

## Memorandum

**To:** MR. GERRY MEIS, Chief  
Office of Signs, Delineation & Technical Support  
Traffic Operations

**Date:** November 30, 2001

**File:**

**From:** DEPARTMENT OF TRANSPORTATION  
Traffic Operations  
Mail Station 36

**Subject:** Traffic Manual Errata Correction

It was brought to my attention that the Traffic Manual, Chapter 9, Section 9-13.11 "Voltage Drop" Calculation includes an errata by recommending an incorrect minimum wire size. Furthermore, the Internet electronic version needs to match the definition of the Traffic Manual hard copy for the resistance and the length of the conductor.

Presently, the Voltage Drop Calculation in the above chapter provides a calculated wire resistance value and refers to an incorrect corresponding wire size.

Traffic Manual, Chapter 9, Section 9-13.11 emphasizes the method to determine the acceptable wire size to be used for the allowed Voltage Drop by calculating the wire resistance. The corresponding Table 9-9 in the same chapter supplies the correct wire size to be used for the calculated wire resistance.

The Voltage Drop Calculation needs to incorporate the following corrections:

1. A calculated resistance of **2.43** ohms (per 1000 m). According to the Traffic Manual, Chapter 9, Table 9-9, a resistance range from 2.56 to 1.61 ohms (per 1000 m) should use a corresponding minimum wire size of size 6. However, the Voltage Drop Calculation incorrectly recommends the use of a minimum wire size **8**. The Internet electronic version and the hard copy should be corrected to recommend the use of wire size of number 6 not number 8.
2. On the online version, Traffic Manual, Chapter 9, Section 9-13.11 Voltage Drop, third paragraph, L= Length of Conductor (305 m) should read L= Length of Conductor (in **1000 m**) or (in **Kilometer**).
3. On the online version, Traffic Manual, Chapter 9, Section 9-13.11 Voltage Drop, third paragraph, R= Resistance of Conductor should read Resistance of Conductor (**1,000 m**).
4. On the online version, Traffic Manual, Chapter 9, Section 9-13.11, Table 9-9 listed the D.C. Resistance for number 14 conductor as 10.7 ohms/1000 m while it should be corrected to **10.07** ohms/1000 m.

Mr. Gerry Meis  
November 30, 2001  
Page 2

Please correct the Traffic Manual, Chapter 9, Section 9-13.11 as recommended.

If you have questions regarding this exception process, please call Ms. Theresa Gabriel, Chief, Office of Electrical Systems at (916) 654-5039.

A handwritten signature in cursive script that reads "Theresa Gabriel". The signature is written in black ink and is positioned above the printed name.

**THERESA GABRIEL, Chief**  
**Electrical System Branch**