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Bolted Plate Design Results Page 1

Engineer: Robert P Kiser, PE
 Printed at: Sunday, January 09, 2011 12:54:34 PM

Bolts meet design criteria? True
 Pole Vang meets design criteria? True
 Arm Connection meets design criteria? True

Pole Vang Edge Criteria Violated? False
 Arm Connection Edge Criteria Violated? False

General Data

Project Data File: C:\K2_Projects\Bolted Plate\Design Test Davit Arm 43_25 pole flat-flat.XML
 Customer Name: test customer
 Project Number: test project
 Project Description: test description
 Site Name: test site
 Job Number: J12345
 Structure Number: S123

Analysis Settings

Desired Pole Number: 1
 Connection Type: Davit Arm
 Tube index (for Flange only): 0
 Analysis Type: Redesign
 Bolt Analysis Method: ASCE 48-05
 Use plate thickness in 1/4 inch increments? False
 Bypass Minimum Edge Distance Warnings? False

Pole Data

Pole Type: Transmission
 Pole Shape: 12F - 12 Sides, Flat on Transverse Axis
 Pole Material: A572-50
 Pole Thickness: 0.2500 (in)
 Pole Flat/Flat Width: 43.2261 (in)
 Pole Weld Size: 0.2500 (in)
 Is Stealth Pole? False

Pole Vang Data

Plate Material: A572-50
 Plate Thickness: 0.50000 (in)
 Plate Depth: 14.500 (in)
 Plate Length: 49.500 (in)
 Outside/Outside Distance: 12.000 (in)
 Bolt Diameter: 1.750 (in)
 Bolt Grade: A325
 Bolt Layout: 2 Bolts
 Near End Bolt Edge Distance: 2.500 (in)
 Bolt Offset from Pole Centerline: 23.750 (in)
 Bolt Spacing - Dimension 1: 9.750 (in)
 Bolt Spacing - Dimension 2: 0.000 (in)

Arm Connection Data

Type: U-shaped Bracket
 Plate Material: A572-50
 Plate Thickness: 0.50000 (in)
 Plate Depth: 14.500 (in)
 Bolt Offset from Free Edge: 2.500 (in)
 Bolt Offset from Arm Butt: 6.000 (in)
 On Outside of Vang Plates? True
 Outer Bend Radius: 1.000 (in)
 Arm Shape: 6.000 (in)
 Arm Flat/Flat Width: 10.000 (in)

User Mandates

Pole Out-of-Roundness Tolerance: 1.0 (%)
 Plate Max OD as adder to BC: 10.00 (in)
 Min Distance Center Hole to Pole: 2.00 (in)
 Min Distance Center Pole to Edge: 2.00 (in)
 Min Bolt Edge Distance: 2.00 (in)
 Quadrant On-Center Bolt Spacing: 6.00 (in)
 Minimum Bolt Spacing: 6.00 (in)
 Maximum Bend Line Length: 0.00 (in)
 Maximum Plate Thickness: 4.00 (in)
 Rotation Angle for Eq. Spaced Bolts: 0.00 (Deg)
 Maximum Flange Bolt Spacing: 9.00 (in)



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Bolted Plate Design Results Page 2

Engineer: Robert P Kiser, PE

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Bolts meet design criteria? True
Pole Vang meets design criteria? True
Arm Connection meets design criteria? True

Pole Vang Edge Criteria Violated? False
Arm Connection Edge Criteria Violated? False

Pole Vang Bolt Geometry Data

Bolt Number	Axis 1 Location (in)	Axis 2 Location (in)	Radius From CL (in)
1	-6.0000	4.8750	7.7308
2	-6.0000	-4.8750	7.7308
3	6.0000	4.8750	7.7308
4	6.0000	-4.8750	7.7308

Pole Vang Bolt Loading Results Summary

Bolt Analysis Method = ASCE 48-05

Bolts meet design criteria? True

Worst Case Shear Load = 37.50 kips for Load Case # 4 at Bolt # 3

Worst Case Load Combination = 0.873 for Load Case # 4 at Bolt # 3

Pole Vang Stress Summary

Bolt Analysis Method = ASCE 48-05

Found excessive Bearing Stresses in the Pole Vang? False

Found excessive Shear Stresses in the Pole Vang? False

Found that the AISC Minimum Edge Distance was violated in the Pole Vang? False

AISC Minimum Edge Distance = 2.1875 in

Found that the ASCE 48-05 Minimum Edge Distance was violated in the Pole Vang? False

Pole Vang meets design criteria? True

Worst Case Bearing Stress = 42.85 ksi for Load Case # 4 at Bolt # 3

Worst Case Block Shear Stress = 23.07 ksi for Load Case # 4 at Bolt # 3 in direction towards: End Edge

Arm Connection Stress Summary

Bolt Analysis Method = ASCE 48-05

Found excessive Bearing Stresses in the Arm Connection? False

Found excessive Shear Stresses in the Arm Connection? False

Found that the AISC Minimum Edge Distance was violated in the Arm Connection? False

AISC Minimum Edge Distance = 2.1875 in

Found that the ASCE 48-05 Minimum Edge Distance was violated in the Arm connection? False

Arm Connection meets design criteria? True

Worst Case Bearing Stress = 42.85 ksi for Load Case # 4 at Bolt # 3

Worst Case Block Shear Stress = 23.07 ksi for Load Case # 4 at Bolt # 3 in direction towards: End Edge