

Evaluation and Design

After evaluation of other designs I have chosen to use a computerised solution that employs track circuits to detect oncoming trains and inductive loops for vehicle detection. This is a very simplistic, and reliable solution to the problem. In regards to safety, the track circuits can reliably detect any oncoming train, triggering the gates to be lowered when this occurs. This system is very unlikely to be triggered by foreign objects due to their train specific design.

Furthermore, the design is also likely to be unimpeded by weather events like rain or snow. Inductive loops are proven technology with extensive use in traffic systems all over the world. They directly detect metal vehicles when they are present leading to instant data delivery when triggered and they are proven in all sorts of weather scenarios with a strong record of dependability.

Moreover, the design is simplistic and easy to understand. Both sensor systems rely on electrical principles, keeping the system straightforward and easy to troubleshoot, there are minimal moving parts that could require servicing. Both sensors provide simple true or false/on or off signals as well, leading to very simple integration within a gate control logic.

In conclusion, the sensors and overall design are reliable through robust records, safe through reliable resistance to weather scenarios and false positives and simplistic through easy integration into logic and consistent principles.