APPENDIX B.

To find tension of cables:
Let \( x \) represent deflection.
\( y \) " half the span.
\( W \) " weight of cables and load equally distributed.
\( T \) " tension resulting,
and the following formula will give the value of tension.

\[
T = \frac{W}{4x} \sqrt{\frac{2}{4x^{2} + y^{2}}}
\]

Substitute for \( x \), 59 and \( y \), 410.66, and

\[
T = \frac{W}{4 \times 59} \sqrt{\frac{2}{4 \times 59^{2} + 410.66^{2}}}
\]
or \( T = W \times 1.81 \).

The tension of the cables therefore will be obtained by multiplying the weight \( W \) by the factor 1.81.

APPENDIX C.

The length of span and deflection being known, to find the length of the cable, calculated as a parabola:
Let \( y \) express half the length of span.
" \( x \) " deflection.
" \( z \) " half the length of cable.

Then \( Z = \sqrt{\frac{y^{2}}{2} + \frac{4}{3}x^{2}} \)

The following formula will give deflection when length of span and of cable are known.

\[
X = \sqrt{\frac{3}{4} \left( \frac{z}{y} - y^{3} \right)}
\]

THE END.