

CASE STUDY

AmeySRM | Offline Bridge Construction – 01/02/22

Introduction

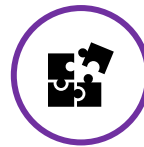
This cases study describes the good work done with regards to Design Risk Management in determining offline bridge construction on the A533 Expressway Bridge Replacement Project



Overview

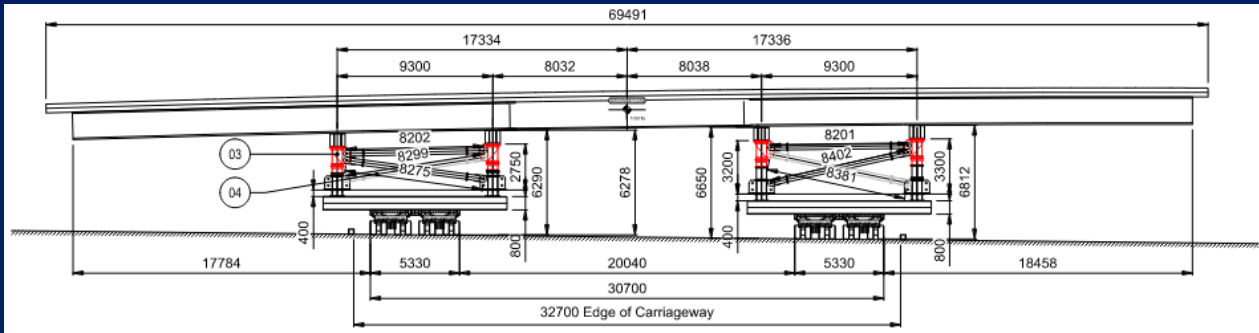
Driven by their strategy to reduce impact on the customer (road user) National Highways set the challenge to replace the A533 bridge over the M56 with the absolute minimum number of road closures. We engaged fully with the preliminary proposal to construct the bridge deck in the compound 'offline' and transport and jack into its final position in a single motorway closure.

We worked closely with our specialist supply chain partner Sarens to ensure that the design remained feasible when accounting for the temporary loading conditions imparted during transport and jacking.



Challenges





Action Taken

Initially the design to allow for off line construction used a single prop resulting in long cantilevers and large steel plate sections. Further design development was undertaken through liaison with Sarens to reduce the amount of steel by modifying the prop arrangement to reduce the cantilever. Not only was this cost effective, the substitution of work on bespoke plate girders with assembly of standard proprietary components reduced overall manufacturing H&S risk.

Results



This solution brings extensive Health and Safety benefits to road users and construction workers as a result of eliminating the need to work above the motorway. We have effectively eliminated the work at height (falling) risk to our workforce and the risk of falling objects to public. Vastly reduced the number of motorway closures has reduced vastly, maintaining networks efficiency and therefore improving road user safety.

Further benefits of constructing the bridge deck off line result from the ability to emulate a 'factory' working environment. As the work area is more static than traditional construction work areas, risk will be reduced by having long term quality access routes, storage areas.



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home
safe
and well

