Bracket Analysis Report for Kiowa 115kV Substation Project

Bid Number: 19-15677

Customer: Intermountain Rural Electric Association
Structure: 001 H-FRAME DEADEND STRUCTURE - 50FT

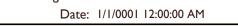
Model: 001-19-15677-50ft.pol

Engineer: RS

8653 E. Hwy 67 ~ Alvarado, TX 76009 ~ 866.254.3707

Sabre Industries

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Arm ~ CAI											
Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)	
CAI	8	Flat-Flat	9.00	9.00	0.1875	35.00	666.0	65	LP:CA1	0	

(8) I" Dia x 3" Long - A325 Bolts					Bracket ~ YK12-LG							Stiffeners		
Diameter (in)	Total Qty	Center Space	Grade	Usage	Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing	Qty	Thickness (in)	Width (in)	
I	8	4.5	A325	30.85%	0.75	12.125	18	57.55%	25.83%	11.47%	0	0	0.00	

Controlling Load Case (absolute value of reactions at pole face) Torsion, Mt Moment, ML Axial, Ft Shear, Fv Shear, FL Moment, Mv Description **Governing Element** (kips) (kips) (kips) (ft-kips) (ft-kips) (ft-kips) DISTRICT : HEAVY (STRENGTH LOAD) CAI:O Bolt & Bracket 0.10 42.11 6.59 1.55 11.19 7.65

Arm ~ CA2											
Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)	
CA2	8	Flat-Flat	10.00	10.00	0.2500	35.00	986.6	65	LP:CA2	0	

(8) I" Dia x 3" Long - A325 Bolts					Bracket ~ YK13-LG							Stiffeners		
Diameter (in)	Total Qty	Center Space	Grade	Usage	Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing	Qty	Thickness (in)	Width (in)	
Ι	8	6	A325	56.44%	0.75	13.125	21	79.64%	47.26%	20.99%	0	0	0.00	

Controlling Load Case (absolute value of reactions at pole face)											
Description	Joint Label	Axial, Ft (kips)	Shear, Fv (kips)	Shear, FL (kips)	Moment, Mv (ft-kips)	Torsion, Mt (ft-kips)	Moment, ML (ft-kips)	Governing Element			
DISTRICT : HEAVY (STRENGTH LOAD)	CA2:O	3.25	13.14	0.29	94.78	9.70	2.02	Bolt & Bracket			