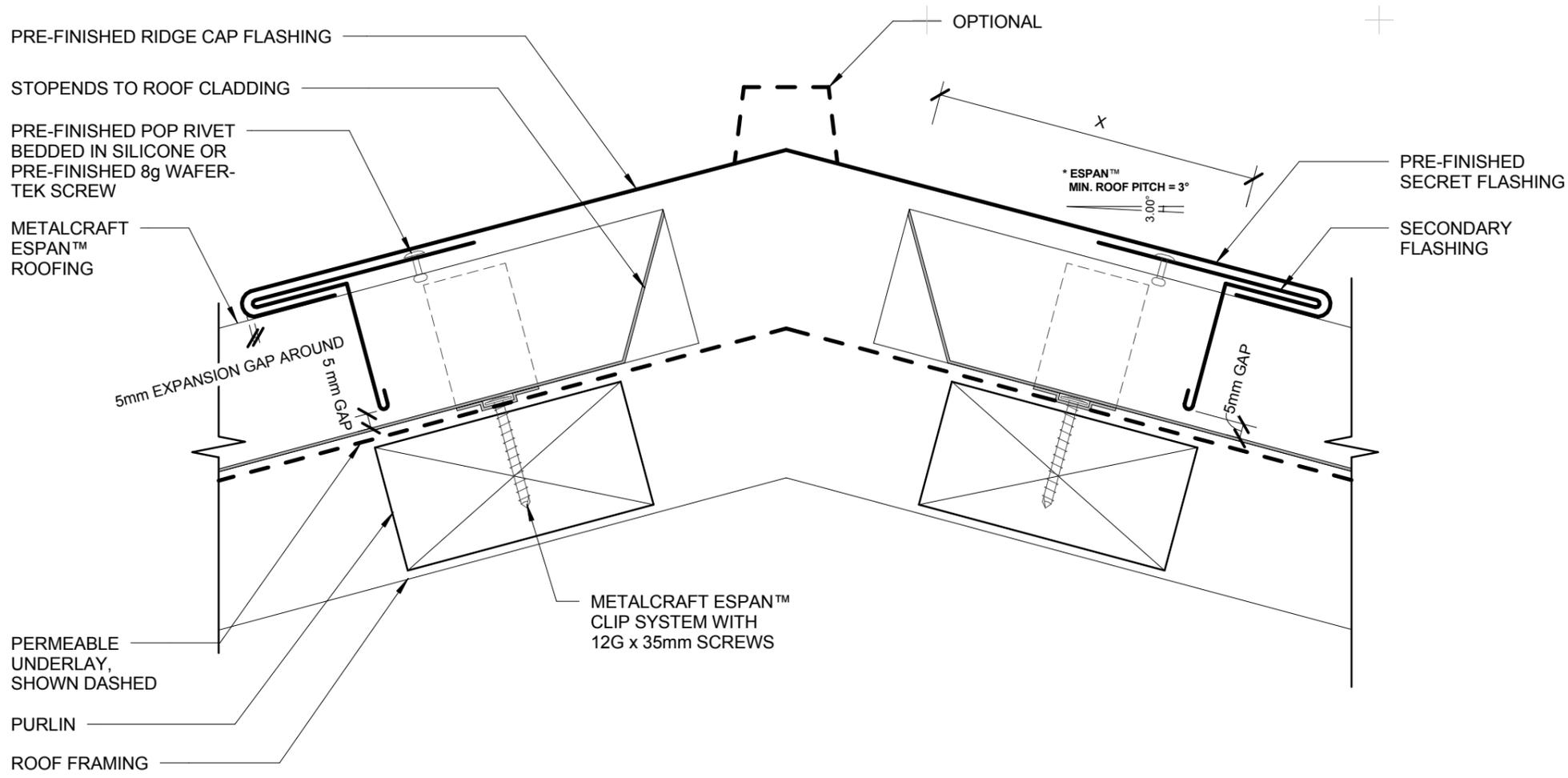


# Espan 340™ / 470™

## RESIDENTIAL ROOFING

### DETAIL LIST

00 / 20	COVER SHEET
01 / 20	RIDGE FLASHING
02 / 20	SAWTOOTH RIDGE
03 / 20	SAWTOOTH EAVE
04 / 20	ROOF VALLEY
05 / 20	ROOF - CHANGE PITCH
06 / 20	EAVE WITH ROUND GUTTER
07 / 20	EAVE WITH SQUARE GUTTER
08 / 20	BARGE FLASHING
09 / 20	PARAPET WITH TRANSVERSE APRON
10 / 20	TRANSVERSE APRON
11 / 20	PARALLEL APRON
12 / 20	MAX. 85mm DIAMETER PIPE PENETRATION
13 / 20	OVER 85mm DIAMETER PIPE PENETRATION
14 / 20	3D RIDGE TO BARGE JUCTION
15 / 20	3D DUTCH GABLE
16 / 20	3D APRON
17 / 20	3D OVER 85mm DIAMETER PIPE PENETRATION
18 / 20	3D CHIMNEY PENETRATION
19 / 20	3D RIDGE/BARGE FLASHINGS
20 / 20	3D DUTCH GABLE FLASHINGS



**ACCEPTABLE SOLUTION** AS PER E2/AS1

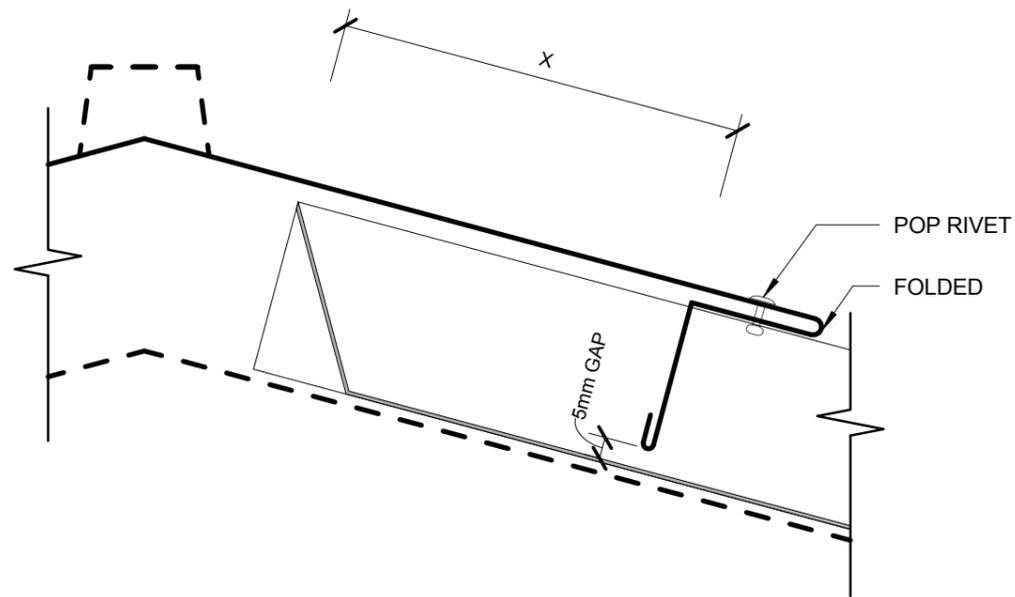
SITUATION 1	SITUATION 2	SITUATION 3
1. LOW, MEDIUM, HIGH WIND ZONES 2. ROOF PITCH $\geq 10^\circ$ X MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM, HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$ MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	1. FOR ALL ROOF PITCHES IN EXTRA HIGH WIND ZONES MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)

PLEASE REFER TO E2 FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.

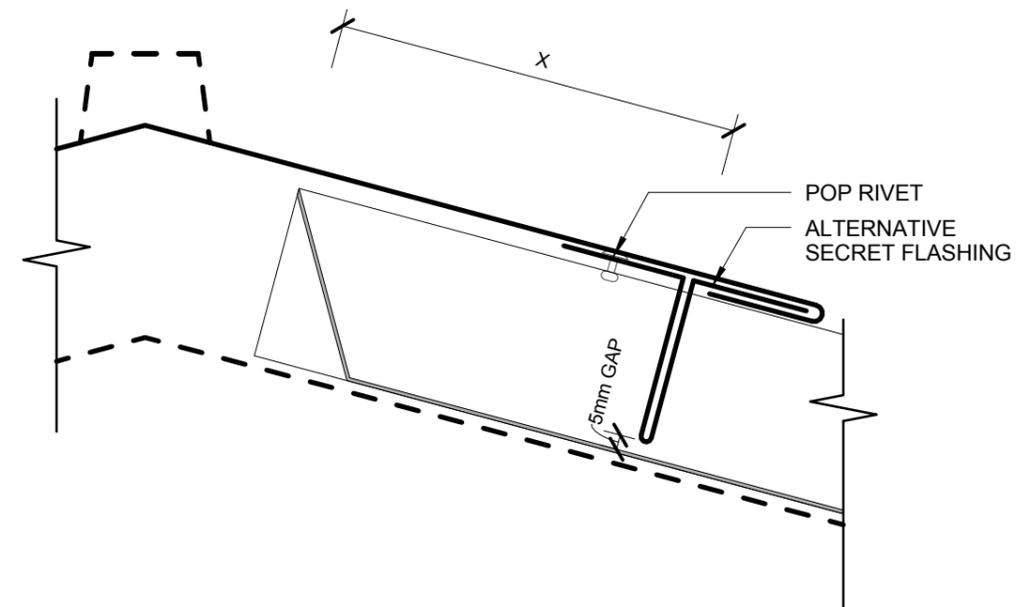
**ALTERNATIVE SOLUTION** AS PER MRM CODE OF PRACTICE

CATEGORY A	CATEGORY B
1. NORMAL EXPOSURE 2. ROOF PITCH $> 10^\circ$ X MIN. 130mm	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5kPa 2. ROOF PITCH $< 10^\circ$ MIN. 200mm

**ALTERNATIVE OPTION - A**

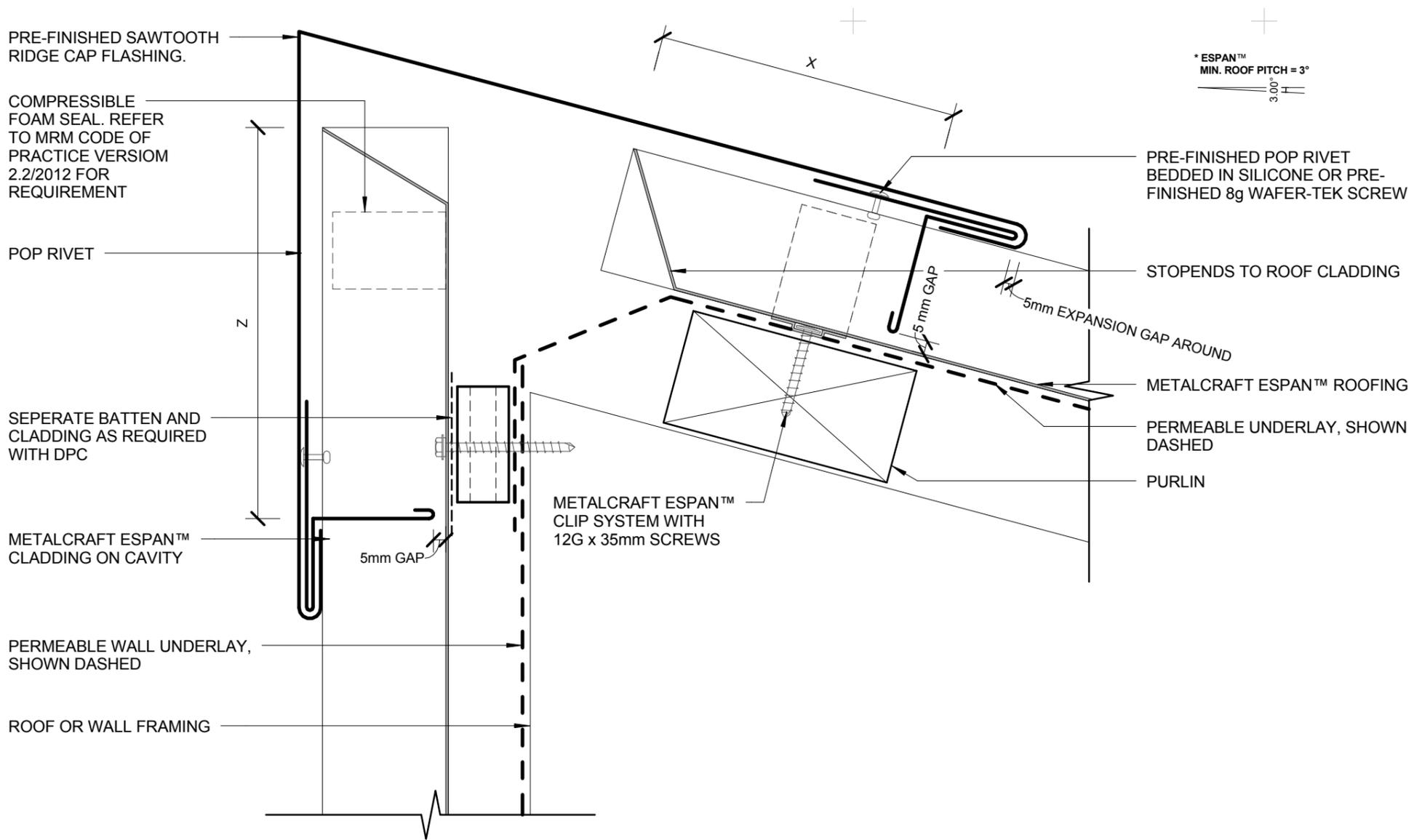


**ALTERNATIVE OPTION - B**

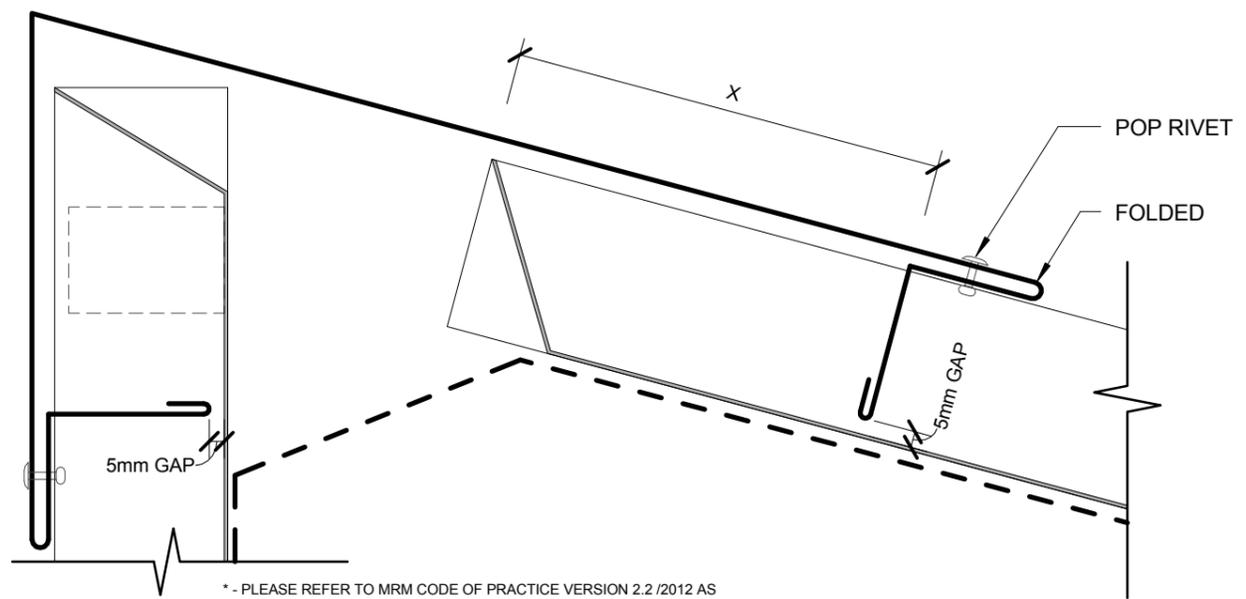


\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



**ALTERNATIVE OPTION - A**



**ALTERNATIVE OPTION - B**

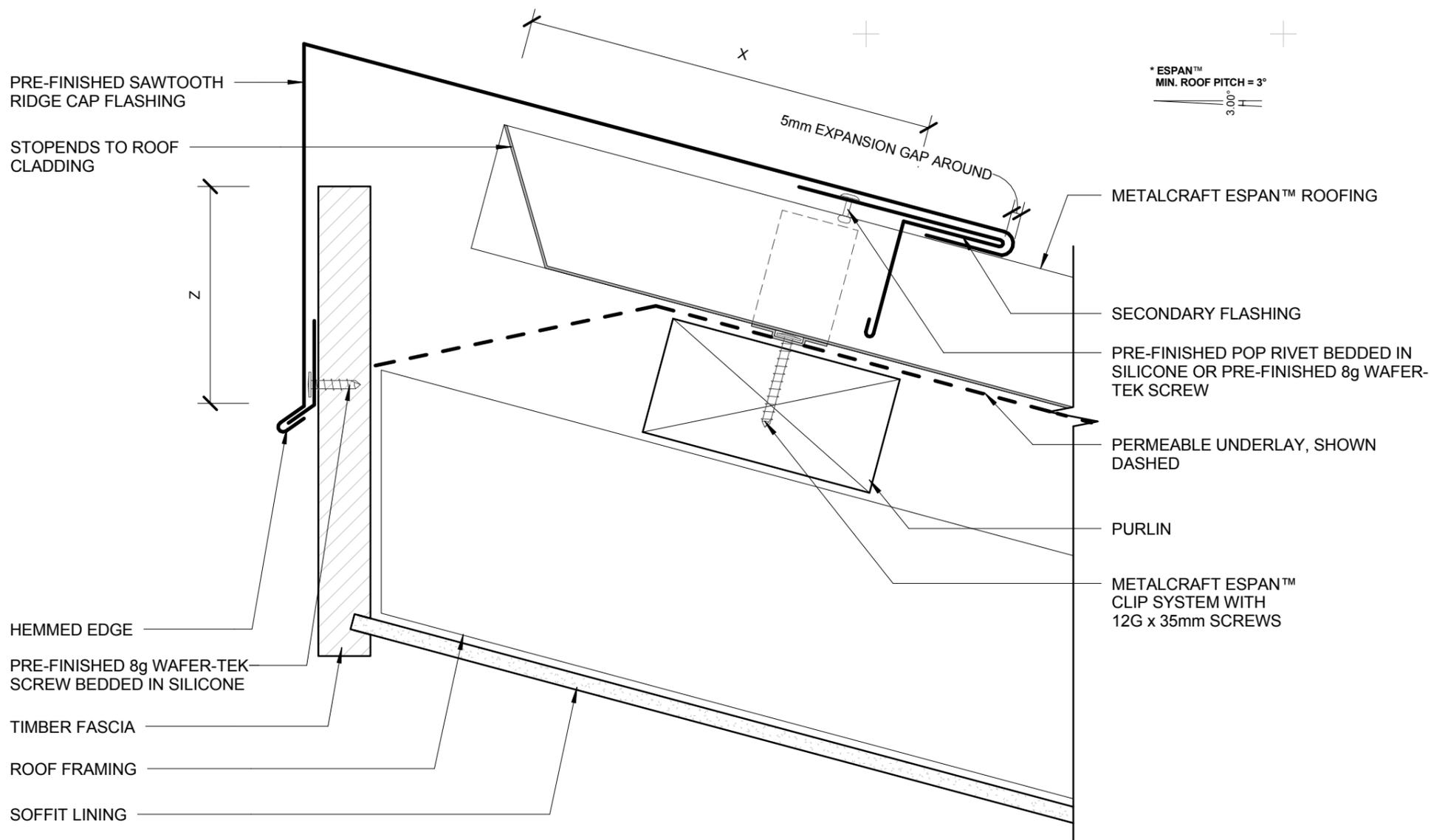
\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

ACCEPTABLE SOLUTION AS PER E2/AS1		
SITUATION 1	SITUATION 2	SITUATION 3
1. LOW, MEDIUM, HIGH WIND ZONES, WHERE ROOF PITCH $\geq 10^\circ$	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM AND HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE
X MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)
Z MIN. 50mm	MIN. 70mm	MIN. 90mm

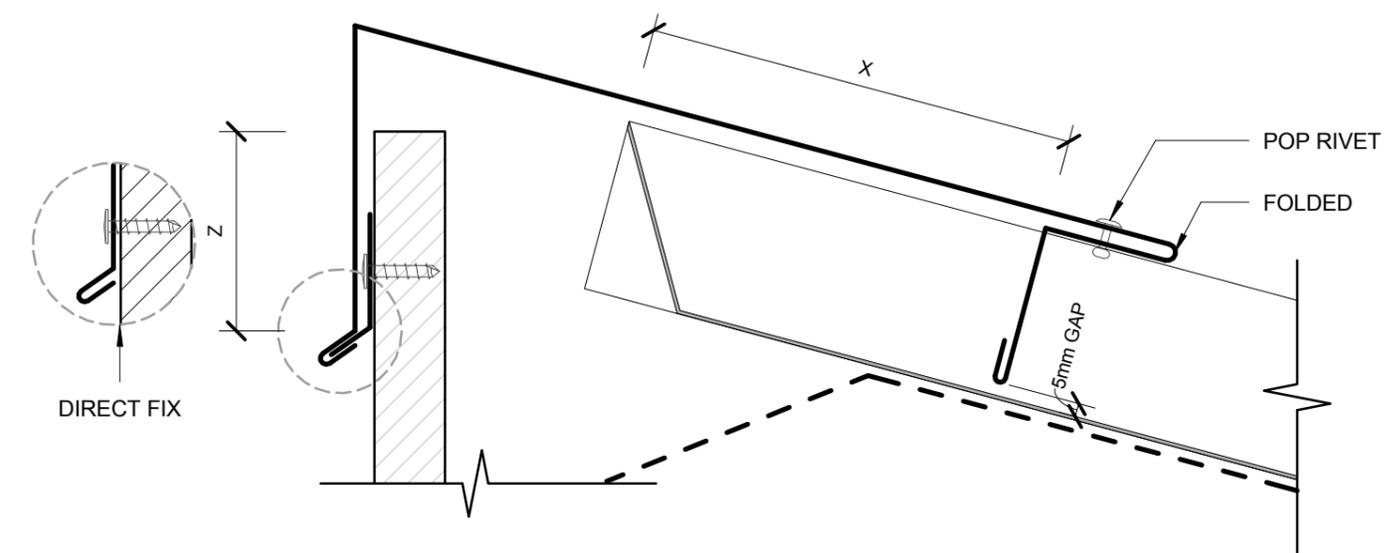
ALTERNATIVE SOLUTION AS PER MRM CODE OF PRACTICE	
CATEGORY A	CATEGORY B
1. NORMAL EXPOSURE 2. ROOF PITCH $>10^\circ$	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $<10^\circ$
X MIN. 130mm	MIN. 200mm
Z MIN. 50mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 75mm (VERTICALLY DOWN FACE - PROFILED)	MIN. 75mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 100mm (VERTICALLY DOWN FACE - PROFILED)



**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



**ALTERNATIVE OPTION - A**



**ALTERNATIVE OPTION - B**

ACCEPTABLE SOLUTION AS PER E2/AS1		
SITUATION 1	SITUATION 2	SITUATION 3
1. LOW, MEDIUM, HIGH WIND ZONES, WHERE ROOF PITCH $\geq 10^\circ$	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM AND HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE
X MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)
Z MIN. 50mm	MIN. 70mm	MIN. 90mm

ALTERNATIVE SOLUTION AS PER MRM CODE OF PRACTICE	
CATEGORY A	CATEGORY B
1. NORMAL EXPOSURE 2. ROOF PITCH $>10^\circ$	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $<10^\circ$
X MIN. 130mm	MIN. 200mm
Z MIN. 50mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 75mm (VERTICALLY DOWN FACE - PROFILED)	MIN. 75mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 100mm (VERTICALLY DOWN FACE - PROFILED)

\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

METALCRAFT ESPAN™ ROOFING

METALCRAFT ESPAN™ CLIP SYSTEM WITH 12G x 35mm SCREWS

PURLIN

ROOF FRAMING

VALLEY BOARD

PERMEABLE UNDERLAY  
CONTINUOUS UNDER GUTTER IF  
COPPER BASED TREATMENTS ARE  
USED

PREFINISHED VALLEY GUTTER

A : OVERALL VALLEY GUTTER WIDTH

B : CLEARANCE BETWEEN ROOFING

C

C

MIN. 30mm  
MAX. 60mm

5mm EXPANSION GAP AROUND

MIN. 50mm

MIN. 20mm

MIN. 10mm GAP

\* ROOF PITCH FOR VALLEYS AS PER E2.

**ACCEPTABLE SOLUTION** AS PER E2/ASI

	<b>SITUATION 1</b>	<b>SITUATION 2</b>
	MAX. CATCHMENT 25m <sup>2</sup> MIN. ROOF PITCH 8°	MAX. CATCHMENT 16m <sup>2</sup> MIN. ROOF PITCH 12.5°
A	MIN. 250mm	160mm - 249mm
B	MIN. 50mm	MIN. 40mm
C	MIN. 80mm	MIN. 60mm

**ALTERNATIVE SOLUTION** AS PER MRM CODE OF PRACTICE

<b>ROOF PITCH</b>	<b>TYPE B</b>	<b>TYPE C</b>
8 - 12°	MIN. 75mm	MIN. 75mm
12 - 35°	MIN. 50mm	MIN. 70mm
> 35°	MIN. 50mm	MIN. 70mm

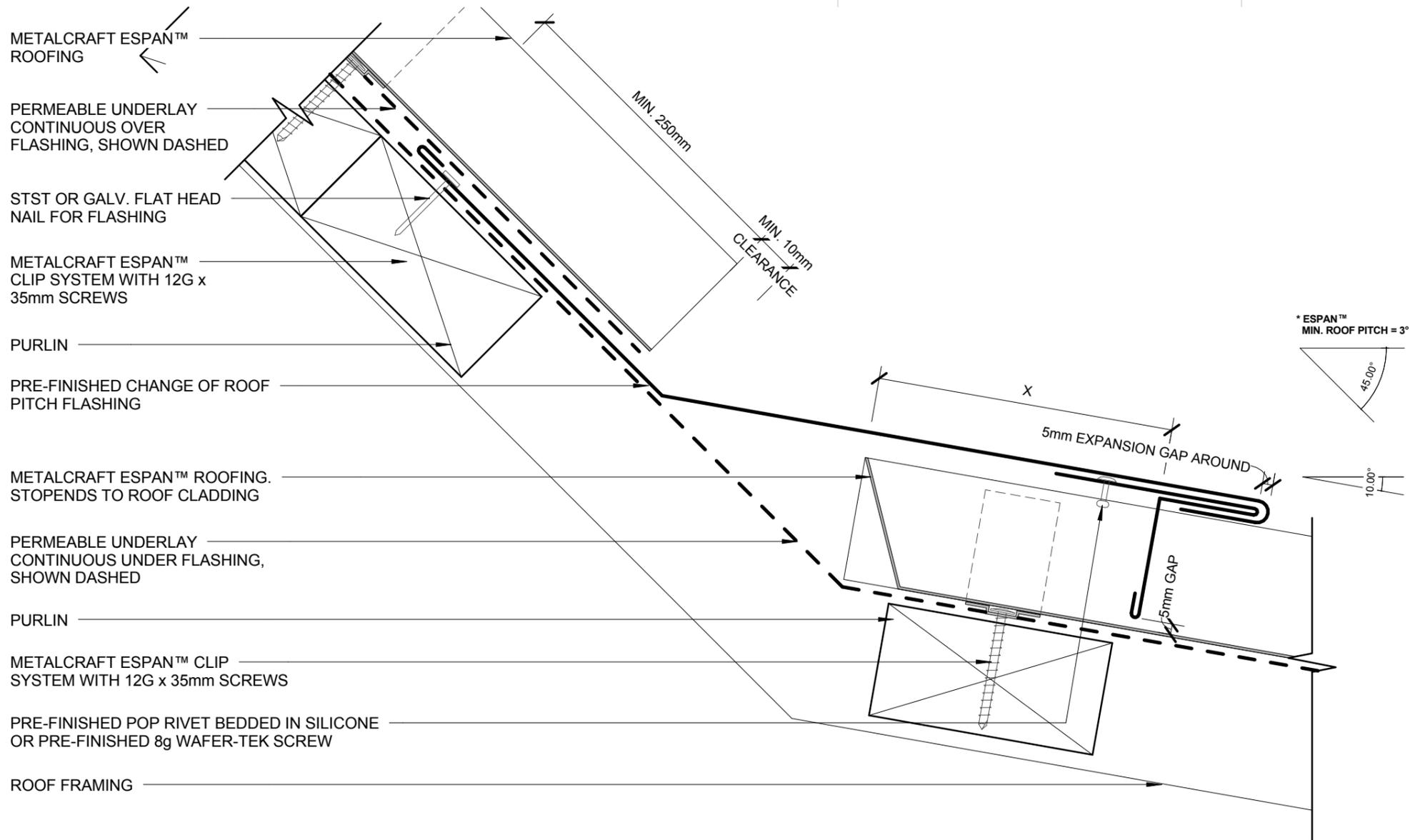
**ALTERNATIVE OPTION - A**

MIN. 30mm  
MAX. 60mm

MIN. 50mm

\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



**ACCEPTABLE SOLUTION** AS PER E2/AS1

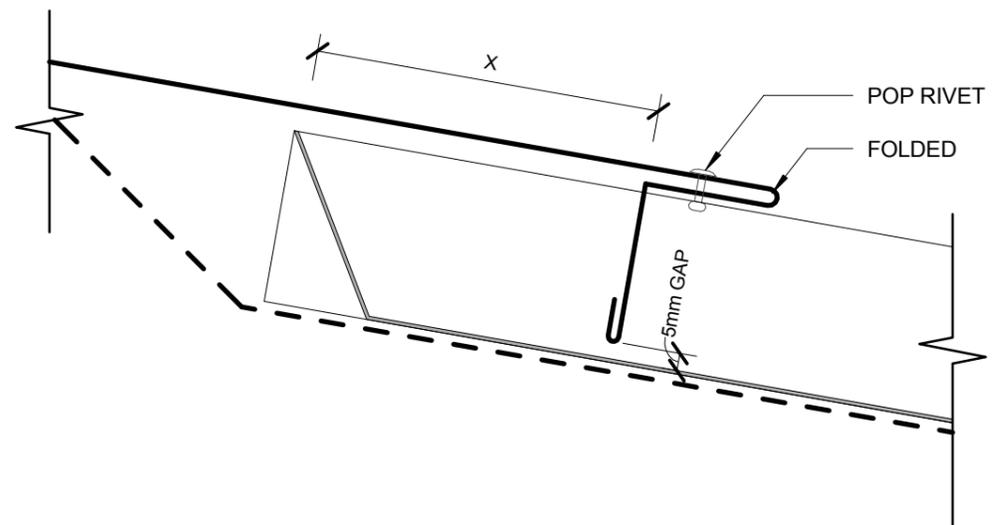
SITUATION 1	SITUATION 2	SITUATION 3
1. LOW, MEDIUM, HIGH WIND ZONES 2. ROOF PITCH $\geq 10^\circ$ X MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM, HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$ MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	1. FOR ALL ROOF PITCHES IN EXTRA HIGH WIND ZONES

PLEASE REFER TO E2 FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.

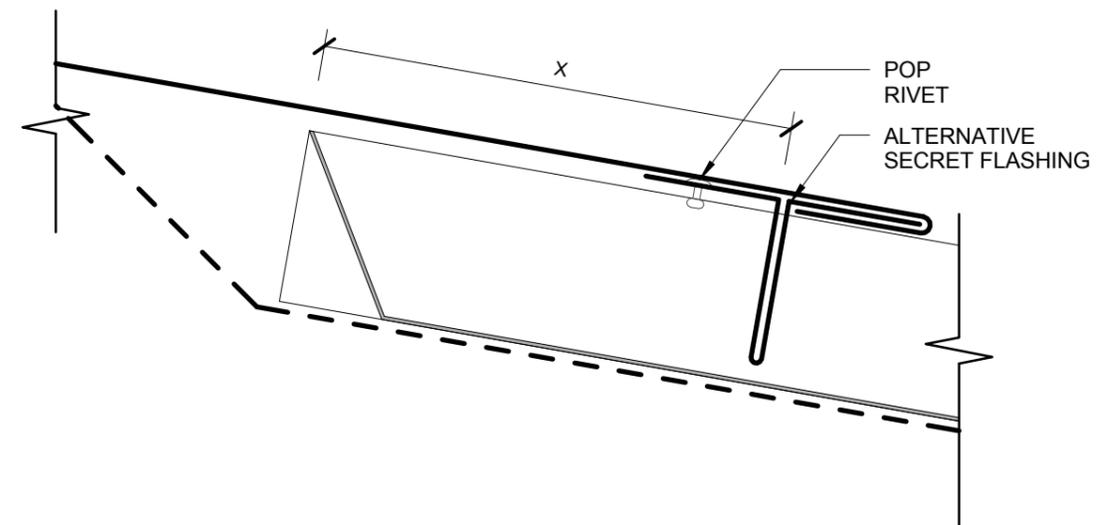
**ALTERNATIVE SOLUTION** AS PER MRM CODE OF PRACTICE

CATEGORY A	CATEGORY B
1. NORMAL EXPOSURE 2. ROOF PITCH $> 10^\circ$ X MIN. 130mm	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5kPa 2. ROOF PITCH $< 10^\circ$ MIN. 200mm

**ALTERNATIVE OPTION - A**



**ALTERNATIVE OPTION - B**

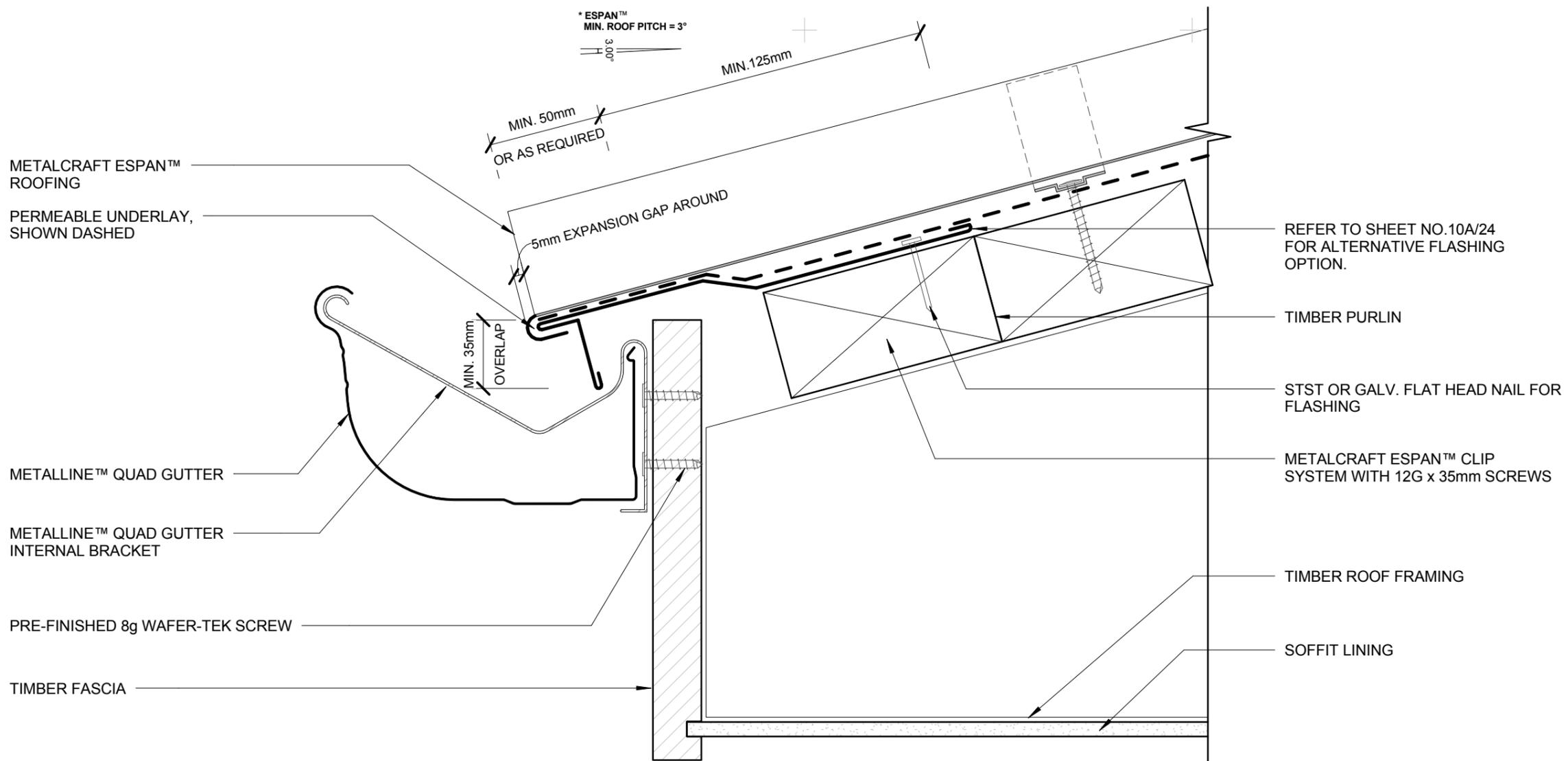


\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.



**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

\* ESPAN™  
MIN. ROOF PITCH = 3°



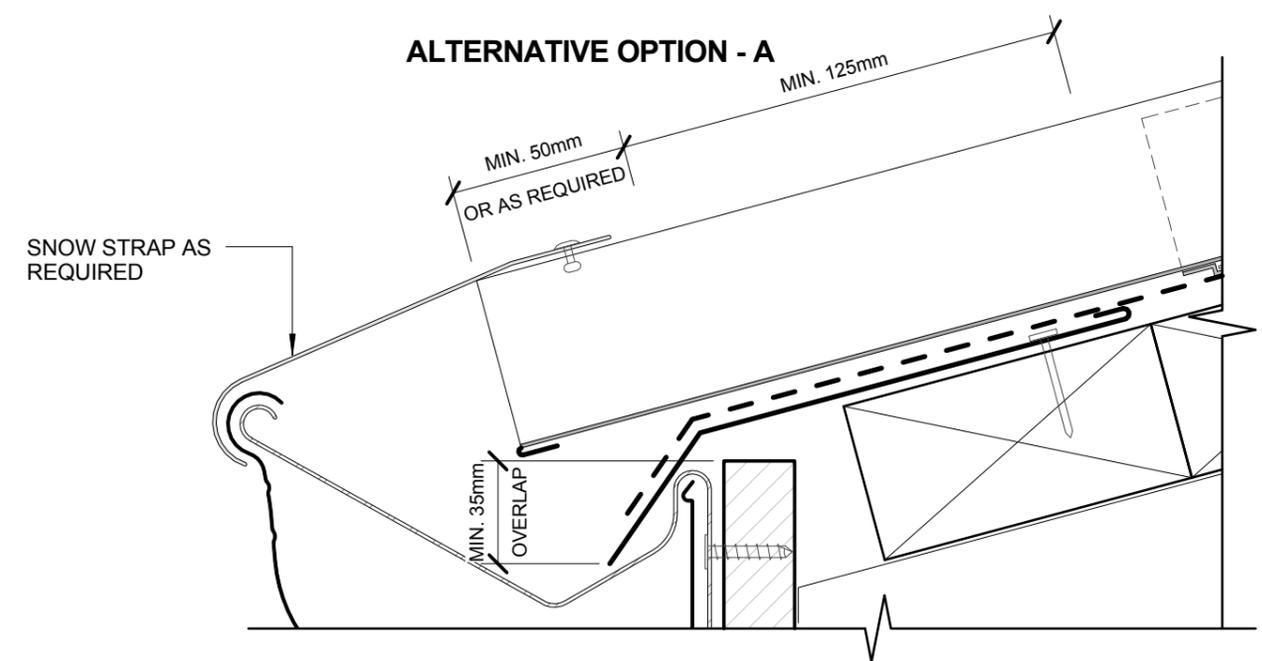
EAVE FLASHING REQUIRED WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:  
 - ROOF PITCH  $\leq 3^\circ$ , AND  
 - SOFFIT WIDTH  $\leq 100\text{mm}$ , AND  
 - WIND ZONES = VERY HIGH OR EXTRA HIGH OR  
 - ENGINEER SPECIFIC DESIGN  
 - MRM RECOMMENDS TO USE IN AREAS EXPOSED TO CONTAMINATORS SUCH AS SEA SALT OR INDUSTRIAL POLLUTANTS

\*DETAILS APPLY TO ALL METALCRAFT GUTTERS

METALCRAFT ESPAN™ ROOFING  
 PERMEABLE UNDERLAY, SHOWN DASHED  
 METALLINE™ QUAD GUTTER  
 METALLINE™ QUAD GUTTER INTERNAL BRACKET  
 PRE-FINISHED 8g WAFER-TEK SCREW  
 TIMBER FASCIA

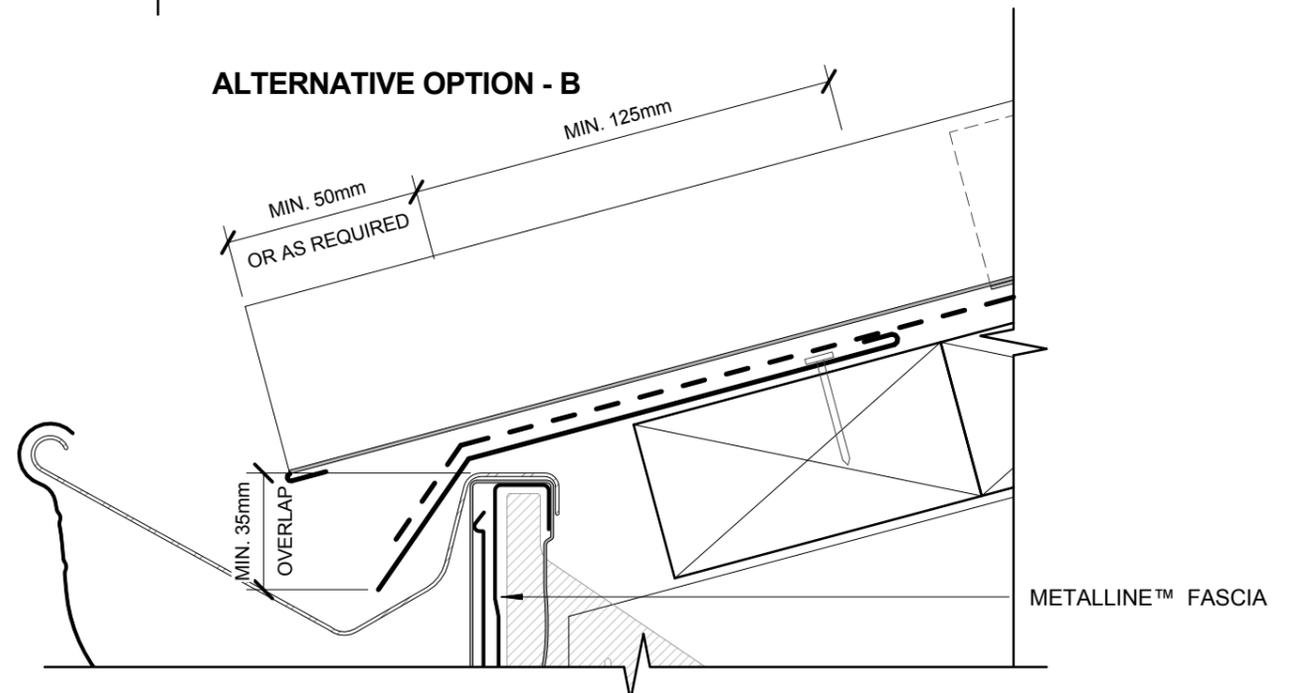
REFER TO SHEET NO.10A/24 FOR ALTERNATIVE FLASHING OPTION.  
 TIMBER PURLIN  
 STST OR GALV. FLAT HEAD NAIL FOR FLASHING  
 METALCRAFT ESPAN™ CLIP SYSTEM WITH 12G x 35mm SCREWS  
 TIMBER ROOF FRAMING  
 SOFFIT LINING

**ALTERNATIVE OPTION - A**



SNOW STRAP AS REQUIRED

**ALTERNATIVE OPTION - B**



METALLINE™ FASCIA

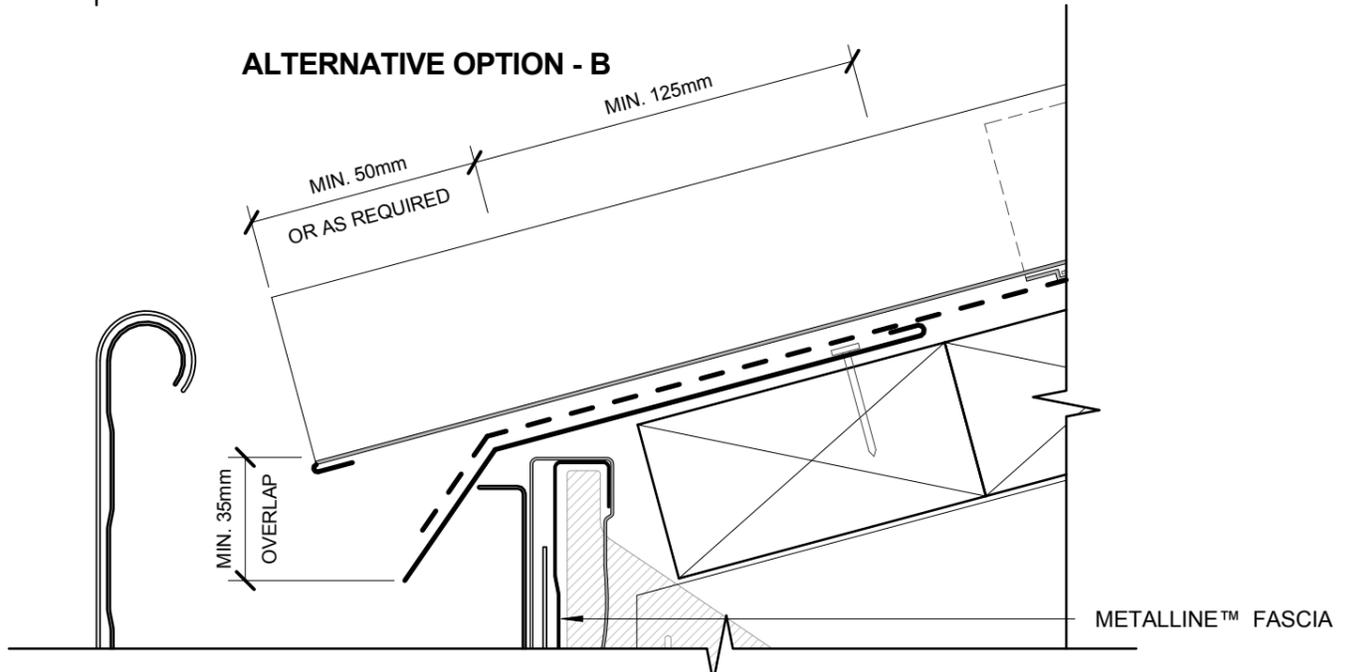
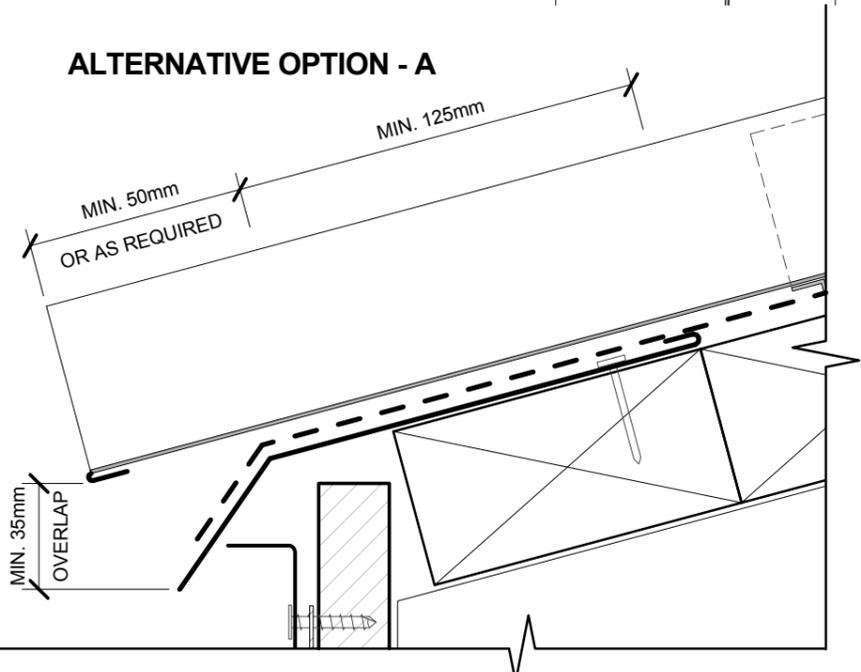
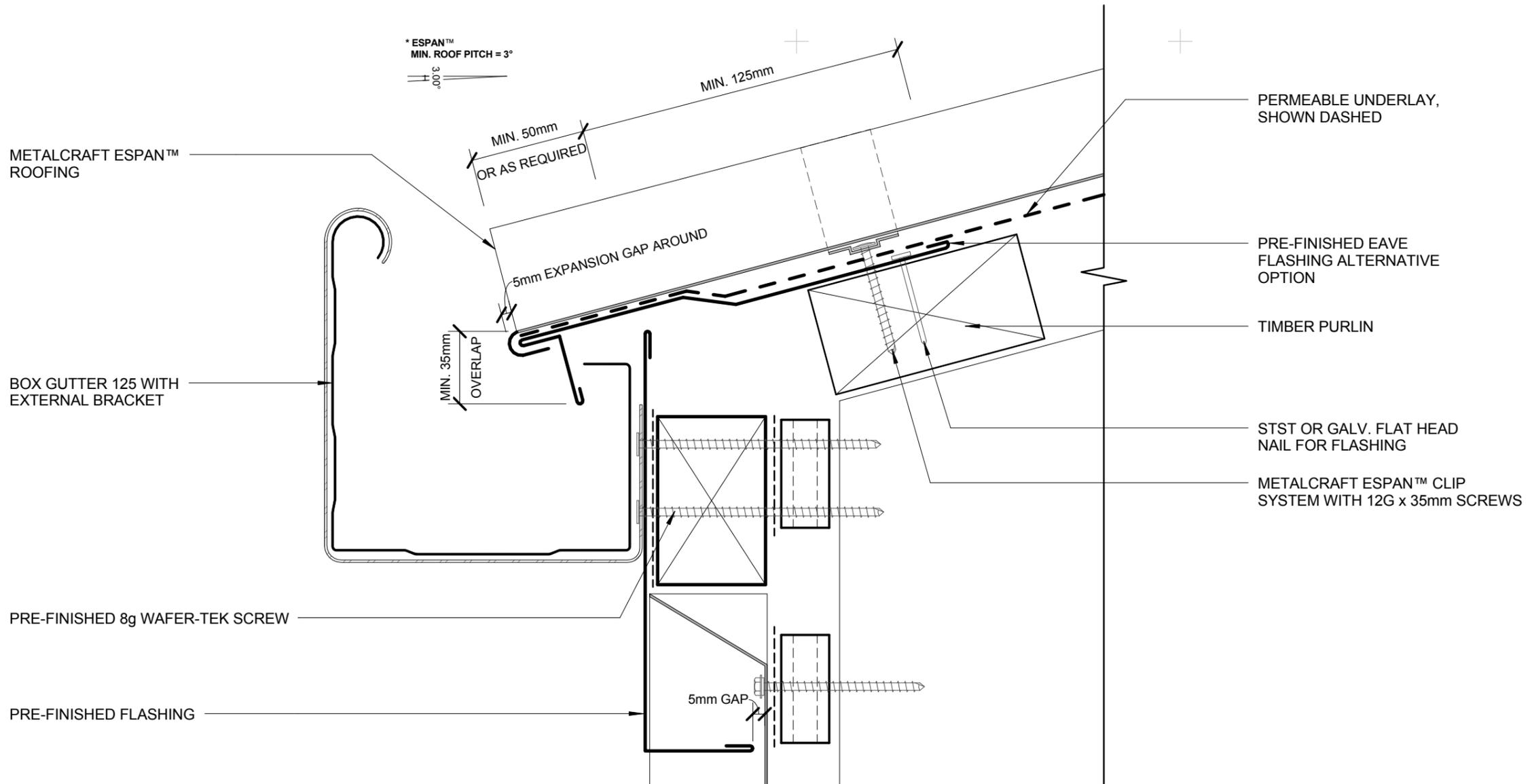
\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.



DISCLAIMER:  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

EAVE FLASHING REQUIRED WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:  
 - ROOF PITCH  $\leq 3^\circ$ , AND  
 - SOFFIT WIDTH  $\leq 100\text{mm}$ , AND  
 - WIND ZONES = VERY HIGH OR EXTRA HIGH OR  
 - ENGINEER SPECIFIC DESIGN  
 - MRM RECOMMENDS TO USE IN AREAS EXPOSED TO CONTAMINATORS SUCH AS SEA SALT OR INDUSTRIAL POLLUTANTS

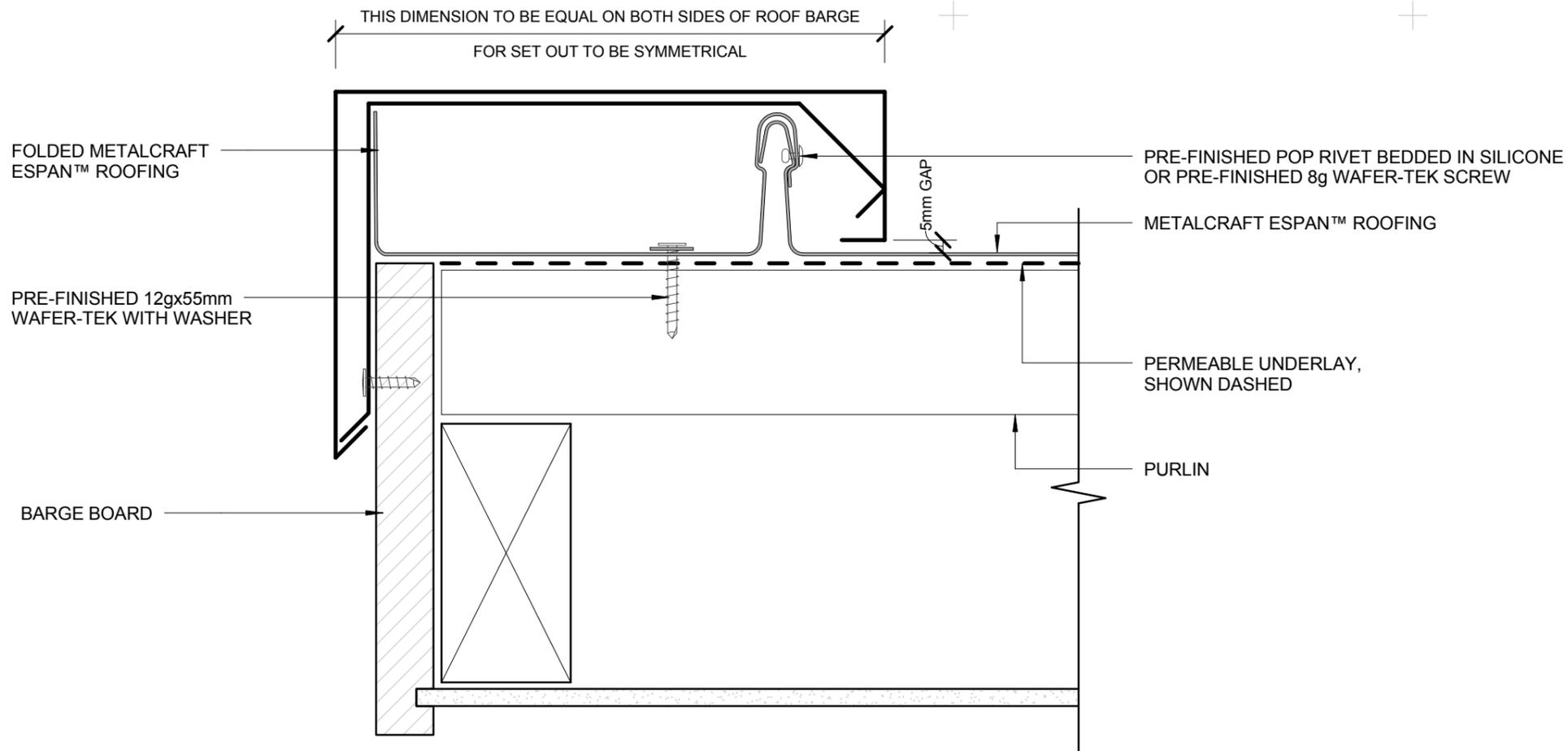
\*DETAILS APPLY TO ALL METALCRAFT GUTTERS



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

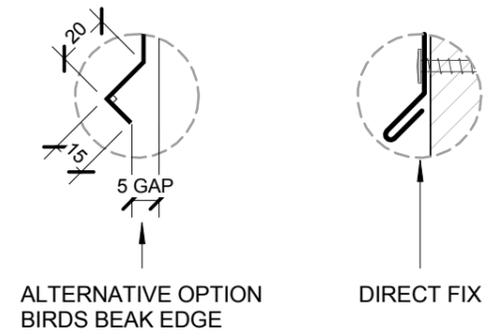


**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



ACCEPTABLE SOLUTION AS PER E2/AS1		
SITUATION 1	SITUATION 2	SITUATION 3
1. LOW, MEDIUM, HIGH WIND ZONES WHERE ROOF PITCH $\geq 10^\circ$	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM AND HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE.
Y AT LEAST TWO CRESTS	AT LEAST TWO CRESTS	AT LEAST TWO CRESTS
Z MIN. 50mm	MIN. 70mm	MIN. 90mm

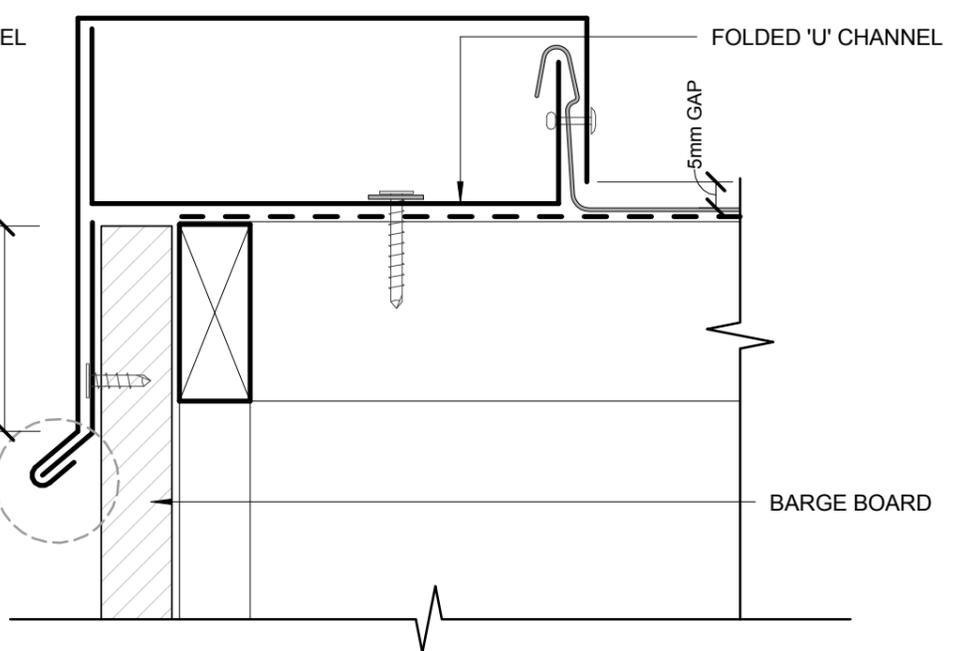
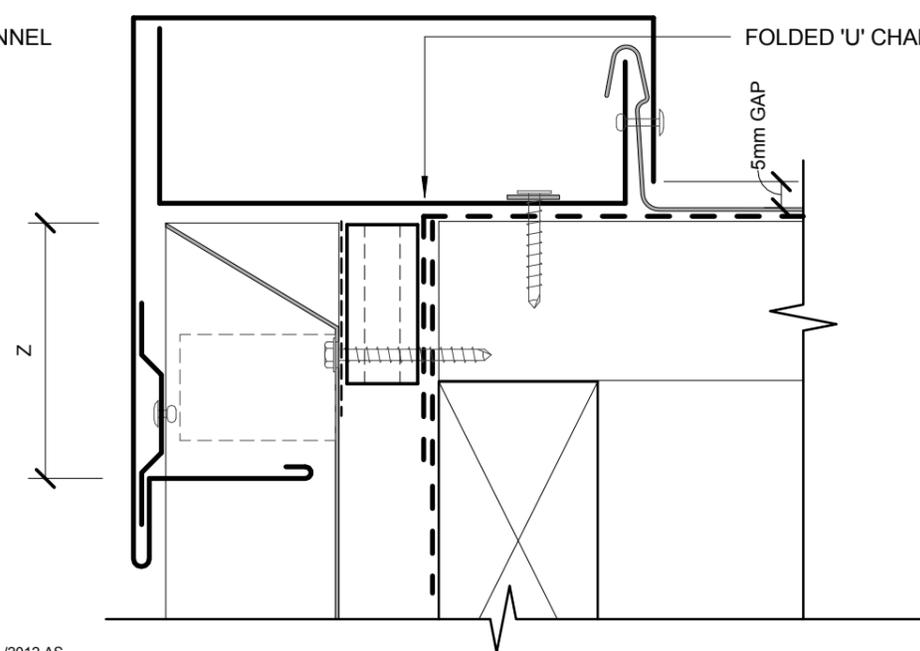
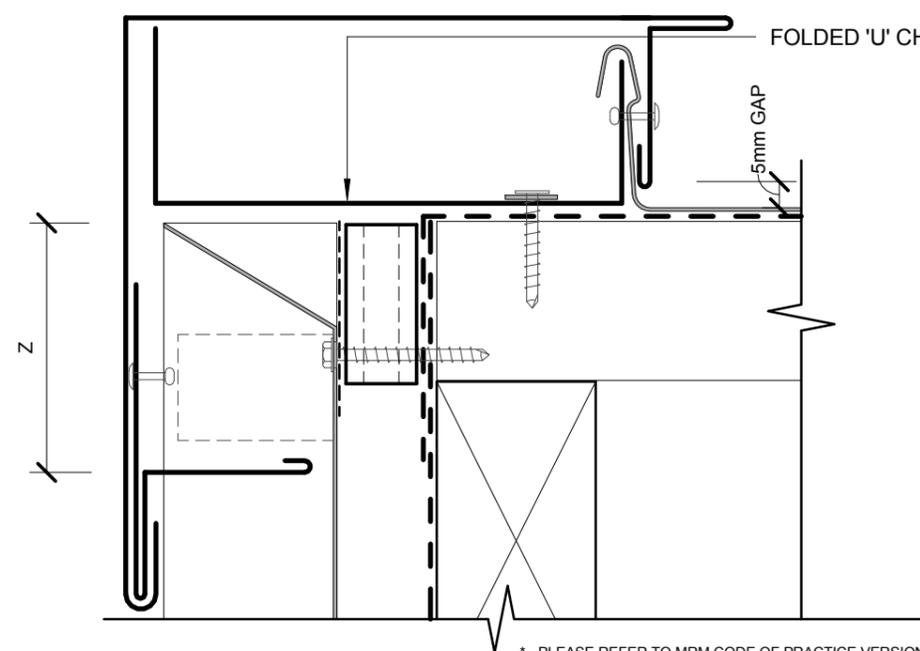
ALTERNATIVE SOLUTION AS PER MRM CODE OF PRACTICE	
CATEGORY A	CATEGORY B
1. NORMAL EXPOSURE 2. ROOF PITCH $> 10^\circ$	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $< 10^\circ$
Y ONE RIB (TRAPEZOIDAL & TRAY) 2 CORRUGATIONS	ONE RIB, TWO RIBS ( $< 20\text{mm}$ ) (TRAPEZOIDAL & TRAY) 3 CORRUGATIONS
Z MIN. 50mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 75mm (VERTICALLY DOWN FACE - PROFILED)	MIN. 75mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 100mm (VERTICALLY DOWN FACE - PROFILED)



ALTERNATIVE OPTION - A

ALTERNATIVE OPTION - B

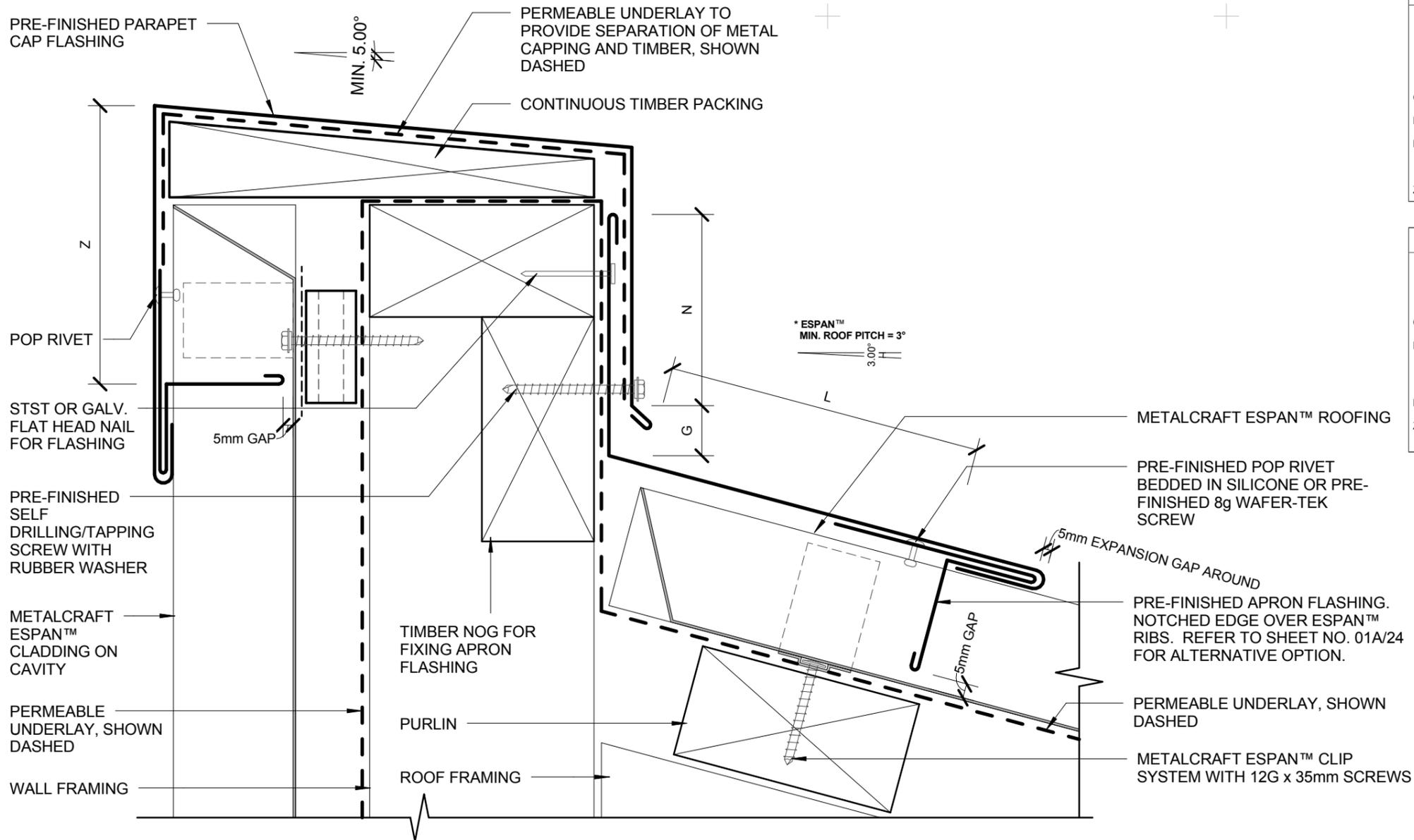
ALTERNATIVE OPTION - C



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.



DISCLAIMER:  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

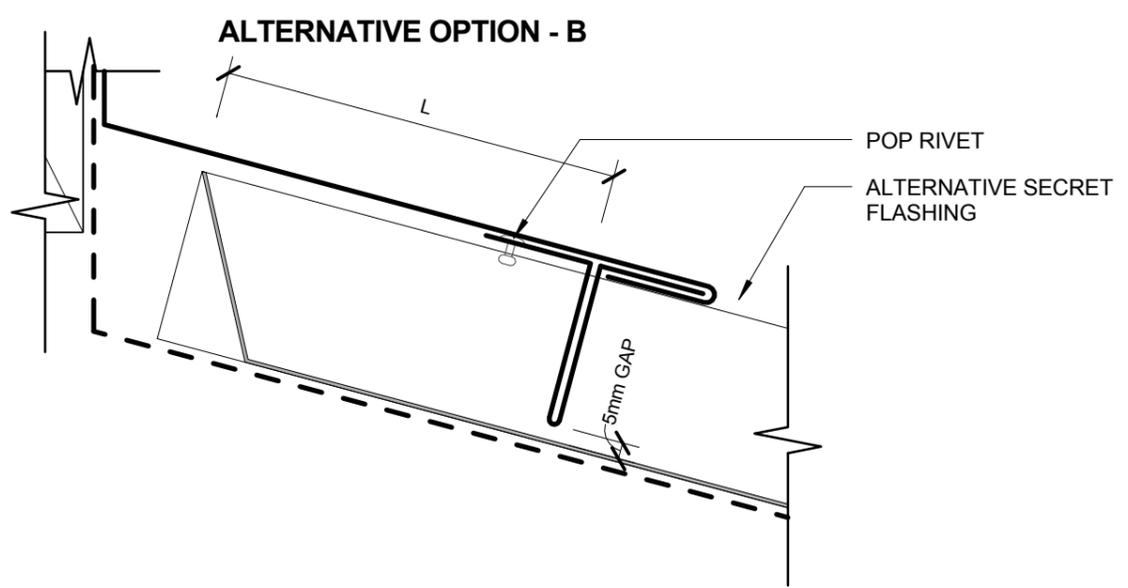
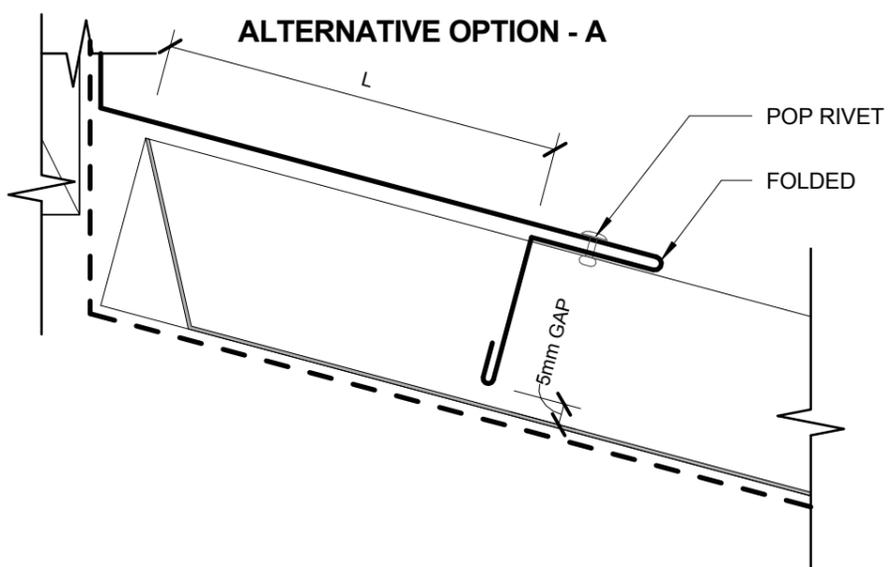


**ACCEPTABLE SOLUTION** AS PER E2/AS1

	<b>SITUATION 1</b> 1. LOW, MEDIUM, HIGH WIND ZONES, WHERE ROOF PITCH $\geq 10^\circ$	<b>SITUATION 2</b> 1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM, & HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	<b>SITUATION 3</b> 1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE
G	MIN. 35mm	MIN. 35mm	MIN. 35mm
N	MIN. 75mm	MIN. 75mm	MIN. 75mm
L	MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)
Z	MIN. 50mm	MIN. 70mm	MIN. 90mm

**ALTERNATIVE SOLUTION** AS PER MRM CODE OF PRACTICE

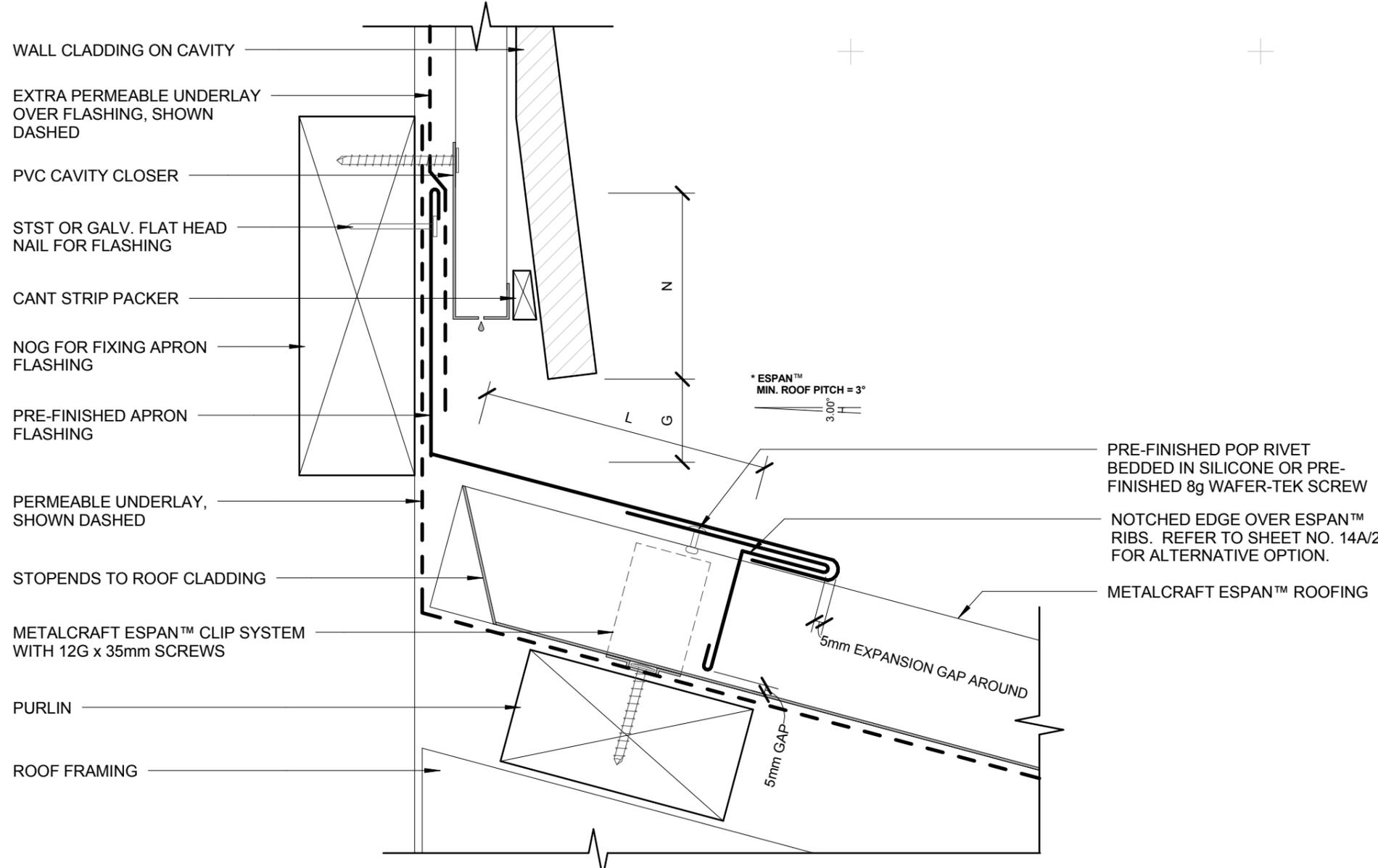
	<b>CATEGORY A</b> 1. NORMAL EXPOSURE 2. ROOF PITCH $>10^\circ$	<b>CATEGORY B</b> 1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $<10^\circ$
G	25mm	25mm
N	MIN. 50mm + HEM OR 75mm (VERTICALLY UP FACE - SMOOTH) MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - PROFILED)	MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - SMOOTH) MIN. 100mm + HEM OR 125mm (VERTICALLY UP FACE - PROFILED)
L	MIN. 150mm	MIN. 200mm
Z	MIN. 50mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 75mm (VERTICALLY DOWN FACE - PROFILED)	MIN. 75mm (VERTICALLY DOWN FACE - SMOOTH) MIN. 100mm (VERTICALLY DOWN FACE - PROFILED)



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.



**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

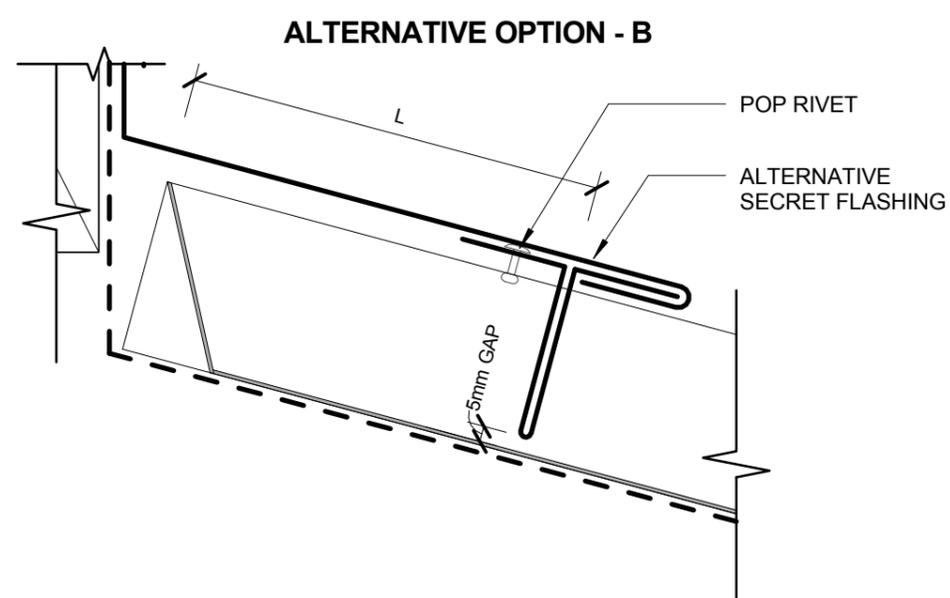
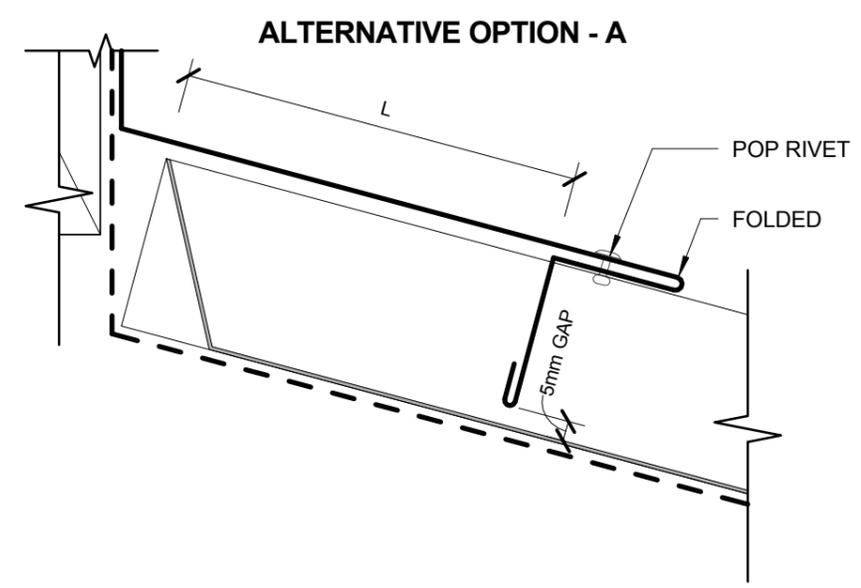


**ACCEPTABLE SOLUTION** AS PER E2/AS1

	<b>SITUATION 1</b>	<b>SITUATION 2</b>	<b>SITUATION 3</b>
	1. LOW, MEDIUM, HIGH WIND ZONES, WHERE ROOF PITCH $\geq 10^\circ$	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONES 2. LOW, MEDIUM, AND HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE
G	MIN. 35mm	MIN. 35mm	MIN. 35mm
N	MIN. 75mm	MIN. 75mm	
L	MIN. 130mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)	MIN. 200mm (EXCLUDING ANY SOFT EDGE OR TURN-DOWN TO ROOFING)

**ALTERNATIVE SOLUTION** AS PER MRM CODE OF PRACTICE

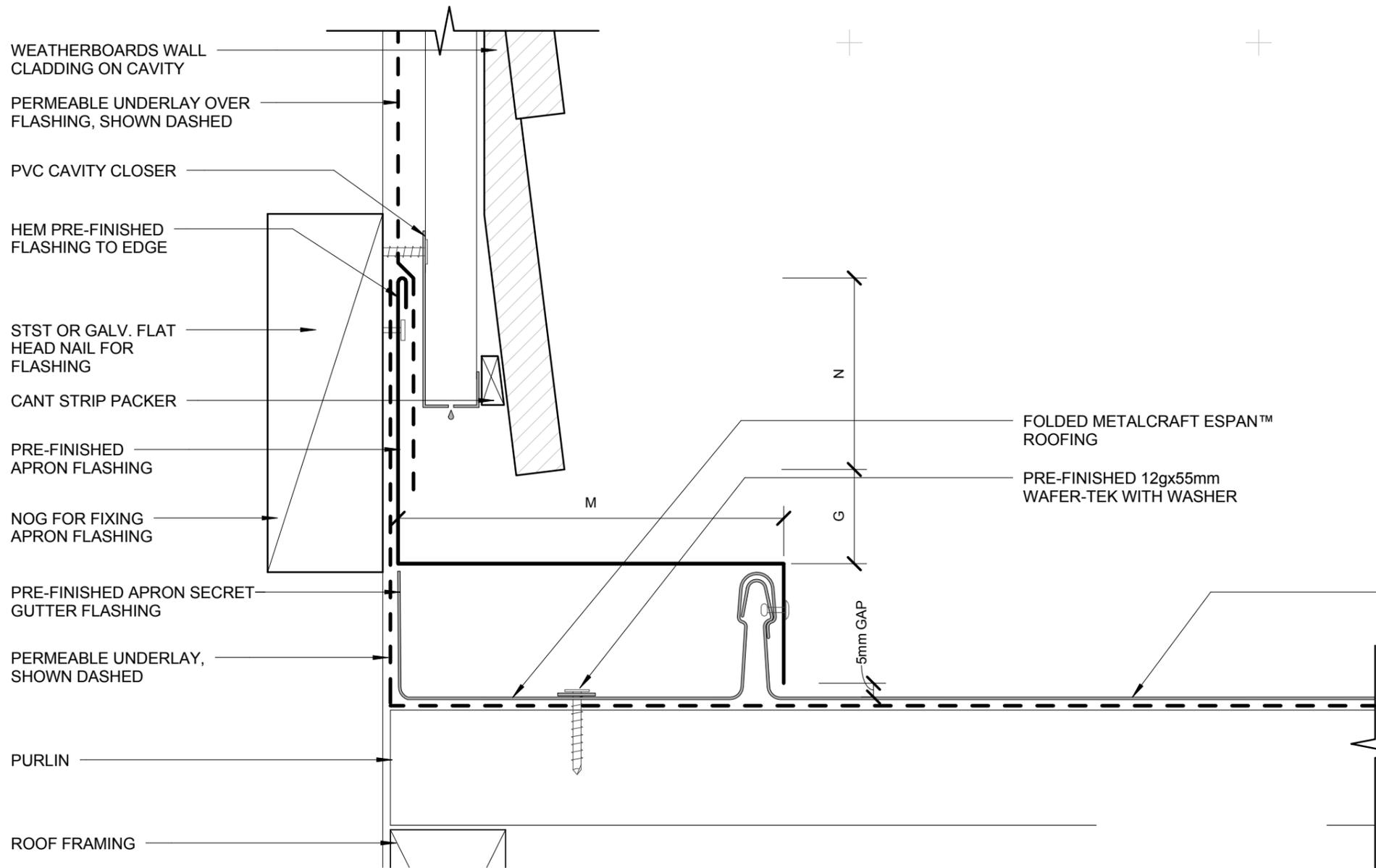
	<b>CATEGORY A</b>	<b>CATEGORY B</b>
	1. NORMAL EXPOSURE 2. ROOF PITCH $>10^\circ$	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $<10^\circ$
G	25mm	25mm
N	MIN. 50mm + HEM OR 75mm (VERTICALLY UP FACE - SMOOTH) MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - PROFILED)	MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - SMOOTH) MIN. 100mm + HEM OR 125mm (VERTICALLY UP FACE - PROFILED)
L	MIN. 150mm	MIN. 200mm



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.



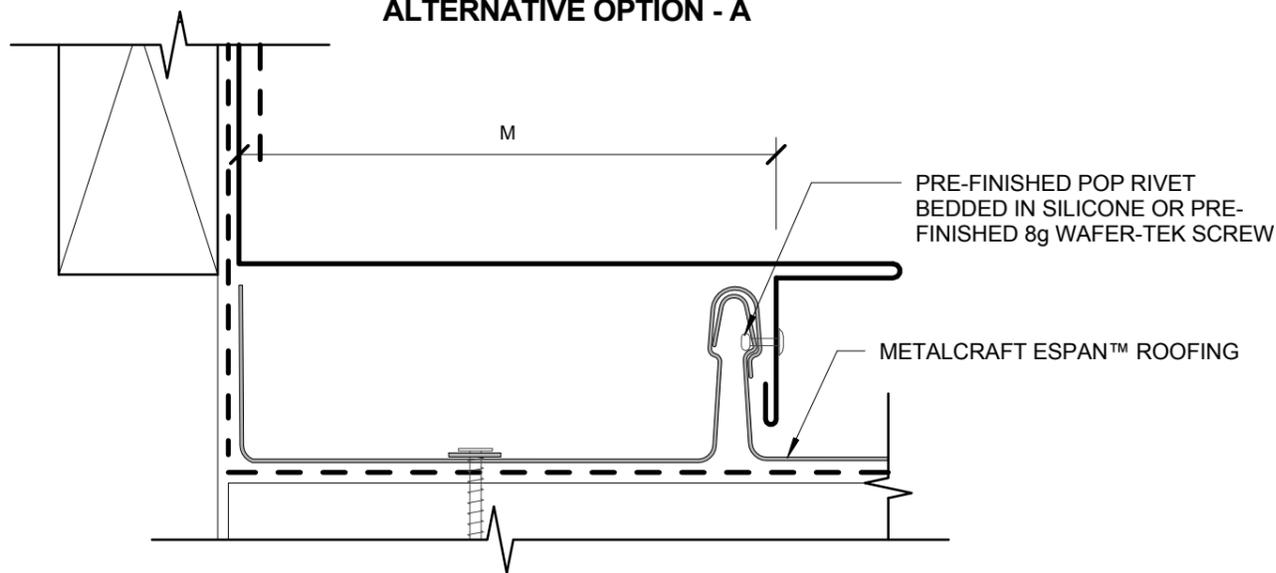
**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



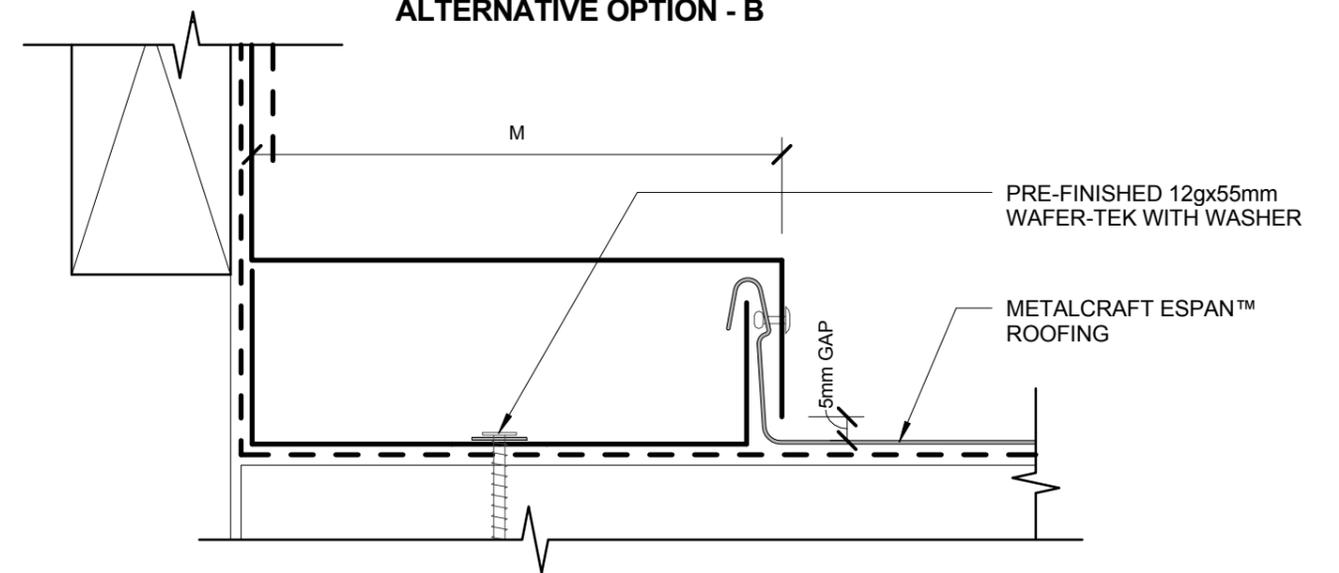
ACCEPTABLE SOLUTION AS PER E2/AS1			
	SITUATION 1	SITUATION 2	SITUATION 3
	1. LOW, MEDIUM, HIGH WIND ZONES, WHERE ROOF PITCH $\geq 10^\circ$	1. ALL ROOF PITCHES IN VERY HIGH WIND ZONE 2. LOW, MEDIUM, AND HIGH WIND ZONES WHERE ROOF PITCH $\leq 10^\circ$	1. ALL ROOF PITCHES IN EXTRA HIGH WIND ZONE
G	MIN. 35mm	MIN. 35mm	MIN. 35mm
N	MIN. 75mm	MIN. 75mm	MIN. 75mm
M	AT LEAST TWO CRESTS	AT LEAST TWO CRESTS	AT LEAST TWO CRESTS

ALTERNATIVE SOLUTION AS PER MRM CODE OF PRACTICE		
	CATEGORY A	CATEGORY B
	1. NORMAL EXPOSURE 2. ROOF PITCH $> 10^\circ$	1. EXPOSED (HIGHER RISK) & WIND LOAD EXCEEDS 1.5 kPa. 2. ROOF PITCH $< 10^\circ$
G	25mm	25mm
N	MIN. 50mm + HEM OR 75mm (VERTICALLY UP FACE - SMOOTH) MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - PROFILED)	MIN. 75mm + HEM OR 100mm (VERTICALLY UP FACE - SMOOTH) MIN. 100mm + HEM OR 125mm (VERTICALLY UP FACE - PROFILED)
M	ONE RIB (TRAPEZOIDAL & TRAY) 2 CORRUGATIONS (CORRUGATE)	TWO RIBS ( $< 20\text{mm}$ ) (TRAPEZOIDAL & TRAY) 3 CORRUGATIONS (CORRUGATE)

ALTERNATIVE OPTION - A



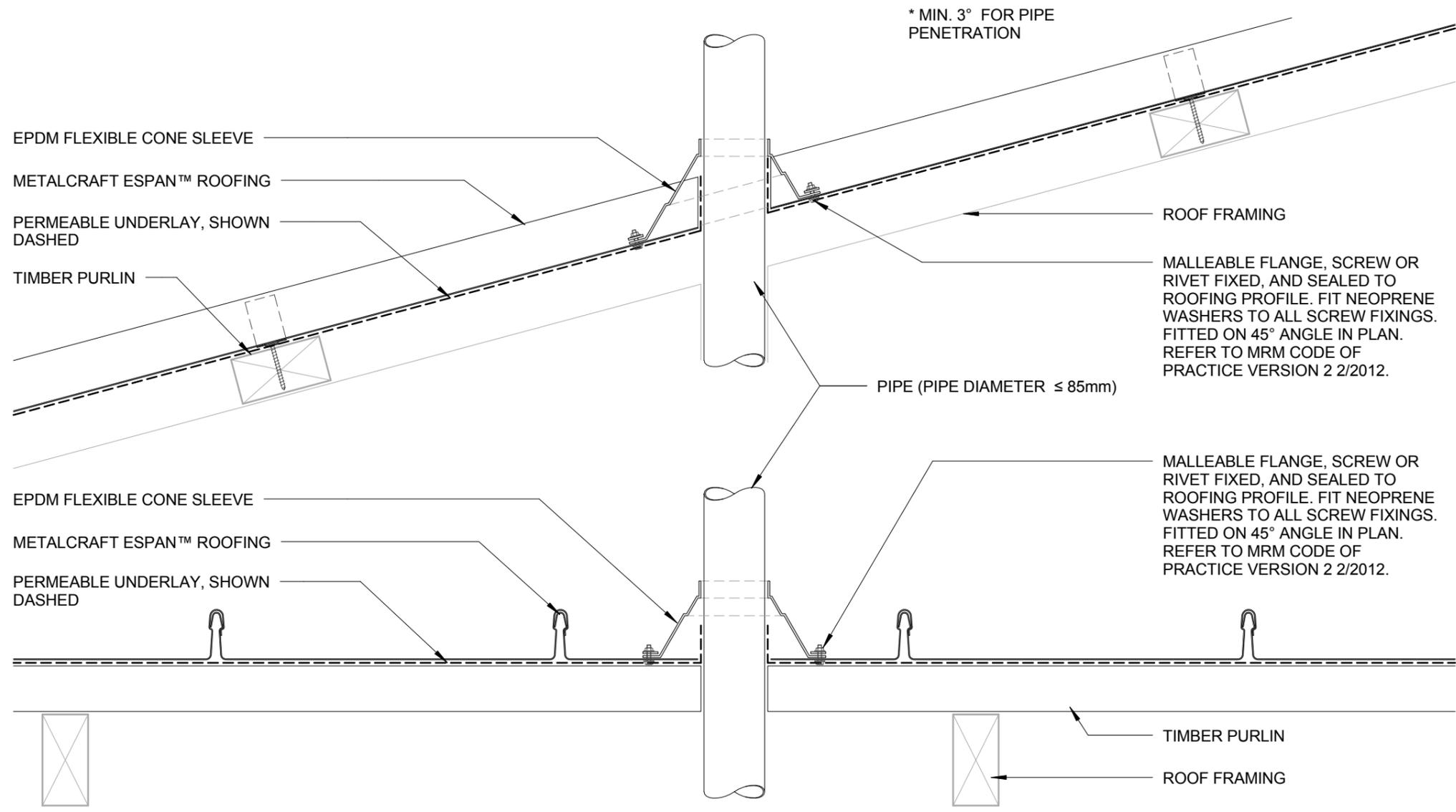
ALTERNATIVE OPTION - B



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

THIS DETAIL IS APPLIED ONLY WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:  
 - ROOF PITCH MIN. 3° and MAX. 45°  
 - PIPE DIAMETER MAX. 85mm  
 - ALLOW PIPE PENETRATIONS TO BE SAME AS ROOF PITCH



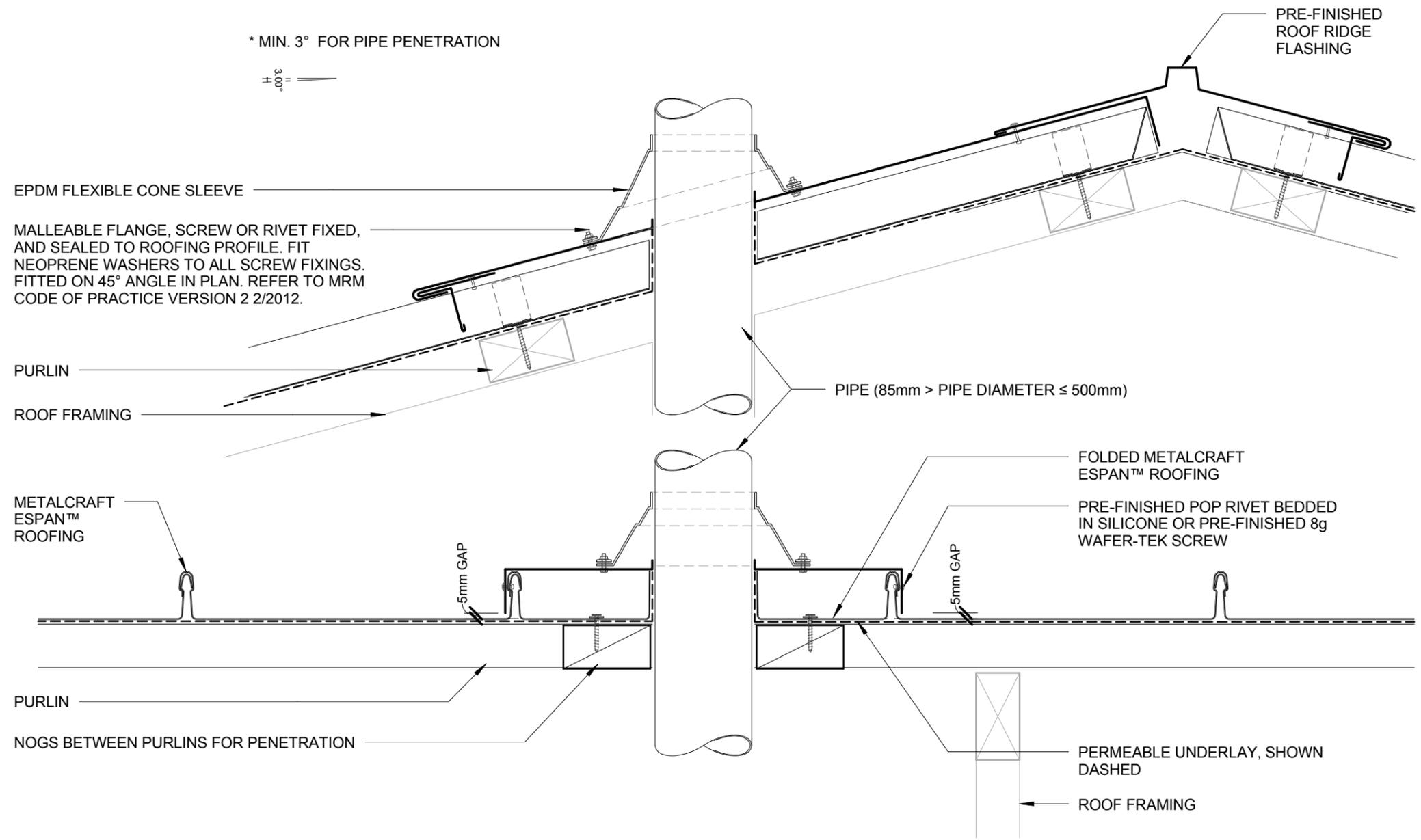
\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



MAX. 85mm DIAMETER PIPE PENETRATION  
 Espan 340™ / 470™ RESIDENTIAL ROOFING

THIS DETAIL IS APPLIED ONLY WHEN ALL OF THE FOLLOWING CONDITIONS ARE MET:  
 - ROOF PITCH MIN.3° and MAX 45°  
 - PIPE DIAMETER MAX 85mm  
 - ALLOW PIPE PENETRATION TO BE SAME AS ROOF PITCH



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.



\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

3D RIDGE TO BARGE JUCTION  
 RESIDENTIAL ROOFING

Espan 340™ / 470™

Reference RREP

Rev: R0

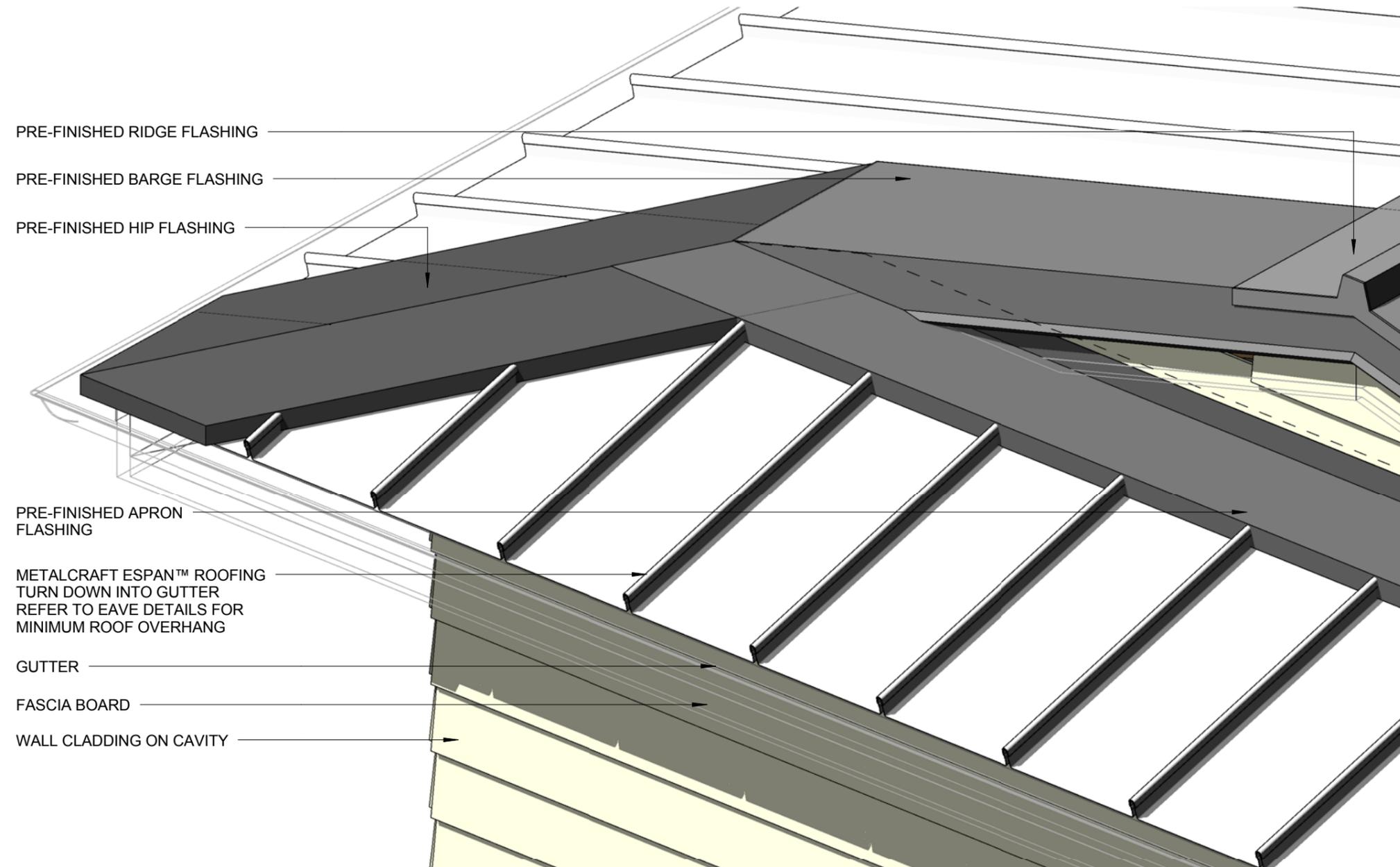
Date 2018

Scale

Sheet

14 / 20

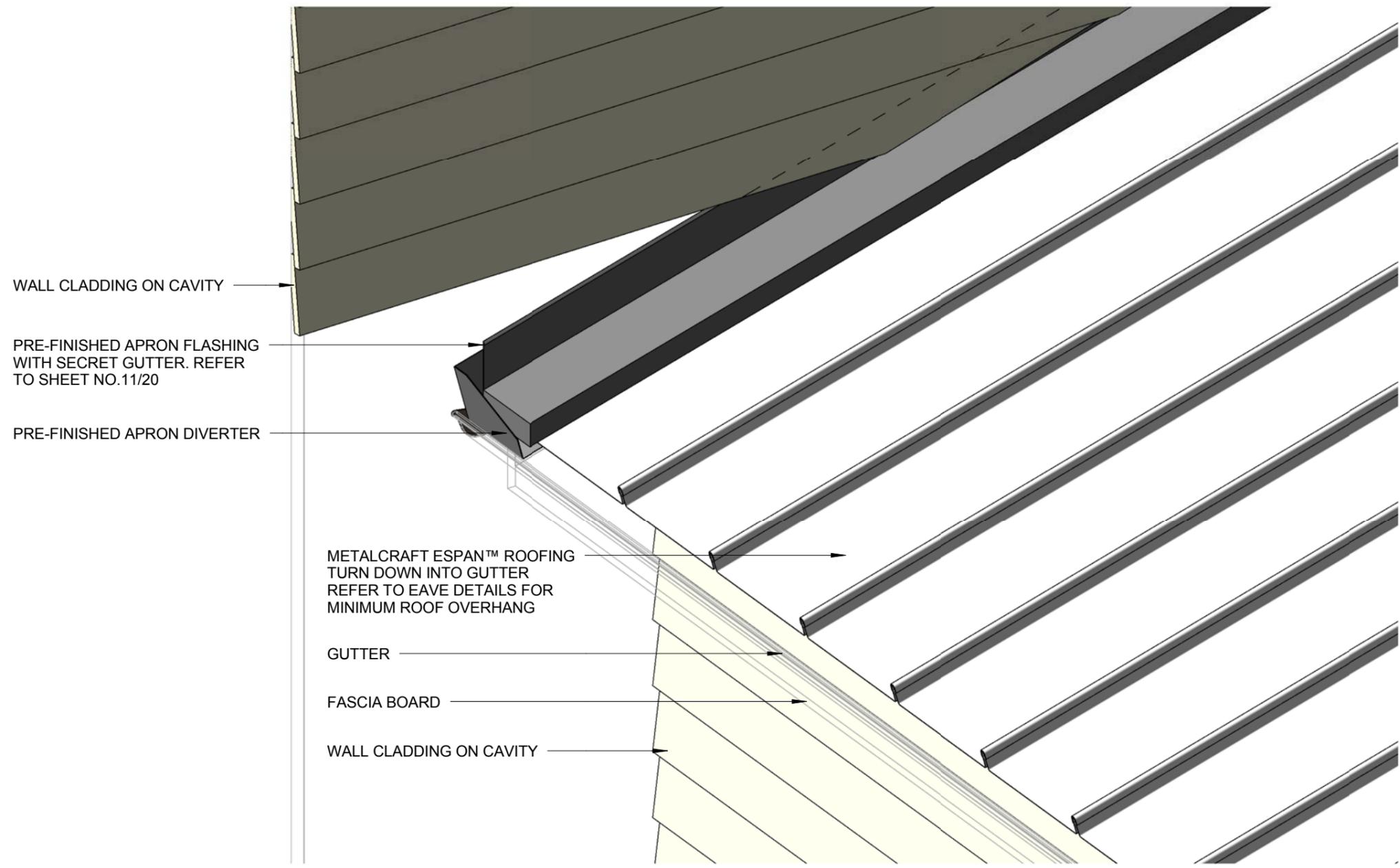
\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

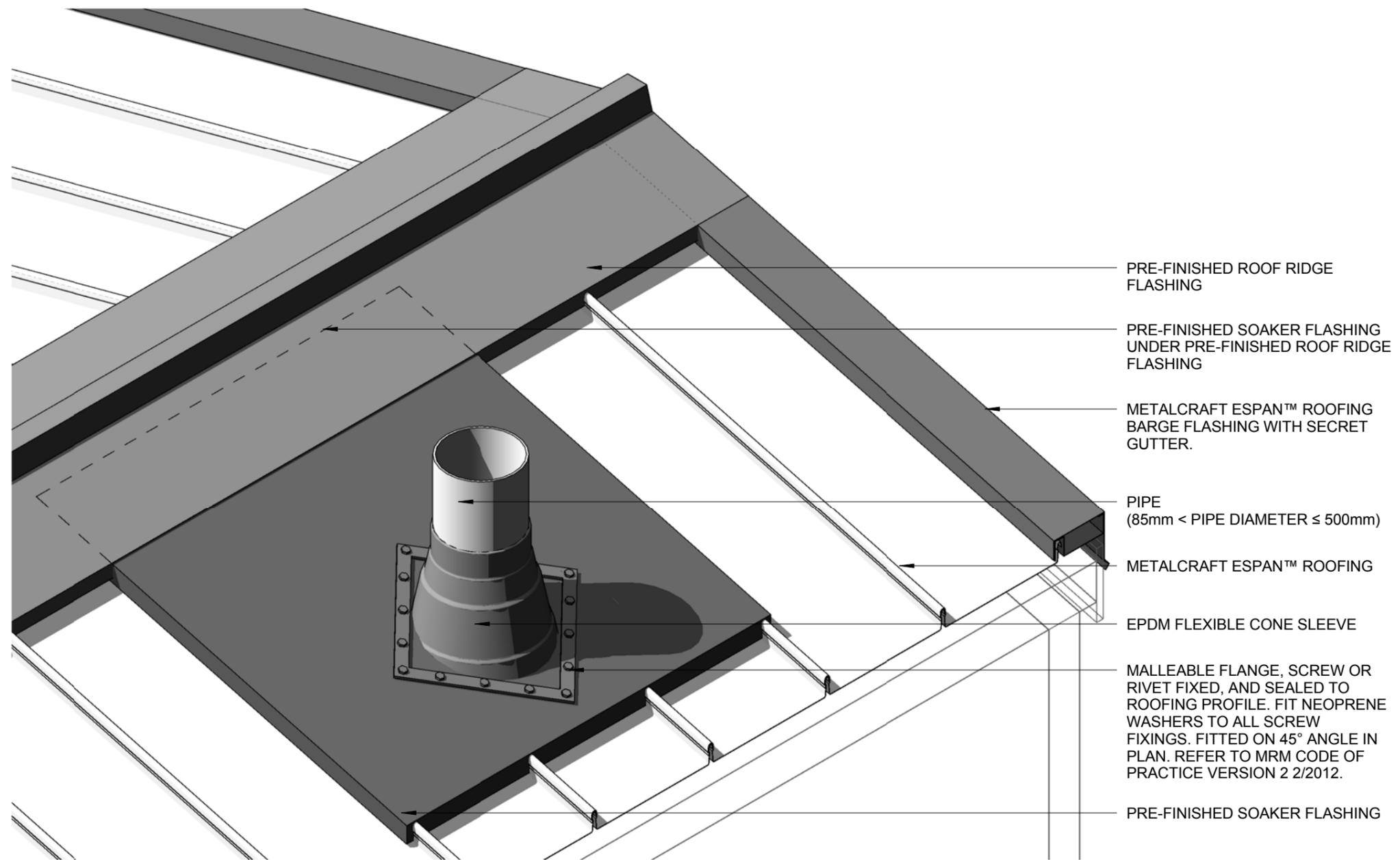
\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



PRE-FINISHED ROOF RIDGE FLASHING

PRE-FINISHED SOAKER FLASHING UNDER PRE-FINISHED ROOF RIDGE FLASHING

METALCRAFT ESPAN™ ROOFING BARGE FLASHING WITH SECRET GUTTER.

PIPE (85mm < PIPE DIAMETER ≤ 500mm)

METALCRAFT ESPAN™ ROOFING

EPDM FLEXIBLE CONE SLEEVE

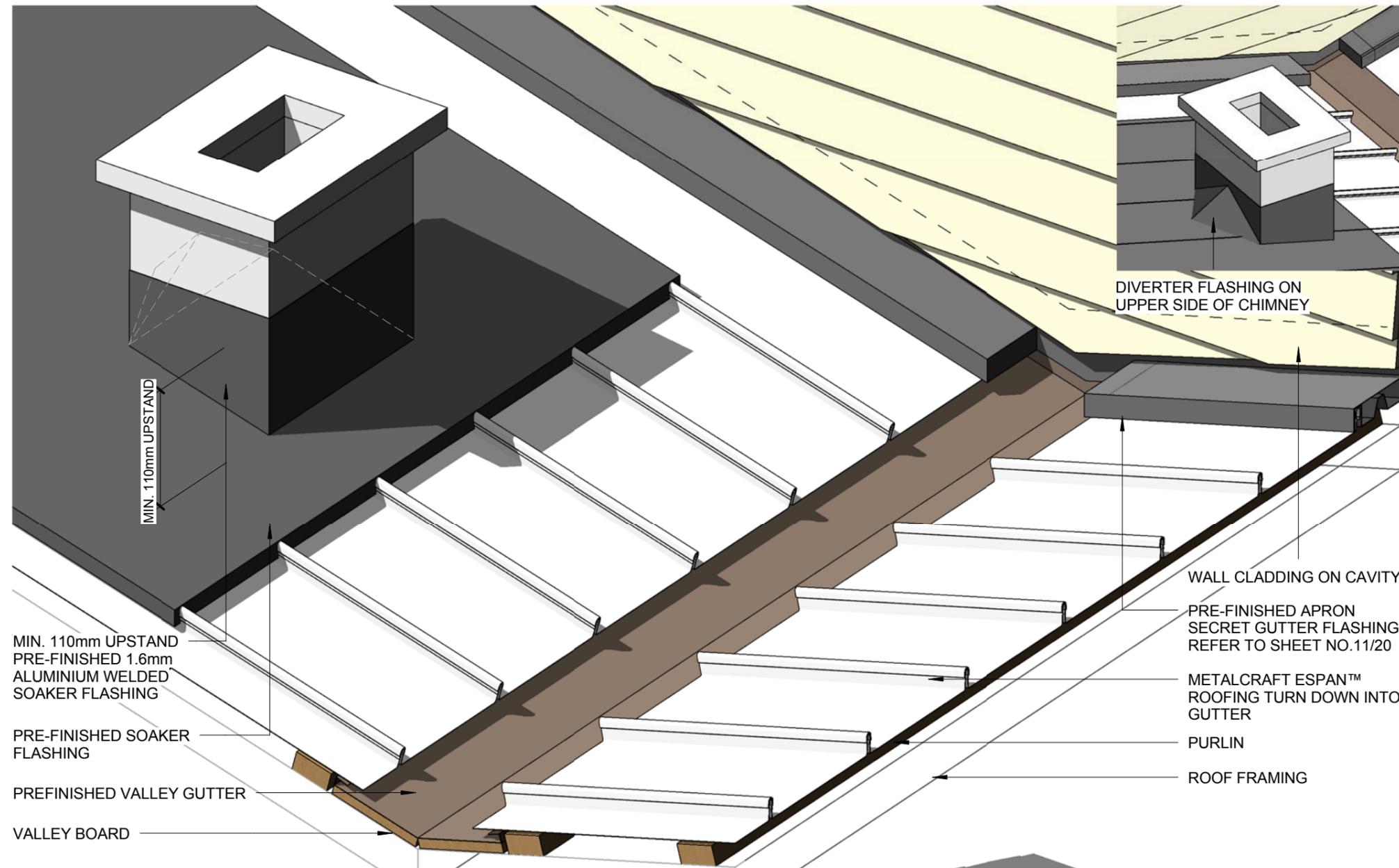
MALLEABLE FLANGE, SCREW OR RIVET FIXED, AND SEALED TO ROOFING PROFILE. FIT NEOPRENE WASHERS TO ALL SCREW FIXINGS. FITTED ON 45° ANGLE IN PLAN. REFER TO MRM CODE OF PRACTICE VERSION 2 2/2012.

PRE-FINISHED SOAKER FLASHING

\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

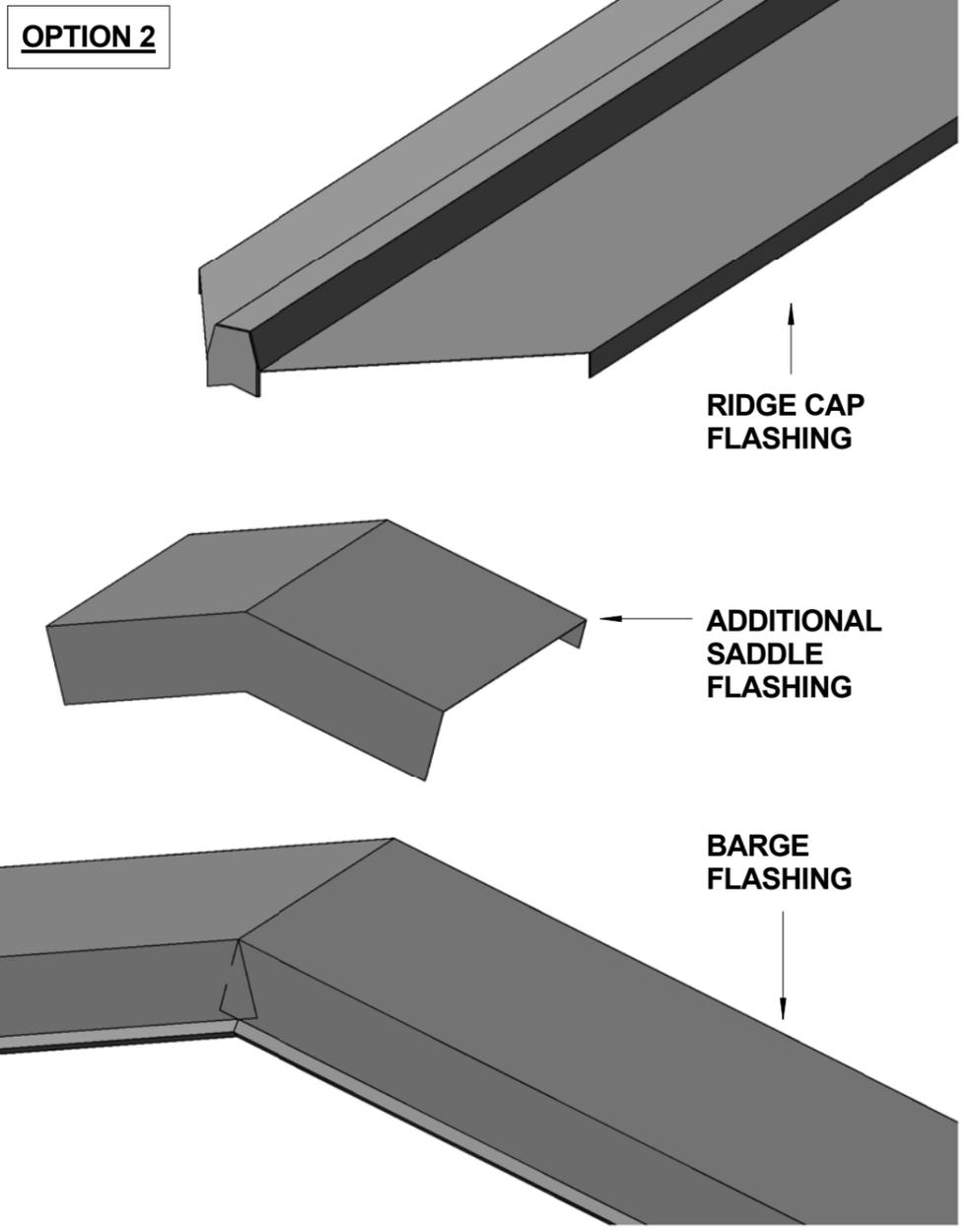
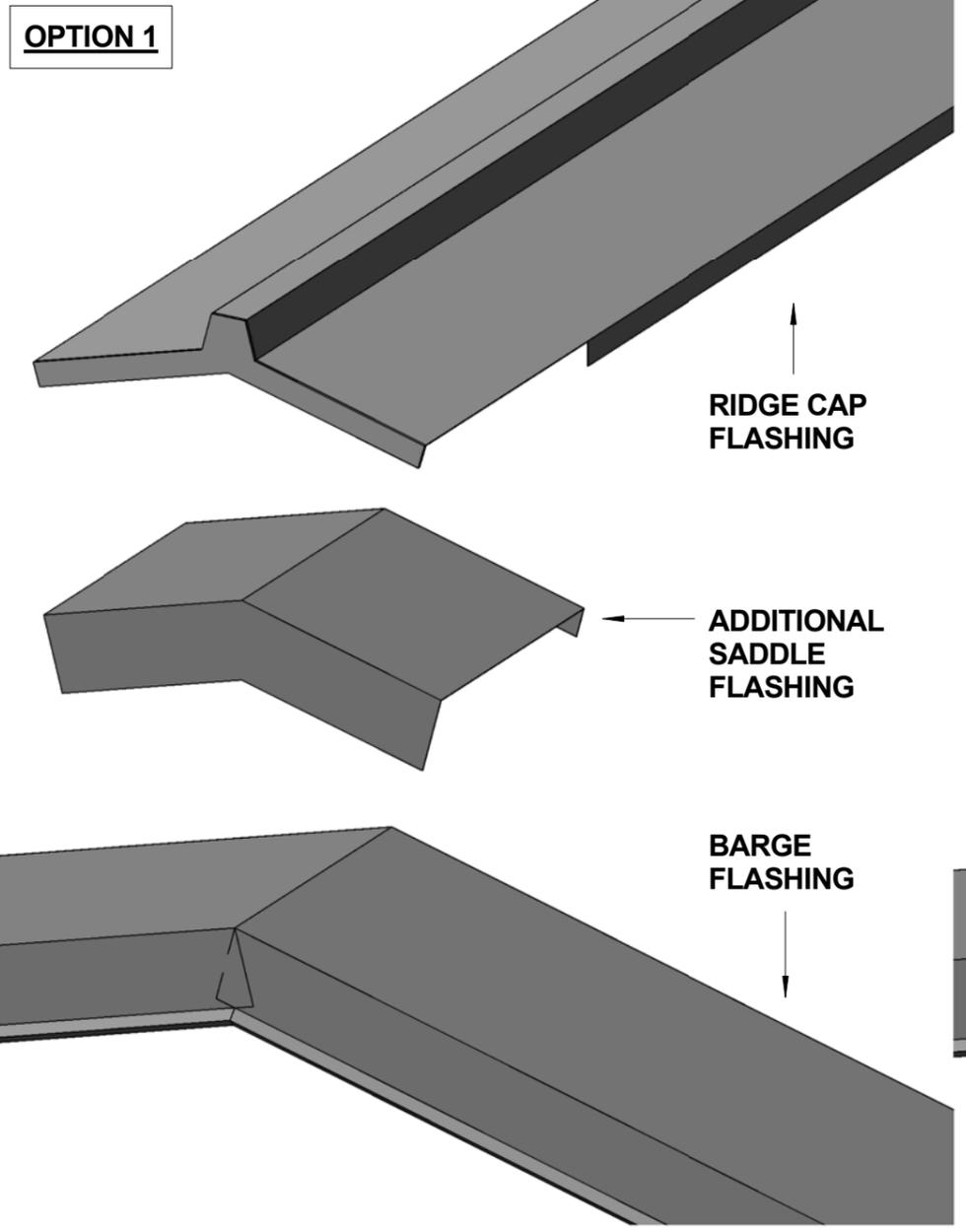
\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

DISCLAIMER:  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

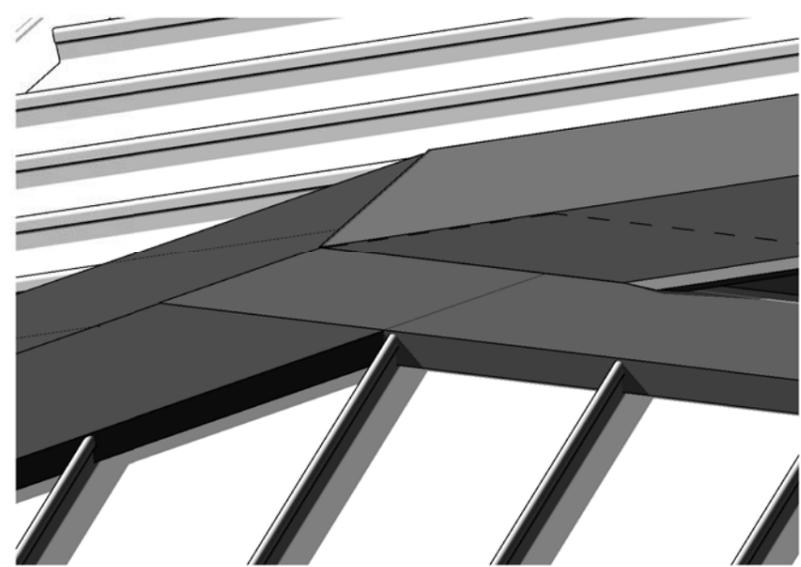
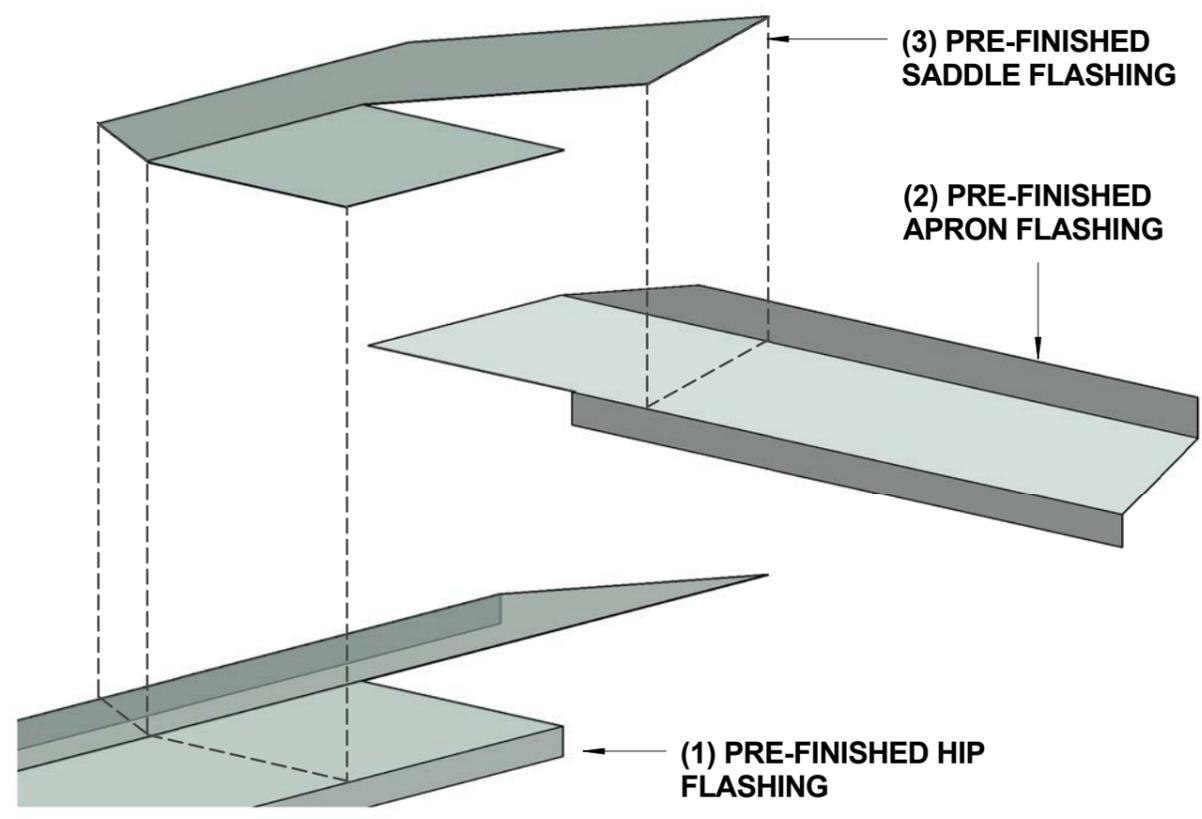
\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND RANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.

\* PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2/2012 AND BRANZ HOW TO ON-SITE GUIDE METAL ROOF FLASHINGS FOR FURTHER INFORMATION ON FLASHING COVER WIDTHS.



\* - PLEASE REFER TO MRM CODE OF PRACTICE VERSION 2.2 /2012 AS MINIMUM PITCH WILL INCREASE DEPENDING ON SHEET LENGTH.

**DISCLAIMER:**  
 All details are to be used for indicative purposes only and the designer should consult both the MRM code of practice version 2.2 /2012, E2 and all other relevant building codes  
 Details of the supporting mechanisms are indicative only. Compliance of the supporting mechanisms is the responsibility of the designer. Construction detail can vary for wall cladding. The underlay is detailed as a single line for simplicity and is indicative only. Building paper type and method of installation should comply with underlay manufacturers recommendations and NZBC regulations.