TEMPORARY BRIDGE
(Leven Railway Bridge Replacement)

Works Programme & Method Statement

Roads & Transportation Services
Fife Council
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1 Introduction

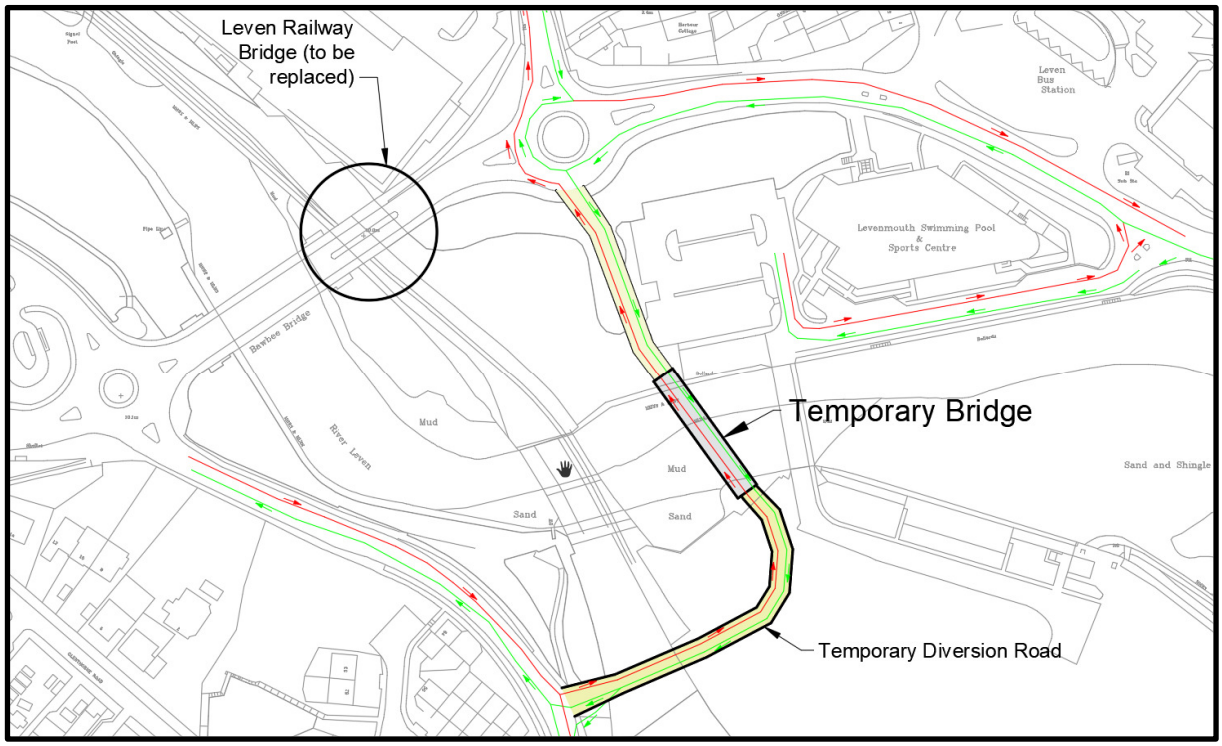
Fife Council intends to replace the deck of A955-30B Leven Railway Bridge and carry out concrete repairs to the adjacent bridge, A955-20B Bawbee Bridge. This will permit removal of the existing 18 tonne weight restriction at this crossing and facilitate construction of the new electrified Leven Railway.

The road crossing the bridge will be closed for the duration of the works.

To mitigate the effects on traffic flow, a temporary diversion road will be built on the east side of Leven Railway Bridge. The temporary diversion road will link B932 South Street with the roundabout near the bus station in Leven, see picture below. The temporary diversion road will have to cross the River Leven, therefore it will be necessary to install a temporary bridge.

The temporary bridge crosses the tidal reach of the River Leven and therefore the scheme falls under the remit of Marine Scotland and requires a Marine Licence to cover the construction activities within the tidal zone.

The temporary bridge will be a bailey bridge 54m long and 13m wide.



The nature of the works will consist in construction of the temporary foundations/abutments and installation of a temporary bailey bridge. As will be explained in sections below, the methodology used for the installation of the bridge will be by launching.

The deck will be above water level at all times and the foundations will be constructed on the land behind existing retaining walls. So, no work within the water is necessary.

2 Programme for the works

START DATE SUBJECT TO STATURY CONSENTS FOR THE WORKS: 25TH APRIL 2022

- Contractor mobilisation: 2 weeks. (Completion date: 6th May 2022)
- Site Establishment and preparation works: Foundations and Abutments construction – 3 weeks (Completion date: 27th May 2022)
- Installation of the temporary bridge: 3 weeks. (Completion date: 17th June 2022)

LEVEN RAILWAY BRIDGE REPLACEMENT WORKS. (COMPLETION DATE: 30TH JUNE 2023)

- Temporary bridge dismantling: 3 weeks (Completion date: 21st July 2023)
- Foundations/abutment dismantling: 2 weeks (Completion date: 4th August 2023)

COMPLETION DATE FOR THE WORK: 4TH AUGUST 2023

3 Method Statements

3.1 Foundations/abutments

Construction of the foundations/abutments of the temporary bridge are beyond the MHWS boundary and only the steel sheet piling and concrete piles will be below the MHWS.

1.- Steel sheet piling will be installed between the foundations of the temporary bridge and existing wall. The object of the steel sheet piles is to minimize the horizontal load against the existing wall. The Contractor will use 40 tonne excavator (using vibrator or impact attachments) or a pilling rig to drive the steel sheet piles.

2.- Excavation will be carried out to formation level. The excavation will be carried out using mechanical plant and trucks to remove the material. The material will be stored on site.

3.- Installation of the concrete piles. Preference will be given to lower noise/vibration techniques if the design requirements can be met.

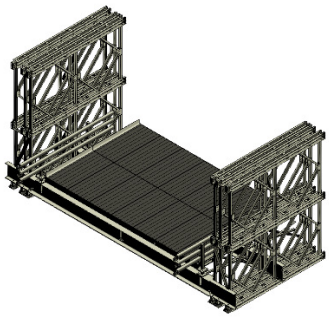
4.- Constructing the in-situ concrete cap.

5.- Installation of the lego precast concrete blocks.

6.- Construction of the in-situ concrete bearing plinth.

3.2 Temporary Bridge Installation

The temporary Bailey Bridge is a segmental bridge. It consists of individual sections as shown below.



3.2.1 Unloading of bridge units from transport

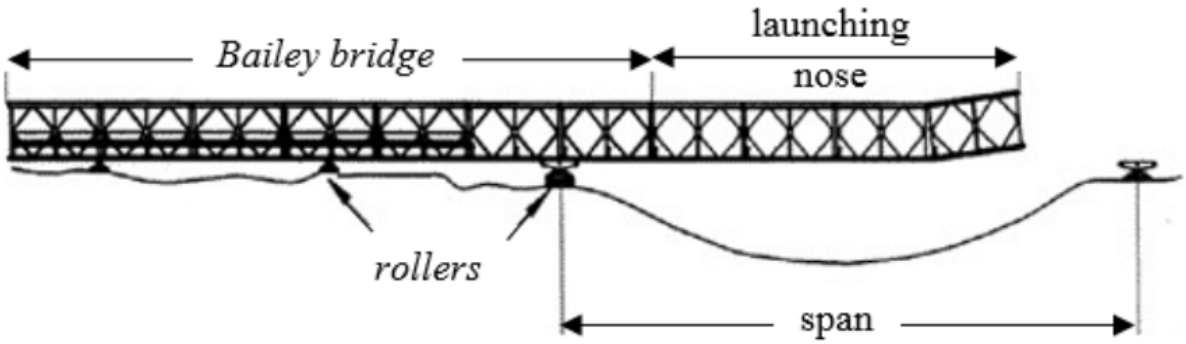
The temporary bridge will arrive on site dismantled in sections. These sections will be unloaded on the south side of the River Leven.

3.2.2 Construct Launch Nose.

The launching of the bridge will be done from the south side of the River Leven. Launch Nose will be built.

3.2.3 Launching procedures

1. Rocking rollers will be installed on top of the south abutment and also on the south side of the south abutment, as shown in picture below.



2.- Sections of the bridge will be connected to each other until they reach a total length of 15 m. These sections will be connected to the launching nose.

3.- The launching nose will be resting on the roller located on top of the south abutment and the sections behind will be resting on the other rollers located at the back.

4.- From the back, a 40 tonnes dozer will push forward, slowly moving the bridge on the rollers. The bridge will be moved forward in stages of 6-9m.

5.- Each time that the bridge has moved 9 m, other sections will be connected at the back of the bridge and the dozer will push forward the bridge.

6.- This process will continue until the launching nose reaches the landing rollers at the north side of the River Leven.

7.- Using suitable hydraulic cylinders the bridge will be lifted and the rollers will be removed.

8.- Bearing shoes will be installed and the construction of the abutments will be completed.

9.- Carefully lower the bridge onto the bearings, jacking and packing as necessary.