



# Good Practice Guide to Hut Building

Prepared by Reforesting Scotland's Campaign for a Thousand Huts

(5th Draft)

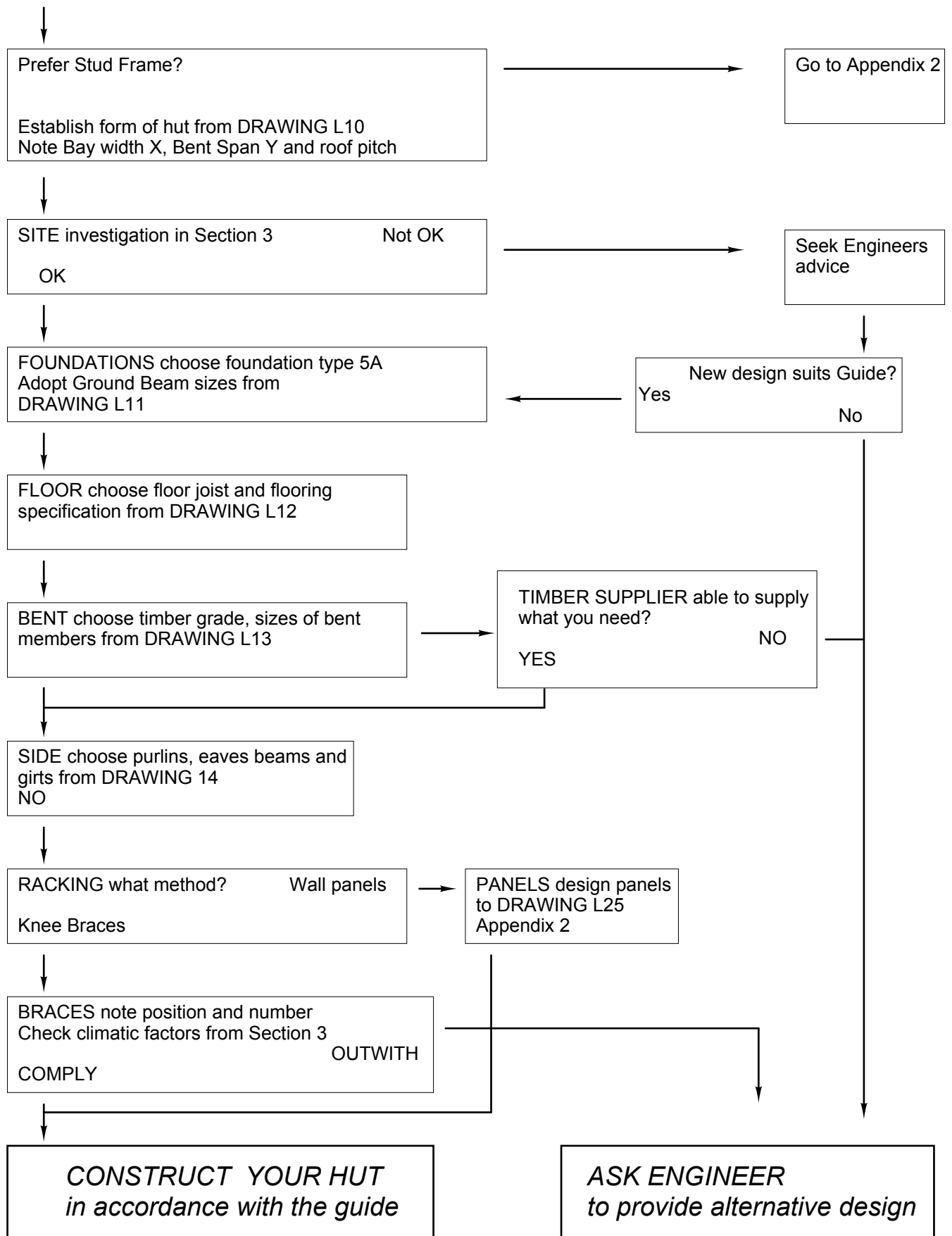
## APPENDIX 1 : Post and Beam Model

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[www.thousandhuts.org](http://www.thousandhuts.org)  
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# How to navigate Post & Beam - Appendix 1

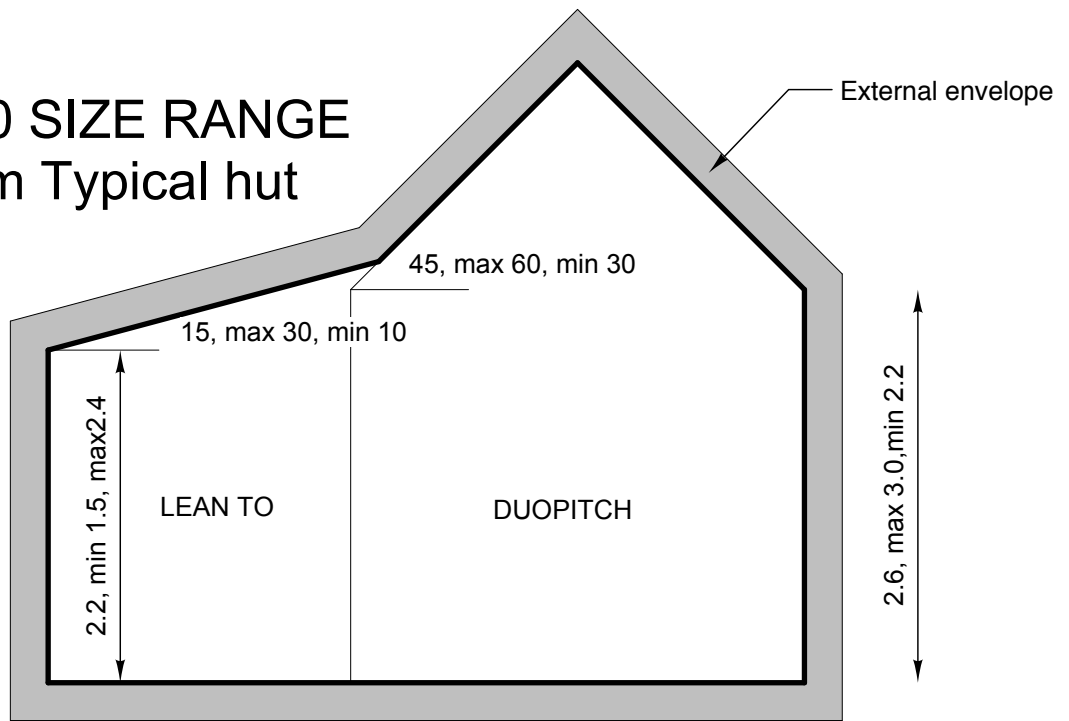
## YOUR HUT



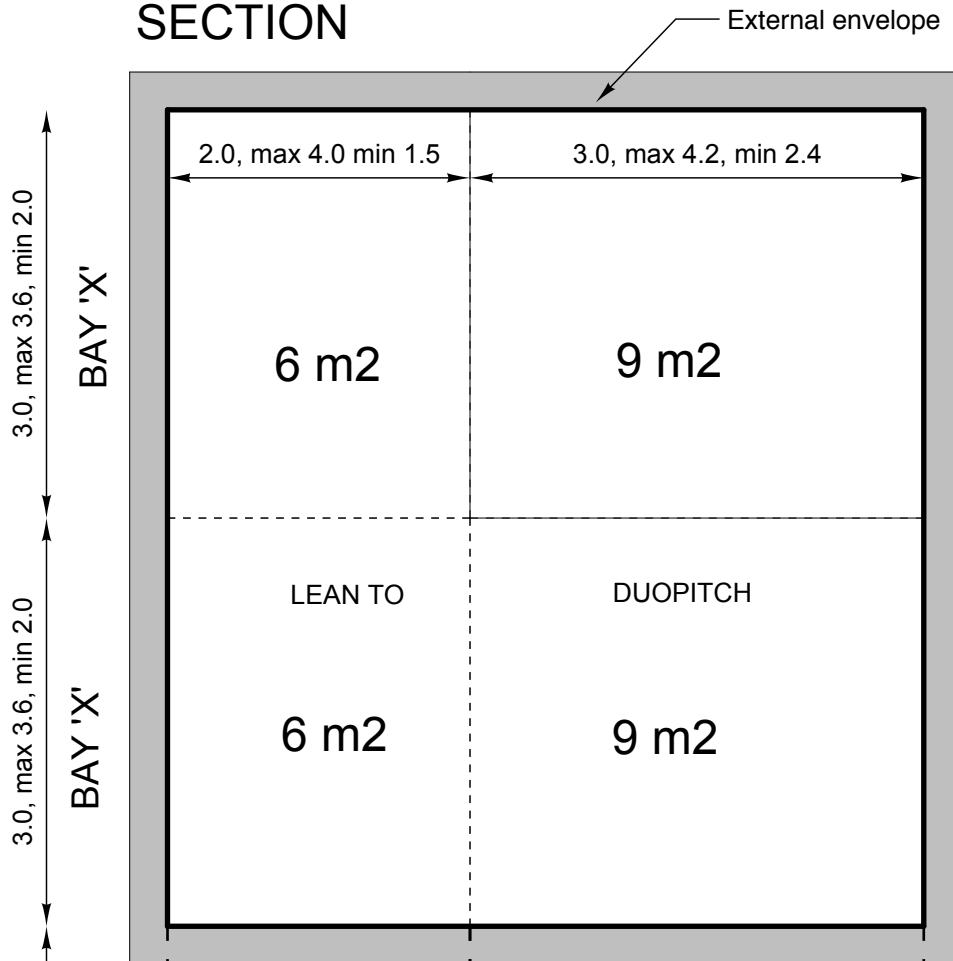
# Appendix 1

## Drawing L10 SIZE RANGE

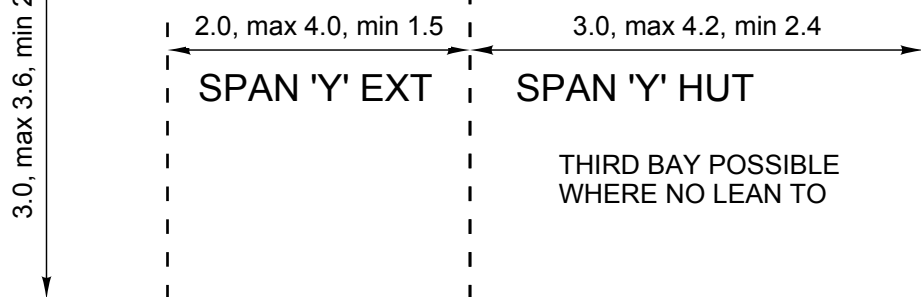
### Post & Beam Typical hut



### SECTION



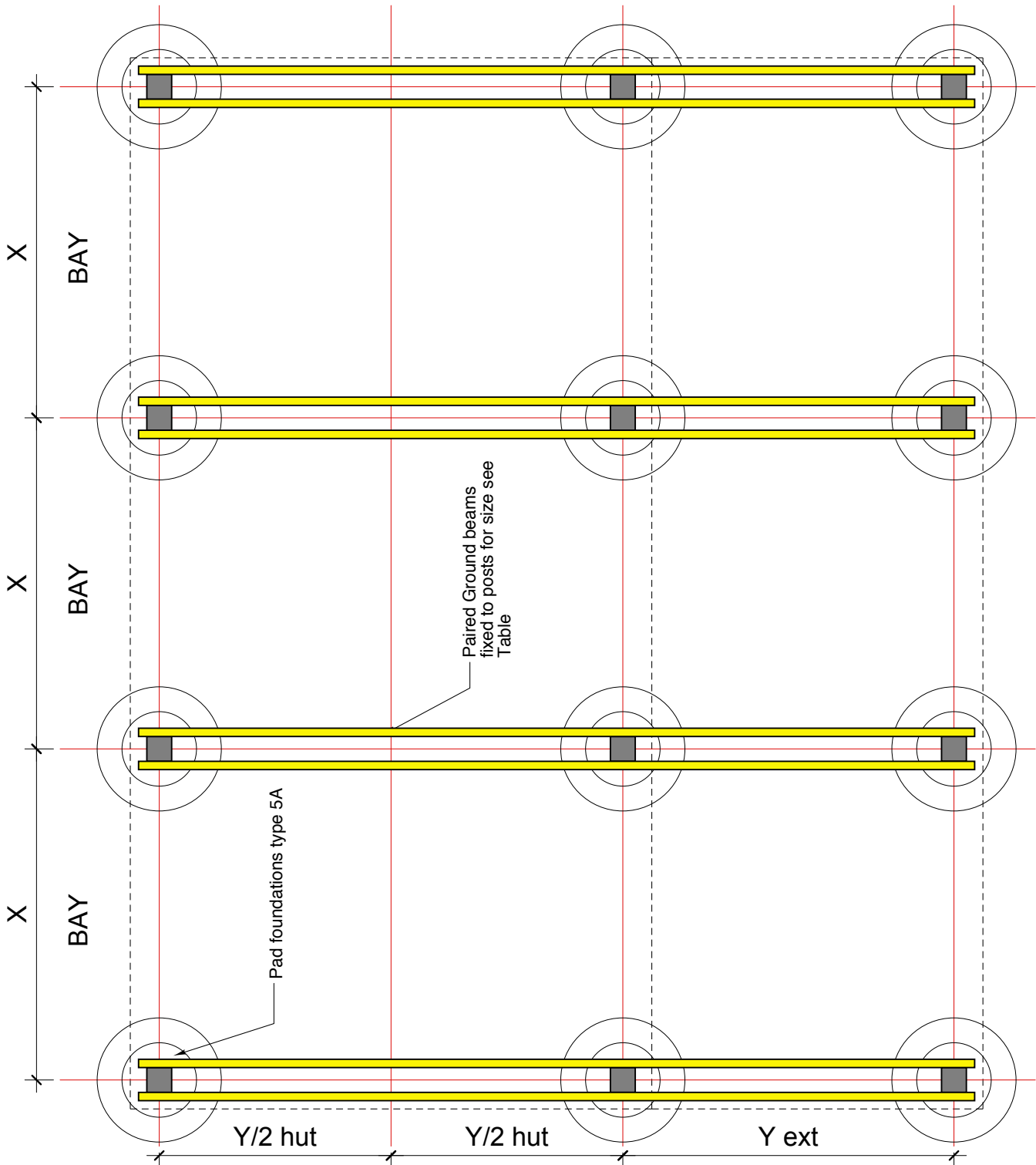
### PLAN



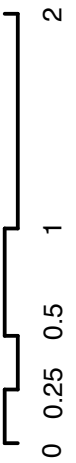
*Dimensions are in metres, angles in degrees  
areas in metres squared. Maximum area 30m<sup>2</sup>*

# Drawing L11 FOUNDATIONS - Post & Beam - Appendix 1

POST & BEAM HUT	TABLE 11	
<b>GROUND BEAM SIZING</b>		
Span (Y) height x depth of ground beam		
2.4m	3.0m	3.6m 4.2m
Bay spacing (X) up to 2m		
175 x 50	225 x 50	225 x 63 NA
Bay spacing (X) up to 2.6m		
200 x 50	225 x 63	250 x 63 <b>250 x 75</b>
Bay spacing (X) up to 3.2m		
225 x 50	250 x 63	<b>250 x 63 275 x 75</b>
Bay spacing (X) up to 3.6m		
225 x 50	250 x 75	<b>250 x 75 275 x 75</b>
Notes. All ground beams twinned. All timbers are C16 except figures in bold which are C24		



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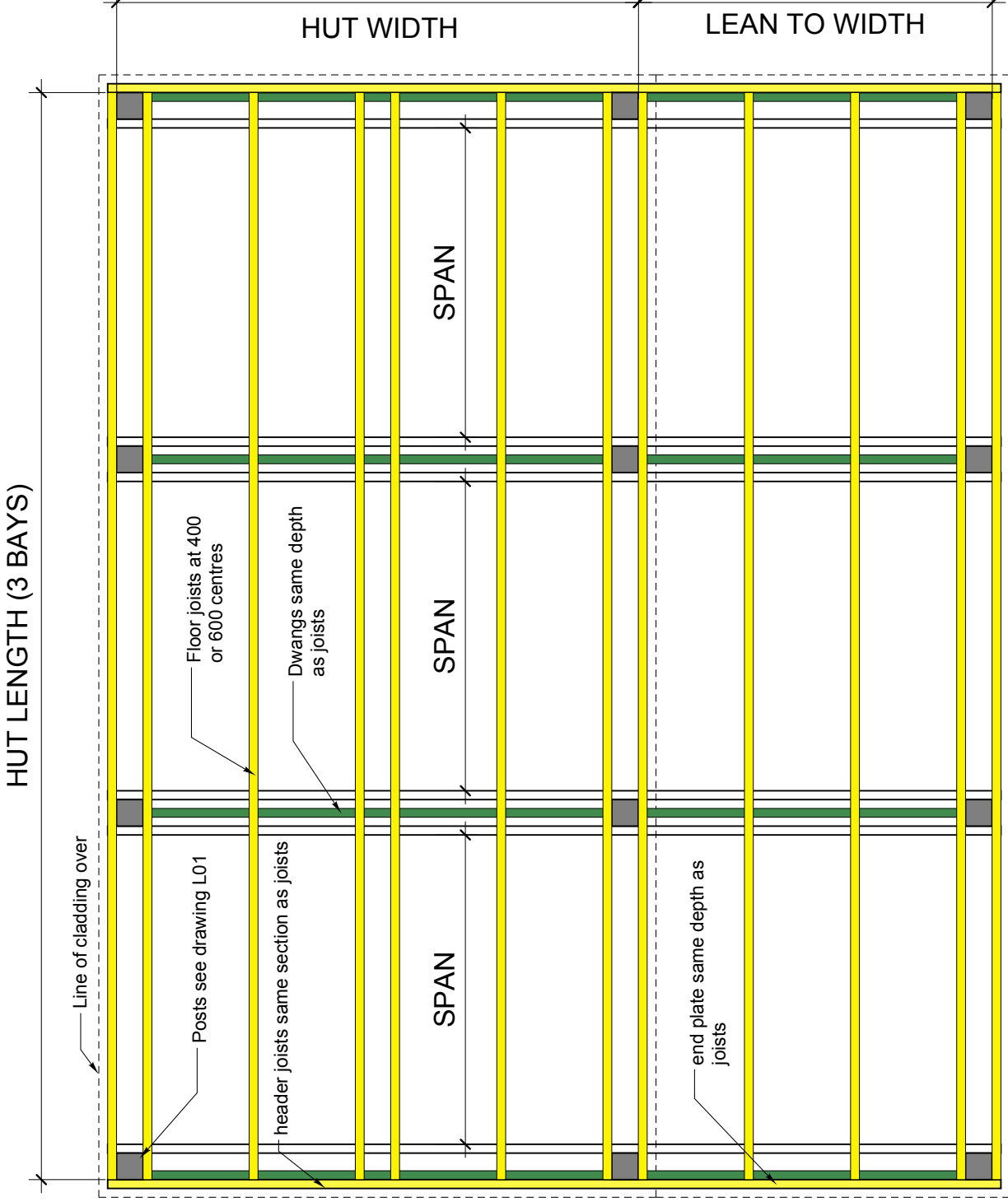


SCALE OF METRES

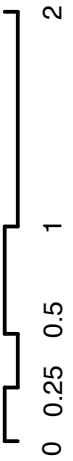
# Drawing L12 FLOOR PLATFORM - P & B

POST & BEAM HUT		TABLE 12A	
<b>FLOOR PLATFORM JOIST SPAN TABLE</b>			
Width of Joist	Height of Joist	Span in metres	
		400	600
38	97	1.8	1.3
38	122	2.4	1.9
38	147	2.9	2.5
38	170	3.4	2.8
38	195	3.9	3.2
47	97	2	1.5
47	122	2.6	2.3
47	147	3.2	2.7
47	170	3.6	3.1
63	97	2.3	1.9
63	122	2.9	2.5
63	147	3.5	3
63	170	4	3.5
75	122	3.1	2.7
75	147	3.7	3.2
75	170	4.2	3.7
<b>NOTES</b>			
1. Joists to be timber strength class C16 or better			
2. Roughsawn timber from a sawmill can be used next size up e.g. 47 x 97 becomes 50 x 100			
3. Dead load not more than 0.25kN/m <sup>2</sup>			

POST & BEAM		TABLE 12B	
<b>FLOORING TO GROUND FLOOR</b>			
Type of flooring	min. thickness for joist ccs of		
	400	600	
Softwood tongued and grooved	16		
Hardwood tongued and grooved	16		
Chipboard tongued and grooved	18		
<b>NOTES</b>			
1. Softwood flooring can be secret nailed or fixed with two bright zinc lost head nails min 50mm every joist			
2. Hardwood floors should be secret nailed with a proprietary nail in a flooring nailer at max 400 centres			
3. Chipboard should be fixed with 65 annular ring shank nails at max 300 centres. Joist should be glued with expanding PVA adhesive.			
4. Flooring can be laid to the full extend of the floor platform or be laid later inside external walls			



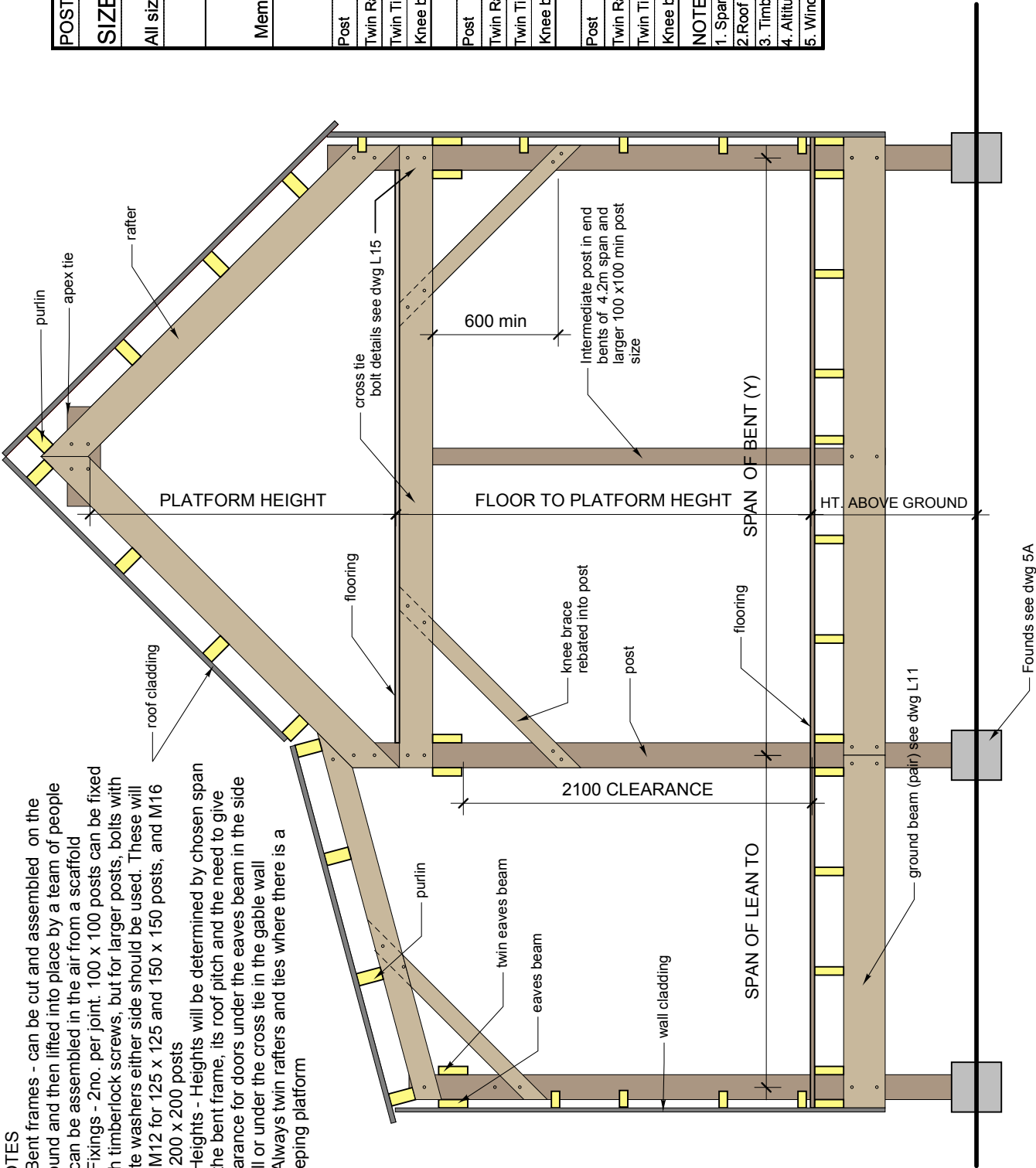
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SCALE OF METRES

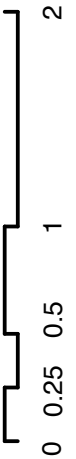
# Drawing L13 ELEVATION OF BENT Post & Beam - Appendix 1

- NOTES**
1. Bent frames - can be cut and assembled on the ground and then lifted into place by a team of people or can be assembled in the air from a scaffold
  2. Fixings - 2no. per joint. 100 x 100 posts can be fixed with timberlock screws, but for larger posts, bolts with plate washers either side should be used. These will be M12 for 125 x 125 and 150 x 150 posts, and M16 for 200 x 200 posts
  3. Heights - Heights will be determined by chosen span of the bent frame, its roof pitch and the need to give clearance for doors under the eaves beam in the side wall or under the cross tie in the gable wall
  4. Always twin rafters and ties where there is a sleeping platform



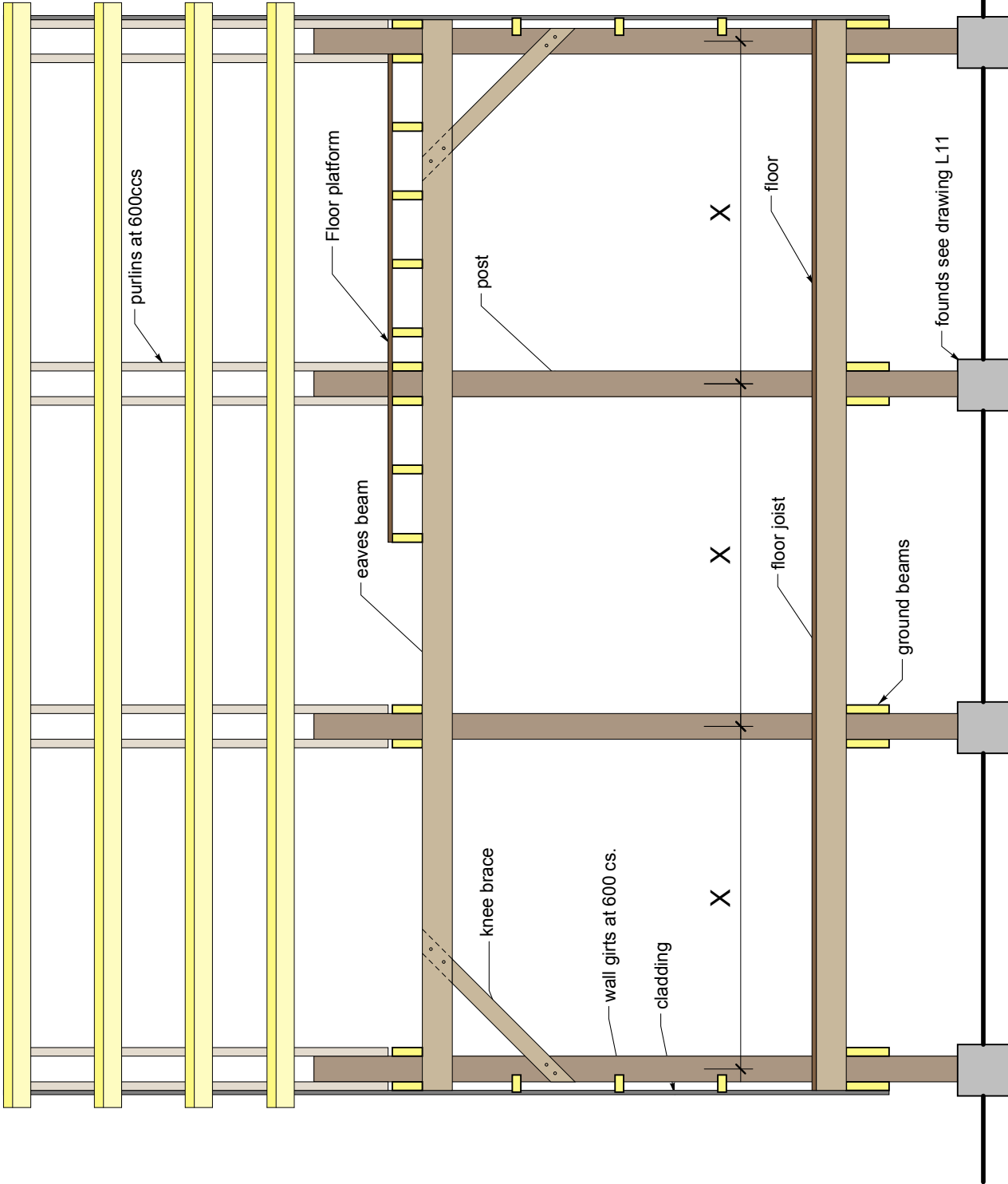
POST & BEAM HUT		TABLE 13	
<b>SIZES OF BENT MEMBERS</b>			
All sizes in millimetres except span			
Member	Span (Y) in metres		
	2.4	3	3.6
	4.2		
Span of Bay (X) is 2.0m			
Post	150 x 150	150 x 150	175 x 175
Twin Rafter	2/100 x 50	2/125 x 50	2/150 x 50
Twin Tie	2/100 x 50	2/125 x 50	2/150 x 50
Knee brace	100 x 40	100 x 40	125 x 40
Span of Bay (X) is 3.0m			
Post	150 x 150	175 x 175	200 x 200
Twin Rafter	2/100 x 50	2/150 x 50	2/175 x 50
Twin Tie	2/125 x 50	2/150 x 50	2/200 x 50
Knee brace	100 x 40	100 x 40	125 x 40
Span of Bay (X) is 3.6m			
Post	175 x 175	175 x 175	200 x 200
Twin Rafter	2/125 x 50	2/175 x 50	2/200 x 50
Twin Tie	2/125 x 50	2/175 x 50	2/225 x 50
Knee brace	100 x 40	100 x 40	125 x 40
<b>NOTES Consult an engineer if:</b>			
1. Span is greater than 4.8 metres			
2. Roof pitch is less than 30 degrees or more than 60			
3. Timber strength is less than C24			
4. Altitude is more than 200m			
5. Wind speed is greater than 28m/s			

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SCALE OF METRES

# Drawing L14 SIDE ELEVATION Post & Beam - Appendix 1



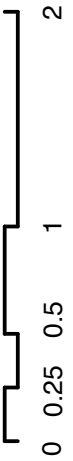
POST & BEAM HUT		TABLE 14A	
<b>PURLIN &amp; EAVES BEAM SIZING</b>			
Bay (X) Width in metres			
	2	2.4	3
Timber strength class C16			
Purlin	125 x 50	125 x 63	150 x 63
Eaves beam	150 x 50	150 x 50	175 x 50
Girt	125 x 50	125 x 50	150 x 50
			177 x 63
			175 x 50
			175 x 50

POST & BEAM HUT		TABLE 14B	
<b>WALL RACKING</b>			
Altitude (m) (up to)	No. of knee braces in bents	No. of knee braces on each side	
	Wind speeds from map in section 3		
Wind speed up to 23m/s			
50	0	0	0
100	2	2	2
150	2	2	2
200	2	2	2
300	4	4	2
400	4	4	2
Wind speed up to 25m/s			
50	2	2	2
100	2	2	2
150	2	2	2
200	4	4	2
300	4	4	2
Wind speed up to 27m/s			
50	2	2	2
100	2	2	2
150	4	4	2
200	4	4	2

**NOTES Consult an engineer if:**

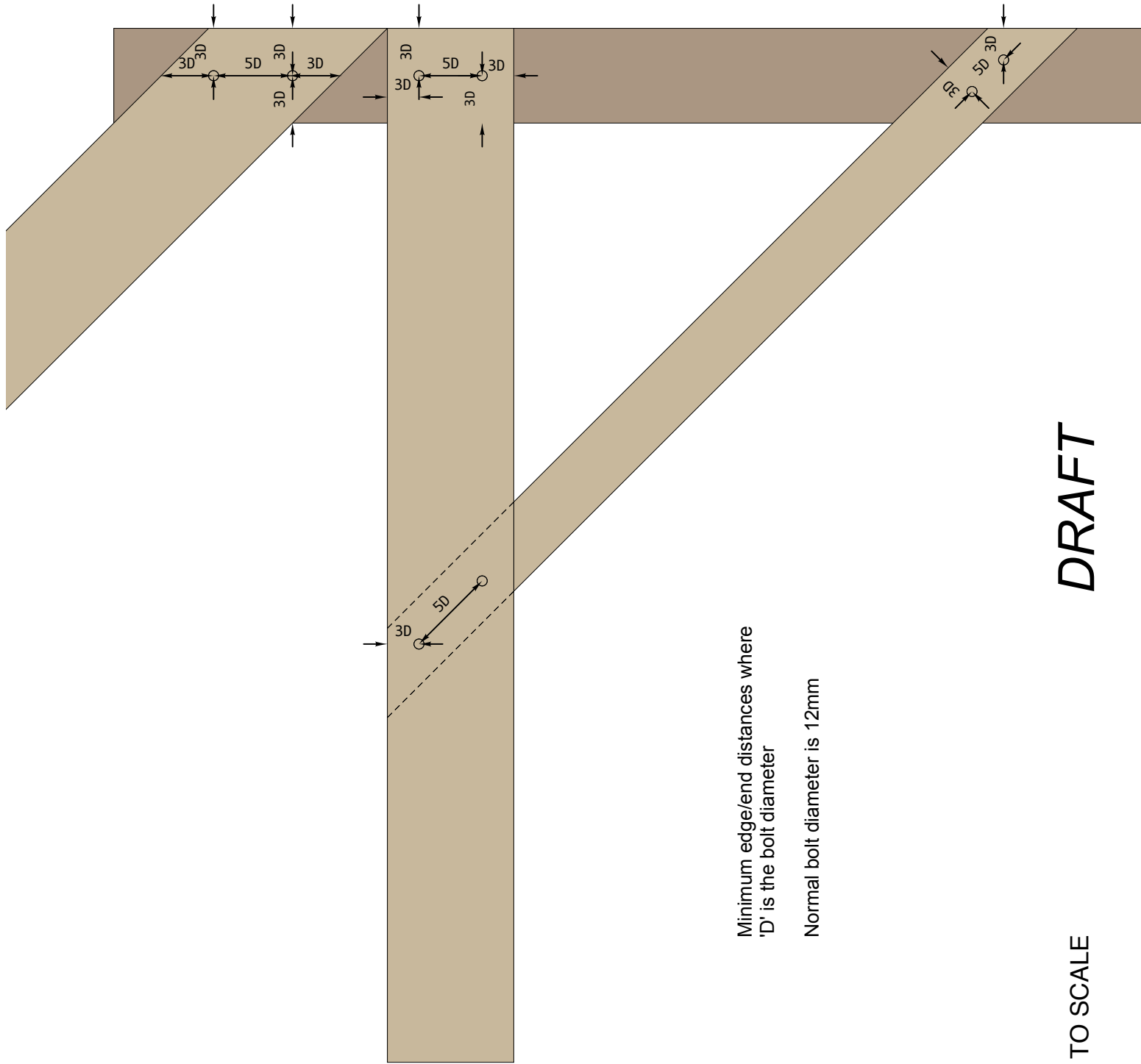
- You intend alternative racking resistance
- Your altitude exceeds 400metres
- Your corrected wind speed exceeds 27 metres/sec

- NOTES**
- Racking - as an alternative to knee braces the wholepanel rules in Appendix 2 may be followed
  - Floor joist - last joist on outside fixed to posts with 2no. M10 coach screws
  - Eaves beam fixed to posts as per ties on drawing L13
  - Purlins - fixed to rafters with timber cleats or galvanised brackets
  - Girts - fixed to posts with galv. nails



**SCALE OF METRES**

# Drawing L15 DETAILS OF BOLTING Post & Beam - Appendix 1



Minimum edge/end distances where  
'D' is the bolt diameter

Normal bolt diameter is 12mm

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NOT TO SCALE