

TECHNICAL NOTE

DATE:	26 September 2025	CONFIDENTIALITY:	Public
SUBJECT:	Tipner Regeneration Project - Tipner Bridge Feasibility Study		
PROJECT:	UK-70098718	AUTHOR:	Justin Sherlock / Graham Evans
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INTRODUCTION

WSP has been commissioned by Portsmouth City Council (PCC) to review options for and undertake a high-level engineering feasibility study for delivery of the Tipner Bridge as part of preparation of the evidence base for the emerging Portsmouth Local Plan.

The principle of delivery of a bridge link between Tipner West and Horsea Island East (HIE) has been long established. A number of studies have been undertaken previously to consider the feasibility, cost and impacts of delivery of this link.

This study reviews and builds on those previous studies to assist in understanding the feasibility of delivery of the bridge link in response to the constraint imposed by Portsmouth Harbour's designation as a Special Protection Area (SPA). Specifically, PCC have asked WSP to consider the engineering feasibility of delivery of a bridge that has no adverse impacts on the SPA that cannot be mitigated impacts on the SPA by following an alignment parallel to the M275 and as much as possible avoids infrastructure within the SPA.

Following this introduction the remainder of this bridge study is structured as follows:

- Section 2 provides a summary of previous studies undertaken to consider the Tipner West to HIE bridge link
- Section 3 considers new options that respond to the request for no adverse impacts on the SPA that cannot be mitigated; and
- Section 4 provides a summary and next steps

PREVIOUS STUDIES

A number of studies have been undertaken historically to consider options for the bridge link. The main studies considered here are:

- Tipner, Port Solent and Horsea Island Bridge Feasibility Study - Peter Brett Associates (2010)
- Tipner Regeneration Project Horsea Island East Bridge – Options Review – WSP (2019)

2010 PBA Study

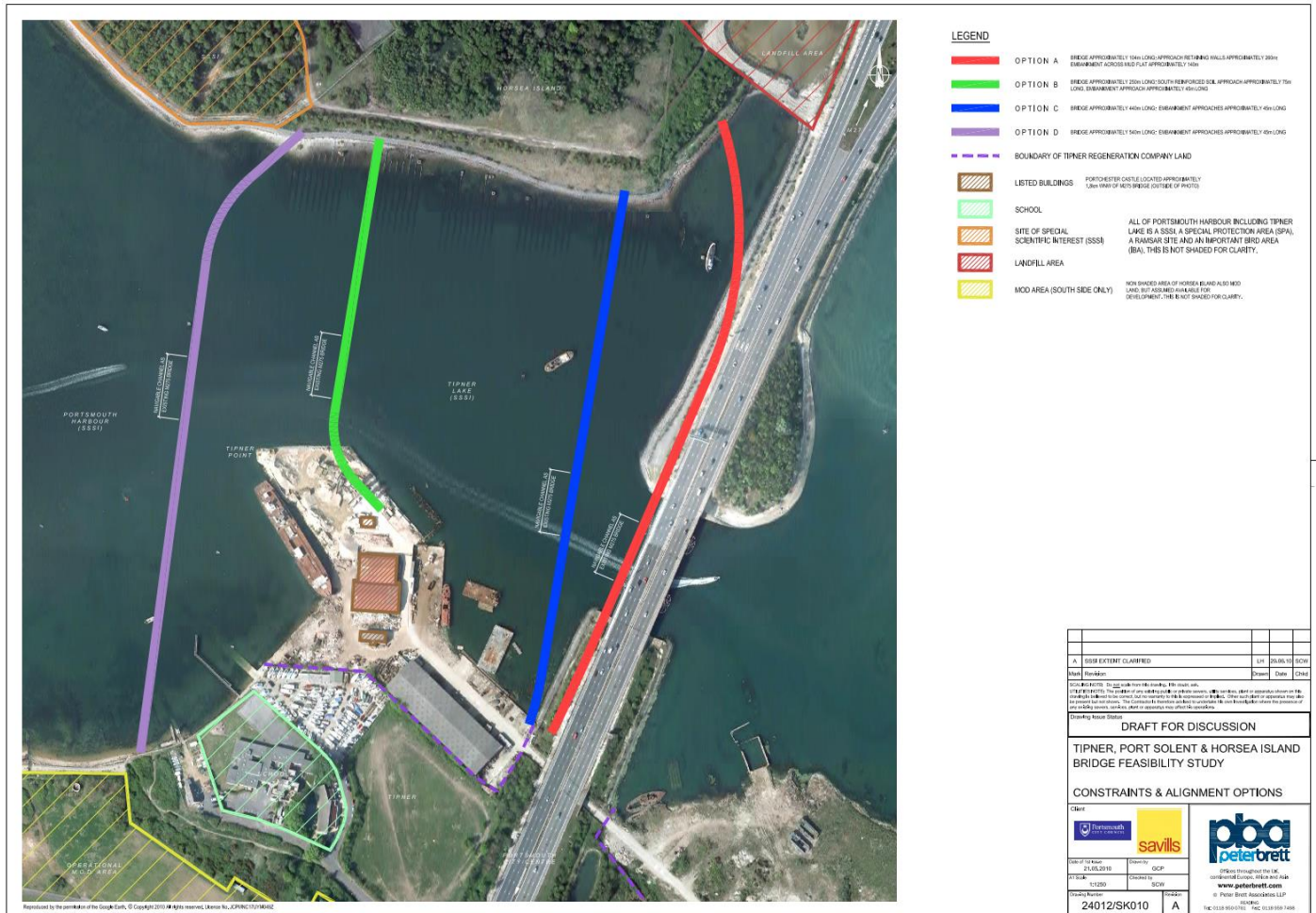
This study, commissioned to support the development of the 'Portsmouth Plan', adopted in 2012 considered options for crossing Portsmouth Harbour in the context of delivery of a wider link that would connect Port Solent with Horsea Island, Tipner West and the M275 for onward connection to/from the City Centre. The bridge was proposed to carry vehicles, pedestrians and cyclists. Four potential options (**Figure 1**) for a new bridge were identified in the study:

- Option A – was identified as the lowest cost option and followed an alignment parallel to the M275

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- Option B – was identified as having the shortest length and proposed to connect Tipner Point with HIE
- Option C – proposed a diagonal connection commencing to the immediate east of the existing TJ Waste Site and connecting across to HIE.
- Option D – proposed a connection to the west of Tipner Point and had the longest potential length.

Figure 1 – Bridge Route Options



The study concluded that from an engineering feasibility perspective Option A and B represented the most feasible options.

2019 WSP Study

Through work undertaken to promote Tipner West and HIE as a site allocation within the Local Plan further consideration of the bridge link was undertaken. The proposals for the bridge followed that of Option A on the basis that it would minimise land take on both Tipner West and HIE.

Sufficient space needed to be provided to the existing M275 bridge and its foundations as shown in **Figure 2**. A minimum offset to the existing bridge foundations of two metres was proposed to ensure that the existing foundations were not disturbed. When considered in the context that the existing bridge foundations stretch some 22.23m wider than the existing carriageway, the new bridge was located 15m further west from the existing.

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Figure 2 – M275 Bridge Foundations Exclusion Zones



The height of the bridge was identified as needing to be sufficient to maintain existing accessibility through to Tipner Lake. A few options were considered as it was deemed at the time that providing a bridge deck that was lower than the existing M275 would be beneficial for road safety. The preferred option featured a crest height set at 5.66m Above Ordnance Datum (AOD) (approximately 3m lower than the existing M275 bridge).

The option put forwards in the 2019 study involved a pre-cast beam structure with three spans and a total span length of approximately 105 metres. The bridge piers were located in alignment with the existing M275 bridge piers to minimise impacts. Either side of the bridge structure it was proposed that the road would continue on an embankment.

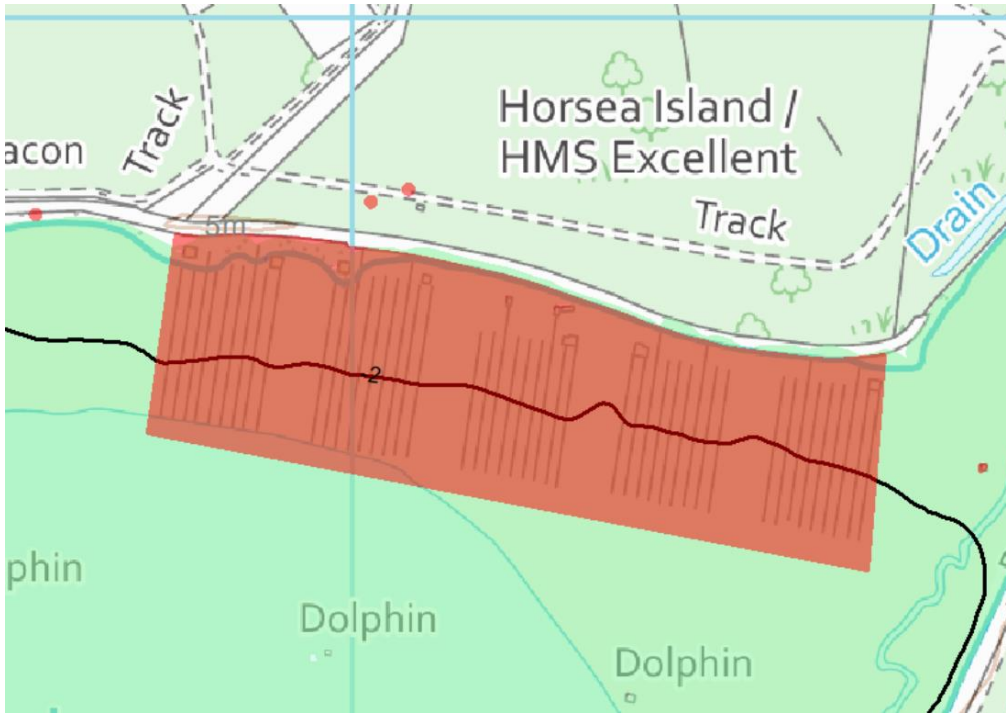
The preferred option from the 2019 study is shown in **Figure 3**.

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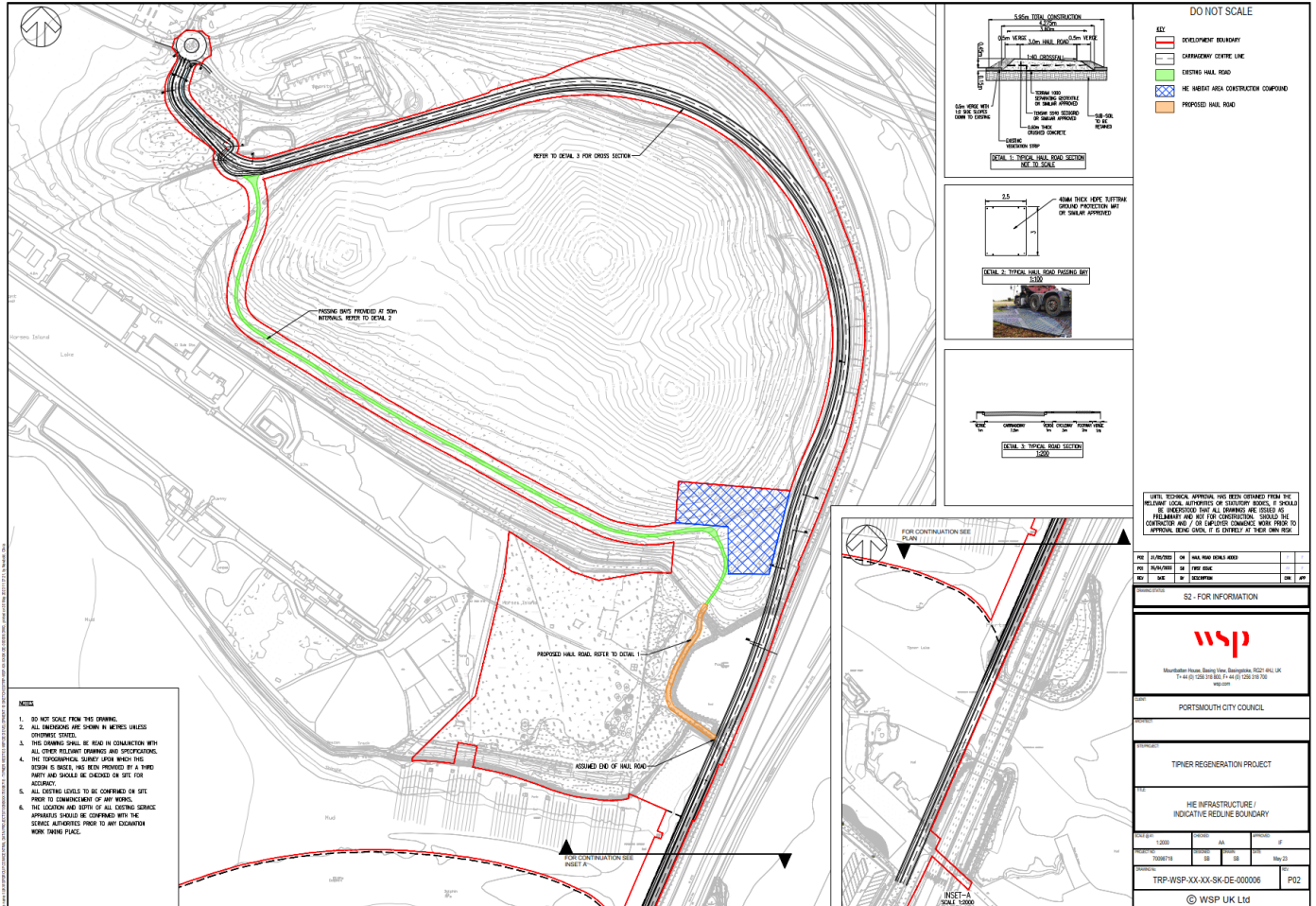
Figure 4 – D-Day Landing Craft Maintenance Site Scheduled Ancient Monument (List entry: 1479109)



Further work undertaken to support the site allocation also considered the alignment of the road through to Port Solent. A separate study that considered the route through the Horsea Island proposed an alignment around the north of the strategic open space and through the eastern side of the attenuation pond that serves the existing landfill Site. This alignment was presented to the Local Planning Authority in June 2023 as part of pre-application discussions and is shown in **Figure 5**. This alignment has been used for the purposes of consideration of new bridge options.

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Figure 5 - Alignment of road through Horsea Island Strategic Open Space

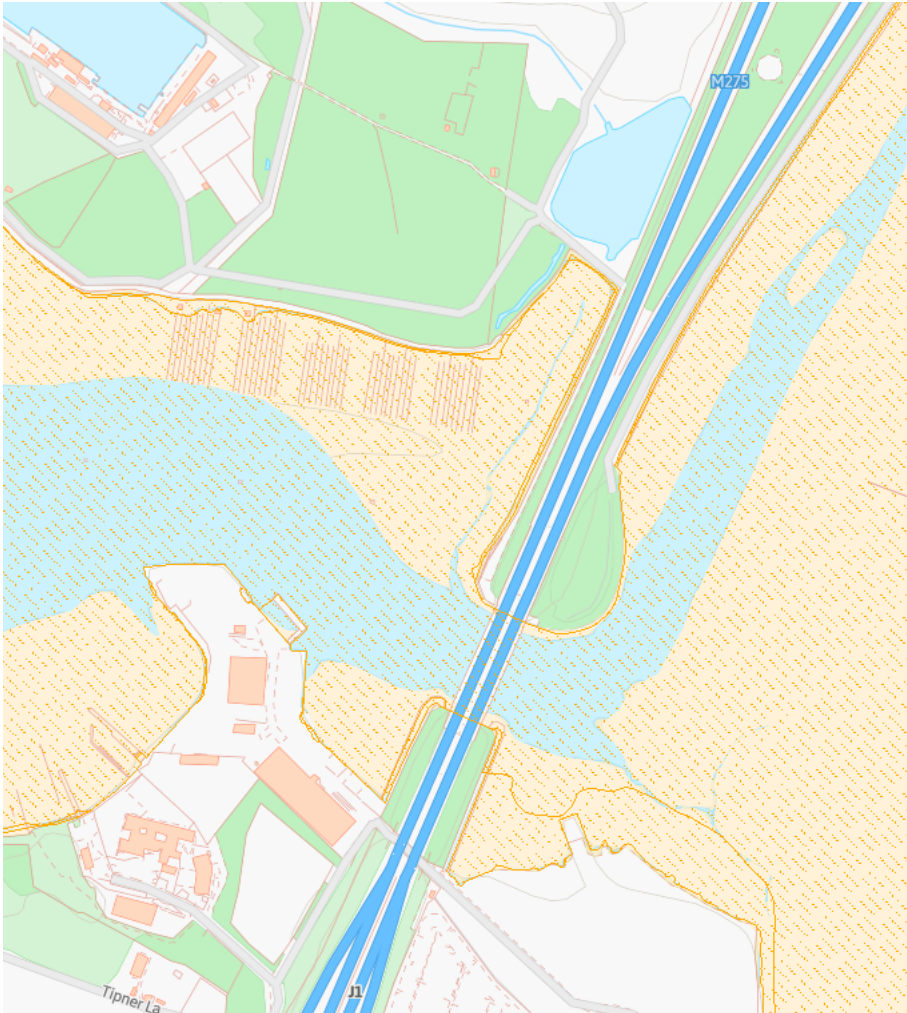


2025 BRIDGE OPTIONS

To assist in development of the site allocation for Tipner West and HIE within the Local Plan process WSP has been requested to consider bridge options that have no adverse impact on Portsmouth Harbour SPA that cannot be mitigated.

PCC has sought to clarify the definition of the boundary of the SPA with Natural England who has identified that the existing Mean High Water Springs (MHWS) level should be used to inform the boundary of the SPA. Indicatively however the boundary of the SPA is set out in **Figure 6**.

Figure 6 – Portsmouth Harbour Special Protection Area Boundary (source: MAGIC)



The following broad criteria have also been used to inform the feasibility work:

Horizontal Alignment

The bridge should be located as close to the M275 as possible to avoid encroachment into the SPA noting the constraint imposed by the existing foundations of the M275 structure.

Vertical Alignment

Access through to Tipner Lake should be maintained and therefore the height of the existing M275 bridge presents a useful reference point for the height of the bridge.

The 2019 study also considered the height of the bridge in the context of tying into the proposed development at Tipner West and HIE. Whilst this does not represent a fixed constraint for this study the road coming off any bridge would need to feed into the existing M275 Tipner Interchange. The existing circulatory carriageway is set at approximately 4.8m AOD on the north western side.

Any bridge and road would need to feature a vertical alignment of no more than 1:21 to ensure that it was accessible to all users.

A clear span of the Tipner channel would need to feature in the design in order to avoid any adverse impacts on the SPA that cannot be mitigated.

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A further consideration is the existing underpass between Tipner West and Tipner East. Whilst this has not been specifically considered in this study it should be picked up at future design stages.

Cross-section

The bridge would require a carriageway with a width of 7.3m to be able to carry all vehicle types with a segregated pedestrian and cycle route. The bridge would be used by passenger transport vehicles together with active modes, ie cyclists, pedestrians and micromobility. It may potentially be used by normal vehicles during an emergency however this would require further engagement with relevant stakeholders. Whilst consideration has been given to reducing this width, if the bridge was taken down to a single lane it would require traffic lights. The length over which the traffic lights would need to operate would be approximately 550m. This would significantly reduce the capacity of this link and therefore this has not been considered further.

In accordance with Local Transport Note (LTN) 1/20 the pedestrian and cycle route would need to be 5m in width (two metres designated to pedestrians and three metres to cyclists). The pedestrian and cycle route would need to be offset a minimum of 500mm from the bridge parapet and 200mm from the carriageway. Taking account of the above criteria the minimum bridge cross-section would be 13.5m.

Embankment vs Viaduct

To the north and south of the existing M275 bridge crossing the new link road could be created on either an embankment or viaduct. The width of the existing embankment alongside the M275 varies and in places would not be sufficiently wide to accommodate the new link without encroaching into the SPA. The following options were considered:

- Embankment - If an embankment was used it would need to be formed of an appropriate slope into Portsmouth Harbour. Currently a rock armour type embankment is in place. If a similar approach was adopted the new embankment would in places encroach into the SPA.
- Sea wall – A vertical wall could be considered. This would reduce land take when compared to an embankment, however, this would require further consideration in terms of its design to ensure that it had sufficient design to withstand wave impact.
- Viaduct – a viaduct would be the most space efficient option albeit would probably be the most expensive.

For the purposes of this study a viaduct has been proposed to the north and south of the existing M275 bridge crossing to minimise any impacts on the SPA.

Options

Given the above constraints, consideration has been given to the options for building a new bridge to the west of the existing M275 crossing, to connect Tipner West and Horsea Island East, for context, the 2019 bridge arrangement is also included within this exercise.

2019 Option

The first option considered is the bridge proposed in 2019. This pre-cast beam bridge features an overall span of approximately 105 metres. To the north and south of the bridge an embankment would be used.

PLAN VIEW
SCALE: 1:500

CROSS SECTION
SCALE: 1:500

KEY:

- THE IS A CROSSLING SECTION TO SHOW THE SPINAL ROADWORK BETWEEN DESIGN LEVELS.
- ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS ARE 14 METERS UNLESS NOTED OTHERWISE.
- DESIGN SPEED BASED ON 140 KPH FOR SPURS & 120 KPH FOR MAIN LANE.
- DESIGN COMPONENTS ARE SHOWN SCHEMATICALLY ONLY.
- BRIDGE FOUNDATION DEPTH TO BE DETERMINED BASED ON CURRENT PRICE. IF IT ASSUMED A PILED FOUNDATION WILL BE REQUIRED.

PLAN VIEW
SCALE: 1:500

CROSS SECTION
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- BRIDGE FOUNDATION DEPTH TO BE DETERMINED BASED ON CURRENT PRICE. IF IT ASSUMED A PILED FOUNDATION WILL BE REQUIRED.

- Bridge piers located in the channel adjacent to the existing M275 bridge piers
- Bridge abutments which would encroach beyond the MHWS
- Embankment/retaining wall north and south of the bridge which would encroach beyond the MHWS

Further options have been considered and which are discussed throughout the remainder of this document. Considerations of buildability and the construction sequence have been central in assessing alternative bridge types.

1) Post tensioned concrete box girder construction using a balanced cantilever method, to result in a three-span structure of overall length approximately of 339m. A related option is a three-span steel box girder, which would require a different construction methodology

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3) An asymmetric cable stayed solution, with a single tower support located on the northern side of the crossing

These three all achieve the aim of providing a clear span over the channel to carry the combined highway traffic and pedestrians/cyclists. For options 1 and 2 a structurally separate northern approach section is required, and a design based on prestressed concrete beams and reinforced concrete foundations has been proposed for this length of approximately 196m.

Basis of option selection and appraisal.

The selection of options shares a common set of objectives, assumptions and guidelines. The first consideration is the need to avoid positioning a support within the channel and designated SPA. This results in a minimum main span of at least 143m. The southern pier (designated pier 14) does encroach on the SPA, but this is unavoidable given the layout at this section. The value of the part of the SPA may however be considered limited given the nature of the existing adjacent uses but this will require further discussion with stakeholders in due course.

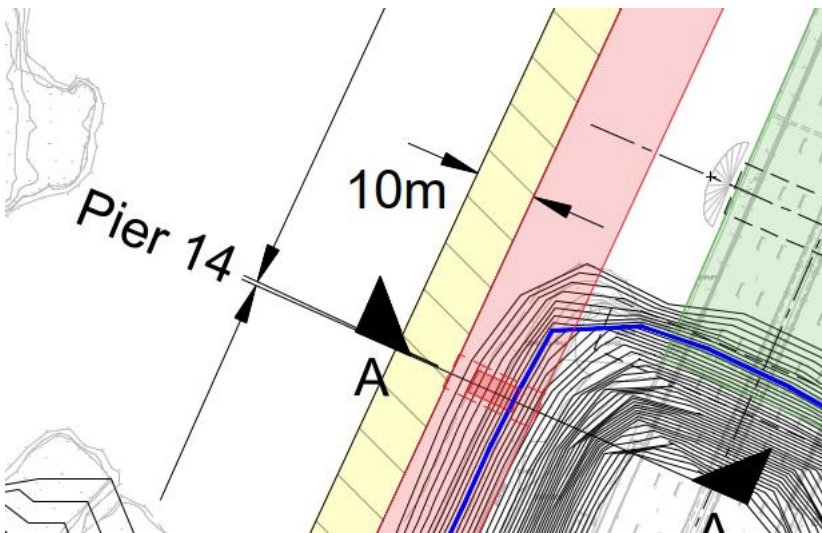


Fig 8: Proposal for Pier 14:

The estimated area of encroachment would be in the order of 25 m² in the permanent case and probably three times that during construction.

It is assumed that high containment vehicle parapets are not required, but could be provided with a heavier deck section to provide the required level of containment.

The highway approach gradients and vertical alignment has not been subject to a detailed design appraisal, although the probable maximum gradient on approach to the crossing is around 4%.

The deck options have not been subject to analytical modelling although some basic calculations have been carried out to assess feasibility. The estimated construction depths and section thicknesses have been based on typical span to depth ratios, recently designed examples of similar bridges, and documented case studies of comparable bridges.

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Maintenance requirements have also been considered, particularly in the marine environment. This is likely to require careful specification in the final design to ensure a high quality of construction and low maintenance requirements.

The three options are very different in form and appearance, so engagement with the relevant planning authority and other stakeholders is recommended. It is anticipated that the relevant stakeholders would include, but not be limited to: -

- Portsmouth City Council
- Natural England
- RSPB
- Hampshire & Isle of Wight Wildlife Trust
- National Highways
- Historic England
- Environment Agency
- MMO & other relevant marine organisations

Option 1 concrete box girder:

Description

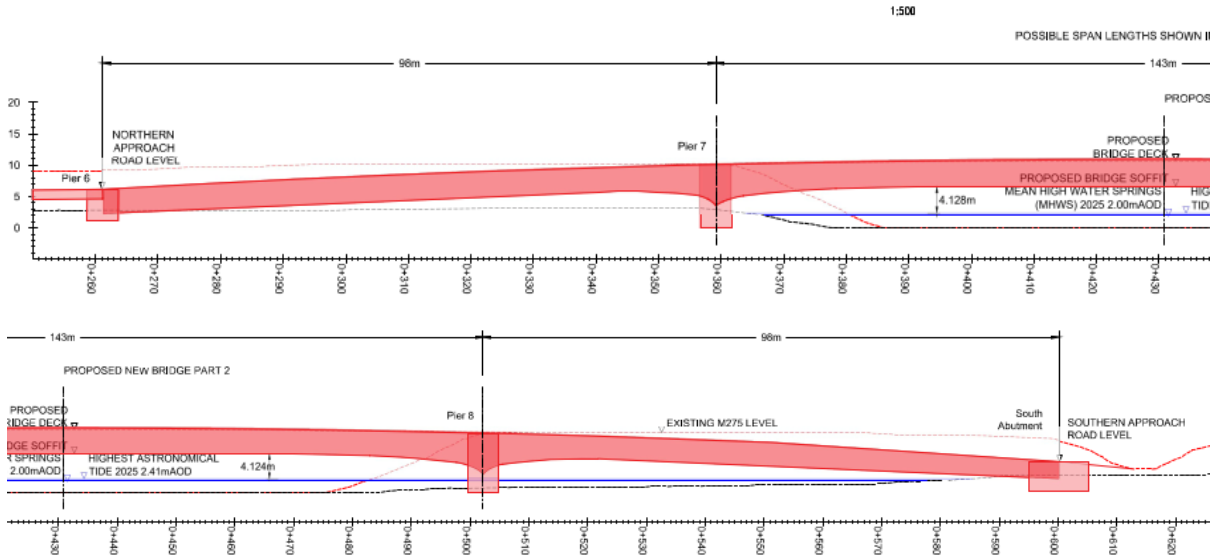
The main crossing consists of a three span continuous viaduct comprising a variable depth twin-cell post tensioned concrete box girder with cantilever outriggers, supported on piled reinforced concrete foundations. This is continued to the north with an independent elevated structure consisting of prestressed concrete beams supported on raised piers and crossbeams. These details are shown on Drawing 70098718-BR-SK-04 P04, which is appended to this document. Drawing 70098718-BR-SK-05 presents details of Pier 14 through illustrative satellite imagery for context purposes, particularly from the perspective of its positioning within the SPA.

Structure	Spans	Total
Main crossing – post tensioned box girder	98m, 143m, 98m	339m
Northern approach – prestressed beams	6 spans of 32/33m	196m

It is envisaged that the main crossing is continuous with a joint at the northern end at the interface with the prestressed beam section. The prestressed beam section would need at least one expansion joint, for example an expansion joint at the centre would divide this section into two discrete lengths of 98m each. All sections of the structure will require piled foundations. The design of piles will require further detailed analysis of the structure and understanding of geotechnical design parameters based on a recent Ground Investigation. Some information can be obtained from the existing structure records, which demonstrate that piling is feasible in this location.

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Figure 9: elevation of three-span main crossing, showing variable depth



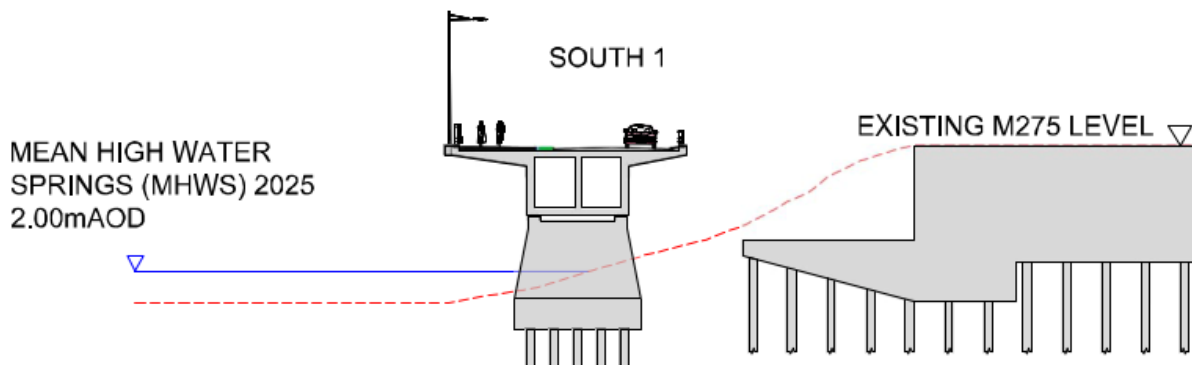
Main spans: concrete box girder - outline deck sizing

The box girder section features a variable depth, with a minimum deck depth of 4m to 4.5m at midspan (slenderest point) and 6m to 7m haunch depth at the supports. This is necessary for economy and structural performance, with a constant depth deck ruled out because of the spans involved.

These depths are based on typical span to depth ratios and will be refined as the design progresses. Increasing the span:depth ratios to produce a slimmer deck introduces the risk that the deck will be more lively - given that the crossing is intended for non-motorised traffic as well as for motorised traffic, user comfort takes on more importance.

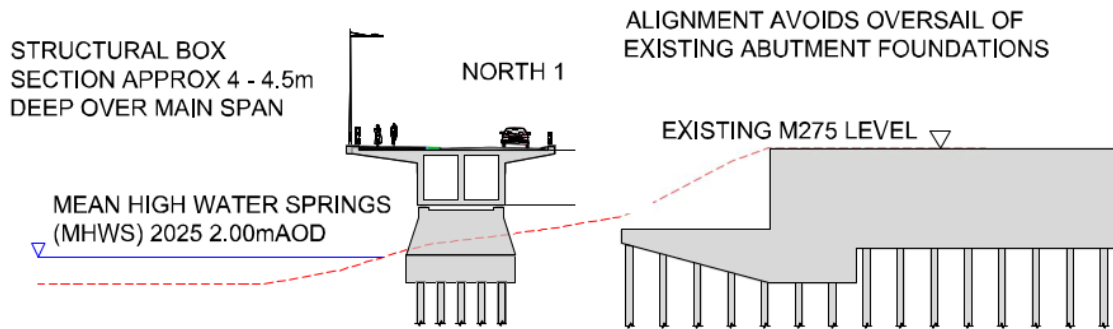
The main span piers have been positioned 143m apart to ensure there is adequate space for construction, including temporary works requirements.

Figure 10: Southern Pier Section A-A showing proximity to Piers at either side of Tipner Lake channel (depth of section may be deeper than depicted)



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Figure 11: Northern Pier Section B-B showing proximity to Piers at either side of Tipner Lake channel (depth of section may be deeper than depicted)



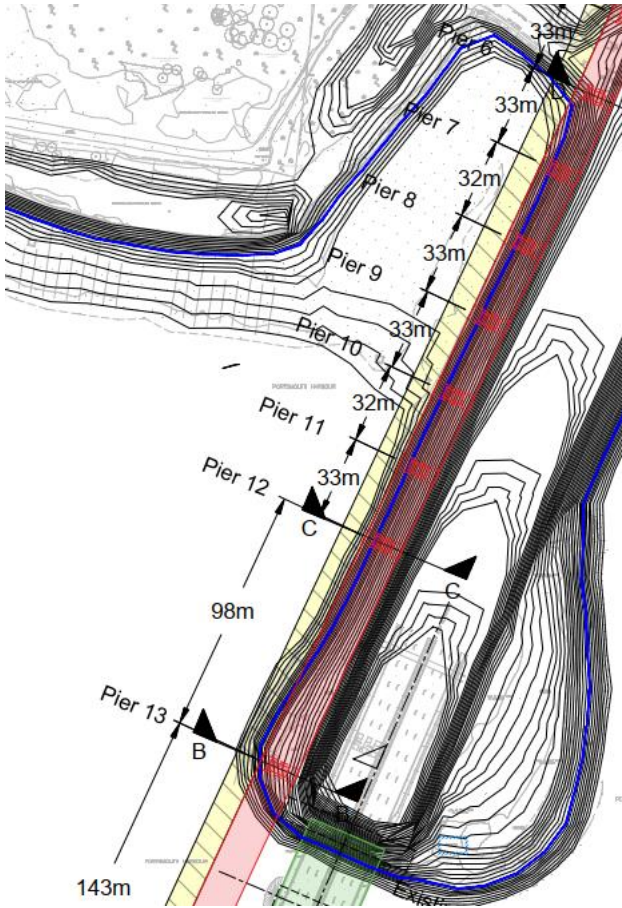
The construction methodology for the post tensioned concrete box spans is discussed later in this Note.

Option 1 northern approach spans: prestressed concrete beam construction

The proposal for the northern section of the route is to build a concrete viaduct using prestressed concrete beams supported on reinforced concrete piers. It is not possible to build an embankment within the available space, as shown below in the plan view.

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Figure 12: Plan view of northern section Pier 7 to Pier 13 consisting of prestressed concrete beams supported on reinforced concrete piers and piled foundations

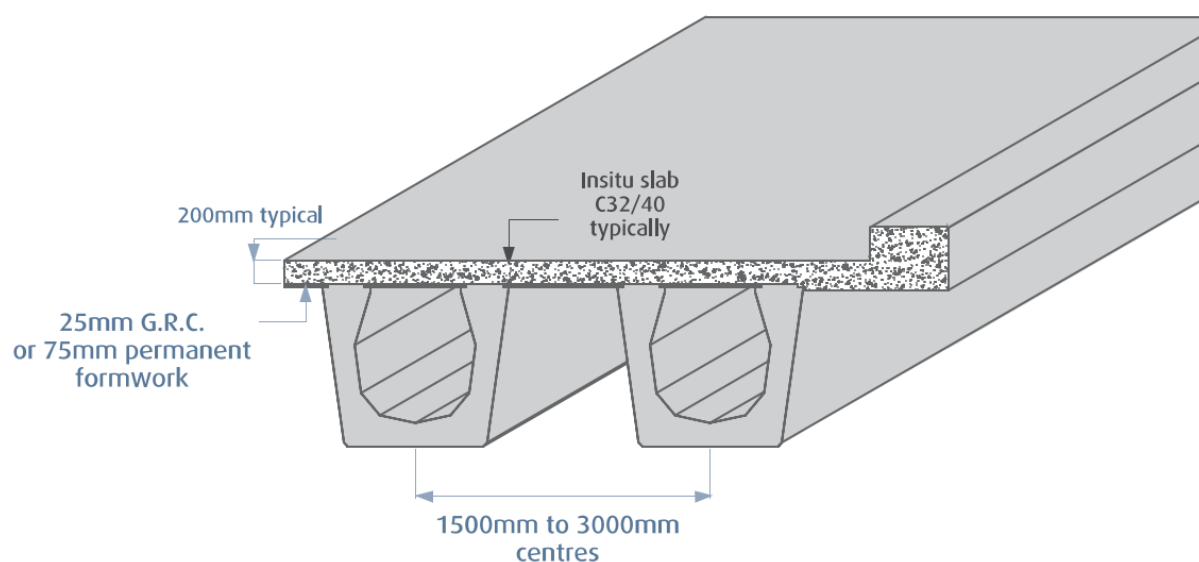


The north approach construction has been kept out of the inter-tidal zone, although it is likely that all piers would require temporary construction works within the SPA. It is believed that it may be possible to keep the permanent works above the SPA but it should be noted that the piers would need to touch MHWS line to maximise pier width and ensure stability. It is considered very unlikely that temporary disturbance of the SPA can be avoided entirely.

The interface with the M275 needs more investigation than has been possible for this study. It is probable that the shadow of the proposed structure will overhang the National Highways (NH) embankment and potentially require some local hard retaining wall construction. This brings risks to the proposal and the need for early discussion with NH to start the process of gaining consents.

The deck section consists of prestressed concrete 'U' beams, acting compositely with an in situ reinforced concrete deck slab. This is a common and cost effective form of construction and widely used in the UK.

The size and spacing of the beams will be refined following further study, but as an indication a deck of 5 or 6 beams of U12 type (depth 1600mm) would be suitable for a 33m span. The practical upper limit for span length is around 45m for these beams. (Photo and image from Shay Murtagh website)



**Typical Arrangement of Deck
Section with Cantilever**

U beams have been proposed because of the ease of construction and durability.

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Where possible the intention for this section is to avoid disturbance to the existing motorway embankment, which will be confirmed following reviews of topographical survey information, although there is a potential conflict which may necessitate a retaining structure for some of the more northerly spans.

Option 1: Construction methodology

How would the piers be constructed?

The working assumption would be use of sheet pile cofferdams to create a sealed working zone within which the foundations (assumed to be piled) will be constructed. On these will be cast reinforced concrete pile caps and then the piers raised to the appropriate levels. Once the piers are complete, the sheet pile cofferdams would be withdrawn and the area around and over the bases are reinstated. It would be expected that some form of protection from scour and erosion from tidal and storm waters may be required around the base of the piers.

How will the spans be constructed?

Balanced cantilever construction is a popular form of construction for situations where access to the ground below is severely constrained. Work starts by erecting a section of deck and securing it to the pier top using prestressing to provide stability under subsequent construction loading.

Deck sections of circa 3m length are then attached or cast in pairs to each side of the pier gradually cantilevering out whilst keeping the overall arms in balance. Work on successive piers is undertaken simultaneously until the two cantilevers meet in the middle where an in situ splice is made to close the span.

Although it is possible to use precast sections to complete the spans, it may be more economic to cast each section in situ using a travelling formwork arrangement. The depth of the two-cell box or twin boxes will vary between a deep haunch at the supports and a slender section at midspan. Therefore, there is very little repetition in the casting of each segment, so the economy of setting up a bespoke casting yard may be lost for such a relatively short structure.

However, the drawback with cast in situ sections is the additional depth needed below the deck soffit level to support the formwork. The recorded Mean High Water Springs level is recorded at 2.0m AOD at the southern pier, so a deck level around 10m AOD would only leave an 8m working zone for the structural concrete (estimated at 6 to 7.0m) and any temporary works. This has the potential to affect the deck levels and gradient of the approach roads.

Balanced cantilever construction has been used recently in the UK, seen below at Taf Fawr Viaduct in South Wales 2022/23, although this is usually carried out by a specialist contractor (in this case Tecozam from Spain). It is understood that this structure has adjacent ecological and heritage constraints.



Option 2: arch solutions

One form of bridge that has also been considered is a bow string arch. There are several variants of this type, all of which feature a pair of arches with hangers to support the deck.



Description of Option 2

The main crossing can be achieved with a single span arch of 143m, i.e. keeping the pier supports in the same position as Option 1. The structure consists of a pair of steel girders suspended from the arch, with cross girders to support the deck, and can be configured for the deck width required.

However, this introduces a disadvantage in that the supports need to be wider than those of the concrete box, because the main arches need to be supported directly. This would result in a wider foundation and greater incursion into the SPA.

This form is suitable for spans around 143m. The arch height would be around 30m above deck level, based on the span to rise ratio of similar examples.

As the arch is self-supporting, the foundations predominantly support vertical loads plus horizontal effects from traffic, thermal etc with the arch thrust is contained within the deck.

The northern approach viaduct will be identical in form to Option 1 and consist of prestressed concrete beams supported on reinforced concrete foundations.

Option 2: Construction sequence

The usual construction sequence is reliant on temporary supports – in this case they would need to be installed in the non-navigable zone adjacent to the existing M275 bridge.

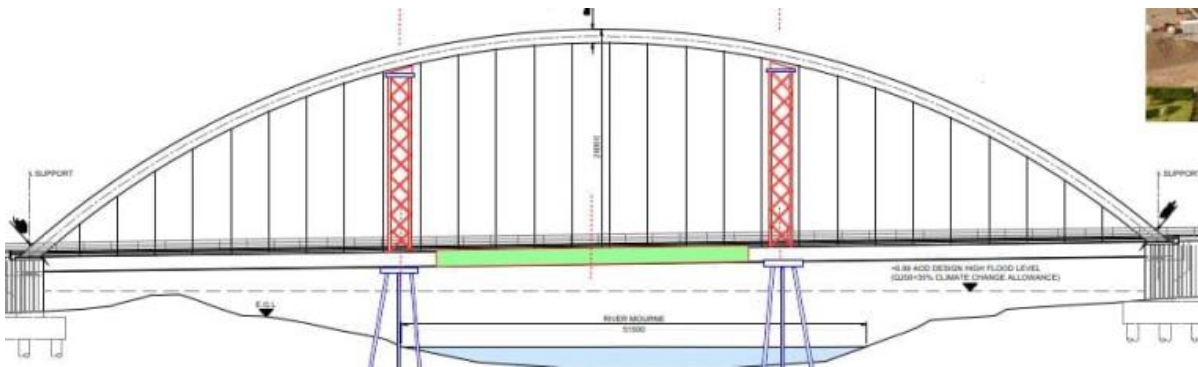
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A barge would be needed to install piles and the support superstructure could then be assembled.

This would allow the deck girders to be placed to span between the end supports and temporary supports, and the cross girders installed.

The next stage is the erection of the arches, using further temporary works:



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In summary the construction of an arch is feasible if the temporary works can be placed within the channel and land obtained for the permanent supports. The temporary works could be removed following construction.

There are precedents for assembling the entire arch in a convenient location close to the site and bringing the structure to site on a floating pontoon/barge before lifting into position with a suitable crane or with jacks.

This method of construction relies on being able to find a suitable temporary works area and the kit and expertise to carry out the complex floating in and lifting of bridge spans that will weigh in the order 5000 tonnes. Internationally this has been done but is not common in the UK.

The example below is from the US and shows a steel tied arch span being floated into position, indicating the principle.



Option 3: cable stayed structure

This option which has the potential to avoid any permanent effect on the SPA is to consider a cable supported structure with a tall mast. The obvious location of this mast will be adjacent to the northern abutment of the existing M275 motorway bridge crossing Tipner Lake. This would give a southern span of approximately 240m landing adjacent to the underpass at Tipner.

The northern span could balance the southern span, creating a 480m span symmetric cable fan structure. The remaining length ($535\text{m} - 480\text{m} = 55\text{m}$) could be spanned in one using a more conventional form of beam construction.

Alternatively, and possibly to the benefit of the permanent impact on the SPA, an unbalanced asymmetric arrangement could be considered omitting a northern pier and landing on an abutment beyond the limit of the SPA. This would result in a southern span of approximately 240m and a northern span of approximately

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295m. This inevitably imposes some unbalanced loading effects which will result in heavier foundations under the central pier and the south abutment. It must be clearly understood that this option is only described as a possibility and considerably more work on such an ambitious scheme would be required to determine its feasibility.

Construction costs

Estimating the costs of construction is difficult and open to significant uncertainty for a number of reasons:

1. Access. The constrained site with limited access for heavy plant and delivery of materials will present challenges that escalate the costs of normal construction.
2. Environment. Working in a tidal zone and a site that is exposed to coastal weather results in higher risks and this will affect contractor costs for undertaking the work. The proposed site also closely interfaces with National Highways infrastructure which brings additional risks.
3. Construction. The form of construction involving long spans and non-standard construction methods, such as balanced cantilever segmental construction or whole spans lifted into place, inevitably will result in higher costs per unit of deck than for decks of standard construction form.

Further design development is recommended to enable an initial cost estimate to be prepared. However WSP can provide some analysis of costs from other similar bridge structures if this is considered to be beneficial.

SUMMARY AND NEXT STEPS

Summary

WSP has been commissioned by Portsmouth City Council (PCC) to review options for and undertake a high-level engineering feasibility study for delivery of the Tipner Bridge as part of preparation of the evidence base for the Local Plan.

A review of historical studies has been undertaken to help define the scope of the bridge for review. The PBA study conducted in 2010 considered four potential alignment options and concluded that a route closest to the M275 would be most cost effective and minimise impacts on the SPA. Further work by WSP in 2019 proposed a pre-cast beam bridge with three spans featuring an overall span of approximately 105 metres. To the north and south an embankment was proposed to retain the road as it connected with the M275 to the south and HIE to the north.

WSP's preliminary finding is that there are three possible bridge types that can be safely constructed within the narrow confines of the site, and that further work is recommended to provide supporting data to increase confidence in the solution and allow initial cost estimates to be prepared beyond this feasibility stage.

Next Steps

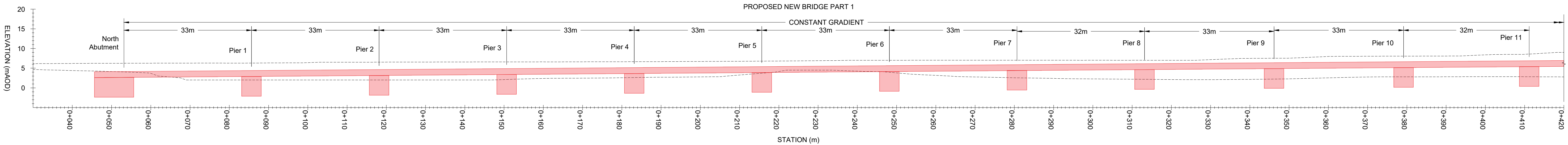
It is considered that next steps would include, but not be limited to the following activities

- Discussion with relevant elements of PCC;
- Discussion with relevant stakeholders concerning the positioning of Pier 14 within a limited part of the SPA;
- further detailed analysis of the structure and understanding of geotechnical design parameters;
- consideration of temporary construction impacts/implications;

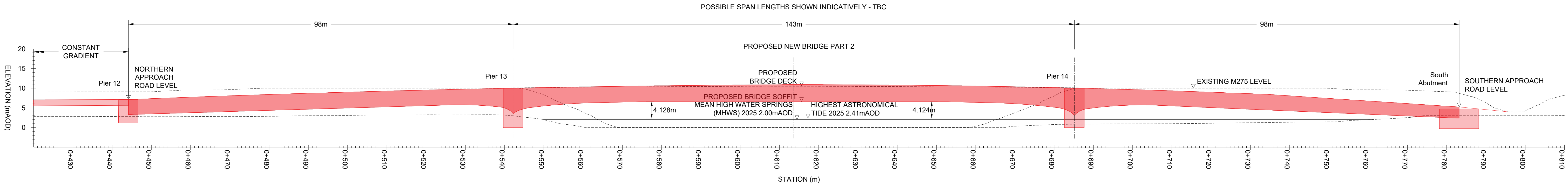
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- consideration of the relationship with the existing underpass to the south;
- discussion with National Highways concerning the interface between the existing M275 structure and the proposed structure;
- consideration of area to be safeguarded from development within the Tipner site in order to facilitate construction of the bridge (to account for the possibility that the bridge may come after development at Tipner) and
- further design / development in order to allow a cost estimate of the preferred structure to be progressed.

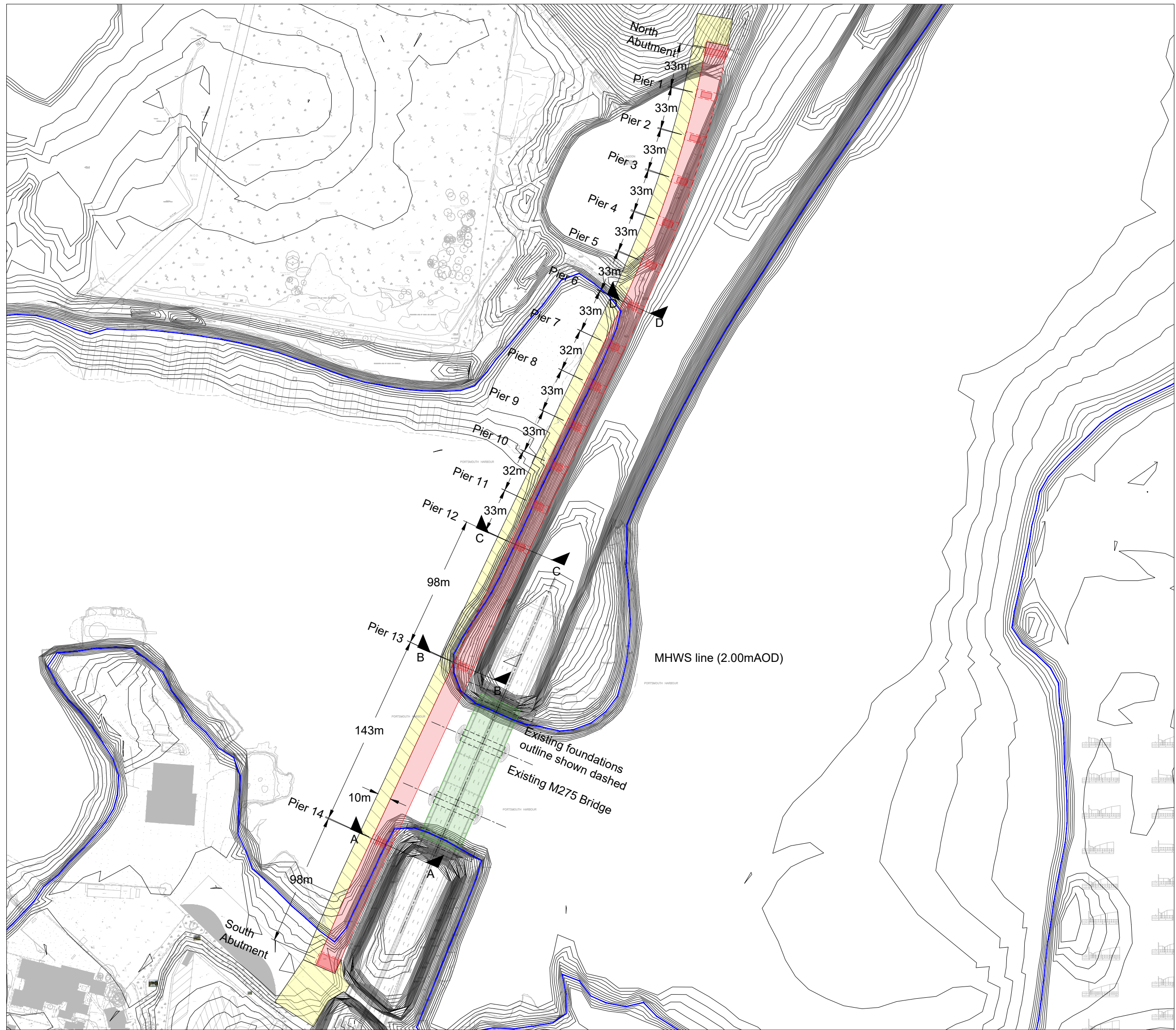
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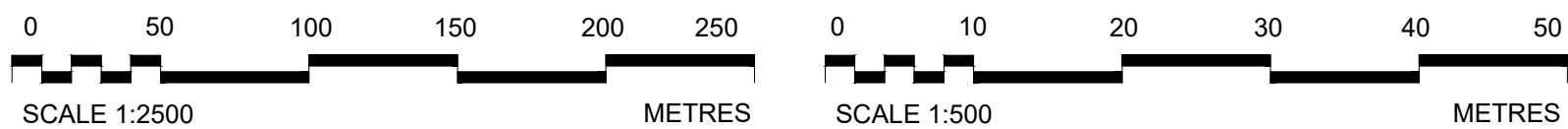
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1:500



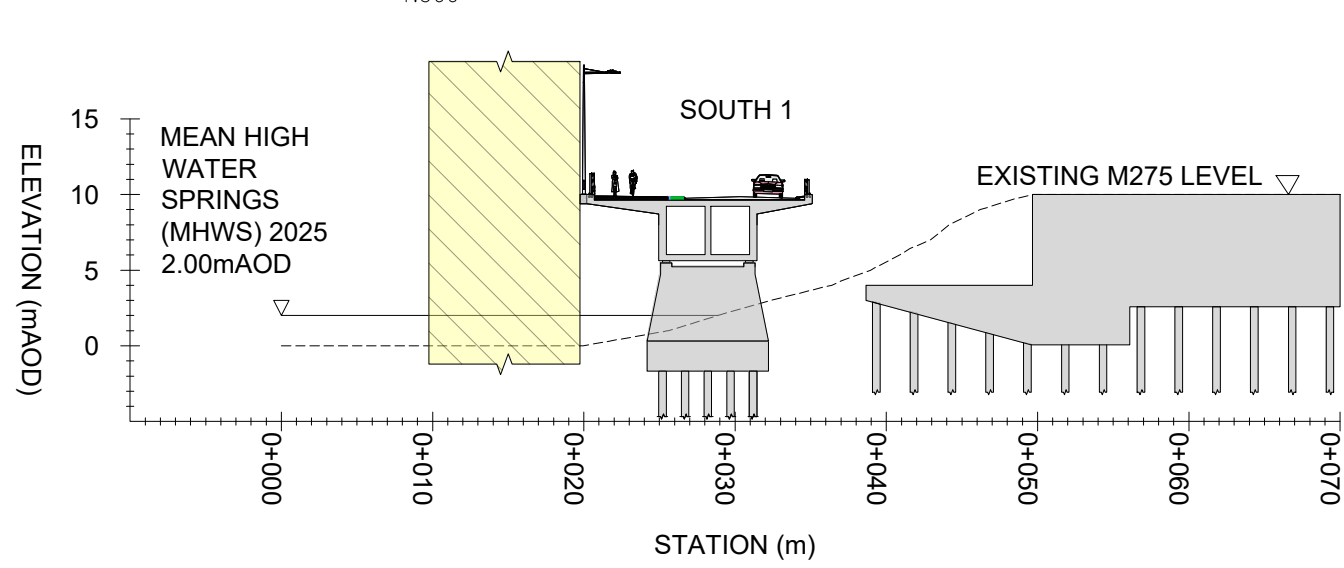
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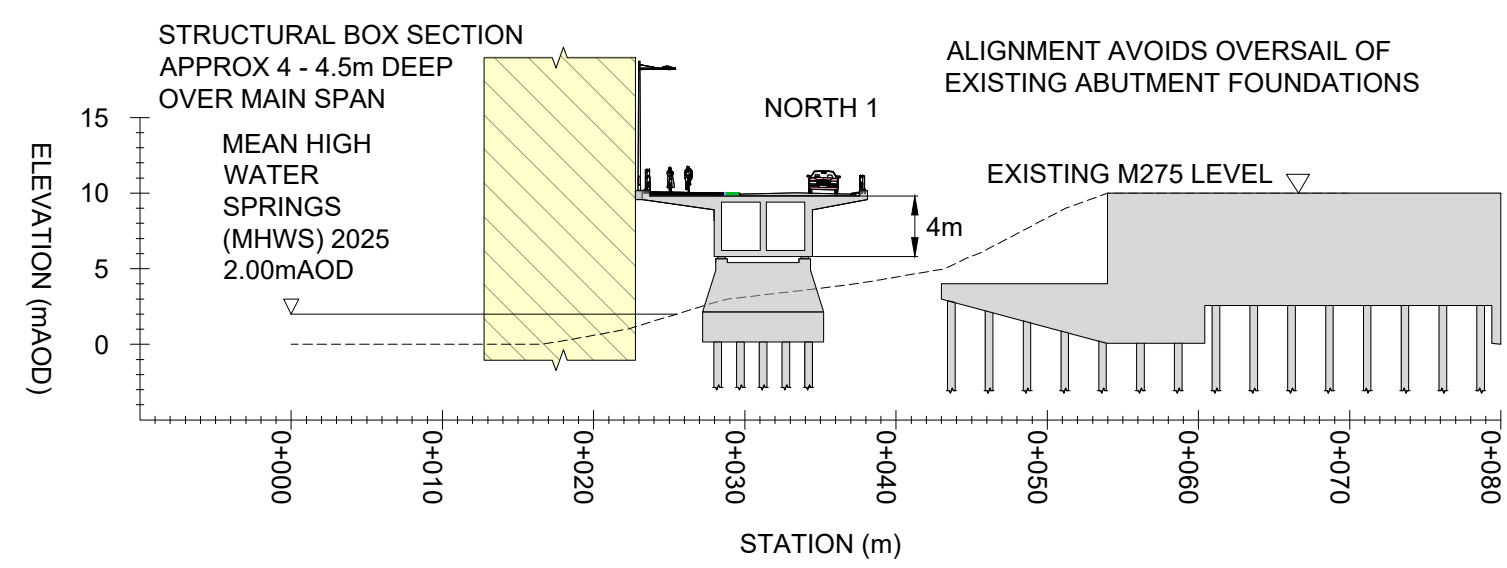
PLAN
1:2500



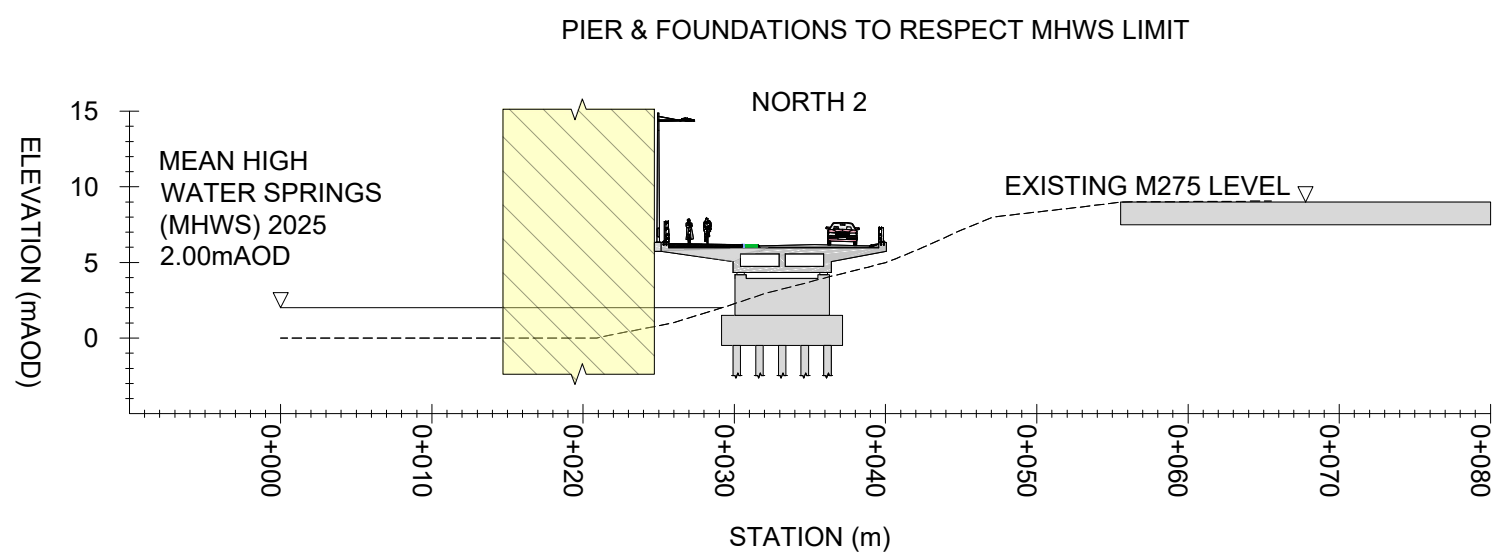
- KEY
- PROPOSED
 - EXISTING GROUND LEVEL
 - EXISTING M275 PROFILE
 - WATER LEVEL
 - LAND SAFEGUARDED FOR BRIDGE DELIVERY



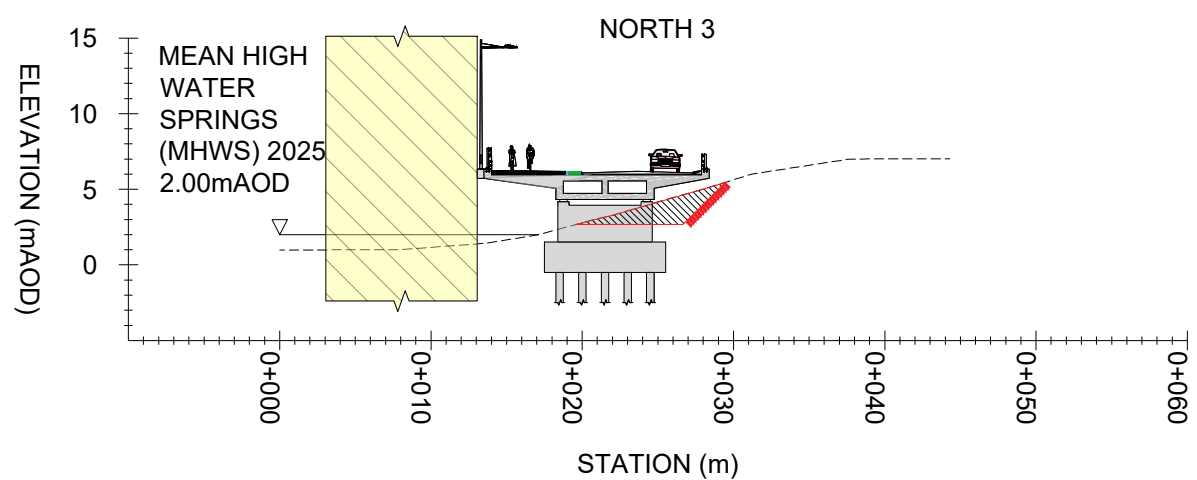
SECTION A-A
1:500



SECTION B-B
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SECTION C-C
1:500



SECTION D-D
1:500

P04	26/08/2025	TR	ALIGNMENT UPDATED	DY	GS
P03	19/08/2025	TR	SPAN LENGTHS UPDATED	DY	GS
P02	13/08/2025	TR	MHWS LEVEL ADDED	DY	GS
P01	01/08/2025	TR	PROPOSED BRIDGE	DY	GS
REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS:	DRAFT
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<http://www.wsp.com>

CLIENT:	PCC
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ARCHITECT:	
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PROJECT:

TIPNER REGENERATION PROJECT
STAGE 2

TITLE:

PROPOSED HORSEA ISLAND BRIDGE
LONG SECTION AND CROSS SECTIONS
CONCRETE BOX GIRDER VIADUCT

SCALE @ A1:	AS SHOWN	CHECKED:	DY	APPROVED:	GES
CAD FILE:	70098718-BR-SK-004	DESIGN-DRAWN:	TR-CC	DATE:	AUGUST 2025

PROJECT No:	70098718	DRAWING No:	70098718-BR-SK-004	REV:	P04
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PLAN
1:1000

- KEY
- PROPOSED
 - EXISTING M275 PROFILE
 - WATER LEVEL
 - LAND SAFEGUARDED FOR BRIDGE DELIVERY

DO NOT SCALE

BACKGROUND IMAGERY IS
APPROXIMATE - SKETCH TO BE
USED FOR INFORMATION
PURPOSES ONLY

P01	25/09/2025	TR	PROPOSED BRIDGE WITH BACKGROUND IMAGE	IF	GS
REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS:	DRAFT
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CLIENT:	PCC
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ARCHITECT:	
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PROJECT:	TIPNER REGENERATION PROJECT STAGE 2
TITLE:	PROPOSED HORSEA ISLAND BRIDGE SATILLITE IMAGERY - SKETCH CONCRETE BOX GIRDER VIADUCT

SCALE @ A1:	AS SHOWN	CHECKED:	DY	APPROVED:	GES
CAD FILE:	70098718-BR-SK-004	DESIGN-DRAWN:	TR	DATE:	SEPTEMBER 2025

PROJECT No:	70098718	DRAWING No:	70098718-BR-SK-005	REV:	P01
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