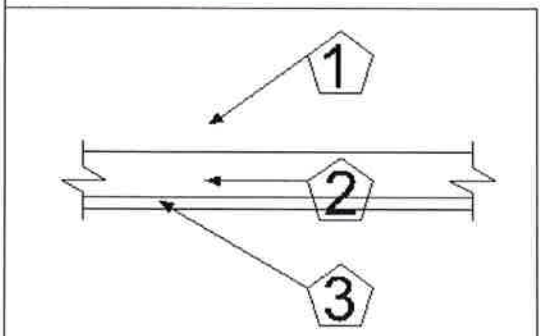
Layers listed from interior to exterior:

Layer 1. Inside air film
Layer 2. 3" min. concrete slab
Layer 3. 2" min. extruded polystyrene

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.03048	0.173073
Layer 3	1.778	10.09595
Total	1.97	11.2



Nominal R Value: R10	Actual R Value: R11.2	Actual U Value: 0.0893
Required R Value with HRV: R11.1 ✓	Required R Value Without HRV: R11.1 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E01

Description: Exposed floor with wood I joist on 16" centers with R31 fiberglass batt cavity insulation. Inside sheathed with 5/8" OSB and exterior finished with vinyl soffit.

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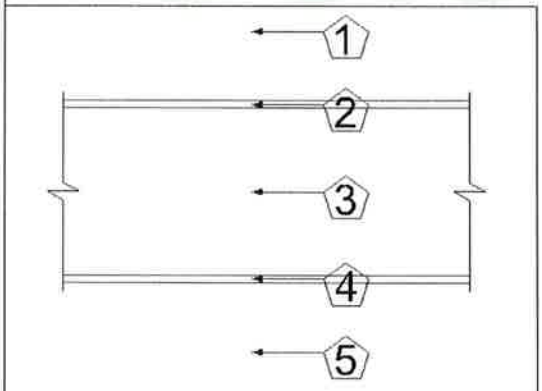
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	I joist @ 16" o/c with R31 fiberglass batt
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.799555	27.25314
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	5.26	29.9



Parallel Heat Flow Calculation

Framing %	9
Cavity %	91
RSI Framing	2.159
RSI Cavity	5.46
RSI Total	4.799555

Nominal R Value: R31	Actual R Value: R29.9	Actual U Value: 0.0334
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E02

Description: Exposed floor with wood I joist on 16" centers with 6.5" 2lb sprayed polyurethane foam cavity insulation. Inside sheathed with 5/8" OSB and exterior finished with vinyl soffit.

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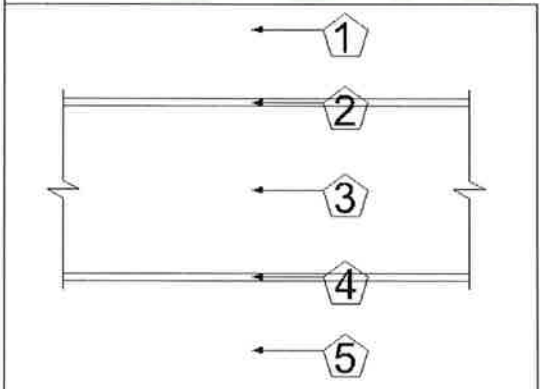
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	I joist @ 16" o/c with 6.5" min. 2lb foam
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.723545	25.84696
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	5.18	29.5



Parallel Heat Flow Calculation

Framing %	9	
Cavity %	91	
RSI Framing	1.40335	0.6477
RSI Cavity	5.85	0.16
RSI Total	4.723545	

Nominal R Value: R31	Actual R Value: R29.5	Actual U Value: 0.0339
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E03

Description: Exposed floor with wood I joist on 16" centers with 8" 1/2lb sprayed polyurethane foam cavity insulation. Inside sheathed with 5/8" OSB and exterior finished with vinyl soffit.

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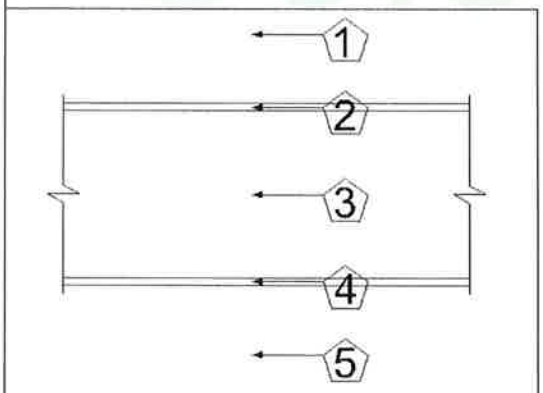
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	I joist @ 16" o/c with 8" min. 1/2 lb foam
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.570835	25.954403
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	5.03	28.6



Parallel Heat Flow Calculation

Framing %	9	
Cavity %	91	
RSI Framing	1.7272	0.32385
RSI Cavity	5.2	0.16
RSI Total	4.570835	

Nominal R Value: R31	Actual R Value: R28.6	Actual U Value: 0.0350
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E04

Description: Exposed floor with dimensional lumber joist on 16" centers with R31 fiberglass batt cavity insulation. Inside sheathed with 5/8" OSB and exterior finished with vinyl soffit.

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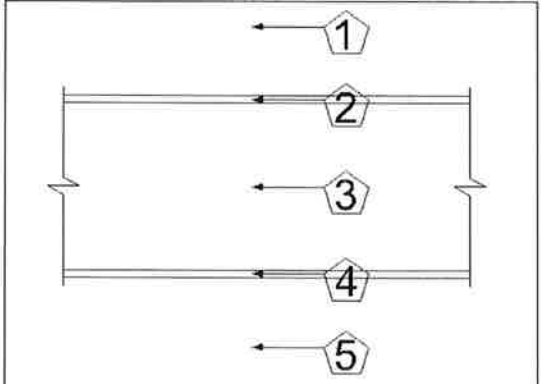
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	Lumber joist @ 16" o/c with R31 fiberglass batt
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.455616	25.30016
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	4.91	27.9



Parallel Heat Flow Calculation

Framing %	13
Cavity %	87
RSI Framing	1.997075
RSI Cavity	5.46
RSI Total	4.455616

Nominal R Value: R31	Actual R Value: R27.9	Actual U Value: 0.0358
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E05

Description: Exposed floor with dimensional lumber joist on 16" centers with 7" 2lb sprayed polyurethane foam cavity insulation. Inside sheathed with minimum 5/8" OSB and exterior finished with vinyl soffit.

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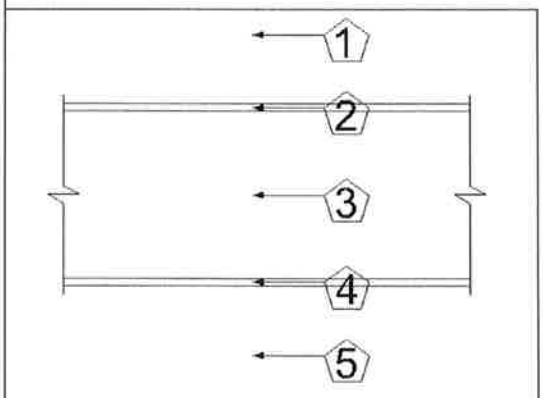
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	Lumber joist @ 16" o/c with 7" min. 2lb foam
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.637298	26.331798
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	5.01	28.9



Parallel Heat Flow Calculation

Framing %	13	
Cavity %	87	
RSI Framing	1.5113	0.485775
RSI Cavity	6.3	0.16
RSI Total	4.637298	

Nominal R Value: R31	Actual R Value: R28.9	Actual U Value: 0.0346
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Exposed Floor Assembly

Assembly #TOQ-E06

Description: Exposed floor with dimensional lumber joist on 16" centers minimum with 8.5" minimum low density sprayed polyurethane foam cavity insulation. Inside sheathed with minimum 5/8" OSB and exterior finished with vinyl soffit.

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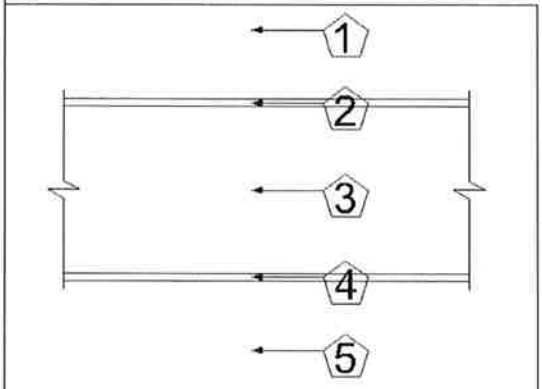
Layers listed from interior to exterior:

Layer 1.	Inside air film
Layer 2.	5/8" min. OSB
Layer 3.	Lumber joist @ 16" o/c with 8.5" min.1/2lb foam
Layer 4.	Vinyl soffit
Layer 5.	Outside air film

*Components with no insulation value are not detailed here

Isothermal Planes Calculation

	RSI Value	R Value
Layer 1	0.16	0.908522
Layer 2	0.155575	0.883396
Layer 3	4.540354	25.781324
Layer 4	0.11	0.624609
Layer 5	0.03	0.170348
Total	5.00	28.4



Parallel Heat Flow Calculation

Framing %	13	
Cavity %	87	
RSI Framing	1.83515	0.161925
RSI Cavity	5.525	0.16
RSI Total	4.540354	

Nominal R Value: R31	Actual R Value: R28.4	Actual U Value: 0.0352
Required R Value with HRV: R26.5 ✓	Required R Value Without HRV: R26.5 ✓	

Note: Care was taken when calculating the above assembly's effective R value; however, it may not be free of errors. For this reason, this assembly is only intended to be used when submitting a building permit application to the Town of Quispamsis for compliance with the energy efficiency components of the code. Submitting the above to other Authorities Having Jurisdiction or use as construction documents is done at your own risk.

Non-Standard Assembly

Instructions: All non-standard assemblies must use a form similar to the form below. Please complete the form below and provide any additional information such as specifications for products where insulation values differ than those used in Table-A.9.36.2.4(1)D. RSI values must be calculated in accordance with ASTM C177 or ASTM C518 at a temperature of 22 ±2˚C.

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Material	Thickness (mm)	RSI/mm	RSI
		Total:	

Sketch

Composite RSI value calculation for thermal bridging:

$$\frac{\text{\% Area of framing:}}{\text{RSI of framing:}} = \text{“A”}$$

$$\frac{\text{\% Area of cavity:}}{\text{RSI of cavity:}} = \text{“B”}$$

$$\frac{100}{A + B} =$$

Nominal R Value:	Actual R Value:	Actual U Value: