

SAG AND SWING CALCULATIONS FOR 165/167 MT. PLEASANT ST:

GrandBridge Energy - Grant Chapman

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Conductor: Aluminum

Conductor Type: 1/0 Triplex

Conductor Span: 27.1m

Conductor weight (kg/m): $w = 0.62$ [1]

Conductor Diameter (mm): $d = 8.25$ [2]

Conductor Sag at 100 °C (m): 1.09m (Figure 1)

$d/w: 8.25/0.62 = 13$

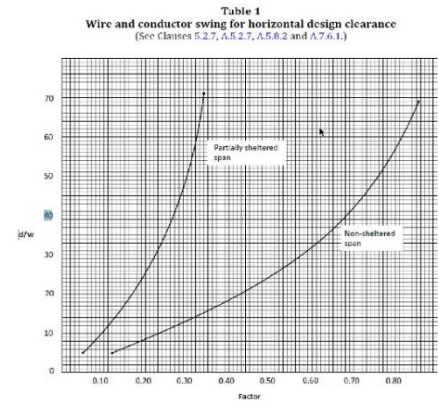
Thus, the factor is 0.31 as seen in Figure 2

$1.09\text{m} \times 0.31 = 0.34\text{m}$

∴ The conductor swing is 0.34m horizontally

TABLE 2 (1/0 ALUMINUM TRIPLEX)									
Initial (Stringing) Condition					RTS = 3883kg				
Ambient temperature (°C)	Span (m)				Tension				
	22	26	30	34	kg	lbs	kN	%RTS	
Sag (cm)									
30	66	92	122	157	53	117	0.52	2.6	
20	64	89	119	153	55	121	0.54	2.7	
10	62	87	116	149	56	123	0.55	2.8	
0	60	84	112	144	58	128	0.57	2.9	
-10	59	82	109	140	60	132	0.59	3	
-20	56	79	105	135	62	137	0.61	3.1	
-30	55	77	102	131	64	141	0.63	3.2	
Final Condition									
Span (m)					Tension				
Loading Condition									
	22	26	30	34	kg	lbs	kN	%RTS	
Temp (°C)	Wind (N/m²)	Ice (mm)	Sag (cm)						
-20	400	12.5	63	88	117	150	188	2.65	13.3
0	0	0	62	87	116	149	186	0.55	2.8
50	0	0	70	98	131	288	210	0.49	2.5
100	0	0	78	109	145	326	233	0.44	2.2

(Figure 1)



(Figure 2)

Bibliography

- [1] “1/0-1/0-1/0 neritina aluminum Triplex Overhead Service Drop Cable,” 1/0 1/0 1/0 Nerltina ACSR Aluminum Triplex Overhead Service Drop Cable | WireAndCableYourWay.com, <https://www.wireandcableyourway.com/1-0-1-0-1-0-nerlina-acsr-aluminum-triplex-overhead-service-drop-cable> (accessed Mar. 21, 2024).
- [2] “FAQ: AWG Chart and the metric system: Eland cables,” FAQ: AWG chart and the metric system | Eland Cables, <https://www.elandcables.com/the-cable-lab/faqs/faq-what-is-the-conversion-between-awg-and-the-metric-system> (accessed Mar. 25, 2024).