

(The Code clause and table references given below apply to Part 2 and Part 3 unless specifically noted)

Background


AS 1684.2, Clause 9.6.1 states that "continuity of tie-down shall be provided from the roof sheeting (sheeting in this sense also applies to roof tiles) to the foundations". For 'pitched' coupled roofs, where there is net uplift that cannot be resisted by nominal nailing alone, the code requires specific tie-down fixings to be installed. From Tables 9.2 and 9.5, it can be seen that these specific tie-downs are required

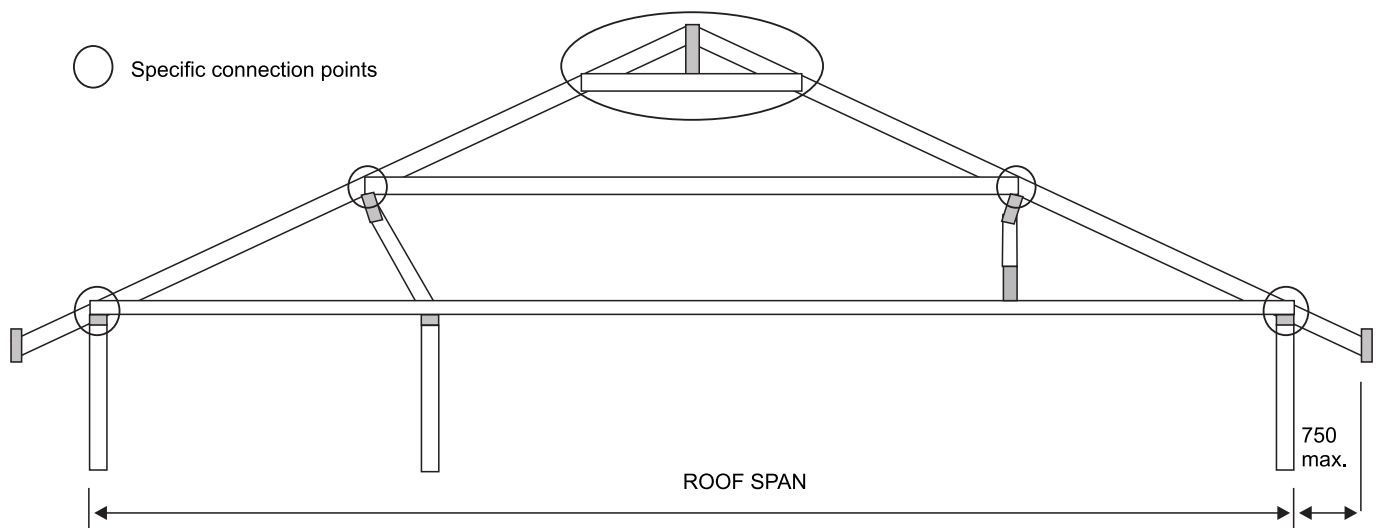
for N1, N2, N3 and N4 sheet roofs and N3 and N4 tile roofs. This guide only covers N1 & N2 sheet roofs and N3 tile roofs.

Simplified details for a limited range of building spans and member and tie-down spacings are provided in this Guide Note and accompanying sheets for the following conditions:-

Roof Span	Maximum Overhang	Roof Type	Rafter Spacing	Wind Classification		
				N1	N2	N3
Up to 9000	750	Sheet	900	Sheet 3.1	Sheet 3.5	NGA
			1200	Sheet 3.2	Sheet 3.6	NGA
		Tile	450			Sheet 3.9
			600			Sheet 3.10
9000 to 12000	750	Sheet	900	Sheet 3.3	Sheet 3.7	NGA
			1200	Sheet 3.4	Sheet 3.8	NGA
		Tile	450			Sheet 3.11
			600			Sheet 3.12

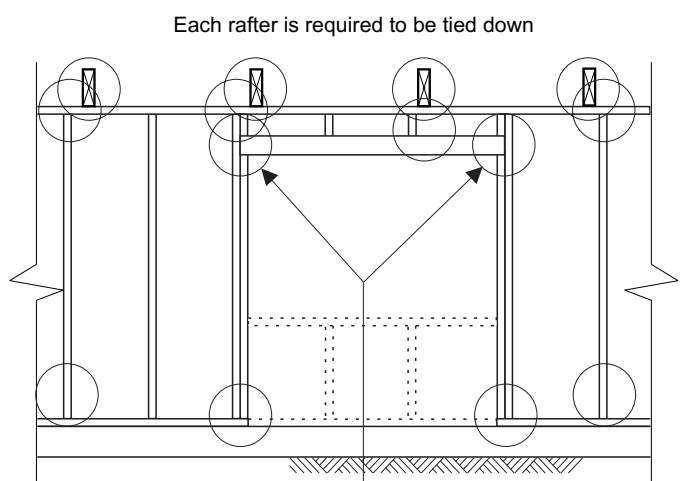
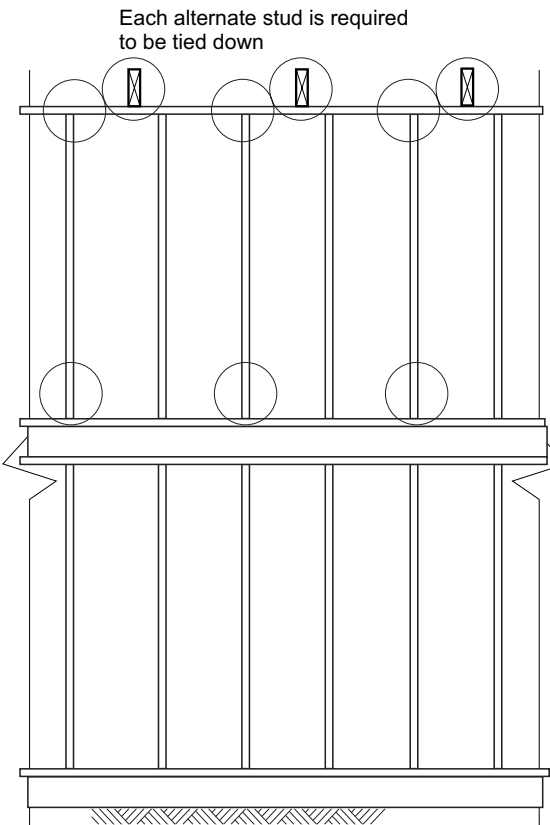
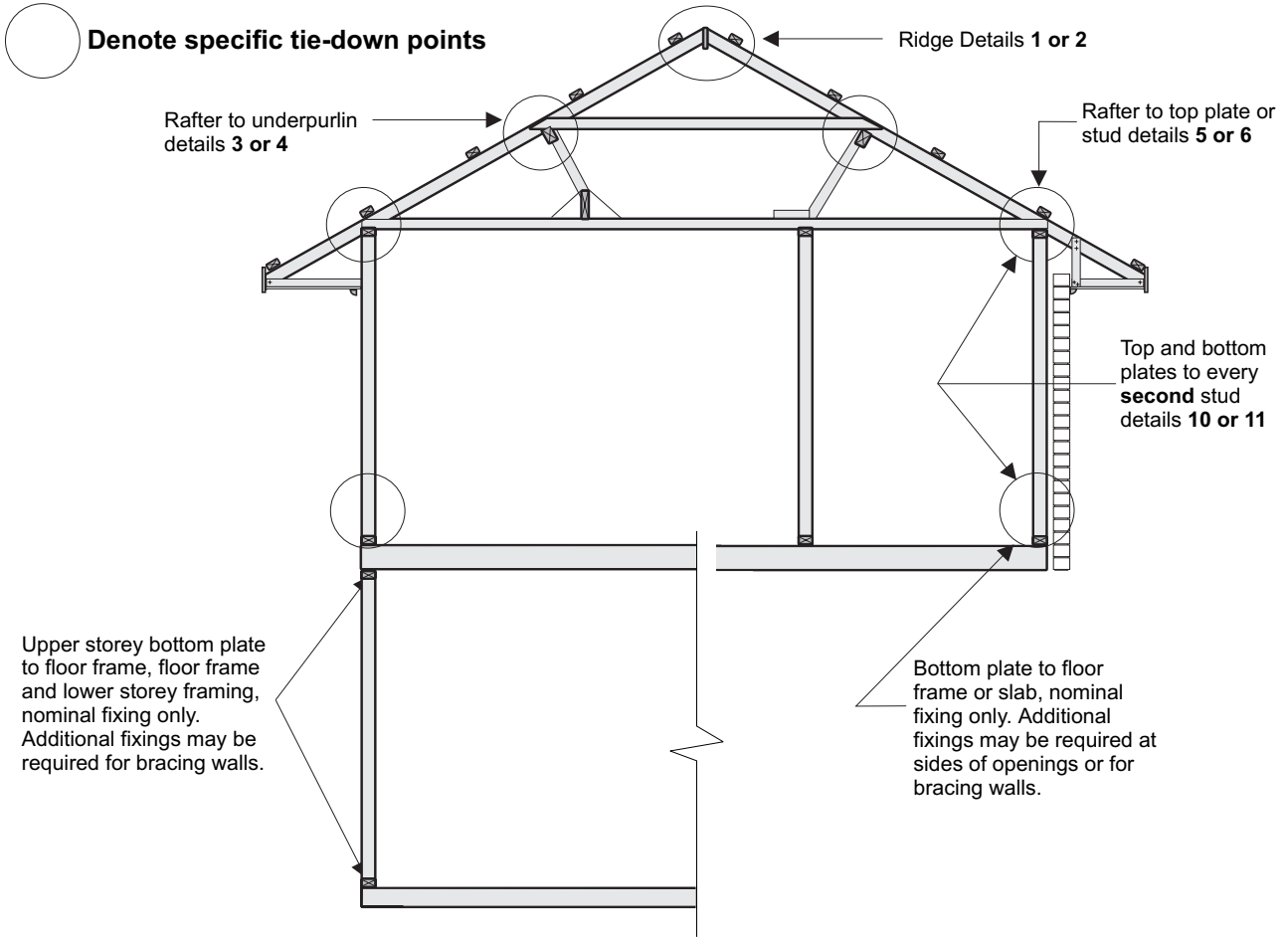
Notes:

1.  = no specific tie-down required
2. NGA = no guide available
3. The details provided are suitable for timber with Joint Strengths J1 to J4 and JD4 and JD5.



AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N1 SHEET ROOF Sheet 3.1

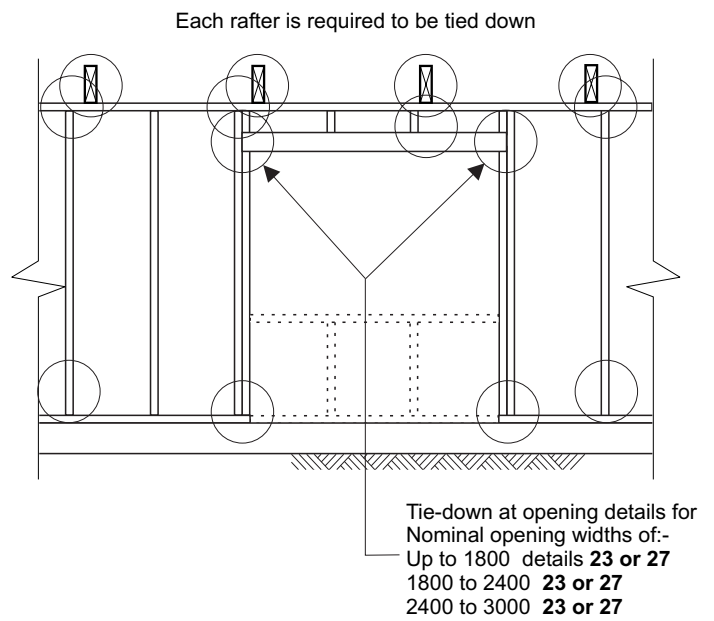
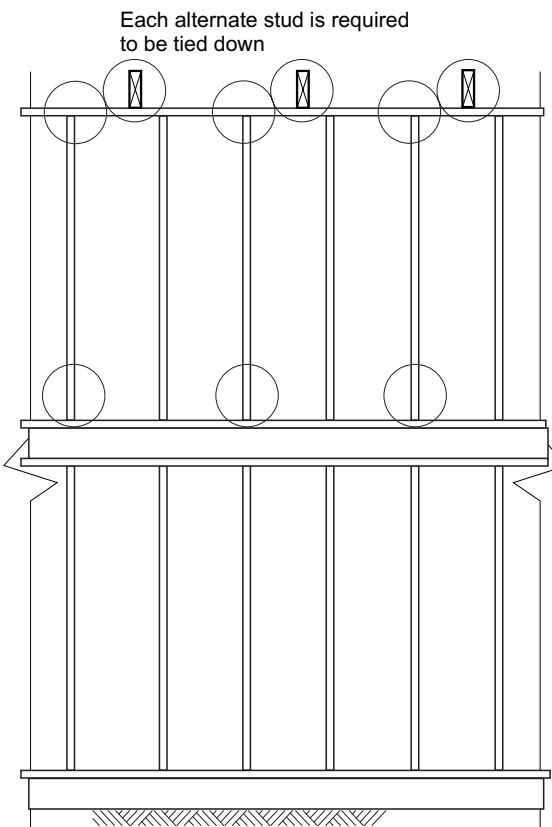
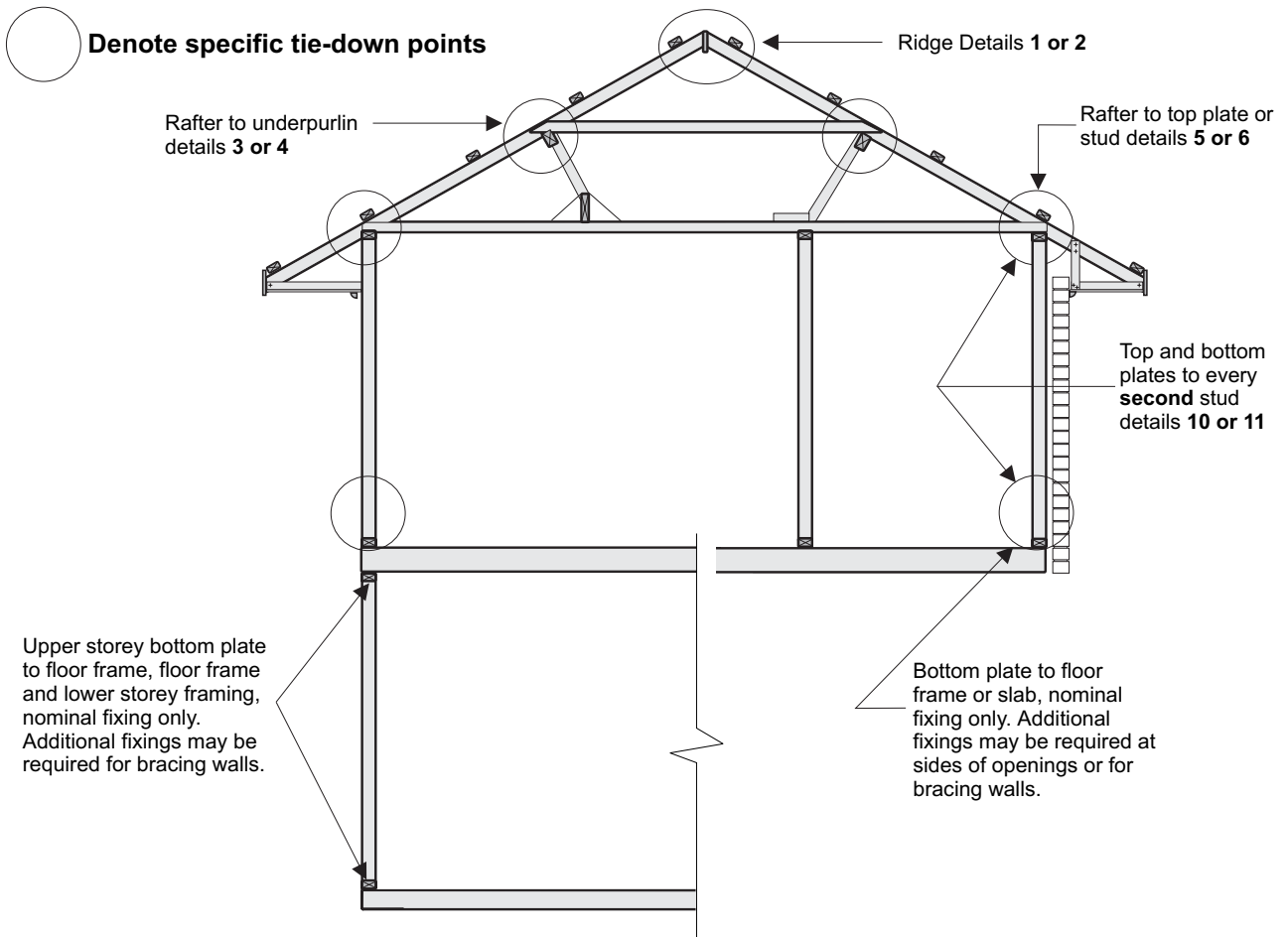
(Roof Span up to 9000 mm, Rafters @ 900 crs, Collar Ties @ 900 crs, O/hang 750 mm max)



Tie-down at opening details for Nominal opening widths of:-
 Up to 1800 details 23 or 27
 1800 to 2400 23 or 27
 2400 to 3000 23 or 27

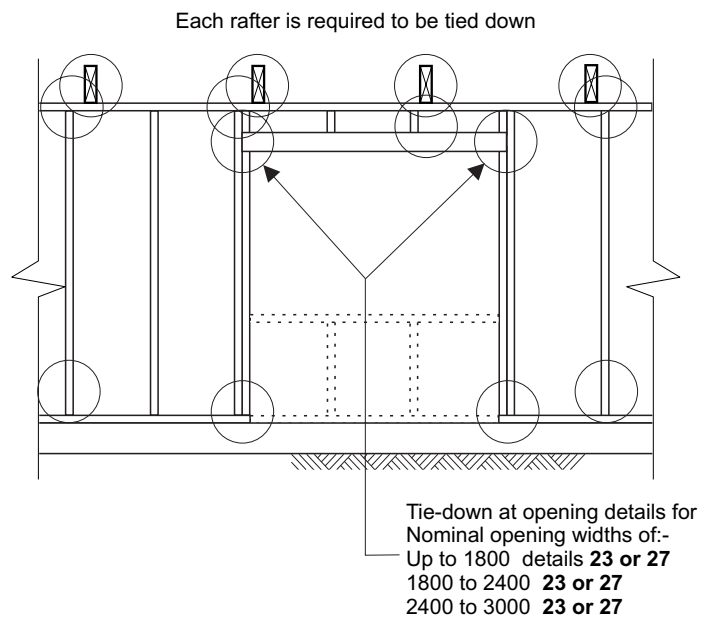
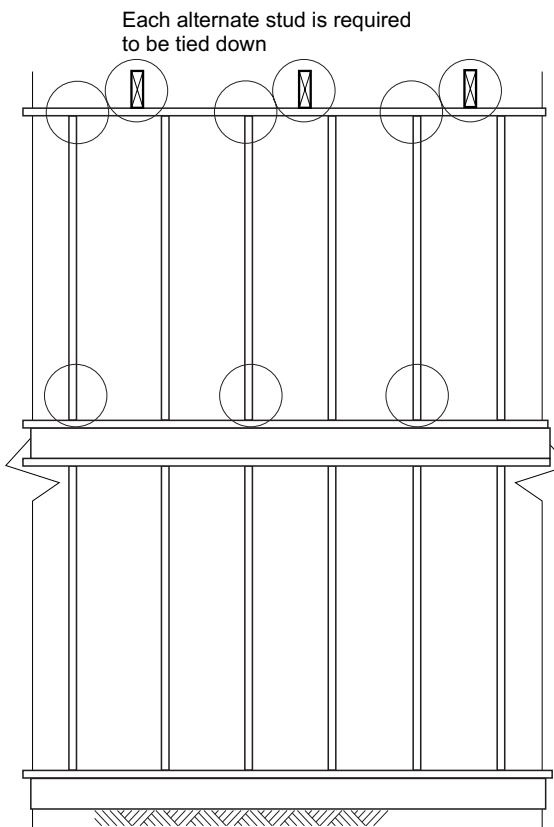
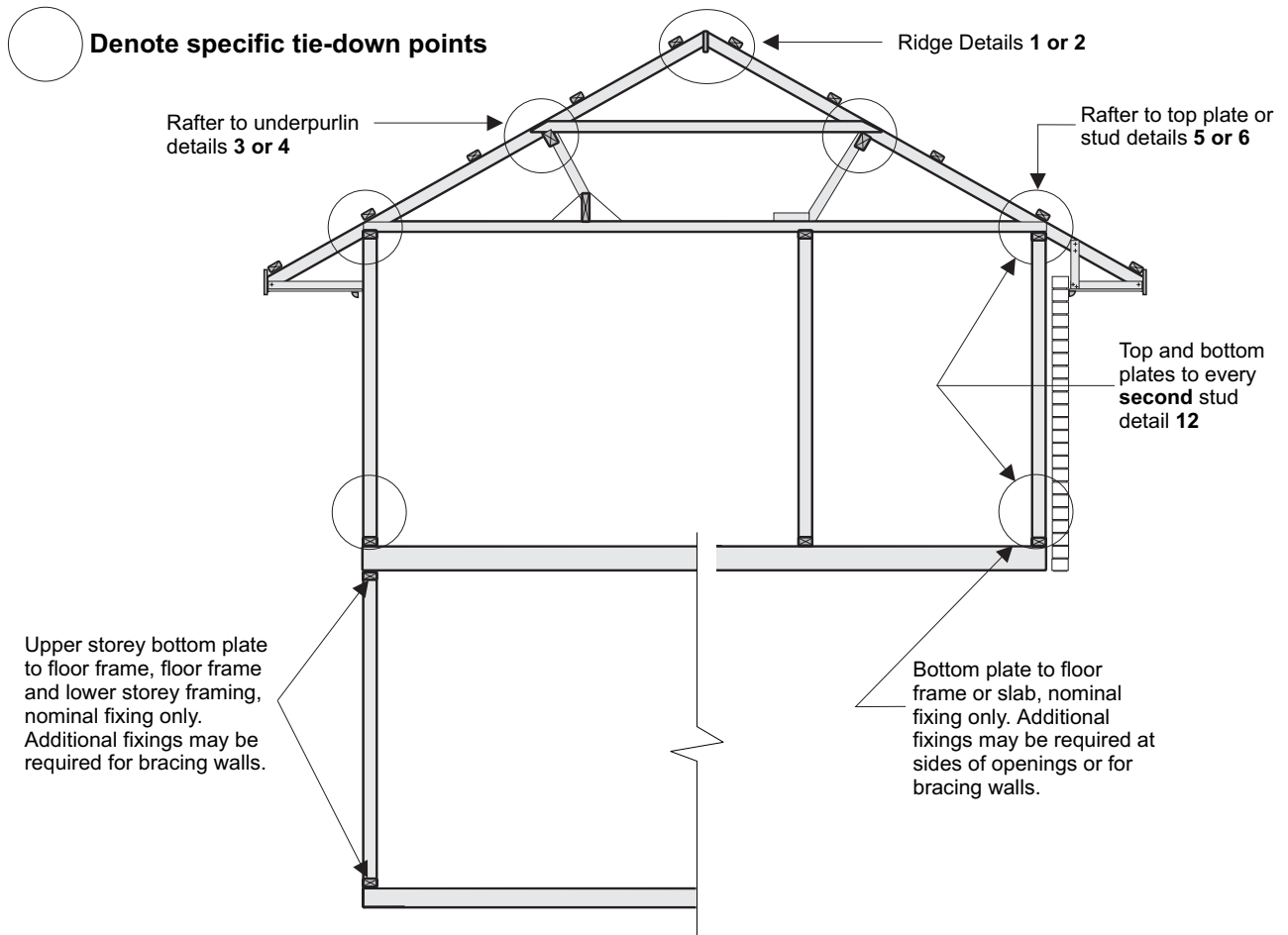
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N1 SHEET ROOF Sheet 3.2

(Roof Span up to 9000 mm, Rafters @ 1200 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)



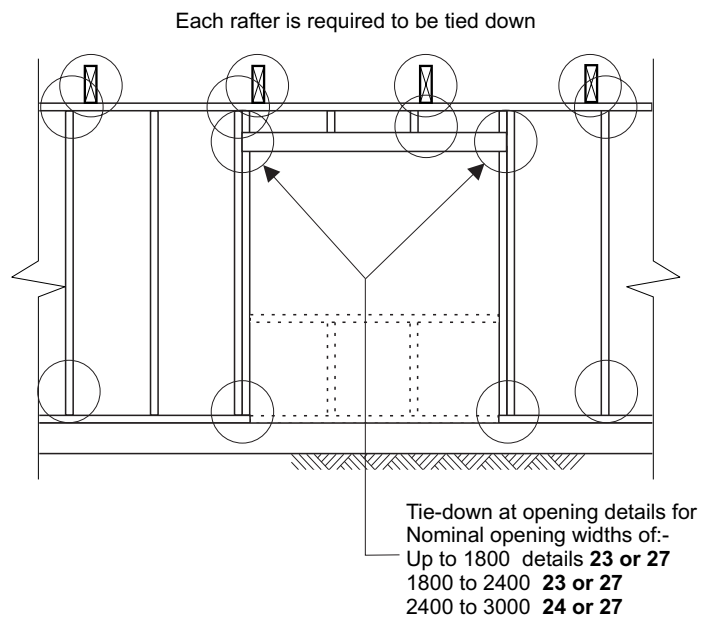
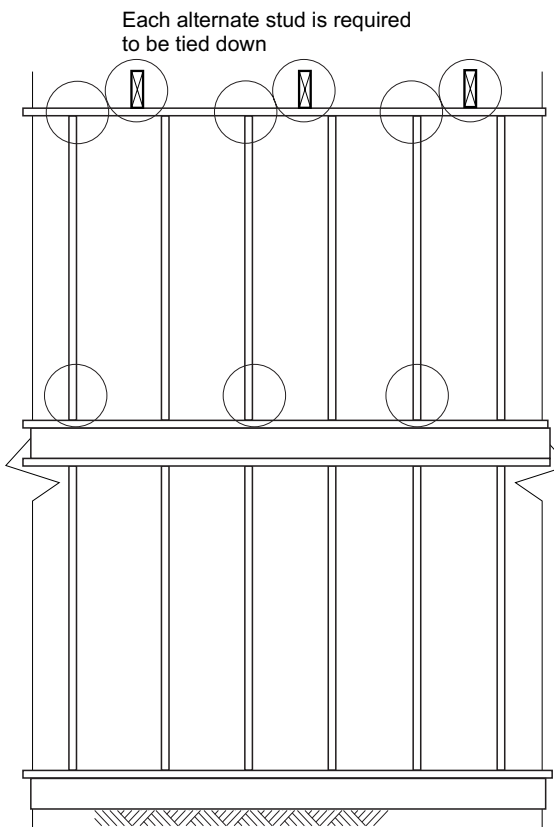
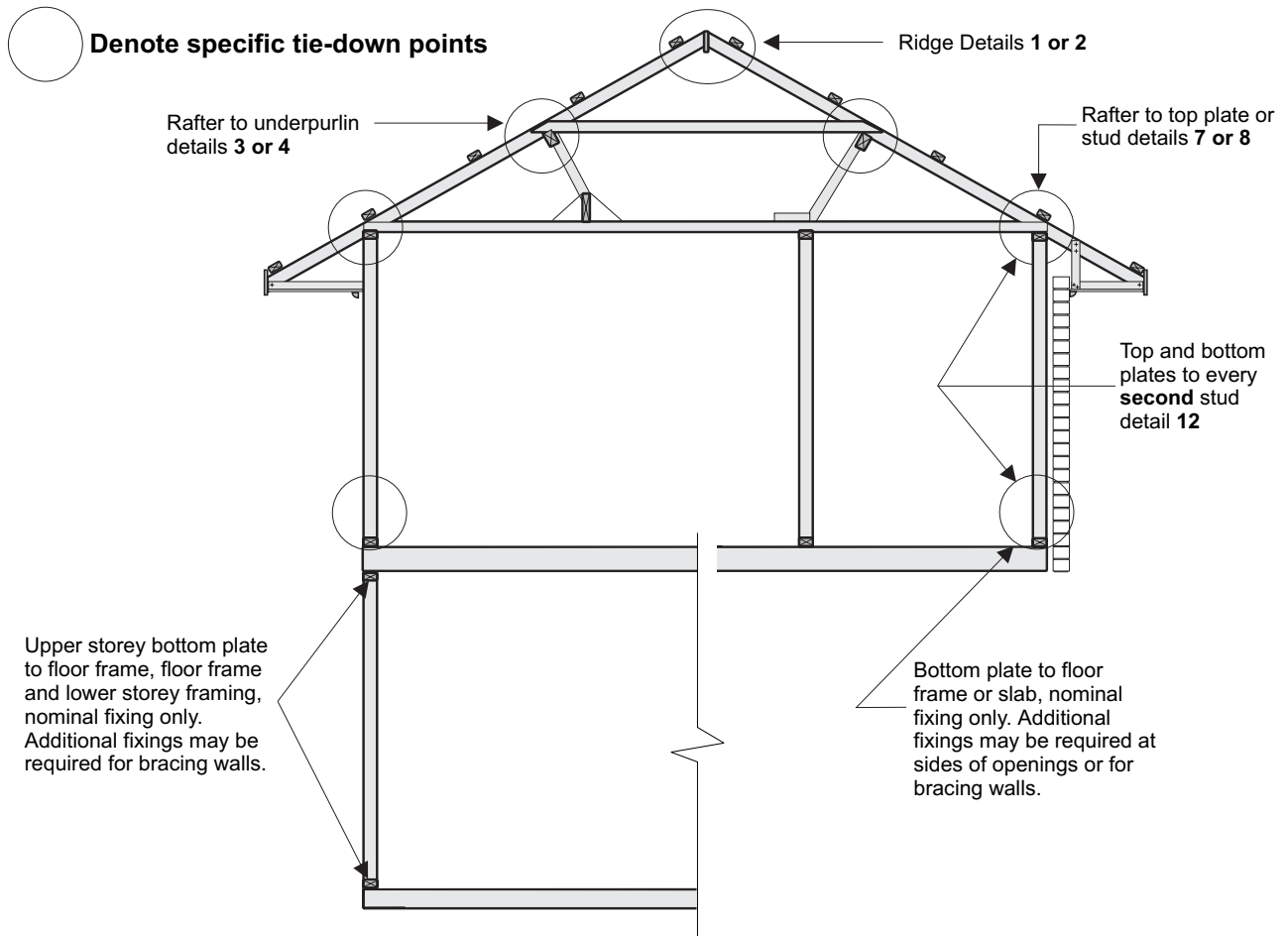
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N1 SHEET ROOF Sheet 3.3

(Roof Span up to 9000 - 12000mm, Rafters @ 900 crs, Collar Ties @ 900 crs, O/hang 750 mm max)



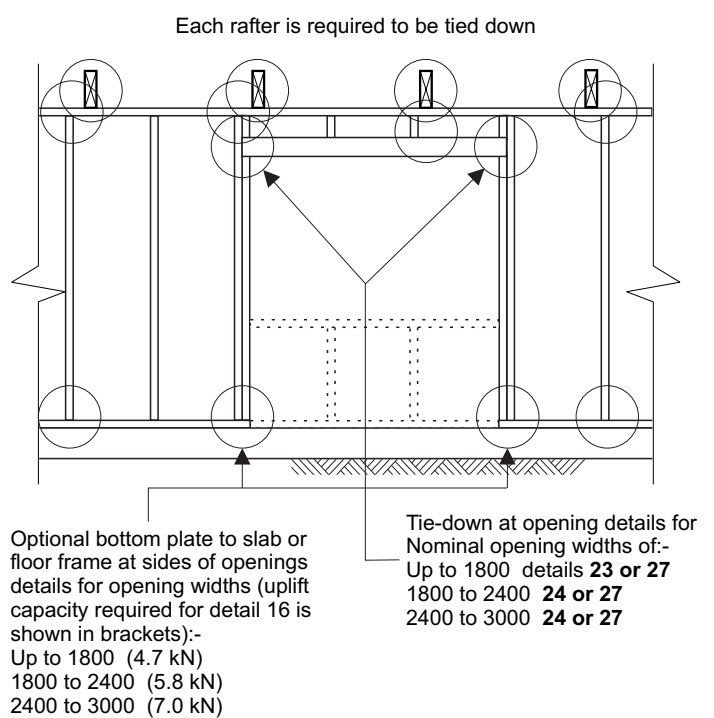
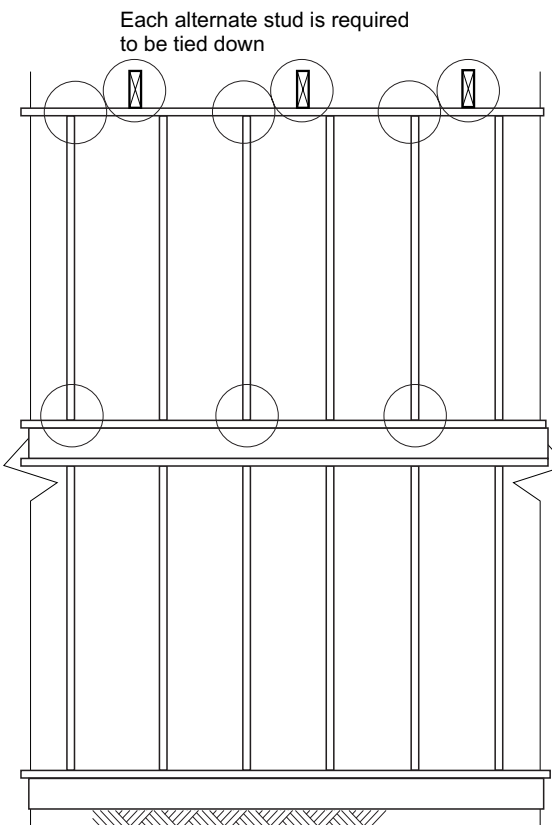
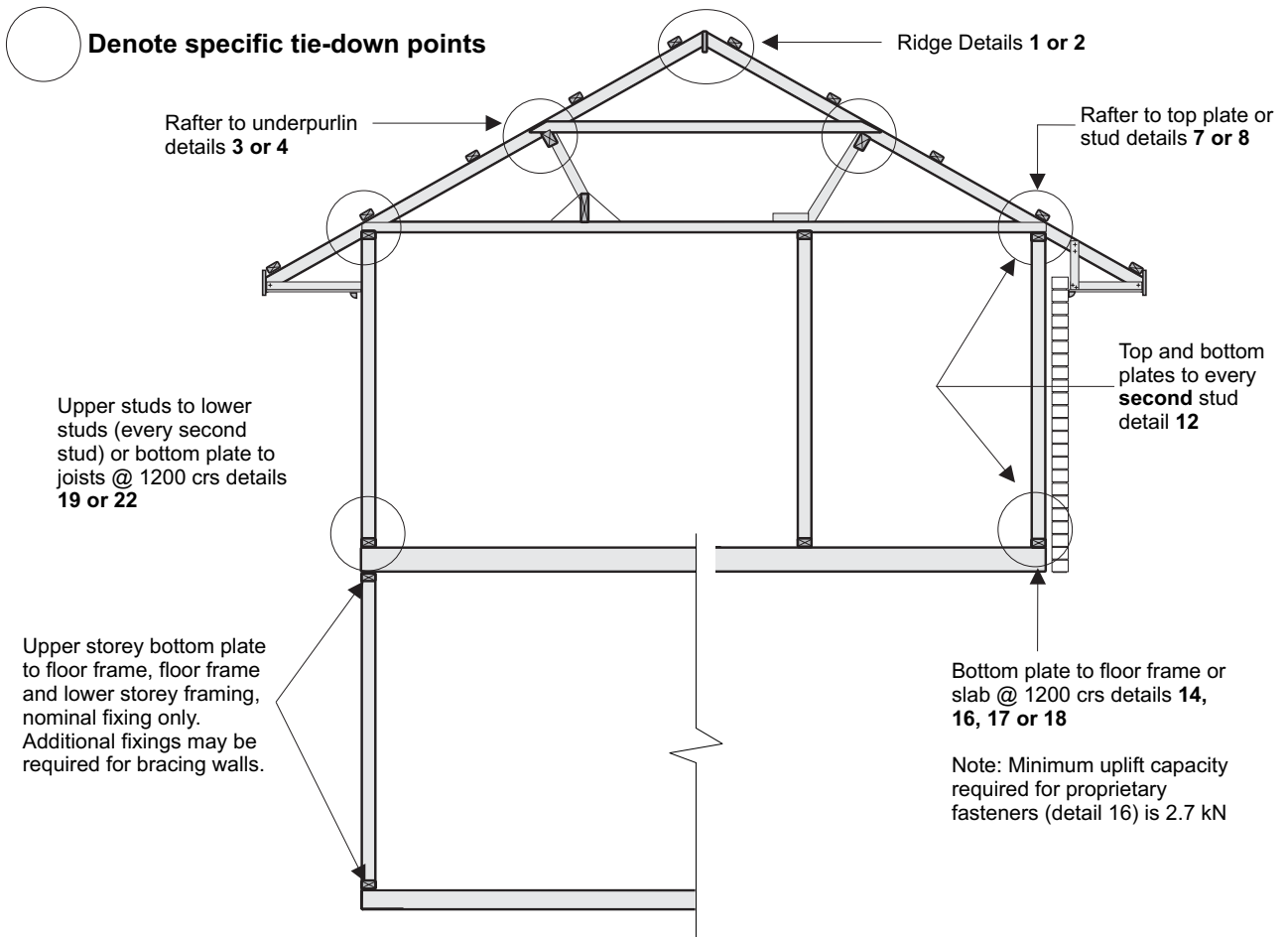
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N1 SHEET ROOF Sheet 3.4

(Roof Span up to 9000 - 12000mm, Rafters @ 1200 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)



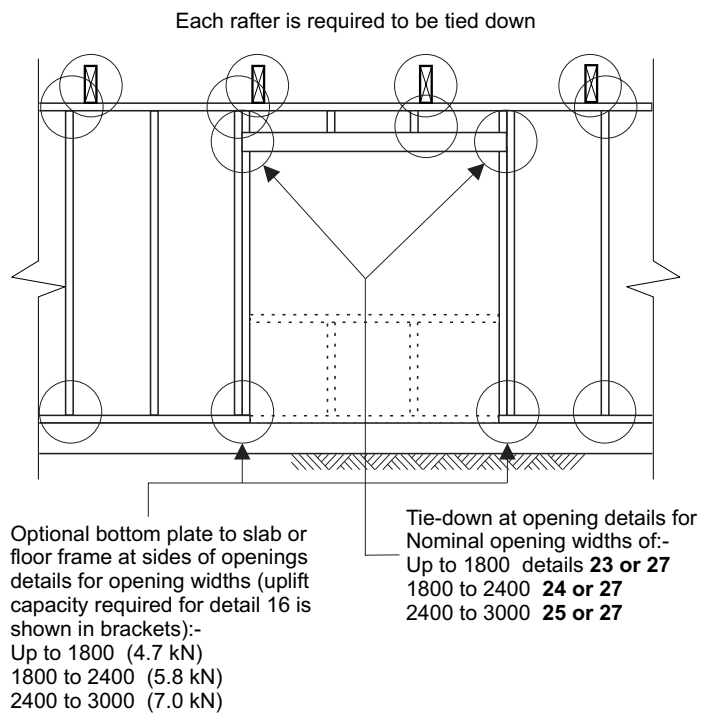
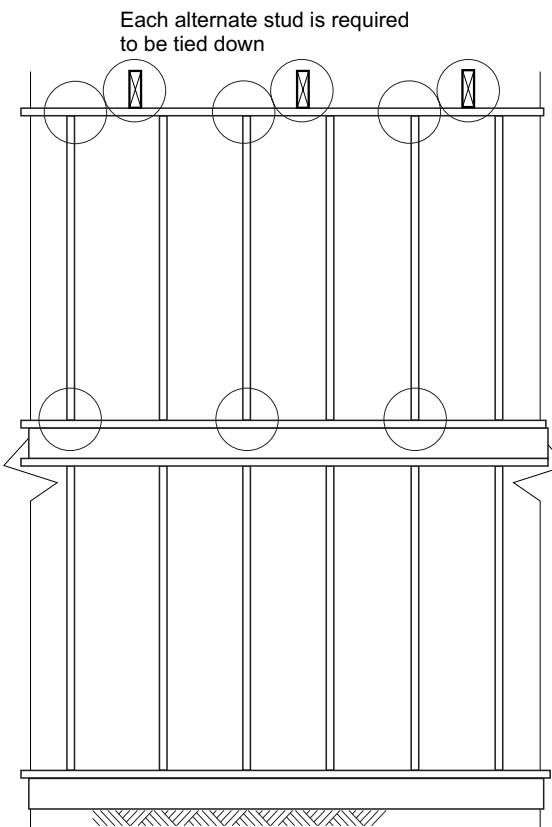
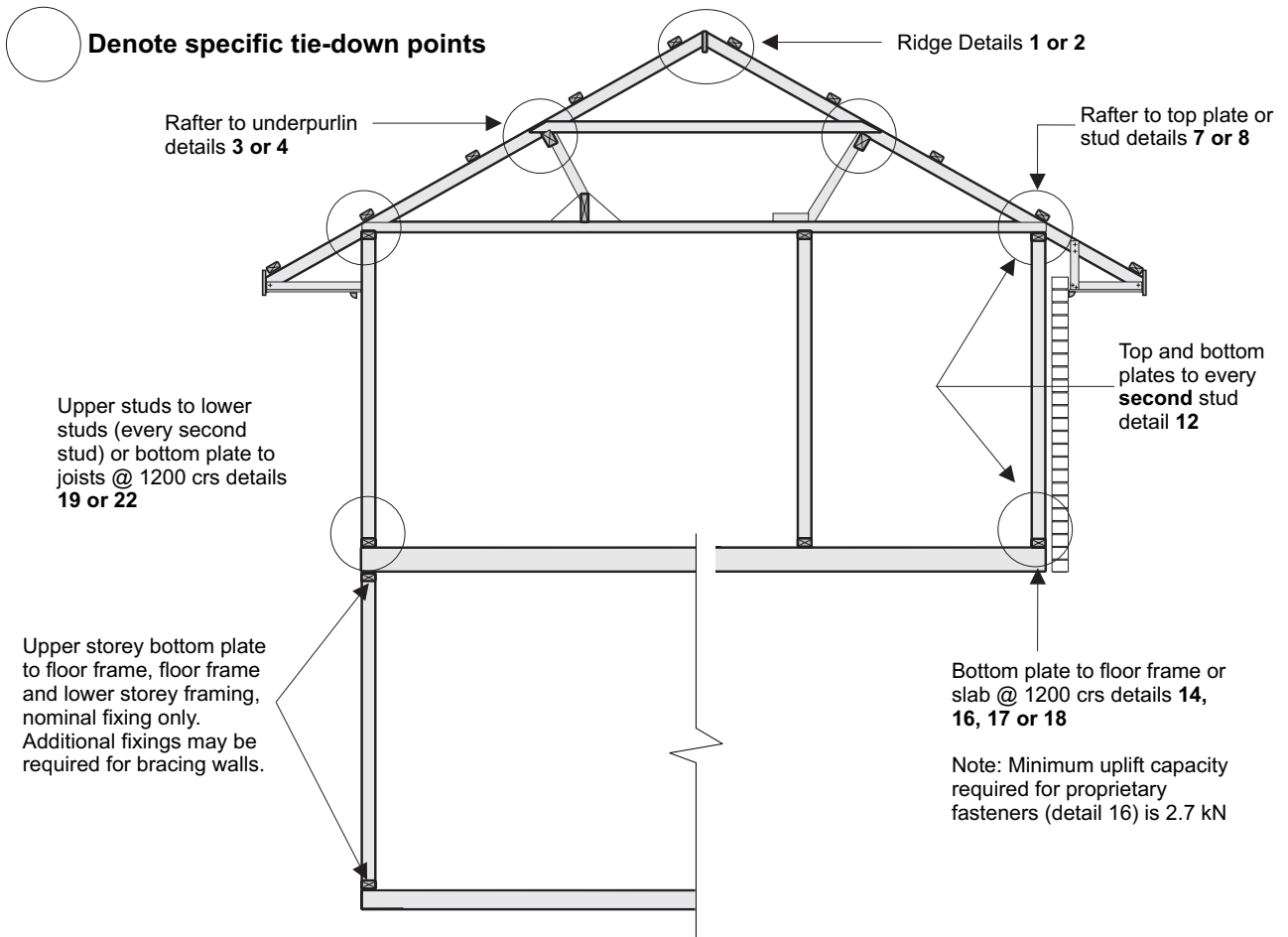
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N2 SHEET ROOF Sheet 3.5

(Roof Span up to 9000 mm, Rafters @ 900 crs, Collar Ties @ 900 crs, O/hang 750 mm max)



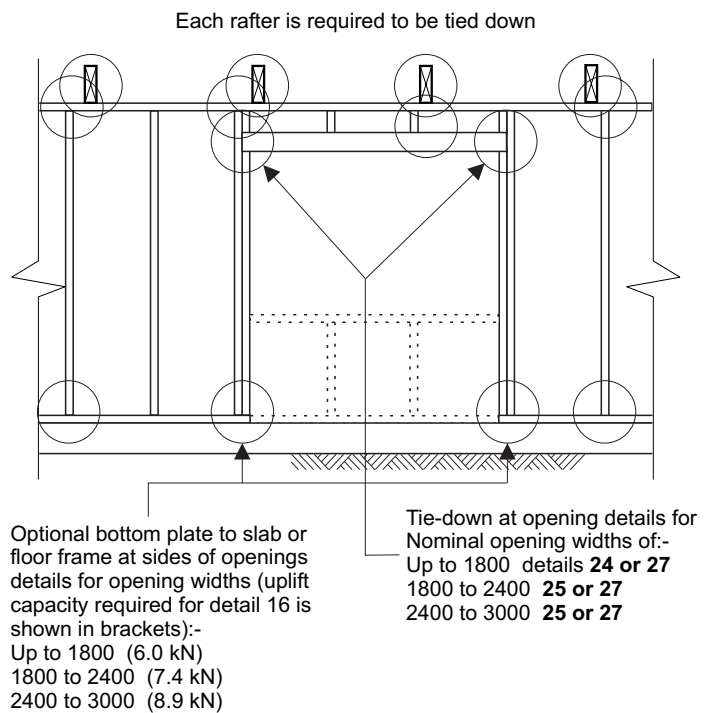
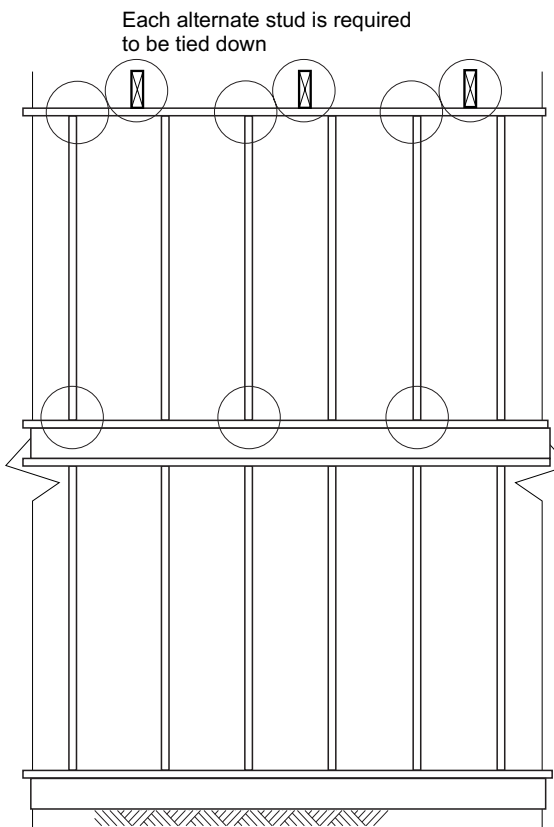
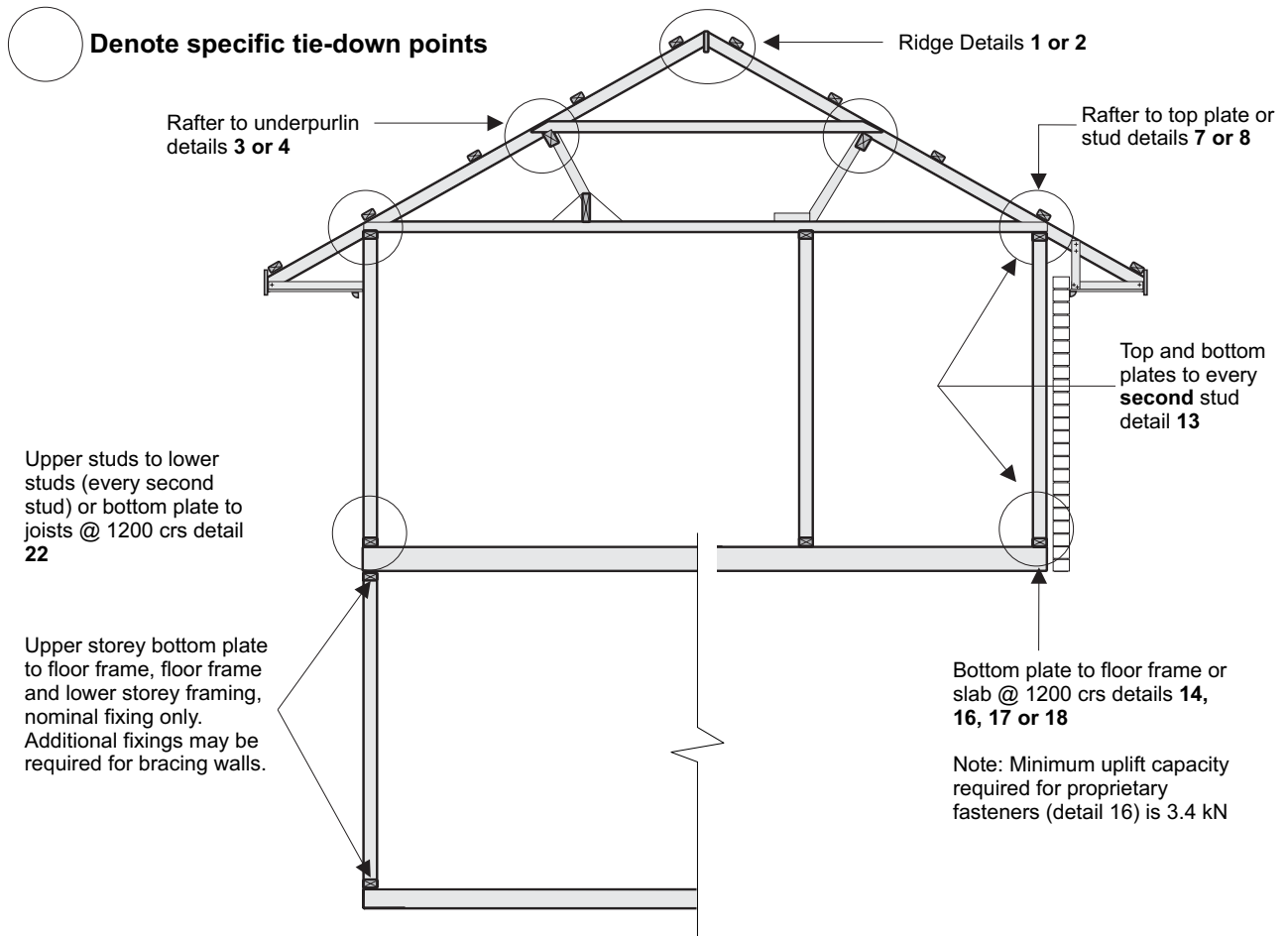
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N2 SHEET ROOF Sheet 3.6

(Roof Span up to 9000 mm, Rafters @ 1200 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)



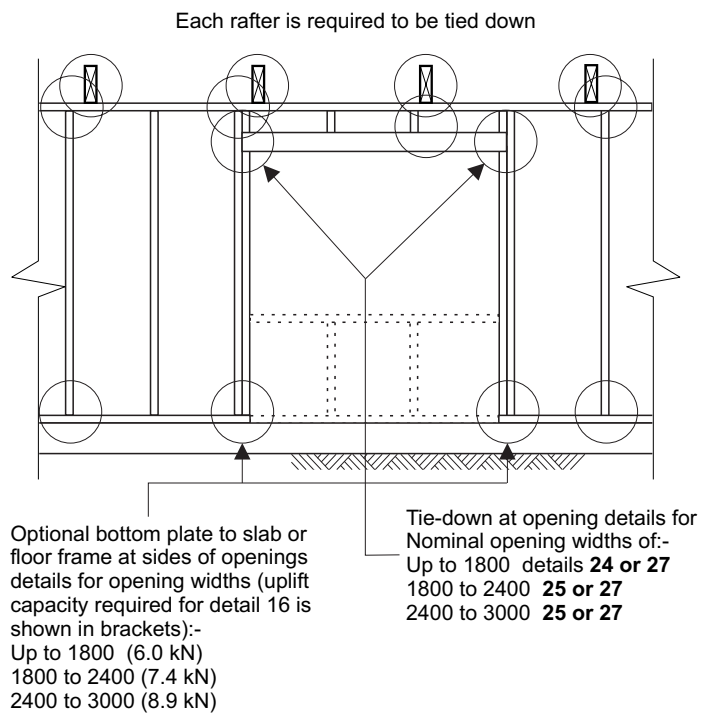
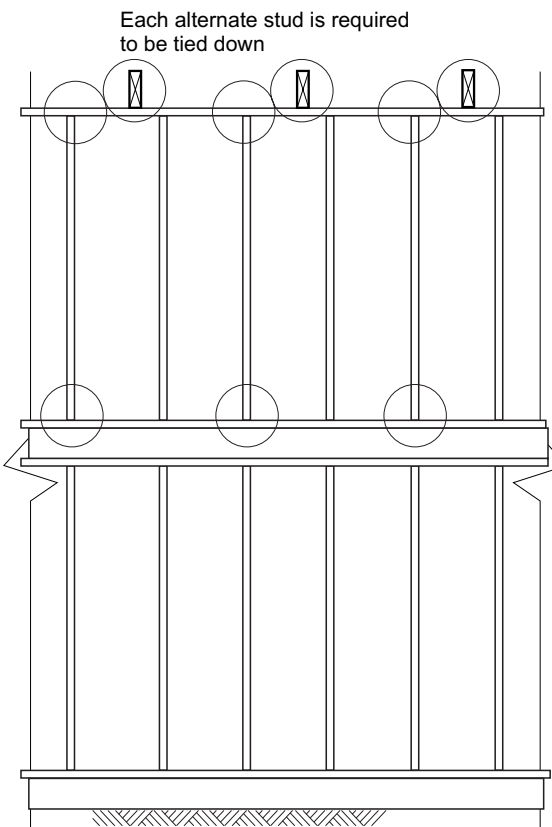
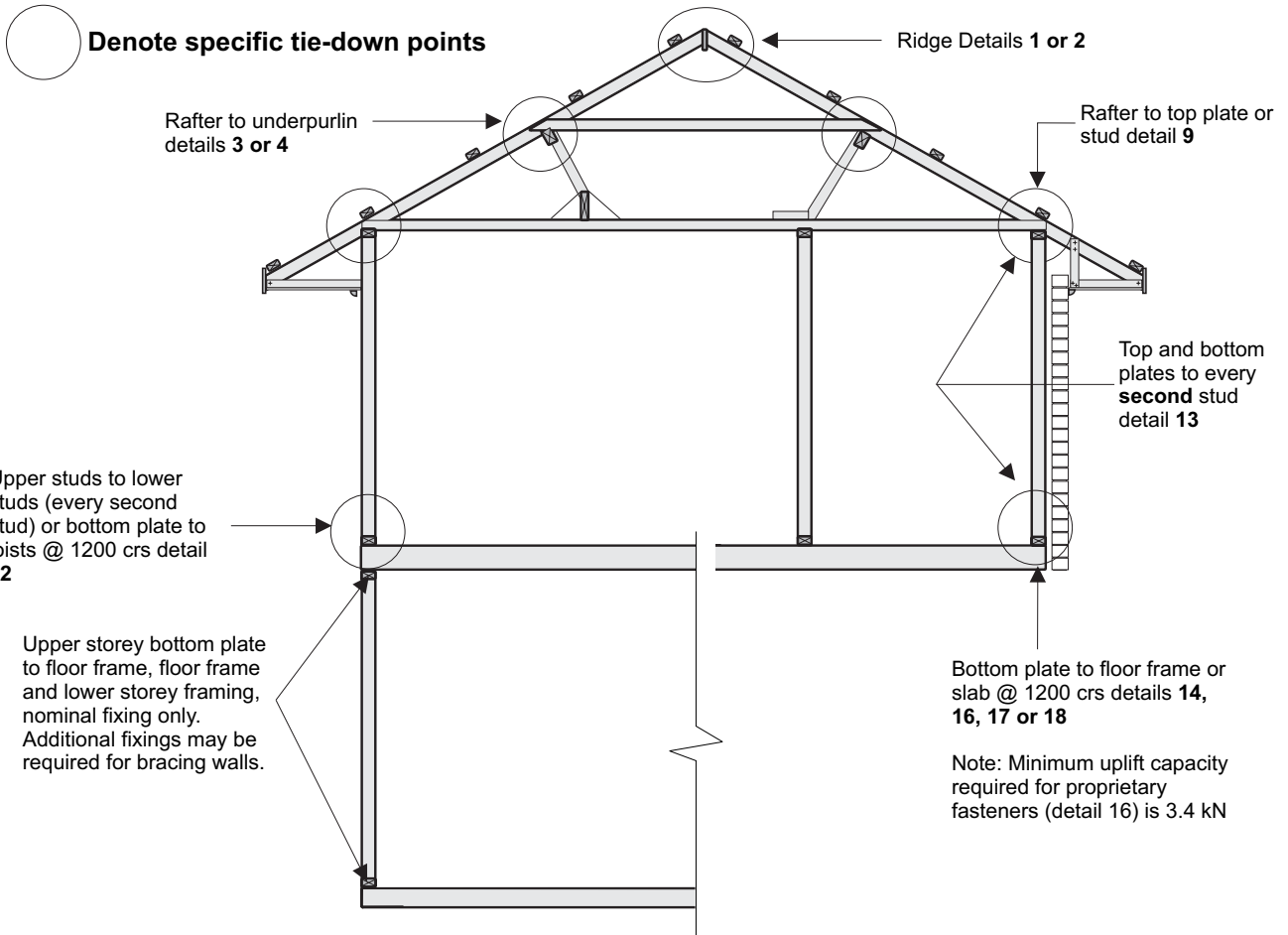
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N2 SHEET ROOF Sheet 3.7

(Roof Span up to 9000 - 12000 mm, Rafters @ 900 crs, Collar Ties @ 900 crs, O/hang 750 mm max)



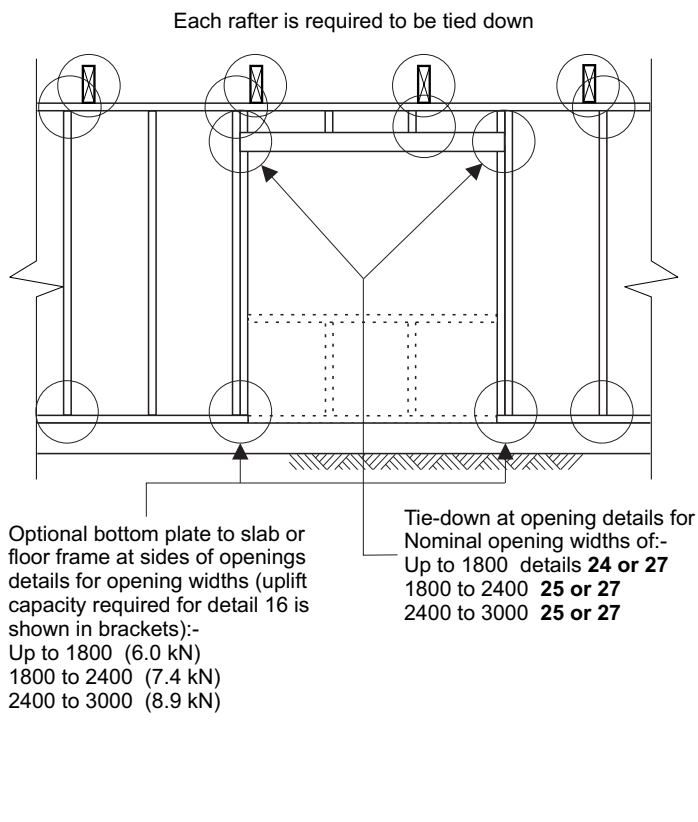
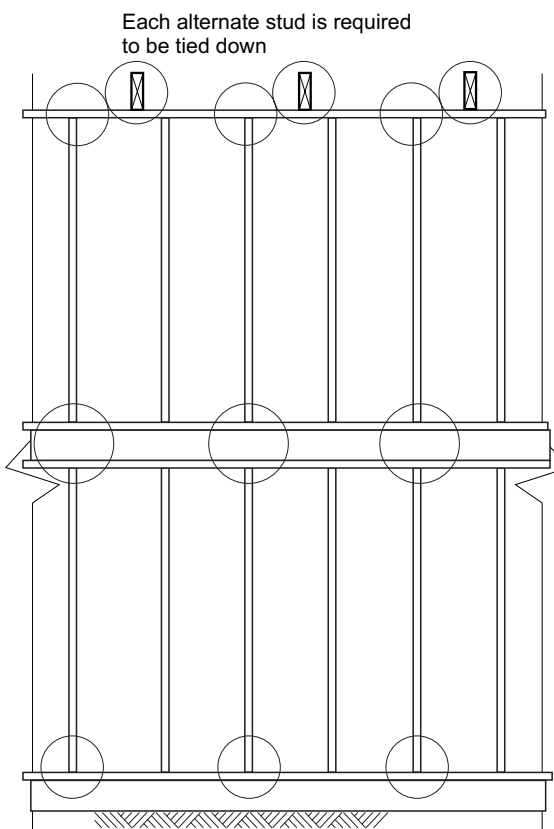
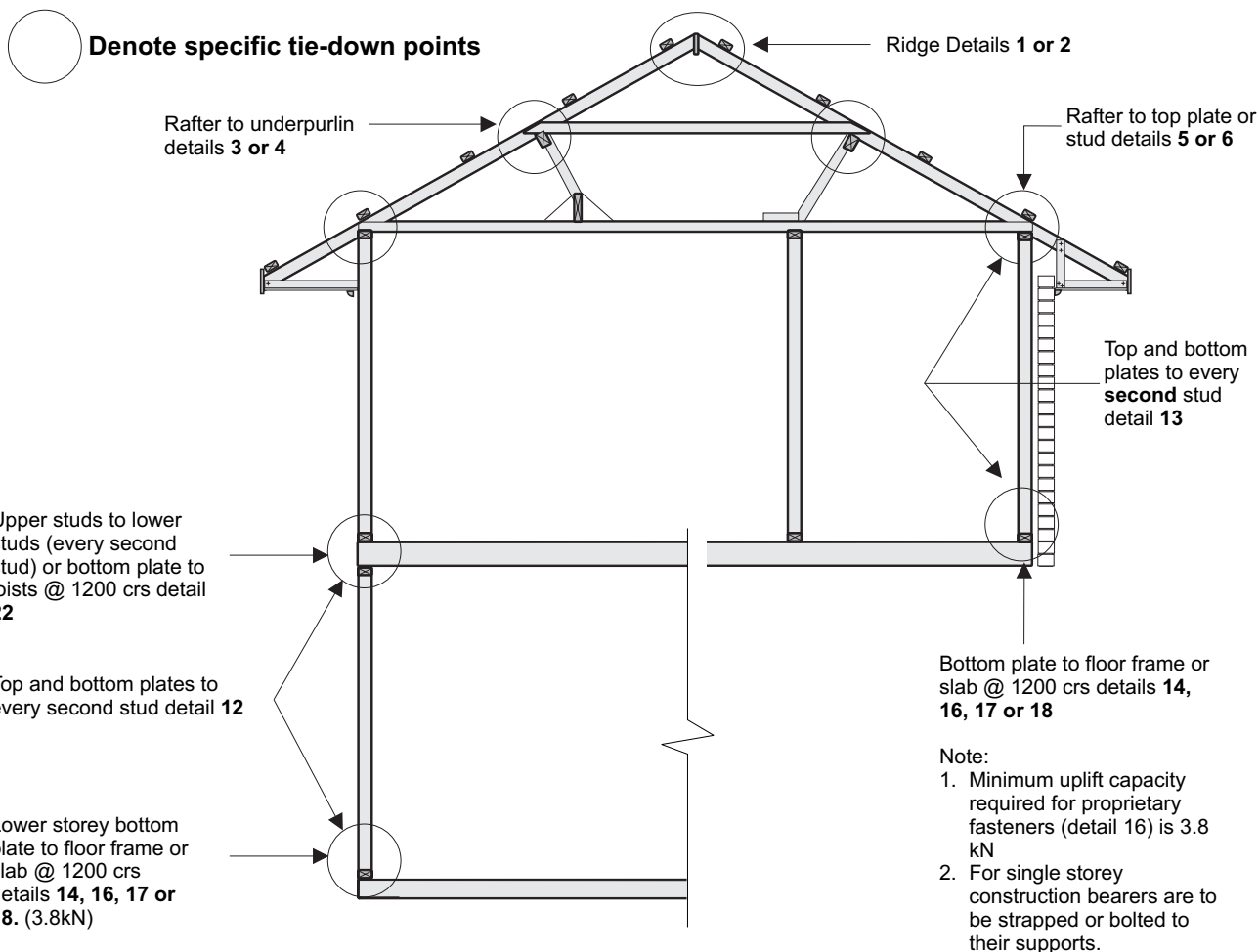
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N2 SHEET ROOF Sheet 3.8

(Roof Span up to 9000 - 12000 mm, Rafters @ 1200 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)



AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N3 TILE ROOF Sheet 3.9

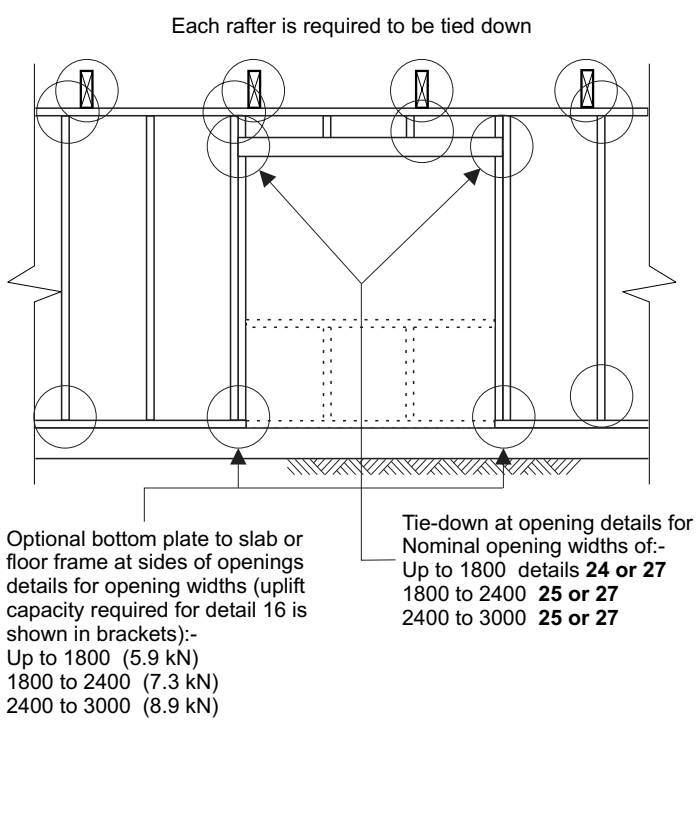
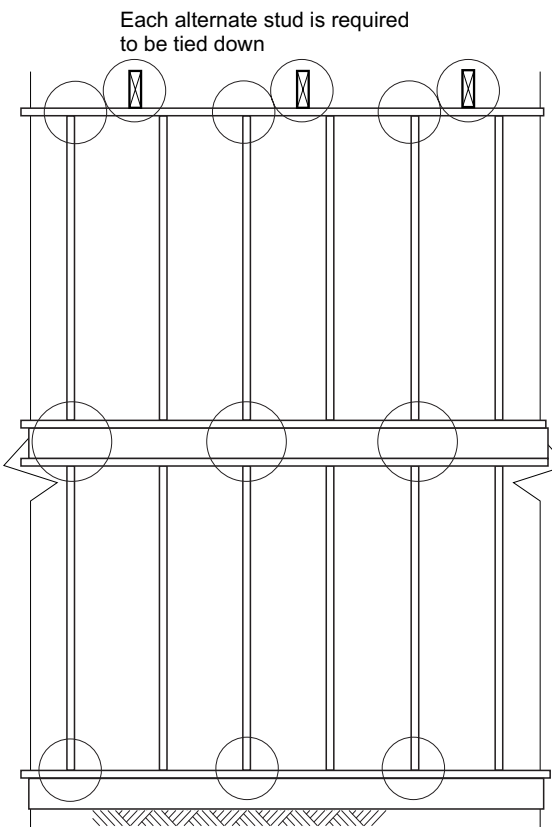
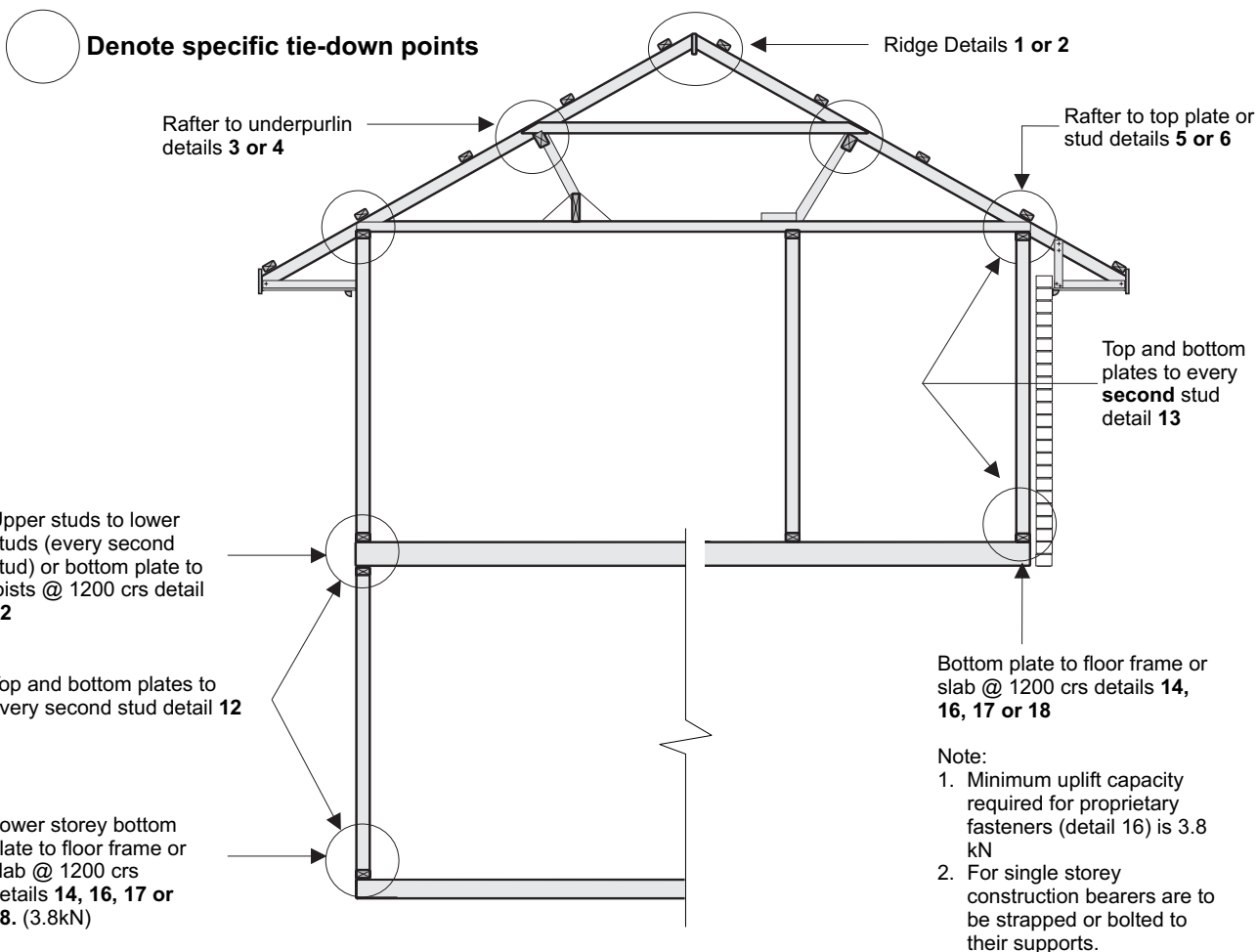
(Roof Span up to 9000 mm, Rafters @ 450 crs, Collar Ties @ 900 crs, O/hang 750 mm max)



AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N3 TILE ROOF

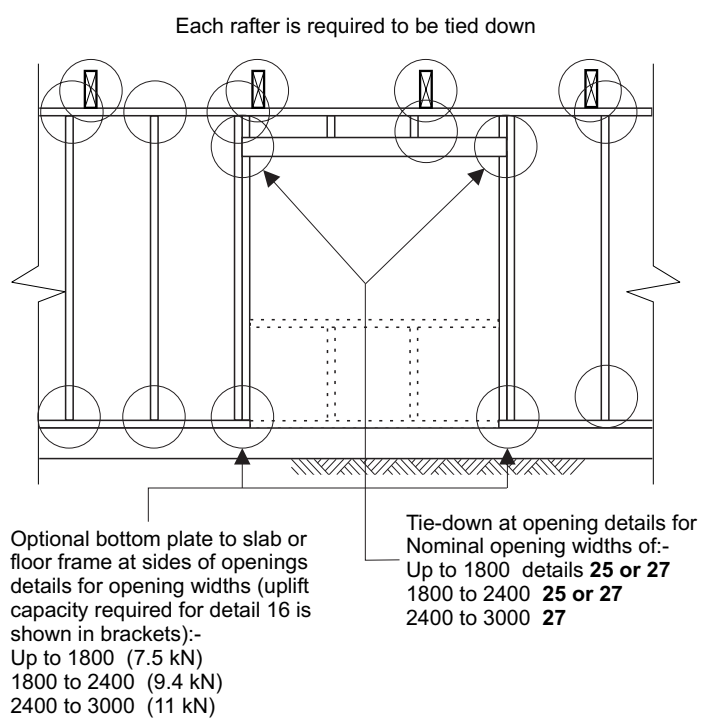
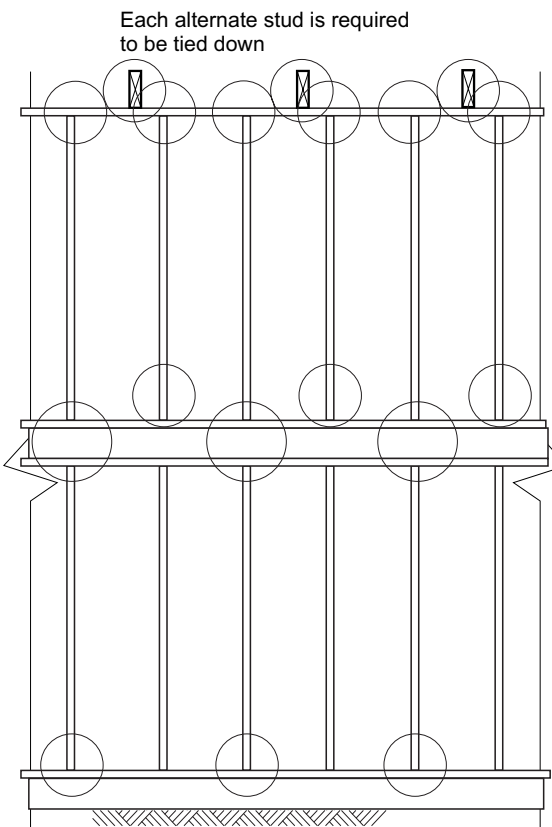
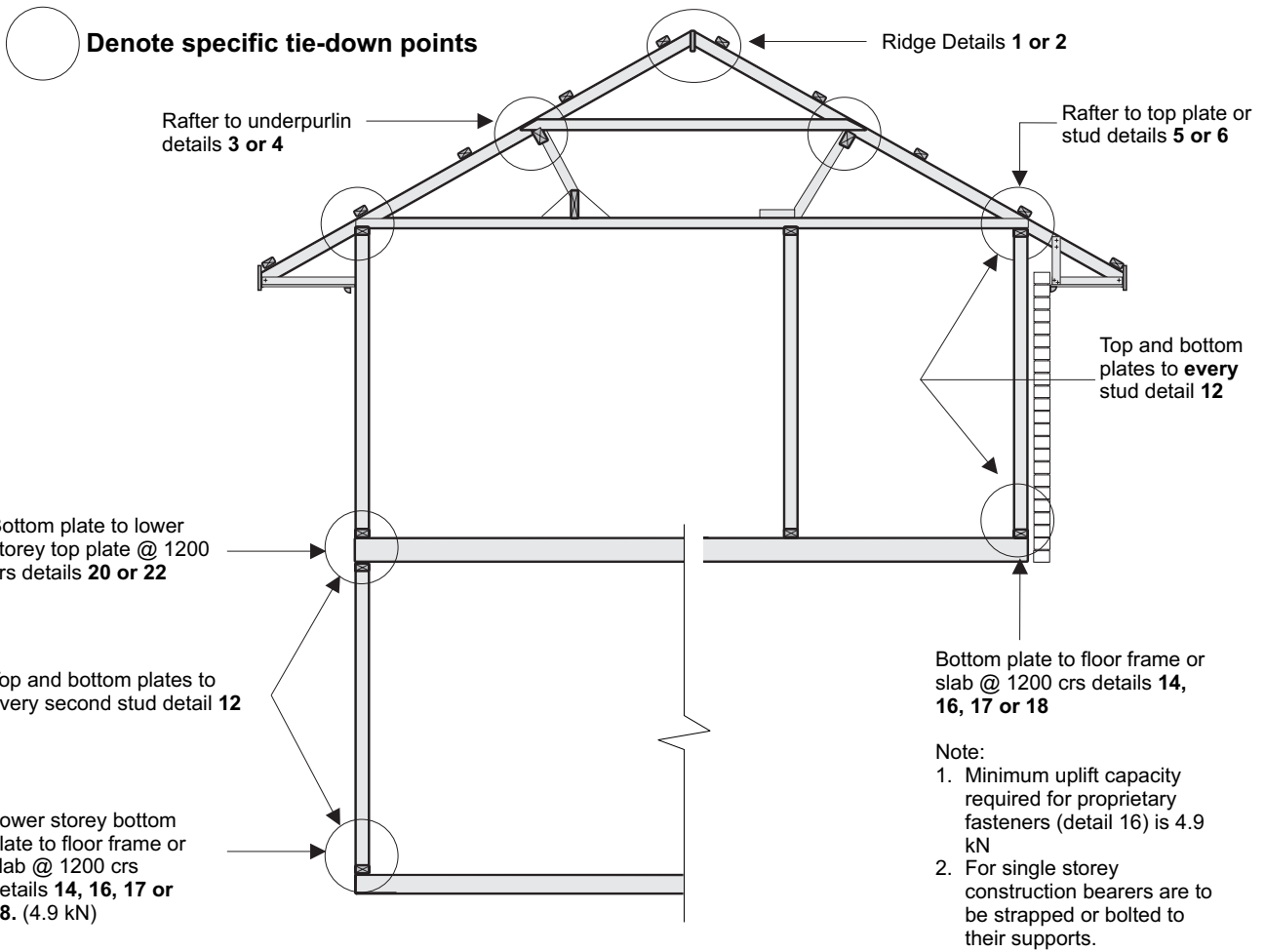
Sheet 3.10

(Roof Span up to 9000 mm, Rafters @ 600 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)



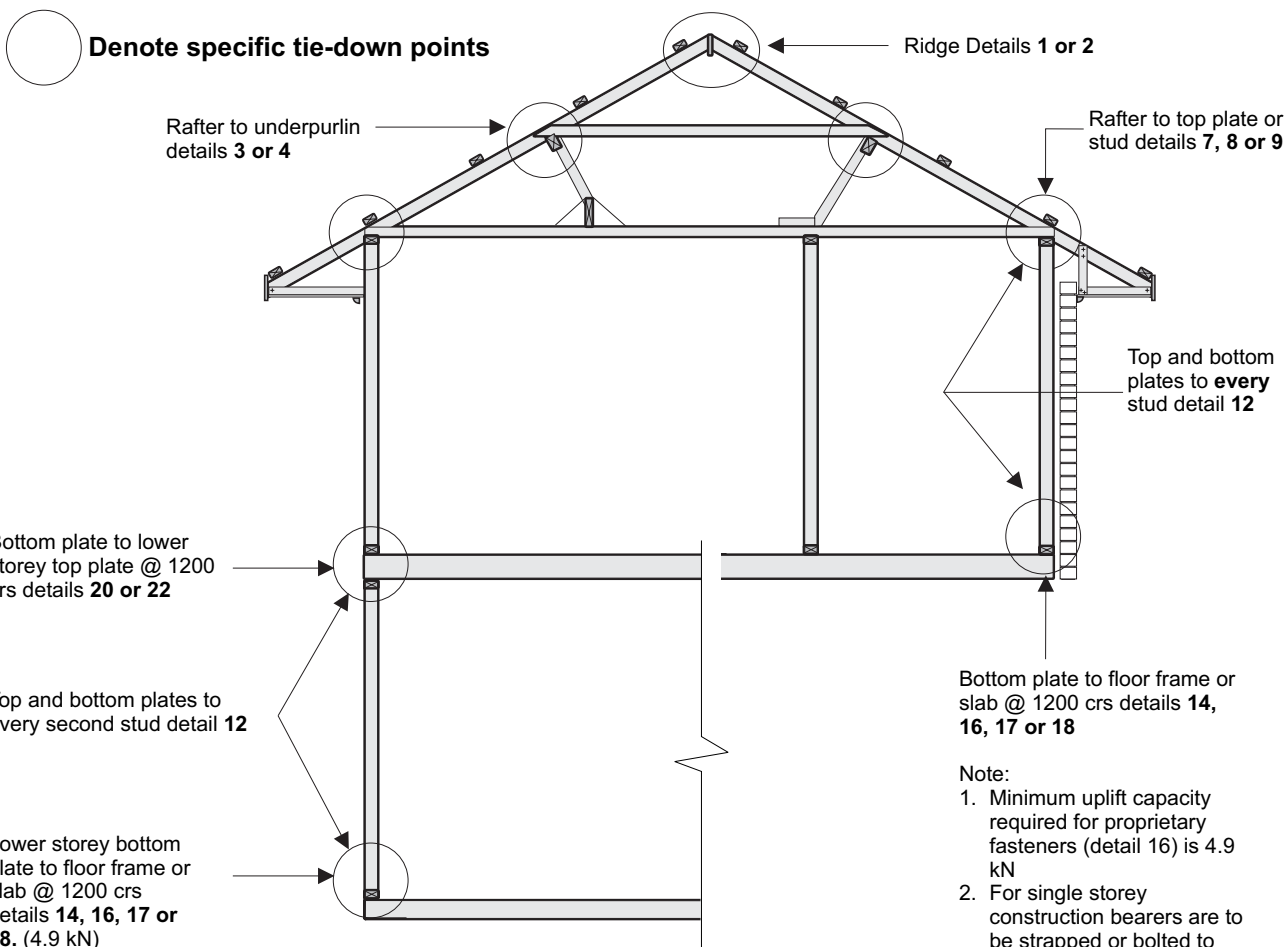
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N3 TILE ROOF Sheet 3.11

(Roof Span up to 9000 - 12000 mm, Rafters @ 450 crs, Collar Ties @ 900 crs, O/hang 750 mm max)

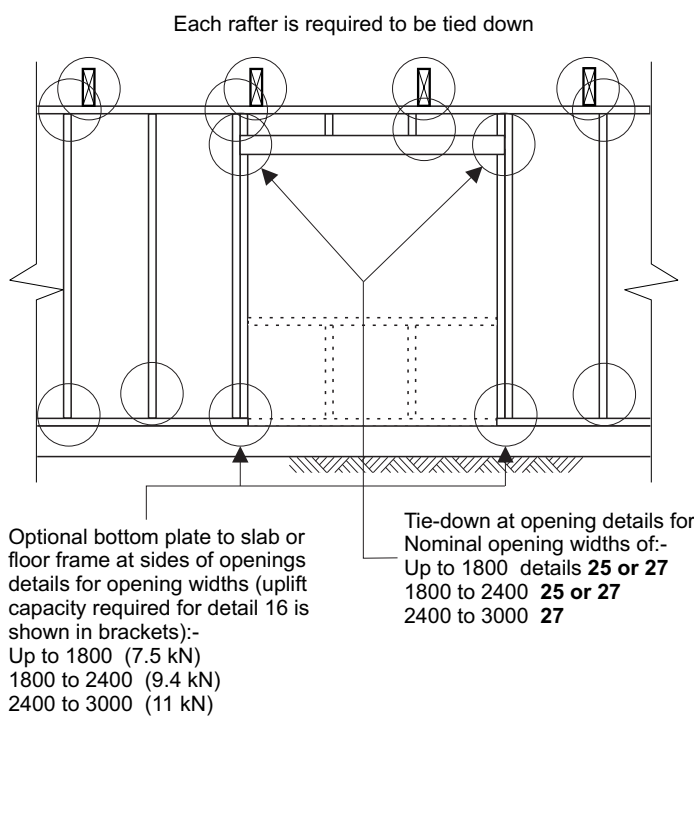
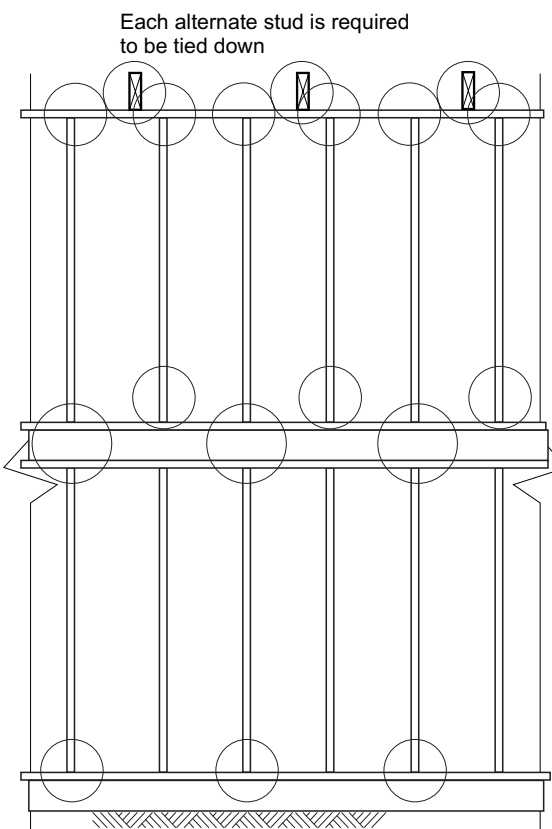


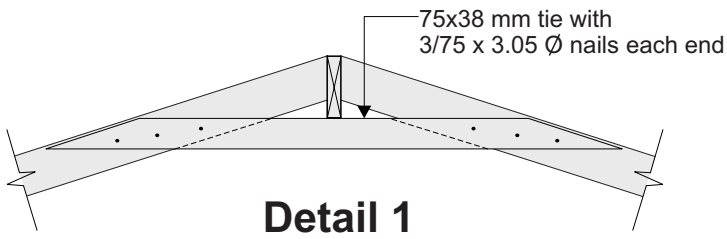
AS 1684 - Part 2 - SIMPLIFIED TIE-DOWN - N3 TILE ROOF Sheet 3.12

(Roof Span up to 9000 - 12000 mm, Rafters @ 600 crs, Collar Ties @ 1200 crs, O/hang 750 mm max)

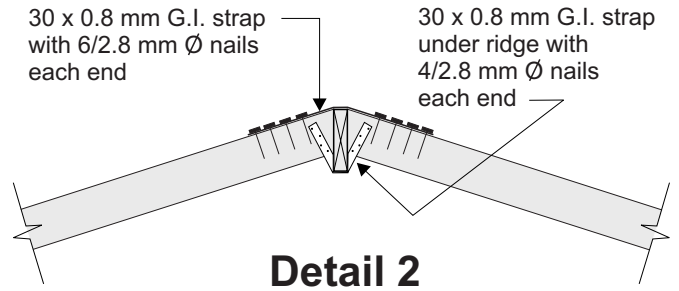


- Note:**
1. Minimum uplift capacity required for proprietary fasteners (detail 16) is 4.9 kN
 2. For single storey construction bearers are to be strapped or bolted to their supports.

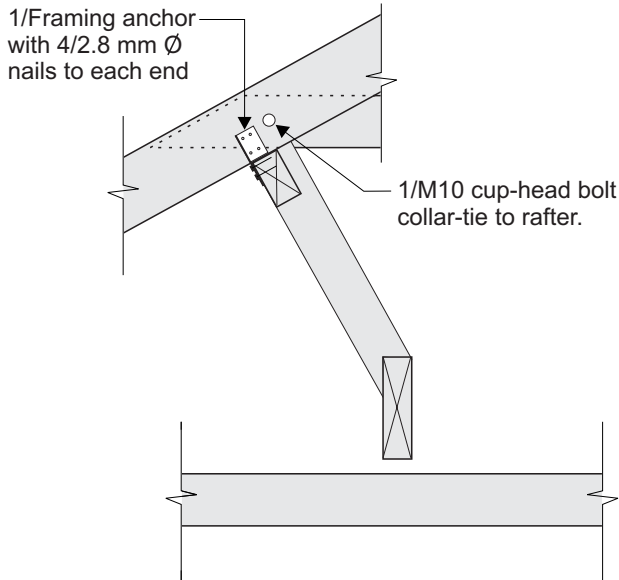




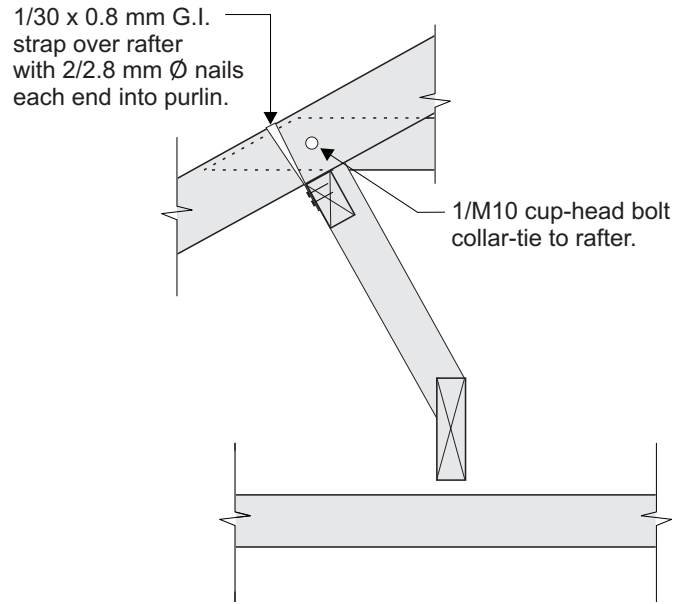
Detail 1



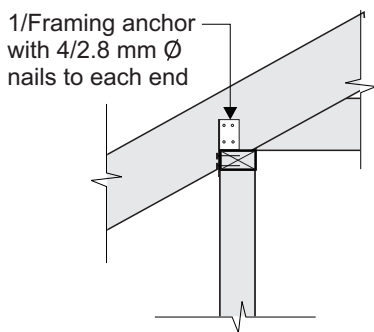
Detail 2



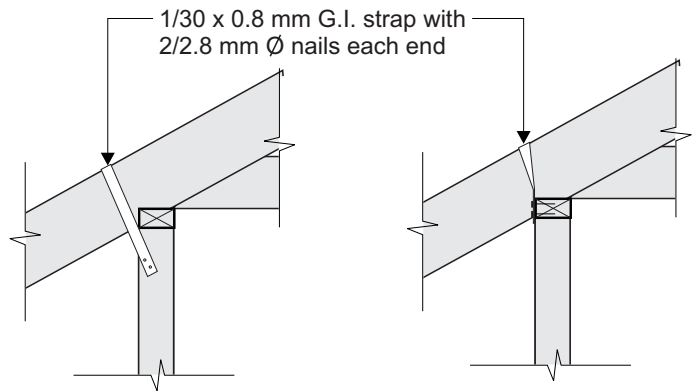
Detail 3



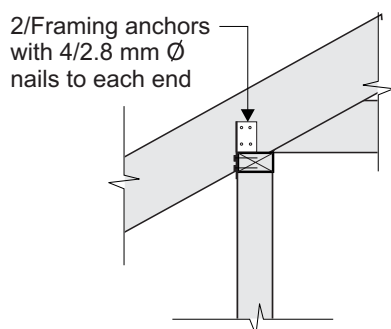
Detail 4



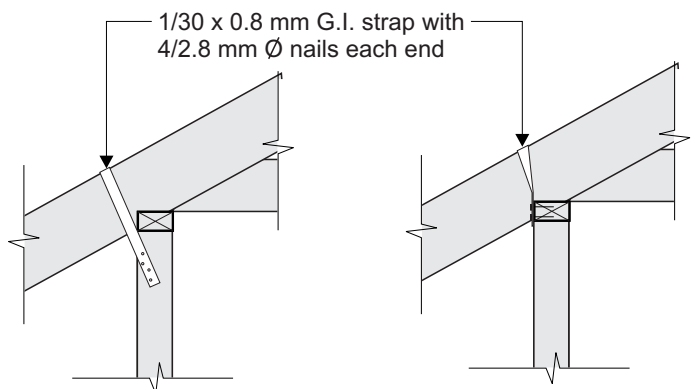
Detail 5



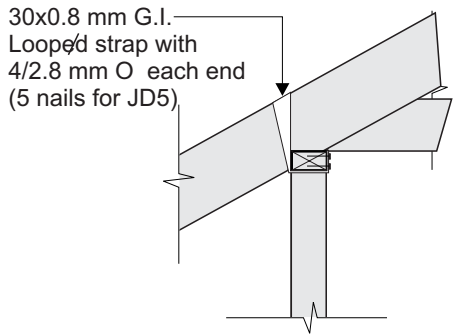
Detail 6



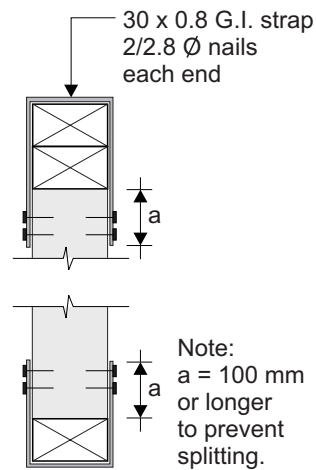
Detail 7



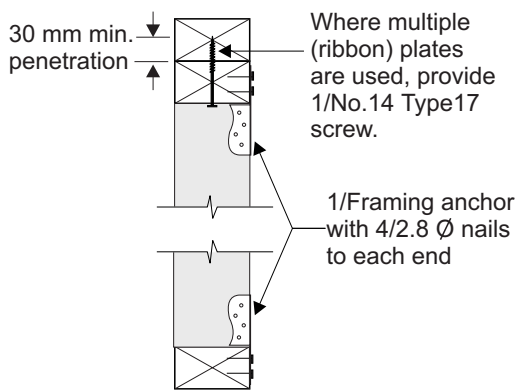
Detail 8



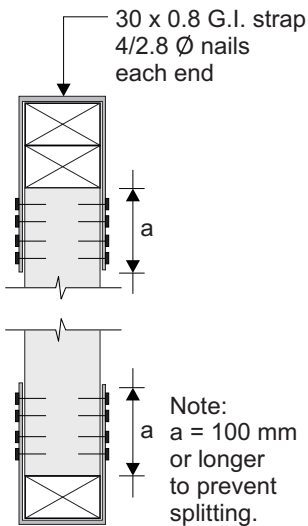
Detail 9



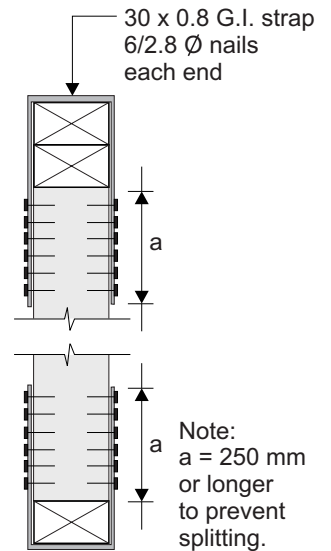
Detail 10



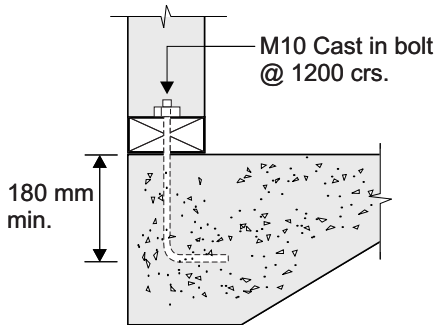
Detail 11



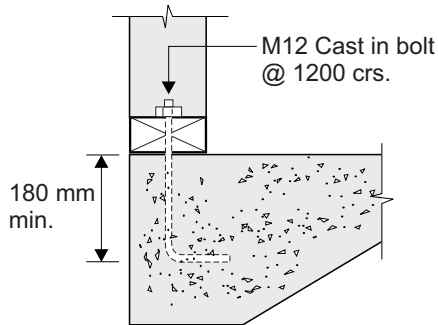
Detail 12



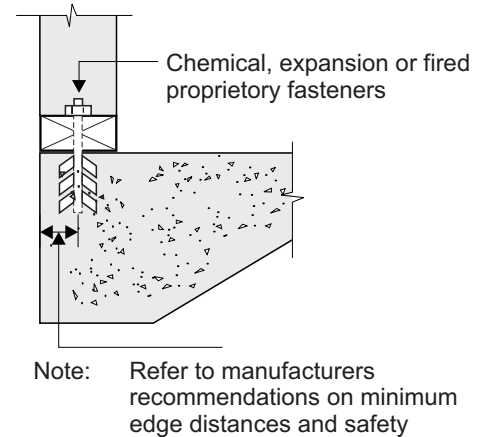
Detail 13



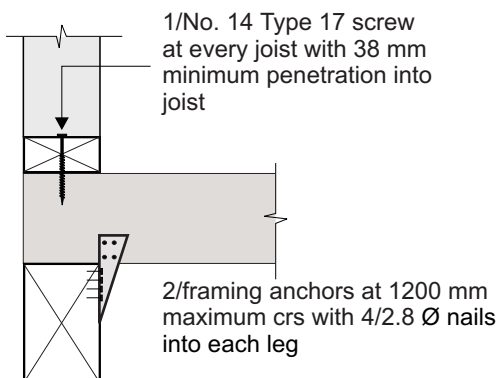
Detail 14



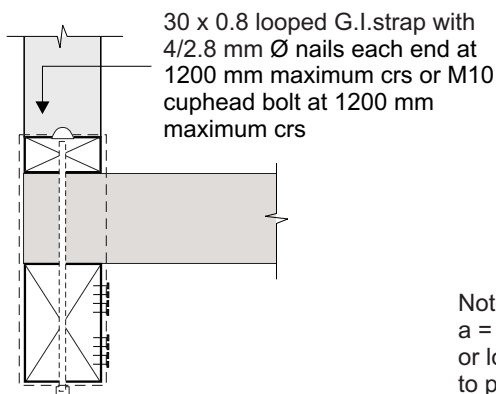
Detail 15



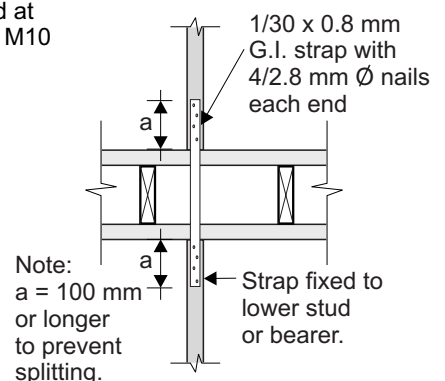
Detail 16



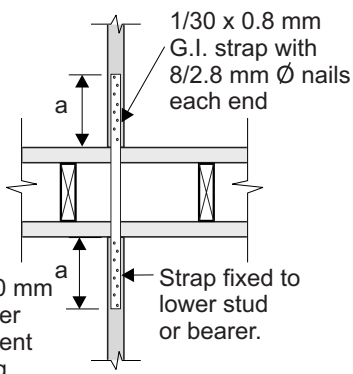
Detail 17



Detail 18

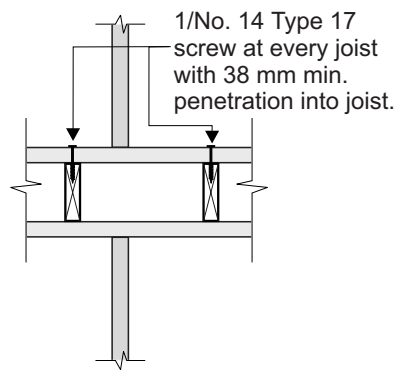


Detail 19

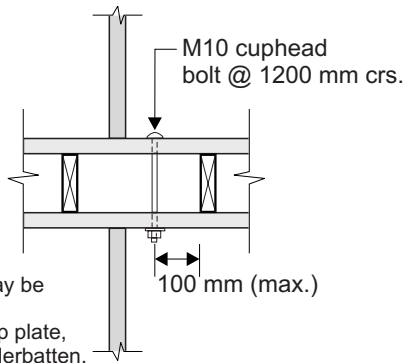


Note:
a = 250 mm
or longer
to prevent
splitting.

Detail 20

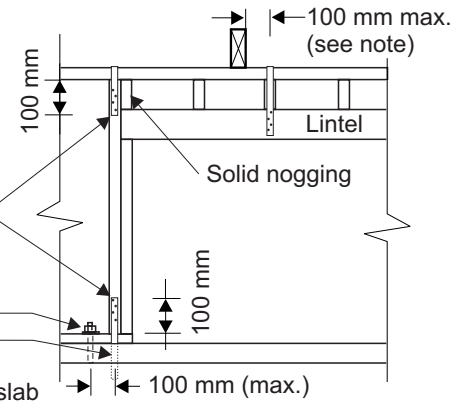


Detail 21



Note: Bolt may be
fixed through
lower floor top plate,
bearer or underbatten.

Detail 22

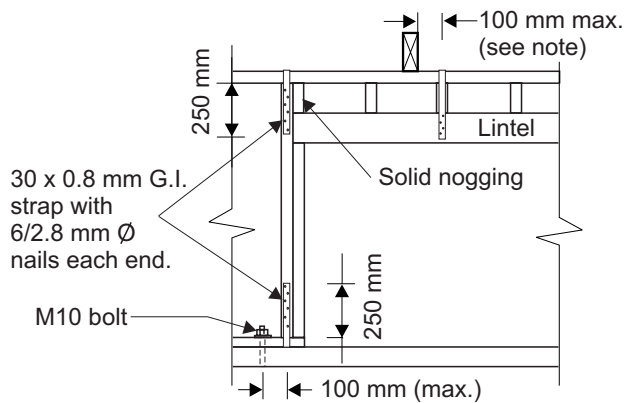


30 x 0.8 mm G.I.
strap with
4/2.8 mm \varnothing
nails each end.

M10 bolt or
G.I. strap with
8 nails each end,
to floor frame or slab

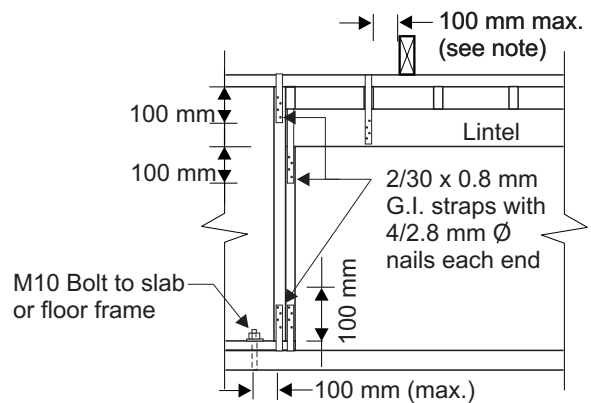
NOTE: The top plate shall be fixed to the lintel within
100 mm of each rafter/truss, or the rafter/truss fixed
directly to the lintel with a fixing of equivalent tie-down
strength to that required for the rafter/truss.

Detail 23



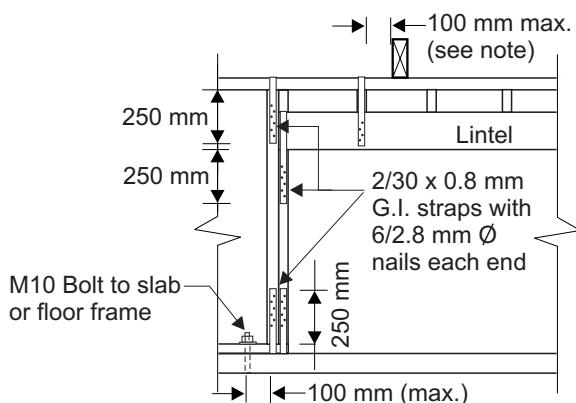
NOTE: The top plate shall be fixed to the lintel within
100 mm of each rafter/truss, or the rafter/truss fixed
directly to the lintel with a fixing of equivalent tie-down
strength to that required for the rafter/truss.

Detail 24



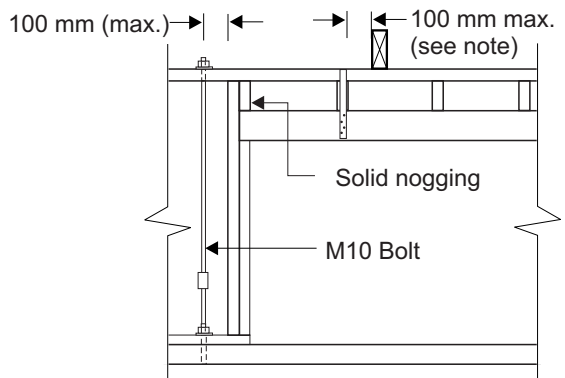
NOTE: The top plate shall be fixed to the lintel within
100 mm of each rafter/truss, or the rafter/truss fixed
directly to the lintel with a fixing of equivalent tie-down
strength to that required for the rafter/truss.

Detail 25



NOTE: The top plate shall be fixed to the lintel within
100 mm of each rafter/truss, or the rafter/truss fixed
directly to the lintel with a fixing of equivalent tie-down
strength to that required for the rafter/truss.

Detail 26



NOTE: The top plate shall be fixed to the lintel within
100 mm of each rafter/truss, or the rafter/truss fixed
directly to the lintel with a fixing of equivalent tie-down
strength to that required for the rafter/truss.

Detail 27

Technical Advice

Further technical information and assistance is available from the following Timber Advisory Services.

NEW SOUTH WALES

Timber Development Association NSW Ltd.
13-29 Nichols Street
Surry Hills NSW 2010
Tel: (02) 9360 3088 Fax: (02) 9360 3464
Email: showroom@tdansw.asn.au

QUEENSLAND

Timber Research and Development Advisory Council
Limited
500 Brunswick Street
Fortitude Valley QLD 4006
Tel: (07) 3358 1400 Fax: (07) 3358 1411
Email: info@tradac.org.au

VICTORIA

Timber Promotional Council
320 Russell Street
Melbourne VIC 3000
Tel: (03) 9662 3222 Fax: (03) 9662 3666
Email: tpcvic@tpcvic.org.au

NATIONAL

Plantation Timber Association of Australia
830 High Street
Kew East VIC 3102
Tel: (1800) 007 463

WESTERN AUSTRALIA

Timber Advisory Centre (WA)
Homebase Expo
55 Salvado Road
Subiaco WA 6008
Tel: (08) 9380 4411 Fax: (08) 9380 4477
Email: info@fifwa.asn.au

TASMANIA

Tasmanian Timber Promotion Board
Suite 22/11 Morrison Street
Hobart TAS 7000
Tel: (03) 6224 1033 Fax: (03) 6224 1030
Email: fiat@southcom.com.au

SOUTH AUSTRALIA

Timber Development Association of SA Inc.
113 Anzac Highway,
Ashford SA 5035
Tel: (08) 8297 0044 Fax: (08) 8297 2772
Email: peter.llewellyn@bigpond.com

Important Notice

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