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Bolted Plate Design Results Page 1

Engineer: Robert P Kiser, PE
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Analysis completed successfully? True
 Bolts meet design criteria? True
 Plate meets design criteria? True

Minimum Edge Distance Warnings encountered? False
 AASHTO Minimum Plate Thickness Warning encountered? False

General Data

Project Data File: C:\K2_Projects\Bolted Plate\Design Text Baseplate 95 inch 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: Baseplate
 Tube index (for Flange only): 0
 Analysis Type: Redesign
 Plate Bending Stress Analysis Method: Bend Lines at Pole Flat or Point
 Bolt Analysis Method: ASCE 48-05
 Assume shear resisted by 1/2 of bolts? True
 Use plate thickness in 1/4 inch increments? False
 Limit Bend Line Length to Pole Point/Point Width? False
 Limit Bend Line Length to 1/2 Plate Outer Dimension? False
 Limit Bend Line Length to 45° Line from End-Most Bolt? True
 Limit Bend Line Length to Pole Perimeter / (# of Bolts)? False
 Limit Bend Line Length to Pole Flat Width? False
 Bypass Minimum Edge Distance Warnings? False
 Bypass AASHTO Minimum Plate Thickness Warning? False
 Bypass Anchor Bolt Development Length Calculation? False

Pole Data

Pole Type: Transmission
 Pole Shape: 12F - 12 Sides, Flat on Transverse Axis
 Pole Material: A572-50
 Pole Thickness: 0.6875 (in)
 Pole Flat/Flat Width: 95.0000 (in)
 Pole Weld Size: 0.6875 (in)
 Is Stealth Pole? False

Plate Data

Plate Shape: 0 - Round
 Plate Material: A572-50
 Plate is Galvanized? True
 Socket Style Weld? False
 Plate Outer Dimension: 115.250 (in)
 Plate Thickness: 4.0000 (in)
 Plate Corner Clip Length: 0.000 (in)
 Plate Blank Dimension 1: 115.250 (in)
 Plate Blank Dimension 2: 115.250 (in)
 Bolt Hole Diameter: 2.5625 (in)
 Plate Center Hole Shape: None
 Center Hole Dimension 1: 0.000 (in)
 Center Hole Dimension 2: 0.000 (in)
 Center Hole Corner Radius: 0.000 (in)
 Galvanizing Drain Method: None
 Galvanizing Drain Dimension 1: 0.000 (in)
 Galvanizing Drain Dimension 2: 0.000 (in)

Bolt Data

Bolt Grade: 18J Gr. 75
 Bolt Diameter: 2.250 (in)
 Bolt Length: 129.000 (in)
 Bolt Pattern: Equally Spaced
 Bolt Circle Diameter 1: 105.000 (in)
 Number of Bolts on BC1: 48
 Bolt Circle Diameter 2: 0.000 (in)
 Number of Bolts on BC2: 0
 Bolt Threads are in Shear Plane? True
 Nuts on Top Side: 1
 Nuts on Bottom Side: 1
 Total Number of Nuts: 96

User Mandates

Pole Out-of-Roundness Tolerance: 1.0 (%)
 Plate Max OD as adder to BC: 11.00 (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)

Anchorage Data

Concrete Strength: 3000 (psi)
 Foundation Diameter: 129.00 (in)
 Clear Distance Above Foundation: 0.00 (in)
 Top Template Thickness: 0.5000 (in)
 Template ID: 100.00 (in)
 Template OD: 110.00 (in)
 Bottom Template Thickness: 0.5000 (in)
 Anchor Bolt Embedded Length: 119.63 (in)
 Has Uplift Plates? False
 Uplift Plate Width: 6.00 (in)
 Uplift Plate Thickness: 0.25 (in)



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Bolted Plate Design Results Page 2

Engineer: Robert P Kiser, PE

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Analysis completed successfully? True
Bolts meet design criteria? True
Plate meets design criteria? True

Minimum Edge Distance Warnings encountered? False
AASHTO Minimum Plate Thickness Warning encountered? False

Bolt Loading Results Summary

Bolt Analysis Method = ASCE 48-05

Bolts meet design criteria? True

Shear Load resisted by only 1/2 of Bolts? True

Worst Case Compression Load = -232.12 kips

Worst Case Tension Load = 226.79 kips

Worst Case Shear Load = 9.08 kips

Worst Case Bolt Tension Ratio = 0.955

Worst Case Tension Ratio Bolt Number = 27

Load Case for Worst Case Tension Ratio = 5 (E)

Worst Case Bolt Shear Ratio = 0.061

Worst Case Shear Ratio Bolt Number = 1

Load Case for Worst Case Shear Ratio = 5 (E)

Overall Worst Case Plate Stress Details

Occurred at Pole Flat # 7 for Load Case 5 (E)

Total Bending Moment: -415.93 ft-kip

Eff. Bend Line Length: 38.179 in

Bend Line Length Limiting Criteria: 45 Degree lines back from End-Most Bolts

Bending Stress: -49.024 ksi

Adjusted Yield Strength: 50.000 ksi (Fy x 1.00 x 1.00)

Usage: 0.980