

Truss Diagonal Splices	
<b>Bolted Splice Design</b>	
Maximum Axial Force in Diagonal =	7.31 kips
Bot Dia. =	0.000 inches
Bot Area =	#N/A
Number of Bolts =	0
Allowable Shear stress =	19 ksi (ASHTD Table 10.32.2C) Galvanized surface
Allowable Load on Connection =	#N/A
<b>Welded Splice Design</b>	
Maximum Axial Force in Diagonal =	7.31 kips
Capacity of 1/4" weld =	6.72 kips per inch (double weld)
Required Length of Weld =	1.089 inches (based on 2 welds)
Minimum for angles =	6.0 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 =	7.31 kips
Stress in plate =	1.95 ksi
Allowable stress =	30.00 ksi
<b>Connection Plate Weld</b>	
Force per inch of weld =	0.73 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
Bot Dia. =	0.000 inches
Bot Area =	0.001 inches
Number of Bolts =	0
Allowable Shear stress =	19 ksi (ASHTD Table 10.32.2C) 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 =	6.0 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 (use W6x9)	
NA - See Connection Below	
Maximum Reaction =	3.95 kips (half reaction)
Capacity of 1/4" weld =	3.36 kips per inch (single weld)
Length of Weld Required =	0.588 inches (based on double weld)
Length of Weld Provided =	19.00 inches
Shear Capacity of W6x9 =	11.87 kips

Truss Support Connection (Single or Double pole) - Tri - Chord Only			
Maximum Reaction (Vert) =	3.95 kips (max of left or right conn.)	Number of Chords =	3
Maximum Wind Load (Horiz) =	4.73 kips (max of left or right conn.)	Plate (per end) =	1
Reaction per chord connection (Vert) =	1.97 kips	# of Connections =	2
Reaction per chord connection (Horiz) =	2.37 kips	Weld Size =	0.19 in
Area of Weld =	8.48 in <sup>2</sup>		
Stress =	22.82 ksi		
fy =	0.29 ksi		
fu =	1.62 ksi		
φ =	0.29 ksi		
(fy+fu)/2 =	1.01 ksi		
Allowable stress of weld =	19 ksi		

Monotube Support Connection (Single Vertical Pole)		
NA - See Connection Above		
Max Shear =	2.25 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 =	0.354 in <sup>2</sup>	Based on depth of saddle equal to 0.5 * Diameter of Monotube
Tension in U-bolt Leg =	0.49 kips	
Stress in U-bolt =	1.41 ksi	
Allowable U-bolt stress =	18 ksi	Eq. 5-21
Stress Check =	OK	