MEMO 508

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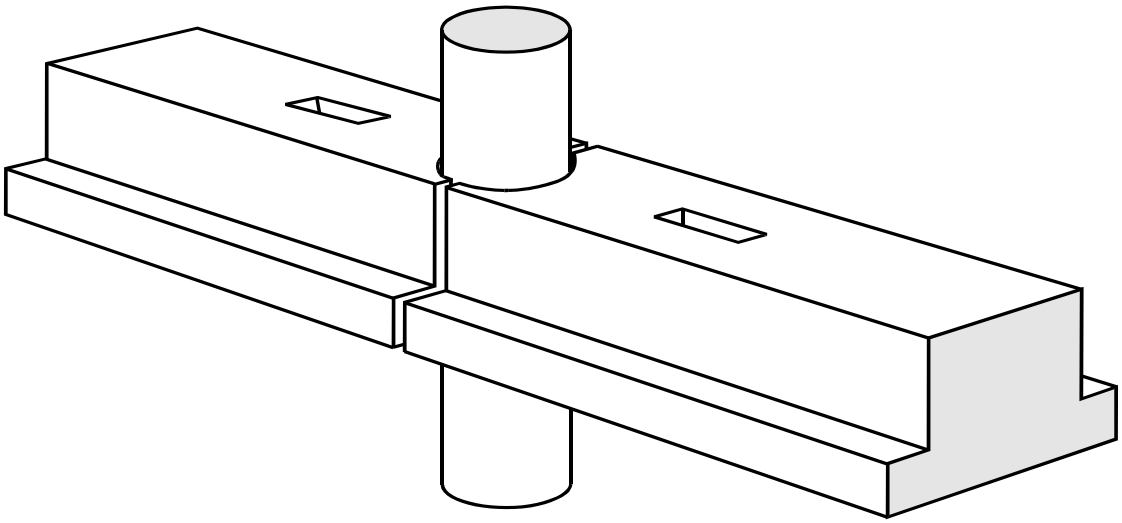
BSF - CONNECTION SOLUTIONS		Last rev.:	14.02.2020	Sign.:	sss
		Doc. no.:	K4-10/508E	Control:	ps
PLANNING					

BSF - CONNECTION SOLUTIONS

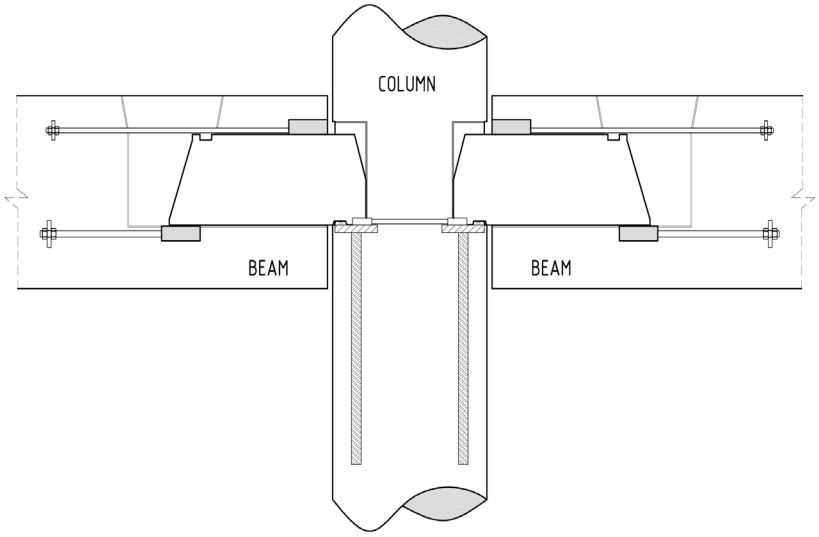
CIRCULAR COLUMN

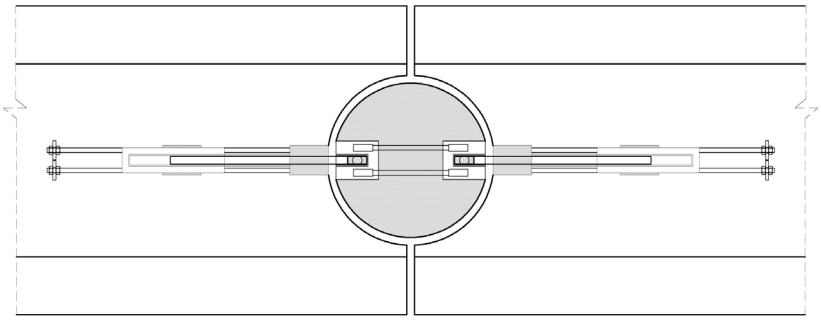


Note:

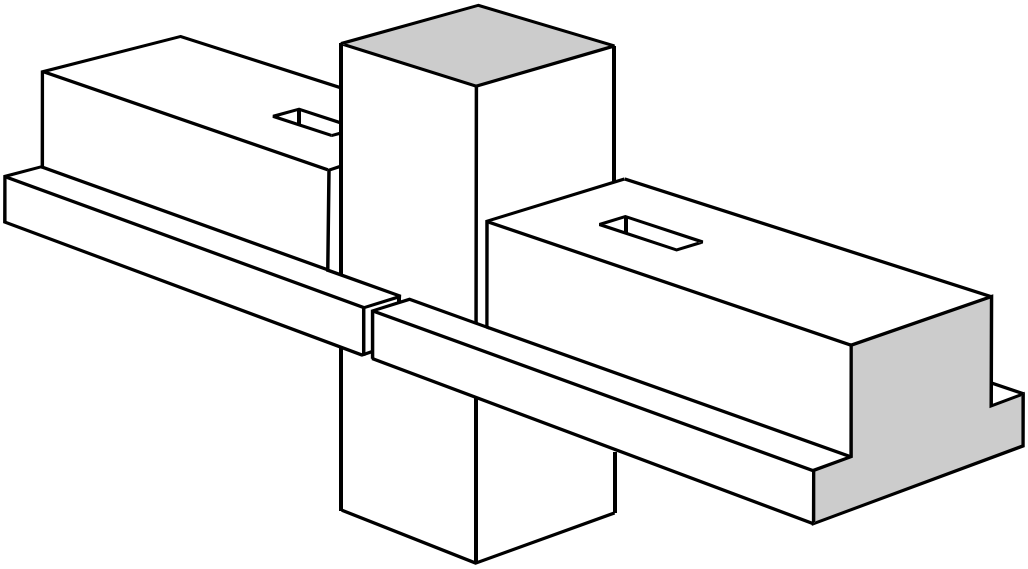
Circular columns may be more difficult to align properly during erection. If the column units are not orientated correctly then the BSF elements may not line up correctly. To assist proper alignment, there should be a reference mark at base level indicating where the BSF insert is at higher level.

On site, erection crews should use this reference mark as well as visually checking the BSF insert in the column.

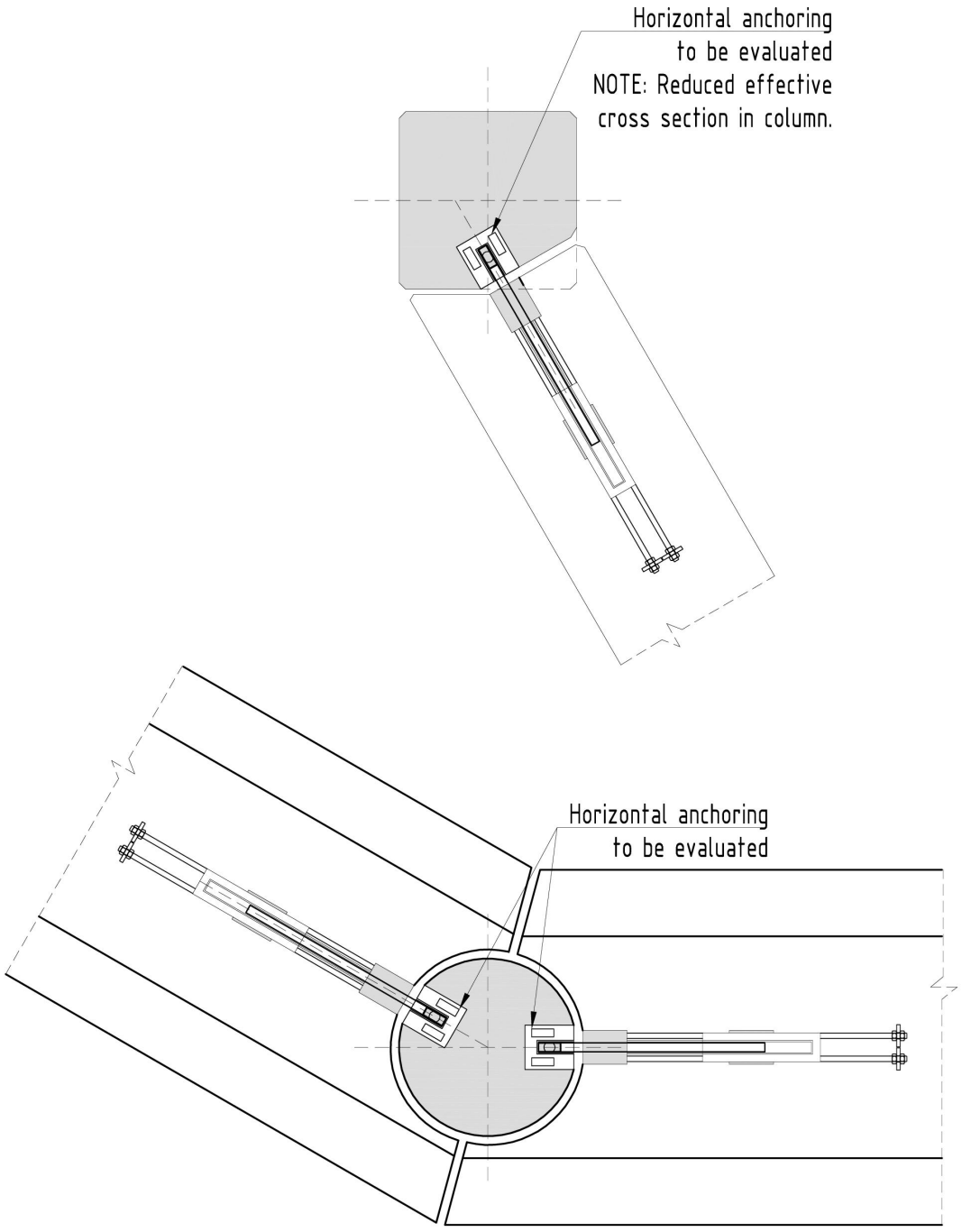




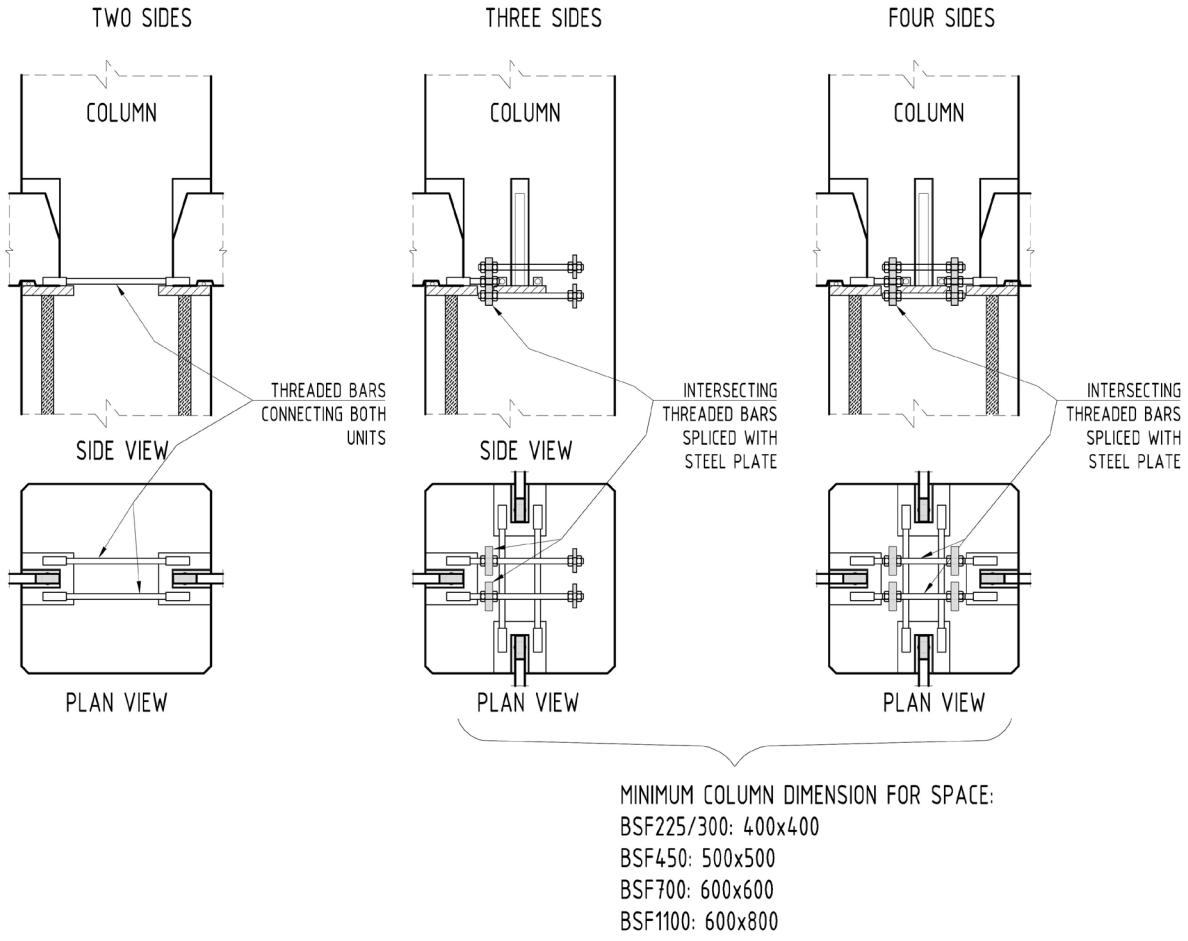
INVERTED T-BEAM FORKED AROUND THE COLUMN

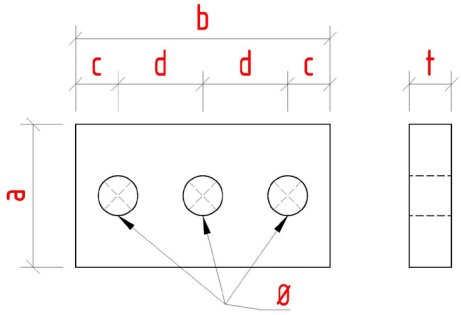


CONNECTIONS NOT AT A RIGHT ANGLE



CONNECTIONS FROM SEVERAL DIRECTIONS

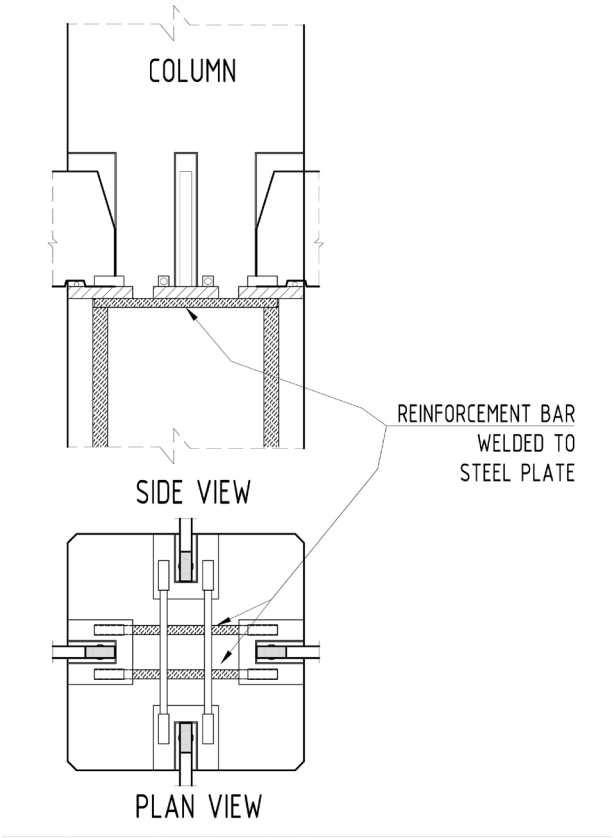




Unit	a [mm]	b [mm]	c [mm]	d [mm]	t [mm]	Ø [mm]	Steel quality
BSF225	60	100	20	30	15	14	S355
BSF300	60	100	20	30	20	14	S355
BSF450	60	100	20	30	25	18	S355
BSF700	80	130	27,5	37,5	25	22	S355
BSF1100	80	150	30	45	40	26	S355

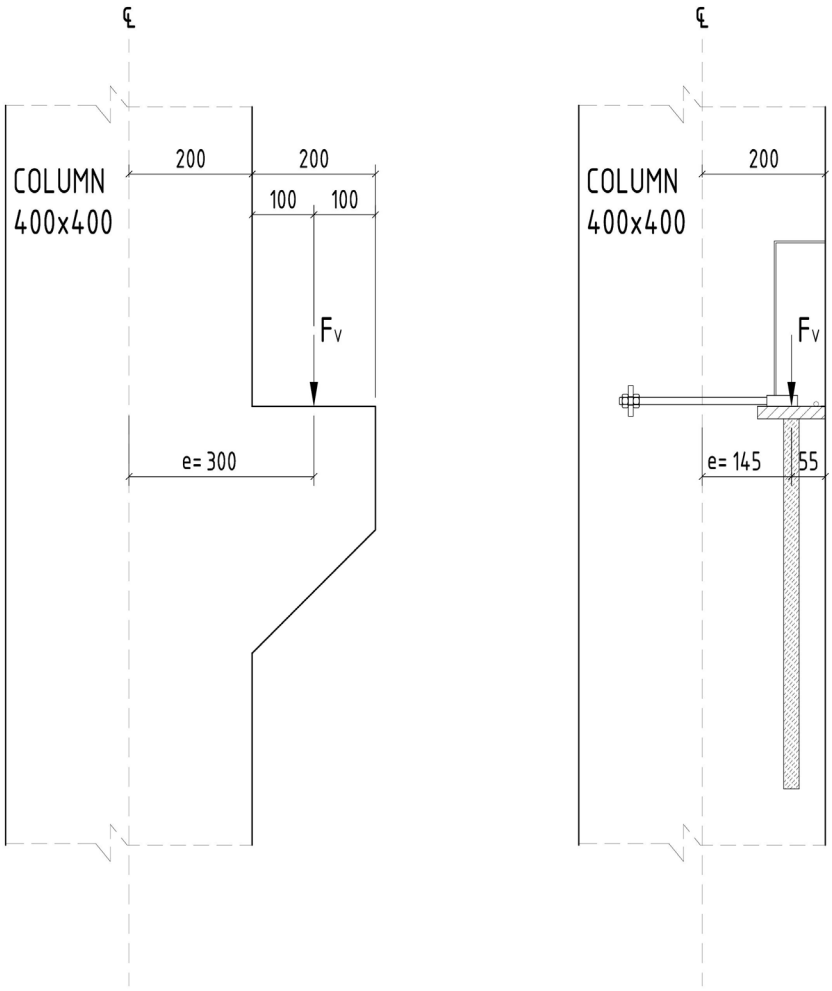
Table 1: Plate for splice of threaded bars

Another solution is to replace two of the threaded bars with welded on reinforcement, as illustrated below.



ECCENTRICITY

For most columns the design will benefit from the greatly reduced eccentricity resulting from using BSF.



The example shown above (BSF225) illustrates how the load eccentricity (e) is more than halved using BSF. This reduces bending and allows a more efficient and cost-effective design

REVISION HISTORY	
Date:	**Description:**
17.10.2013	First Edition
28.11.2013	Included comments from external review.
07.10.2014	Updated figure page 4. Clarified text: “Minimum column dimension for space.”
27.02.2015	Included a nut on the front side of the steel plate anchoring the threaded bars. (To ensure correct position of the plate when casting the concrete).
23.05.2016	New template
16.11.2018	Included BSF1100
14.02.2020	Included illustration with welded on reinforcement for horizontal anchoring