Suffolk County Council

Sea Link Grid Reinforcement

Pre-Submission Engagement

Suffolk County Council Response

January 2025

Contents

1 Introduction

1.1 The following comments by Suffolk County Council (the County Council) are in response to the pre-submission engagement held between 21 November 2024 and 12 January 2025 by National Grid Electricity Transmission (NGET) regarding changes to the Sea Link proposals since the Targeted Consultation closed in August 2024.

1.2 The Sea Link proposals consist of the construction of a 2GW High Voltage Direct Current (HVDC) undersea electricity link between Suffolk and Kent which will connect to a substation at Friston in East Suffolk, which has consent via a third party (ScottishPower Renewables) but as yet is unbuilt.

1.3 The offshore scheme consists of a 122 kilometre (km) subsea cable which will run between the proposed Suffolk landfall location, between Aldeburgh and Thorpeness, and the Kent landfall location at Pegwell Bay.

1.4 The onshore scheme proposes the installation of a High Voltage Alternating Current (HVAC) 1.9 km underground cable between the proposed Friston substation and the proposed converter station near the town of Saxmundham, the 2GW HVDC converter station itself, of up to 26 metres (m) in height including ancillary works, and a HVDC underground cable connection of 10 km between the converter station and a transition joint bay approximately 900 m from shore to enable the transition from offshore to onshore technology.

1.5 The proposals also include the construction of a substation in Friston if this is not built by ScottishPower Renewables under its existing consent.

1.6 The comments in this response should be considered in association with those made by the County Council at Statutory Consultation and the Targeted Consultation regarding the project outside of the changes documented in the further engagement information.

2 Changes to the Sea Link Proposals Since Targeted Consultation

2.1 The changes to the Sea Link proposals have been cited by the developer as including: -

a) <u>The location and alignment of the proposed Fromus Crossing</u>

NGET have stated: -

"We have realigned and rotated the proposed crossing of the River Fromus, to avoid valuable trees on the eastern bank. This moves the bridge approximately 40 metres north along the river".

b) <u>The reintroduction of land for construction compounds at the Converter Station site that had previously been removed from the order</u>

NGET have stated: -

i) "We have reintroduced areas adjacent to the proposed converter station to provide more flexibility on where we can locate the necessary construction compound."

ii) "By including flexibility in where we can put our construction compound, we are allowing National Grid Ventures more time to consider where to locate their own converter station within the wider site. By giving Sea Link flexibility, we are giving NGV more flexibility and greater opportunity to effectively site their own converter station and construction area, as part of a coordinated wider site."

c) <u>Modification to the order limits to allow delivery of ecological mitigation measures</u>

NGET have stated: -

i) "We have moved an area of proposed temporary mitigation from where it was shown at targeted consultation (off the A1094, within the National Landscape area) to a nearby site on the other side of the road."

ii) "We have also introduced an additional area of arable farmland close to Saxmundham, where it is proposed to adapt existing farming practices to include 'skylark plots'."

iii) "We have refined areas of land along the River Fromus to better reflect the opportunities for the delivery of ecological enhancement, removing certain areas which are not required for mitigation, and where managing and maintaining habitats may be difficult and deliver fewer public benefits."

d) <u>Modifications to, the alignment of buried cables and the construction access routes</u>

NGET have stated in respect of these specific modifications: -

"Other adjustments include introducing more flexibility for routing the Friston substation access road, and new and relocated monitoring accesses off the B1119 to potential joint bay locations. Other changes include introducing more flexibility for routing the underground cables into Friston substation, to allow us the better coordinate final routing with future projects in way that retains the functionality of landscape planting. We are introducing more flexibility for routing the underground cables within an area east of Friston to allow us to avoid buried archaeology, if necessary."

2.2 The County Council electoral divisions which will be directly affected by the scheme include the following: -

- Aldeburgh and Leiston
- Blything
- Kessingland and Southwold
- Wilford

2.3 The first section of this representation outlines the key issues which the County Council has identified, which has been informed by our technical specialists, whose comments are provided in Appendix A.

3 Overview of the County Council's Position on the Sea Link Proposals

3.1 As cited in the previous Targeted Consultation which concluded in August 2024, the County Council maintains a holding objection to the Sea Link proposals for the following reasons: -

<u>River Fromus Crossing</u>

- The County Council maintains its stance that the preferred access route, particularly the proposed River Fromus Crossing, where the visual impact caused by the proposed scale of the bridge to the key views from the south of the Conservation Area, the Grade II* Church of St John the Baptist, and the Grade II listed Hurts Hall, provides a disproportionate solution in creating a permanent access to the converter station site.

Core Working Hours – Inclusion of 7am-5pm on Sundays and Bank Holidays

- The potential for construction activities to take place seven days a week and Bank Holidays could provide host communities with very little respite from the impacts of the development activities associated with the Sea Link proposals, including disruption to local roads and PRoW used for recreational activity at times when they are most frequently used.

4 Key Issues the County Council Has Identified on the Current Sea Link Proposals

Fromus crossing:

4.1 The County Council acknowledges the change in layout of the Fromus crossing to avoid veteran trees on the eastern bank of the Fromus. However, this amendment will result in the bridge and access road becoming more prominent in key views from the south of the Conservation Area, the Grade II* Church of St John the Baptist, and the Grade II listed Hurts Hall.

4.2 The County Council have repeatedly engaged with the promoter regarding alternatives to the proposed Fromus crossing and, furthermore, pressed the case for a coordinated solution, between the major energy infrastructure projects in the area, to resolve the issue of access and minimise the adverse impact on communities and the environment.

Access Route – Benhall Railway Bridge, B1121:

4.3 A condition survey has been undertaken by Suffolk Highways (see Appendix B), where concerns have been raised over the condition of the encased steel beams of the railway bridge, therefore the recommended structural capacity of the bridge has been restricted to STGO 1, 46 tonnes.

4.4 The single span bridge was commissioned in 1956 and is of reinforced concrete construction. The bridge located over a non-electrified single-track part of the East Suffolk rail line and is close to the junction of the B1121 and A12 trunk road, it also contains various services.

4.5 The County Council has significant concerns regarding the use of the Benhall Railway Bridge on the B1121 which forms part of the access route selected by the promoter to the Converter Station site.

4.6 Although the option of constructing an overbridge for the transportation of Abnormal Indivisible Loads (AILs) could be considered, the Benhall Railway Bridge is not currently included within the Draft Order Limits for the Sea Link proposals.

4.7 The County Council would have significant concerns over the feasibility of this solution due to the geometry of the railway bridge and its proximity to the A12 trunk road, where complex traffic management arrangements would be required to allow safe use of the bridge by the public and prevent potentially dangerous queuing of traffic onto the A12.

4.8 As currently designed, this bridge would form critical infrastructure to deliver the Sea Link scheme. Whilst it is under the control and the responsibility of the County Council, it does interact with Network Rail assets which are themselves critical for the delivery of Sizewell C (of which the UK Government is a major shareholder), therefore effective joint engagement between all relevant parties, regarding this bridge, will be essential.

Design Review Panel – Converter Station Site:

4.9 The County Council notes that there is public interest in the Design Review Panel (DRP) process regarding the Converter Station site with a public question raised for December's Full Council regarding the outcome of the initial meeting of the DRP.

4.10 The County Council considers it essential that the DRP's feedback is published by NGET before the submission of the Development Consent Order (DCO) in the interests of transparency and accountability.

4.11 The publication of the DRP's feedback on the proposals would allow affected host communities to understand the design approach to the development and how the design principles and masterplan of the site is being developed. It could also contribute to building public confidence in the project and safeguarding community wellbeing.

Expansion of Order Limits at Fromus Crossing:

4.12 The inclusion of additional land within the order limits around the proposed Fromus Crossing should allow more space for drainage associated with the new embankment, road, and bridge, noting that no evidence has been provided regarding the sizing of this.

Construction & maintenance compounds:

4.13 The County Council considers that it is unclear how the added flexibility sought by Sea Link will provide additional flexibility for other promoters and believes that these changes result in greater uncertainty and vagueness of the scheme unless the promoter provides more clarity.

4.14 The reintroduction of land adjacent to the B1119 implies that access may be taken from this road by increased volumes of traffic serving the construction and maintenance compounds. Even if this does not have a material environmental impact, it may have in terms of highway design or access routes.

4.15 The Applicant should allocate enough space within the red line, along the southern side of the B1119 Saxmundham, to allow for a landscape buffer next to the watercourse and the creation of a bridleway to provide an off-road route along the B1119 for non-motorised users.

Mitigation and enhancement land:

4.16 The additional area west of Bloomfields' Covert and the area at Hazlewood Common are considerable additions to the project proposals. The County Council advises that geophysical survey should be carried out for all areas that have not previously been subject to archaeological assessment, followed by trenched evaluation, at the earliest opportunity.

4.17 The movement of the enhancement area (acid grassland) to the south of the A1094 may make it more useful as a wildlife resource. However, the County Council considers that it should be retained for thirty years, rather than the proposed ten.

4.18 The area of land to where the temporary mitigation has been re-located is still located within the National Landscape. The County Council has, in principle, no objection to some of this area being managed as acid grassland. However, there appears to be scrub vegetation within this area, and the County Council would welcome further information and detail on what is proposed for those elements of the site.

5 General Comments

National Policy

5.1 The County Council acknowledges the need to increase renewable energy generation, the increasing demand for new additional generation, and the UK Government's legal obligation to achieve Net Zero emissions by 2050, as supported by research and publications by the Committee for Climate Change.

5.2 The Government issued the revised version of the National Policy Statements on 22 November 2023, with the amendments having full effect in relation to 'those applications for development consent accepted for examination, after the designation of those amendments', which will include the Sea Link proposals.

5.3 The National Policy Statement, EN-1, is the UK Government's overarching strategy for energy. The County Council would like to draw the applicant's attention to the following assessment requirements: -

- *'Applicants for Critical National Priority (CNP) infrastructure must continue to show how their application meets the requirements in this NPS and the relevant technology specific NPS, applying the mitigation hierarchy, as well as any other legal and regulatory requirements.'*
- '*Applicants must apply the mitigation hierarchy and demonstrate that it has been applied. They should also seek the advice of the appropriate SNCB or other relevant statutory body when undertaking this process. Applicants should demonstrate that all residual impacts are those that cannot be avoided, reduced, or mitigated.'*

- *'Applicants should set out how residual impacts will be compensated for as far as possible. Applicants should also set out how any mitigation or compensation measures will be monitored and reporting agreed to ensure success, and that action is taken. Changes to measures may be needed e.g. adaptive management. The cumulative impacts of multiple developments with residual impacts should also be considered.'*

5.4 The National Policy Statement (EN-5) is the UK Government's strategy for electricity network infrastructure. This policy statement applies to transmission systems and associated infrastructure (e.g. substations) and sets out the general principles that should be applied in the assessment of the application for development consent.

Suffolk County Council Energy and Climate Adaptive Infrastructure Policy

5.5 The County Council has declared a climate emergency and is therefore predisposed to support projects which are necessary to deliver Net Zero Carbon for the United Kingdom (UK).

5.6 The County Council updated its energy infrastructure policy in May 2023[1], setting out its overall stance on projects required to deliver Net-Zero Carbon for the UK. However, proposals will not be supported unless the harms of the projects alone, as well as cumulatively and in combination of other projects, are adequately recognised, assessed, appropriately mitigated, and if necessary, compensated.

Project Engagement

5.7 The timing of the targeted consultation, overlapping with the Christmas/New Year period, has made full engagement by relevant internal stakeholders challenging.

[1] Suffolk County Council's Energy and Climate Adaptive Infrastructure Policy
https://www.suffolk.gov.uk/asset-library/energy-and-climate-adaptive-infrastructure-policy.pdf

6 Summary of site-specific key Issues raised by the technical comments

This section provides a brief summary of key issues raised by the technical departments of the County Council. These should be read in conjunction with the full technical comments on the proposals which can be found in Appendix A.

Archaeology

6.1 The additional areas added to the scheme, the area west of Bloomfields' Covert and the area at Hazlewood Common, are considerable additions to the project proposals.

6.2 The area west of Bloomfield's Covert has had only limited geophysical survey and trenched evaluation and the Council advises that geophysical survey should be undertaken across the remaining area, followed by trenched evaluation, in line with the rest of the scheme at the earliest opportunity. This is in order to define the nature, extent, and significance of any surviving below ground archaeological remains, to allow an appropriate mitigation strategy to be defined. Multi-period finds scatters are recorded within and around the new area.

6.3 The area at Hazlewood Common has not previously been subject to archaeological assessment and therefore the County Council would recommend this receive geophysical survey, followed by trial trench evaluation to understand what archaeology exists, its significance and preservation, and to inform possible mitigation. This additional area is in a topographically favourable location for archaeological remains of all periods and there is potential for very good preservation of below ground remains due to this being an uncultivated area and so assessment should take place at the earliest opportunity.

6.4 The County Council understands from recent meetings that NGET (Sealink) and NGV (Lionlink) are looking into a data sharing agreement. The County Council supports this as it would avoid duplication of effort. Co-operation with SPR will also be beneficial, given the overlapping nature of this scheme with the EA1N/2 project.

6.5 It is important to state that, at the time of writing, the Draft Outline Written Scheme of Investigation (WSI) for onshore archaeology, DCO requirement wording and statement of common ground (alongside any other relevant documents) have yet to be seen by Suffolk County Council Archaeological Service (SCCAS). These should be provided to SCCAS (and Historic England) at the earliest opportunity for comment and review. Early input into these documents will hopefully assist in simplifying the examination process for all parties.

Ecology

6.6 With regard to the proposed crossing over the River Fromus, the County Council welcomes the redesign to spare the veteran trees from destruction.

6.7 The County Council understands that the construction and maintenance compounds are at the Western end of the route. The easternmost site under consideration has a good hedgerow in it and boxing it in would seriously impact upon its ability to deliver any worthwhile ecological function. One of the alternatives would therefore be preferred.

6.8 Moving the enhancement area (acid grassland) to the south of the A1094 may make it more useful as a wildlife resource. However, the County Council considers it should be retained for thirty years rather than the proposed ten.

Highways

6.9 The inclusion of additional land within the order limits around the proposed Fromus Crossing should allow more space for drainage associated with the new embankment, road, and bridge, noting that no evidence has been provided regarding the sizing of this.

6.10 The reintroduction of land adjacent to the B1119 implies that access may be taken from this road by increased volumes of traffic serving the construction and maintenance compounds. Even if this does not have a material environmental impact, it may have in terms of highway design or access routes.

6.11 Access to the ecological mitigation area south of the A1094 may have an environmental impact if vegetation needs to be removed to provide safe visibility, noting mature trees and hedges at this location.

Landscape

6.12 The County Council acknowledges the change in layout of the Fromus crossing to avoid veteran trees on the eastern bank of the Fromus. However, this will result in the bridge and access road becoming more prominent in key views from the south of the Conservation Area, the Grade II* Church of St John the Baptist, and the Grade II listed Hurts Hall. In order to make this acceptable in landscape and visual terms, the design of both the access road and the bridge would need to be of outstanding quality, and harmonise with its setting; however, very little is said in this regard.

6.13 The County Council finds it difficult to see (without further elaboration) how the added flexibility sought by Sea Link will provide additional flexibility for other promoters. The County Council may be able to support, in principle, the inclusion of additional land in the DCO, if additional benefits could be demonstrated, such as additional land for mitigation and recreation, and if it was to micro-site and co-ordinate temporary infrastructure with other promoters, with the aim to reduce the overall land take for temporary compounds, access points, structures etc, with a view to reduce vegetation loss and ground disturbance. These goals, which the County Council would consider should be part of the design principles have not been mentioned, and the County Council therefore considers that the added flexibility for the promoter results in greater vagueness of the scheme and greater uncertainty.

6.14 The area of land to where the temporary mitigation has been re-located is still located within the National Landscape. The County Council has, in principle, no objection to some of this area to be managed as acid grassland. However, there appears to be scrub vegetation within this area, and the County Council would welcome further information and detail on what is proposed for those elements of the site.

6.15 The County Council is concerned that through removing areas from the DCO limits that were previously included for mitigation, comprehensive landscape, and visual mitigation commensurate with the proposals is being made more difficult/ impossible to deliver. The County Council therefore considers that the area along the Fromus, as well as the field north of the converter station site, should form part of the DCO limits.

Public Rights of Way (PRoW)

6.16 The Applicant should allocate enough space within the red line, along the southern side of the B1119 Saxmundham, to allow for a landscape buffer next to the watercourse and the creation of a bridleway to provide an off-road route along the B1119 for non-motorised users.

Suffolk County Council

Sea Link Pre-Submission Engagement

Suffolk County Council Response

Appendix A: Technical Comments

1 Introduction

1.1 The County Council has gathered technical comments from its technical departments regarding the details contained within the further engagement.

1.2 The full list of technical comments are as follows:

- Archaeology
- Ecology
- Highways
- Landscape
- Lead Local Flood Authority
- Public Health
- Public Rights of Way

2 Archaeology

These comments are in addition to those provided to the 2023 Statutory consultation and the additional consultation in summer 2024.

2.1 Geophysical survey has been completed for the majority of previous order limits, showing multiple areas of previously unknown features of likely archaeological origin.

2.2 In communication with AECOM and Stantec/Oxford Archaeology, two phases of trial trenching (informed by the geophysics results where available) prior to the submission of the DCO application have been agreed, with phase 1 completed and phase 2 having recently commenced. These phases cover a large proportion of the order limits.

2.3 Any remaining areas within the order limits not included in phase 1 or 2 trenched evaluation will require evaluation (with evaluation strongly advised to be undertaken at the earliest opportunity and preferably within the DCO examination period), including areas of the Friston substation site which have not been evaluated as part of the EA1N/2 project. All haul roads, compounds and ecological mitigation areas etc. will also need suitable evaluation and mitigation. Haul roads and access for recent NSIPs, as well as ecological mitigation areas, have often been completely destructive and the assumption should therefore be that they will have an archaeological impact unless proved otherwise. For the area east of landfall which will be subject to directional drilling, the Council would advise that appropriate assessment of deposits in this area will need to take place to enable the potential impacts of planned works to be fully understood.

2.4 A number of areas requiring archaeological mitigation, prior to works involving ground disturbance commencing within these areas, have already been defined as a result of the archaeological trial trenching works undertaken so far, in addition to the previously known areas requiring mitigation at the Friston substation site (which will not be mitigated as part of the EA1N/2 project). There is high potential for numerous further mitigation areas to be defined during ongoing evaluation work.

2.5 The new area west of Bloomfields' covert is a sizeable new addition, which has only seen limited geophysical survey and trenched evaluation. As such, in line with the rest of the scheme, the Council advises that geophysical survey should be undertaken across the remainder of the area, followed by trial trenched evaluation (at the earliest opportunity), in order to define the nature, extent and significance of any surviving below ground archaeological remains, to allow an appropriate mitigation strategy to be defined. Multi-period finds scatters are recorded within and around the new area, with geophysical survey and trial trenching works completed in the vicinity defining a number of previously unknown archaeological sites.

2.6 The area at Hazlewood Common is a large addition which has not previously been subject to archaeological assessment and therefore the Council would recommend that as elsewhere (depending upon the scope of ecological mitigation works which are proposed), this receives geophysical survey, followed by trial trench evaluation to understand what archaeology exists, its significance and preservation, and to inform possible mitigation. There is a possible ring ditch/barrow (FRS 011) recorded within the site, which suggests that further remains (including human remains) may be present. In addition, a number of Second World War features are recorded within the area (FRS 012, 053, 054), including features surviving as extant earthworks. As such, earthwork survey prior to trenching would also be appropriate. This additional area is in a topographically favourable location for archaeological remains of all periods and there is potential for very good preservation of below ground remains due to this being an uncultivated area, and so assessment should take place at the earliest opportunity.

2.7 The Council understands from recent meetings that NGET (Sealink) and NGV (Lionlink) are looking into a data sharing agreement. The Council supports this as it would avoid duplication of effort. Co-operation with SPR will also be beneficial, given the overlapping nature of this scheme with the EA1N/2 project.

2.8 Where order limits overlap with other schemes (notably Lionlink and EA1N/EA2) the applicants should negotiate responsibility for archaeological evaluation and mitigation, and mitigation areas will be expected to be sensitive to the archaeology. This will be of particular concern at the Saxmundham Converter station and Friston substation sites. The Council is pleased that the northern part of the converter station site is going to also be trenched imminently by Lionlink due to apparently complex and potentially significant features revealed by geophysics, which cross the boundaries of the order limits for the two schemes. It is highly likely that mitigation for the remains in this area will have to be undertaken in one instance by whoever undertakes works in this area first. At the Friston substation site, although archaeological mitigation requirements have been defined for much of this area, making sure any areas where assessment is still required is completed will be critical, as well as understanding the mitigation works, which will be the responsibility of the SeaLink project e.g. for sites which have been designated as Preservation in Situ areas by the EA1N/2 scheme as no works are planned, but which will see impacts as part of SeaLink and therefore will in fact need mitigation.

Comments on Additional Preliminary Heritage Information document

2.9 1.2.1 Archaeological remains have been shown to be extensive in certain areas of the scheme, although there is generally a fairly good correlation between the geophysical survey and trial trenching results. However, as was to be expected, additional archaeological remains not detected by the geophysical survey have also been defined.

2.10 1.2.2 Until full archaeological assessment, which includes trial trenching, has been completed for this area, this cannot be confirmed.

2.11 1.3.9 The potential archaeological impacts of the two new additional areas west of Bloomfield’s convert and at Hazlewood common also need to be considered. Until full archaeological assessment has been completed and therefore the surviving archaeological resource in these areas has been fully defined, impacts of proposals upon heritage assets cannot be properly understood and as such it is not yet possible to determine that there will be no ‘significant adverse effects’ to below ground archaeology in these areas.

2.12 With the imminent submission of the DCO application for this scheme, this would also be a useful point to highlight that copies of the Draft Outline Written Scheme of Investigation for onshore archaeology, DCO requirement wording and statement of common ground (alongside any other relevant documents) should be provided to SCCAS (and Historic England) at the earliest opportunity for comment and review, as the Council has yet to see any of these documents. Early input into these documents will hopefully assist in simplifying the examination process for all parties.

3 Ecology

3.1 Ecology work continues into early 2025, with a further thematic meeting scheduled for Friday 17th January 2025. These comments are therefore subject to further discussions with NGET and its consultants, and sight of the results of various survey work.

Fromus crossing:

3.2 The County Council welcomes the redesign to spare the veteran trees from destruction.

Construction & Maintenance Compounds:

3.3 The County Council understands that the construction and maintenance compounds are at the Western end of the route. One of the sites (the Easternmost) under consideration by NGET has a good hedgerow in it. Although this would be protected by temporary fencing, boxing it in would seriously impact upon its ability to deliver any worthwhile ecological function, and one of the alternatives will be preferred.

Mitigation & Enhancement Land:

3.4 Moving the enhancement area (acid grassland) to the south of the A1094 may make it more useful as a wildlife resource. It is further from a busy road, has other features that help in the mosaic including trees and a scrubby fringe (to the south). However, the County Council understands that it is proposed to be retained for only ten years and considers that it should be retained for thirty years.

4 Highways

Fromus Crossing

4.1 In highway terms the moving of the bridge 40m north does not raise additional concerns other than those expressed in previous correspondence albeit the inclusion of additional land within the order limits should allow more space for drainage associated with the new embankment, road, and bridge, noting that no evidence has been provided regarding the sizing of this. It is presumed that the drawing (S42_S/IGA/PS/0002) only shows the basal area of the lagoon.

Construction and maintenance compounds

4.2 The reintroduction of land adjacent to the B1119 implies that access may be taken from this road by increased volumes of traffic serving the construction and maintenance compounds. Even if it does not have a material environmental impact, it may have in terms of highway design or access routes.

Mitigation and enhancement land

4.3 Access to the ecological mitigation area south of the A1094 may have an environmental impact if vegetation needs to be removed to provide safe visibility, noting mature trees and hedges at this location.

Other changes

4.4 It is presumed from the inclusion of the additional land within the order limits that the flexibility in the alignment of the access road to the substation does not change the proposed connection to the public highway (B1121) as shown on drawing S42_S/IGA/PS/0003.

4.5 SCC remains concerned about the capacity of structures over which AILs will need to pass to access the converter site, specifically the rail overbridge on the B1121, but also the whole route from a suitable port and /or the SRN to the site, as structures such as those on the A14, A12 and A137 have not been considered. The latest review for the B1121 that highlights the issues with that structure can be found in Appendices B and C.

5 Landscape

5.1 SCC (Landscape) have reviewed the additional information provided by the Applicant in November 2024 and offer the following comments with regards to landscape and visual matters, without prejudice to any comments Suffolk County Council or East Suffolk Council may wish to make at a later date as further information emerges.

5.2 SCC (Landscape)'s previous comments remain valid, except where they are specifically superseded by the additional comments below.

Fromus Crossing:

5.3 SCC (Landscape) maintains its position that the proposed access and crossing over the river Fromus is unacceptable in landscape and visual terms, given the identified sensitivity of the landscape, and given that there may be other visible access routes, which SCC considers have not been fully explored by the Applicant. Within this context, SCC (Landscape) welcomes the change in layout to avoid veteran trees on the eastern bank of the Fromus, which could potentially be of national significance. This change will, however, result in the bridge and access road becoming more prominent in key views from the south of the Conservation Area, the Grade II* Church of St John the Baptist Church, and the Grade II listed Hurts Hall. In order to make this acceptable in landscape and visual terms, the design of both the access road and the bridge would need to be of outstanding quality, and harmonise with its setting; however, very little is said in this regard.

5.4 Paragraph 1.3.6 of the Additional preliminary heritage information – design amendments in Suffolk Version A November 2024:

5.5 ‘Less than substantial’ harm is a broad category that can range from almost no harm, at the lower end of the scale, to just below ‘substantial harm’ at the higher end of the scale. Planning Practice Guidance (MHCLG 2019) states that the extent of harm may vary and should be clearly articulated. At this stage of the assessment process, there is uncertainty regarding the final design of the proposed bridge and the associated landscape screening design for the bridge and permanent access. Visualisations of the proposed bridge and permanent access in the context of the conservation area, church and hall are also in production to assist with the assessment of this impact. For this reason, it is not possible at this stage to fully articulate where the level of harm would sit within the range of ‘less than substantial harm,’ however it is possible to state that it is not considered to be at the high end of the range.’

5.6 The Summary of design amendment following Targeted Consultation, Version A, November 2024, states: ‘[…] the proposed bridge is likely to result in significant adverse effects on the setting of the Church of St John the Baptist and Hurts Hall.’ (para. 1.2.4)

5.7 These two statements appear to be somewhat contradictory, and SCC (Landscape) disagrees with the statement that it is possible to state that the harm would not be ‘at the high end of the range,’ given that so little information has been provided to date.

<u>Construction and Maintenance compounds:</u>

5.8 SCC has continuously advocated a co-ordinated approach by the converter station promoters. However, it is difficult to see (without further elaboration) how the added flexibility sought by Sea Link will provide additional flexibility for other promoters. The additional potential work compound areas around the proposed Saxmundham Converter Station site, added to the DCO limits, appear to be located within areas that were previously presented as potential additional converter station sites. Further explanation as to how this would provide flexibility for other promoters would be welcome.

5.9 SCC (Landscape) may be able to support, in principle, the inclusion of additional land in the DCO, if additional benefits could be demonstrated, such as additional land for mitigation and recreation (field to the north of the site), and if it was to micro-site and co-ordinate temporary infrastructure with other promoters with the aim to reduce the overall land take for temporary compounds, access points, structures etc, with a view to reduce vegetation loss and ground disturbance. These goals, which SCC (Landscape) would consider should be part of the design principles have not been mentioned, and SCC (Landscape) therefore considers that the added flexibility for the promoter results in greater vagueness of the scheme and greater uncertainty.

5.10 SCC expects that the Applicant would have taken into consideration the additional potential vegetation losses/potential reduction in vegetation losses and impacts on archaeology, which could result from the addition of compound areas and associated required accesses, prior to adding them to the DCO limits. However, no information on this was provided.

Mitigation and Enhancement Land:

5.11 The area of land to where the temporary mitigation has been re-located is still located within the National Landscape. SCC (Landscape) has, in principle, no objection to some of this area to be managed as acid grassland. However, there appears to be scrub vegetation within this area, and SCC (Landscape) would welcome further information and detail on what is proposed for those elements of the site.

5.12 If this acid grassland is part of Biodiversity Net Gain that is to be achieved by the scheme, then SCC would welcome clarification why this is temporary mitigation for 10 years only.

5.13 It is unclear where near Saxmundham the 'skylark plots' are proposed. SCC would welcome further information on this. Should this be in the area that has been added in the wider parkland of Hurts Hall, then it would need to be demonstrated how the 'skylark plots' integrate with the parkland landscape restoration proposals.

5.14 SCC (Landscape) considers that the reduction of area for mitigation along the River Fromus is likely to limit further the landscape and visual mitigation that would be required in this area. SCC (Landscape) considers that it is unacceptable that the section for Mitigation and Enhancement Land focuses solely on ecological mitigation and enhancement, leaving out landscape and visual mitigation, which should be a key consideration in the sensitive location south of Saxmundham.

5.15 SCC (Landscape) would welcome further clarification on the rationale that has brought the Applicant to the conclusion that the removed is no longer needed for mitigation, why managing, and maintaining habitats in this area is considered too difficult, and why this area would deliver fewer public benefits than other mitigation areas or measures, which have not been referenced here.

5.16 SCC (Landscape) is concerned that through removing areas from the DCO limits that were previously included for mitigation, comprehensive landscape, and visual mitigation commensurate with the proposals is being made more difficult/ impossible to deliver. SCC (Landscape) therefore considers that the area along the Fromus, as well as the field north of the converter station site, should form part of the DCO limits.

5.17 In para. 1.2.10 the Additional preliminary heritage information – design amendments in Suffolk Version A November 2024, states:

'This assessment notes that hedgerows have been lost in the parkland and identifies the reinstatement of hedgerows and replanting of parkland trees as a way to enhance the character of the area and the approach to the town.'

5.18 SCC (Landscape) would welcome clarification on how the reinstatement of hedgerows east of the Fromus will enhance the approach to the town of Saxmundham.

Other changes:

5.19 SCC (Landscape) would welcome further information with regards to the additional changes mentioned in the Summary of design amendment following Targeted Consultation, Version A, November 2024. It would be helpful to learn how the Applicant has arrived at the conclusion that these and all other changes would not result in materially different environmental effects. SCC (Landscape) would welcome it if the Applicant were to demonstrate that the proposed changes do not only bring much more flexibility to the scheme, but also measurable environmental benefits, such as reduction in vegetation loss and disturbance of archaeological sites.

6 Lead Local Flood Authority (LLFA)

6.1 No comments.

7 Public Health

7.1 No comments.

8 Public Rights of Way (PRoW)

8.1 SCC PRoW and Green Access' response to the targeted consultation, dated August 2024, still stands, with particular reference to paragraphs 14.10 and 14.13.

8.2 In addition, the Applicant should allocate enough space within the red line, along the southern side of the B1119 Saxmundham, to allow for a landscape buffer next to the watercourse, and to also allow for the creation of a bridleway.

8.3 The bridleway would allow non-motorised users to have an off-road route along the B1119.

8.4 This would connect Church Hill, Saxmundham to Sternfield Bridleway 010 (E-491/010/0) to local villages to the East and South, and to Friston Bridleway 029 (E-260/026/0) to villages and routes to the East and North, towards the coastal paths.

8.5 This will give safe, alternative routes to the wider PRoW network away from the carriageway which has no footways or public rights of way.

Suffolk County Council

Sea Link Pre-Submission Engagement

Suffolk County Council Response

Appendix B: Benhall Railway Bridge Structural Review Report

RECORD OF STRUCTURAL REVIEW TO CS451 (Type 3)

1	**STRUCTURE DETAILS**	
1.1	Structure Name	*Benhall Railway Bridge*
	Structure No.	*59/42*
	Structure Code.	*1717*
1.2	Date Commissioned	*1956*
1.3	Obstacles crossed	*Double non electrified rail line*
	Structure carries	*B1121 Single Carriageway*
1.4	Structure type, form, span, skew, carriageway & verge widths	*The bridge deck comprises 19 steel I-beams encased in concrete, functioning as the primary deck element, with the encasing concrete serving as the secondary element. The deck is supported by mass concrete abutments and wingwalls, which are founded on 0.5m diameter bored piles.* *The bridge spans approximately 10.75 meters at a skew angle of about 42°, with a square span of 8 meters. The total width between the parapets is around 13.7 meters and the carriageway is approx. 6.7m wide (from as-built drawings).*
1.5	Reason for Structural Review	*Requested by Suffolk Highways to compliment routine Principal Inspection.*
2	**EXISTING ASSESSMENT DETAIL OR DESIGN RECORDS**	
2.1	Assessed / Design capacity	*40T Assessment Live Load and 33 Units of HB.*
2.2	Date of Assessment	*January 2000*
2.3	Assessment report reference	*960387/BN/AR/R1.0*
2.4	Certification	*Assessment Certificate dated 23/12/2002*
2.5	Calculations	*Assessment calculations – 960387/BN/R1.0*
2.6	As built drawings	*Sections drawing dated 1956* *Site layout plan – undated* *Elevation views (included in Assessment report)*
2.7	Critical elements	*Bridge deck – carriageway bending*
2.8	Comments on Assessment or Design	*Benhall Railway Bridge was assessed in accordance with BD 21/97.* *A longitudinal shear check (to BD 61/96 Cl. 8) proved that composite action between the steel beam and concrete surround would not be possible. Therefore, simple strip analysis to a single steel beam was used to determine the loading capacity, assuming the beams were restrained by the surrounding concrete and compact.* *The substructure was not assessed as it showed no signs of distress.*
	EVALUATION	

3.1	Inspection Date	*04-08-2024*
3.2	Change in Condition	*Benhall Railway Bridge was found to be in a Fair overall condition.* *All defects have previously been identified and in general their condition does not appear to have deteriorated.* *The exception to this however is potentially the most significant defect, which is the spalled concrete and exposed corroding steel beam within to the deck adjacent the abutments. This defect was previously noted to be affecting a small area only, which photographic evidence proves, but more concrete has since spalled revealing a larger area of corroded steelwork. This defect is likely attributable to failure of the deck expansion joints above.*
3.3	Change in Standard	*Benhall Railway Bridge was assessed in 2002 in accordance with BD 21/97.* *Loading and assessment standards changed in 2020 for both normal traffic and abnormal loads:* • *The current assessment standard is CS 454, which covers vehicles complying with C&U Regulations and AW Regulations. This includes vehicles up to 44T and represents an increase in loading from previous standards.* • *CS 458 is now used to assess the effects of abnormal vehicles complying with STGO Regulations and Special Order vehicles. Notifications/applications are required for STGO and SO vehicle movements.*
3.4	Change in Loading	*There is no indication that the road classification or alignment has changed for this structure since its construction in 1956.*
3.5	Recommendation	*Using the conversion charts in CS 458 the 33 units of HB equates to an SV-TT reserve factor of 1.26. The structure fails all other SV loadings albeit that the SV 80 reserve factor is a marginal failure at 0.99.* *Due to the deteriorating condition of the steel beams, some sensitivity analysis could be undertaken to understand the effects of section loss that is acceptable to this area of the deck, with a view to confirming a revised capacity. This would affect the shear capacity of the deck. However as only three spalled areas are identified (2 at the west abutment and 1 at the east abutment) the effect on the overall shear capacity of the deck is not expected to be significant as the defects identified show corrosion to the beam soffits rather than the web of the beams, which are still encased in concrete.* *Notwithstanding the above the defective deck areas should be scheduled for maintenance in the near future to arrest a potential future problem. When the concrete repairs are carried out is recommended that further investigation is carried out to expose the webs of the beams (at the current defective areas), that can then inform the sensitivity analysis.*
4	**ASSESSMENT JUSTIFICATION (delete or complete as applicable)**	
4.1	Proposed assessment method	*Simple hand calculations to determine shear force at abutments.*

4.2	Proposed approach to establish current condition	*Principal inspection dated 04-08-2024.*	
4.3	Basis of structural / material properties for assessment	*Assessment standards within the DMRB and Eurocodes.*	
4.4	Proposed testing and site investigation	*Steel thickness testing to exposed beam flanges and following additional break out, to the beam webs. Investigation and testing to be carried out during concrete repairs to the deck soffit defects.*	
4.5	Proposed checking category	*Category 2 (as 42 degrees skew)*	
5	**Endorsement**		
		Proposed by	*Chris Sadler BEng CEng MICE* *Principal Engineer* *Milestone Infrastructure Ltd*
		Signed	
		Date	*23/11/24*
5.1	TAA Conclusion	*Having considered the records available for this structure and any changes in condition, standards or loading, I'm not satisfied that the current structural capacity of this structure remains as assessed in 2000 at 33 units of HB (SV-80 failing with a Reserve Factor of 0.99). Considering the uncertainty of the condition of the encased steel beams, I'm qualitatively restricting the bridge to HA (STGO 1, 46T) vehicles until further investigations into the condition of the beams is undertaken as recommended above. While it is acknowledged that this structure is on the B1121, it may be of strategic importance for any S&SO vehicle movements to NSIP developments in the area. I would therefore I also agree that a quantitative STGO assessment of this structure is now required to DMRB (CS 458) in order to quantify its structural capacity, with a proposed checking category of CAT II. However, this assessment should be undertaken alongside further investigations and repairs, so the sensitivity of the assessment can be adjusted according to the various degrees of deterioration of the structure at the locations where it is at risk from deterioration. Since capacities above C&U are greater than our current maintenance liability, some of our costs may need to be reimbursed and any increased liability would need to be fully costed and a commuted sum agreed before a further review is considered. However, for it to remain safe for use and fit for purpose the bridge requires a further High-level Principal Inspection and a Type 3 structural review in 6 years' time.*	
		Agreed by	*Stuart Heald BEng CEng MCIHT* *Structures Condition and Assessment Manager*
		Signed	
		Date	*5th December 2024*

Suffolk County Council

Sea Link Pre-Submission Engagement

Suffolk County Council Response

Appendix C: Benhall Railway Bridge Principal Inspection Report

BENHALL RAILWAY BRIDGE
BRIDGE No. 59/42
(BRIDGE CODE 1717)
BENHALL

PRINCIPAL INSPECTION REPORT

(HIGH LEVEL)

CONTENTS

Inspector(s)	Neil Carter Mgciniwethu Ncube
Report Originator	Mgciniwethu Ncube
Report Checker	Wayne Hewitt
Report Reviewer	Chris Sadler

INSPECTION DATE:
04 August 2024

Report Reference No. 1717-2024-PI-R01

EXECUTIVE SUMMARY

INSPECTOR'S COMMENTS

Structure Description

Benhall Railway Bridge, located west of Benhall village, is a single-span bridge that supports the B1121 single carriageway over a non-electrified, single-track segment of the East Suffolk rail line. The bridge, reconstructed in 1956, spans approximately 10.75m at a skew angle of about 42°, with a square span of 8m. The total width between the parapets is around 13.7m.

The bridge deck comprises 19 steel I-beams encased in reinforced concrete supported by mass concrete abutments and wingwalls, which are founded on 0.5m diameter bored piles.

The structure is considered to be orientated in a Southwest to Northeast direction. For the sake of clarity and to make this report easier to read, it will be considered to run from West to East, as used in the previous inspection reports.

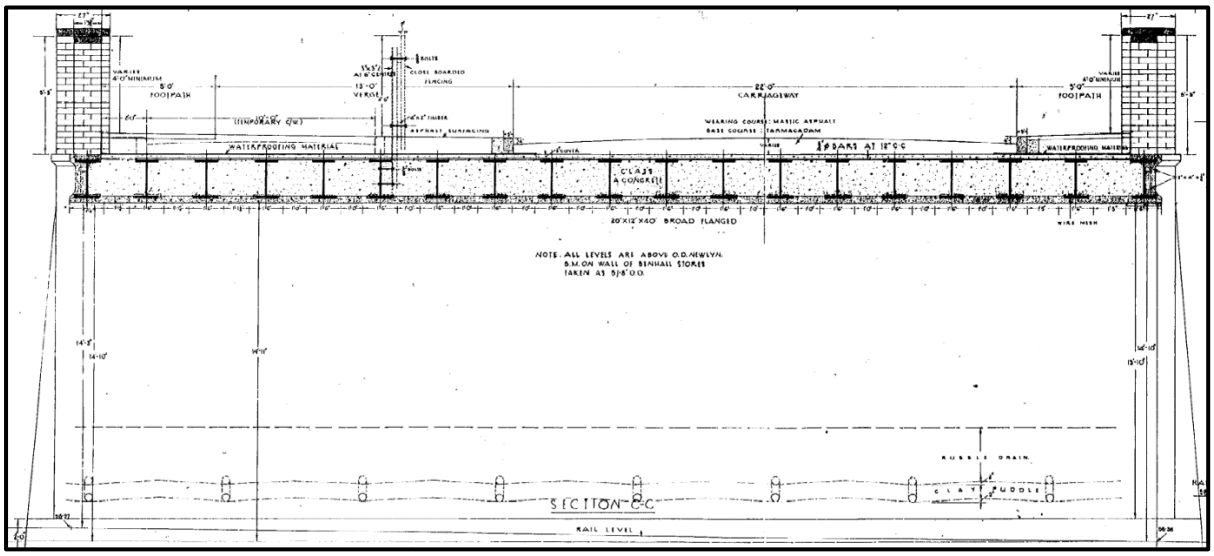


Figure 1: Cross section of Benhall Railway Bridge

Design/Assessment Load Rating

The last load assessment conducted by Suffolk County Council (SCC) in 2002 rated the bridge with a loading capacity of 40T Assessment live Load and 33 Units of HB.

Previous Inspections

The previous 2016 Principal Inspection (PI) identified the following main defects:

- Isolated areas of spalled concrete to deck soffit, some revealing small areas of corroded bottom flange of the encased I-Beams.
- Numerous areas of leaching and water staining at the interface between the abutments and deck soffit, indicating a failure of the waterproofing at the expansion joint.

- Carriageway surfacing had potholes and major weathering throughout.
- Displacement was noted to the west end of south brickwork parapet. Numerous minor cracks and spalls noted throughout both parapets. Ivy growth to both parapets.

MAIN DEFECTS

The main defects identified during this Principal Inspection are summarised by BCI Element number below (refer to BCI form below for further details):

Deck Elements

1 – Primary Deck Element

Multiple areas of hollow and spalled concrete concentrated to the West deck edge adjacent the West abutment. Two areas of spalled concrete exposing corroding steel I beam encased within.

Saline leaching was noted through cracks and construction joints to the deck slab and over the edge beams form the parapet interface.

Load-bearing Substructure

9 – Abutments

Significant saline leaching and corrosion staining observed at the top of both abutments.

Durability Elements

17 – Waterproofing

Saline leaching identified through cracks and construction joints in the deck slab.

18 – Movement/Expansion Joints

Saline leaching and corrosion staining identified to the abutments is indicative of expansion joint failure.

TESTING

No materials testing was undertaken during this inspection.

INSPECTION ACCESS/EQUIPMENT USED

The inspection took place during the night of the 4th of August 2024 and was undertaken by two Milestone Engineers wearing appropriate PPE (orange hi-vis trousers and jacket, blue hard hat, safety boots, safety gloves suitable for Network Rail Work and safety glasses) and utilising a digital camera, crack width gauge and tapping hammer.

The soffit of the deck, exterior elevations of the parapets and abutments were inspected from Network Rail land in a “Safeguarded” safe system of work with the protection of the line possession. At height access was gained using a Glass-Fibre Reinforced Plastic tower scaffold and aluminium sectional ladder. The lower parts of the East and West abutments were

inspected on foot from the cess of the rail track and above bridge deck between parapets was inspected on foot. Foundations and all buried elements were not inspected.

Parking was available opposite the access gate close to the north parapet. Access to the bridge was via the steps at the Southwest of the structure.

ENGINEER'S COMMENTS

Benhall Railway Bridge was found to be in a generally Fair condition.

There are multiple minor defects associated with the mass concrete wingwalls and abutments, such as cracks, spalled concrete and graffiti, which are of little consequence to the element's structural stability. There was also historic cracking, repairs and leaching noted to the brickwork parapets, which should be monitored during future inspections.

Deck Elements

1 – Primary Deck Element

The areas of spalled concrete and exposed steel beam flanges are likely a result of carbonation and has been permitted by the ingress of saline water/moisture through the expansion joints.

The concrete and steel beam defects should be addressed as one holistic scheme to protect the encased steel beams and ensure longevity of the deck. However, the extent of corrosion to the steel beams is currently unknown and should be investigated further, as this will affect the extent remedial works.

The saline leaching emanating through the deck cracks and construction joints; and deck edges, are assumed to be due to waterproofing failure or absence (see Element 17).

Load-bearing Substructure

9 – Abutments

Both abutments were marked with historic and fresh saline leaching and corrosion staining throughout their entire length. This is likely to be a result of failure of the expansion joints above (see Element 18).

Durability Elements

17 – Waterproofing

The leaching identified to the deck is likely a result of failure or absence of the waterproofing membrane. It is recommended that the deck is re-waterproofed to eliminate water/moisture percolation through the deck.

18 – Movement/Expansion Joints

The leaching identified to the abutments and the spalled concrete and exposed corroding steel beams of the deck are attributed to failure of the deck expansion joints. These joints should be replaced as a matter of urgency to prevent further deterioration and before any remedial works to the deck is undertaken. Ideally the joint replacement would be coincidental with the re-waterproofing recommended, if it is confirmed and agreed that only minor concrete repairs are required to the deck.

MONITOR: -

- Width of cracks and leaching to parapet brickwork

BCI INSPECTION REPORT

BCI Form ***Type*** **P** ***Add Insp*** **Z** **Eng Insp** **N** **Red Star** **N**

Bridge Name: Benhall Railway	Road Name: Main Road
Code: 59/42 Bridge Ref/No:1717	Road Ref/No: B1121
Map Ref: TM OS E: 637987 OS N:261310	Construction Form 1 of 1
From: SW To: NE	Span (m):10.75m
All above ground elements inspected: YES ☑ NO ☐	Photographs? YES ☑ NO ☐
Construction Form Width (m):13.7m	

Bridge Type Code:

Primary deck element form Table 2	07
Primary deck element material Table 4	E
Secondary deck element form Table 3	20
Secondary deck element material Table 4	P

Set	No	Element Description	S	Ex	Def	W	P	Cost	Comments/Remarks
Deck Elements	1	Primary deck element (Table 2)	3	B	1.1	R	P2		WORKS REQUIRED See Multiple Defect Element 1, Defect 2.2.
	2	Secondary deck element/s: Transverse beams							
	3	Secondary deck element/s: Element from Table 3							
	4	Half joints							
	5	Tie beam/rod							
	6	Parapet beam or cantilever							
	7	Deck bracing							
Load-bearing Substructure	8	Foundations	1	A	0	N	-	-	The foundations are not accessible and therefore they were not inspected. They show no signs of distress.
	9	Abutments (incl. arch springing)	3	B	2.1	-	-	-	
	10	Spandrel wall/head wall							
	11	Pier/column							
	12	Cross-head/capping beam							
	13	Bearings	1	A	0	N	-	-	Bearings not visible, assumed not present.
	14	Bearing plinth/shelf							
Durability Elements	15	Superstructure drainage							
	16	Substructure drainage	2	B	8.4	-	-	-	Partial blockage of weepholes.
	17	Waterproofing	2	C	14.1	R	P2	30,000	Saline leaching observed across the deck soffit and deck edge beams (see Element 1). WORKS REQUIRED Re-waterproof bridge deck.
	18	Movement/expansion joints	3	D	10.12	R	P2	20,000	Saline leachate deposits and corrosion staining observed to both abutments faces (see Element 9). WORKS REQUIRED Repair/install waterproofing at movement joints.
	19	Finishes: deck elements							
	20	Finishes: substructure elements							
	21	Finishes: parapets/safety fences							
Safety Elements	22	Access/walkways/gantries							
	23	Handrail/parapets/safety fences	3	C	3.5	M	-	-	MONITOR The width of cracks and visual evidence of leaching to be monitored during future inspections.
	24	Carriageway surfacing	1	A	0	-	-	-	Carriageway resurfacing in good condition.
	25	Footway/verge/footbridge surfacing	3	C	9.1	-	-	-	Patchy and friable footway surfacing (P43 & P44).
Other Bridge Elements	26	Invert/river bed							
	27	Aprons							
	28	Fenders/cutwaters/collision prot.							
	29	River training works							
	30	Revetment/batter paving							
	31	Wing walls	3	C	2.1	-	-	-	
	32	Retaining walls							
	33	Embankments	2	B	5.2	-	-	-	Minor vegetation growth obscuring wingwalls (P49 & P52).
	34	Machinery							
An cill	35	Approach rails/barriers/walls							
	36	Signs							

	37	Lighting							
	38	Services							
Multiple Defects	1	Primary deck element (Table 2)	3	B	2.1	-	-	-	Saline leaching through cracks, construction joints and over deck edges. WORKS REQUIRED See BCI Element 17 for remedial action.
	1	Primary deck element (Table 2)	3	B	2.2	R	P2	50,000	WORKS REQUIRED Steelwork protection and concrete repairs to all spalled concrete areas.
	1	Primary deck element (Table 2)	2	B	2.3	-	-	-	Minor diagonal, longitudinal and transverse cracks randomly located to the deck soffit leaching up to 1.0mm wide.
	25	Footway/verge/footbridge surfacing	3	C	5.2	-	-	-	Minor silt and vegetation accumulation and footway edges (P36 & P37).
	31	Wing walls	2	B	3.5	-	-	-	

S – severity, **Ex** – extent, **Def** – defect, **W** – work required, **P** – work priority	Inspection Date: 04/08/2024	Name: Mgciniwethu Ncube

INSPECTOR'S COMMENTS

1	There are two areas of exposed steel beam bottom flange identified to the West end of the deck. One area was approximately 200x150mm and the second area 200x100mm, both of which were in the South half of the deck adjacent the West abutment. The exposed areas are showing heavy corrosion and laminated corrosion product flaking off the bottom flange approx. 1mm thick (P5-P7, P9). It should be noted that this corrosion is at the support location and the exact depth and extents of the corrosion along the beam is unknown. There are isolated areas of spalled concrete concentrated at the deck edge adjacent the soffit/abutment interface (P9). The west side of the deck is the most affected compared to the east abutment. The depth of spalling ranges from a depth of 5mm to 75mm exposing the beam flanges (see Element 1). An isolated area of honeycombing was noted running along the full length of a construction joint (P14) and an isolated area of corroded threaded bar to the middle of the soffit (P15).
9	Saline leachate deposits were observed at the top of the abutments where water seepage has occurred and some of these areas also contained corrosion staining. The thickness of the deposits was approximately 30mm thick at the top of the abutment. Noticeable horizontal leachate deposits were also recorded along the abutment faces at lower levels. A minor vertical crack was observed to the west abutment face measuring approximately 2mm in width and extending approx. 1.6m (P25). An area of minor spalling was noted to the east abutment where a plain bar/object was observed. The spalling is approximately 50mm in diameter and 15mm deep (P24).
23	Several vertical, diagonal and horizontal cracks were observed throughout both parapets. A continuous horizontal crack approx. 1mm in width runs the majority of both parapets' length between the top two new courses and the original parapet (P34 to P39). The widest vertical crack noted was 2.5mm to the west end of the north parapet (P38), the widest diagonal crack was 10mm to the east end of the south parapet (P33) and the widest horizontal crack was 2.5mm to the west end of the north parapet (P38). Further cracks were observed on the rail side face of the parapets and assumed to reflect the cracks on the road facing side. Spalling was mostly observed in the top two new courses and in the corner bricks of the pilasters, while the original parapet had minimal to none (P40).
31	Efflorescence staining was observed to the top of all wingwalls, and the majority is believed to be emanating through the brick parapet interface with isolated spots along lower parts of the wingwall (P54, P55 & P57). Vertical cracks/construction joint cracks (<3.5mm) were observed, with some extending into the parapet above the wingwall (P46, P47, P51 & P59). The top of the wingwalls had a mortar fillet that was easy to pick off for lengths from 1 to 5m (P50 & P55). A large area of spalling concrete was observed below the end pilaster of the south parapet (P48).

Name Mgciniwethu Ncube **Signed** **Date 24-10-2024**

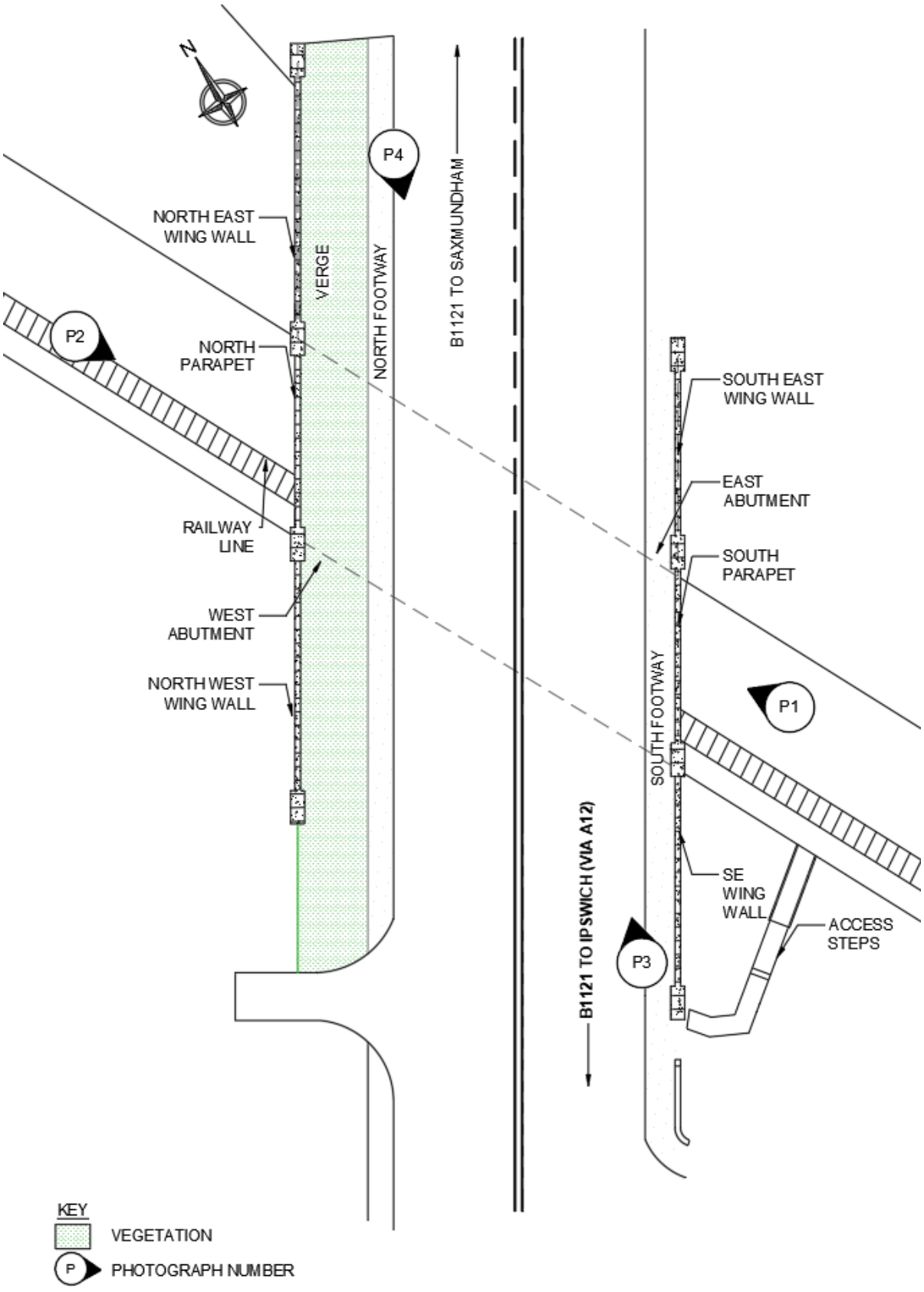
ENGINEER'S COMMENTS

1	The previous inspection highlighted minor exposure and corrosion of the steel beam. Based on photographic evidence the extent of the deterioration to date has increased and is now posing a higher risk to the structure.

	The corrosion to the steel beam is likely due to seepage through the bridge expansion joint and/or failed waterproofing. The defect is at a critical location of the bridge and could lead to shear failure if the defect is not attended to. Previous inspections noted similar spalling defects, but the areas have increased in size and more steel is now exposed. The fact that the spalled concrete areas are adjacent the abutment, where significant leaching/staining is noted to the abutments (see Element 9) and the good cover to steel beams noted, suggests that the cause for this defect is attributable to failed expansion joints and water/moisture ingress. It is recommended that concrete repairs be carried out to the deck to ensure longevity. The steel beams should be cleaned back to sound steel and a protective paint coating applied prior to the concrete repairs. The full extent of corrosion to the steel beams is unknown and should be investigated further prior to detailed design, to ensure suitable remediation. If the extent is relatively small, then cleaning of the steel, protective coating to the steel and concrete repairs to the deck should be sufficient. If the extent is deemed to be significant and potentially affecting capacity, then a more significant deck replacement may be required. The extent of leaching was not measured in the previous inspection and it is a difficult defect to measure, therefore a quantitative comparison cannot be made. However, it is suspected that the defect has deteriorated due to the “fresh” nature of the deposits. The location of the leaching to the soffit and edge beams is indicative of waterproofing failure. It is recommended that the waterproofing be replaced to ensure long term durability of the structure (see Element 17).
9	The previous report noted leaching and staining at the top of the abutment. The staining observed on the abutments are likely due to expansion joint failure allowing water/moisture to percolate though the deck/abutment construction forms. The noticeable horizontal lines of saline deposits to the abutment face at lower levels are likely result of the steps in mass concrete construction form of the abutment and water/moisture percolating through these cold joints. The defect of saline leachate staining to the abutments will be having very little effect on the abutment elements themselves, since they are of mass concrete construction, but the evidence of corrosion staining suggests that the deck beams or reinforcement is corroding, and this should be addressed by replacing the expansion joints (see Element 18). The crack was observed in the last inspection, does not appear to have deteriorated and is minor in nature. The area of spalled concrete with corroding embedded object was noted during the last PI and does not appear to have changed since. This is likely to be a construction defect, as there is no reinforcement in the abutments.
16	The weep hole was not considered a significant defect; however, it is recommended that debris should be removed and snail displaced. Vegetation around the weep holes in the wingwall was removed during the inspection.
23	The multiple cracking has been noted on previous PI’s and does not appear to have significantly deteriorated since. It is noted that the large crack and displacement referenced in the 2016 PI was to the west end of the south parapet, which has now been repaired. The 2007 PI identified the same 10mm diagonal crack to the east end of the south parapet (not explicitly refenced in 2016 PI), and this does not appear to have widened in the intervening 17 years. The 2016 PI observed similar minor spalling to the brickwork throughout both parapets and is likely to be a result of freeze-thaw action. The cracking and spalling are currently of no structural concern. These should be monitored during future inspections.
31	The 2016 PI also noted staining and leaching to all wingwalls. Whilst it is likely that the leaching is getting worse it currently does not pose imminent danger to the structural integrity of the wingwalls. The 2016 PI reported similar cracks and spalled areas, and these seem to have not increased in severity. These defects pose no significant issue, because the wingwalls are of mass concrete construction.

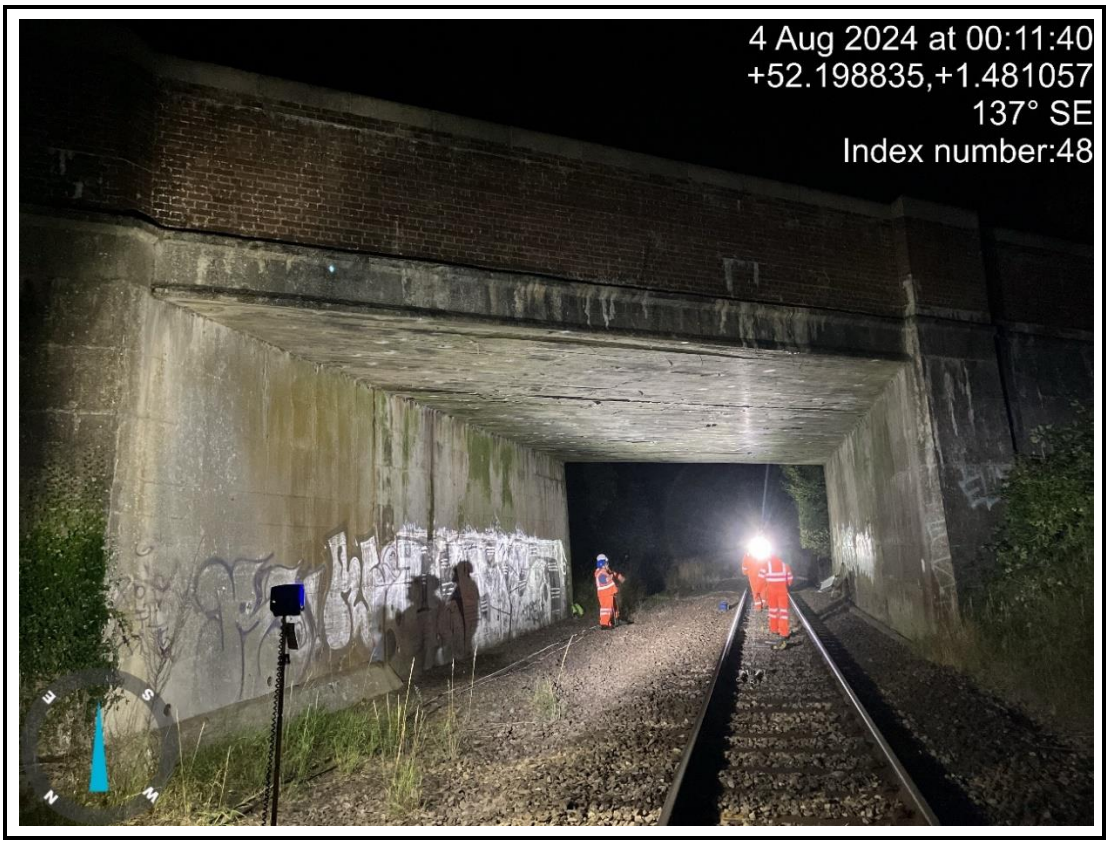
Name Wayne Hewitt **Signed** **Date 07-11-2024**

KEY PLAN
Not to scale



GENERAL BRIDGE PHOTOGRAPHS

1717_P1_2024 South Elevation



1717_P2_2024 North Elevation

1717_P3_2024 Approach looking East (Image captured 19/07/23)

1717_P4_2024 Approach looking West (Image captured 19/07/23)

BRIDGE ELEMENT DEFECT FORMS

Key to abbreviations used throughout element defect forms:

PD = Principal Defect (tick defect as quoted on 'BCI Inspection Report')
S = Severity
Ex = Extent
Def = Defect
W = Work required
P = Work Priority

Element Description: Primary deck element: Concrete encased steel beams								BCI Element No: **1**		
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
Deck Beams	Rusting/Corrosion		3	B	1.1	R	P2		**D1**	**P5-P7, P9**
	Section loss		2	B	1.2	R	P2		**D1**	**P5-P6**
	Welds		1	A	1.3	-	-			
Concrete Deck	Staining/Leaching		3	B	2.1	-	-	See BCI Element 17	**D1**	**P8, P13**
	Spalling	✓	3	B	2.2	R	P2	50,000	**D1**	**P9**
	Cracking		2	B	2.3	-	-	-	**D1**	**P10, P11**
	Delamination		1	A	2.4	-	-	-		
	Thaumasite or Freeze thaw action		1	A	2.5	-	-	-		

DEFECT NOTES

General

The bridge is composed of 19No. steel I beams which are encased in reinforced concrete. The slab was noted in the previous 2016 PI to be cast in-situ using multiple shuttering boards spanning between abutments as seen in the concrete finish.

1.1 & 1.2 Rusting/Corrosion and Section Loss

There are two areas of exposed steel beam bottom flange identified to the West end of the deck. One area was approximately 200x150mm and the second area 200x100mm, both of which were in the South half of the deck adjacent the West abutment. The exposed areas are showing heavy corrosion and laminated corrosion product flaking off the bottom flange approx. 1mm thick (P5-P7, P9).

It should be noted that this corrosion is at the support location and the exact depth and extents of the corrosion along the beam is unknown.

The previous inspection highlighted minor exposure and corrosion of the steel beam. Based on photographic evidence the extent of the deterioration to date has increased and is now posing a higher risk to the structure.

The corrosion to the steel beam is likely due to seepage through the bridge expansion joint and/or failed waterproofing. The defect is at a critical location of the bridge and could lead to shear failure if the defect is not attended to (see recommendation for defect 2.2 below).

2.1 Staining/Leaching

Saline leaching was observed across the bridge deck, in some cases with stalactites forming. There are two distinct areas of leaching, through cracks and construction joints of the deck; and to the deck edges. The active leaching is approximately 10mm thick and stretches along the full length of some of the cracks to the soffit. A continuous line of saline leaching was noted for a length of approximately 2.5m to one of the construction joints (P8). This was the most onerous effected construction joints, but this type of leaching was common throughout the deck. There are areas of isolated saline deposits to the deck edges, the most affected area was noted to the mid span of the North edge beam (P13).

The extent of leaching was not measured in the previous inspection and it is a difficult defect to measure, therefore a quantitative comparison cannot be made. However, it is suspected that the defect has deteriorated due to the “fresh” nature of the deposits. The location of the leaching to the soffit and edge beams is indicative of waterproofing failure. It is recommended that the waterproofing be replaced to ensure long term durability of the structure (see Element 17).

2.2 Spalling

The soffit is characterised by isolated areas of spalled concrete concentrated at the deck edge adjacent the soffit/abutment interface. The West side of the deck is the most affected compared to the East abutment as evidenced by the exposed the steel I beam flanges. The depth of spalling ranges from a depth of 5mm to 75mm of the concrete cover and thus exposing the steel I beams. An isolated area of honeycombing was noted running along the full length of a construction joint (P14) and an isolated area of corroded threaded bar to the middle of the soffit (P15).

Previous inspections noted similar spalling defects, but the areas have increased in size and more steel is now exposed.

The fact that the spalled concrete areas are adjacent the abutment, where significant leaching/staining is noted to the abutments (see Element 9) and the good cover to steel beams noted, suggests that the cause for this defect is attributable to failed expansion joints and water/moisture ingress.

It is recommended that concrete repairs be carried out to the deck to ensure longevity. The steel beams should be cleaned back to sound steel and a protective paint coating applied prior to the concrete repairs. The full extent of corrosion to the steel beams is unknown and should be investigated further prior to detailed design, to ensure suitable remediation. If the extent is relatively small, then cleaning of the steel, protective coating to the steel and concrete repairs to the deck should be sufficient. If the extent is deemed to be significant and potentially affecting capacity, then a more significant deck replacement may be required.

2.3 Cracking

Several cracks were noted in the bridge soffit and characterised by leaching deposits between the cracks. The diagonal, longitudinal and transverse cracks were a maximum of 1mm wide ranging from 0.5m to 2.5m in length.

Minor cracks of similar width were observed in the previous inspections and do not appear to have significantly deteriorated.

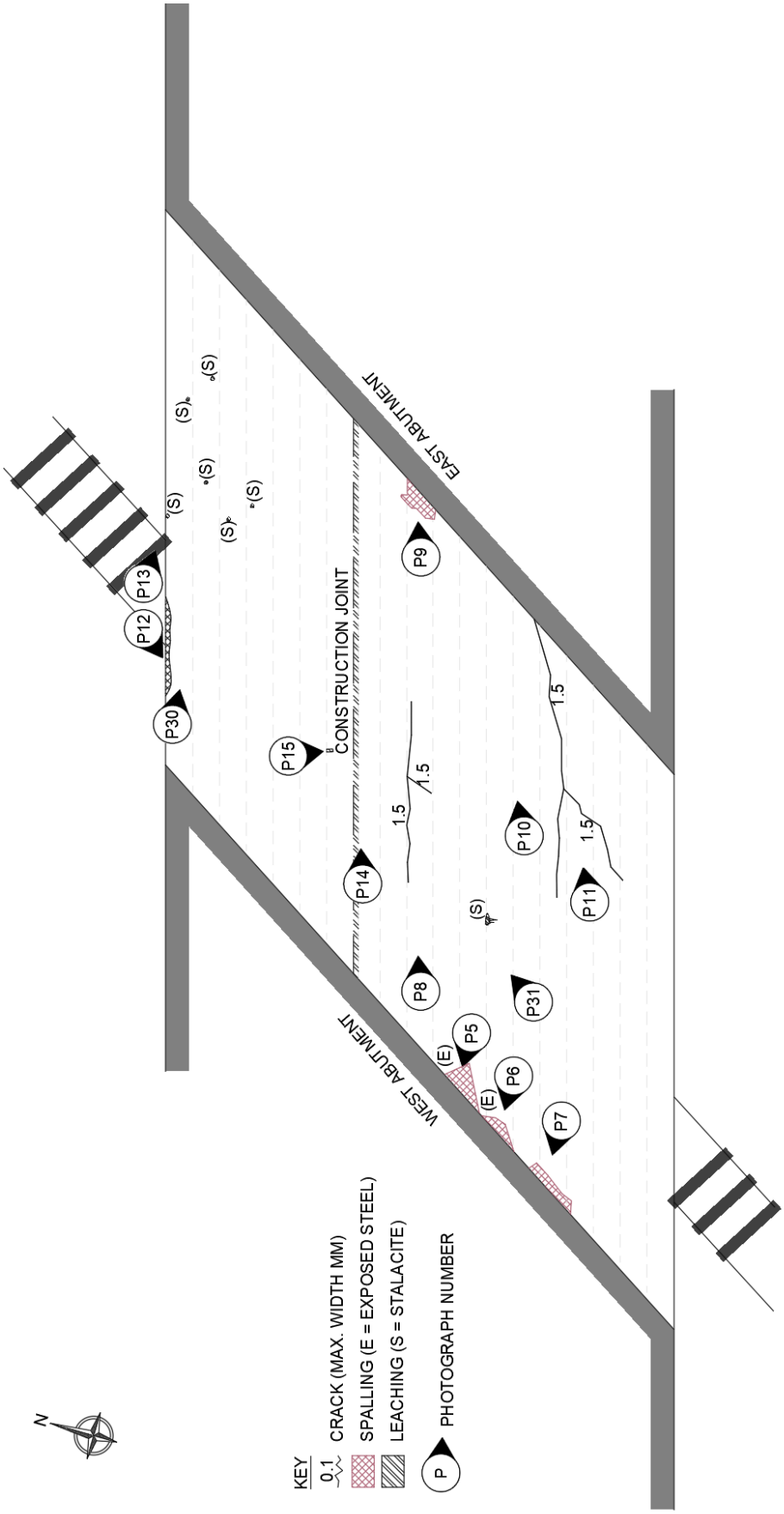
Work action:

Undertake concrete repairs to all spalled concrete areas, following expansion joint repair/replacement.

Expose the steel beam around the affected area (to clean steel), remove corrosion product and prepare to bright clean steel. Apply anti-corrosion paint to the steel, prior to concrete repair for long term durability.

DIAGRAM D1 – BRIDGE SOFFIT

Not to scale



1717_P5_2024 West abutment/soffit interface – Exposed corroding steel I beam (75mm Cover)

1717_P6_2024 West abutment/soffit interface - Exposed steel beam flaking corrosion

1717_P7_2024 West abutment/soffit interface - Partial spalling & exposure of steel beam

1717_P8_2024 Bridge soffit - Stalactites buildup along longitudinal cracks

1717_P9_2024 Abutment/soffit interface - Concrete spalling

1717_P10_2024 Bridge soffit - Cracking and minor spalling

1717_P11_2024 Bridge soffit - Diagonal and longitudinal cracks

1717_P12_2024 North deck edge – Minor concrete spalling

1717_P13_2024 North deck edge - Leachate deposits (<5mm thick) with stalactite build up (also to soffit between beam construction joints)

1717_P14_2024 Bridge soffit – Concrete spalling & honeycombing

1717_P15_2024 Bridge soffit – Exposed corroded threaded bar

1717_P16_2024 Abutment/soffit interface – Deteriorated filler board

Element Description: **Foundations**									BCI Element No: **8**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
Foundations	Settlement		1	A	8.1	-	-			
	Differential movement		1	A	8.2	-	-			
	Sliding		1	A	8.3	-	-			
	Rotation		1	A	8.4	-	-			
	Scour		1	A	8.5	-	-			
	Crack Deformation		1	A	8.6	-	-			

DEFECT NOTES

General

Previous Inspection reports and drawings indicated the bridge is supported on concrete piles with capping beam. The foundations were buried during inspection and therefore no investigations were conducted on the foundation as no evidence of distress was reported.

Work action:

No action required.

Element Description: **Abutments**									BCI Element No: **9**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
West Abutment	Staining/Leaching	✓	3	B	2.1	-	-		**D2**	**P17-P20**
	Deformation		1	A	3.1	-	-			
	Cracking / Spalling		2	B	3.5	-	-		**D2**	
	Bulging / Leaning / Displacement		1	A	3.7	-	-			
East Abutment	Staining/Leaching		3	B	2.1	-	-		**D3**	**P21-P23**
	Deformation		2	A	3.1	-	-			
	Cracking / Spalling		2	B	3.5	-	-		**D3**	**P24 & P25**
	Bulging / Leaning / Displacement		1	A	3.7	-	-			

DEFECT NOTES

General

The general visual condition of the abutments appears poor due to the presence of heavy Saline leaching and graffiti. However, since the abutments are mass concrete these defects are of little concern and do not affect their capacity.

2.1 Staining/Leaching

Saline leachate deposits were observed at the top of the abutments where water seepage has occurred and some of these areas also contained corrosion staining. The thickness of the deposits was approximately 30mm thick at the top of the abutment. Noticeable horizontal leachate deposits were also recorded along the abutment faces at lower levels.

The previous report noted leaching and water stains at the top of the abutment. The staining observed on the abutments are likely due to expansion joint failure allowing water/moisture to percolate though the deck/abutment construction forms, over the bearing shelf and down the abutment face (it should be noted that the construction detail and presence of bearings is unclear from the as-built drawings provided. It appears that there is no movement permitted in the design of these elements). The noticeable lines of Saline deposits to the abutment face at lower levels are likely result of the steps in mass concrete construction form of the abutment and water/moisture percolating through these cold joints.

The defect of Saline leachate staining to the abutments will be having very little effect on the abutment elements themselves, since they are of mass concrete construction, but the evidence of corrosion staining suggests that the deck beams or reinforcement is corroding, and this should be addressed by replacing the expansion joints (see Element 18).

3.5 Cracking / Spalling

A minor vertical crack was observed to the west abutment face measuring approximately 2mm in width and extending 1.6m.

The crack was observed in the past two inspections; however, it does not appear to have deteriorated and is minor in nature.

An area of minor spalling was noted to the east abutment where a plain bar/object was observed. The spalling is approximately 50mm in diameter and 15mm deep.

The previous 2016 PI report noted a similar defect and it has not changed since.

The spalling is likely to be a construction defect, as there is no reinforcement in the abutments.

Work action:
No action required.

DIAGRAM D2 – WEST ABUTMENT

Not to scale

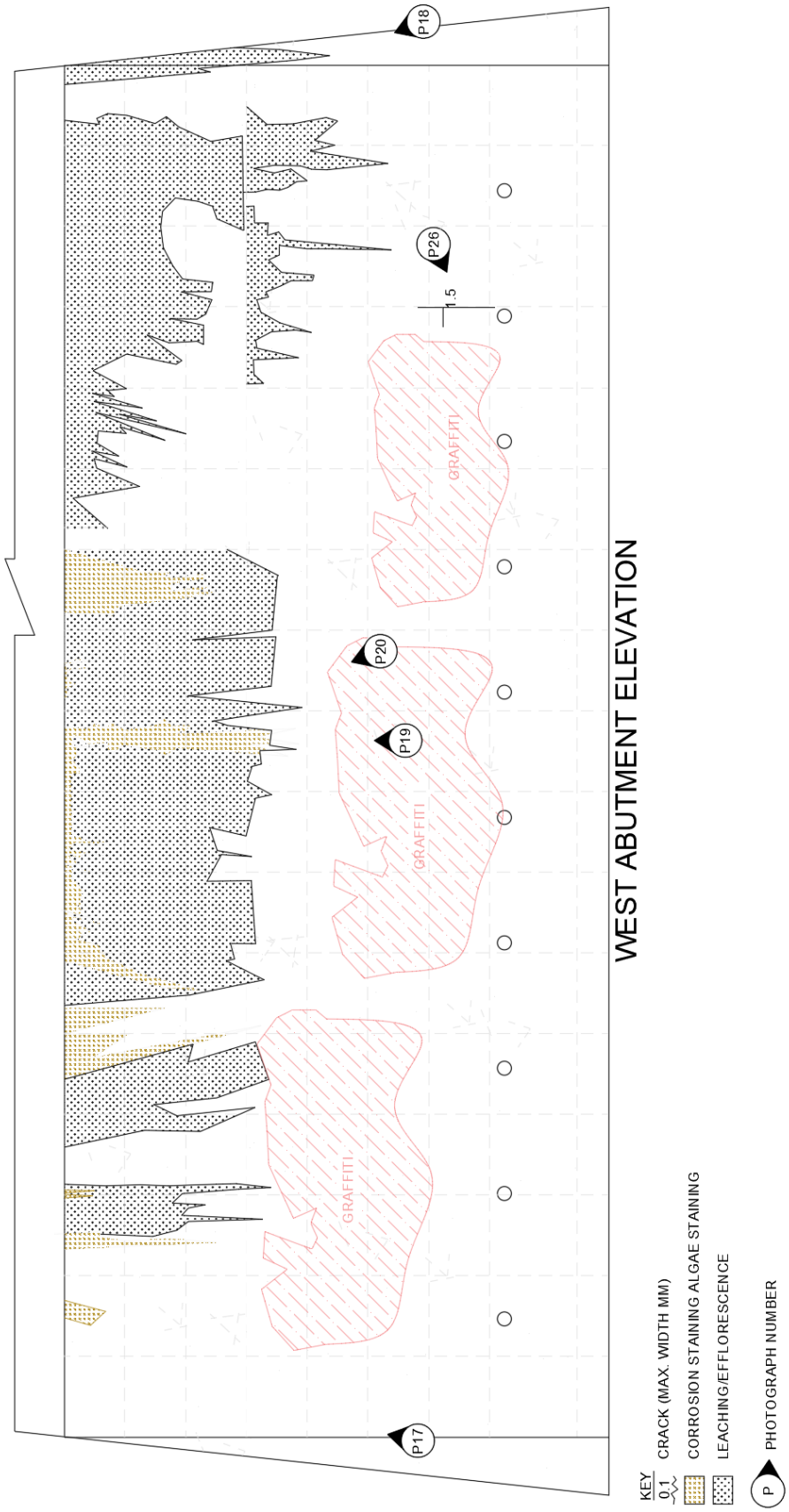
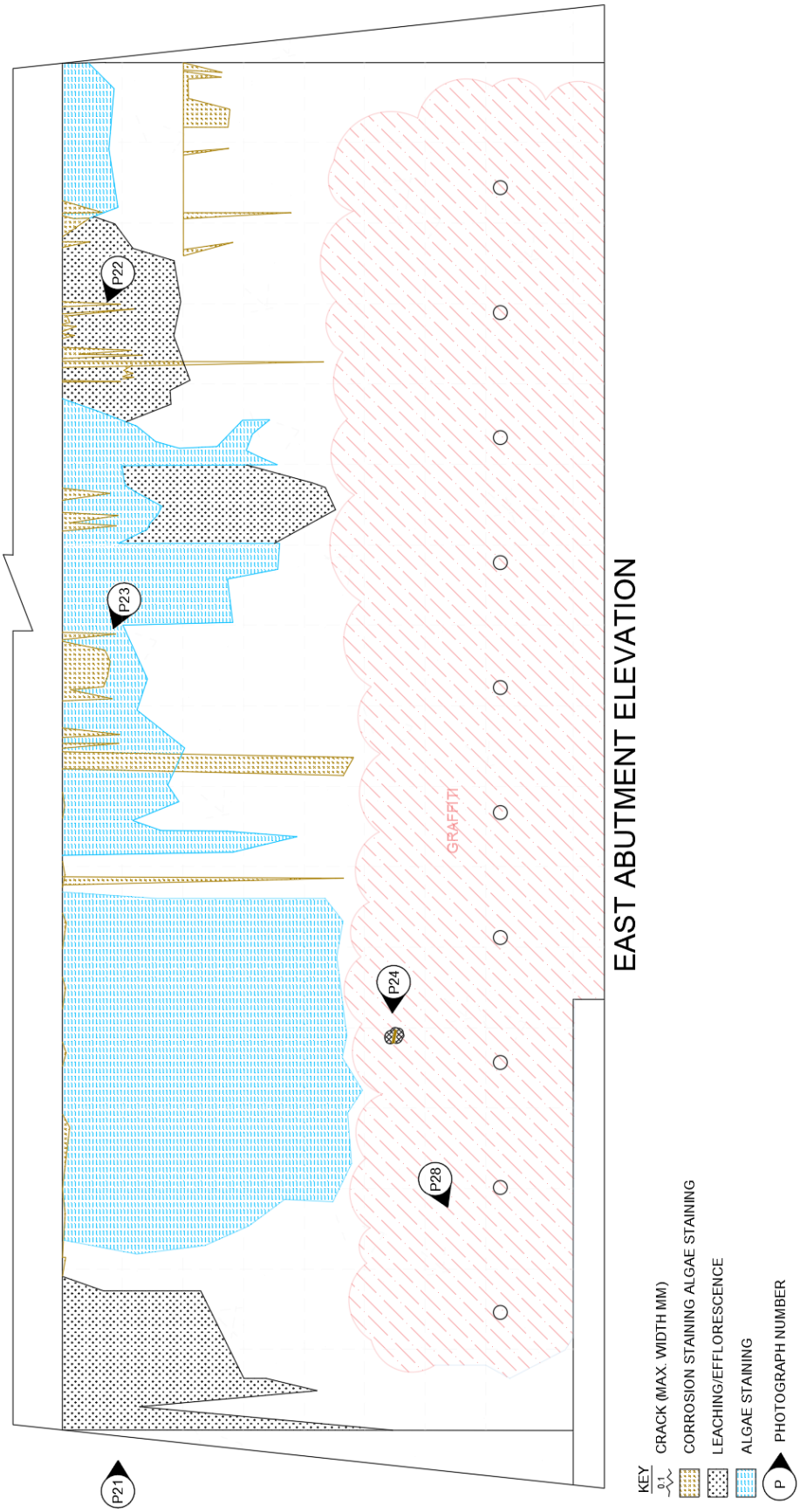


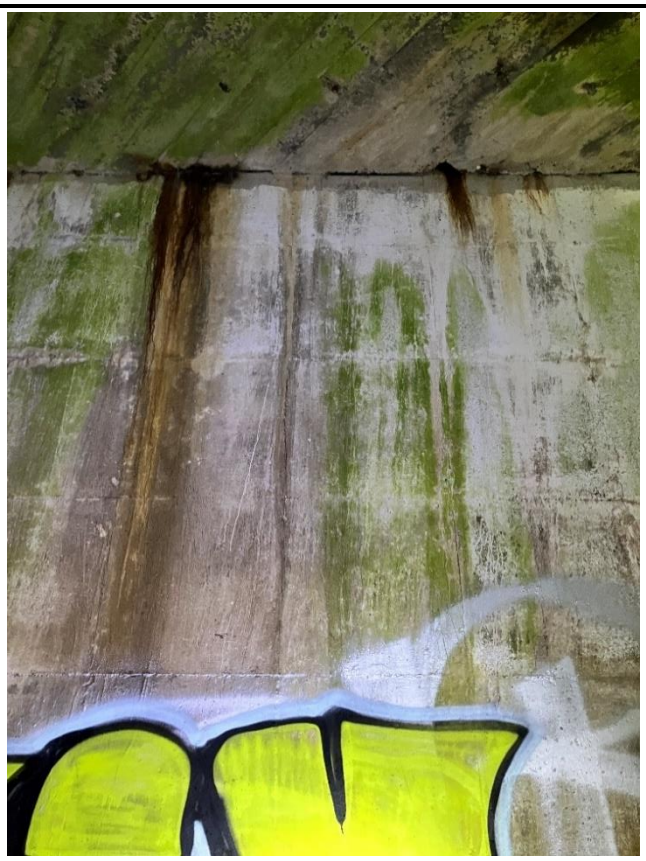
DIAGRAM D3 – EAST ABUTMENT

Not to scale



1717_P17_2024 West abutment – Saline leaching and corrosion staining

1717_P18_2024 West Abutment – Saline leaching (<30mm at the top)



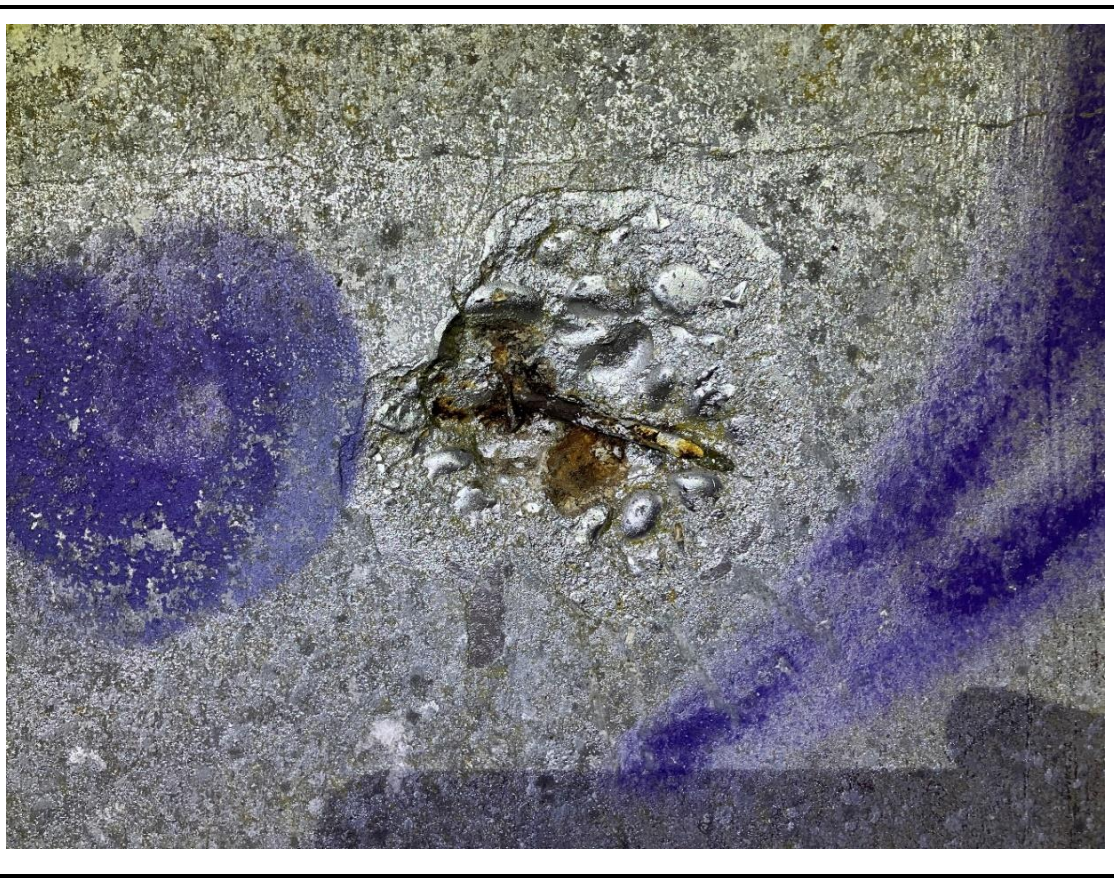
1717_P19_2024 West abutment - Saline leaching and corrosion staining

1717_P20_2024 West abutment - Saline leaching and corrosion staining

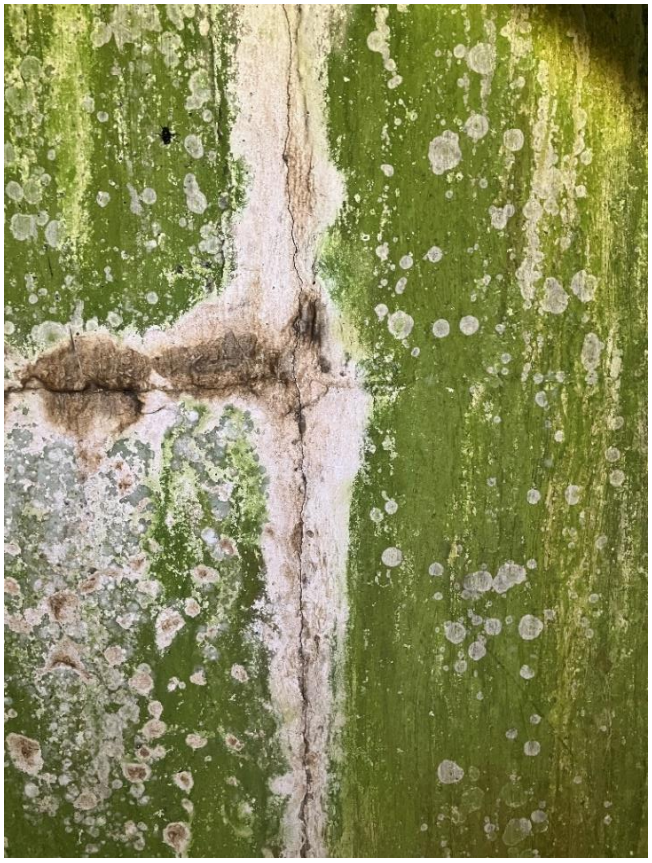
1717_P21_2024 East abutment - Saline leaching, corrosion staining and graffiti

1717_P22_2024 East abutment - Saline leaching and corrosion staining

1717_P23_2024 East abutment - Saline leaching and corrosion staining



1717_P24_2024 East abutment - Concrete spalling, exposed rebar & non-offensive graffiti



1717_P25_2024 West abutment - Vertical crack (<2mm in width)

Element Description: **Bearings**									BCI Element No: **13**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
Abutment Bearings	Weathering/Rusting		1	A	12.1	-	-	-		
	Position		1	A	12.2	-	-	-		
	Sliding bearing position		1	A	12.3	-	-	-		
	Crazing/ Breakdown		1	A	12.4	-	-	-		
	Sliding Plate deformation		1	A	12.5	-	-	-		
	Cracks		1	A	12.6	-	-	-		

DEFECT NOTES

General

The bearings were not accessible for inspection, if indeed they were present. The as-built drawings show no evidence of any bearings to this structure and 2016 Principal Inspection assumed that the deck was supported on a separation layer of unknown material and condition.

Work action:

No action required.

Element Description: **Substructure drainage**									BCI Element No: **16**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
West abutment	Functionality		1	A	8.1	-	-			
	Cleaning/Staining		1	A	8.2	-	-			
	Structural Damage		1	A	8.3	-	-			
	Outlets Blockage	✓	2	B	8.4	-	-		**D2**	**P26, P27**
SW Wing Wall	Functionality		1	A	8.1	-	-			
	Cleaning/Staining		1	A	8.2	-	-			
	Structural Damage		1	A	8.3	-	-			
	Outlets Blockage		2	B	8.4	-	-		**D5**	
NE Wing wall	Functionality		1	A	8.1	-	-			
	Cleaning/Staining		1	A	8.2	-	-			
	Structural Damage		1	A	8.3	-	-			
	Outlets Blockage		2	B	8.4	-	-		**D5**	
East abutment	Functionality		1	A	8.1	-	-			
	Cleaning/Staining		1	A	8.2	-	-			
	Structural Damage		1	A	8.3	-	-			
	Outlets Blockage		2	B	8.4	-	-		**D3**	
SE Wing Wall	Functionality		1	A	8.1	-	-			
	Staining		1	A	8.2	-	-			
	Structural Damage		1	A	8.3	-	-			
	Outlets Blockage		2	B	8.4	-	-		**D5**	**P28, P29**

DEFECT NOTES

General

Corrugated weephole pipes were observed in the northeast, southeast and southwest wingwalls. Weepholes are also present at approximately 1.8m centres along both abutment faces.

8.4 Outlets Blockage

The weepholes were partially blocked with stones, snails and debris, no one weephole was fully blocked.

Work action:
No action required.

1717_P26_2024 West abutment - Drainage weepholes

1717_P27_2024 West abutment - Weephole partially blocked

1717_P28_2024 Southeast wingwall - Weephole partially blocked

1717_P29_2024 Southeast wingwall - Weephole detail & vegetation growth

Element Description: **Waterproofing**									BCI Element No: **17**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
	Seepage	✓	2	C	14.1	R	P2	30,000	**D1-D3**	**P30-P31**
	Wet soffit		1	A	14.2	-	-			

DEFECT NOTES

General
The waterproofing membrane (assumed to be present) was not accessible during this inspection.

14.1 Seepage
The saline leaching observed across the deck soffit and deck edge beams suggests that either the waterproofing has failed or is not present (see Element 1).

Work action:
Re-waterproof bridge deck.

1717_P30_2024 Bridge soffit/Edge beam (North footway) - Stalactite formation (<200mm)

1717_P31_2024 Bridge soffit - Stalactite formation (<150mm)

Element Description: **Movement/Expansion joints**									BCI Element No: **18**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
Above West Abutment	Cracking		1	A	10.10	-	-			
	Sealant		1	A	10.11	-	-			
	Leakage through joint	✓	3	D	10.12	R	P2	10,000	**D2**	**P17-P20**
Above East Abutment	Cracking		1	A	10.10	-	-			
	Sealant		1	A	10.11	-	-			
	Leakage through joint		3	D	10.12	R	P2	10,000	**D3**	**P21-P23**

DEFECT NOTES

General

Historic drawings and previous reports do not highlight a movement/expansion joint detail. It is suspected that there is a buried joint detail of some kind, as the previous report showed images of crack inducers. However, the carriageway has recently been resurfaced and there are currently no crack inducers present. It is therefore likely that any expansion joint has been resurfaced over.

10.12 Leakage through joint

Fresh saline leachate deposits and corrosion staining were observed to both abutments faces, suggesting failure of the expansion joint (see Element 9).

The expansion joints, if present, are permitting the percolation of water/moisture through the deck/abutment gap leading to saline deposits, corrosion of embedded steel elements and spalling of deck concrete. The first action for a remedial scheme to this structure should be to replace the expansion joints in their entirety. The span and skew of the deck needs to be taken into account when designing an expansion joint replacement scheme, but it is suspected that a buried joint detail would suffice in this instance.

Work action:
Install new expansion joints.

Element Description: **Parapet**									BCI Element No: **23**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
North Parapet	Deformation		1	A	3.1	-	-			
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling		3	C	3.5	M	-		**D4**	**P37-P40**
	Weathering/Missing bricks		1	A	3.6	-	-			
	Bulging /Leaning/ Displacement		1	A	3.7	-	-			
	Vegetation		2	C	5.2	R	P3	500	**D4**	**P37 & P41**
South Parapet	Deformation		1	A	3.1	-	-			
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling	✓	3	C	3.5	M	-		**D4**	**P32-P34**
	Weathering/Missing bricks		1	A	3.6	-	-			
	Bulging /Leaning/ Displacement		2	B	3.7	-	-		**D4**	**P35**
	Vegetation		1	A	5.2	R	P3	500	**D4**	**P36**

DEFECT NOTES

General

The brick parapet running on either side of the bridge were noted to have efflorescence build up in isolated areas and below the top two courses of the parapet.

3.5 Cracking/Spalling

Several vertical, diagonal and horizontal cracks were observed throughout both parapets. A continuous horizontal crack approx. 1mm in width runs the majority of both parapets length between the top two new courses and the original parapet (P34 to P39). The widest vertical crack noted was 2.5mm to the west end of the north parapet (P38), the widest diagonal crack was 10mm to the east end of the south parapet (P33) and the widest horizontal crack was 2.5mm to the west end of the north parapet (P38). Further cracks were observed on the rail side face of the parapets and assumed to reflect the cracks on the road facing side.

The multiple cracking has been noted on previous PI's and does not appear to have significantly deteriorated since. It is noted that the large crack and displacement referenced in the 2016 PI was to the west end of the south parapet, which has now been repaired. The 2007 PI identified the same 10mm diagonal crack to the east end of the south parapet (not explicitly refenced in 2016 PI), and this does not appear to have widened in the intervening 17 years.

Spalling was mostly observed in the top two new courses and in the corner bricks of the pilasters, while the original parapet had minimal to none. The 2016 PI observed similar minor spalling to the brickwork throughout both parapets and is likely to be a result of freeze-thaw action.

The cracking and spalling are currently of no structural concern. These should be monitored during future inspections.

3.7 Bulging / Leaning / Displacement

There is an isolated coping unit displaced to the west end of the south parapet above the crack repaired area discussed above (P35).

This defect is of little concern currently but should be monitored during future inspections.

5.2 Vegetation

A small amount of vegetation growth was noted on the inside traffic faces of the parapet partially obscuring the element (P37 & P41).

Light vegetation removal (strimming) was undertaken before the inspection, however it was not possible to remove all vegetation due to the time of year falling within the bird nesting season. Full vegetation removal is recommended prior to the next inspections.

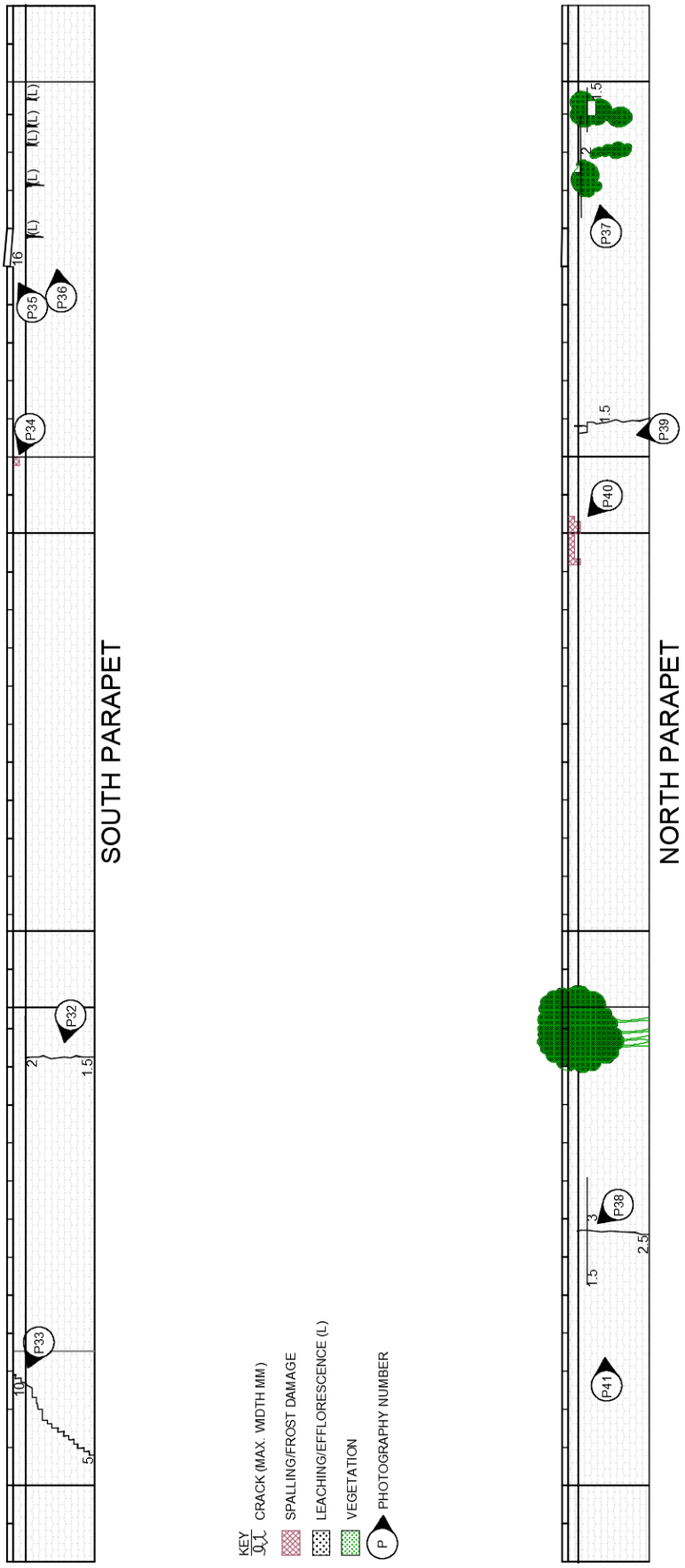
Work action:

Monitor cracks and spalled brickwork during future inspections.

Remove vegetation from parapets prior to next Principal Inspection.

DIAGRAM D4 – NORTH & SOUTH PARAPET

Not to Scale



1717_P32_2024 South parapet - Vertical and hairline horizontal cracks (<2mm)

1717_P33_2024 South parapet - Diagonal parapet crack (<10mm)

1717_P34_2024 South parapet - Brick spalling (10mm deep) & horizontal hairline crack

1717_P35_2024 South parapet – Displacement of parapet copping (<15mm) & repaired diagonal crack

1717_P36_2024 South parapet - Minor vegetation growth & historic leaching

1717_P37_2024 North parapet – Horizontal crack (<2mm), footpath & vegetation growth

1717_P38_2024 North parapet - Vertical crack (<2.5mm), horizontal crack (<3mm) & leaching

1717_P39_2024 North parapet - Vertical Crack (<1.5mm) & leaching

1717_P40_2024 North parapet - Brick spalling & hairline cracks

1717_P41_2024 North parapet - Vegetation growth

Element Description: **Carriageway Surfacing**									BCI Element No: **24**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
Carriageway	Wear/Weathering		1	A	9.1	-	-			
	Cracking/Tracing/ Fretting		1	A	9.2	-	-			
	Texture		1	A	9.3	-	-			
	Top layer		1	A	9.4	-	-			
	Slippery		1	A	9.5	-	-			

DEFECT NOTES

General
The carriageway has been recently resurfaced and remains in good condition.

Work action:
No work required.

1717_P42_2024 West view - Carriageway

Element Description: **Footway**									BCI Element No: **25**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
North Footway	Wear/Weathering	✓	3	C	9.1	-	-			**P43**
	Cracking/Tracing/ Fretting		1	A	9.2	-	-			
	Texture		1	A	9.3	-	-			
	Top layer		1	A	9.4	-	-			
	Slippery		1	A	9.5	-	-			
	Vegetation		3	C	5.2	-	-			**P43**
South Footway	Wear/Weathering		3	C	9.1	-	-			**P44**
	Cracking/Tracing/ Fretting		1	A	9.2	-	-			
	Texture		1	A	9.3	-	-			
	Top layer		1	A	9.4	-	-			
	Slippery		1	A	9.5	-	-			
	Vegetation		3	B	5.2	-	-			**P44**

DEFECT NOTES

General
The North and South footway are in fair condition.

9.1 Wear/Weathering
The footway surfacing is patchy in its condition. There are sound areas, repaired areas and areas of loose friable asphalt.

The 2016 PI characterised the footways as being in fair condition and not having any trip hazard, which remains unchanged.

5.1 Vegetation
There is minor build-up of silt/vegetation in both the south footway adjacent the parapet. The north verge is soft/grassed in nature and is slightly encroaching on to the footway.

Vegetation should be regularly strimmed in order to maintain condition and prevent becoming overgrown.

Work action:
No works required.

1717_P43_2024 North footway - Footway surfacing and vegetation growth (July 2023)

1717_P44_2024 – South footway - Footway surfacing (July 2023)

Element Description: **Wingwalls**									BCI Element No: **31**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
SW Wingwall	Leaching / Staining		1	A	2.1	-	-			
	Deformation		1	A	3.1					
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling		2	B	3.5	-	-			**P46-P48**
	Weathering / Missing bricks		1	A	3.6	-	-			
	Bulging / Leaning / Displacement		1	A	3.7	-	-			
SE Wingwall	Leaching / Staining		3	C	2.1	-	-			**P49 & P50**
	Deformation		1	A	3.1					
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling	✓	2	B	3.5	-	-			**P50-P51**
	Weathering / Missing bricks		1	A	3.6	-	-			
	Bulging / Leaning / Displacement		1	A	3.7	-	-			
NW Wingwall	Leaching / Staining		3	C	2.1	-	-			**P53-P55**
	Deformation		1	A	3.1					
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling		2	B	3.5	-	-			**P55**
	Weathering / Missing bricks		1	A	3.6	-	-			
	Bulging / Leaning / Displacement		1	A	3.7	-	-			
NE Wingwall	Leaching / Staining		3	C	2.1	-	-			**P57**
	Deformation		1	A	3.1					
	Pointing		1	A	3.2	-	-			
	Cracking / Spalling		2	B	3.5	-	-			**P58**
	Weathering / Missing bricks		1	A	3.6	-	-			
	Bulging / Leaning / Displacement		1	A	3.7	-	-			

DEFECT NOTES

General

The previous inspection incorrectly numbered the wingwalls as reinforced concrete elements, they are shown as being mass concrete on the as-built drawing.

2.1 Staining/Leaching

Efflorescence staining was observed to the top of all wingwalls, and the majority is believed to be emanating through the brick parapet interface with isolated spots along lower parts of the wingwall.

The 2016 PI also noted staining and leaching to all wingwalls. These pose no imminent danger to the structural integrity of the wingwalls.

3.5 Cracking/Spalling

Several vertical cracks/construction joint cracks were observed in the wingwalls (<3.5mm wide), with some extending into the parapet above the wingwall. The 2016 PI reported similar hairline cracks and these seem to have not increased in severity.

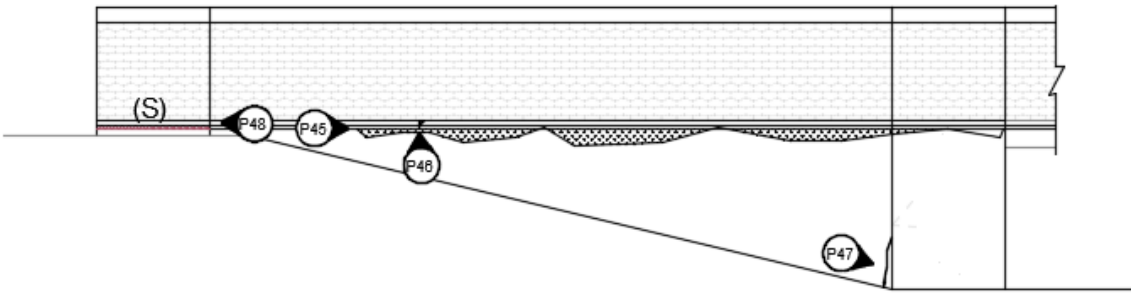
The wingwalls were characterised by areas of isolated spalling concrete. The top of the wingwalls had a mortar fillet that was easy to pick off for lengths from 1 to 5m. The fillets were removed as safety precaution during inspection. A large area of spalling concrete was observed below the end pilaster of the south parapet.

These defects pose no significant issue, because the wingwalls are of mass concrete construction.

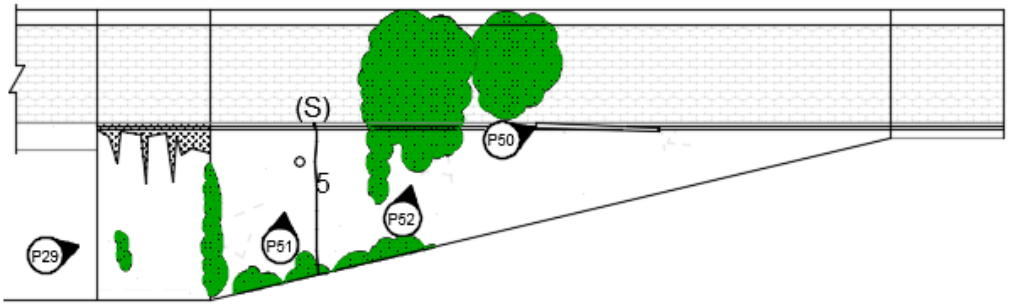
Work action:
Monitor crack widths at next inspection.

DIAGRAM D5 – WINGWALLS

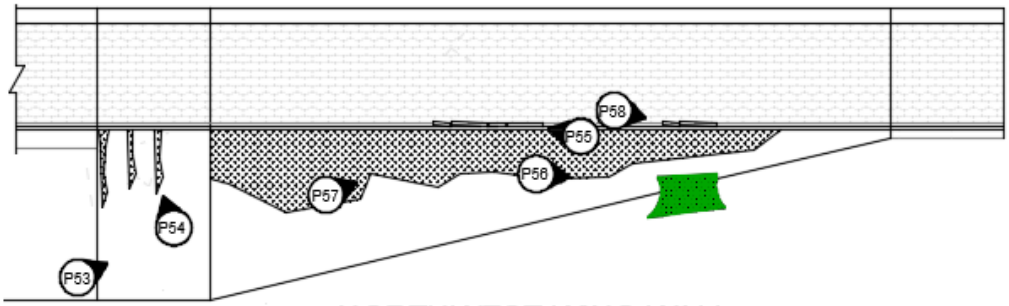
Not to scale



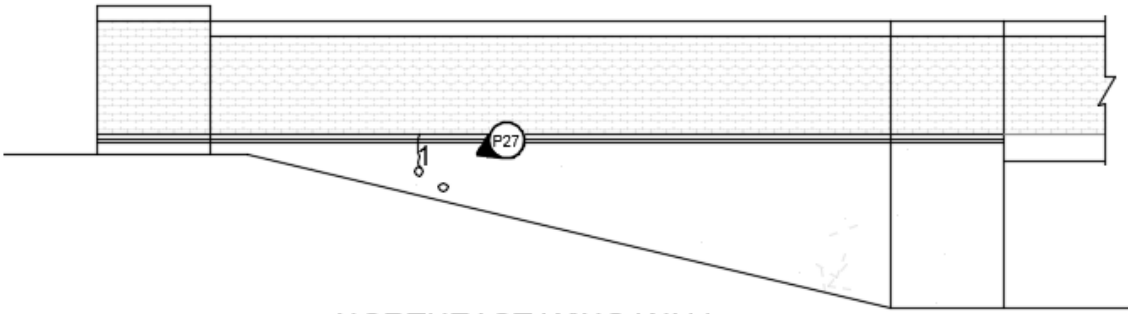
SOUTHWEST WING WALL



SOUTHEAST WING WALL



NORTHWEST WING WALL



NORTHEAST WING WALL

KEY

0.1 CRACK (MAX. WIDTH mm)

SPALLING (S)

VEGETATION

LEACHING/EFFLORESCENCE

P PHOTOGRAPHY NUMBER

1717_P45_2024 Southwest wingwall - Leaching & vegetation growth

1717_P46_2024 Southwest wingwall - Concrete spalling & Vertical crack

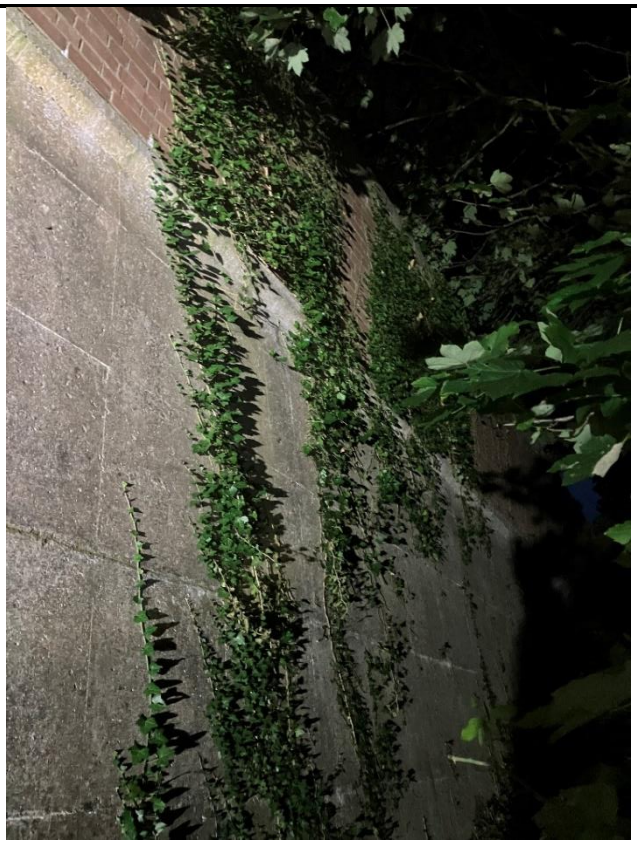
1717_P47_2024 Southwest wingwall/abutment - Concrete spalling & diagonal crack

1717_P48_2024 Southwest pilaster - Concrete spalling (<75mm) below pilaster

1717_P49_2024 Southeast wingwall – Saline leaching & vegetation growth

1717_P50_2024 Southeast wingwall - Mortar fillet peeling off

1717_P51_2024 Southeast wingwall - Vertical cracking (<3.5mm) & minor spalling



1717_P52_2024 Southeast wingwall - Vegetation growth

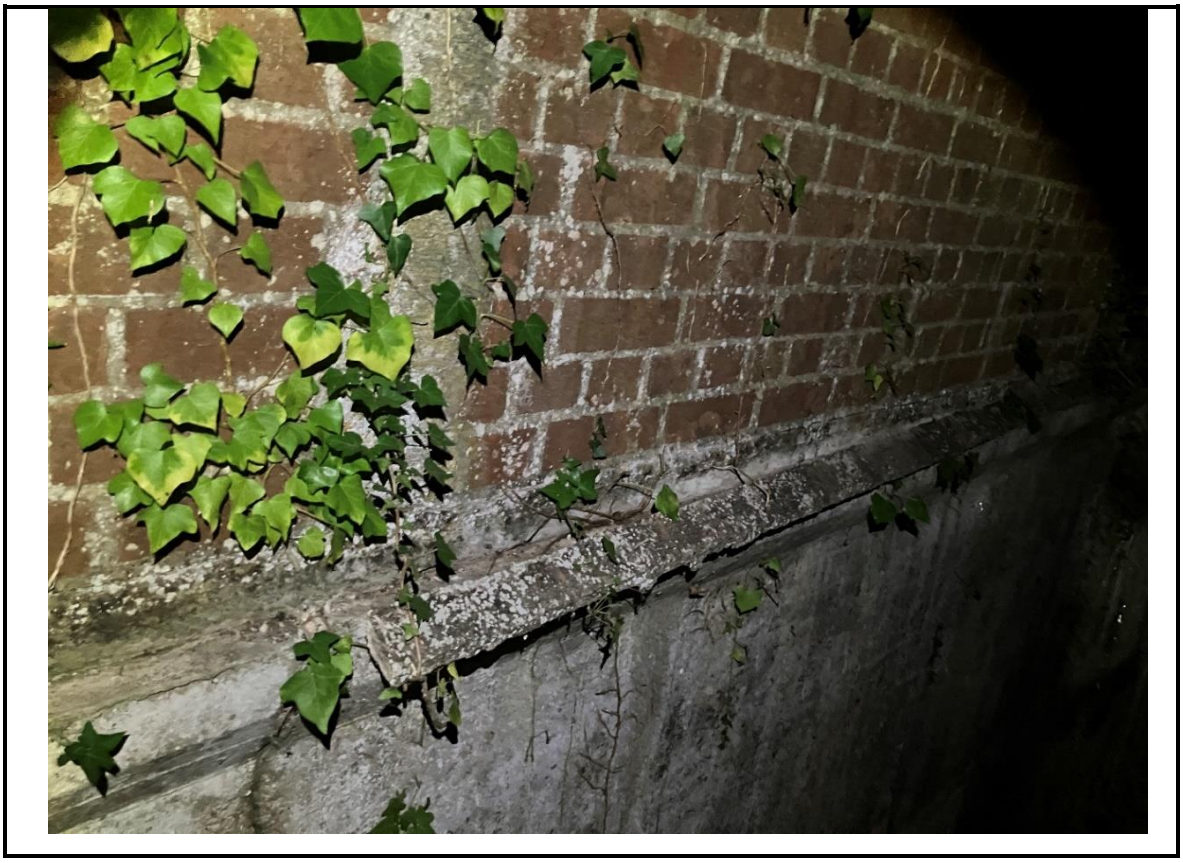
1717_P53_2024 Northwest wingwall – Saline leaching

1717_P54_2024 Northwest wingwall - Active saline leachate deposits (<15mm)

1717_P55_2024 Northwest wingwall - Mortar fillet peeling off

1717_P56_2024 Northwest wingwall - Vegetation growth

1717_P57_2024 Northeast wingwall - Active saline leaching



1717_P58_2024 Northeast wingwall - Mortar fillet peeling off

Element Description: **Embankments**									BCI Element No: **33**	
Location	**Defect Description**	**PD**	**S**	**Ex**	**Def**	**W**	**P**	**Cost (£)**	**Diagrams**	**Photographs**
SW Embankment	Deformation / Slip / Settlement		1	A	11.1	-	-			
	Vegetation		1	A	5.2	-	-			
SE Embankment	Deformation / Slip / Settlement		1	A	11.1	-	-			
	Vegetation	✓	2	B	5.2	-	-			**P49, P52**
NW Embankment	Deformation / Slip / Settlement		1	A	11.1	-	-			
	Vegetation		1	A	5.2	-	-			
NE Embankment	Deformation / Slip / Settlement		1	A	11.1	-	-			
	Vegetation		1	A	5.2	-	-			

DEFECT NOTES

General

There were no visible signs of settlement or slippage to the embankments.

Vegetation

Vegetation clearance was carried out before inspection with the exception of one tree to the edge of the southwest wingwall and ivy growth to the southeast wingwall, which were not removed due to the potential for bird nesting.

At the time of inspection there was a presence of minor vegetation in the face of the wingwall and extending to the parapet. It is recommended that regular vegetation clearance be done to keep the wingwalls from growing cracks or minor spalled areas.

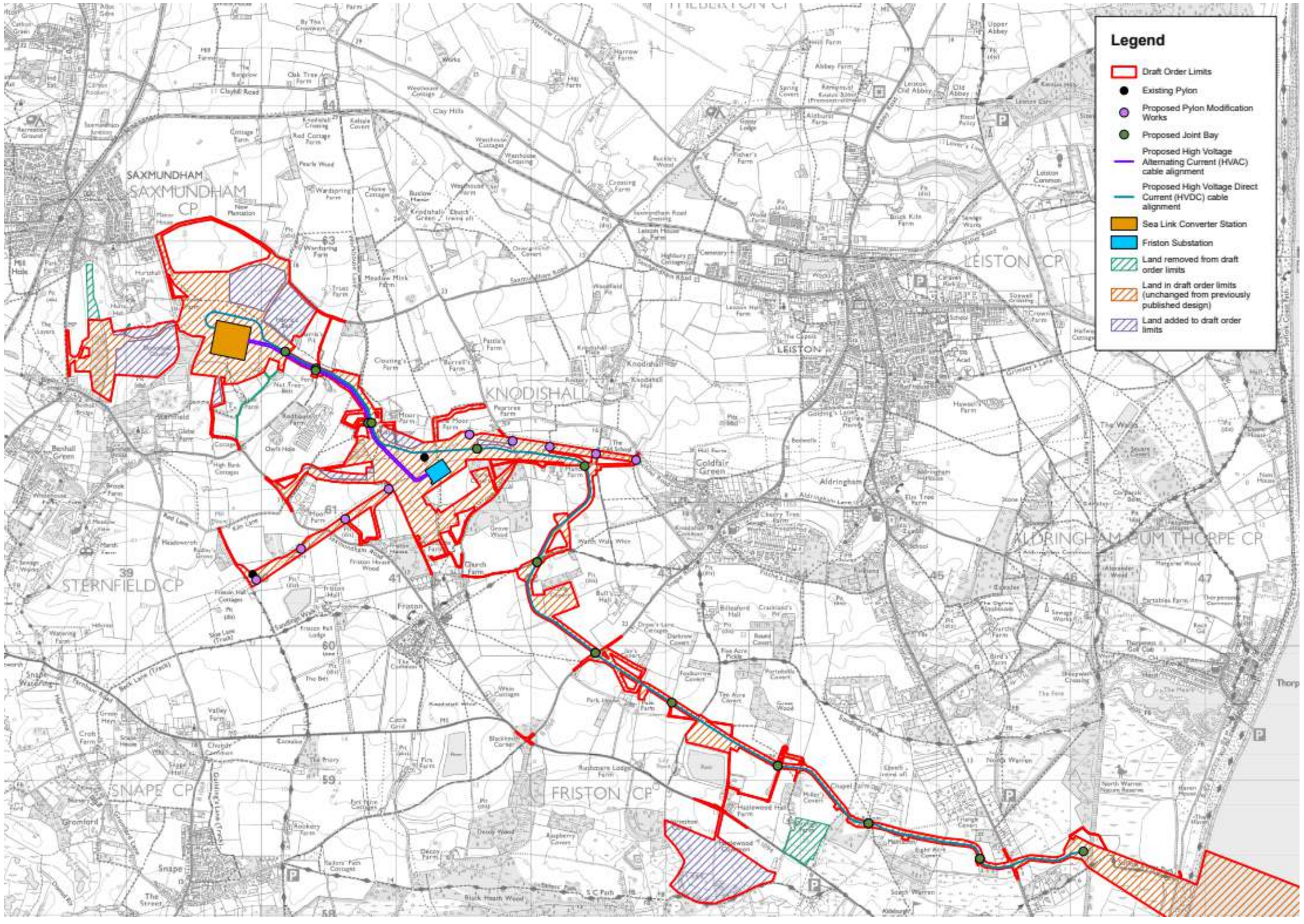
Work action:
No works required.

Suffolk County Council

Sea Link Pre-Submission Engagement

Suffolk County Council Response

Appendix D: Map showing changes to proposals since targeted consultation


Legend
Draft Order Limits
Existing Pylon
Proposed Pylon Modification Works
Proposed Joint Bay
Proposed High Voltage Alternating Current (HVAC) cable alignment
Proposed High Voltage Direct Current (HVDC) cable alignment
Sea Link Converter Station
Friston Substation
Land removed from draft order limits
Land in draft order limits (unchanged from previously published design)
Land added to draft order limits
SAXMUNDHAM CP
KNODISHALL CP
LEISTON CP
STERNFIELD CP
SNAPE CP
FRISTON CP
ALDRINGHAM CUM THORPE CP

BLANK