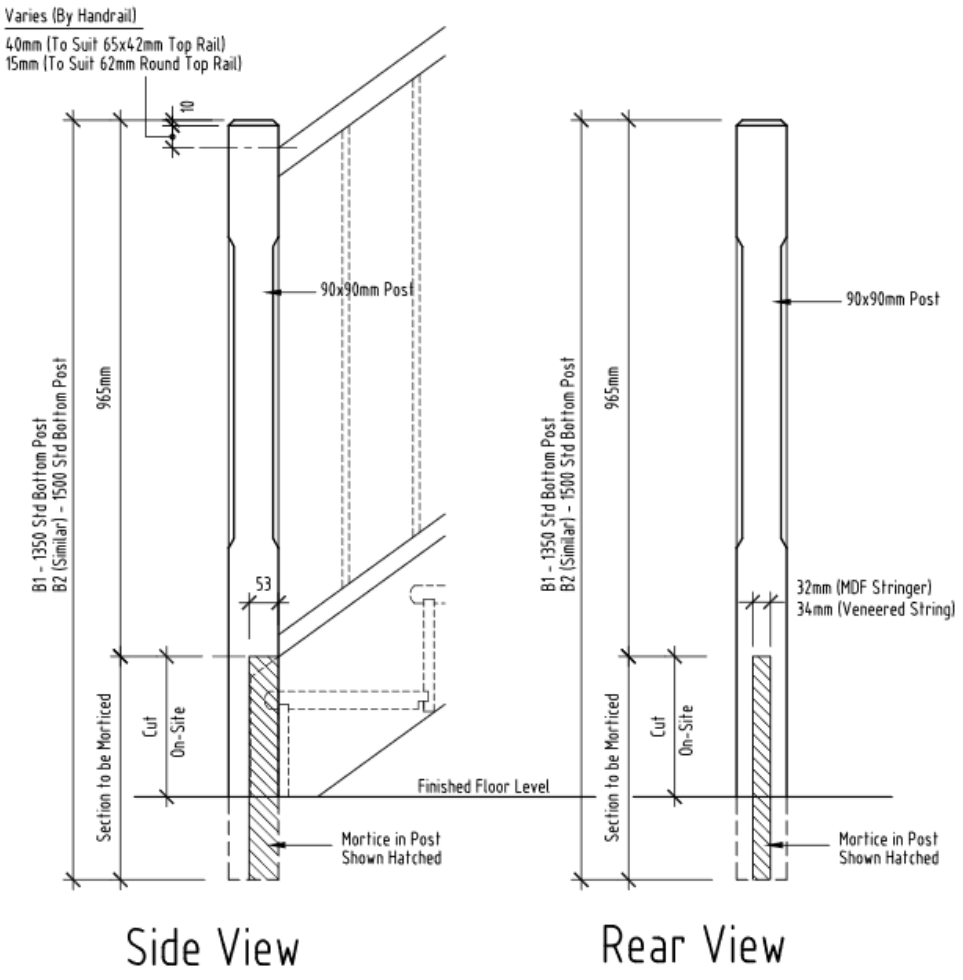
Posts & Balustrade

BOTTOM POSTS

The bottom post (B1 or B2) is fitted to the stringer using a mortice joint. Pre-machined with a 53mm deep by 32mm wide (or 34mm for veneered stringers) mortice into centre of the post. The top of the post is set 965mm above the top of the stringer and fixed using the following method.

1) 2 x 16mm flush plugs and 120mm x 8g screws
2) 65mm chipboard screws into floor (assumes timber)
3) Construction adhesive

Cut a 29mm wide section out of the nosing of tread #1, flush with the face of riser #1. This cut out will allow the post to sit hard against the riser.



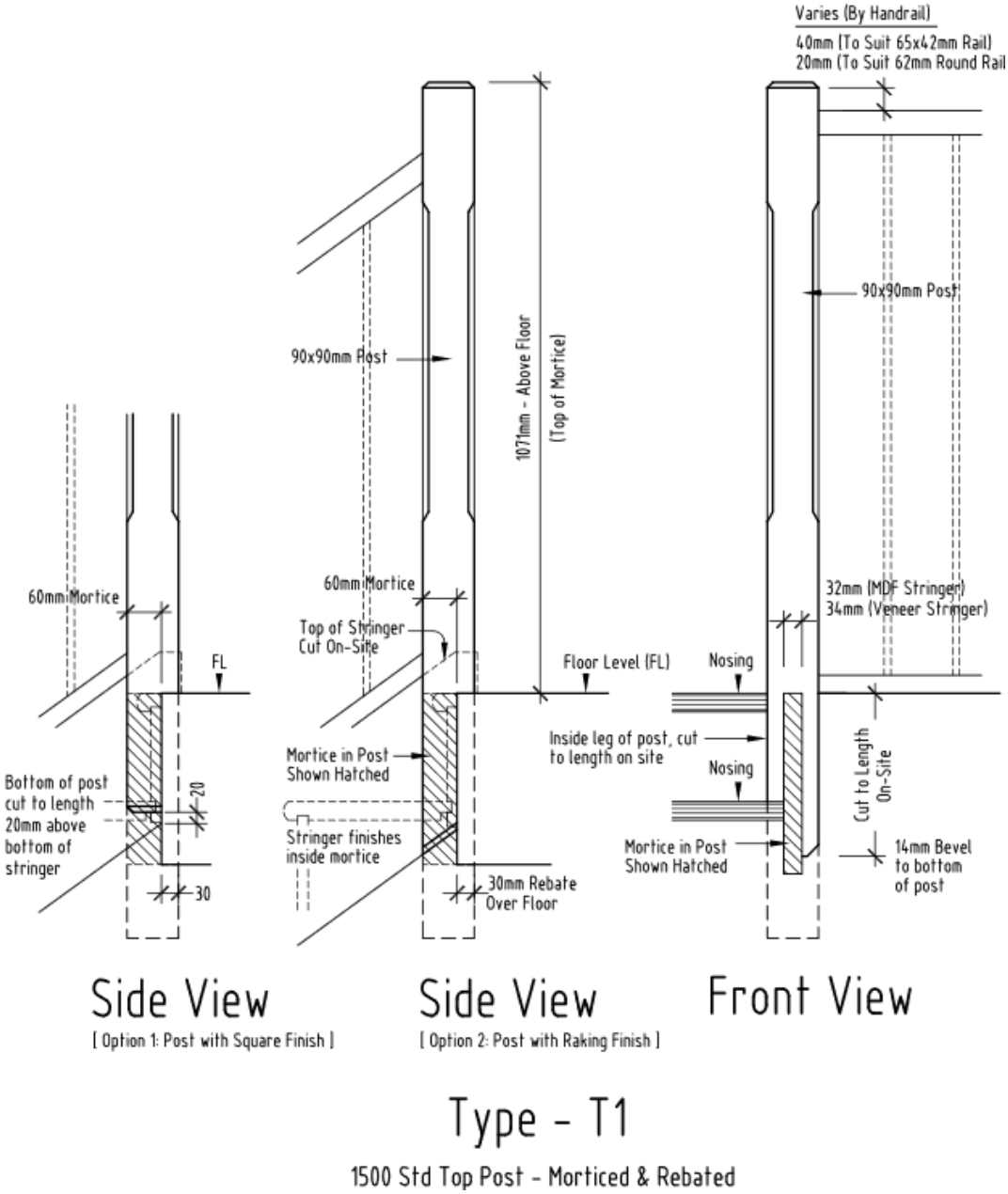
Type - B1 (B2 Similar)

1350 & 1500 Std Bottom Posts - Morticed

TOP POSTS

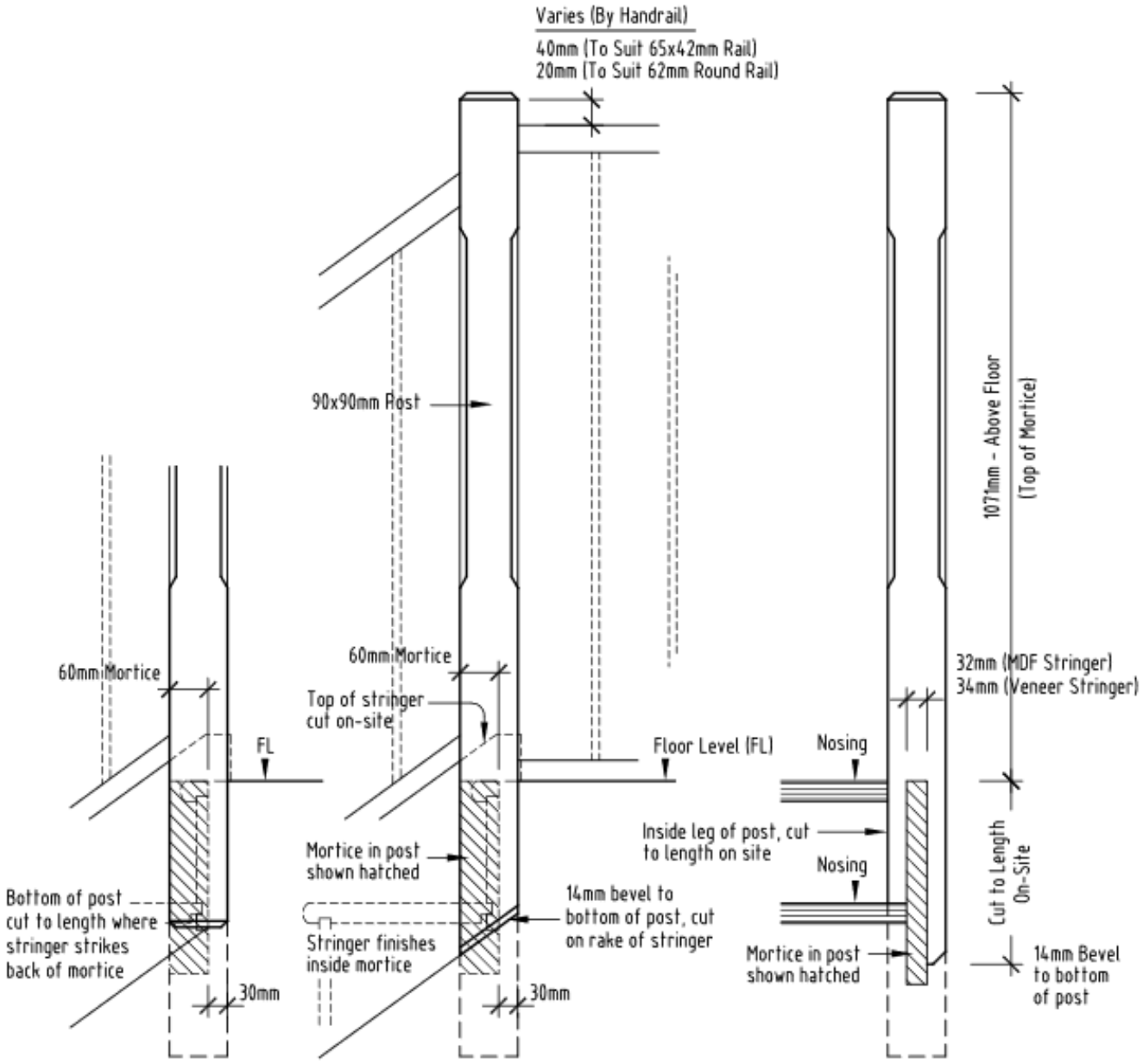
The top post (T1 or T2) is pre-machined and slips over the top of the stringer and down on to the last tread.

1) Mark the upper floor level on the post (1071mm down from top of post)
2) The top horn of the stringer will need to be cut level with the floor, but no further than the front face of the post.
3) The top post must sit on the floor by 30mm to maintain both carpet wrap and the correct flight rail strike point.
4) The inside face of the post needs to be cut level with the last tread (one riser down from the floor).
5) The outside face of the post needs to be cut in line with the bottom of the stringer and then chamfered to match the top of the post.
6) Fix through either side of the top post into the stringer.



Type - T1

1500 Std Top Post - Morticed & Rebated

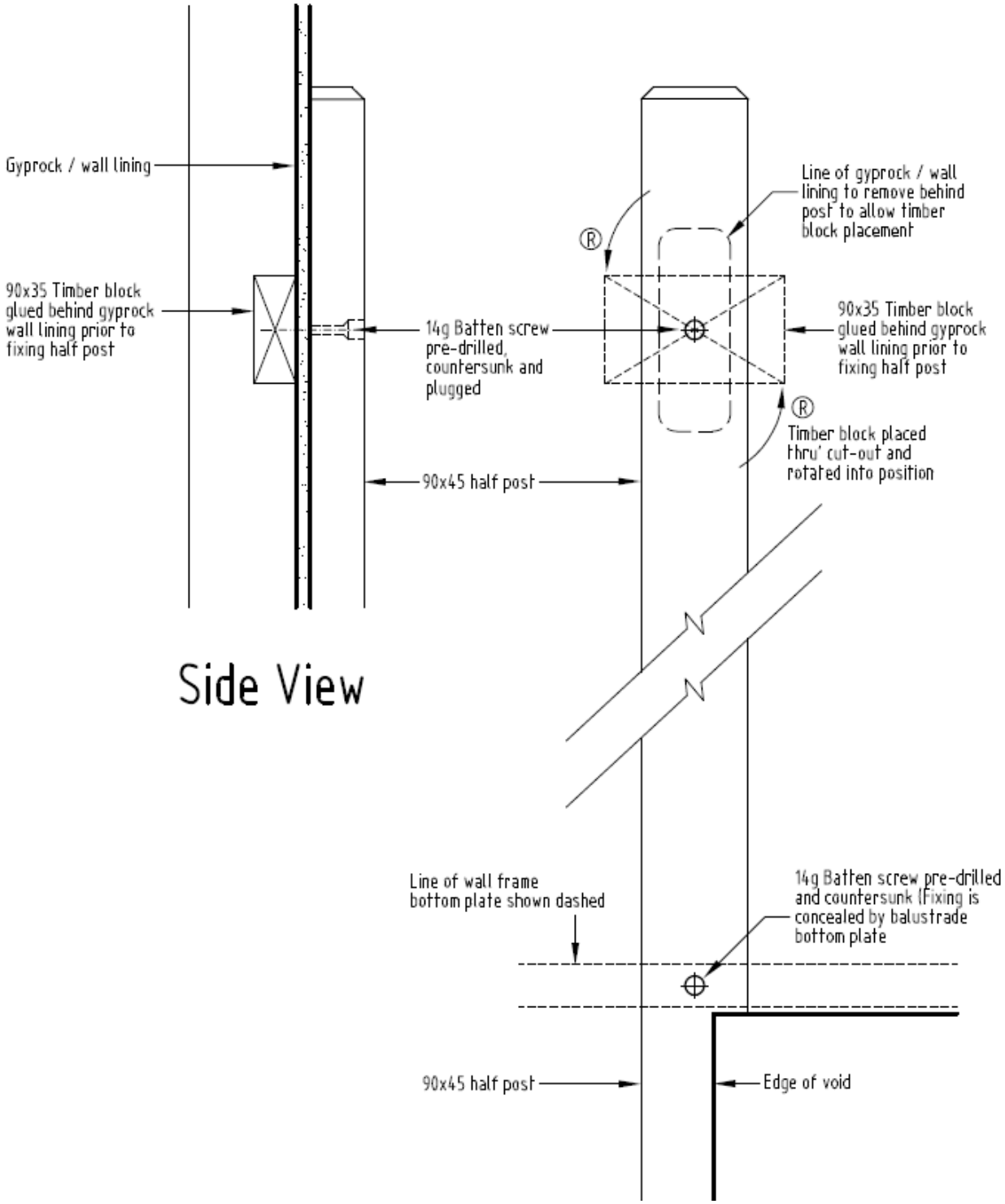


Type - T2

1500 Std Top Post - Morticed Only

HALF POSTS

The following fixing method is used when there is no wall frame directly behind the half post fixing point



PINS & EXTENSION POSTS

For ‘turned’ style balustrade, pins are required to prevent the flight rails from striking the posts in the turned section. The pins are fitted into an extension post by using the dowel supplied.

PIN NAME	TOTAL LENGTH	TOP SQUARE
Quarter Landing	750mm	400mm
2 Tread Winder	750mm	2 x 200mm
Standard	750mm	200mm
3 Tread Winder	550mm	200mm

All extension posts are pre-drilled to accept the dowel. The pins are fixed into the extension posts using construction adhesive and 65mm screws through the dowel. The finished height of the extension post and pin needs to be calculated in the same manner as the bottom post.

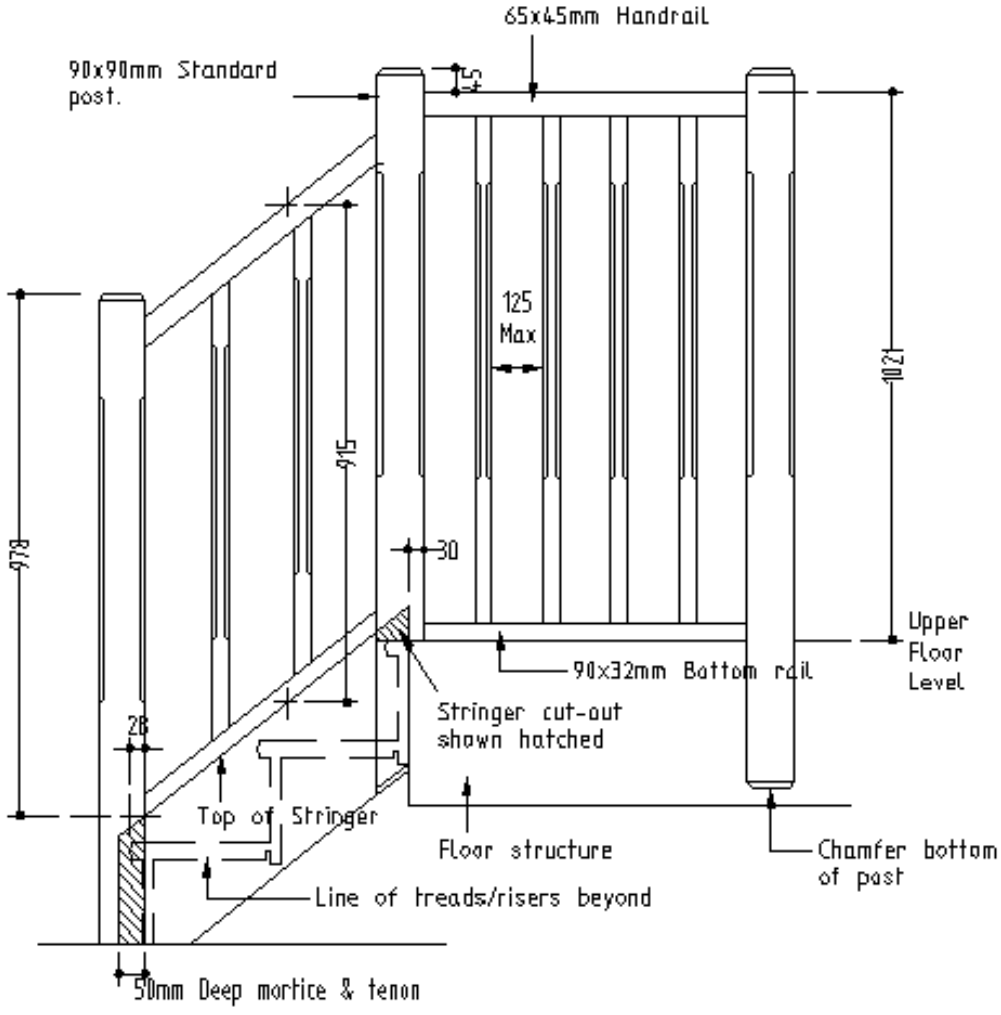
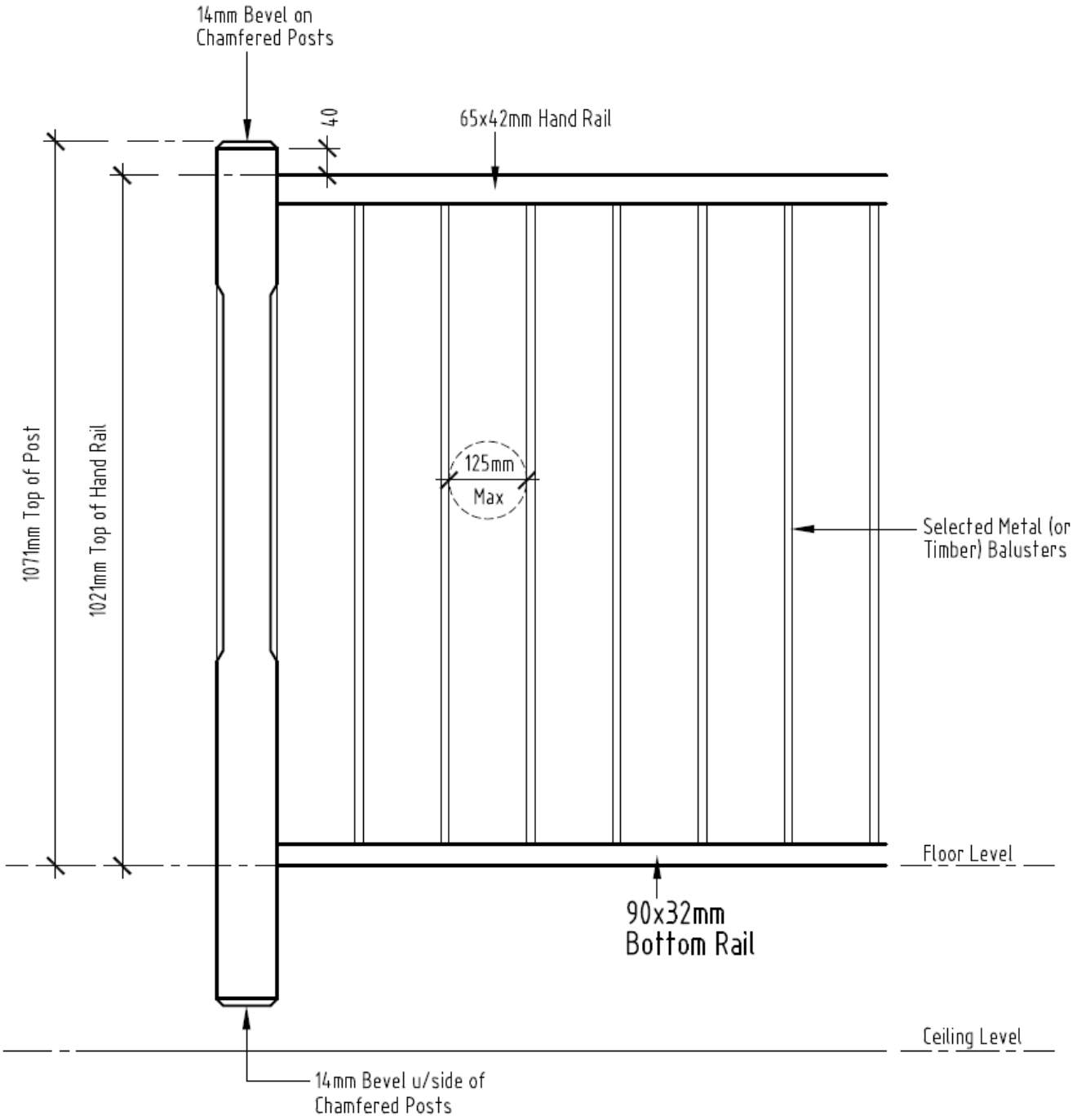


Figure 13
Typical Section detail -"Chamfered "Style

LEVEL RAILS & POSTS

The level rail finishes 1021mm above floor level and 50mm below the top of post. Therefore, the post height for level (balcony) balustrade is 1071mm above floor level.

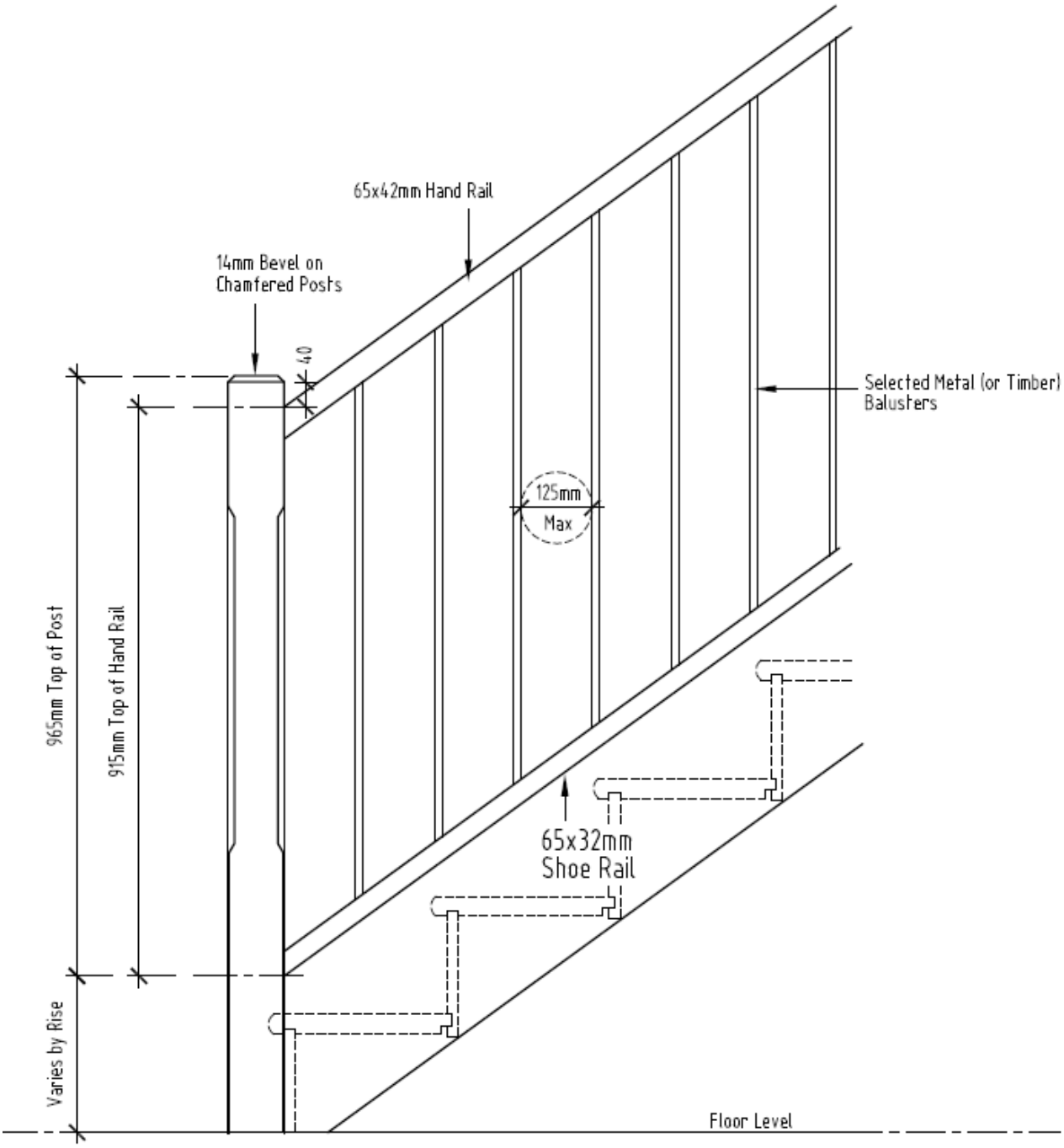
Cut the post to suit the overhang of the balustrade (normally 30mm). Fix of these posts where they run past the face of the floor joist.



BALUSTRADE HEIGHTS

Stair Lock's balustrade system has been designed to suit the following balustrade heights:

- Flight Rail: Measured 915mm plumb above the top of stringer.
- Level Rail: Measured 1021mm above floor level.



HAND RAILS (TOP RAILS)

When using a post with a square top, the level rail may be rested on top of the posts and scribed from the underside. Before cutting the bottom rail, lay it down in front of the posts and measure to length.

When installing the flight hand rail, use a baluster at either end for support and screw the handrail to the post from the underside.

BALUSTER SPACING

The most accurate method of determining baluster spacing is as follows.

Step 1: Measure the distance between posts.
Step 2: Decide how many balusters are required in the section and multiply by the baluster width.
Step 3: Deduct this measurement from the total distance between posts.
Step 4: Divide the remainder by the number of balusters plus 1 to close.

Example: ***Level balustrade section 2350mm long using 12mm metal balusters***

- *17 x 12mm metal balusters = 204mm*
- *2350mm – 204mm = 2146mm*

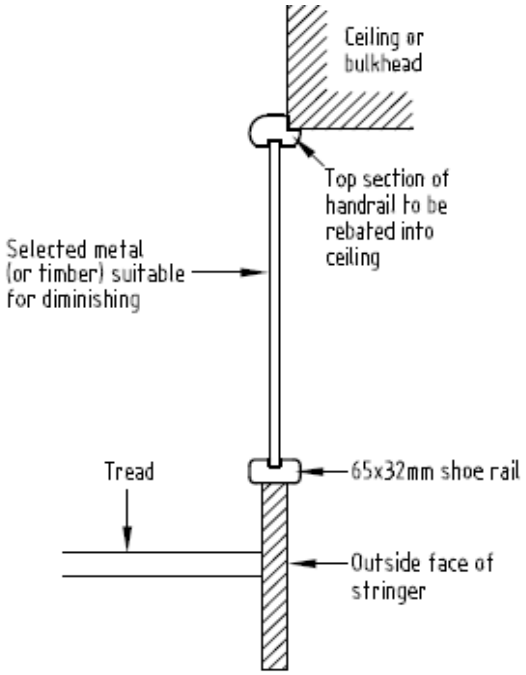
- *1762mm divided by (17+1) = 119.2mm*

*Therefore, **17 balusters** and **18 fillets** @ **119.2mm** long are required*

DIMINISHING BALUSTRADE

Diminishing balustrade occurs as the balustrade strikes the ceiling before landing on the upper floor.

1) Rebate the handrail over the bulkhead.
2) Mitre the intersecting handrails at the ceiling line.
3) Continue the bottom rail up the flight and mitre into the underside of the handrail.
4) Reduce the balusters (square or chamfered) to length to suit the diminished section.



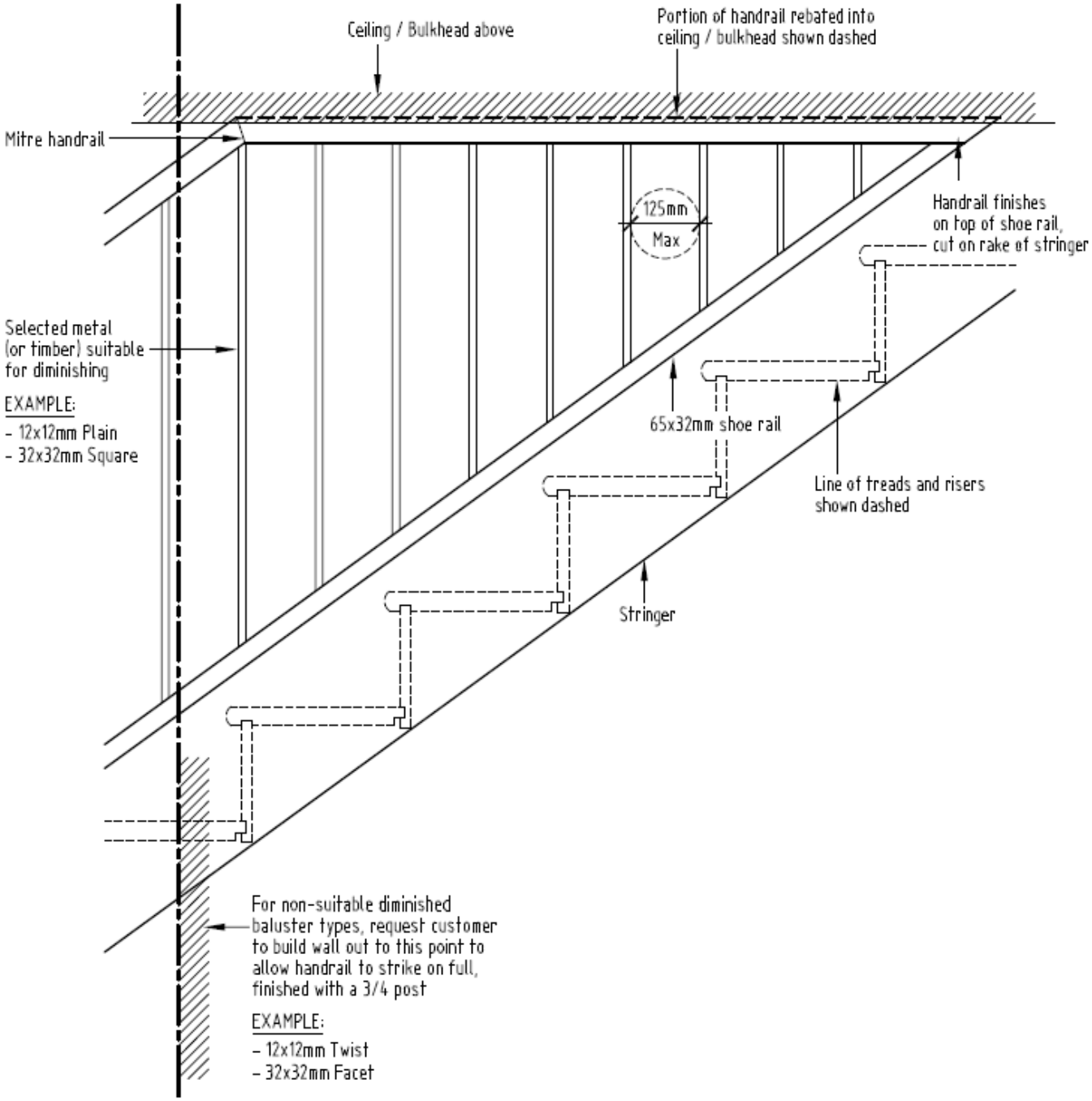


Figure 14
Diminishing Balustrade – Side View

WALL RAILS

Install the wall rail at the same height as the flight rail (915mm plumb above the top of stringer).

1) Mark the centre of the lag screw on the wall, 800mm above the top of the stringer.
2) For framed walls, locate the studs along this line - Line up the lag screw and pre-drill.
3) Plumb cut the wall rail to length (usually 38 degrees and the same length as the stringers).
4) Mount the brackets and fix the wall rail, inserting the screws when the angle is correct.
5) Ensure the wall rail is straight - check by sighting the rail