

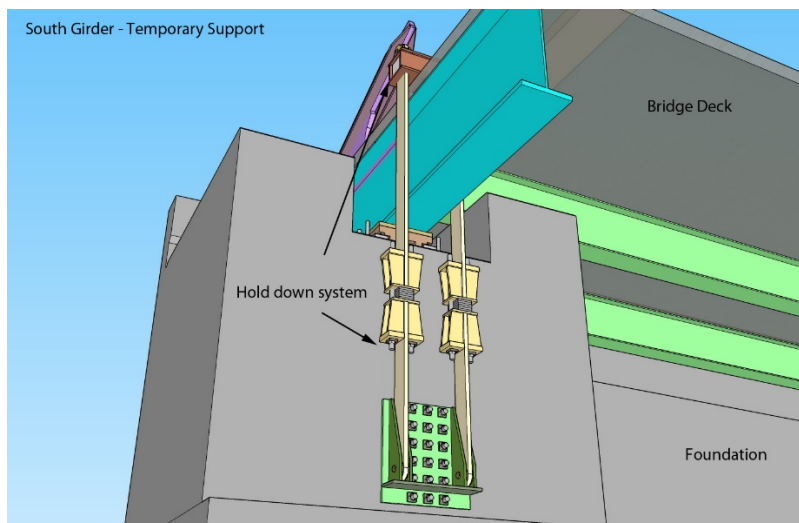
Nipigon River Bridge – Permanent Retrofit

September 22, 2016

Temporary Support

On February 26, 2016, the installation of a temporary support was completed and the Nipigon River Bridge reopened to two lanes of traffic.

The temporary support consists of a hold down system anchored to both the girder and the bridge foundation and will remain until the permanent retrofit is in place.

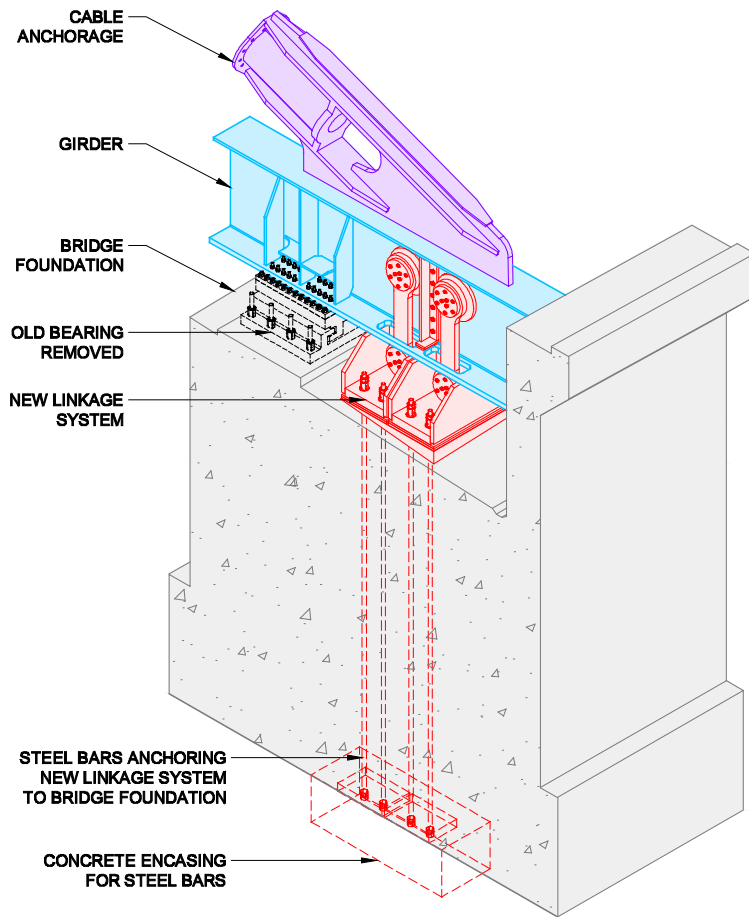


Permanent Retrofit

The design of a permanent retrofit for the bridge is well underway and will be reviewed by Associated Engineering (Ont.). The design criteria for the permanent retrofit included:

- Robust system with a built-in backup
- Minimize impact to the portion of the bridge already built
- Components can be inspected and maintained/replaced with minimal interruption to traffic
- Minimal aesthetic impacts

The solution chosen meets all of these criteria and consists of a linkage anchoring the girder to the bridge foundation. The design concept includes vertical bars placed at each girder end with pins at top and bottom of the bars, allowing longitudinal movement and rotations but preventing uplift.



This concept has been used on other on cable-stayed bridges, including ones in Quebec and Kentucky. The permanent retrofit has been reviewed by Associated Engineering (Ont.) and they have agreed it is appropriate for the Nipigon River Bridge. The permanent retrofit will allow the bridge to function safely for its intended useful life. The ministry is also developing an inspection manual specific to the Nipigon River Bridge.

The permanent retrofit means that the existing bridge design will be modified. The south half of the bridge will be constructed using only the permanent retrofit – the original shoe plate and bearing will not be needed. The permanent retrofit will be installed on the existing north half of the bridge which will allow for the removal of the temporary support.