

January 30<sup>th</sup>, 2015

Calpipe Security Bollards  
19440 S Dominguez Hills Drive  
Rancho Dominguez, CA, 90220

Re: K4 Engineered Bollard Design and Analysis  
PDT8080F-Fixed Bollard

This letter briefly summarizes my engineering review of K4 bollard designs. I have Received and reviewed engineering drawings entitled:

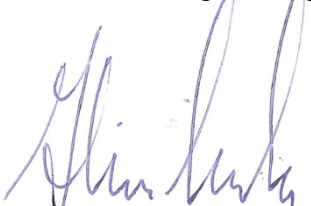
- PDT808F-ENG0000 (30" Above Grade/36" Below Grade) Fixed Bollards dated 9/10/14
- 8" Fixed Bollard Foundation

In addition, I performed engineering calculations including equivalent static Finite Element analysis for the fixed bollard and foundation. The assumptions, analysis and results of this analysis is attached herewith.

Based on my engineering analyses and the analyses and details provided, the designs and engineering details as shown in the two drawings referenced in this letter are suitable to meet or exceed K-4 crash ratings, meaning that they are capable of arresting a 15,000 medium duty truck traveling 30 mph.

We trust that this will address all the concerns.

Newmark Engineering, P.C.



Glenn Newmark, P.E.  
President

