

Building with ROCKWOOL Stone Wool Insulation in Wildfire-Prone Areas

Wildfires are an escalating problem in North America, significantly impacting both the United States and Canada. According to the National Interagency Coordination Center (NICC), the United States experienced an average of 58,700¹ wildfires annually from 2018 to 2023, affecting 6.8 million acres and costing between \$394 billion and \$893 billion each year². In 2023 alone, U.S. wildfires resulted in the loss of 4,318 structures³. Canada also faced severe challenges during its 2023 wildfire season, which was the most catastrophic on record. Over 6,000 fires burned more than 37 million acres (15 million hectares) of land—more than double the previous record⁴. Typically, Canada sees around 6 million acres (2.5 million hectares) burned annually.

These alarming statistics highlight the growing threat of wildfires across North America and underscore the urgent need for effective mitigation strategies. Consequently, in response to this escalating concern, many municipalities have begun implementing fire-resistant construction as part of their building code requirements in areas where structures are located near or within fire-prone lands.

Indeed, as communities and recreational properties have grown in proximity to forested regions, their exposure to wildfires has increased significantly. Furthermore, climate change has exacerbated these risks, resulting in longer fire seasons and more frequent, severe fires in regions that were previously less affected.

Evolving Codes and Guidelines

The concept of Wildland-Urban Interface (WUI) areas emerged in the 1950s, initially focusing on water policy conflicts between rural interests and the growing urban population centers in California. However, it was not until 1987 that the U.S. Department of Agriculture launched a research initiative titled “The Wildland-Urban Interface,” marking the first time WUI areas were studied in relation to fire research.

WUI areas are defined as geographical zones where structures and other human developments meet or intermingle with wildland or vegetative fuels.

While various municipalities had established limitations in these areas, it wasn't until 2003 that the International Code Council (ICC) developed the International Wildland-Urban Interface Code (IWUIC), which sets minimum requirements for land use and the built environment in designated WUI areas, based on data collected from tests, fire incidents, technical reports and mitigation strategies from around the world.

Similarly, in Canada, historical wildfire events such as the 2016 Horse River Fire in Fort McMurray, Alberta—the costliest insured loss event in the country's history—and the increasing risks associated with the expansion of urban areas into fire-prone wildlands, have highlighted the urgent need for coordinated action. In response, the National Research Council of Canada (NRC) and Infrastructure Canada developed the National Guide for Wildland-Urban Interface Fires. The Guide provides comprehensive, informed guidance, drawing on international best practices and developed with input from an international technical committee of experts.



This document was authored in 2024 to serve as a guide to some of these regulations, outlining their applicability and offering sample construction details that generally comply with these requirements. In recognition of the rapid development and ever-changing nature of the building industry's knowledge, applicable code requirements and industry guidance, it is recommended that the latest version of this document be accessed at www.rockwool.com, and that the latest versions of codes and guidelines applicable to the project's jurisdiction should be referred to.

Comparing U.S. and Canadian Approaches

Wildfire risk mitigation in WUI areas is addressed through the IWUIC and other codes and standards in the U.S., as well as the National Guide for Wildland-Urban Interface Fires in Canada. Although these frameworks target the same goal, their approaches differ.

The IWUIC provides an enforceable set of standards that states or local jurisdictions can adopt in full or in part. It outlines specific regulations, offering clear, mandated requirements for reducing wildfire risks in WUI areas, using both prescriptive and performance-related provisions.

Since its establishment by the International Code Council (ICC), the International Wildland-Urban Interface Code (IWUIC) has been adopted, either fully or partially, by nearly 200 jurisdictions across 24 states⁵. Notably, there is full state-level adoption in Colorado, Washington, and Nevada. Furthermore, an Executive Order mandates that all new federal buildings exceeding 5,000 square feet in Wildland-Urban Interface (WUI) areas must adhere to the IWUIC⁶.

In addition to these adoptions, certain states, such as California and Oregon, have developed more stringent codes tailored to their unique wildfire conditions, thereby exceeding the standards set by the IWUIC.



In contrast, Canada does not have a rigid Wildland-Urban Interface (WUI) code. Provinces, territories, and municipalities can use the National Guide, which serves as a best-practices framework rather than an enforceable code. The National Guide aims to enhance life safety and property protection by breaking the WUI fire disaster sequence at various stages. It provides flexible, prescriptive, and performance-based guidance tailored to local conditions, allowing communities to adapt measures based on regional needs. Emphasizing collaboration and local stakeholder input, the guide promotes strategies for hazard assessment, property protection, community resilience, and emergency planning to mitigate WUI fire effects. Its goal is to enhance resilience to wildfires and reduce the potential for catastrophic losses by establishing guidelines and construction standards for WUI fire risks in Canada.

However, this guide has not been widely applied. Instead, various jurisdictions, including provinces, have embraced the voluntary FireSmart™ program from the Canadian Interagency Forest Fire Centre. The FireSmart™ program is a comprehensive initiative designed to mitigate the risk of wildfires and educate residents and stakeholders about the potential impacts on communities and critical infrastructure. It provides a framework to increase neighborhood resilience and minimize the negative effects of wildfires through various programs, research, resources, and tools.

Comprehensive Mitigation Strategies

WUI codes and guidelines, regardless of jurisdiction, are centered on reducing wildfire risks and protecting communities. They encompass key elements that reflect a common understanding of the essential strategies needed to safeguard lives, property, and communities from the threat of wildfires.

A critical component of wildfire mitigation is the creation of defensible space and effective vegetation management. This involves maintaining a buffer zone around structures by managing vegetation to reduce fuel loads. Such measures help to slow the spread of wildfires and provide an essential defense line for firefighting efforts.

Building construction standards also play a vital role in minimizing the risk of structure ignition during wildfires. These standards emphasize the use of ignition-resistant materials and construction techniques to enhance the survivability of structures in fire-prone areas.

Key aspects include roofing materials, which are particularly vulnerable during wildfires. Class A rated roof coverings significantly reduce the risk of ignition from embers or radiant heat. Proper installation, including ignition-resistant membranes and decks when required, is fundamental for maximum protection.

Eaves, soffits, and roof vents are common entry points for embers. To mitigate this risk, non-combustible materials and ember-resistant vents with fine mesh screening can be used to prevent embers from entering and igniting combustible materials within soffit and attic spaces.

Similarly, siding and exterior walls made from non-combustible or ignition-resistant materials, such as stucco, fiber cement, brick, or treated wood, enhance ignition resistance and help prevent the propagation and development of flames that could extend into the buildings.

For windows and doors, multi-pane tempered glass provides greater heat resistance compared to single-pane options. Fire-rated doors, solid-core wood doors, and doors made from ignition-resistant or non-combustible materials such as metal can effectively prevent ember entry when properly sealed.

Decks and patios are also highly susceptible to ember attacks. Ignition-resistant and noncombustible materials, such as metal, composite, or treated wood, are recommended for these areas. Enclosing the underside of decks and minimizing gaps between boards further reduces fire risks.

Fences can act as fire pathways, spreading flames to the building. Using noncombustible materials for the section closest to the structure can prevent this risk.

Likewise, emergency access and egress are necessary. Ensuring that roads, driveways, and properties in WUI areas are accessible for emergency vehicles is vital. Standards typically cover road widths, turnarounds, and clear signage to facilitate efficient emergency response. This is decisive during wildfire events, as timely access can significantly impact the outcome.

An adequate water supply for firefighting is another fundamental element. Ensuring that communities have sufficient water sources, such as hydrants and reservoirs with the necessary flow rates, is essential for effective firefighting operations.

Community involvement and collaboration are emphasized across WUI guidelines, recognizing that effective wildfire risk reduction relies on the active participation of local governments, residents, and other stakeholders. This collaborative approach is crucial for developing and implementing wildfire mitigation strategies tailored to the specific needs of each community.

Finally, emergency planning and preparedness are key components. Comprehensive planning should include the development of evacuation routes, communication strategies, and other preparedness measures. These actions are essential for protecting lives and property during a wildfire event.

Impact on Community Resilience

WUI codes and guidelines have been instrumental in reducing wildfire risks and enhancing the resilience of communities in fire-prone areas.

A notable example of the effectiveness of such codes can be seen in an impact analysis for the National Guide for Wildland-Urban Interface Fires, prepared by the Institute for Catastrophic Loss Reduction (ICLR) for the National Research Council of Canada. The analysis revealed a significant finding: 59.4% of buildings constructed in or after 2008, and adhering to the 2008 California Building Code—which introduced advanced requirements regulating materials and construction methods for exterior wildfire exposure—survived the 2018 Californian Camp Fire. In contrast, only 21% of structures built prior to the implementation of this code survived the wildfire⁷.

Similarly, in Canada, the principles of WUI codes are increasingly being integrated into community planning, particularly through the 'FireSmart' program. This Canadian initiative aims to reduce wildfire risks in communities located in WUI areas. The effectiveness of these principles was demonstrated during the 2016 Fort McMurray wildfire in Alberta. Structures that incorporated many of the attributes promoted by the recommended FireSmart guidelines had a higher survival rate compared to those that did not.⁸

Further evidence of the benefits of wildfire-resistant guidelines comes from an impact analysis conducted by the ICLR⁹ in Canada. The study found a benefit-cost ratio of 34:1 for new buildings in high-hazard zones constructed according to these guidelines, indicating that for every dollar invested, an estimated \$34 is saved through avoided damages, reduced losses, or other long-term benefits. For existing buildings retrofitted to meet wildfire-resistant construction standards, the benefit-cost ratio is 14:1, meaning each dollar spent yields \$14 in savings.

These experiences further reinforce the effectiveness of WUI principles in reducing wildfire risks and protecting communities from devastating losses.

Enhancing Fire Resistance with Stone Wool Insulation

WUI area regulations and requirements significantly enhance a structure's resistance to flame propagation and penetration through exterior walls and roof coverings.

Incorporating stone wool insulation, which not only resists ignition but also hinders the spread of fire and the development of smoke, further strengthens a building's ability to withstand fire. Indeed, ROCKWOOL stone wool insulation products – Comfortbatt®, Comfortboard® and Toprock® DD - are noncombustible, as per ASTM E136, "Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C" and CAN/ULC-S114, "Standard Method of Test for Determination of Non-Combustibility in Building Materials," and have flame spread and smoke developed indices, rating and classification of 0, respectively, as per ASTM E84 (UL 723), "Standard Test Method for Surface Burning Characteristics of Building Materials" and CAN/ULC-S102, "Surface Burning Characteristics of Building Materials and Assemblies."

However, insulation is only one aspect of constructing resilient structures in fire-prone areas. A variety of materials and construction methods are essential in achieving this goal.

To ensure that structures meet the highest standards of fire resistance, it is imperative to adhere to, and whenever possible, exceed the requirements of the applicable codes by jurisdiction.

Architectural Details for WUI Construction

The details on the following pages of this document illustrate materials and construction methods that generally conform to the most rigorous requirements identified in the referenced codes and guidelines:

- California: Chapter R337 of the California Residential Code (2022)
- Washington State: 2018 Washington Wildland-Urban Interface Code (First Edition)
- Colorado: 2021 International Wildland-Urban Interface Code (IWUIC)
- Nevada: 2018 International Wildland-Urban Interface Code (IWUIC), except for:
 - City of Las Vegas: 2021 International Wildland-Urban Interface Code (IWUIC)
- Oregon: Section R327 Wildfire Hazard Mitigation, 2023 Oregon Residential Specialty Code
- Canada: NRC's National Guide for Wildland Urban Interface Fires (2021)

Where codes identify multiple ignition-resistant classes of construction, the most rigorous requirements are referenced, providing a robust framework for fire-resistant construction.

In areas lacking established code requirements for ignition-resistant construction, the contents of this document may be considered representative of increased resilience to the hazards described in the referenced WUI codes and guidelines.

Footnotes

- ¹ www.nifc.gov/fire-information/statistics/wildfires
- ² www.jec.senate.gov/public/?a=Files.Serve&File_id=9DF2A5B6-602B-4B07-836C-EEBE694499C9
- ³ National Interagency Coordination Center Wildland Fire Summary and Statistics Annual Report 2023
- ⁴ <https://natural-resources.canada.ca/simply-science/canadas-record-breaking-wildfires-2023-fiery-wake-call/25303>
- ⁵ <https://www.iccsafe.org/products-and-services/wildland-urban-interface-code/>
- ⁶ www.govinfo.gov/content/pkg/DCPD-201600328/pdf/DCPD-201600328.pdf
- ⁷ Figure 4A page 9 at <https://www.iclr.org/wp-content/uploads/2021/05/ICLR-SPA-Risk-Impact-Analysis-for-the-National-WUI-Fire-Guide-2021.pdf>
- ⁸ www.iclr.org/wp-content/uploads/PDFS/why-some-homes-survived-learning-from-the-fort-mcmurray-wildland-urban-interface-fire-disaster.pdf
- ⁹ <https://www.iclr.org/wp-content/uploads/2021/05/WUI-NRC->

The code matrix in Appendix A, and the architectural details in Appendices B and C are intended to assist in the design of ignition-resistant structures. It is important to note that the details presented illustrate one method of constructing a split-insulated wall assembly with an exterior air and water-resistive barrier. Practical application may require subtle adjustments in detailing to achieve the same code compliance intent.

It is recommended to review all building code requirements for the applicable jurisdiction to ensure that all assembly detailing is in general conformance. Alternatively, the ROCKWOOL Building Science department can be contacted for project support.

The construction details depicted in this document are generally appropriate for WUI code requirements or guidelines at the time of publication. However, determining the suitability of any specific application should be done independently by an experienced Project Architect and/or Engineer, using their professional judgment.

Disclaimer of Liability

© 2024 RDH Building Science Inc. & ROXUL Inc.

RDH Building Science Inc. ("RDH") and ROXUL Inc. (dba ROCKWOOL) are the authors and editors of the "Building with ROCKWOOL Stone Wool Insulation in Wildfire-Prone Areas" Technical Bulletin. This document generally conforms to the following Codes and Guides: Chapter R337 of the California Residential Code (2022); 2018 Washington Wildland-Urban Interface Code (First Edition); Colorado Wildland-Urban Interface Code (2021); Section R327 Wildfire Hazard Mitigation, 2023 Oregon Residential Specialty Code; and NRC's National Guide for Wildland Urban Interface Fires (2021).

This document, including the architectural details and code matrix, is intended for reference, training and educational purposes only and should not be used as a construction document. Every project presents unique design challenges, and actual outcomes may vary depending on a number of independent factors specific to the given end-use application, including but not limited to, design, workmanship, materials, geographic, environmental, and other specific conditions.

When applying the information, techniques, practices, and procedures described in this document, it is essential to consider applicable and current laws, codes, regulations, as well as on-site and project-specific conditions. As this document cannot account for every contingency or circumstance, a qualified design consultant should be consulted to adapt its guidance to the specific project.

Appendix A: Building Code Matrix

Code Jurisdiction	Building Components			
	Common Requirements	01 - Roof Covering	02 - Walking Surfaces	03 - Protection of the Eaves
Canada*	1-hour fire resistance rated construction per CAN/ULC-S101	<p>3.3.5 CAN/ULC-S107 Class A Rating.</p> <p>Exposed Flashing is non-combustible</p> <p>Drip edges noncombustible and extend at least 75mm upslope from edge of roof.</p> <p>Roof penetrations to be noncombustible.</p> <p>No gaps larger than 3mm at any location.</p>	-	<p>3.3.7/3.3.8 - Eaves, soffits and roof projections have their own test ASTM E2957.</p> <p>Finish with noncombustible materials.</p> <p>Enclosed without openings except with materials meeting ASTM E2886, -OR- Have a non-combustible, corrosion resistant mesh with mesh aperture less than 3mm.</p>
California	<p>R337.7.3. Coverings: Noncombustible materials - OR - Ignition resistant materials - OR - Fire retardant treated wood.</p> <p>R337.7.4 Assemblies: 1-hour fire resistance rated construction - OR - One layer of 5/8" Type X Manual.</p>	<p>R337.5.1. ASTM E108 Class A Rating.</p> <p>Where covering has gap between covering and combustible deck, include mineral surfaced nonperforated cap sheet over combustible decking</p> <p>Add bird stops at eaves to prevent debris. Caps shall be mudded in to prevent fire ember intrusion.</p> <p>EXCEPTION: Cap sheet not required when no less than 1 inch of mineral wool board or other noncombustible materials is located between the roofing material and wood framing or deck. Can also use fire retardant deck material if no cap sheet is provided.</p>	<p>R337.9 Walking surfaces of decks, porches, balconies and stairs within 10' of buildings</p>	<p>R337.7.5 and 337.7.6 Refer to Common Requirements. EXCEPTION: Trim and fascia boards.</p>
IWUIC (Colorado, Nevada)	1-hour fire resistance rated construction - OR - Noncombustible materials - OR - Ignition-resistant materials - OR - Fire retardant treated wood.	<p>504.2 ASTM E108 Class A Rating.</p> <p>Where covering has gap between covering and deck, provide fire blocking at eaves -OR- Mineral surfaced nonperforated cap sheet over combustible decking. EXCEPTIONS APPLY.</p>	-	<p>504.3 Eaves and soffits - Refer to Common Requirements.</p> <p>Fascia backside need 1-hour fire resistance rated construction or 2-inch nominal dimensional lumber.</p>
Oregon	1-hour fire resistance rated construction - OR - Noncombustible materials - OR - Ignition resistant materials - OR - One Layer of 5/8" Type X.	<p>R327.3 Constructed of asphalt shingles, slate shingles, metal roofing, tile, clay, or concrete shingles. -OR- Other equivalent to a Class B rated roof assembly.</p> <p>Where covering has gap between covering and deck, provide fire blocking at eaves -OR- include mineral surfaced nonperforated cap sheet over combustible decking.</p>	<p>R327.3.5. Walking surfaces, deck, porch, and balcony Between 30" and 12' above grade, Refer to Common Requirements. Except for surfaces less then 200 ft2, constructed of 2" Lumber</p>	<p>R327.3.4.1 Eaves, soffits, and cornices. Where less than 12' above grade Refer to Common Requirements -OR- Prescriptive soffit assembly.</p> <p>Protection not required at more than 12' above grade and have 2" fire blocking between roof framing members from wall top plate to underside of sheathing. Fascia and architectural trim boards do not require protection. Rafter ends only.</p>
Washington	1-hour fire resistance rated construction - OR - Noncombustible materials - OR - Fire retardant treated wood	<p>504.2 ASTM E108 Class A Rating.</p> <p>Where covering has gap between covering and deck, provide fire blocking at eaves -OR- Mineral surfaced nonperforated cap sheet over combustible decking. EXCEPTIONS APPLY.</p>	-	<p>504.3 Eaves and soffits Refer to Common Requirements</p> <p>Fascia backside 1-hour fire resistance rating -OR- 2-inch nominal dimensional lumber.</p>

Building with ROCKWOOL Stone Wool Insulation in Wildfire-Prone Areas

Code Jurisdiction	Building Components			
	04 - Gutters and Downspouts	05 - Exterior Walls	06 - Foundation Walls	07 - Underfloor Enclosure
Canada*	<p>3.3.6 Non-combustible.</p> <p>Required means to prevent leaves and debris.</p> <p>Regular cleaning to remove materials from gutters/guard surfaces.</p>	<p>3.3.2 Non-combustible cladding required.</p> <p>Extending from top of foundation to top plate, bottom of truss, soffit, OR bottom of built-up roof deck.</p> <p>3 mm maximum gap for openings in cladding</p> <p>Less than 200mm from grade, must be non-combustible or at least one layer of type X exterior gypsum or cement board.</p>	<p>3.3.3 Concrete or unit masonry - OR - (1-hour fire resistance rated assembly on both sides, and protected on exterior face with: non-combustible material or 1 layer of type X exterior sheathing or cement board.)</p>	<p>3.3.4 Minimum 2m above ground,</p> <p>1-hour fire resistance rating,</p> <p>Protected on exterior face with non-combustible material, -OR- Type X -OR- Cement board.</p>
California	<p>R337.5.4 Roof gutters provided with means to prevent accumulation of leaves and debris.</p>	<p>R337.7.3 and 337.7.4 Exterior coverings, wall assemblies, eave overhangs, soffits, porch ceilings, floor projections, and underfloor areas Refer to Common Requirements.</p> <p>Top of foundation to roof, terminated with 2" nominal solid wood blocking between rafters at all roof overhangs.</p> <p>Where enclosed eaves, terminate at the enclosure. Trim, fascias, embellishments, fascias, and gutters excluded.</p>	-	<p>R337.7.9 Refer to Common Requirements - OR - Enclosed to grade.</p> <p>EXCEPTION: Structural columns and beams do not require protection where they are heavy timber 4" nominal or more.</p>
IWUIC (Colorado, Nevada)	<p>504.4 Noncombustible.</p> <p>Required approved means to prevent accumulation of leaves and debris.</p>	<p>504.5 Refer to Common Requirements - OR - Heavy timber -OR- Log wall Extend protection from top of foundation to underside of roof sheathing.</p>	-	<p>504.6 and 504.7.1. Refer to Common Requirements - OR - Exterior walls extend to ground.</p> <p>Where an attached structure projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches of the ground.</p>
Oregon	<p>R327.3.1 Noncombustible.</p> <p>Required means to prevent accumulation of leaves and debris.</p>	<p>R327.3.3 Refer to Common Requirements - OR - Heavy timber assembly, log wall, -OR- 10-minute direct flame contact exposure ASTM E2027.</p> <p>Extend from top of foundation to roof. Terminate at 2" nominal solid wood blocking between rafters at all roof overhangs, or in case of enclosed eaves or soffits, shall terminate at underside of the enclosure.</p>	-	<p>327.3.4.4. Refer to Common Requirements - OR - Enclosed to grade.</p>
Washington	<p>504.4 Noncombustible.</p> <p>Required approved means to prevent accumulation of leaves and debris.</p>	<p>504.5 Refer to Common Requirements - OR - Heavy timber -OR- Log wall Extend protection from top of foundation to underside of roof sheathing.</p>	-	<p>504.6 and 504.7.1. Refer to Common Requirements - OR - Exterior walls extend to ground.</p> <p>Where an attached structure projects over a descending slope surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches of the ground.</p>

Building with ROCKWOOL Stone Wool Insulation in Wildfire-Prone Areas

Code Jurisdiction	Building Components			
	08 - Appendages and Projections	09 - Exterior Glazing	10 - Exterior Doors	11 - Vents
Canada*	<p>3.3.10 - Decks, Balconies or other building attachments non-combustible -OR- Meet ASTM E2632.</p>	<p>3.3.9 All windows required to be tested to SFM 12-7A-2. (Or approved alternate testing standard)</p> <p>All windows required to be provided with non-combustible screen with no gaps larger than 3mm including mesh aperture</p> <p>Where provided, shutters shall be noncombustible, fixed to building, when closed max 3mm gap, operable from interior/exterior, and protect entire window/door assembly.</p>	<p>3.3.9 Non-combustible, and have a fire protection rating of not less than 20 min per CAN/ULC-S104.</p> <p>Tempered outer pane of glazing per CAN/ULC-S104.</p> <p>Secondary screen doors shall have a gaps including the mesh aperture limited to 3mm and be self closing.</p>	<p>3.3.8 Openings should be enclosed by materials tested using ASTM E2886 -OR- Non-combustible, corrosion-resistant screen with a mesh aperture less than 1/8" (3.2mm)</p>
California	<p>R337.7.10 Underside of Appendages: Refer to Common Requirements.</p> <p>EXCEPTION: Structural columns and beams do not require protection where they are heavy timber 4" nominal or more.</p>	<p>R337.8.2 1. Tempered, multi pane glass, 2. Glass blocks, 3. 20-min fire resistance rating per NFPA 257 4. Tested to SFM 12-7A-2</p> <p>Openable skylights require non-combustible screen with mech apertures limited to 1/8" (3.2 mm).</p>	<p>337.8.2. Exterior glazed doors: Tempered, multi pane glass, -OR- Glass blocks, -OR- 20-min fire resistance rating per NFPA 252 -OR- Tested to SFM 12-7A-2</p> <p>337.8.3. Exterior non-glazed doors Surface / Cladding is non-combustible / ignition resistance, -OR- Solid core wood with panels 1 1/4" thick, -OR- 20-min fire resistance rating -OR- Tested to ASTM E2707 or SFM 12-7a-1.</p>	<p>337.6.2. Vent openings to be wildfire flame and ember resistant approved by the fire marshal, -OR- Tested to ASTM E2886.</p> <p>Vents on sloped roofs shall be covered with a non-combustible, corrosion-resistant screen with a mesh aperture less than 1/8" (3.2mm).</p>
IWUIC (Colorado, Nevada)	<p>504.7. Refer to Common Requirements - OR - Heavy timber.</p>	<p>504.8 Exterior Glazing (including glazing in doors)</p> <p>Tempered glass, -OR- Multilayered glazed panels, -OR- Glass block, -OR- have fire protection rating not less than 20 minutes.</p>	<p>504.9 Noncombustible, -OR- Solid core not less than 1.75" thick, -OR- 20-min fire resistance rating.</p> <p>Exception for Vehicle Access Doors.</p>	<p>504.10 Attic ventilation openings, underfloor vents, etc. Not exceed 144 square inches,</p> <p>Noncombustible, corrosion resistant mesh, with mesh aperture no larger than 1/4" (6.4 mm) - OR - Prevent flame/ember penetration.</p> <p>Cannot be located within soffits, eaves, between rafters, etc. Gable end or dormer vents must be 10' from lot lines, typ. Locate underfloor vents close to grade as possible.</p>
Oregon	<p>R327.3.4.2 and R327.3.5. Patio and porch ceilings, greater than 200 ft², and less than 12' above grade And Floor projections, cantilevered floor projections under 12' above grade, Refer to Common Requirements Except for Trim Boards.</p>	<p>327.3.6 Tempered glass, multilayered glazed panels, glass block, or have fire protection rating not less than 20 minutes</p>	-	<p>R327.3.2 Covered with noncombustible and corrosion resistant wire mesh, designed to resist intrusion of embers and flame. Mesh Apertures max 1/8" (3.2mm).</p> <p>Cannot be located within soffits, eaves, between rafters, etc. EXCEPTION: when 12' or more above grade.</p>
Washington	<p>504.8. Refer to Common Requirements - OR - Heavy timber with dimensions as follows:</p> <ul style="list-style-type: none"> • Posts are 6x6" • Beams are 6x8" • Joists are 4x8" and 24" on center 	<p>504.9 Exterior Glazing (including glazing in doors)</p> <p>Tempered glass, -OR- Multilayered glazed panels, -OR- Glass block, -OR- 20-min fire resistance rating.</p>	<p>504.10 Noncombustible, -OR- Solid core not less than 1.75" thick, -OR- 20-min fire resistance rating.</p> <p>Exception for Vehicle Access Doors.</p>	<p>504.11 Attic ventilation openings, underfloor vents, etc. shall not exceed 144 square inches, and be covered with noncombustible, corrosion resistant mesh, with mesh aperture no larger than 1/4" (6.4 mm) - OR - Prevent flame/ember penetration.</p> <p>Cannot be located within soffits, eaves, between rafters, etc. Gable end or dormer vents must be 10' from lot lines, typ. Locate underfloor vents close to grade as possible.</p>

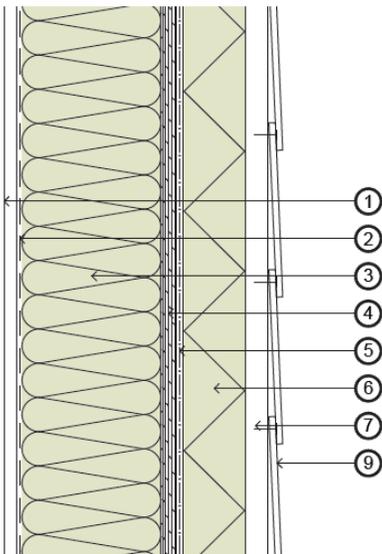
NOTE: The red text indicates the most stringent requirement for the building element (roof, floor, wall, etc.), which is typically reflected in the architectural details in Appendices B and C.

*Provided as a guidance resource for local governments, development teams, owners, and insurers.

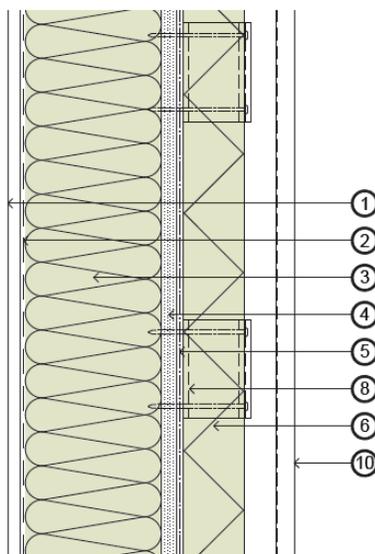
Appendix B: ROCKWOOL Fire-Resistance Rated Exterior Wall Assemblies

1-hour fire-resistance rated exterior Wall Assemblies that are generally conforming with requirements associated with the referenced Wildland Urban Interface codes and guidance. The assemblies provided depict split-insulated lightweight wood-framed construction for residential and commercial buildings up to 4 stories.

Deviations from listed assemblies must be confirmed by a fire engineer to confirm fire-resistance in accordance with applicable codes, project performance criteria, and the authority having jurisdiction.



See Intertek Design Listing RI/MFF 60-01[®]

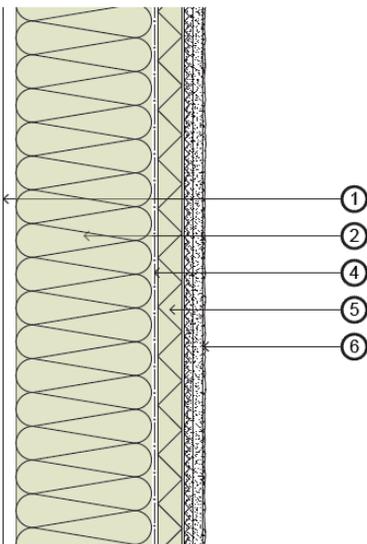


See Intertek Design Listing RI/MFF 60-02[®]

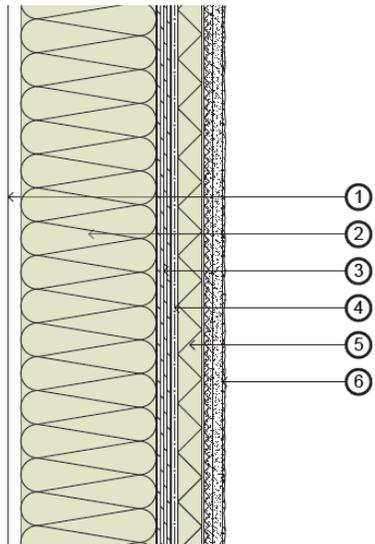
Assembly components

NOTE: General assembly layers are described here. For detailed information, including minimum required thickness of each layer, refer to the design listings.

1. Interior Finishes
2. Vapor Retarder
3. ROCKWOOL Comfortbatt[®]
4. Exterior Sheathing
5. Air and Water Resistive Barrier (AB/WRB)
6. ROCKWOOL Comfortboard[®] 80
7. Intermittent Furring and Air Space
8. Intermittent Cladding Attachment System
9. Fiber Cement Lap Siding
10. Steel Profiled Exterior Cladding



See Intertek Design Listing RI/MFF 60-03[®]



See Intertek Design Listing RI/MFF 60-04[®]

Assembly components

NOTE: General assembly layers are described here. For detailed information, including minimum required thickness of each layer, refer to the design listings.

1. Interior Finishes
2. ROCKWOOL Comfortbatt[®]
3. Exterior Sheathing
4. Water Resistive Barrier (AB/WRB)
5. ROCKWOOL Comfortboard[®] 80
6. Stucco Cladding over Self-Furring Lath

General Notes

This Detail Package is to be used in conjunction with the full ROCKWOOL WUI Zone Building Enclosure Details document, including introduction and applicable codes discussion and the attached WUI Code/Guide Comparison Matrix.

- The details included in this document are generally applicable to the strictest interpretation of the WUI code requirements in the noted applicable jurisdictions. However, specific end-use applications vary widely with project-specific design, materials, environments, and jurisdictions. What is appropriate in any specific application is a determination that must be made independently by the experienced Project Architect and/or Engineer in their own professional judgement and in alignment with current codes or guides and the authority having jurisdiction.
- Insulation thickness depicted is representational only. Thermal performance of the assemblies depicted shall be the responsibility of the design professional in accordance with local code requirements and project performance goals. For thermal performance of ROCKWOOL products, refer to their technical data sheets.
- Water vapor control strategies depicted are representational only. Vapor control within the assemblies shall be the responsibility of the design professional and appropriate for the project.
- General enclosure materials are shown. Material compatibility within the assemblies shall be the responsibility of the design professional and appropriate for the project.
- Interior vapor control for cold climates shown. For further climate zone specific considerations for thermal, air and vapor control methodologies and requirements, **please contact ROCKWOOL Building Science.**

Legend:



WUI Code Section Key

Applicable WUI Code sections are identified with this callout. See the attached "WUI Code/Guide Comparison Matrix" for additional information.

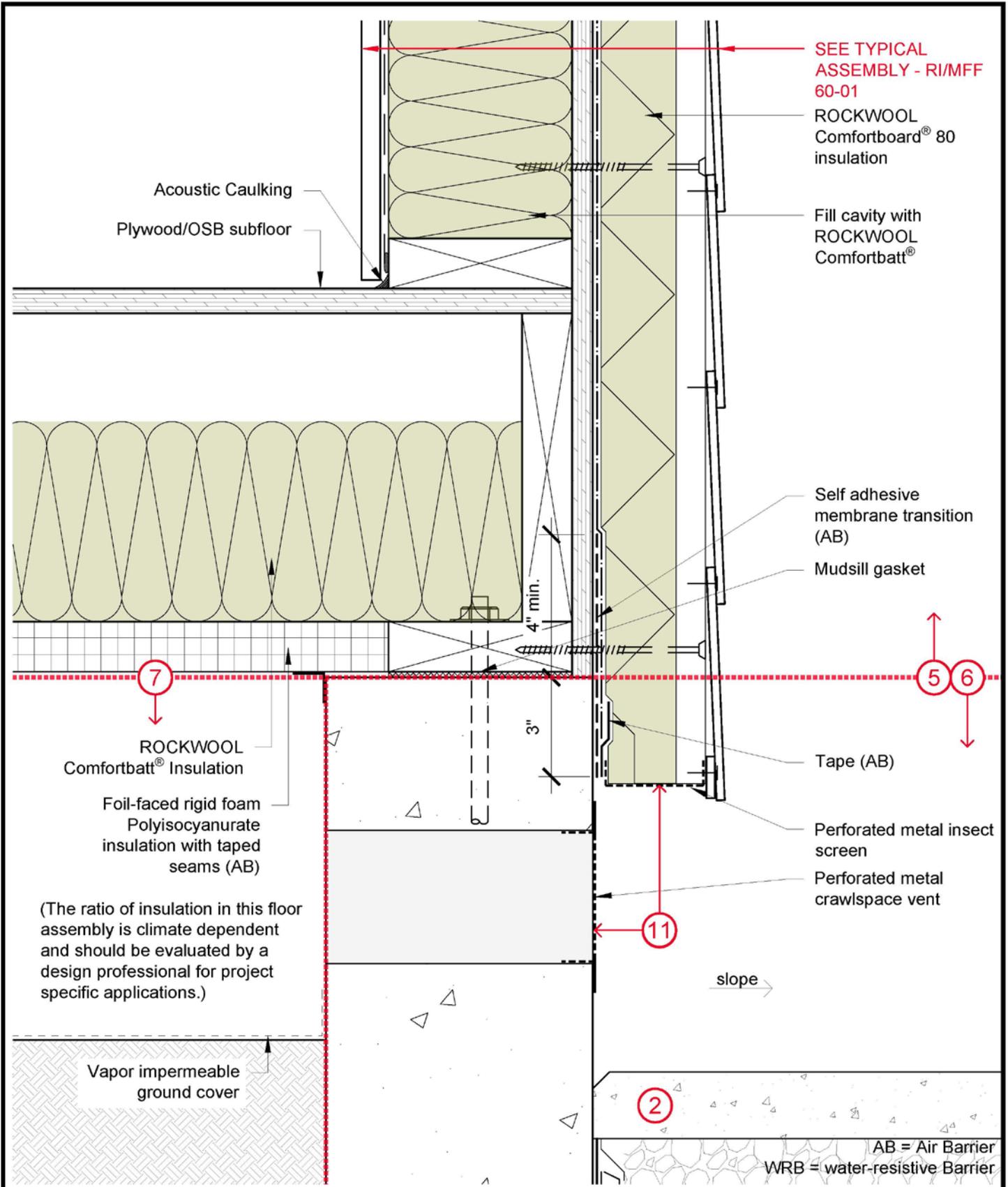


WUI Code Section Extents

The conceptual interface between WUI code sections is depicted with this linetype.

Drawing Index:

- 01 - TYPICAL WALL AT FOUNDATION WALL (CRAWLSPACE)
- 02 - FOUNDATION WALL AT FOOTING (BASEMENT)
- 03 - TYPICAL WALL AT FOUNDATION WALL (BASEMENT)
- 04 - TYPICAL WALL AT FLOOR
- 05 - TYPICAL WALL AT CANTILEVERED FLOOR
- 06 - TYPICAL WALL AT CANTILEVERED BALCONY
- 07 - TYPICAL ROOF PARAPET AT LOW SLOPE ROOF
- 08 - TYPICAL FLANGE-MOUNTED WINDOW HEAD
- 09 - TYPICAL FLANGE-MOUNTED WINDOW SILL
- 10 - TYPICAL FLANGE-MOUNTED WINDOW JAMB
- 11 - TYPICAL FLANGELESS WINDOW HEAD
- 12 - TYPICAL FLANGELESS WINDOW SILL
- 13 - TYPICAL FLANGELESS WINDOW JAMB



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

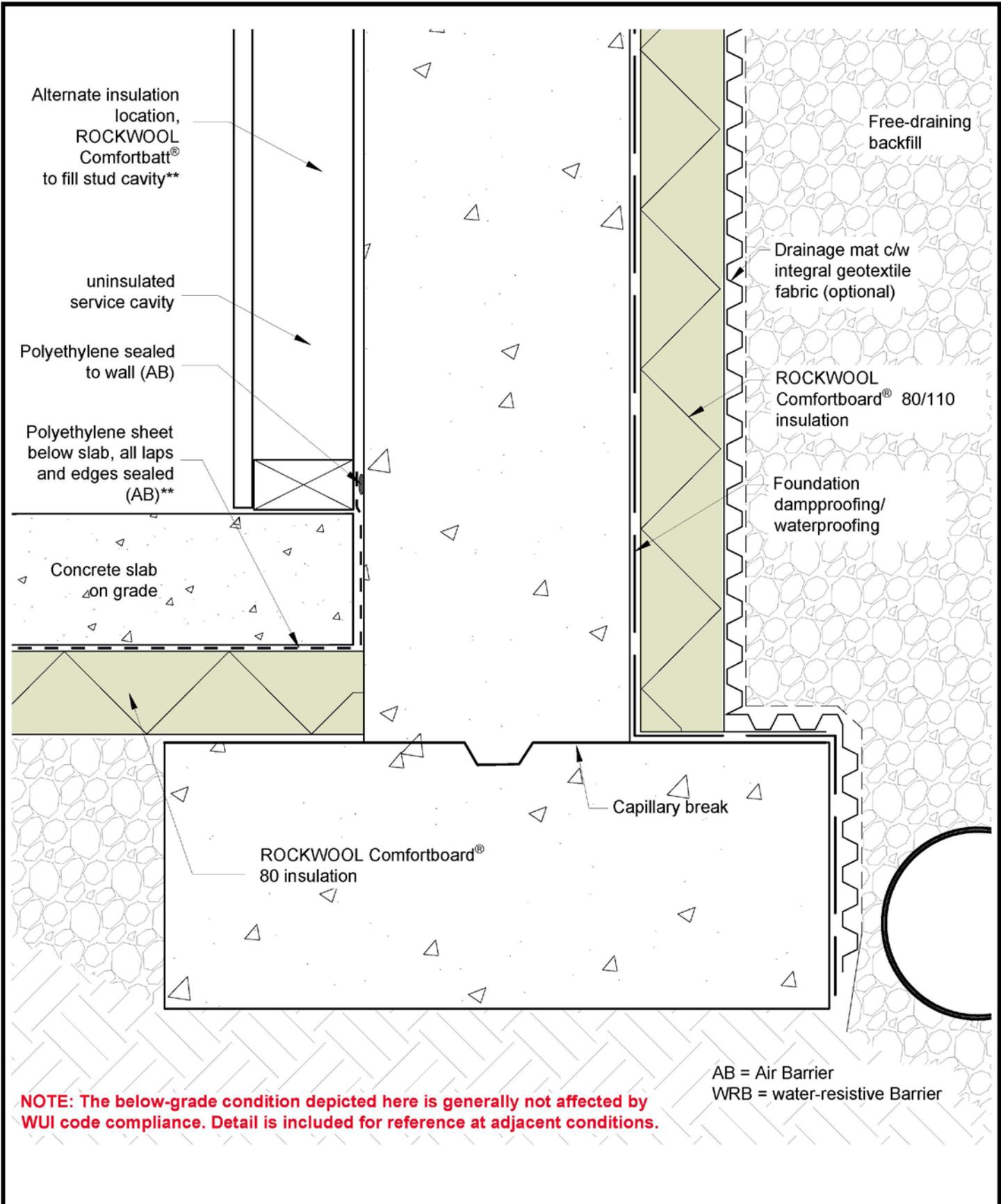


DRAWING TITLE:

TYPICAL WALL AT FOUNDATION WALL (CRAWLSPACE)

DRAWING NO.:
DETAIL 01

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

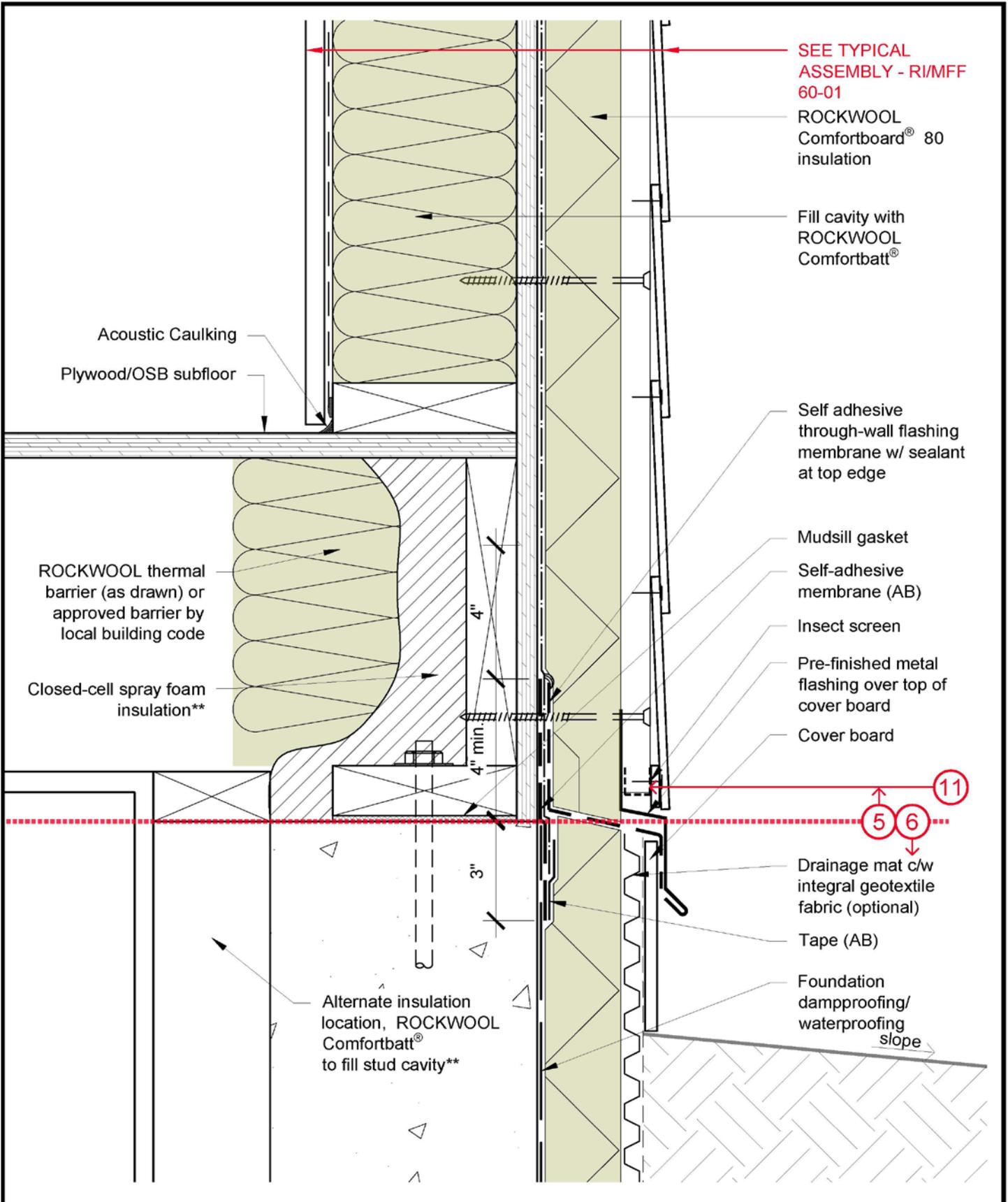


DRAWING TITLE:

FOUNDATION WALL AT FOOTING (BASEMENT)

DRAWING NO.:
DETAIL 02

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**



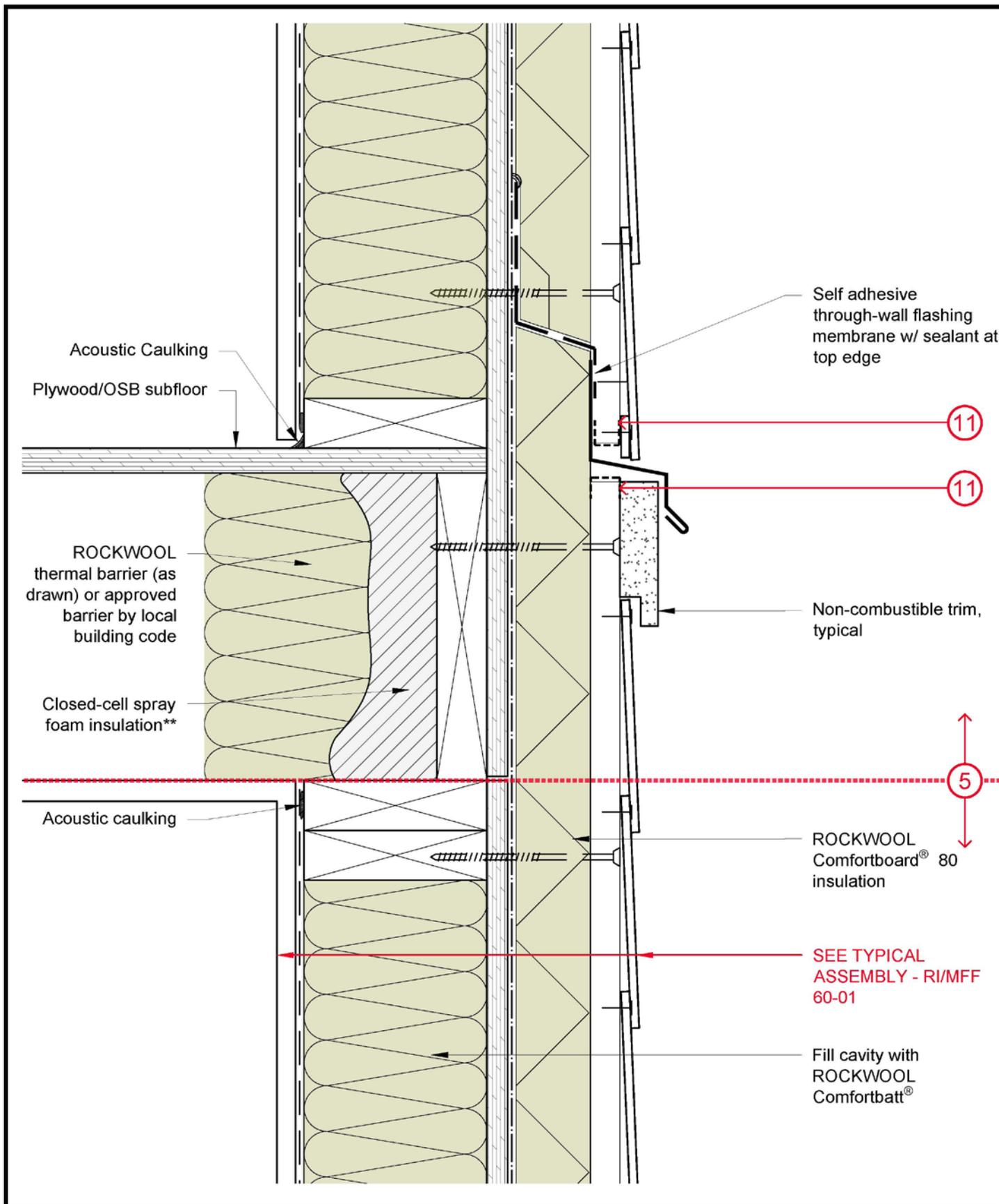
DRAWING
TITLE:

TYPICAL WALL AT FOUNDATION WALL (BASEMENT)

DRAWING NO.:
DETAIL 03

SCALE: 3" = 1'-0"

DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

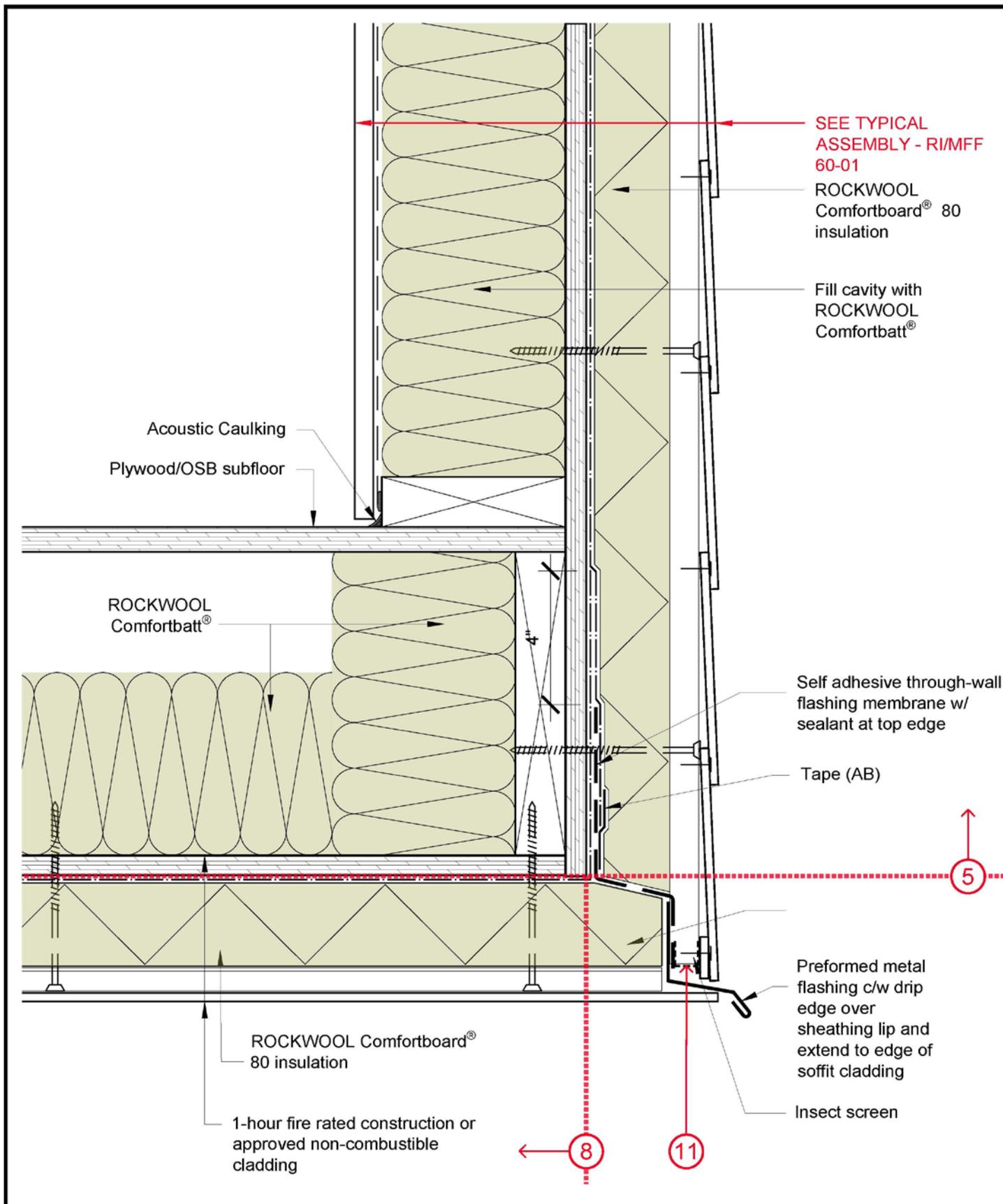


DRAWING
TITLE:

TYPICAL WALL AT FLOOR

DRAWING NO.:
DETAIL 04

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**



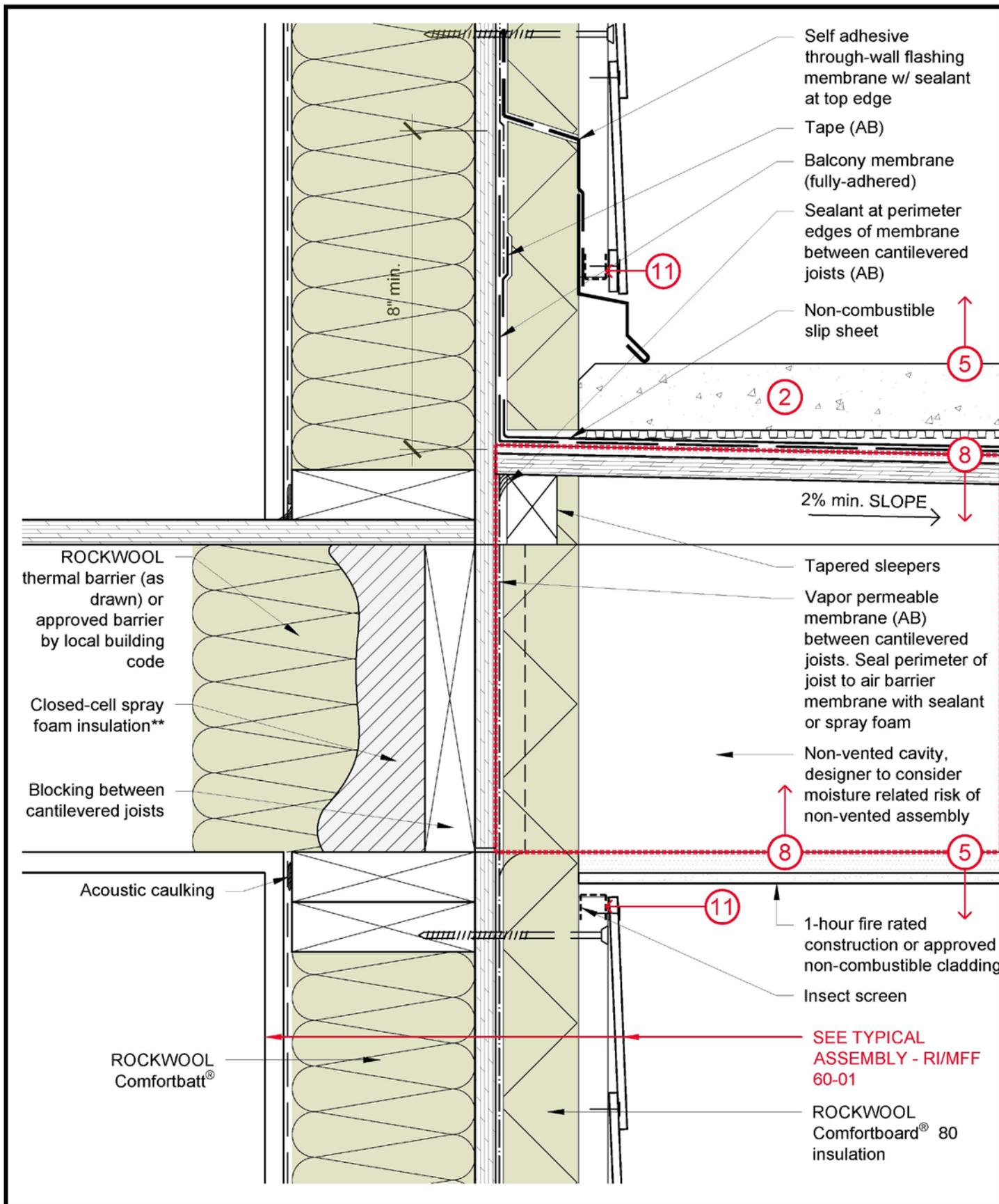
DRAWING TITLE:

TYPICAL WALL AT CANTILEVERED FLOOR

DRAWING NO.:
DETAIL 05

SCALE: 3" = 1'-0"

DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

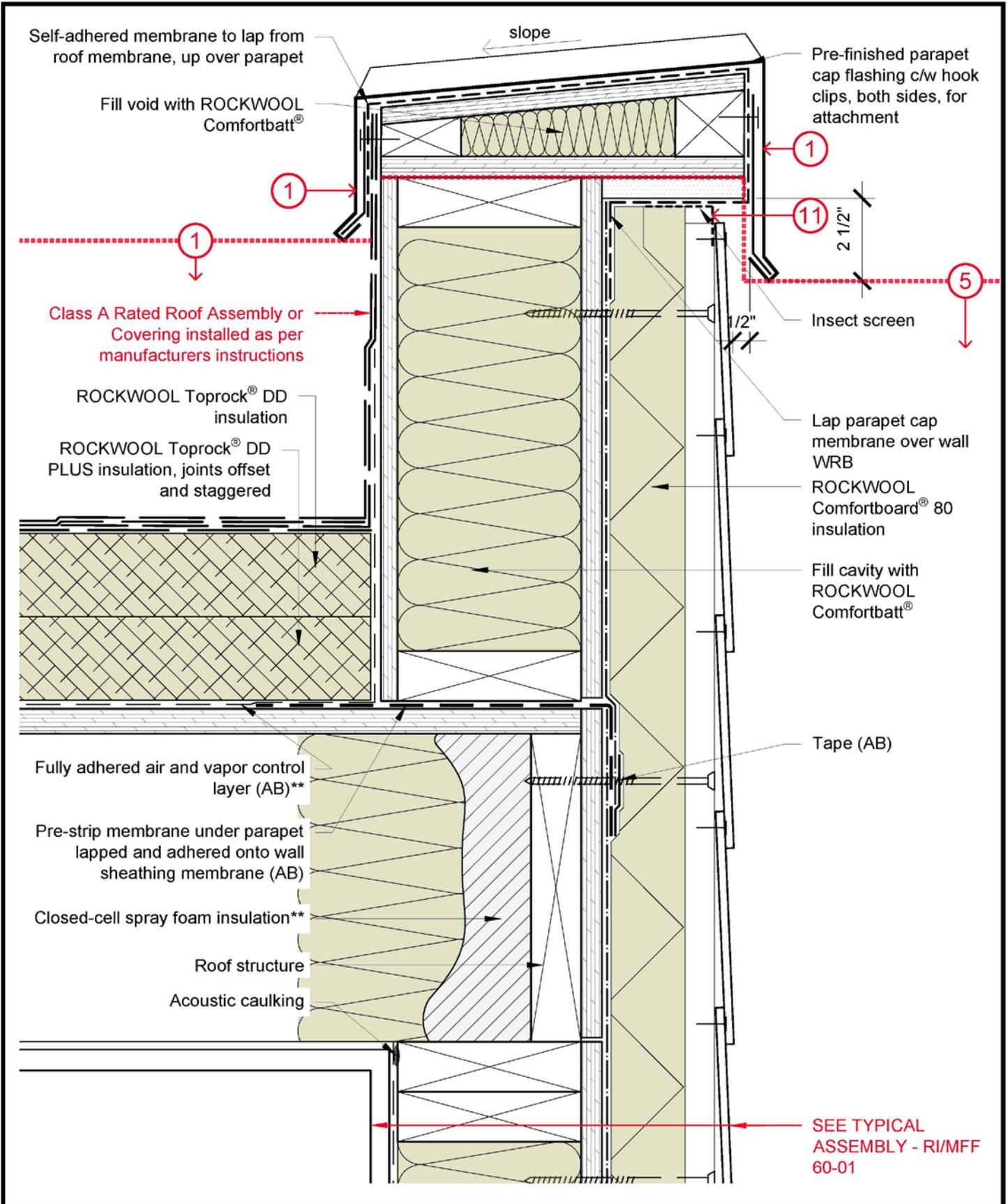


DRAWING TITLE:

TYPICAL WALL AT CANTILEVERED BALCONY

DRAWING NO.:
DETAIL 06

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

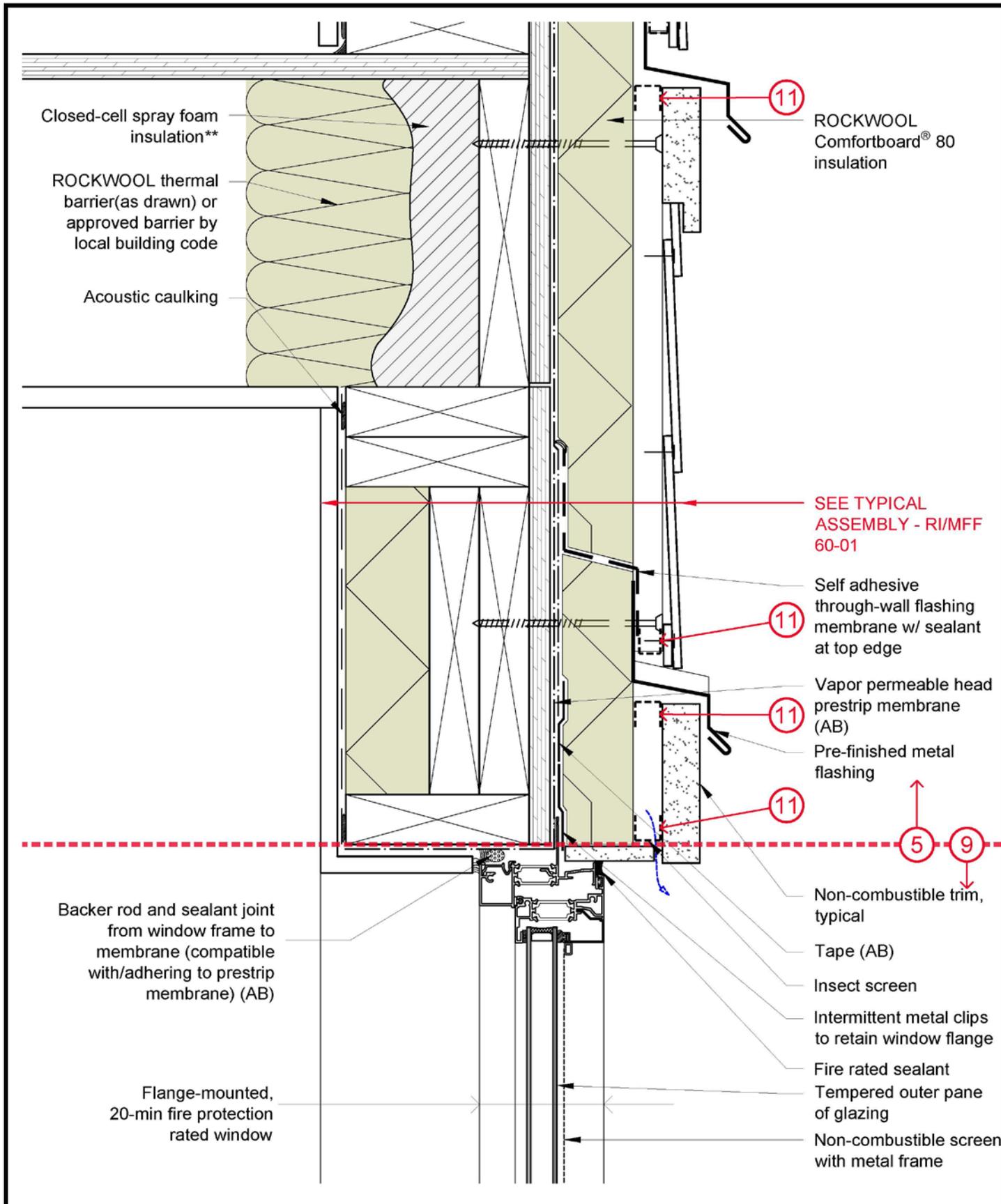


DRAWING
TITLE:

TYPICAL ROOF PARAPET AT LOW SLOPE ROOF

DRAWING NO.:
DETAIL 07

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

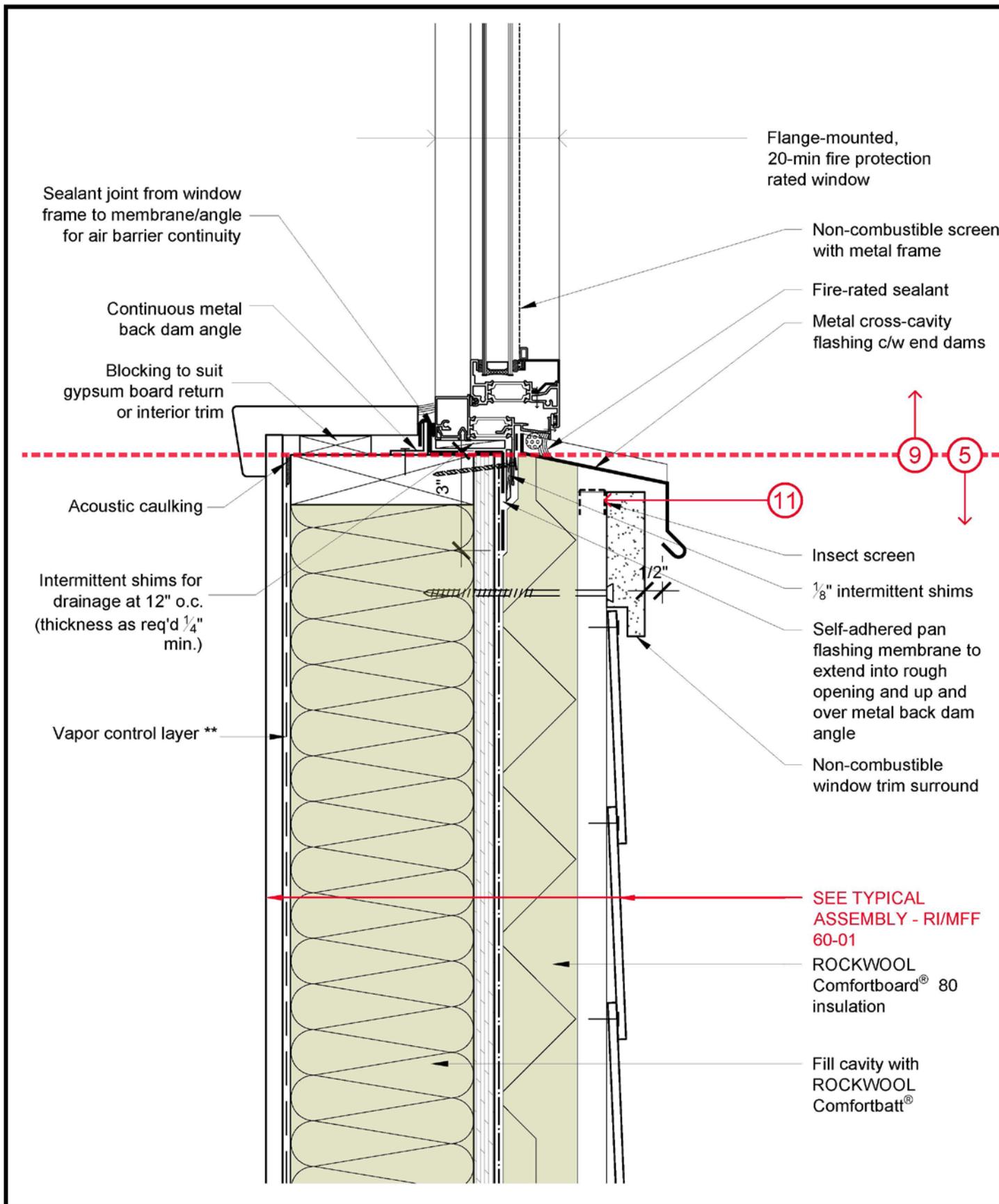


DRAWING
TITLE:

TYPICAL FLANGE-MOUNTED WINDOW HEAD

DRAWING NO.:
DETAIL 08

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**



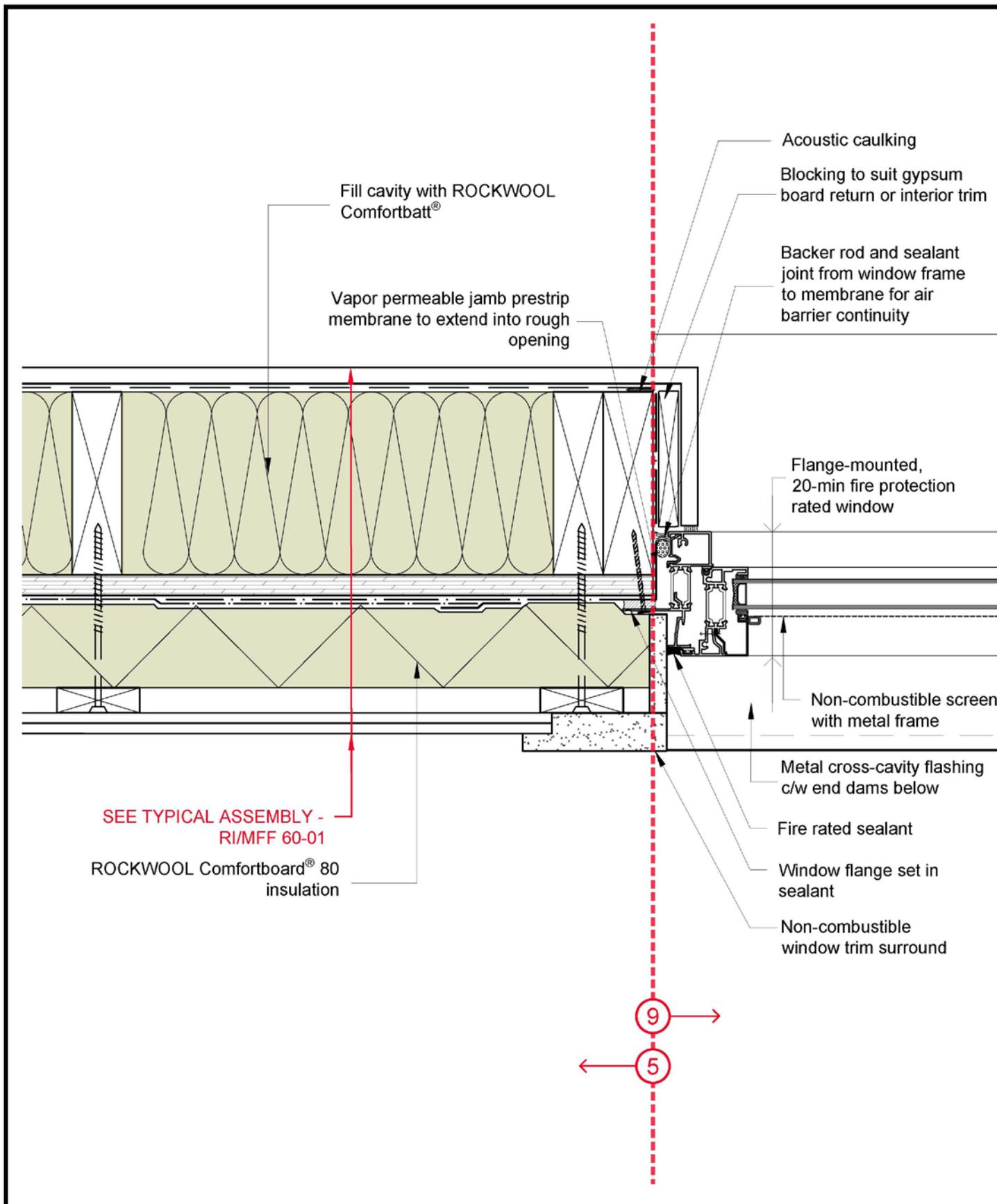
DRAWING
TITLE:

TYPICAL FLANGE-MOUNTED WINDOW SILL

DRAWING NO.:
DETAIL 09

SCALE: 3" = 1'-0"

DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

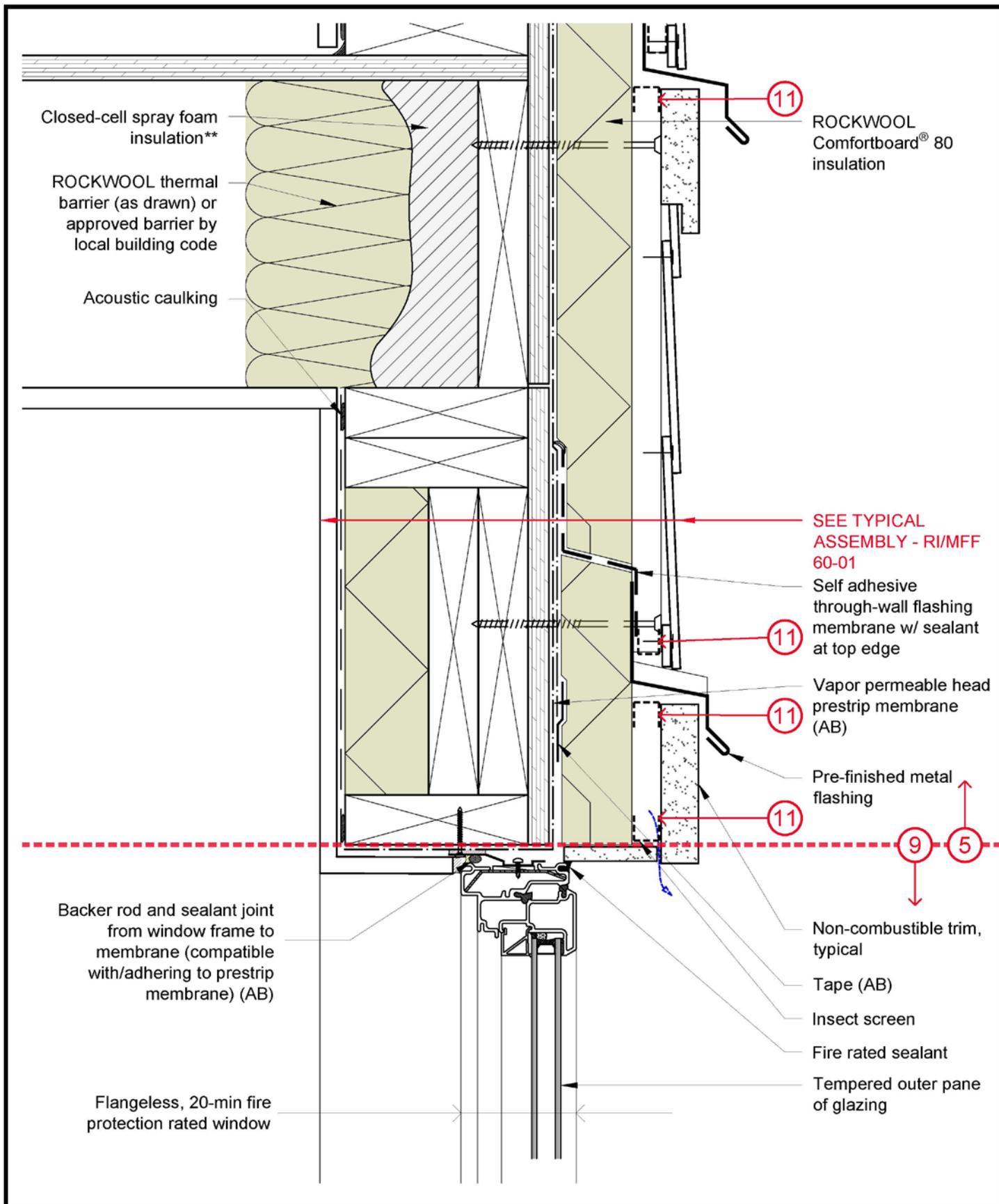


DRAWING
TITLE:

TYPICAL FLANGE-MOUNTED WINDOW JAMB

DRAWING NO.:
DETAIL 10

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

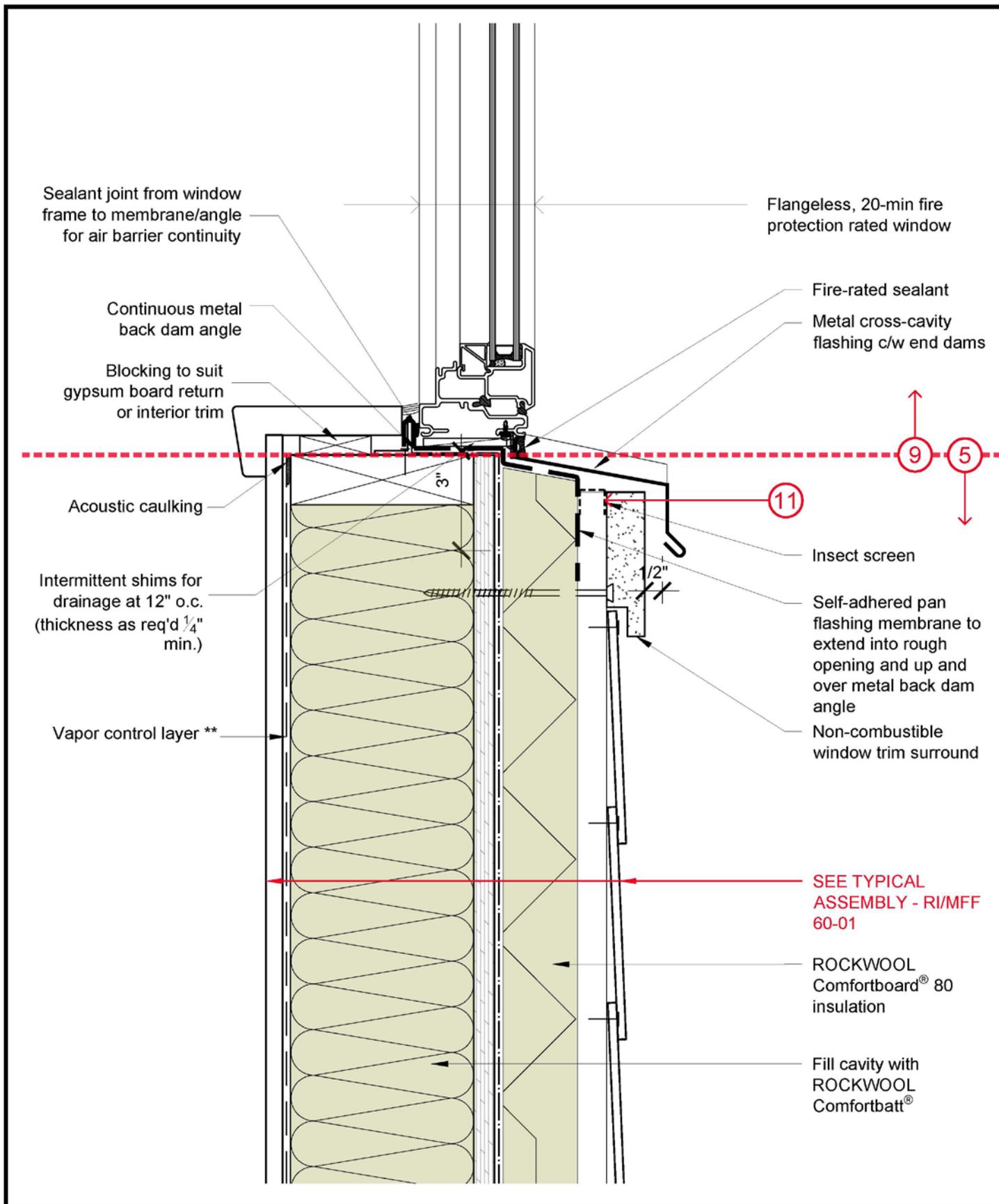


DRAWING
TITLE:

TYPICAL FLANGELESS WINDOW HEAD

DRAWING NO.:
DETAIL 11

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**

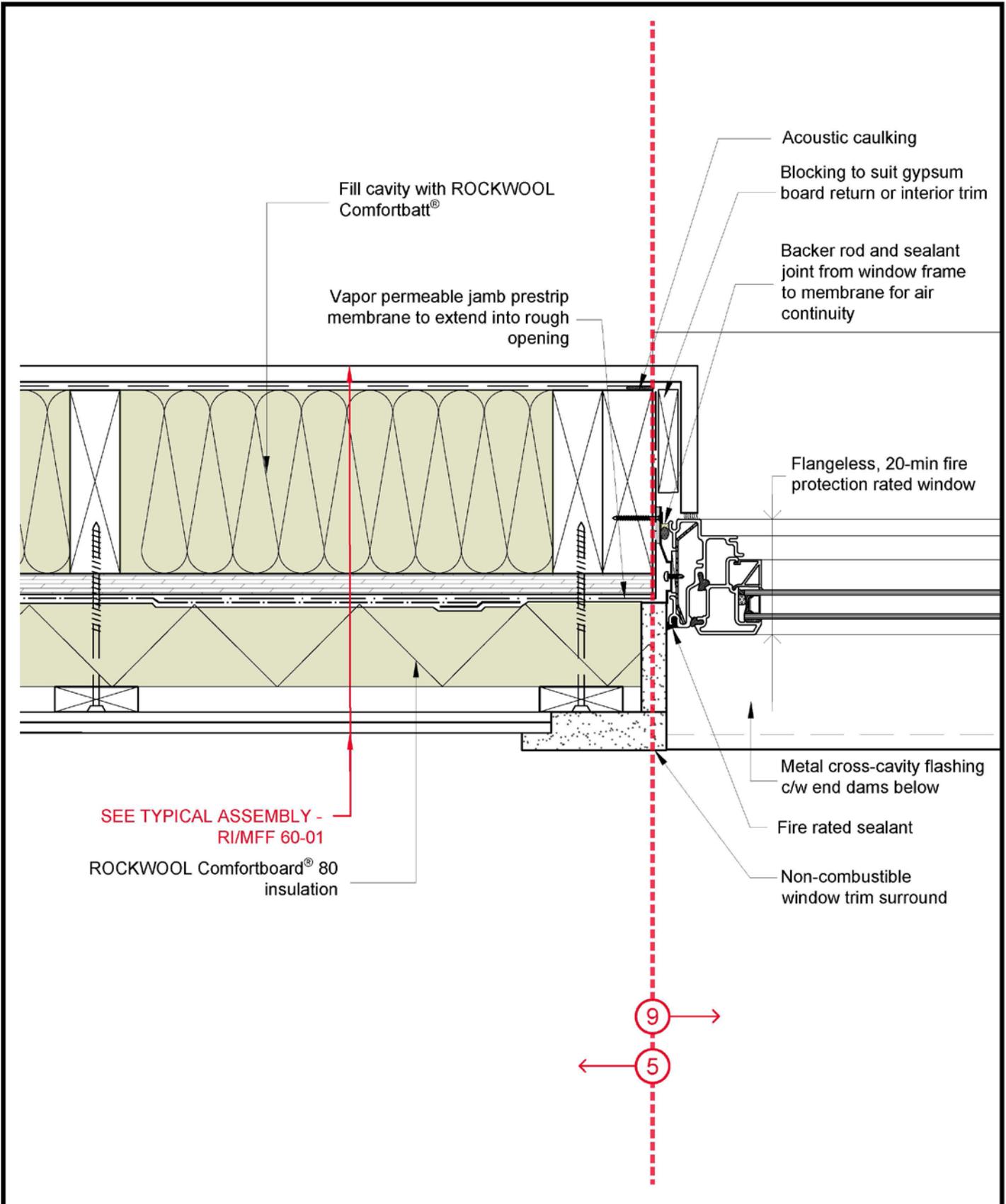


DRAWING
TITLE:

TYPICAL FLANGELESS WINDOW SILL

DRAWING NO.:
DETAIL 12

SCALE: 3" = 1'-0"
DATE: JUNE 2024



**WOOD FRAME CONSTRUCTION UP TO 4 STOREYS
- LIGHTWEIGHT HORIZONTAL CLADDING**



DRAWING TITLE:

TYPICAL FLANGELESS WINDOW JAMB

DRAWING NO.:
DETAIL 13

SCALE: 3" = 1'-0"
DATE: JUNE 2024

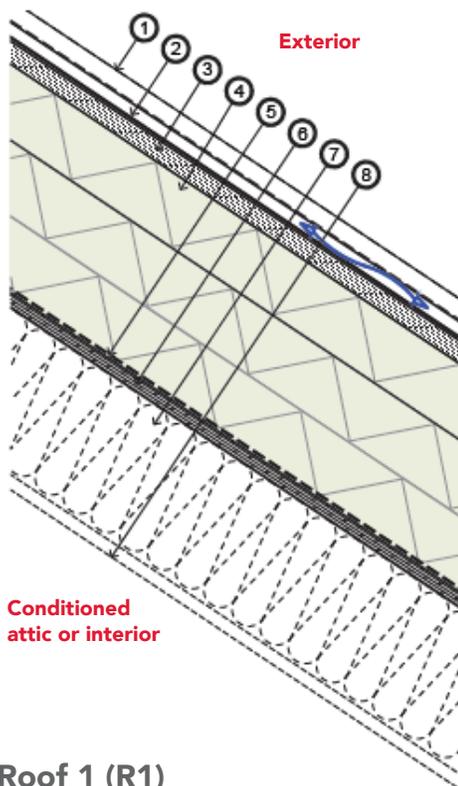
February 24, 2025 4:25 PM

Appendix C: ROCKWOOL WUI Compliant Typical Roof Assemblies

The roof assemblies on this page generally conform with the requirements associated with the referenced Wildland Urban Interface codes and guidance. The assemblies provided depict wood-framed roof construction for residential and commercial buildings up to 4 stories.

The fire-resistance of each assembly for project specific application must be confirmed by a fire engineer and in accordance with applicable codes, project performance criteria, and the authority having jurisdiction. General air and vapor control layer placement is shown on each assembly. Air and vapor control layer requirements and placement will vary based on assembly materials and layers and interior space conditioning. Consult with a qualified building enclosure professional for project-specific applications.

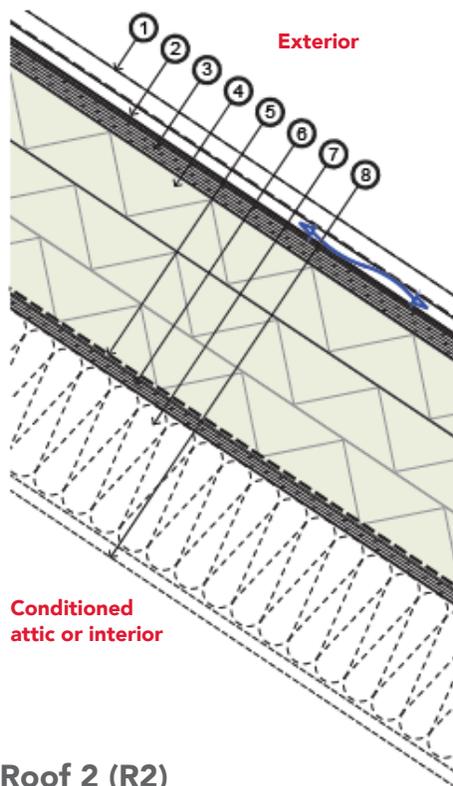
Climate Zones 1 to 3 (1-3)



Roof 1 (R1)

Metal Panel with Firestopping

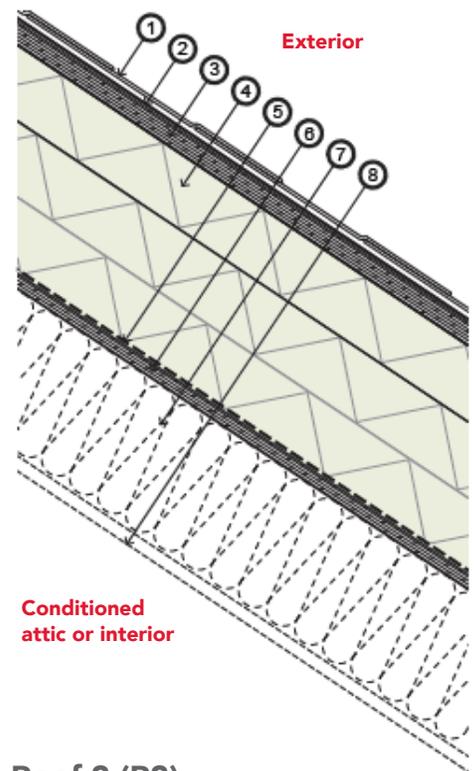
1. Class A roof covering (e.g. metal roof panel with ventilated air gap (see detail for firestopping information))
2. Vapor-impermeable water control membrane
3. Non-combustible roof sheathing
4. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
5. Vapor-permeable air barrier membrane
6. Roof deck sheathing
7. ROCKWOOL Comfortbatt® as required by code or project performance criteria (optional)
8. Interior finishes (optional)



Roof 2 (R2)

Metal Panel with Granulated Roof Membrane

1. Class A roof covering (e.g. metal roof panel with ventilated air gap)
2. Vapor-impermeable water control membrane (see detail for additional information)
3. Roof sheathing
4. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
5. Vapor-permeable air barrier membrane
6. Roof deck sheathing
7. ROCKWOOL Comfortbatt® as required by code or project performance criteria (optional)
8. Interior finishes (optional)

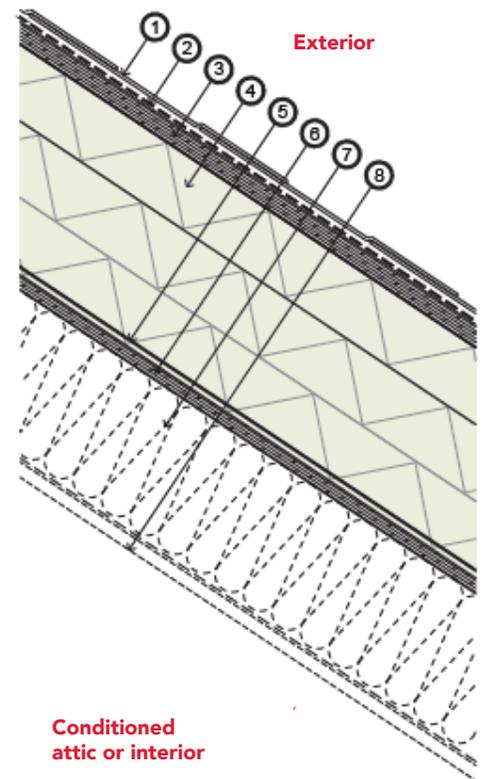
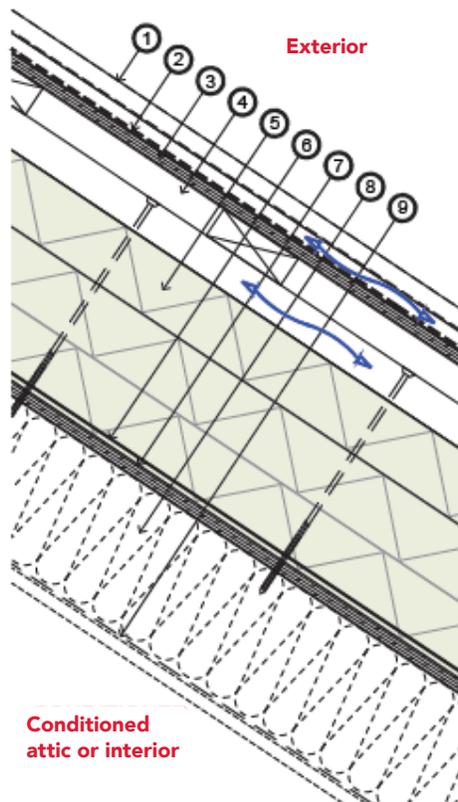
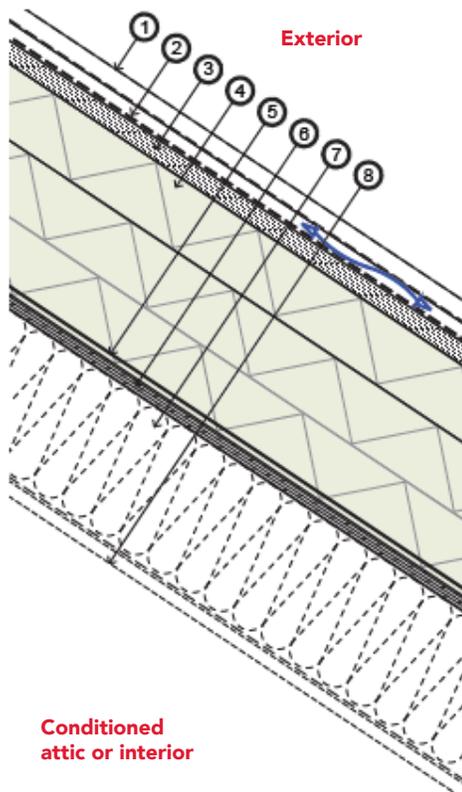


Roof 3 (R3)

Asphalt Shingle

1. Class A roof covering (class-A asphalt shingles)
2. Vapor-impermeable water control membrane
3. Roof sheathing
4. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
5. Vapor-permeable air barrier membrane
6. Roof deck sheathing
7. ROCKWOOL Comfortbatt® as required by code or project performance criteria (optional)
8. Interior finishes (optional)

Climate Zones 4 to 8 (4 and above)



Roof 4 (R4)

Metal Panel with Firestopping

1. Class A roof covering (e.g. metal roof panel with ventilated air gap)
2. Vapor-permeable water control membrane
3. Non-combustible roof sheathing
4. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
5. Vapor-impermeable air barrier membrane
6. Roof deck sheathing
7. ROCKWOOL Comfortbatt® with vapor control layers as required by code or project performance criteria (optional)
8. Interior finishes (optional)

Roof 5 (R5)

Vented Roof with Firestopping

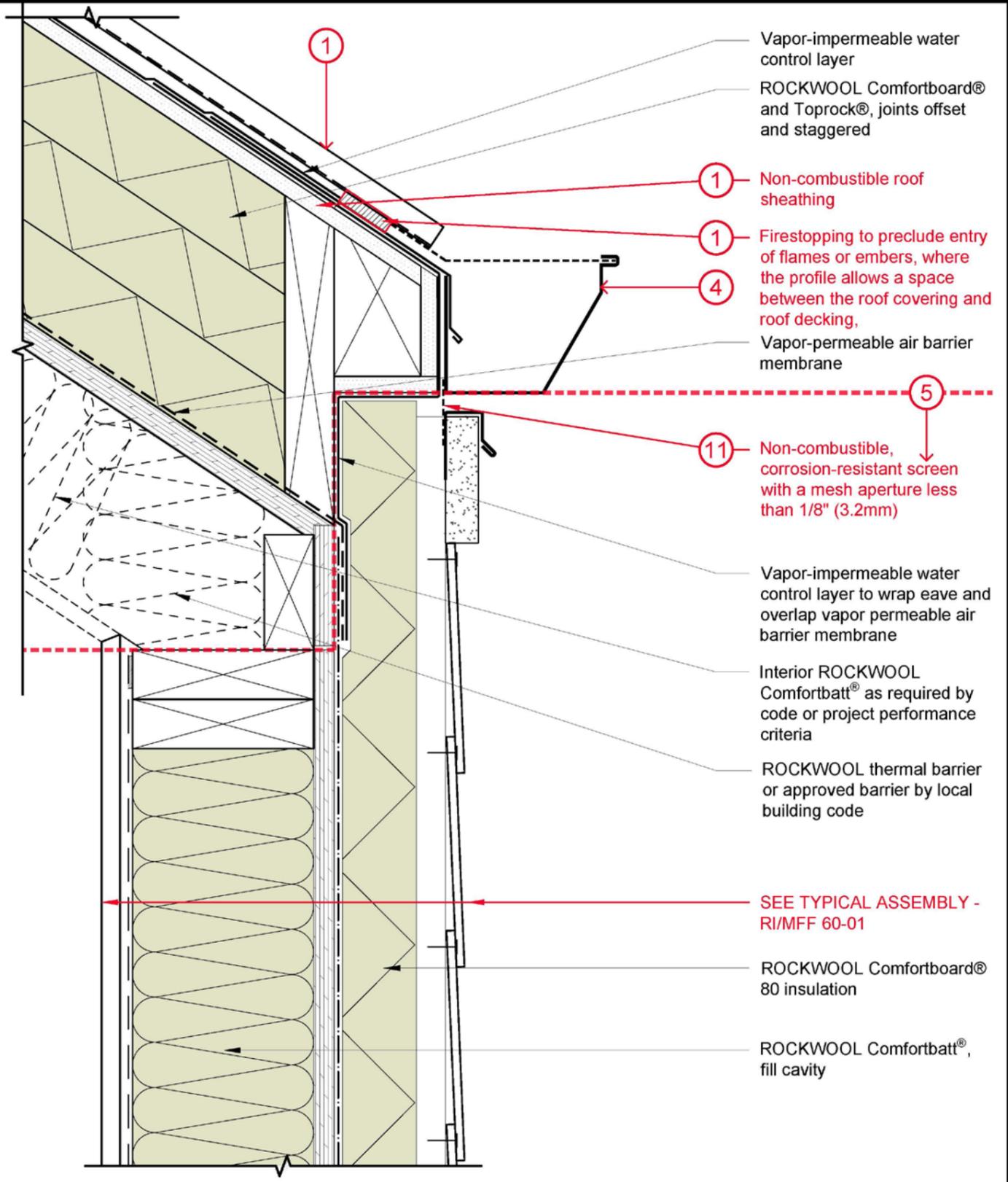
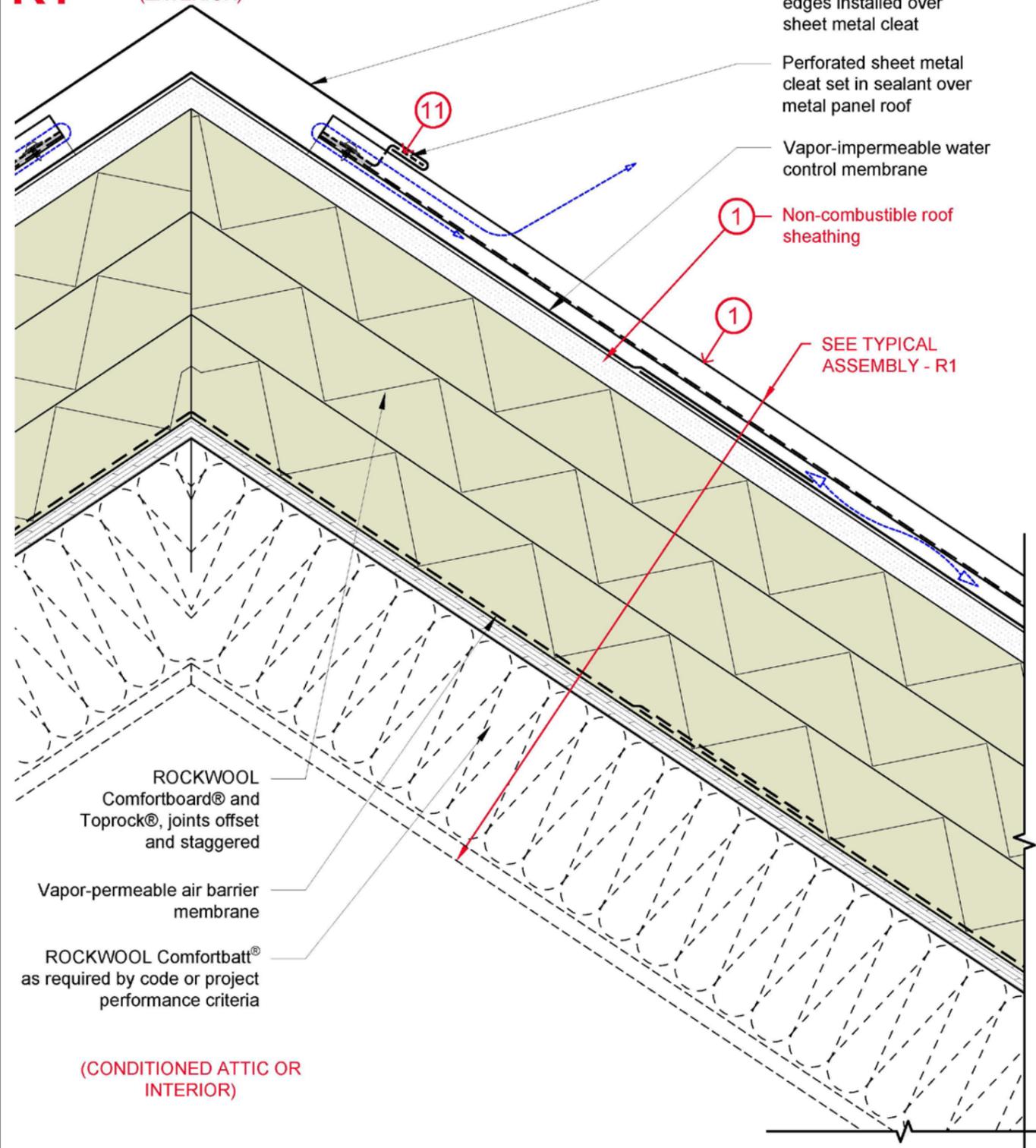
1. Class A roof covering (e.g. metal roof panel with ventilated air gap)
2. Water control membrane (vapor-permeable or vapor-impermeable)
3. Roof sheathing
4. Ventillated cross-framing
5. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
6. Vapor-impermeable air barrier membrane
7. Roof deck sheathing
8. ROCKWOOL Comfortbatt® with vapor control layers as required by code or project performance criteria (optional)
9. Interior finishes (optional)

Roof 6 (R6)

Asphalt Shingle

1. Class A roof covering (class-A asphalt shingles)
2. Vapor-permeable water control membrane
3. Roof sheathing
4. ROCKWOOL Comfortboard® 80 or 110, joints offset and staggered
5. Vapor-impermeable air barrier membrane
6. Roof deck sheathing
7. ROCKWOOL Comfortbatt® with vapor control layers as required by code or project performance criteria (optional)
8. Interior finishes (optional)

CLIMATE ZONES 1-3
R1



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS



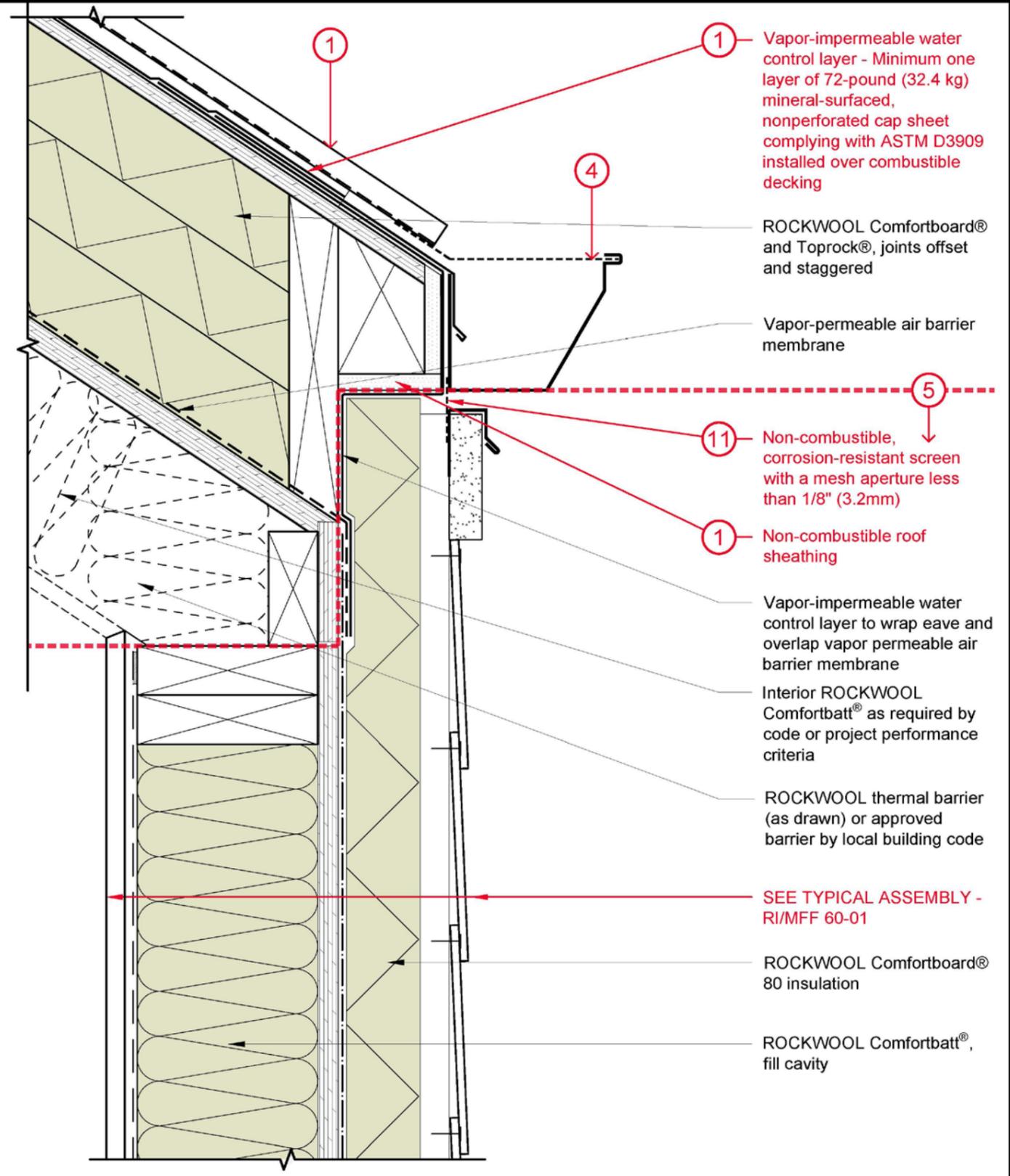
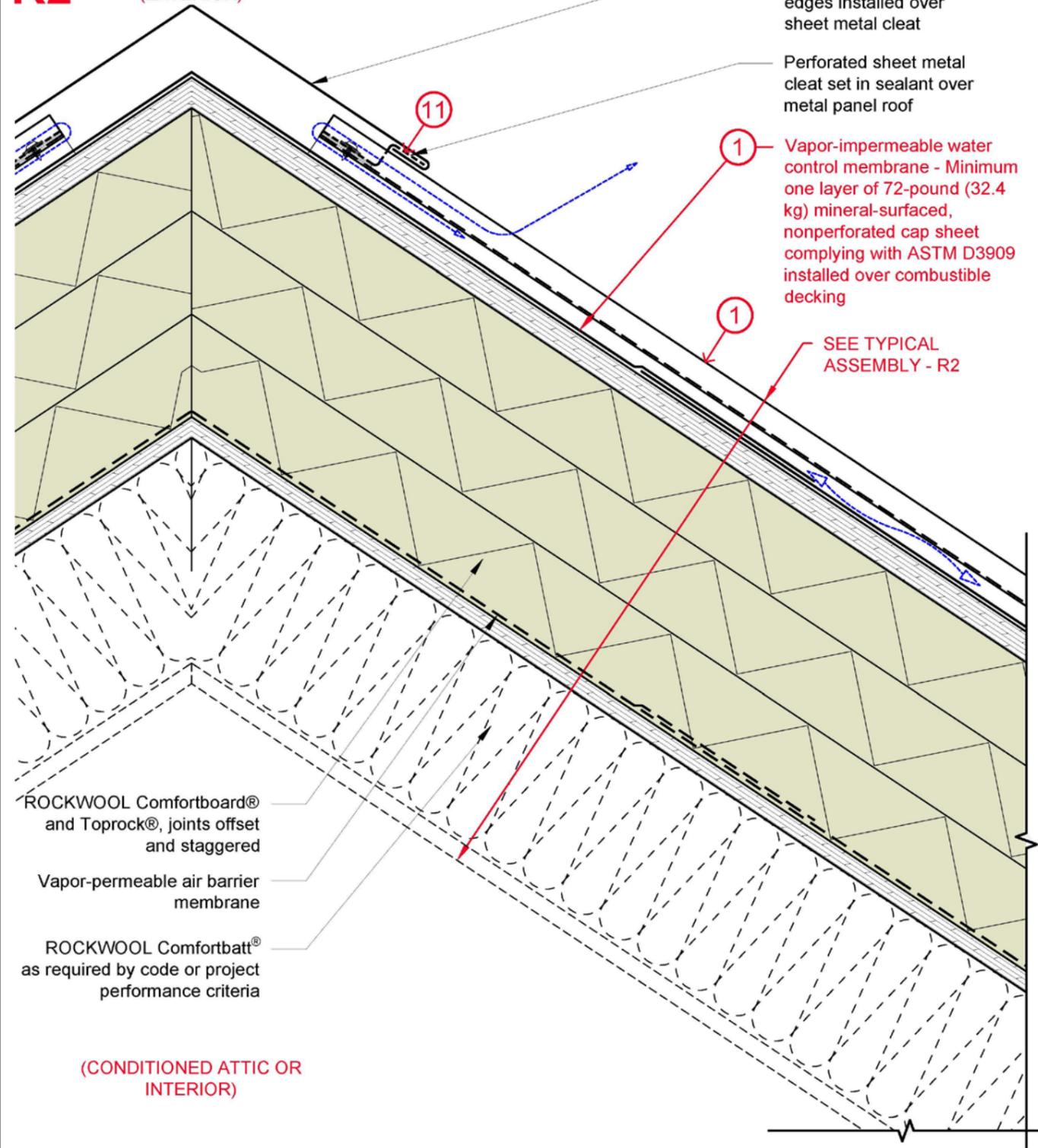
DRAWING TITLE:

CLIMATE ZONES 1-3 - METAL PANEL ROOF WITH FIRESTOPPING

DRAWING NO.:
DETAIL 01

SCALE: 3" = 1'-0"
DATE: JUNE 2024

CLIMATE ZONES 1-3
R2



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS



DRAWING TITLE:

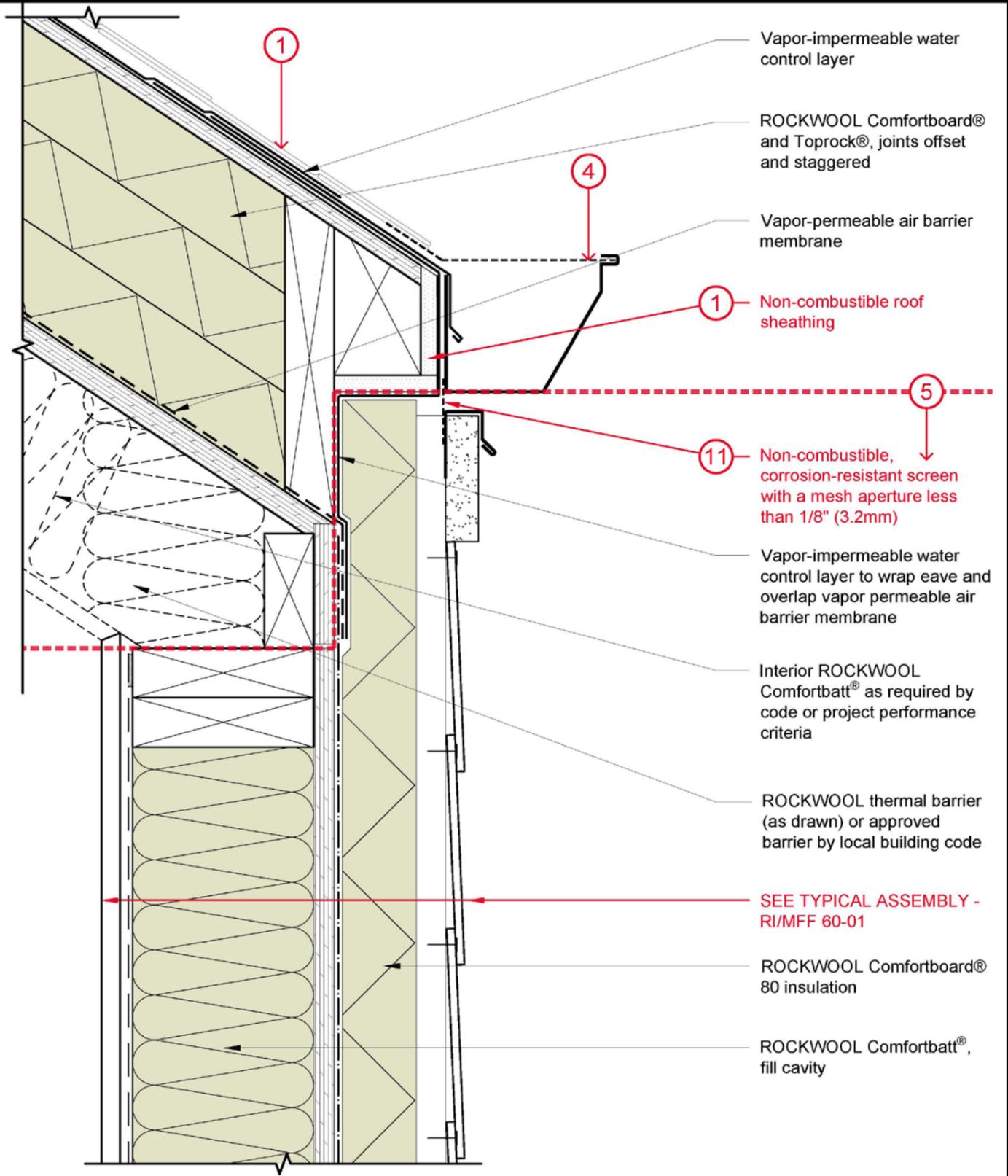
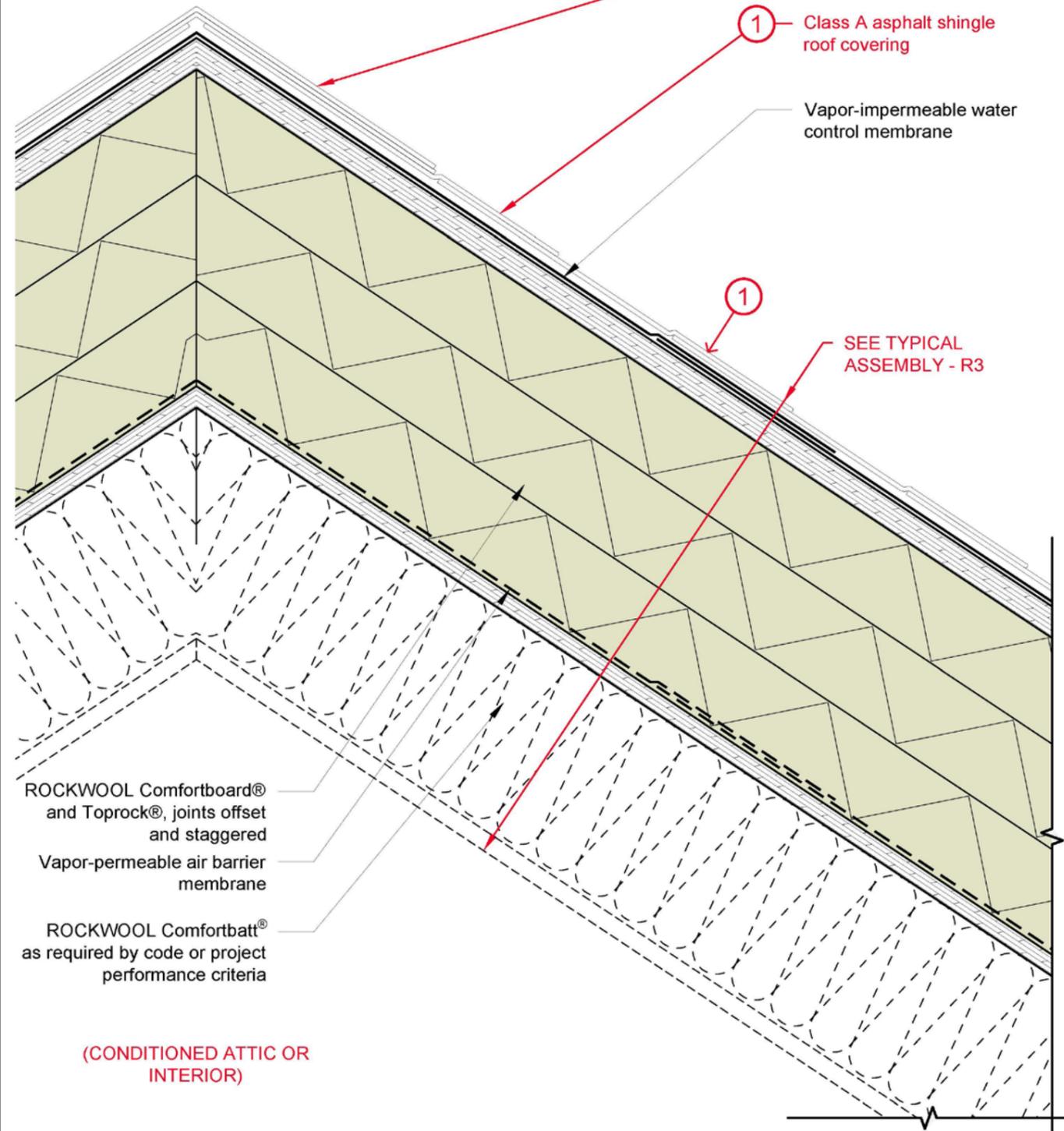
CLIMATE ZONES 1-3 - METAL PANEL ROOF WITH GRANULATED ROOF MEMBRANE

DRAWING NO.:
DETAIL 02

SCALE: 3" = 1'-0"

DATE: JUNE 2024

CLIMATE ZONES 1-3
R3 (EXTERIOR)



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS



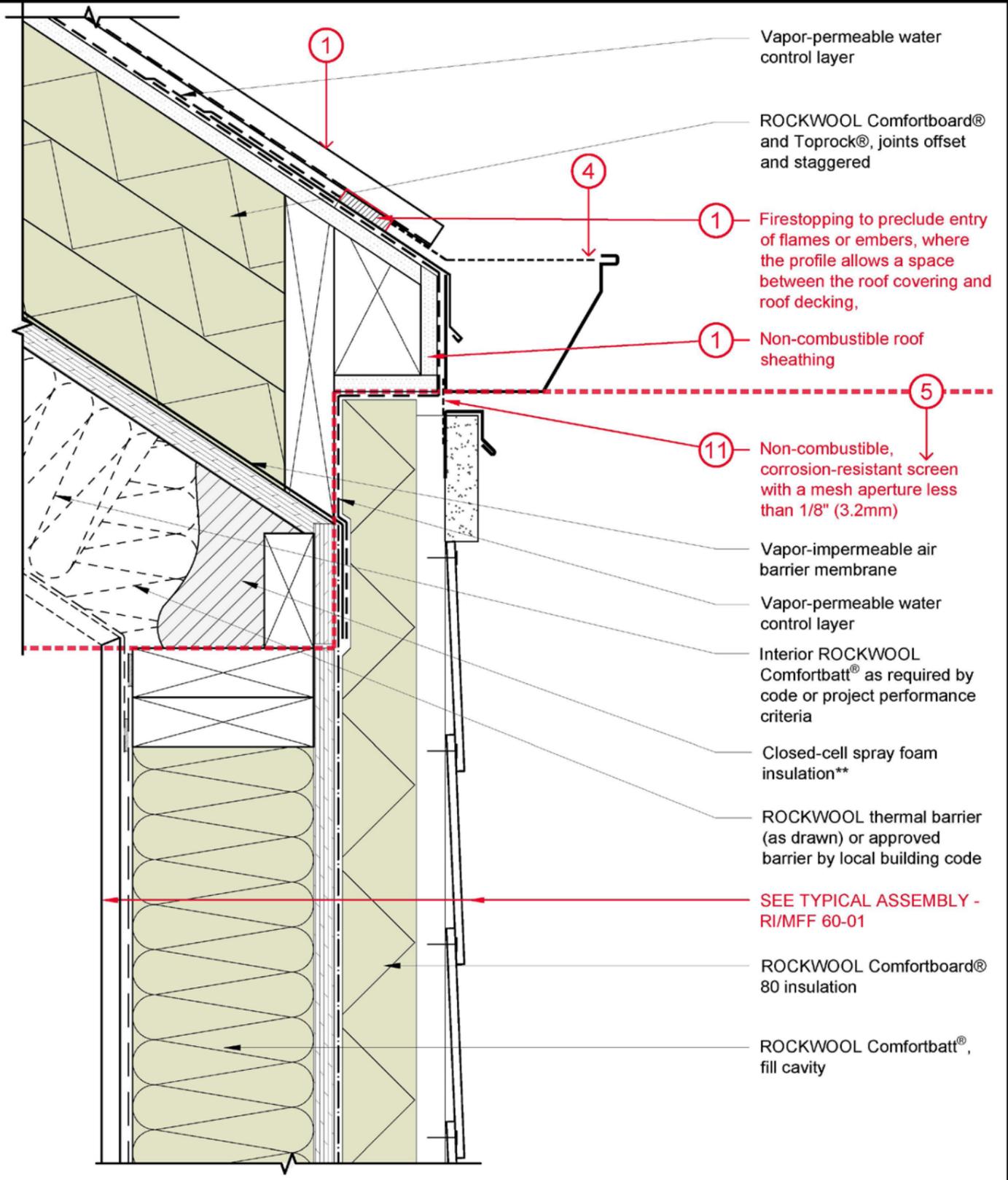
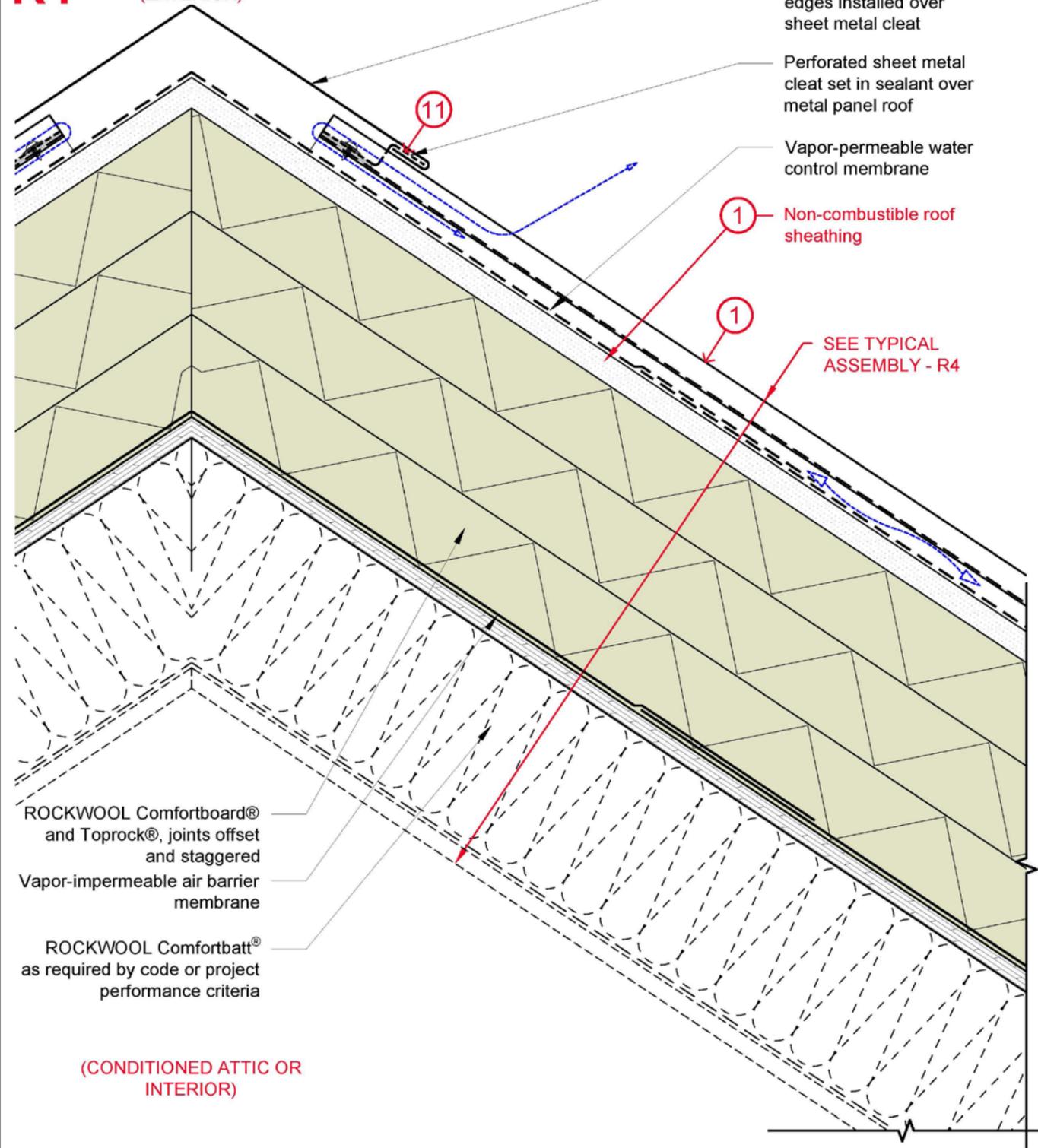
DRAWING
TITLE:

CLIMATE ZONES 1-3 - ASPHALT SHINGLE

DRAWING NO.:
DETAIL 03

SCALE: 3" = 1'-0"
DATE: JUNE 2024

CLIMATE ZONES 4 AND ABOVE
R4



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS



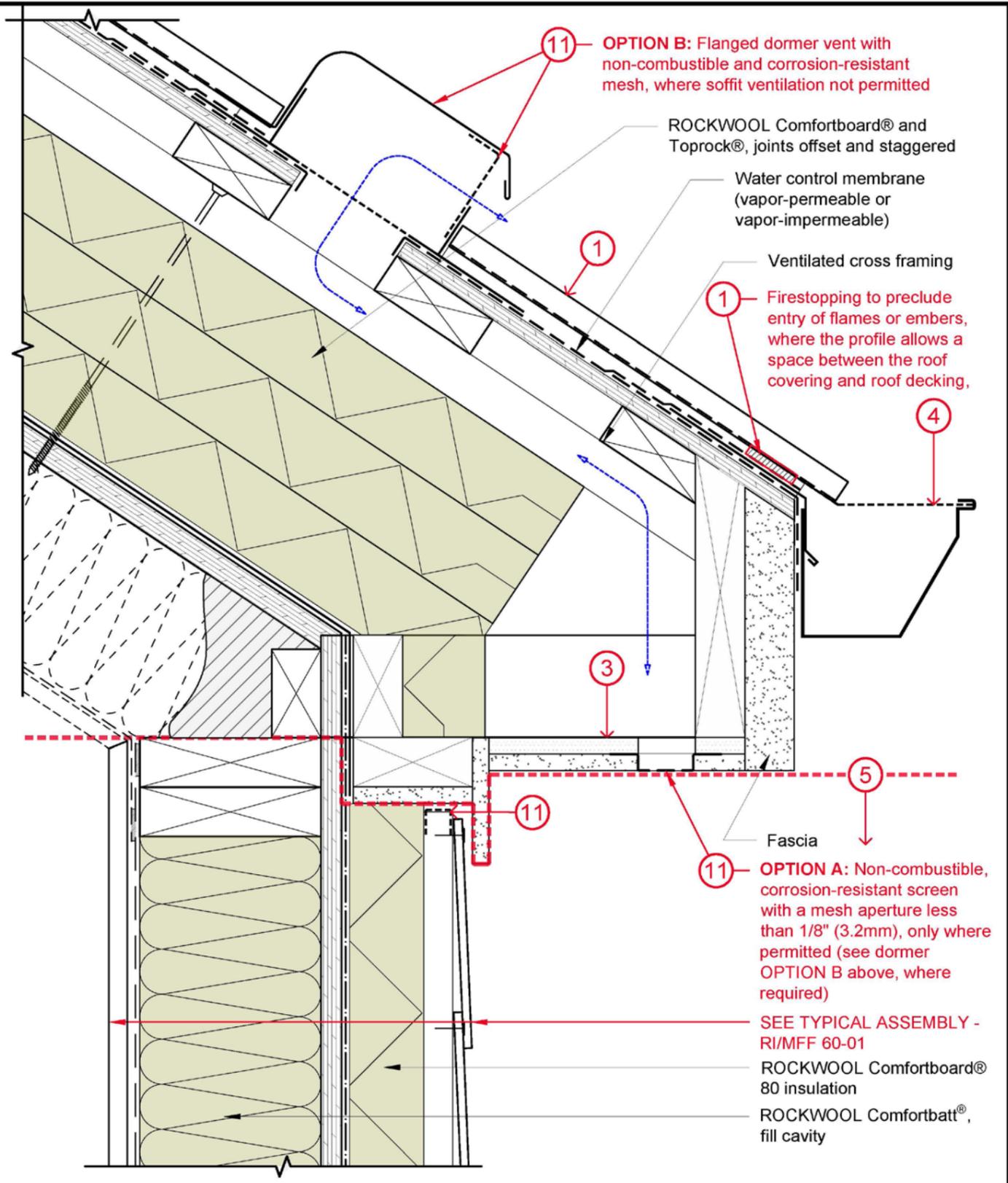
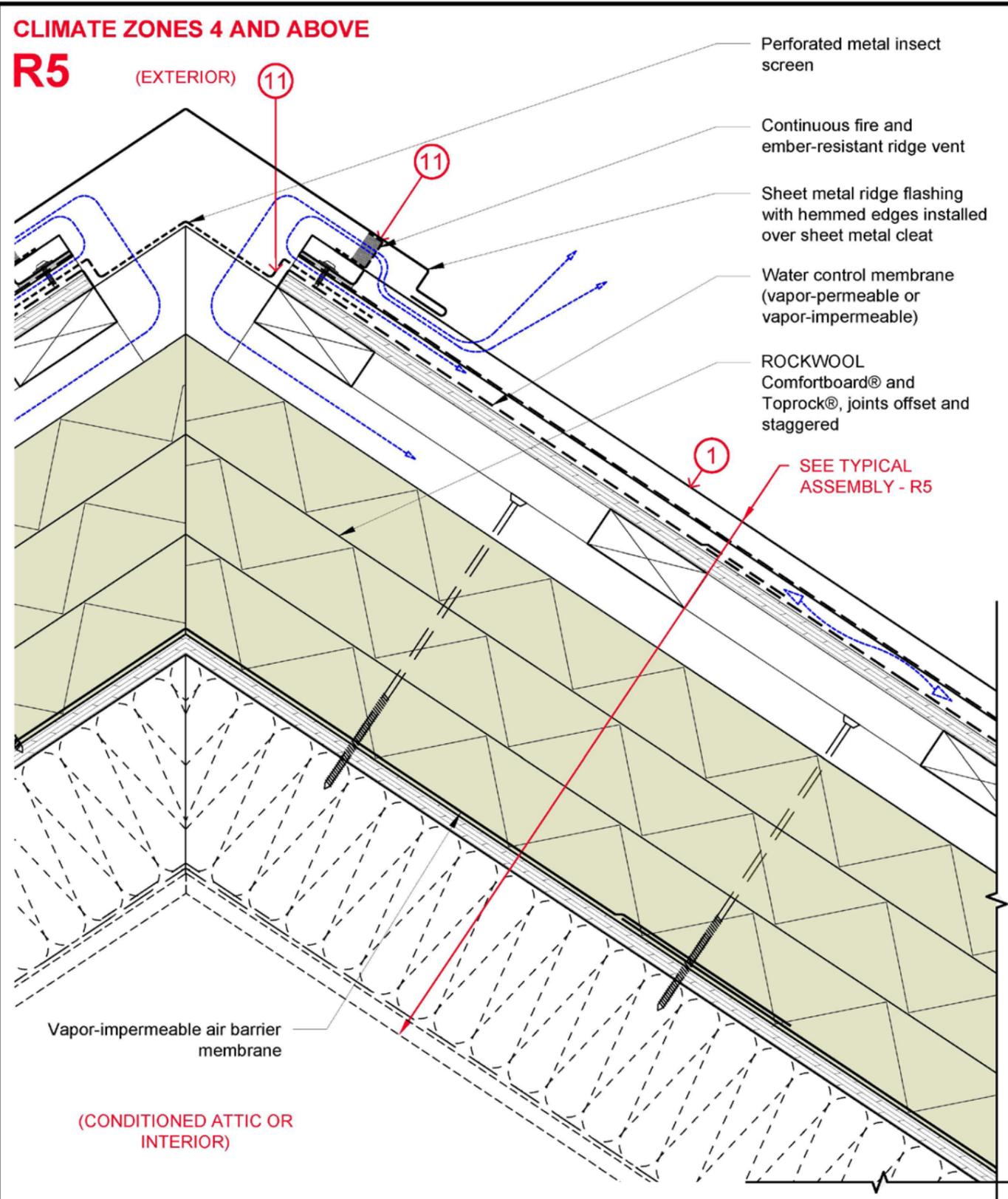
DRAWING TITLE:

CLIMATE ZONES 4 AND ABOVE - METAL PANEL ROOF WITH FIRESTOPPING

DRAWING NO.:
DETAIL 04

SCALE: 3" = 1'-0"
DATE: JUNE 2024

CLIMATE ZONES 4 AND ABOVE
R5



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS

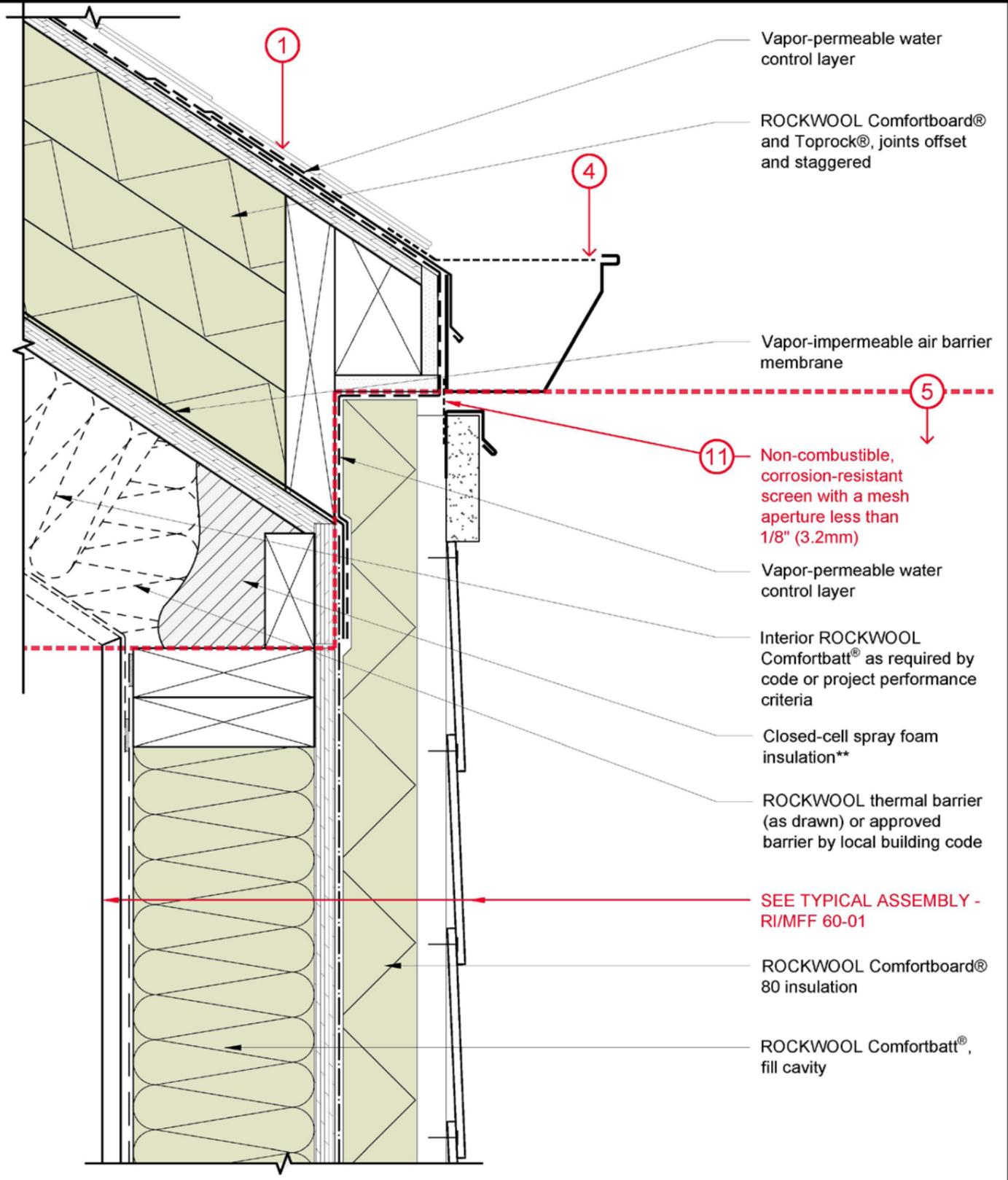
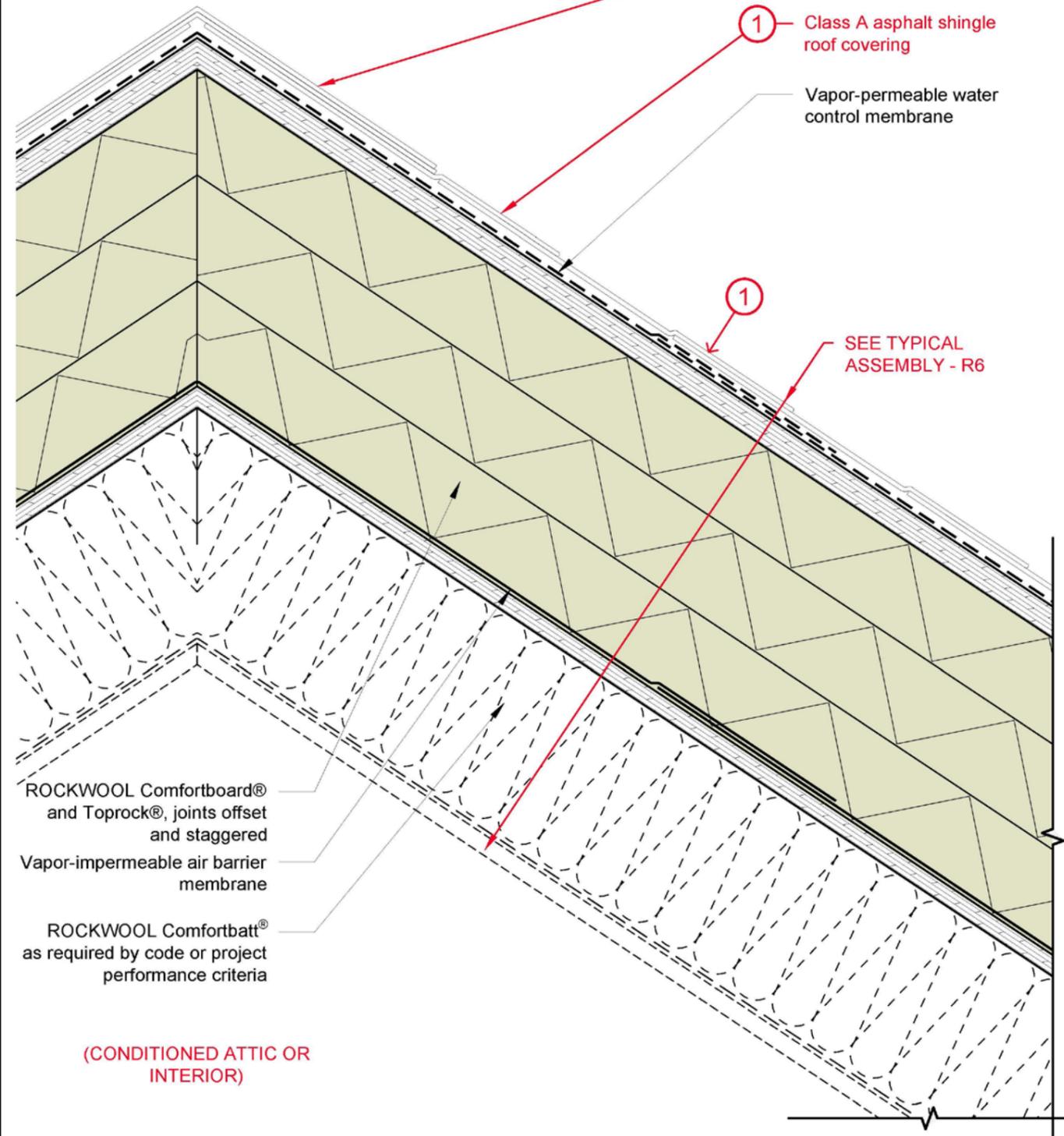


DRAWING TITLE:

CLIMATE ZONES 4 AND ABOVE - VENTED ROOF WITH FIRESTOPPING

DRAWING NO.: **DETAIL 05**
SCALE: 3" = 1'-0"
DATE: JUNE 2024

CLIMATE ZONES 4 AND ABOVE
R6 (EXTERIOR)



WOOD FRAME CONSTRUCTION UP TO 4 STOREYS



DRAWING TITLE:

CLIMATE ZONES 4 AND ABOVE - ASPHALT SHINGLE

DRAWING NO.:
DETAIL 06

SCALE: 3" = 1'-0"
DATE: JUNE 2024