Sight Line for Street Works Technical Description

Background:

Blind and partially sighted people have a variety of strategies depending on the extent of their usable vision, their choice of mobility aid and other personal and biographical factors. One of the things most of them have in common however is the extent to which they rely on their mental maps of an area to navigate.

Because of this they are reliant on predictability in order to complete an independent journey and so unexpected changes, such as bus diversions or road works can be extremely disruptive.

The equipment used to sign and guard road was introduced in 1991 with the New Roads and Street Works Act and is described in Chapter 8 of the Traffic Signs Regulations and General Directions. When correctly deployed, it is effective in preventing blind and partially sighted people falling into an excavation but not at informing them what is happening and what they are expected to do.

Sight Line is a set of changes to this signing and guarding equipment to increase the information it provides to blind and partially sighted people with minimal impact on road works operatives workflow. It provides information in three ways: through tactile features, high-contrast visual features and digitally.

The system comprises the following changes to street works equipment and its use:

A line of raised hemispherical tactile dots 8 mm to 10 mm in diameter and 4 mm to 5 mm in height at 25mm centre spacing is presented on the reverse side of the barrier from the mandated reflective red and white visibility strip at a centre height of 970mm from ground level. This strip extends at least 1250 mm along the length of the barrier. The tactile strip should be presented on the side of the barrier pedestrians are required to be on.

A yellow and black graphic strip with a sawtooth pattern of at least 100 mm in height is presented on the reverse side of the barrier from the mandated reflective red and white visibility strip at a centre height of 895 mm from ground level. This strip extends at least 1250 mm along the length of the barrier. The yellow and black strip should be presented on the side of the barrier pedestrians are required to be on.

A black tactile arrow of 120 mm by 60 mm or cross of 85 mm by 60 mm is presented at a height of 970mm above ground level 5 mm proud of a yellow surface 270 mm to 290 mm in width on the first and last barriers closest to the building line. The cross is presented if the footway is closed and pedestrians should cross over to the other side of the road, whilst the arrow is presented if pedestrians are required to navigate around the works site on the same side of the footway or in a temporary footway in the carriageway.
A bluetooth proximity beacon is also presented on the first and last barriers closest to the building line along with a QR code carrying the beacon's unique identification information. When the site is set up information about the site layout, length and duration of the works, along with any relevant additional details, such as the presence of entrances within the site or the movement of a bus stop, is associated with the beacons' IDs and GPS coordinates and logged in the Sight Line database by an app used by the operatives.

The 'PEDESTRIANS' arrow sign (diagram 7018) and 'PEDESTRIANS PLEASE USE OTHER FOOTPATH" signs are attached to the barriers. Free standing signs should not be used.

The tactile arrow or cross, bluetooth proximity beacon and pedestrians signs may be combined into a single item or two items.

Blind and partially sighted people are able to use the additional information provided by the Sight Line system in three ways:

People carrying a smartphone they can use the Sight Line app to retrieve an audio description of the site configuration based on the information logged by the operatives. The app is triggered to retrieve and deliver the information when the proximity beacon is detected, typically as a distance of 5 to 20 m from the beacon.

People who rely primarily on tactile information that can use the tactile dots to confirm that they have encountered road works and that they are on the correct side of the barriers. If they follow the tactile dots they should be able to locate the first tactile arrow or cross which will indicate to them in which direction they should be following the barriers or if they should cross to the other footway instead. In the case of the arrow if they continue to follow the tactile dots as they move past successive barriers they should reach the tactile arrow at the other end of the site which indicates to them that they have reached the end and should be attempting to reorientate themselves.

People who rely primarily on their available vision can use the strong visual contrast between the yellow and black graphic strip and the red and white one to determine that they are on the correct side of the barriers. They also may be able to visually identify the presence of the tactile arrow or cross due to their height and contrast with their background. They may also be able to see the arrow on the pedestrian sign.

Ross Atkin Associates

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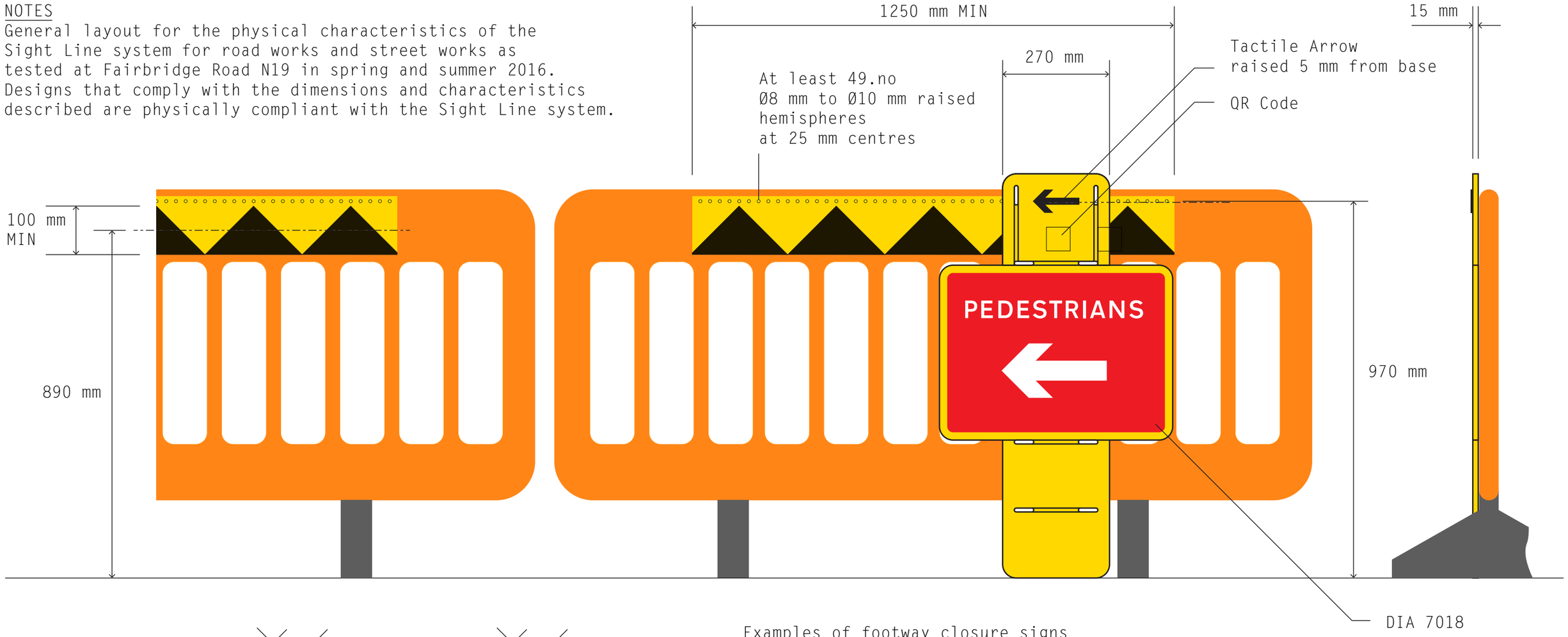
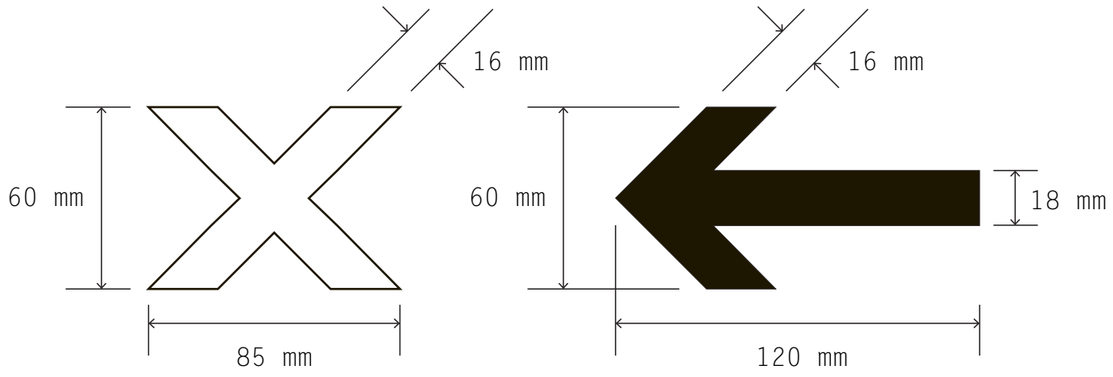
NOTES

General layout for the physical characteristics of the Sight Line system for road works and street works as tested at Fairbridge Road N19 in spring and summer 2016. Designs that comply with the dimensions and characteristics described are physically compliant with the Sight Line system.

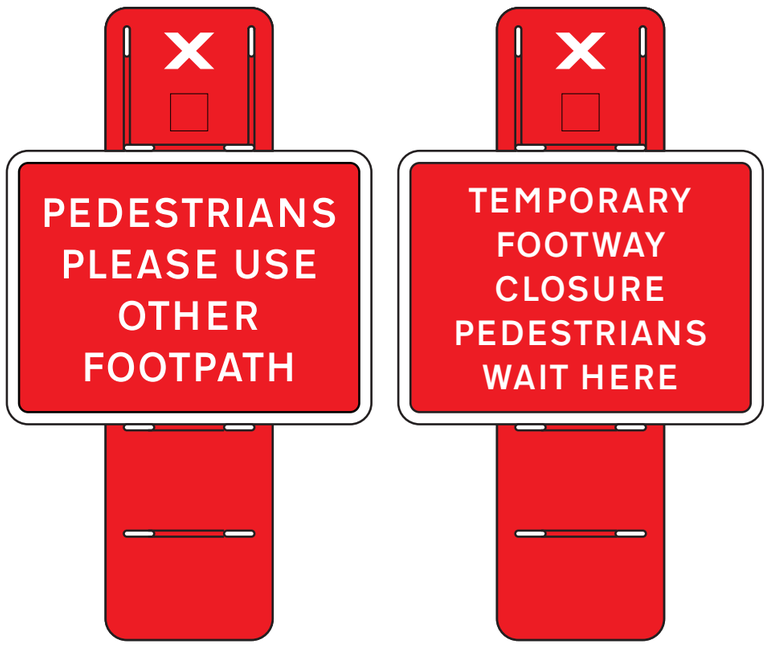




Tactile CROSS for footway closure
SCALE 1:2

Tactile ARROW for non-closure
SCALE 1:2

Examples of footway closure signs

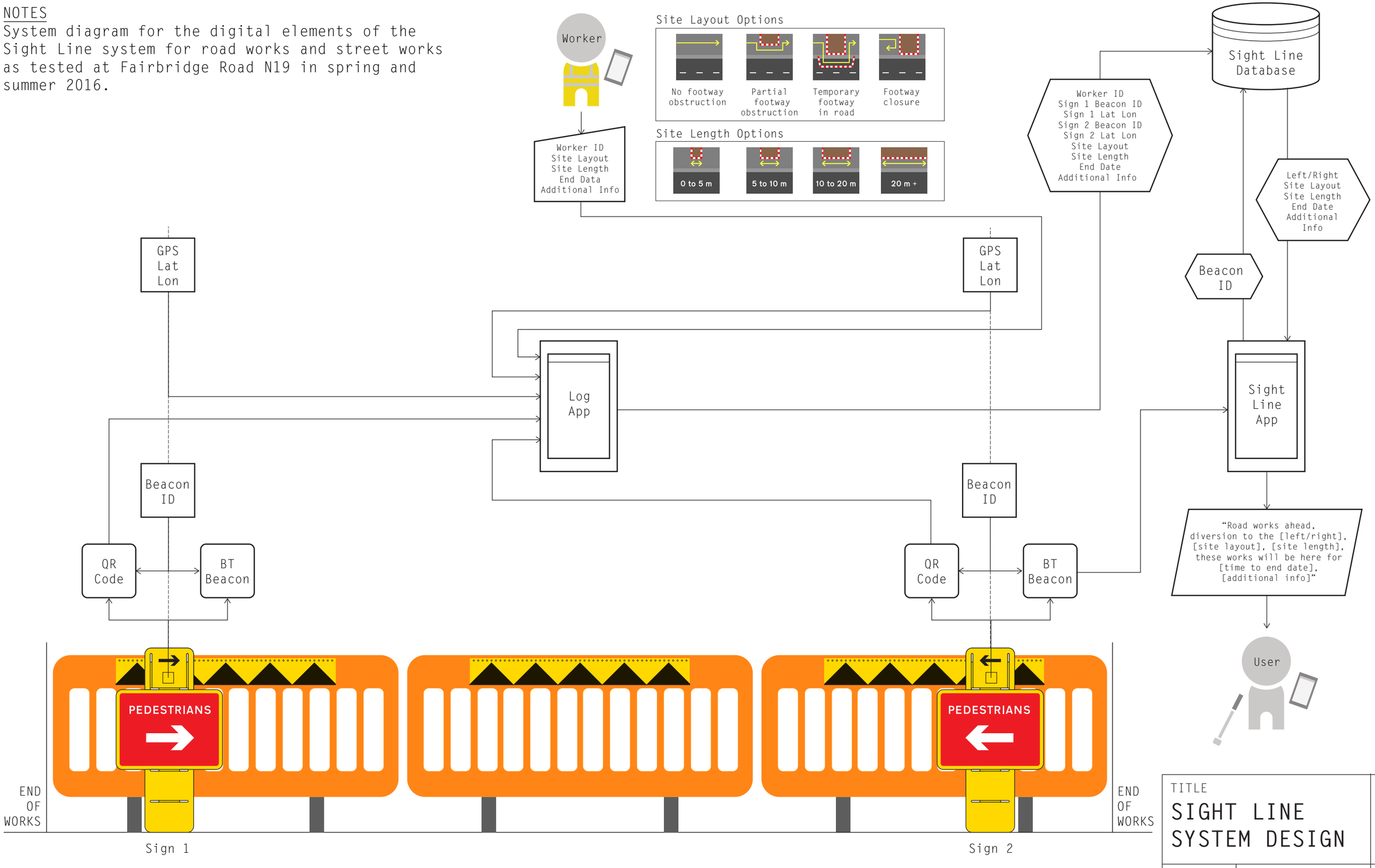


TITLE		SCALE
SIGHT LINE LAYOUT DESIGN		1:10
DATE	NOTES	ISSUE
21/10/16		01

Ross Atkin Associates
2nd Floor, 90 Main Yard
90 Wallis Road, E9 5LN
+44(0)7790802370
ross@rossatkin.com

NOTES

System diagram for the digital elements of the Sight Line system for road works and street works as tested at Fairbridge Road N19 in spring and summer 2016.



TITLE SIGHT LINE SYSTEM DESIGN		SCALE N/A
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Ross Atkin Associates
2nd Floor, 90 Main Yard
90 Wallis Road, E9 5LN
+44(0)7790802370
ross@rossatkin.com