

Truss Diagonal Splices	
<b>Bolted Splice Design</b>	
Maximum Axial Force in Diagonal =	7.90 kips
Bolt Dia. =	0.00 inches
Bolt Area =	#N/A inches
Number of Bolts =	0
Allowable Shear stress =	15 ksi (AASHTO Table 10.32.3C) Galvanized surface
Allowable Load on Connection =	#N/A kips (single shear)
<b>Welded Splice Design</b>	
Maximum Axial Force in Diagonal =	7.90 kips
Capacity of 1/4" weld =	6.72 kips per inch (double weld)
Required Length of Weld =	1.175 inches (based on 2 welds)
Minimum for angles =	8.0 inches (based on 2 welds 3" long)
Minimum for pipes =	12.0 inches (based on 4 welds 3" long)
Minimum Weld Length =	6.0 inches
<b>Connection Plate Design</b>	
Total Force in 1/2 Plate =	7.90 kips
Stress in plate =	2.11 ksi
Allowable stress =	30.00 ksi
<b>Connection Plate Weld</b>	
Force per inch of weld =	0.79 kips per inch
Capacity of 1/4" weld =	6.72 kips per inch (double weld)

Post Diagonal Connections	
<b>Bolted Splice Design</b>	
NA - Single Post Design	
Maximum Axial Force in Diagonal =	0.00 kips
Bolt Dia. =	0.875 inches
Bolt Area =	0.601 inches
Number of Bolts =	0
Allowable Shear stress =	15 ksi (AASHTO Table 10.32.3C) Galvanized surface
Allowable Load on Connection =	0.0 kips (single shear)
<b>Welded Splice Design</b>	
Maximum Axial Force in Diagonal =	0.00 kips
Capacity of 1/4" weld =	6.72 kips per inch (double weld)
Required Length of Weld =	0.000 inches (based on 2 welds)
Minimum for angles =	8.0 inches (based on 2 welds 3" long)
Minimum for pipes =	12.0 inches (based on 4 welds 3" long)
Minimum Weld Length =	12.0 inches
<b>Connection Plate Design</b>	
Total Force in 1/2 Plate =	0.00 kips
Stress in plate =	0.00 ksi
Allowable stress =	30.00 ksi
<b>Connection Plate Weld</b>	
Force per inch of weld =	0.00 kips per inch
Capacity of 1/4" weld =	6.72 kips per inch (double weld)

Truss Support Connection (uses W6x5)	
NA - See Connection Below	
Maximum Reaction =	4.38 kips (half reaction)
Capacity of 1/4" weld =	3.95 kips per inch (single weld)
Length of Weld Required =	0.549 inches (based on double weld)
Length of Weld Provided =	10.00 inches
Shear Capacity of W6x5 =	11.87 kips

Truss Support Connection (Single or Double pole) - Tri - Chord Only			
Maximum Reaction (Vert) =	4.38 kips (max of left or right conn.)	Number of Chords =	3
Maximum Axial Force in Diagonal =	5.23 kips (max of left or right conn.)	Pipes (per end) =	1
Reaction per chord connection (Vert) =	2.13 kips	# of Connections =	2
Area of Weld =	8.48 in <sup>2</sup>	Weld Size =	0.19 in
Weld =	22.62 in <sup>3</sup>		
Rs =	0.28 ksi		
Rt =	1.79 ksi		
Rb =	0.21 ksi		
(Rt+Rb)/2 =	2.12 ksi		
Allowable stress of weld =	19 ksi		

Monotube Support Connection (Single Vertical Pole)		
NA - See Connection Above		
Max Shear =	2.48 kips	Div by 2 because 2 u-bolts are always used
Monotube Dia. =	14.00 in	
U-bolt Leg Dia. =	0.75 in	
Area of U-bolt Leg =	0.334 in <sup>2</sup>	
Tension in U-bolt Leg =	0.94 kips	Based on depth of saddle equal to 0.3 * Diameter of Monotube
Stress in U-bolt =	1.62 ksi	
Allowable U-bolt stress =	18 ksi	Eq. S-21
Stress Check	OK	