

On Day 22 of the inquiry, Mr Kenning was asked why it was not possible to fit red / green lights at E45 / E46 like those fitted at Frating Abbey footpath level crossing to the west. Mr Kenning provided a verbal explanation and, on Day 22, provided an annotated extract of the current Signalling Plan ("SP") for the area showing key features of the railway infrastructure relating to level crossings in the area. The extract consisted of 3 sheets of A4 (landscape), which had cut lines and numbers to match across the cutline to ensure correct orientation. The following text is intended to further clarify the details of the signalling in the area and explain why it is not possible to provide red / green light at E45 / E46 without significant changes to the existing signalling.

Frating Abbey

Frating Abbey footpath level crossing is located on the middle sheet of the SP: all the features specific to Frating Abbey are in blue bubble balloons. To the west (on the left-hand sheet) is the strike-in point (the point where a train passing this point will operate the level crossing equipment) for trains travelling in the Clacton direction. To the right of the level crossing is the strike-in for trains travelling in the Colchester direction. It can be seen that between these strike-ins and the level crossing there is no infrastructure that would bring a train to a stop or cause it to significantly alter its speed. This means that it is possible to give consistent warning times at the level crossing. There is also no need to interface with the signalling, and so an overlay system can be used.

Frating AHB

Frating Automatic Half Barrier (AHB) level crossing is located further to the west, and features for this level crossing are identified in the purple bubble balloons. Being an AHB there are no protecting signals for this type of level crossing. The strike-in to the east (Colchester direction trains) is located close to Great Bentley CCTV level crossing, but on the side that would be unaffected by a train stood in Great Bentley station. The Clacton direction strike-in is located to the west of Thorrington CCTV level crossing and is affected by the protecting signal for Thorrington CCTV level crossing. This signal is regulated, which means that if a train is stood at the red signal Frating AHB does not operate. Only when it is possible for the signal to clear to a proceed aspect and the train has passed the signal does Frating AHB operate: this is because there is a second strike in for Frating AHB just beyond the protecting signal. In this instance there is an interface between the signal and the level crossing. This is a fully integrated level crossing as it has its controls changed depending on the state of the signals.

Great Bentley CCTV level crossing

Thorrington & Great Bentley CCTV level crossing are full barrier level crossings, and this means that they will have protecting signals (preventing trains passing over the level crossing until the level crossing is proved clear of any obstruction or trapped pedestrians). As they are manually operated they do not have strike-ins as such, the barriers being operated by the operator (Signaller).

Great Bentley level crossing has a protecting signal on either side. The protecting signal is approx. 170m before the level crossing for trains travelling in the Clacton direction. In the Colchester direction the protecting signal is located on the approach to the platform – approximately 240m from the level crossing. This is greater than the optimal distance that would usually be used (approx. 180m) because of the station platforms (ie if the signal was located 180m from the level crossing this would put it in the middle of the station).

E45 & E46

Looking at trains travelling in the Clacton direction, the position of the strike ins for MSL at E45 or E46 would mean that the warning at E45 or E46 would be triggered by a train stopping in the station as well as a train passing through. There are no signals to prevent a train leaving the platform in the eastbound (ie Clacton) direction. If there was a signal to prevent the train leaving the platform, a similar control to that fitted to Frating AHB could be considered (although there are further controls that would be needed in this case). However, it is not possible to install a signal to protect E45 and/or E46 at the end of the platform due to the protecting signal to the west of Great Bentley CCTV which is located only 170m on the Colchester side of that level crossing. It is not possible to have to a second stop signal so close to the existing signal for Clacton direction trains as there is not sufficient braking distance between the two signals.

If we were to move the current signal protecting Great Bentley CCTV level crossing for trains travelling in the Clacton direction (ie the signal to the west of Great Bentley CCTV level crossing) and put it at the Clacton end of the platform (to provide protection for E45 and/or E46 in respect of Clacton direction trains), this might overcome the issue about signal spacing and braking distances. However this would mean that we would now be using the signal protecting Thorrington CCTV level crossing (to the west of Great Bentley CCTV level crossing) to protect Great Bentley CCTV level crossing as well as Thorrington CCTV level crossing. This would result in a significant increase in the road closure time of Great Bentley CCTV level crossing resulting in significant increases in traffic queuing and, potentially, leading to poor behaviours of users driving through the level crossing during its closure sequence as they do not want to get caught for a long delay.

It is for those reasons that Network Rail does not consider that fitting technology to E45 and/or E46 would be the appropriate solution, not least given the potential for impact on the Great Bentley CCTV Level Crossing and its users (of which there are a significant number).

Frating AHB Clacton direction strike-in

Frating AHB Clacton direction stike-in (if stopped at signal) (Signal regulation)

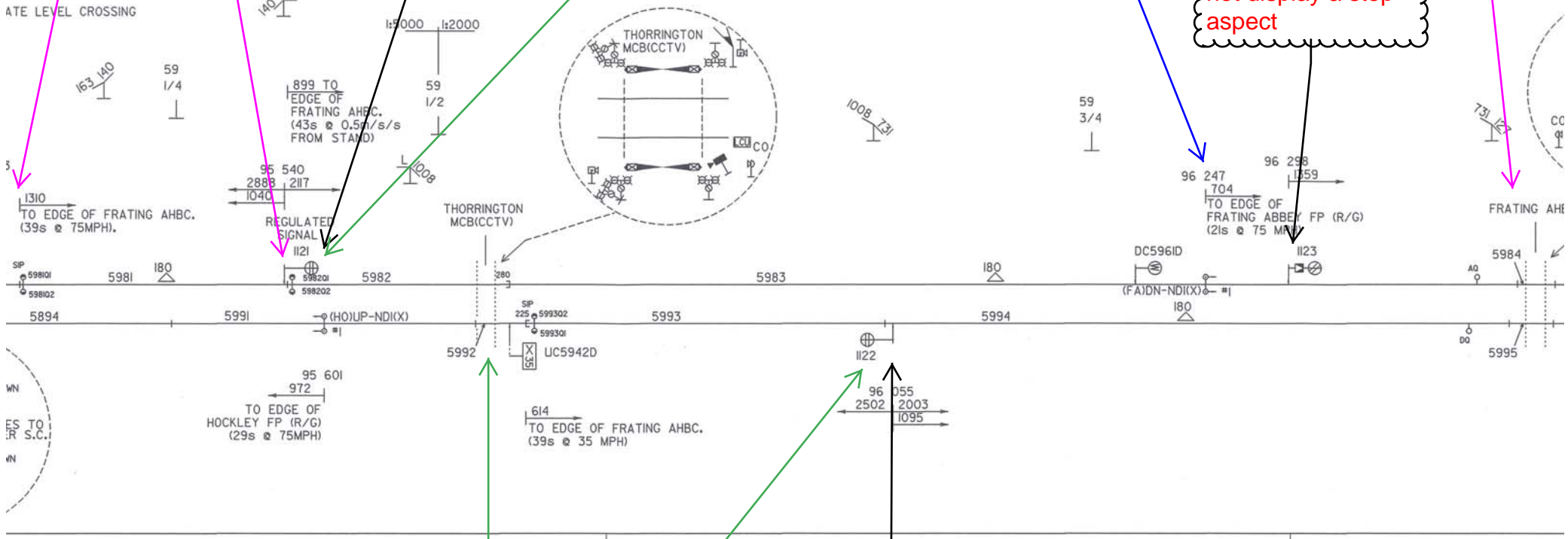
Signal capable of displaying a stop aspect

Protecting signal for Thorrington CCTV level crossing

Frating Abbey fp Clacton direction strike-in

Signal that does not display a stop aspect

Frating AHB

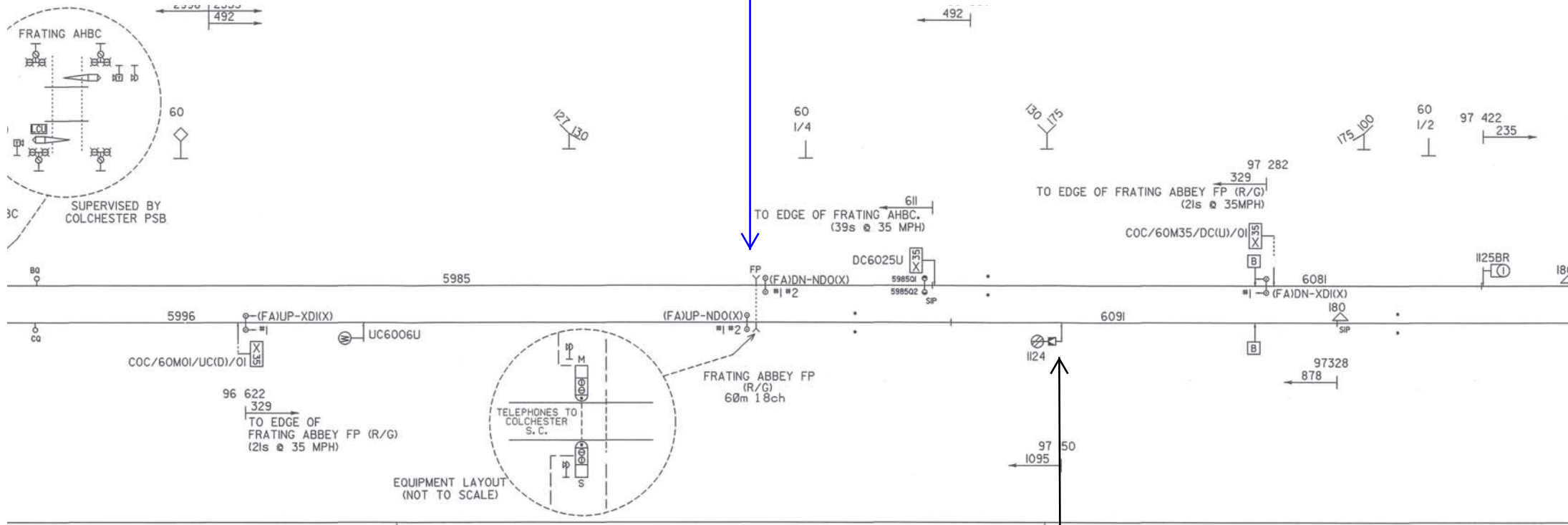


Thorrington CCTV level crossing

Protecting signal for Thorrington CCTV level crossing

Signal capable of displaying a stop aspect

Frating Abbey fp
level crossing



Signal capable of displaying a stop aspect

Signals

CCTV level crossings

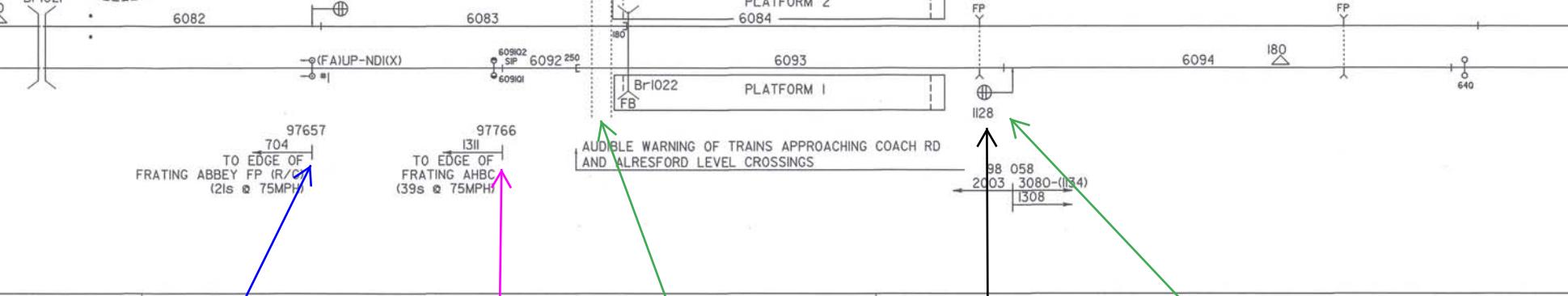
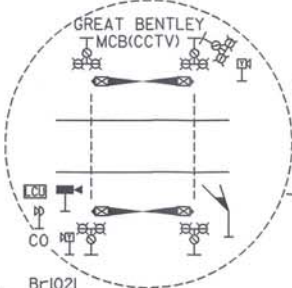
Frating AHB level crossing

Frating Abbey fp level crossing

Protecting signal for Great Bentley CCTV level crossing

Level crossing E45

Level crossing E46



97657
704
TO EDGE OF
FRATING ABBEY FP (R/C)
(21s @ 75MPH)

97766
1311
TO EDGE OF
FRATING AHB
(39s @ 75MPH)

Great Bentley CCTV level crossing

Protecting signal for Great Bentley CCTV level crossing

Frating Abbey fp Colchester direction strike-in

Frating AHB Colchester direction strike-in

Signal capable of displaying a red aspect