

Bracket Analysis Report for No Trees Switch - Andrews County South Switch 138kV Line

Bid Number: 20-16066

Customer: Oncor Electric Delivery Company

Structure: 001 001-68104 dc sra 10-15d 90ft

Model: 001-68104 dc sra 10-15d 90ft.pol

Engineer: DH

Date: 1/1/0001 12:00:00 AM



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

For Office Use Only

Arm ~ A1

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A1	8	Flat-Flat	6.00	10.00	0.1875	6.50	109.9	65	pole:YV1	0

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	54.20%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	85.44%	45.39%	20.16%

Stiffeners

Qty	Thickness (in)	Width (in)
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
Construction - COND left ckt	A2:O	3.76	1.76	7.09	26.06	16.00	73.62	Bolt & Bracket

Arm ~ A2

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A2	8	Flat-Flat	6.00	10.00	0.2500	10.25	231.2	65	pole:YV1	180

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	54.20%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	85.44%	45.39%	20.16%

Stiffeners

Qty	Thickness (in)	Width (in)
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
Construction - COND left ckt	A2:O	3.76	1.76	7.09	26.06	16.00	73.62	Bolt & Bracket

Arm ~ A3

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A3	8	Flat-Flat	6.00	10.00	0.1875	6.50	109.9	65	pole:YV2	0

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	45.78%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	64.22%	38.33%	17.02%

Stiffeners

Qty	Thickness (in)	Width (in)
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
TXU Heavy - left ckt	A4:O	10.01	5.85	0.00	83.25	0.00	0.00	Bolt & Bracket

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Arm ~ A4

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A4	8	Flat-Flat	6.00	10.00	0.2500	10.25	231.2	65	pole:YV2	180

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	45.78%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	64.22%	38.33%	17.02%

Stiffeners

Qty	Thickness (in)	Width (in)
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
TXU Heavy - left ckt	A4:O	10.01	5.85	0.00	83.25	0.00	0.00	Bolt & Bracket

Arm ~ A5

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A5	8	Flat-Flat	6.00	10.00	0.1875	6.50	109.9	65	pole:YV3	0

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	46.10%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	64.67%	38.60%	17.14%

Stiffeners

Qty	Thickness (in)	Width (in)
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
TXU Heavy - left ckt	A6:O	9.98	5.91	0.00	83.80	0.00	0.00	Bolt & Bracket

Arm ~ A6

Label	Sides	Orientation	Tip OD (in)	Butt OD (in)	Thickness (in)	Length (ft)	Weight (lbs)	Yield (ksi)	Attach Label	Azimuth (deg)
A6	8	Flat-Flat	6.00	10.00	0.2500	10.25	231.2	65	pole:YV3	180

(8) 1" Dia x 3" Long - A325 Bolts

Diameter (in)	Total Qty	Center Space	Grade	Usage
1	8	6	A325	46.10%

Bracket ~ YK13-LG

Thickness (in)	Opening (in)	Height (in)	Usage	Shear Rupture	Bearing
0.75	13.125	21	64.67%	38.60%	17.14%

Stiffeners

Qty	Thickness (in)	Width (in)
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
TXU Heavy - left ckt	A6:O	9.98	5.91	0.00	83.80	0.00	0.00	Bolt & Bracket