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Company Name	abc	Project Title	
Group/Team Name	xyz	Subtitle	
Designer	Amit	Job Number	
Date	05 /06 /2016	Method	Limit State Design (No Earthquake Load)

Design Conclusion	
Finplate	Pass
Finplate	
Connection Properties	
Connection	
Connection Title	Single Finplate
Connection Type	Shear Connection
Connection Category	
Connectivity	Column flange-Beam web
Beam Connection	Bolted
Column Connection	Welded
Loading (Factored Load)	
Shear Force (kN)	200
Components	
Column Section	
Material	Fe 410
Beam Section	
Material	Fe 410
Hole	STD
Plate Section	
Thickness (mm)	20
Width (mm)	110
Depth (mm)	300
Hole	STD
Weld	
Type	Double Fillet
Size (mm)	16
Bolts	
Type	Black Bolt
Grade	3.6
Diameter (mm)	12
Bolt Numbers	18
Columns (Vertical Lines)	2
Bolts Per Column	9
Gauge (mm)	30
Pitch (mm)	30
End Distance (mm)	30
Edge Distance (mm)	30
Assembly	

Column-Beam Clearance (mm)	20
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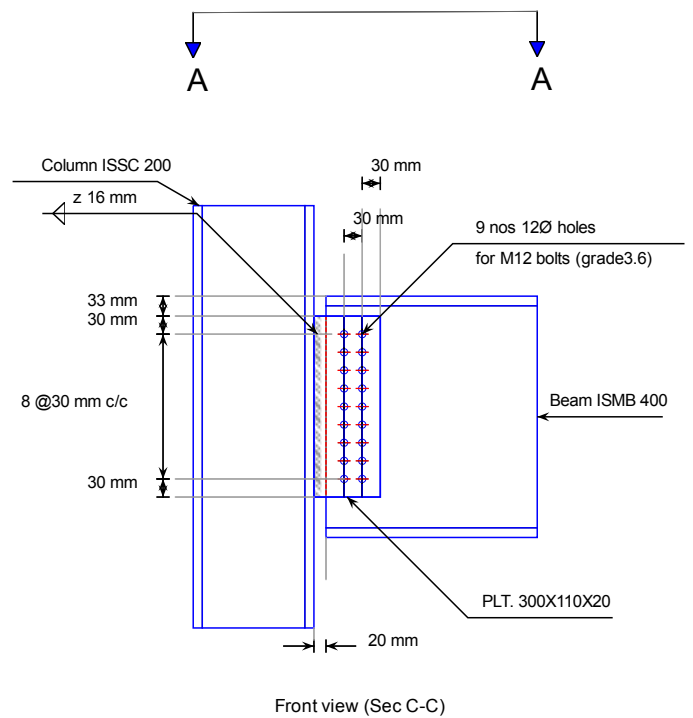
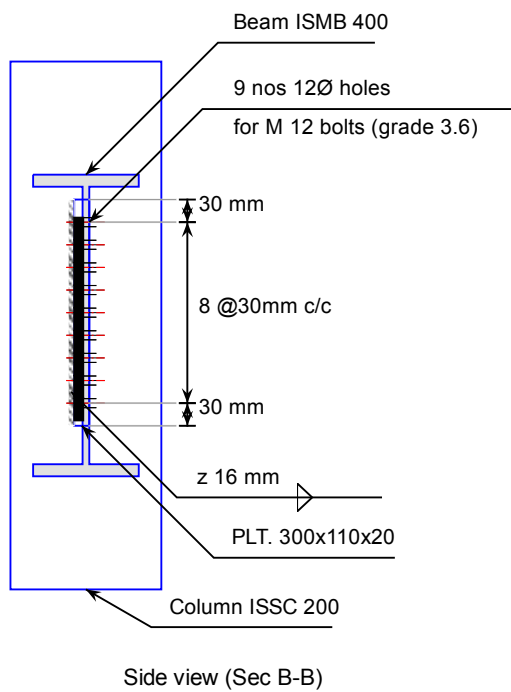
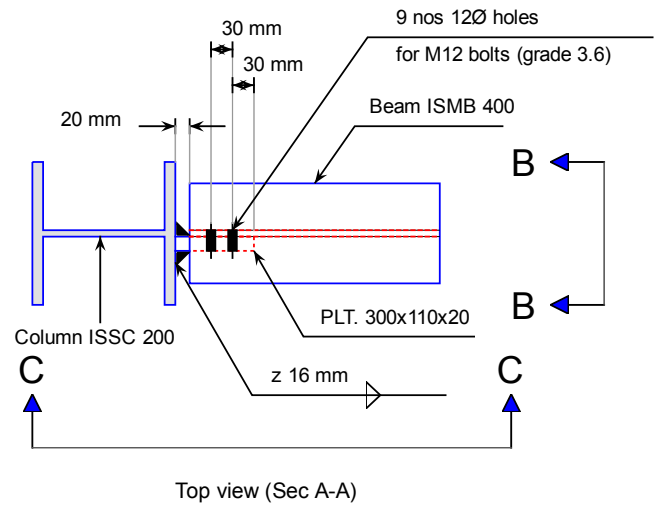
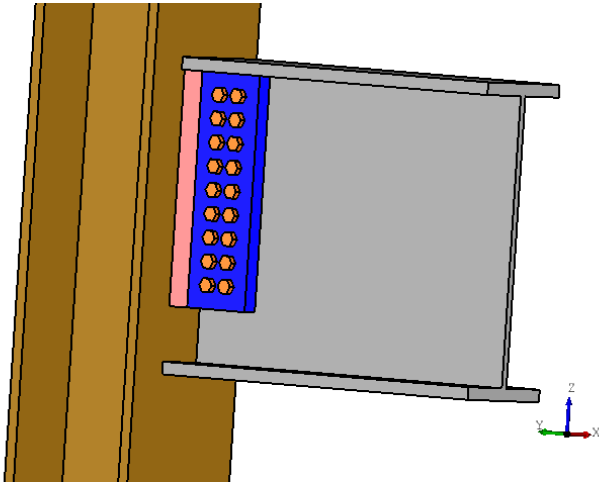
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Design Check			
Check	Required	Provided	Remark
Bolt shear capacity (kN)		$V_{dsb} = (300 \times 0.6126 \times 12 \times 12) / (\sqrt{3} \times 1.25 \times 1000)$ = 11.709 [cl. 10.3.3]	
Bolt bearing capacity (kN)		$V_{dps} = (2.5 \times 0.519 \times 12 \times 8.9 \times 410) / (1.25 \times 1000)$ = 45.452 [cl. 10.3.4]	
Bolt capacity (kN)		Min (11.709, 45.452) = 11.709	
No. of bolts	$200 / 11.709 = 17.1$	18	Pass
No. of column(s)	≤ 2	2	
No. of bolts per column		9	
Bolt pitch (mm)	$\geq 2.5 \times 12 = 30, \leq \text{Min}(32 \times 8.9, 300) = 285$ [cl. 10.2.2]	30	Pass
Bolt gauge (mm)	$\geq 2.5 \times 12 = 30, \leq \text{Min}(32 \times 8.9, 300) = 285$ [cl. 10.2.2]	30	
End distance (mm)	$\geq 1.7 \times 13 = 22.1, \leq 12 \times 8.9 = 106.8$ [cl. 10.2.4]	30	Pass
Edge distance (mm)	$\geq 1.7 \times 13 = 22.1, \leq 12 \times 8.9 = 106.8$ [cl. 10.2.4]	30	Pass
Block shear capacity (kN)	≥ 200	$V_{db} = 816$	Pass
Plate thickness (mm)	$(5 \times 200 \times 1000) / (300 \times 250) = 13.33$ [Owens and Cheal, 1989]	20	Pass
Plate height (mm)	$\geq 0.6 \times 400 = 240.0, \leq 400 - 16 - 14 - 10 = 330.0$ [cl. 10.2.4, Insdag Detailing Manual, 2002]	300	Pass
Plate width (mm)		100	
Plate moment capacity (kNm)	$(2 \times 11.709 \times 30^2) / (30 \times 1000) = 14.405$	$M_d = (1.2 \times 250 \times Z) / (1000 \times 1.1) = 81.82$ [cl. 8.2.1.2]	Pass
Effective weld length (mm)		$300 - 2 \times 16 = 268$	
Weld strength (kN/mm)	$\sqrt{[(14405 \times 6) / (2 \times 268^2)]^2 + [200 / (2 \times 268)]^2}$ = 0.708	$f_v = (0.7 \times 16 \times 410) / (\sqrt{3} \times 1.25)$ = 2.121 [cl. 10.5.7]	Pass
Weld thickness	$\text{Max}((0.708 \times 1000 \times \sqrt{3} \times 1.25) / (0.7 \times 410), 20 \times 0.8) = 16.0$		

(mm)	[cl. 10.5.7, Insdag Detailing Manual, 2002]	16	Pass
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Views



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Additional Comments			