

# Overview – Hele flood alleviation



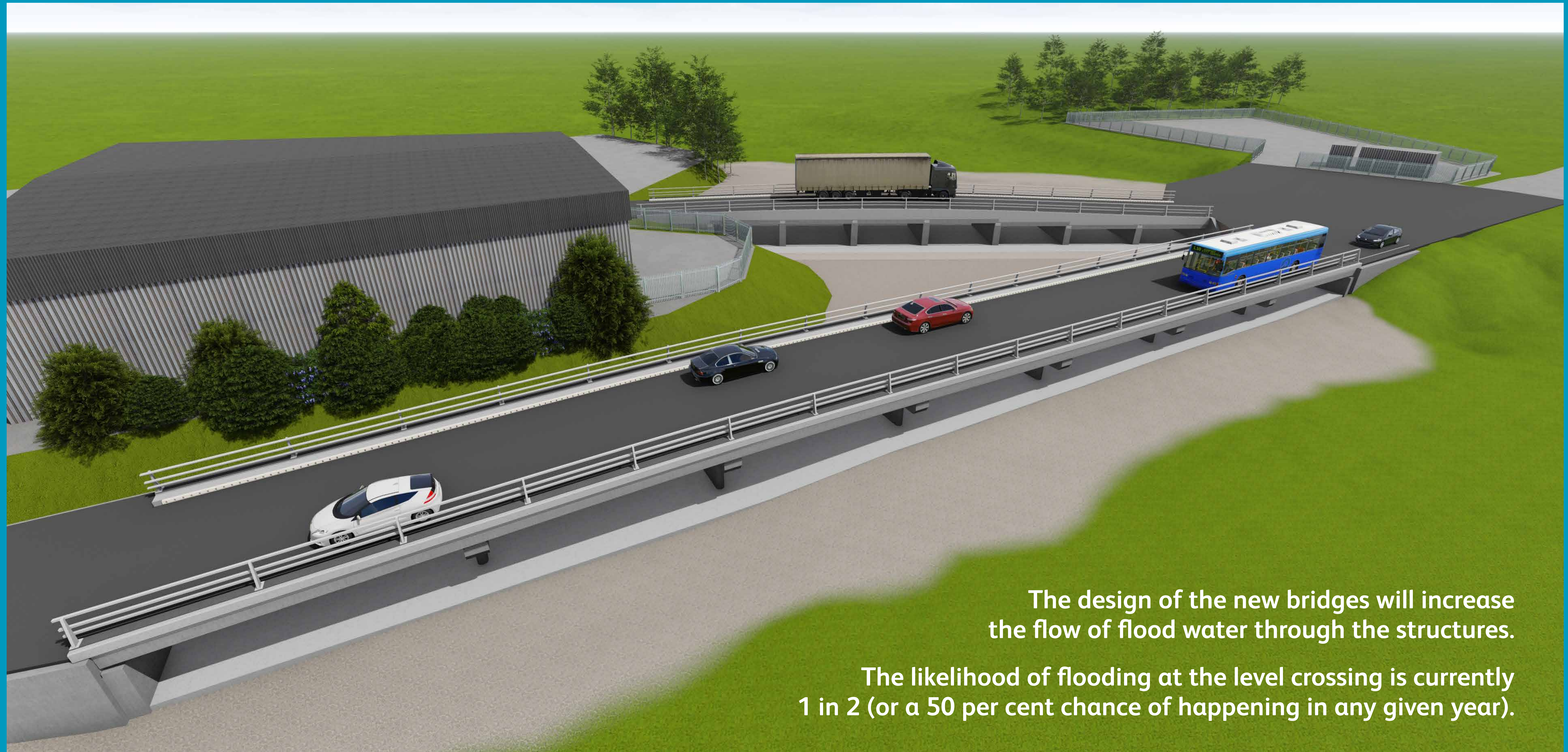
This £7.2m scheme is part of the Department for Transport's £31.5m package of work to reduce flooding between Paddington and Penzance. It follows flood defence work at Cowley Bridge Junction, near Exeter, and the new sea wall at Dawlish. Together, these schemes will reduce disruption on the crucial railway line that connects the South West to the rest of the country.

The scope of the work at Hele will include:

- Demolishing Station Road bridge and building a new raised viaduct
- Building a raised access bridge to Devon Valley Mill before demolishing the existing bridge, subject to agreement with the mill owners
- Reprofiling of the flood basin
- Local flood mitigation at Hele Square, subject to agreement with affected residents.



# Impact and benefits



The design of the new bridges will increase the flow of flood water through the structures.

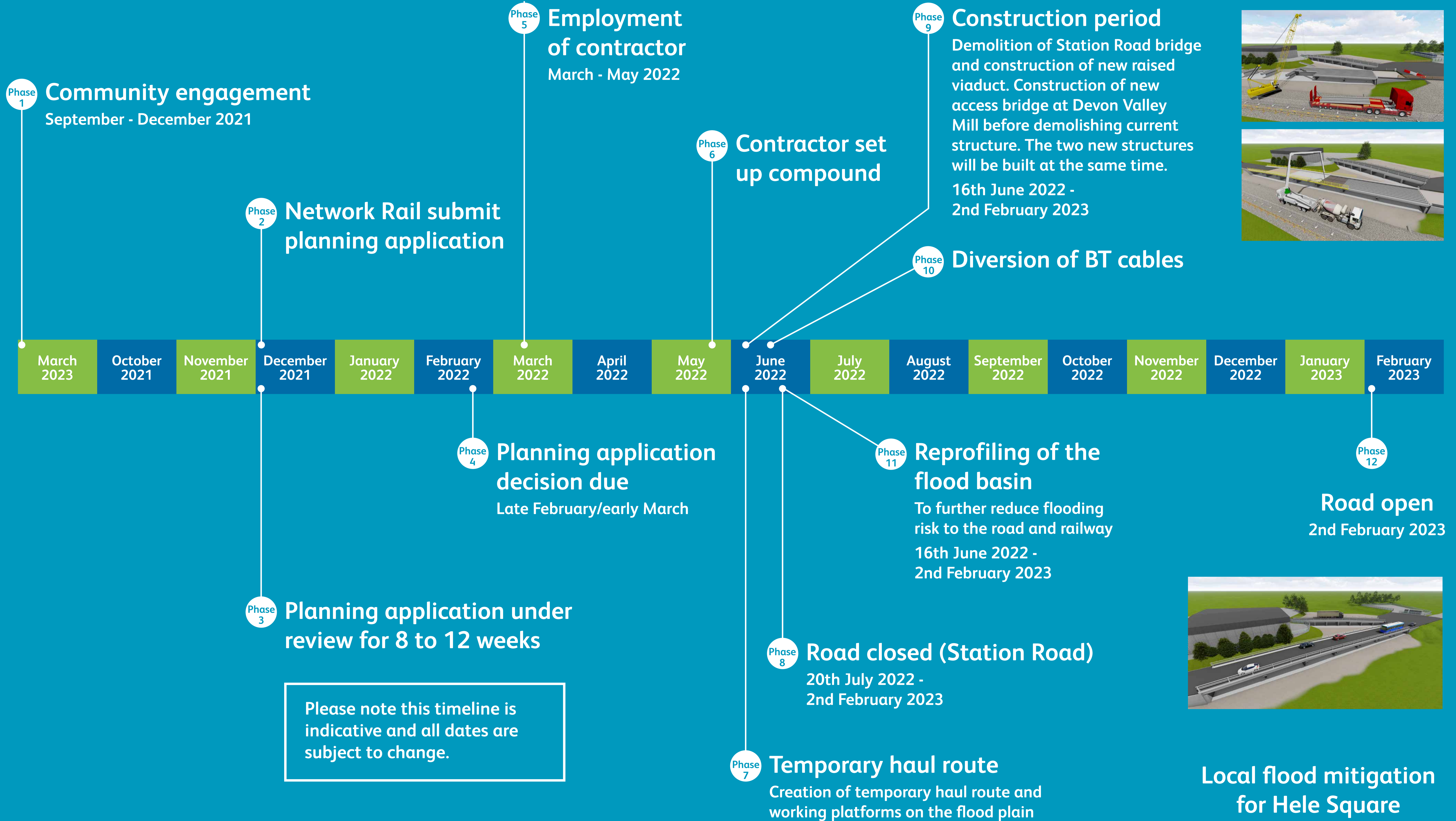
The likelihood of flooding at the level crossing is currently 1 in 2 (or a 50 per cent chance of happening in any given year).

The revised modelling shows that our scheme will reduce that to 1 in 5 (20 per cent chance) under present conditions. Flood risk has been assessed up to a 1 in 1000 (0.1 per cent chance) with rainfall and river flows as they are today. The impacts of climate change have been tested by increasing the 1 in 100 (1 per cent chance) flows by 61 per cent. This is in line with the latest guidance on the increase in river flows due to climate change over 100 years.

- Frequency and intensity of flood events on the railway, the road, at the mill and the pub will be reduced.
- Flooding will generally reduce in Station Yard
- There will be fewer and shorter closures for road and rail passengers and freight, and less damage to some local businesses
- The scheme will improve safety on Station Road with new barriers and a raised footpath
- Reducing the risk of flooding will help to boost economic growth by reducing disruption to the road and rail network.



# Proposed timeline

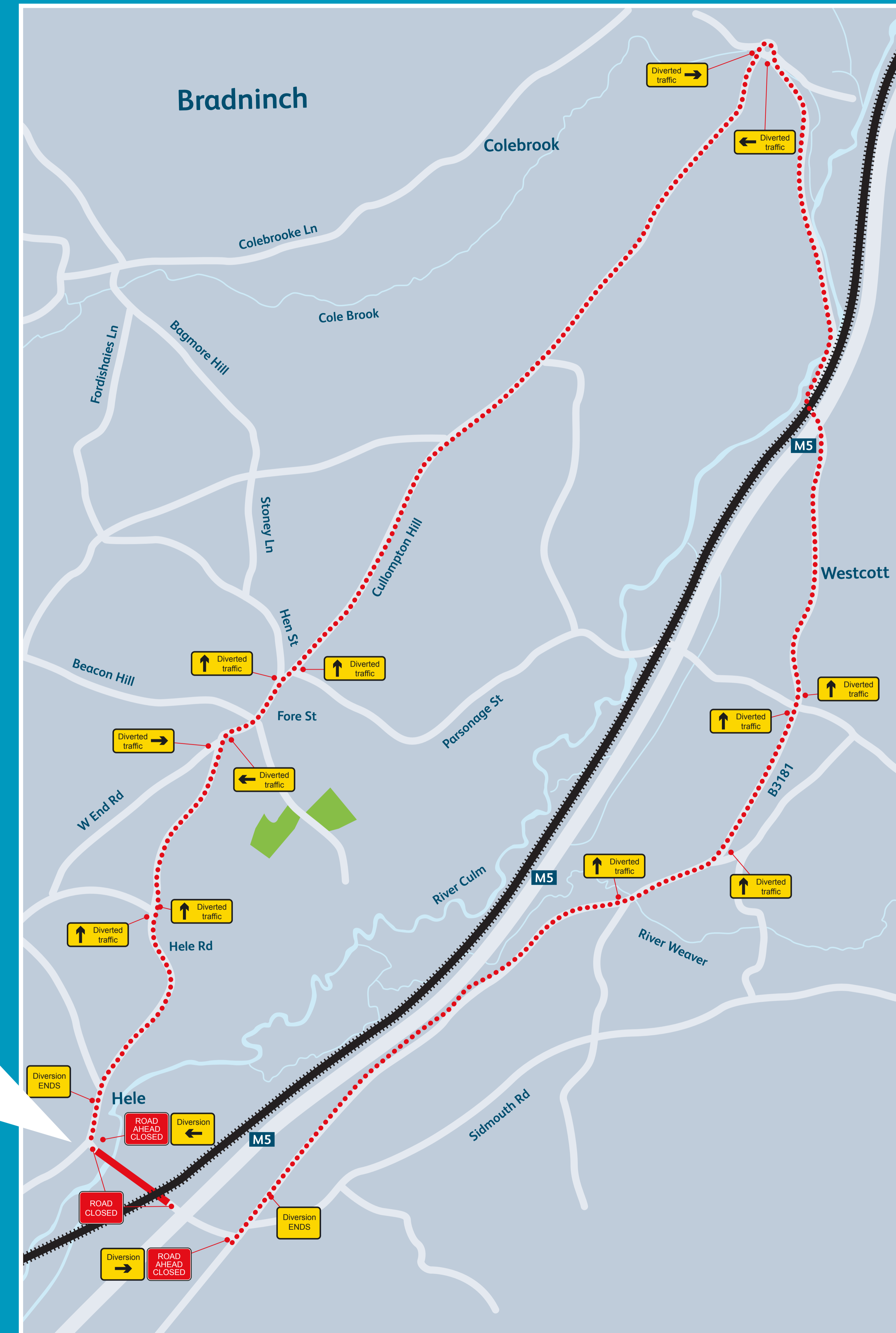
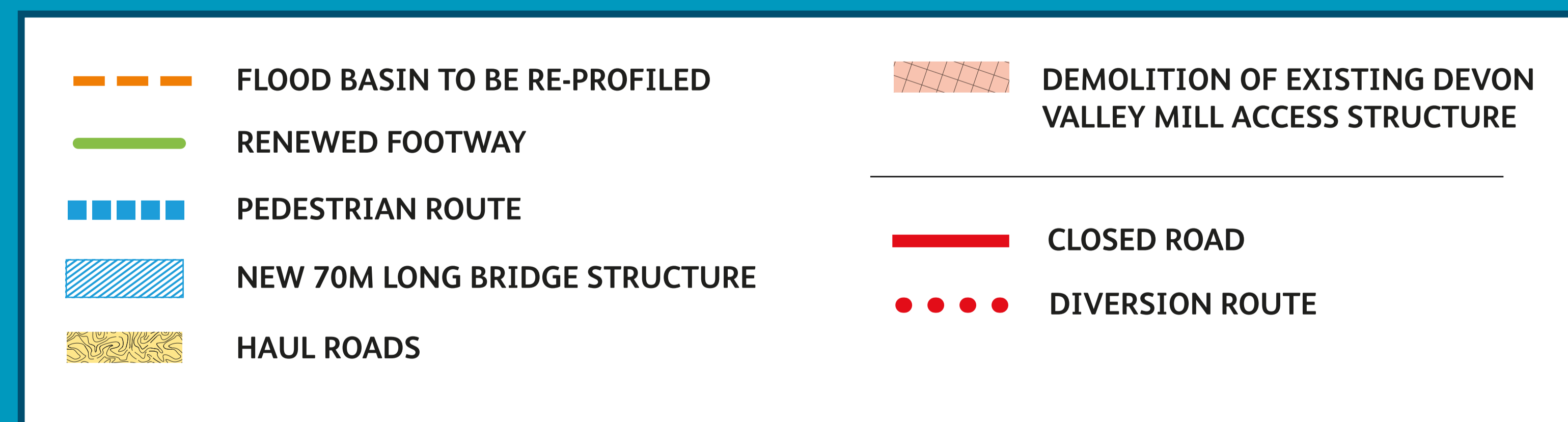
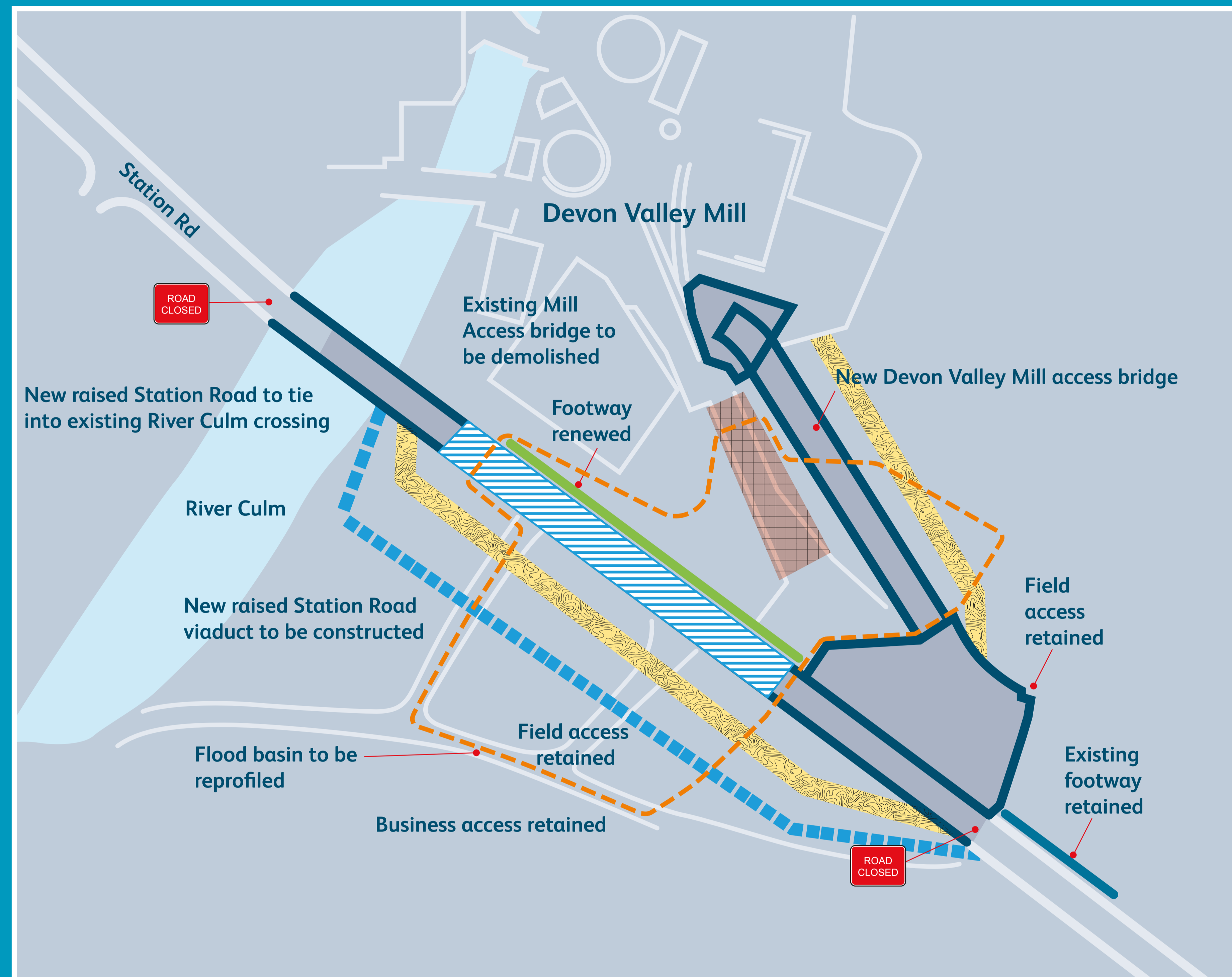


Please note this timeline is indicative and all dates are subject to change.

**Local flood mitigation for Hele Square**  
(subject to agreement with property owners).  
Timing to be confirmed.



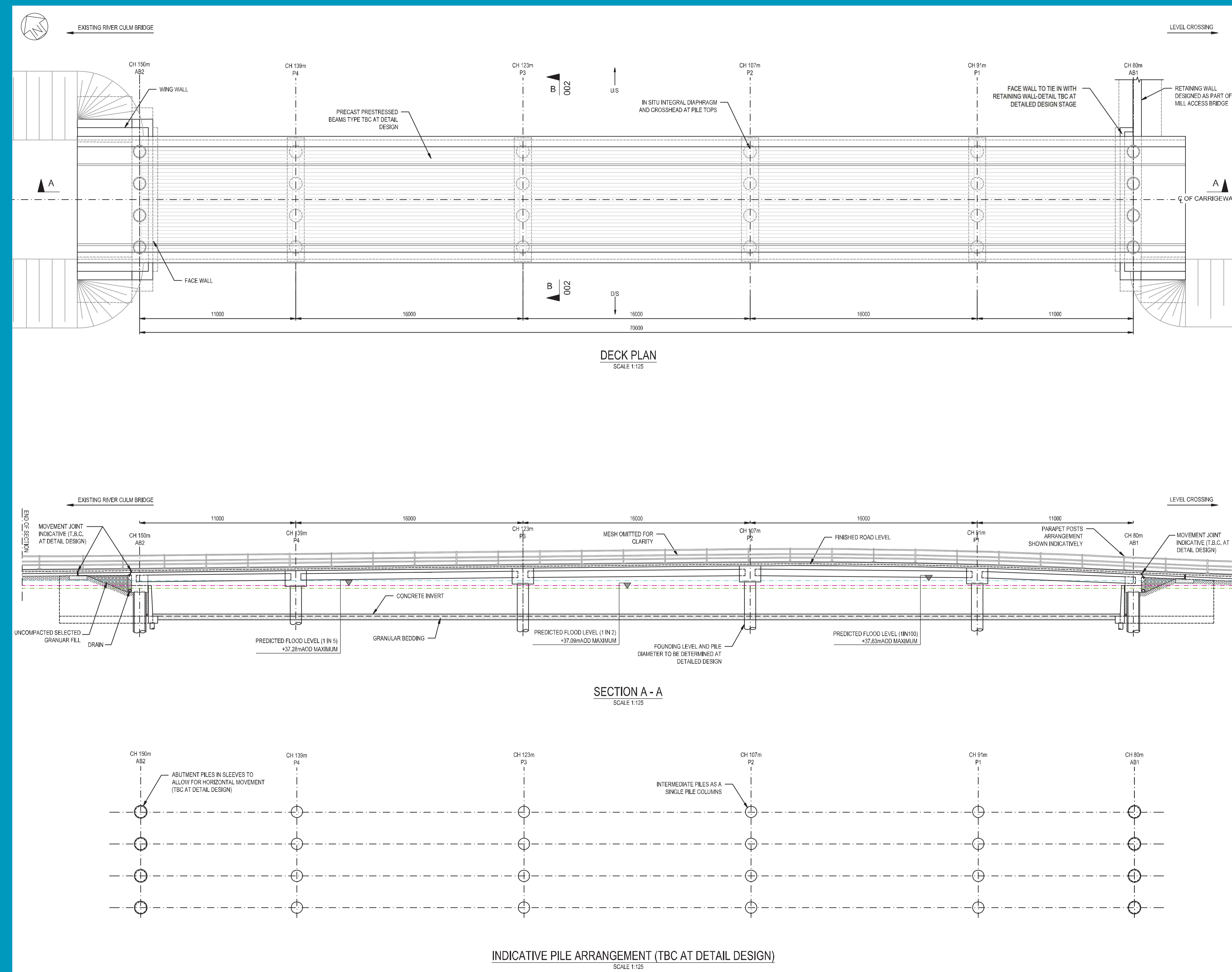
# Proposed diversions



To carry out the work safely, we will need to close Station Road for approximately 32 weeks. We will apply to Devon County Council for permission to close the road with a proposed diversion route as shown. Pedestrians will be able to cross the railway via a temporary route.



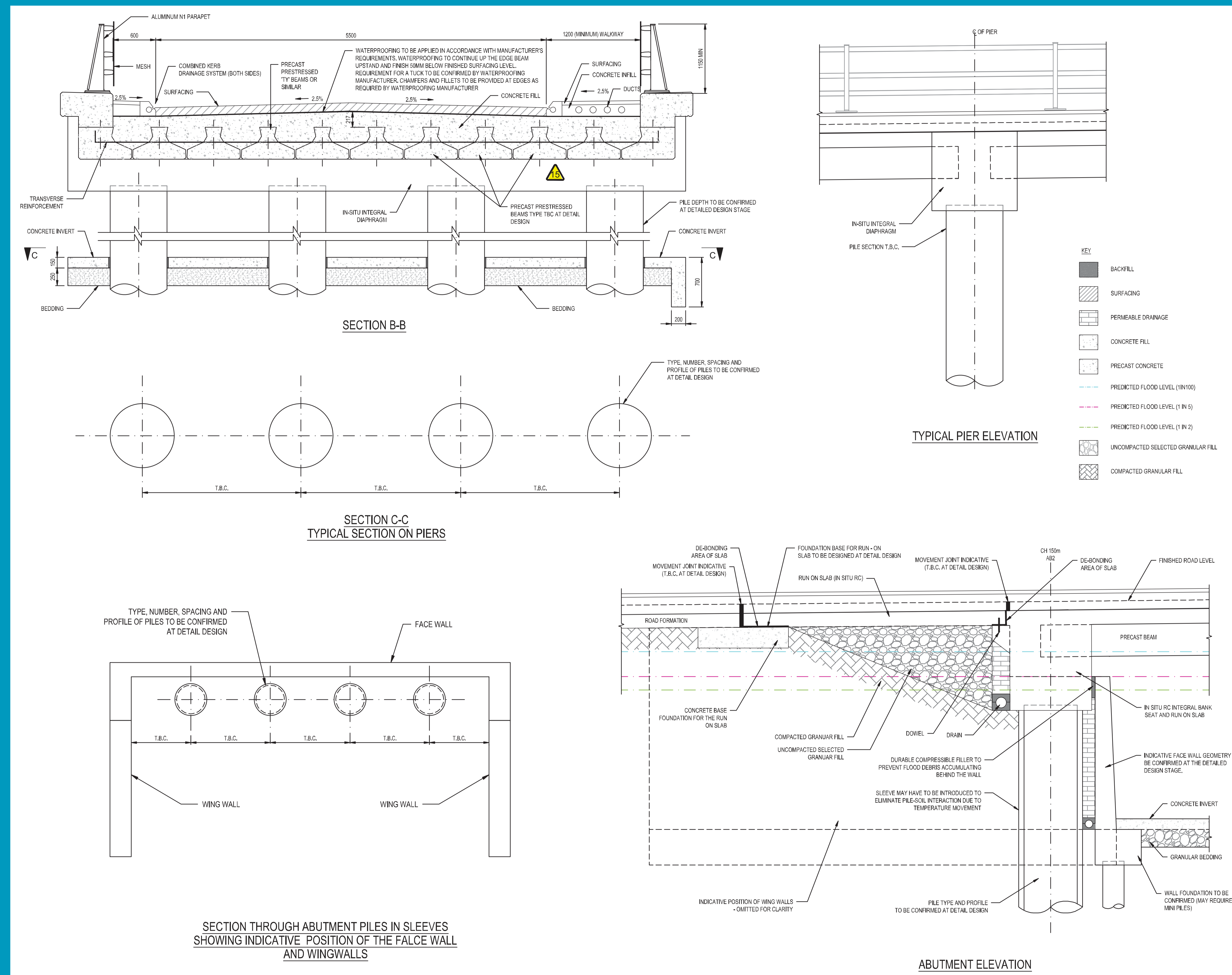
# Design – Station Road viaduct



The new Station Road Viaduct will be 70m in length, made up of five continuous spans supported by columns and will be constructed from reinforced concrete. From a driver's perspective, the road alignment will be slightly raised compared with the existing level. The new structure will have a slender appearance and will have metal parapets, covered in mesh, on both sides.



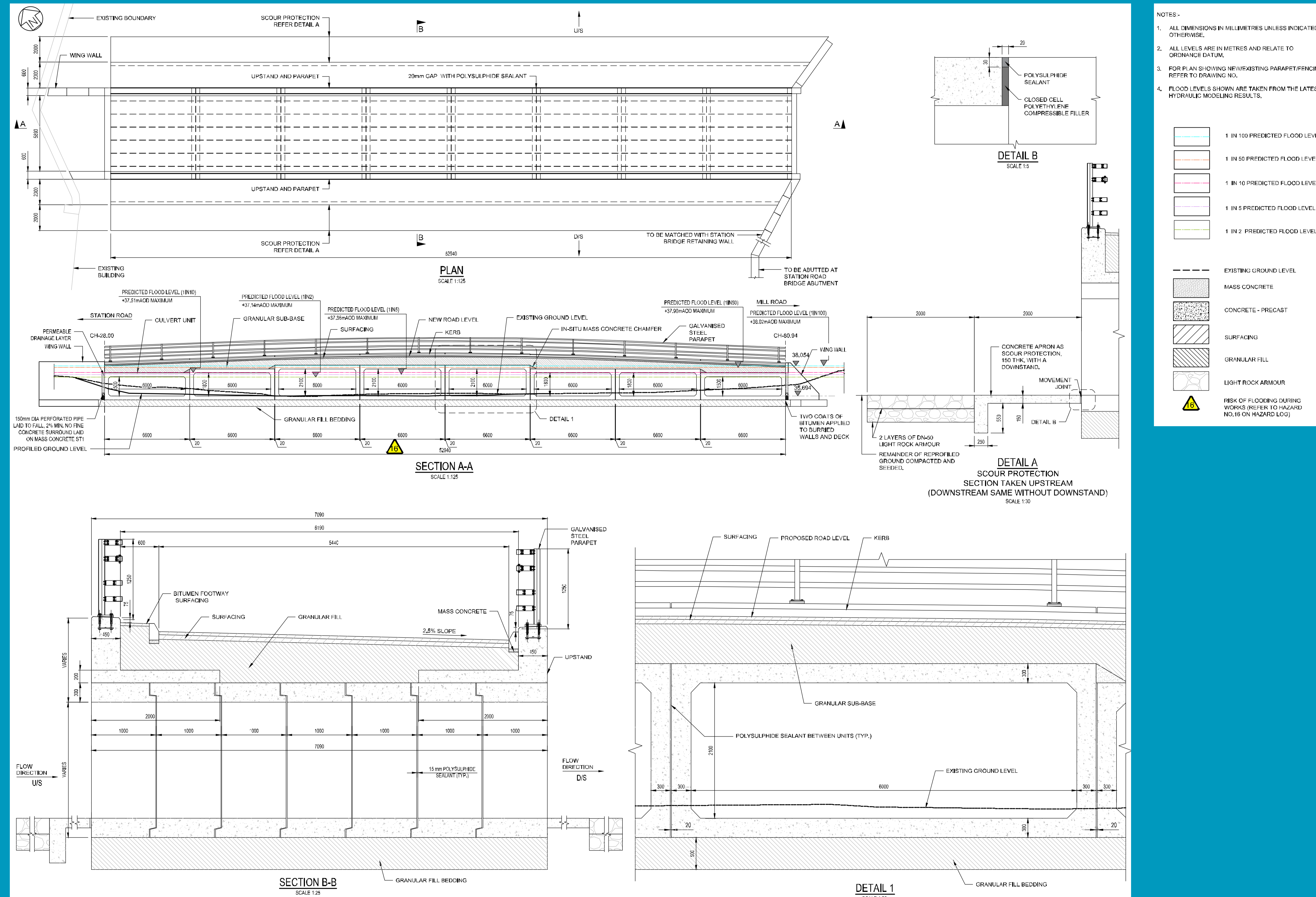
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# Design – access bridge, Devon Valley Mill



The Devon Valley Mill access bridge will be a 53m series of box culverts constructed from reinforced concrete, which will be similar in appearance to the existing structure.

The new bridge will be slightly longer than the current one as it is located further upstream on the flood plain so that we can keep the existing access to the mill open during construction work.

The road level will also be slightly higher than existing and a metal parapet covered in mesh will be provided on both sides.



# Flood modelling



The revised modelling includes the previous model of the local area but has also been extended up to Woodmill gauge (approximately 5km upstream of Hele) and to approximately 1km downstream of Killerton Mill.

By widening the area modelled, we have improved our understanding of the impact our proposals and we have greater certainty of the water levels.

Additional topographic surveys (collected in July 2018 and June 2020) have been included within the model for Hele Square, Station Road and Station Yard, and for the entrance area and flood defence wall at Devon Valley Mill. We've also incorporated information provided by residents.

The model has been calibrated and validated based on four flood events and the Environment Agency is reviewing the Flood Risk Assessment before it is submitted as part of our planning application.



## Hele Square

The new model shows there would be a small increase in the likelihood of flooding at 1-3 Hele Square and the garage of no 4, if the properties remain undefended.

The onset of flooding would increase from between 1 in 50 years and 1 in 100 years at present (or two per cent chance of flood happening in any given year), to between 1 in 50 years and 1 in 20 years (five per cent chance) after the development.

Without any flood protection measures in place, these properties are likely to experience flooding to an increased depth. This is predicted to be up to a 140mm increase for all flood events up to the 1 in 100 (one per cent chance).

We are proposing protection measures that would greatly reduce the impact of flooding for Hele Square which are under discussion with the residents.

The homes at 4 to 8 Hele Square are not predicted to flood currently, nor if the Network Rail scheme goes ahead.