

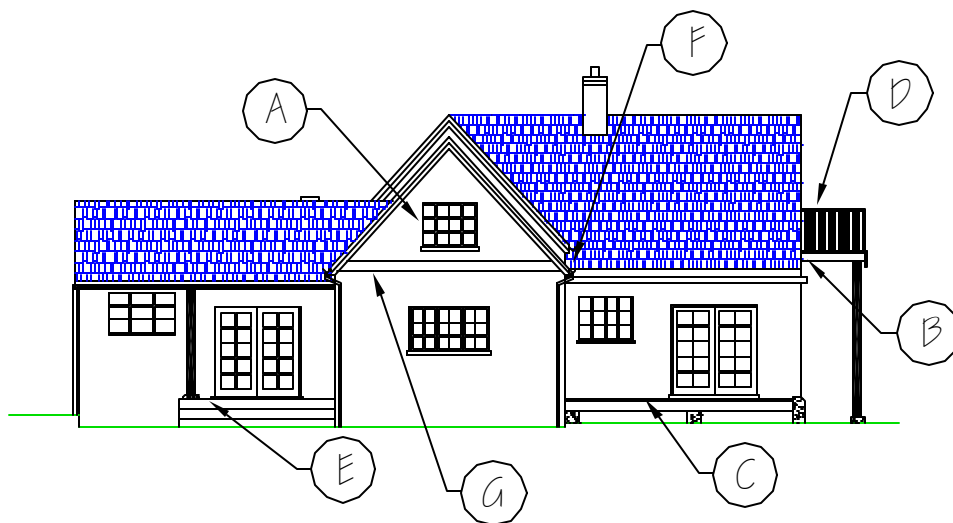
LONDON GUARANTEE

EXTERIOR CONSTRUCTION DETAILS FOR SINGLE FAMILY HOMES

In order to assist our Builders London Guarantee has prepared this series of exterior details that address the most common problem areas on a single family home.

In the case of multi-family projects, or non-typical single family homes the services of a Building Envelope Professional should be retained.

London Guarantee's goal is to provide unparalleled technical services to our Builders.



These details are provided to our builders as a guide only. It is the Builder's responsibility to ensure their adequacy/ completeness. The use of these details by anyone other than London Guarantee's Registered Builders is strictly prohibited.

WINDOW PAPER SEQUENCING

AI

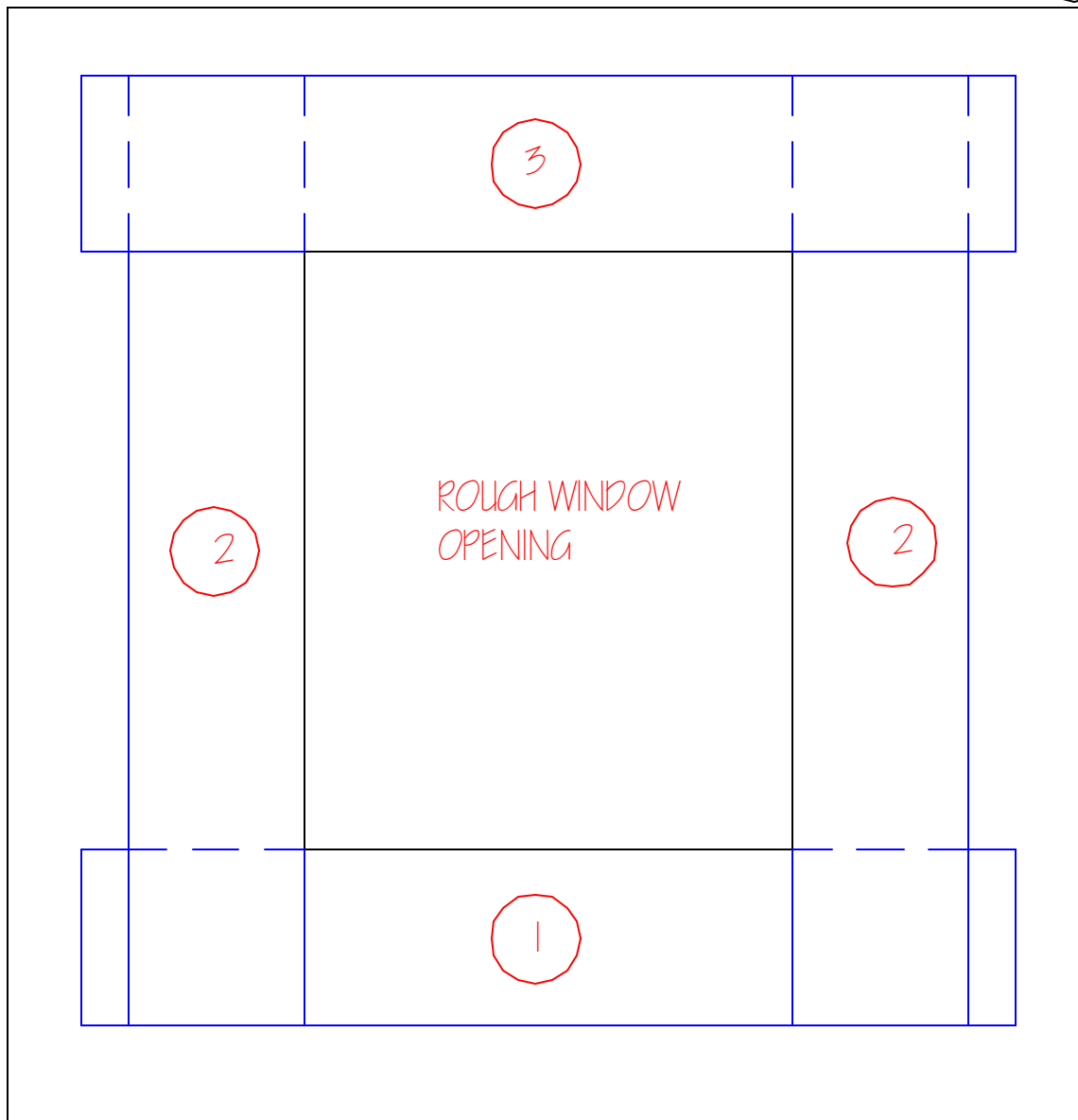


ILLUSTRATION POINTS:

- i) The starter strips of building paper must be installed in the above noted sequence.
- ii) The use of a heavier building paper will minimize physical damage that may occur during construction.
- iii) Ensure the use of four individual pieces, one continuous piece folded at the corners is not acceptable.
- iv) When installing the remainder of the building paper on the exterior attention must be paid in order to ensure that the sill starter strip(#1) is pulled out over top of the building paper. The lower flange should always be visible prior to cladding. Ensure that the building paper is installed in a shingled fashion.

WINDOW SILL DETAIL

A2

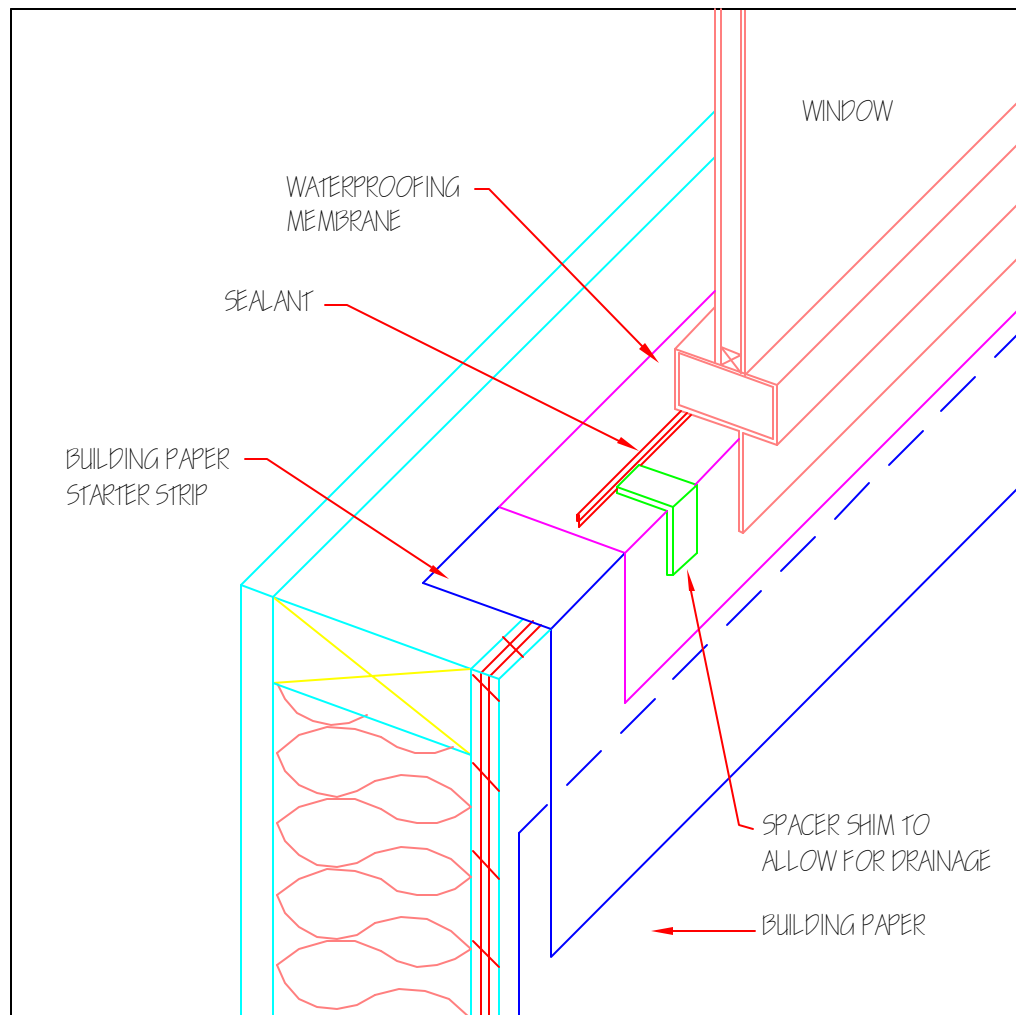


ILLUSTRATION POINTS:

- i) The critical junction is the corner of the opening.
The use of a prefabricated corner piece may help.
The waterproofing membrane should not extend up the sides of the opening more than 6".
- ii) Building paper lapping (4" minimum, shingled laps)
- iii) If peel & stick is used as the waterproofing membrane it should have minimal contact with the wood.
- iv) Ensure that all framing members are protected from the weather, and that the moisture content is below 19% prior to insulating and installing the vapor barrier.

This detail creates the ability for the window opening to deal with incidental water which may enter due to a window leak.

Many versions of this detail exist. However, this detail is not a typical requirement for basic single family homes.

WINDOW HEAD FLASHING DETAIL

A3

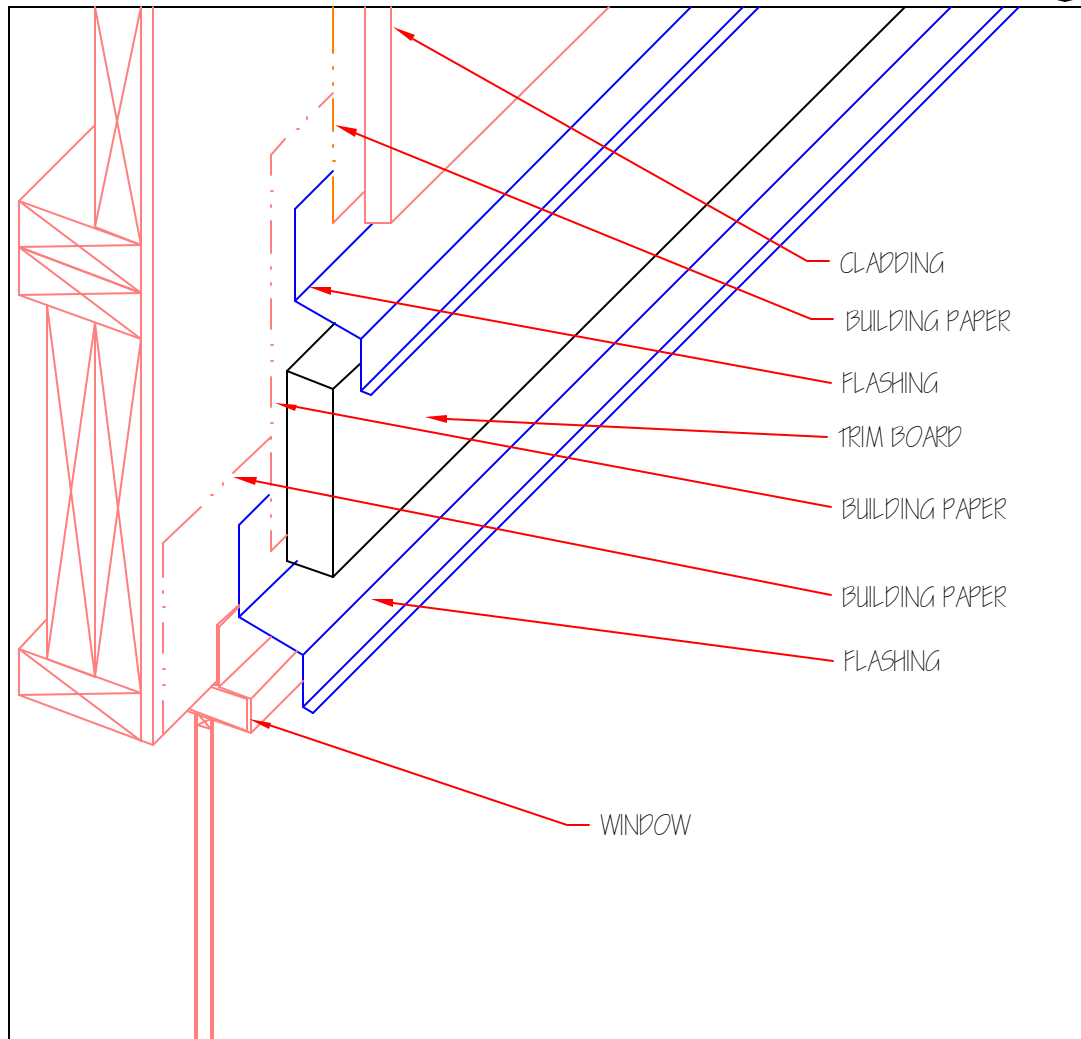


ILLUSTRATION POINTS;

- i) Flashings should extend beyond the flange of the window.
One way of achieving this is to run the flashing the full width of the trim board. In areas where no trim board is present the flashing should extend beyond the window flange by a minimum 1".
- ii) End-dams at the end of the flashings can be created by bending up the ends of the flashing, or applying a small bead of polyurethane caulking.
- iii) The main body of the building paper should always overlap the the flange of the the flashing.

WINDOW HEAD FLASHING DETAIL

A4

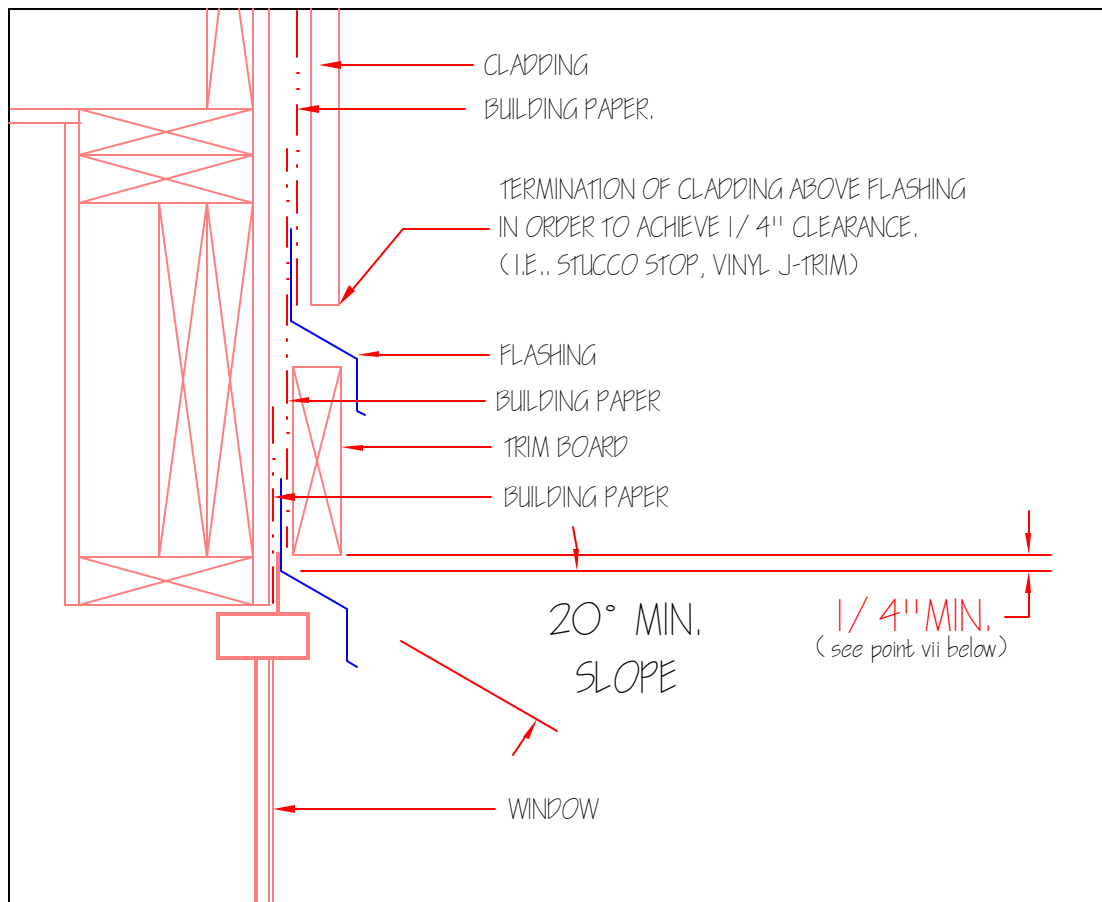


ILLUSTRATION POINTS;

- i) Building Paper Lapping (4" minimum, shingled laps)
- ii) Flashing Slope (20 degrees minimum)
- iii) Gap Between Cladding & Flashing (1/4" minimum) above and below.
- iv) Do not use Vinyl drip flashings, because they are manufactured without a positive slope. Use only adequately sized and sloped (20 degrees min.) metal drip flashings.
- v) All types of building paper and house wraps should always be installed in a shingled fashion, the upper sheet should always overlap the lower sheet a minimum of 4".
- vi) Never rely on any self adhering membranes (red tape, peel and stick) in lieu of properly shingled laps.
- vii) In areas where wood frame building settlement/ shrinkage is expected (box joists, headers, etc.), the minimum gap between the flashing and the cladding should be increased to 1/2".

The above noted detail can also apply to other flashing details such as:
Barge boards, Exterior vents, etc.

DECK CORNER DETAIL

B

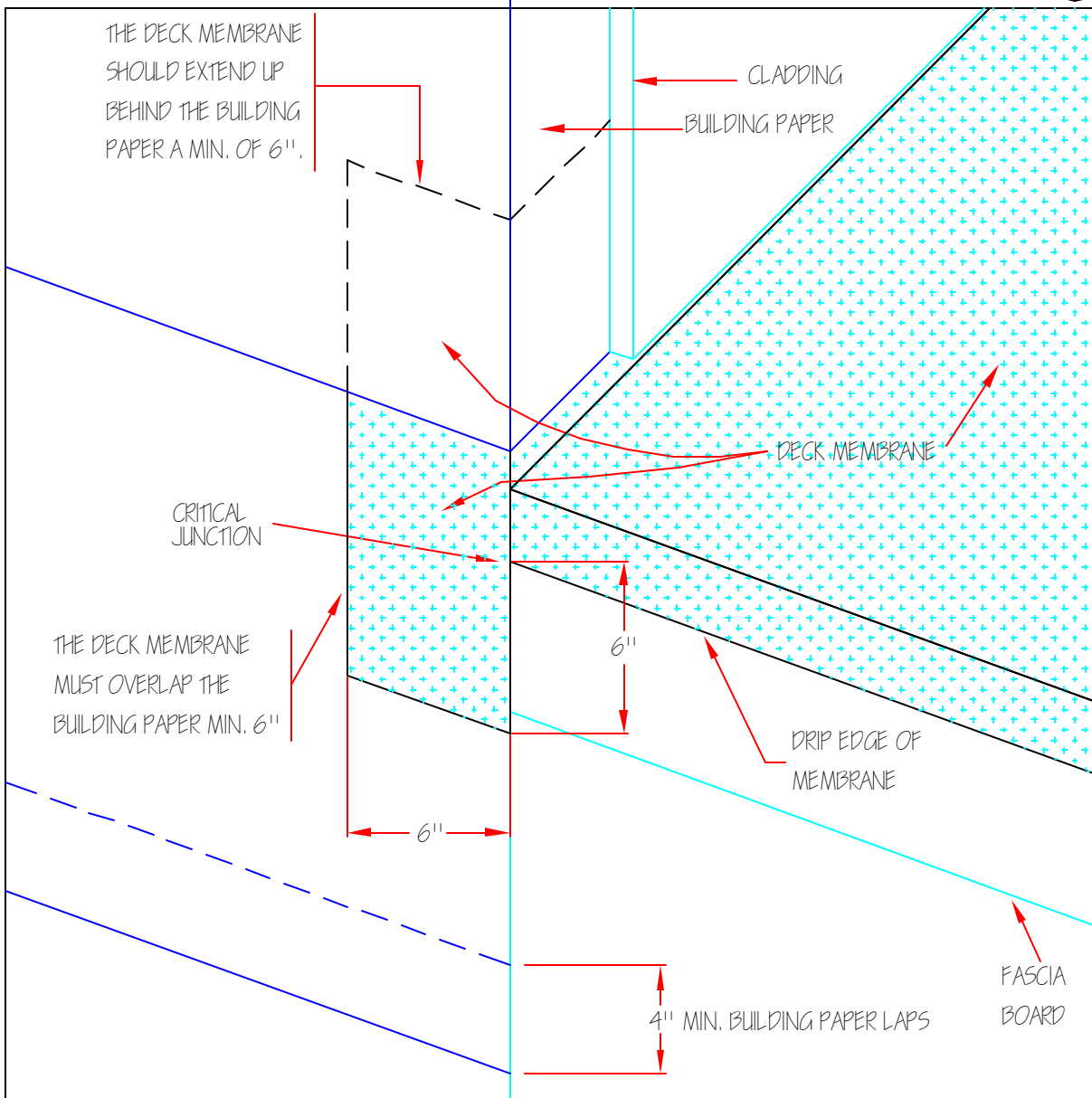


ILLUSTRATION POINTS;

- i) The deck membrane junction with the cladding and the fascia board is the critical junction.
- ii) Prior to the installation of the fascia board a starter strip of building paper should be installed. This will allow for a proper tie in for the detail.
- iii) The deck membrane must extend around the corner in order to provide a three dimensional detail.
- iv) Penetrations through the membrane should be minimized. Example, use side mounted railing.

DRIP DECK FLASHING DETAIL

CI

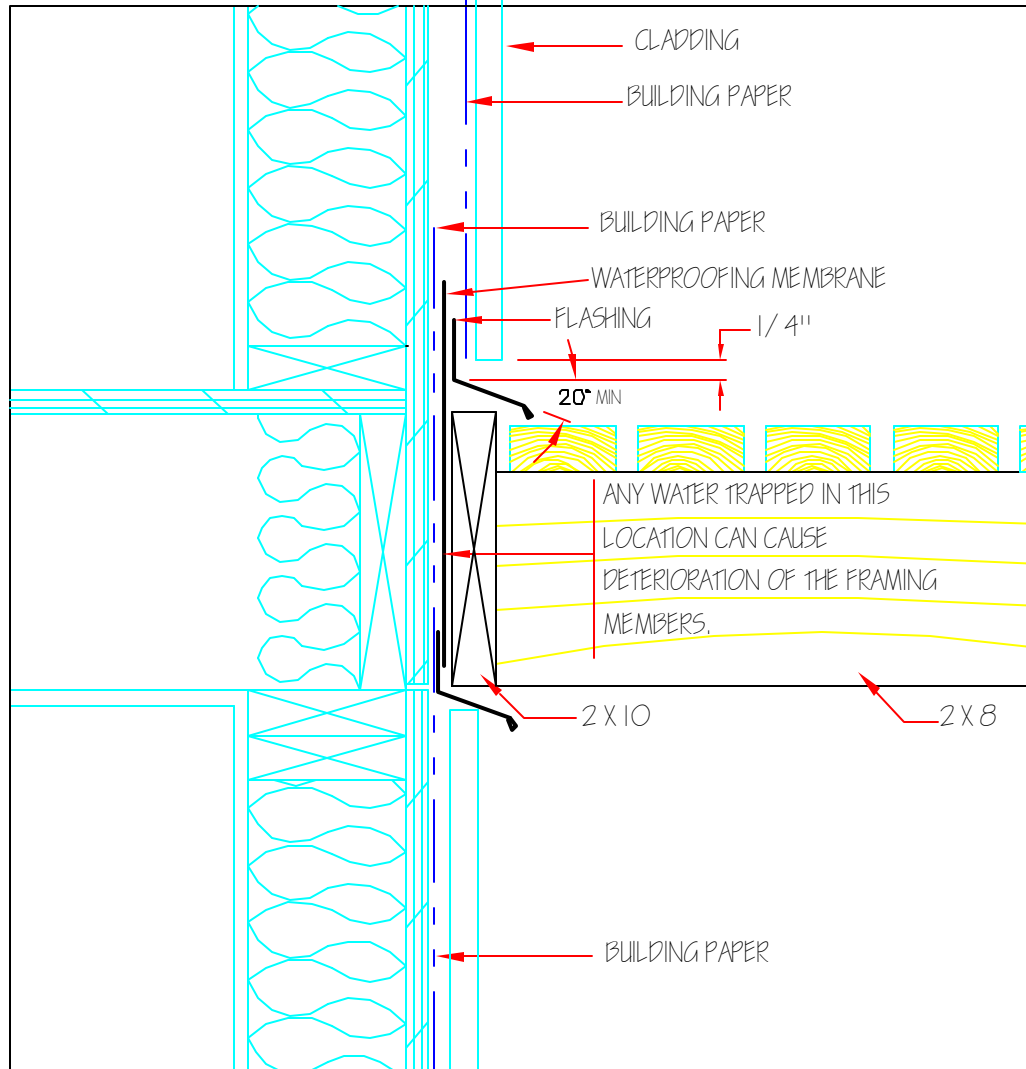


ILLUSTRATION POINTS;

- i) The area of concern is water entry behind the attached 2X member against the wall. sources: rain, owner with a hose etc.
- ii) Ensure all exterior wood members are Pressure Treated. All cut ends should be re-treated with minimum two coats of preservative.
- iii) Ensure that the attached 2X member is 1.5" larger than the joists, this will give the flashing the ability of maintaining it's slope, and prevent water from getting between the hung joist and the box joist.

(for an alternate detail, see C3)

DRIP DECK FLASHING DETAIL

C2

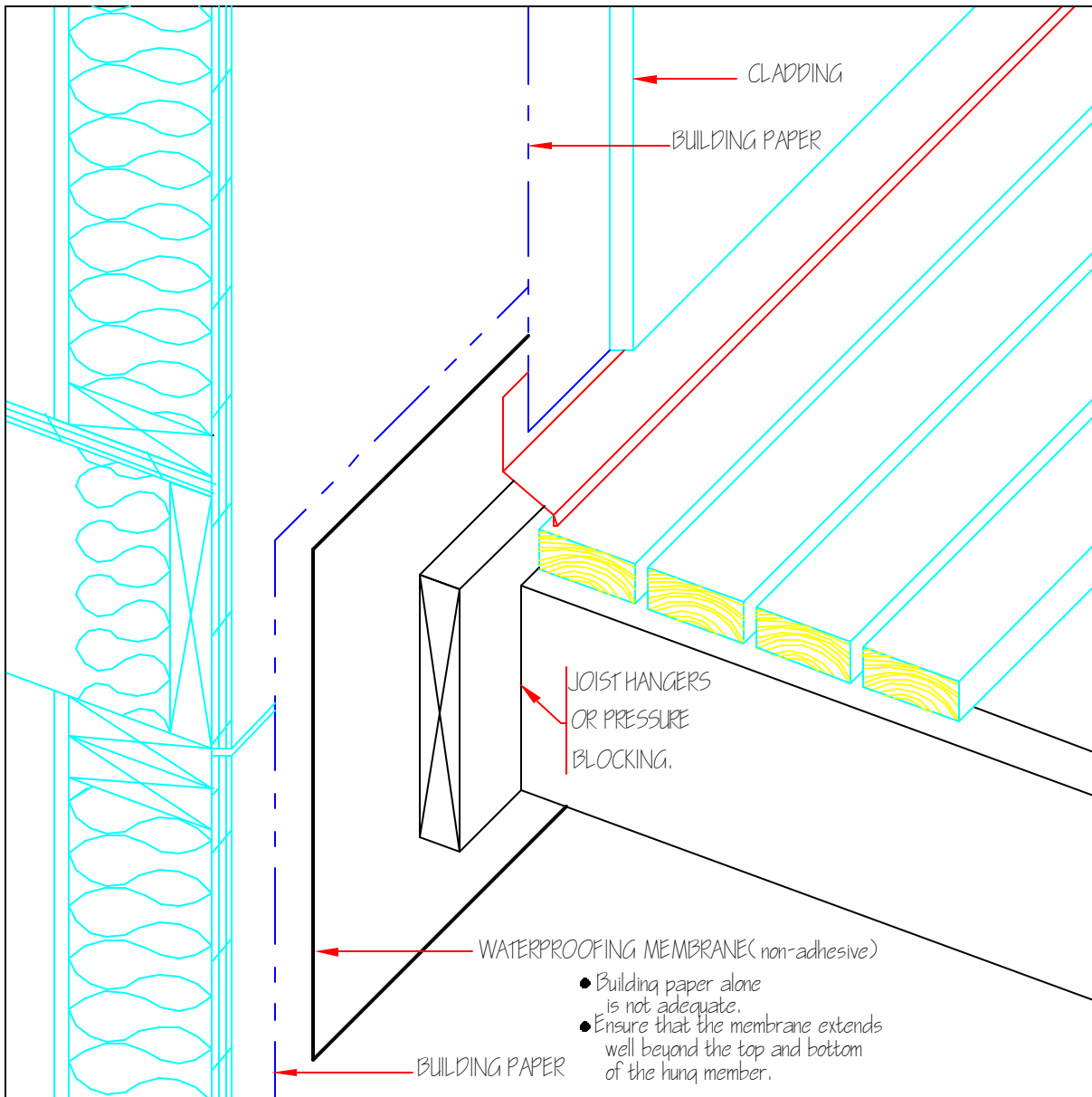


ILLUSTRATION POINTS;

- i) Ensure that all exterior wood members are pressure treated.
- ii) Pay particular attention to the termination of the deck, ensure the water proofing and building papers extend far enough beyond the ends of the deck in order to provide adequate material for the tie in details.
- iii) If using non-pressure treated fascia boards, placing spacers behind the fascia allows air flow and drying to occur.

DRIP DECK FLASHING DETAIL (alternate)

C3

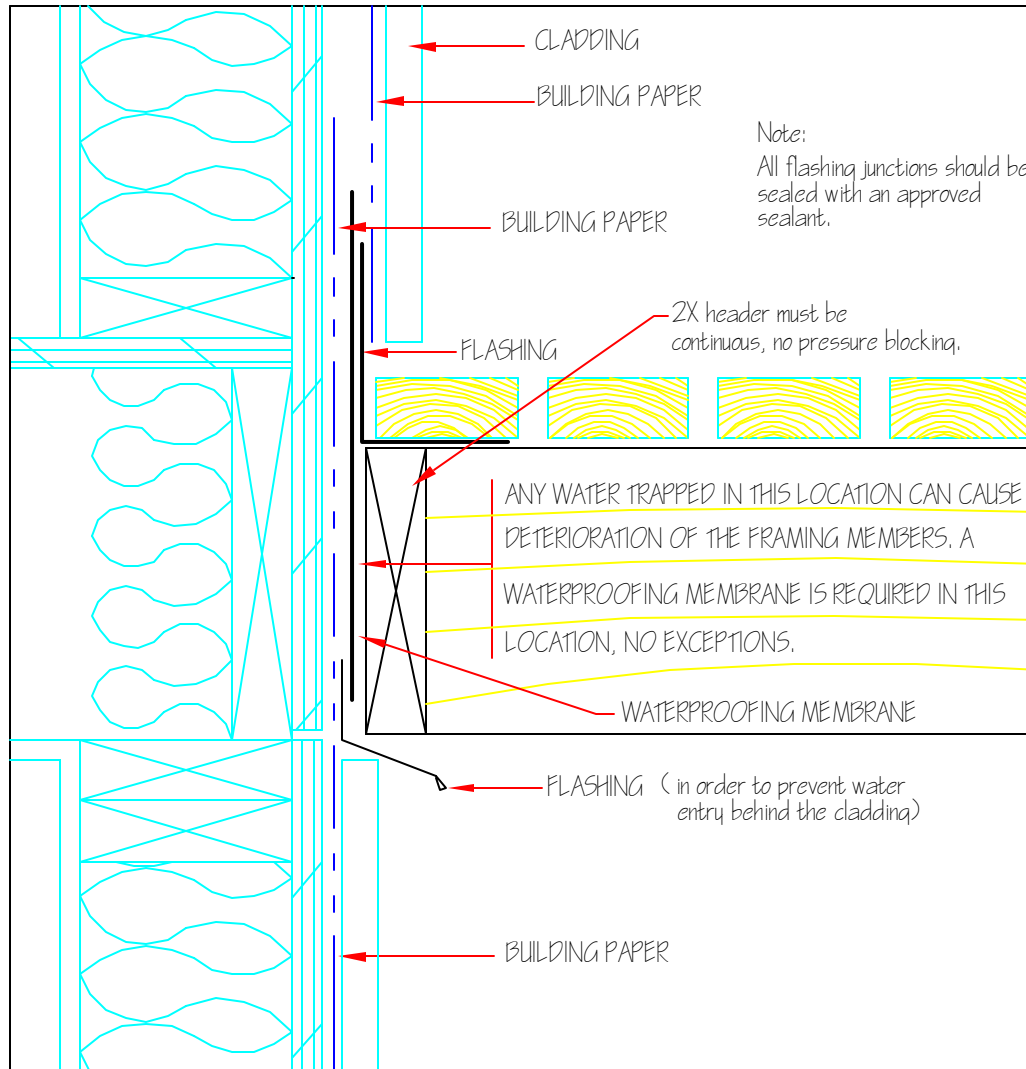


ILLUSTRATION POINTS;

This version of our drip deck detail shows the 2X header as the same dimension as the Joist members. Ensure that there is a waterproofing attached to the wall, on top of the building paper prior to the attachment of the header.

- i) The area of concern is water entry behind the attached 2X header against the wall. sources: rain, owner with a hose etc.
- ii) Ensure all exterior wood members are Pressure Treated. All cut ends should be re-treated with a minimum of two coats of preservative.
- iii) When using non-treated fascia boards to finish the deck, fur out the fascia board using evenly spaced lath (pressure treated or cedar). This will prevent premature deterioration of the fascia board from behind.

LIPSTAND / PARAPET WALL DETAIL

D

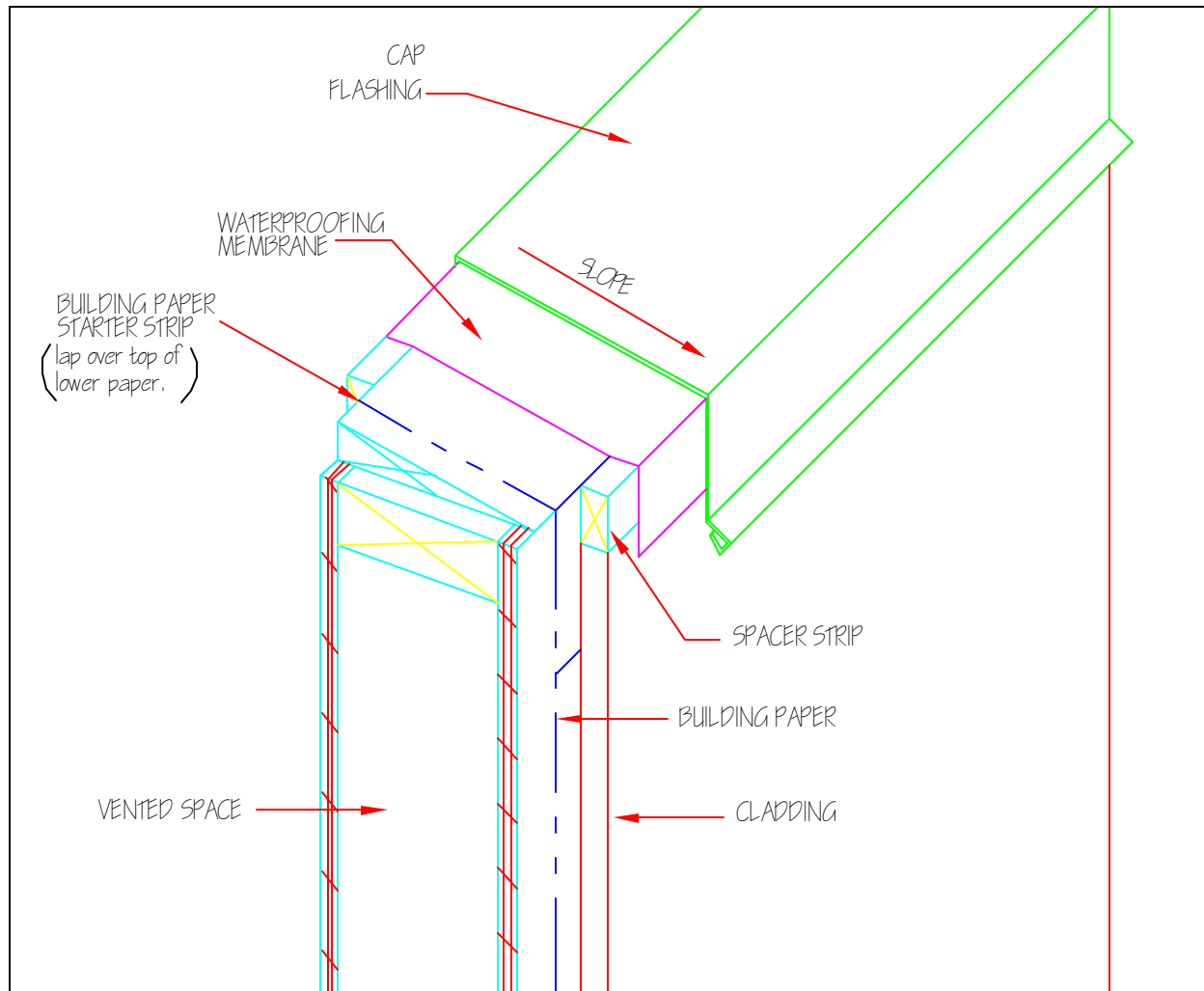


Illustration Points:

- i) The critical junction is the termination of the cap flashing with the wall cladding. Ensure that this junction is adequately detailed with a 3-D saddle flashing.
- ii) Ensure that the waterproofing membrane has minimal direct contact with wood, also any wood members should be below 19% moisture content prior to being enclosed.
- iii) All dead air spaces should be adequately cross vented.
- iv) Railings should be side mounted in order to eliminate any penetrations and low spots
- v) Ensure that the waterproofing membrane is able to withstand the temperatures that may exist beneath the cap.
- vi) wood capping is never a good substitute for metal capping.
- vii) Joints in the capping material should be either Standing ,or S-Lock seams. Lap joints are not adequate.

FRONT STOOP DETAIL

E

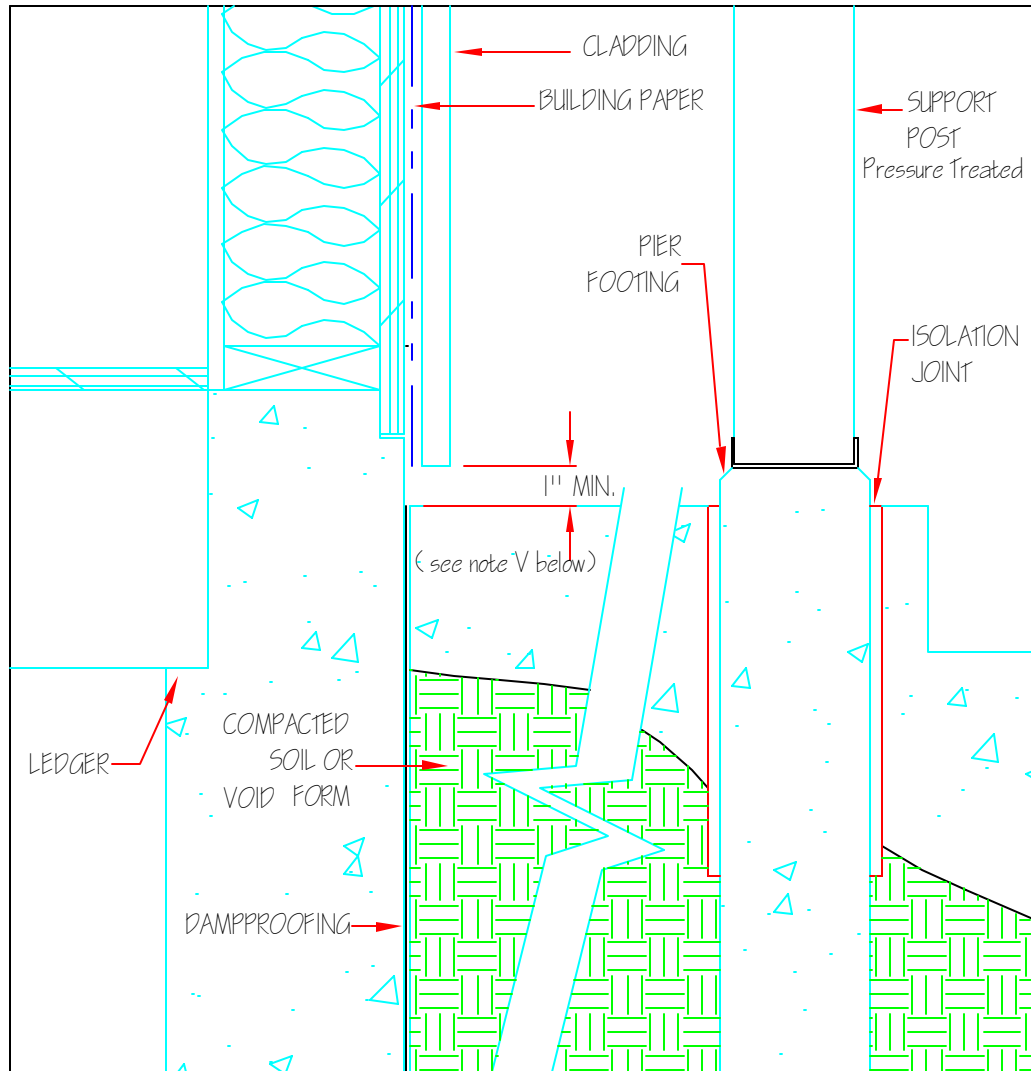


ILLUSTRATION POINTS;

- i) Concrete stoops should not be poured directly against wood framing, a one inch gap should be maintained. The concrete foundation should be stepped up to an elevation above the finished stoop elevation.
- iii) Dampproofing should be applied up to the finished stoop elevation.
- ii) The support post should be pressure treated, the cut ends should be retreated and placed facing up with the uncut end bearing on top of the pier footing.
- iv) Ensure the pier footing for the post extends above the elevation of the concrete stoop (approx. 1").
- v) In areas exposed to the weather a gap greater than 1" is required.

DIVERTER STEP FLASHING DETAIL

(F)

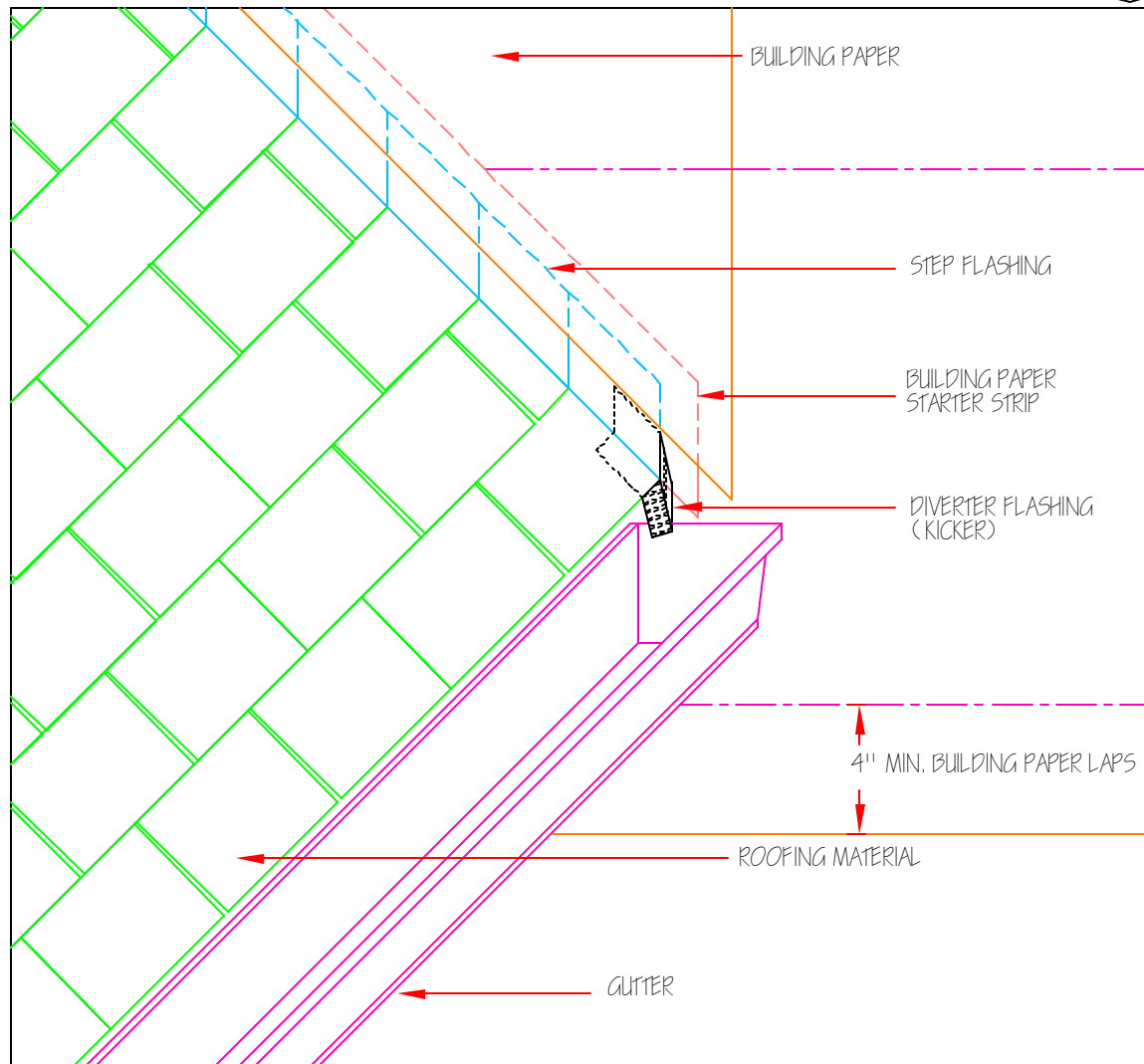


ILLUSTRATION POINTS:

- i) The area of concern is water running down the step flashing and being directed behind the cladding. Typically the gutter is installed after the cladding thereby creating a space between the final step flashing and the gutter. The installation of a diverter (kicker) flashing will ensure that the water is directed into the gutter, and not behind the cladding.
- ii) Building paper should be installed behind the fascia board, as should roofing felt behind the step flashings.
- iii) The diverter (kicker) flashing can be formed out of any flashing material and slipped up behind the final step flashing. Ensure that the diverter is not created by cutting the flashing material, as it may create a pin hole which will still allow some amount of water to pass.
- iv) Maintain a minimum clearance of 2" between the bottom of the cladding and the roof surface.

BARGE BOARD FLASHING DETAIL

9

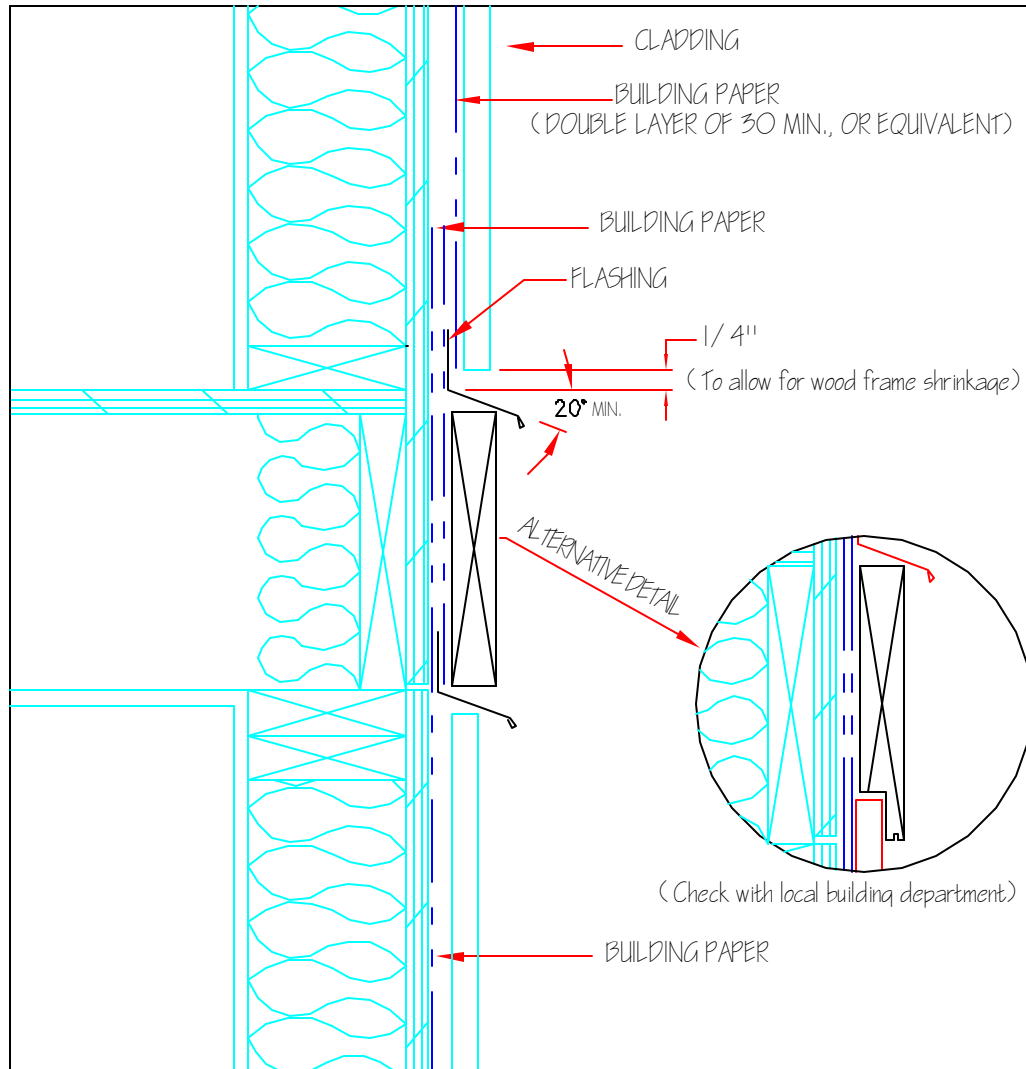


ILLUSTRATION POINTS;

Typically the top of trim/ barge boards are properly detailed. However, the bottom edge does not always receive the same attention. The bottom edge can be detailed in a number of ways, such as the two drawn above. Ensure that your detail creates a drip edge.

- i) Flashing shall be installed at every horizontal junction between 2 different exterior finishes, except where the upper finish overlaps the lower finish.
- ii) The barge board and all other exterior trim boards, shall be properly flashed. Building paper shall be behind and over top of all flashing.
- iii) Properly lap the building paper, Minimum 4" lap, refer to building paper lapping detail (H).

Please refer to the 1998 B.C. Building Code, Subsection 9.27.3.

BUILDING PAPER LAPPING DETAIL

H

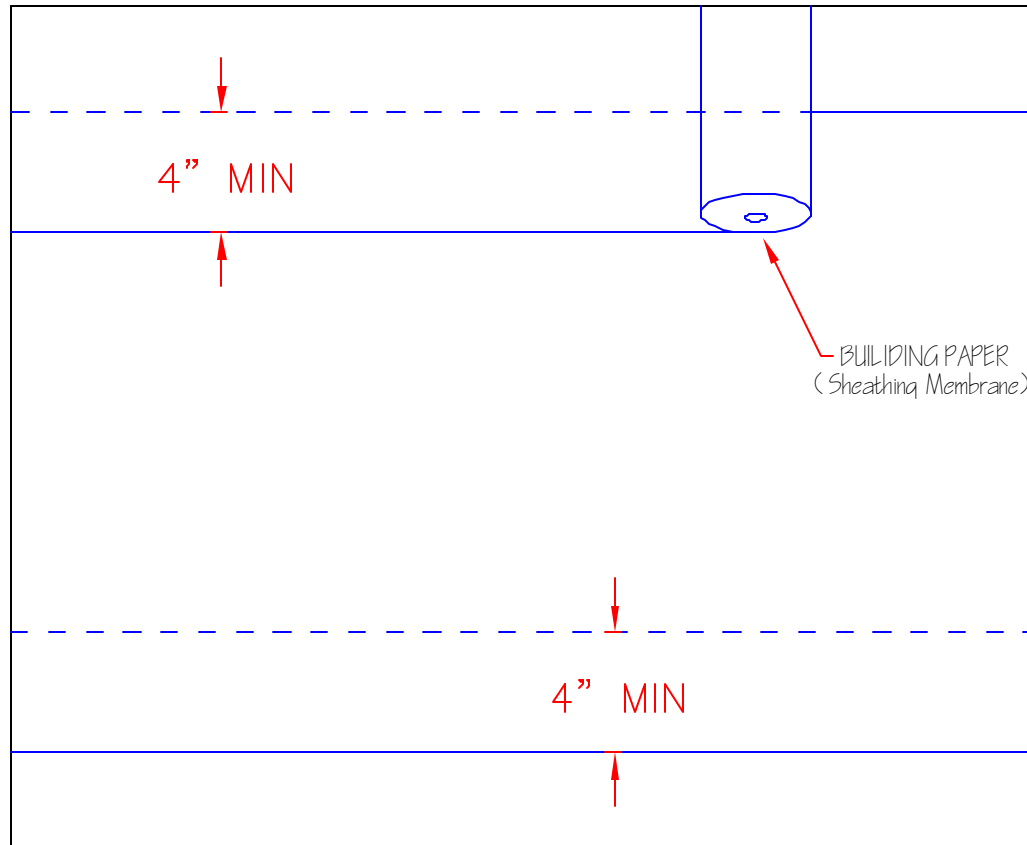


ILLUSTRATION POINTS;

Minimum building paper requirements as per the 1998 B.C. building code.

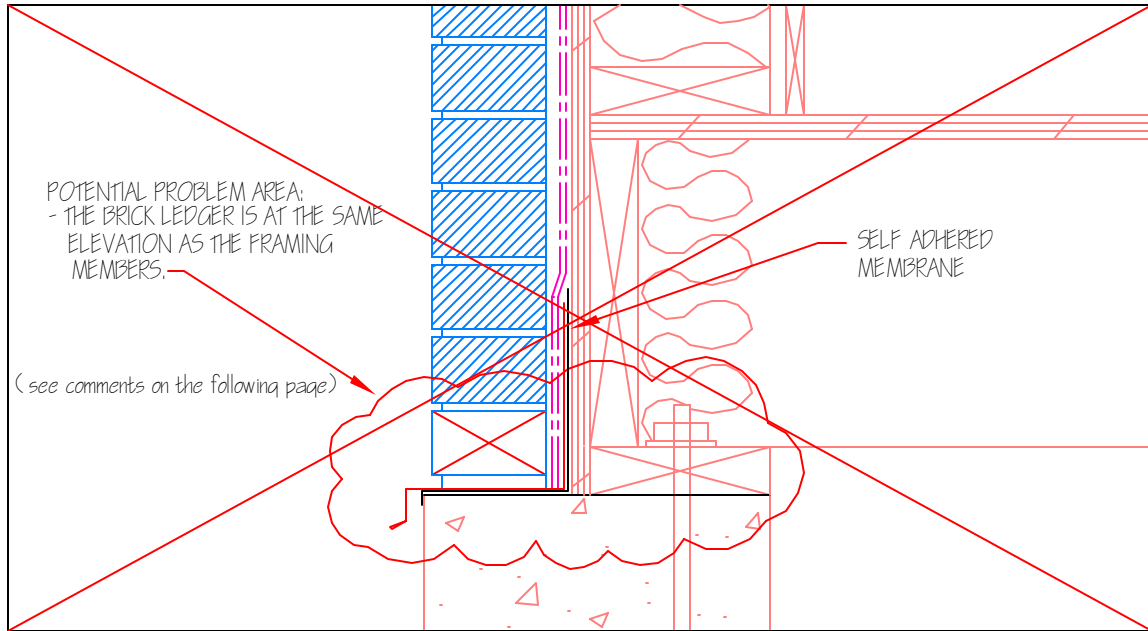
9.23.17.3.(2) Sheathing membrane shall be applied so that joints are lapped not less than 100mm (4").

9.23.17.3.(3) Where sheathing membrane is applied horizontally, the upper sheets shall overlap the lower sheets.

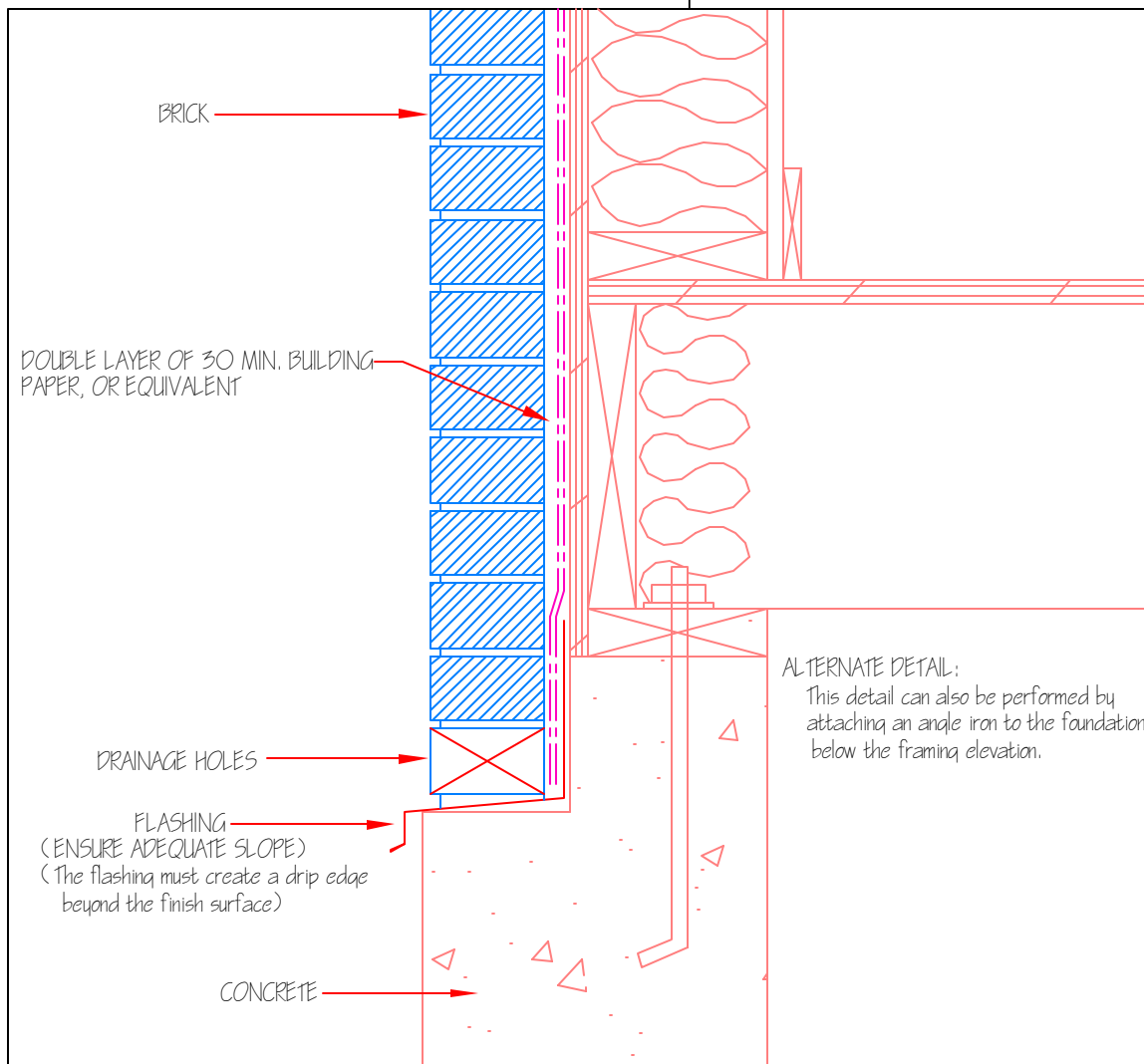
- i) Peel and stick membranes, or tape, should never be used in lieu of proper lapping.
- ii) The building code allows for vertically applied building paper. However, horizontal application is the preferred method.
- iii) With vinyl siding a single layer of 30 min. building paper is acceptable. However, a single layer of 60 min. is preferred. For all other claddings, such as stucco, a double layer of 30 min. should be used.

Please refer to the 1998 B.C. building code, subsection 9.23.17.

BRICK LEDGER DETAIL (A) (not recommended) [Ⓢ]



BRICK LEDGER DETAIL (B) (preferred method)



BRICK LEDGER DETAIL

①

ILLUSTRATION POINTS:

The area of concern is the elevation between the brick ledge and the framing members. Moisture related problems may arise if there is not an elevation difference, as shown in Detail A. Detail B shows an elevation difference, therefore, detail B should be the detail performed on site.

Please refer to the 1998 B.C Building Code, section 9.20. Above-grade masonry. The following are some of the main articles.

- i) Masonry veneer over wood-framed walls shall have not less than a 25mm air space behind the veneer.
- ii) Veneer walls should be constructed so that mortar droppings into the cavity are minimized. (Preventing the mortar from forming a bridge, allow the passage of rain water across the cavity).
- iii) For single family homes the masonry veneer shall be tied to masonry back-up or to wood framing members with strip ties that are hot dipped galvanized, not less than 0.76 mm thick, not less than 22mm wide, shaped to provide a key with the mortar, and spaced in accordance with table 9.20.9.5. The strip ties must be pre-bent at a 90 degree angle within 6mm from the fastener, and fastened with corrosion resistant 3.18mm diameter screws or spiral nails having a wood penetration of not less than 63mm.
- iv) For low rise multi-family, use two piece, hot dipped galvanized, adjustable ties conforming to CSA-A370.
- v) Flashings shall be installed over the top of masonry walls, over the head of glass block panels, over the heads of windows and door openings in exterior walls, and at the bottom of the wall.
- vi) Flashings beneath weep holes in masonry veneer over wood framed walls shall be made watertight, and installed so that the flashing extends not less than 5mm beyond the outer face of the building envelope, and 150mm up behind the sheathing paper.
- vii) Weep holes shall be spaced not more than 800mm apart, and provided at the bottom of masonry veneer walls, and the heads of all openings.

For further technical information, please contact our technical representatives, or Bill McEwen of the Masonry Institute of British Columbia at (PH: 291-1458).