

CONNECTION DESIGN

SDS/2 v 6.322

AISC 2001 3rd EDITION LRFD

BEAM 428B (W8x18) LEFT END

Member number [2973]

Depth = 8 1/8 Tw = 1/4 Bf = 5 1/4 Tf = 5/16

Detail T = 6 1/2 Detail k = 13/16 Design k = 0.630

Material grade: A992 Fu = 65.0 Ksi Fy = 50.0 Ksi

End elevation: 129-0 1/4

Span length: 8-0 Slope: 0.00 degrees

Left end rotation = 0.00 Right end rotation = 0.00

Mtrl len = 6-9 3/8 Left MS = 7 5/16 Right MS = 7 5/16

Plan rotation: 90.00 degrees

Connecting nodes--

Node 1 = [1707]

Frames to flange of Column (W14x90) VOID 406C

Supporting member material grade: A992

Detail k = 2 Design k = 1.310

Thickness = 0.710

Non-composite design

Automatic reaction

Factored loads: Shear = 31.9 Kips Moment = 0.

Design reaction is 49.9 % of the allow. uniform steel bm. load

STANDARD CLIP ANGLE, WELDED TO SUPPORTED MEMBER

TWO-SIDE CONNECTION

Connection material--

Angle: A36 Fu = 58.0 Fy = 36.0

Weld metal specification: E70xx Fexx = 70.0

Near side angle: L4x3 1/2x5/16 x 5 1/2 OSL = 4

Far side angle: L4x3 1/2x5/16 x 5 1/2 OSL = 4

Bolt type: A325SC Bolt dia: 3/4

Class A surface: mean slip coefficient = .33 (A-J3.8b)

(Tension control field bolts)

(Tension control shop bolts)

Bolt rows: 2 Bolt spacing: 3

Connection Gage: 5 1/2

Bolt columns web: 0 OSL ns: 1 OSL fs: 1

Hole type in conn. to supporting member: Short slot

Weld size to supported member = 1/4

Effective weld size: 0.1394

Clip angle OSL Le = 1 1/4

Allow. web bolt shear load: ss = 8.9 Kips, ds = 17.8 Kips

LIMIT STATE AND CALCULATION NUMBER		RESISTANCE PHI*Rn	AISC REF
Beam web shear	( 2)	50.5 Kips	F2
Conn. block shear	(253)	71.1 Kips	J4.3
Conn. gross shear	( 15)	66.8 Kips	J5.3
Conn. net shear	( 16)	61.2 Kips	J4
Weld to supported mbr.	( 26)	60.5 Kips	Table J2.5
Supporting mbr. bolt shear	( 1)	35.5 Kips	J3.6, .9b
Conn. brg.: supporting mbr.	(110)	75.4 Kips	J3.10
Brg. on supporting mbr.	(110)	249.2 Kips	J3.10

Connection ductility check ---

Min. OSL bolt diameter to preclude bolt fracture: 0.32

The effect of eccentricity is included in the weld design.

Connection strength: Load/(PHI\*Rn)  
Shear = 35.5 Kips 0.9

CONNECTION DESIGN PASSES

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Material grade: A992 Fu = 65.0 Ksi Fy = 50.0 Ksi

End elevation: 129-0 1/4

Span length: 8-0 Slope: 0.00 degrees

Left end rotation = 0.00 Right end rotation = 0.00

Mtrl len = 6-9 3/8 Left MS = 7 5/16 Right MS = 7 5/16

Plan rotation: 90.00 degrees

Connecting nodes--

Node 1 = [1848]

Frames to flange of Column (W14x90) VOID 403C

Supporting member material grade: A992

Detail k = 2 Design k = 1.310

Thickness = 0.710

Non-composite design

Automatic reaction

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STANDARD CLIP ANGLE, WELDED TO SUPPORTED MEMBER

TWO-SIDE CONNECTION

Connection material--

Angle: A36 Fu = 58.0 Fy = 36.0

Weld metal specification: E70xx Fexx = 70.0

Near side angle: L4x3 1/2x5/16 x 5 1/2 OSL = 4

Far side angle: L4x3 1/2x5/16 x 5 1/2 OSL = 4

Bolt type: A325SC Bolt dia: 3/4

Class A surface: mean slip coefficient = .33 (A-J3.8b)

(Tension control field bolts)

(Tension control shop bolts)

Bolt rows: 2 Bolt spacing: 3

Connection Gage: 5 1/2

Bolt columns web: 0 OSL ns: 1 OSL fs: 1

Hole type in conn. to supporting member: Short slot

Weld size to supported member = 1/4

Effective weld size: 0.1394

Clip angle OSL Le = 1 1/4

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Member number [2977]

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Detail T = 6 1/2 Detail k = 13/16 Design k = 0.630

Material grade: A992 Fu = 65.0 Ksi Fy = 50.0 Ksi

End elevation: 157-8 1/2

Span length: 8-0 Slope: 0.00 degrees

Left end rotation = 0.00 Right end rotation = 0.00

Mtrl len = 6-9 3/8 Left MS = 7 5/16 Right MS = 7 5/16

Plan rotation: 90.00 degrees

Connecting nodes--

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Far side angle: L4x3 1/2x5/16 x 5 1/2 OSL = 4

Bolt type: A325SC Bolt dia: 3/4

Class A surface: mean slip coefficient = .33 (A-J3.8b)

(Tension control field bolts)

(Tension control shop bolts)

Bolt rows: 2 Bolt spacing: 3

Connection Gage: 5 1/2

Bolt columns web: 0 OSL ns: 1 OSL fs: 1

Hole type in conn. to supporting member: Short slot

Weld size to supported member = 1/4

Effective weld size: 0.1394

Clip angle OSL Le = 1 1/4

Allow. web bolt shear load: ss = 8.9 Kips, ds = 17.8 Kips

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Bolt type: A325SC Bolt dia: 3/4

Class A surface: mean slip coefficient = .33 (A-J3.8b)

(Tension control field bolts)

(Tension control shop bolts)

Bolt rows: 2 Bolt spacing: 3

Connection Gage: 5 1/2

Bolt columns web: 0 OSL ns: 1 OSL fs: 1

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