AtkinsRéalis

KY-N70-040.40 Loher Bridge - Appropriate Assessment Screening Report

Transport Infrastructure Ireland

04/04/2025

5219386DG0059

TO 334 Munster Bridges Term Maintenance

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1. Introduction

1.1 Background

AtkinsRéalis was appointed by Transport Infrastructure Ireland (TII) to prepare, on its behalf, an Appropriate Assessment (AA) Screening Report in respect of the proposed non-routine maintenance works at Loher Bridge (KY-N70-040.40) in Co. Kerry. The proposed works involve infilling of deep scouring which has occurred over a length of almost 50m downstream of the bridge and reinforcement of the new bed and both banks to prevent further erosion. The proposed works are not directly connected with or necessary to the management of any designated site for nature conservation.

This document comprises the AA Screening Report in respect of the proposed works and is intended to assist TII, in its capacity as the competent authority in this case, by providing it with sufficient evidence to make a properly informed determination as to whether or not AA under article 6(3) of the Habitats Directive (02/43/EEC) is required in respect of the proposed works.

1.2 Description of the Proposed Works

1.2.1 Overview

The waterfall directly downstream of Loher Bridge is directing stream flows towards the right (north-west) bank and promoting bank erosion, which is a concern to the adjoining property owners. Temporary protection in the form of concrete had previously been placed to fill the scour hole. However, a more permanent solution is required to protect the integrity of the property in the long term.

A geotechnical and hydromorphological desk study, site visit and options appraisal were undertaken to understand the options for remediation. It was concluded that the main contributing factor to the erosion is the angle/offset at which the water flows from the waterfall against the right-hand bank.

The agreed solution to this issue is to infill the incised channel to create a new and more constant gradient (but with a rough bed texture) from the top of the waterfall to the existing stream bed c. 50m downstream, and to reinforce the right-hand bank at the top of the waterfall using a combination of concrete bags, root-lock bags and concrete canvas. Full details of the proposed solution are presented in the drawings in Appendix A to this report.

1.2.2 Location and Context

The proposed works are located c. 2.8km south of the town of Waterville, on the Iveragh Peninsula in Co. Kerry (ITM Grid Ref. 450921 561889). A small, un-named stream (hereafter referred to as the “Loher stream”) flows from north-east to south-west under the bridge. The stream is part of a wider Water Framework Directive (WFD) River waterbody and EPA-named watercourse (“FINGLAS (WATERVILLE)_010”), which is made up of several unconnected rivers and streams discharging to Ballinskelligs Bay.

Loher Bridge was constructed to carry the N70 Ring of Kerry Road over the Loher stream. Approximately 2m downstream of the bridge (i.e. at the end of the bridge apron) the stream flows over a waterfall before continuing downstream towards the coastline. Within this section, the stream has a high gradient, is within a steep-sided gorge formed by incision during high-flow events, and the bed substrate is predominantly cobbles and boulders. The stream discharges to the sea at Ballinskelligs Bay, which is part of the Ballinskelligs Bay and Inny Estuary SAC, c. 1.3km downstream of the bridge.

The area upstream of the bridge lies within the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC and is characterised as heathland. It is steeply sloping, exposed and grazed by sheep. All works activities are limited to the western (downstream) side of the bridge, i.e. outside of the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC. Here, the stream channel is confined by a residential property to the north-west and farmland (wet grassland) to the south-east.

1.2.3 Detailed Description

1.2.3.1 Methods and Sequence

The text and figures in this section are taken from and based on the Contractor's (Cumnor) Risk Assessment & Method Statement (RAMS), which is presented in Appendix B to this report.

Site Access

1. A previously existing entrance to the field on the left-hand bank of the stream will be used for access to the works area (see red arrow in Figure 1-1 below).

2. A hard standing may need to be created inside the field for deliveries. It should be excavated 300mm deep and geotextile placed on the bottom of the excavation. The hardstanding will be constructed with a 225mm layer of stone and topped off with a compacted 75mm layer of 804 or similar.

3. With regard to vehicle/plant movements around the site, ground/weather conditions at the time of site set-up will determine whether further ground protection is required between the site compound and the riverbank and along the riverbanks.

Figure 1-1 - Access point (red arrow) and compound (red rectangle), east of the works area (blue).

Site Compound

1. A site compound will be positioned in a section of unused land (see red rectangle in Figure 1-1 above), which is currently a mix of species-poor wet grassland and low-growing gorse scrub.

2. The compound will be used to securely store plant, welfare facilities and materials, and will be secured using Heras fencing.

3. The compound will be managed in accordance with the RAMS presented in Appendix A, which details routine practices and procedures to prevent pollution or contamination from the storage and handling of materials, vehicles and equipment.

Water Management

1. IFI will be advised ahead of setting up the water management described below so that arrangements can be made to salvage any fish present in the works area. IFI has confirmed that it will carry out the fish salvage operation itself, in coordination with the Contractor.

2. In order to create a dry works area, a dam will be set up under the bridge (downstream of the SAC boundary; see Figure 5-1) using hessian sandbags and a 4”, 6” or 8” pump (on a drip tray) will be used to over-pump the water to downstream of the works zone (see sketch of this arrangement in Figure 1-2 below). The size of the pump will be determined based on measurements of flow in the stream c. 7 days prior to commencement.

3. For outside of working hours, an opening will be made in the upstream dam (as described above) to allow water to flow through to a secondary dam located between the upstream dam and the works area. From there, water will be flumed through a 300mm twin-wall pipe and discharge back to the stream downstream of the works zone (see Figure 1-2 below).

4. A dam will also be set up at the downstream end of the works zone to capture any silt-laden or contaminated water. This water will be pumped into a green area at least 25m from the stream to prevent contamination.

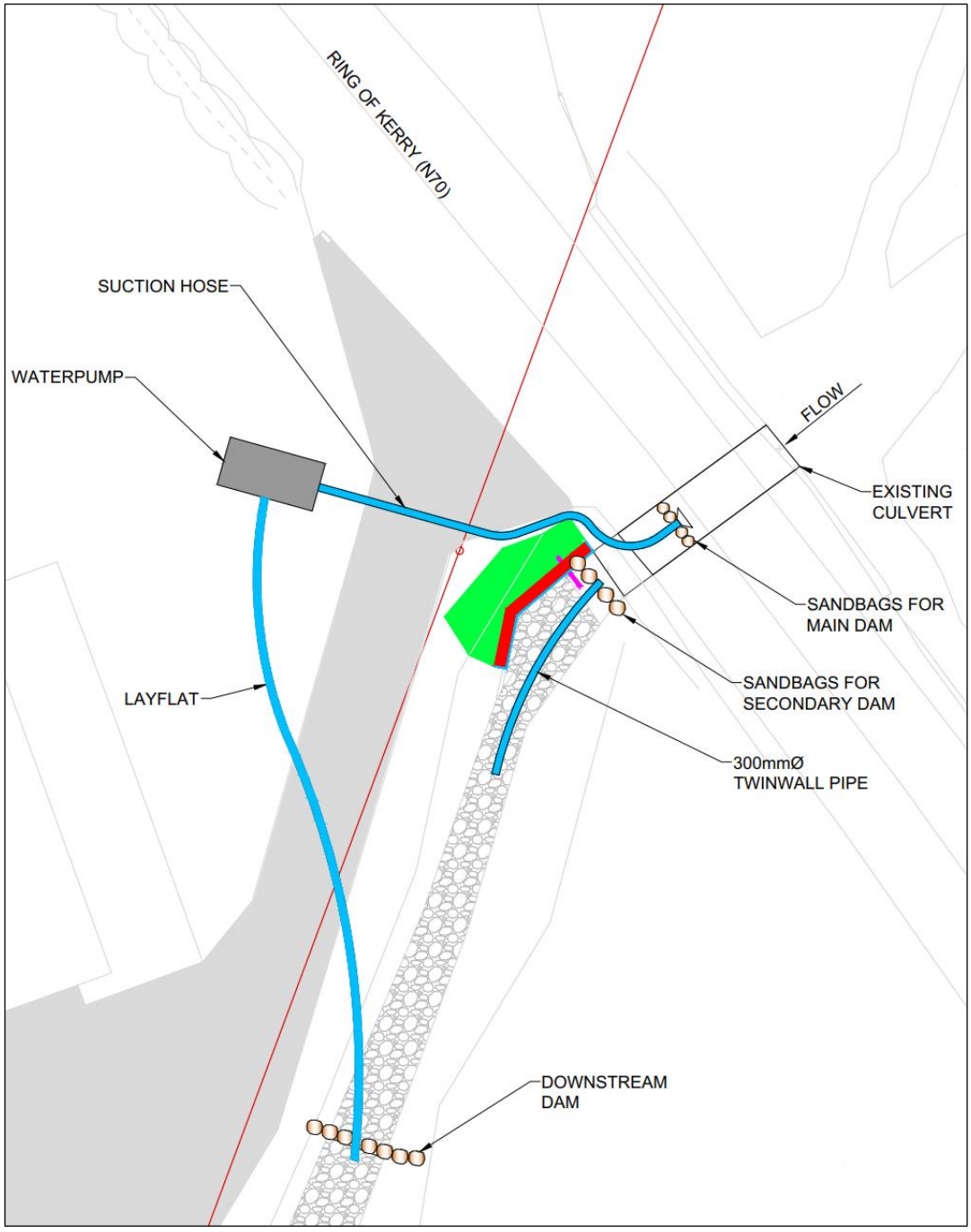

Figure 1-2 - Indicative water management set-up (formalised from sketch the RAMS presented in Appendix A).

Vegetation Clearance

1. Vegetation clearance will be limited to the site access point, compound area and the banks of the stream within the works zone (see indicative area in Figure 1-1 above).

2. Clearing of dense vegetation to prepare the work area will be done using tracked excavators and hand tools, where required. No trees are required to be removed as part of the works.

3. Vegetation will be stockpiled in designated areas and removed for disposal at a licensed waste facility.

Installation of Rock Armour

1. Rip-rap will be delivered to site and stockpiled for use.
2. A 9-ton dumper will be used to transport rip-rap to the excavator.
3. The bottom layer of rip-rap will be installed as per the drawings (see Appendix A) using excavators.
4. Rip-rap will be positioned along the marked installation area, starting at the downstream end (where the toe of the rip-rap will be embedded into the existing stream bed) and progressing in an upstream direction.
5. Once the bottom layer of rip-rap has been installed, semi-dry concrete will be used to fill the voids.
6. Rip-rap will be layered up in accordance with the design, ensuring inter-locking and minimising void spaces. Concrete will be used to fill the voids between each layer.
7. The rip-rap layering will be installed at a 4:1 gradient as per the design drawings (see Appendix A).
8. Size and weight of rip-rap will be as per the design specification (on the drawings in Appendix A).
9. The largest and heaviest rocks will be used in the lowest layers, to ensure stability.

Works to Embankment at Culvert Exit

1. Once rip-rap has been installed to meet the apron of the culvert, any unstable ground on the south-western embankment will be stripped out using an excavator.
2. Waste material will be removed off-site to a licensed waste facility.
3. As per the construction drawings, a concrete footing will be poured on top of the rip-rap (at the bank).
4. Dowels will be cast into the foundation to secure the concrete bags.
5. ‘SoluForm’ concrete bags or a similar approved product will be layered up by hand in stretcher bond to the desired height.
6. The existing 225mm storm water pipe will be built into the wall of concrete bags, as per the design.
7. Concrete Canvas® will be fitted surrounding the concrete bags, lapped correctly and pinned using re-bar.
8. Root-lock bags or a similar approved product will be layered up by hand to the top of the bank.

Demobilisation

1. On completion of the works, all vehicles, plant and machinery will be removed from the site and the compound area, and all access points and routes will be re-instated as per existing.

1.2.3.2 Protection of Vegetation

Site clearance and removal of vegetation will be limited to the area required for works. Vegetation to be retained will be fenced off and sign-posted prior to commencement of works, and protected in accordance with BS5837: Trees in relation to design, demolition and construction.

1.2.3.3 Biosecurity

Routine practices and procedures will be followed to control the risk of spreading invasive alien species to, from or within the vicinity of the proposed works. This includes ensuring that all vehicles, plant, equipment and PPE are clean, dry and free of plant material or other debris before entering and leaving the site.

In addition, while no legally restricted invasive alien species have been identified on the site, all waste (including vegetation) will be sent for disposal at a licensed facility. This will prevent the spread of any non-native species, particularly Montbretia (*Crocosmia* × *crocosmiiflora*), associated with the proposed works.

1.2.3.4 Programme

The proposed works are scheduled to commence no later than March/April 2025 and are expected to take no longer than 6-8 weeks to complete. To facilitate this, permission will be sought from Inland Fisheries Ireland (IFI) to derogate from the default seasonal restriction on in-stream works (July to September, inclusive). As established through consultation with IFI, there is not expected to be any impediment to obtaining such a derogation.

2. Scope of Study

2.1 Legislative Context

2.1.1 Natura 2000

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") is a legislative instrument of the European Union (EU) which provides legal protection for habitats and species of Community interest. Article 2 of the Directive requires the maintenance or restoration of such habitats and species at a favourable conservation status, while Articles 3 to 9, inclusive, provide for the establishment and conservation of an EU-wide network of special areas of conservation (SACs), known as Natura 2000, which also includes special protection areas (SPAs) designated under Article 4 of Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds ("the Birds Directive"). Both SACs and SPAs are commonly referred to as "European sites" or "Natura 2000 sites".

SACs are selected for natural habitat types listed on Annex I to the Habitats Directive and the habitats of species listed on Annex II to the Habitats Directive. SPAs are selected for species listed on Annex I to the Birds Directive, other regularly occurring migratory species and other species of special conservation interest. The habitats and species for which a Natura 2000 site is selected are referred to as the "*qualifying interests*" of that site and each is assigned a "*conservation objective*" aimed at maintaining or restoring its "*favourable conservation condition*" at the site, which contributes to the maintenance or restoration of its "*favourable conservation status*" at national and European levels.

2.1.2 Appropriate Assessment

Article 6 of the Habitats Directive deals with the management and protection of Natura 2000 sites. Articles 6(3) and (4) set out the decision-making process, known as "*Appropriate Assessment*" (AA), for plans or projects in relation to Natura 2000 sites. Article 6(3) states: -

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

The first sentence of Article 6(3) provides a basis for determining which plans and projects require AA, i.e., those "*not directly connected with or necessary to the management of* [one or more Natura 2000 sites] *but likely to have a significant effect thereon, either individually or in combination with other plans or projects*".

In *Waddenzee* (C-127/02), the Court of Justice of the European Union (CJEU) ruled that significant effects must be considered "*likely*" if "*it cannot be excluded, on the basis of objective information*", that they would occur. This clearly sets a low threshold, such that AA is required wherever there is a reasonable possibility of significant effects on a Natura 2000 site. In the same judgment, the CJEU established that the test of significance relates specifically to the conservation objectives of the site concerned, i.e., "*significant effects*" are those which, "*in the light, inter alia, of the characteristics and specific environmental conditions of the site*", could undermine the site's conservation objectives.

In addition to the effects of the plan or project on its own, the combined effects arising from the plan or project under consideration and other plans and projects must also be assessed (see Section 7.1 for more details).

The last part of the first sentence of Article 6(3) defines AA as an assessment of the "*implications* [of the plan or project] *for the site in view of the site's conservation objectives*". In the second sentence, Article 6(3) requires that, prior to agreeing to a plan or project, the competent authority must "*ascertain*" that "*it will not adversely affect the integrity of the site concerned*". In *Sweetman v. An Bord Pleanála* (C-258/11), the CJEU ruled that a plan or project "*will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of sites*". On that basis, EC (2018) described the "*integrity of the site*" as "*the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated*". As such, the "*integrity*" of a specific site is defined by its conservation objectives and is "*adversely affected*" when those objectives are undermined. In *Waddenzee*, the CJEU ruled that the absence of adverse effects can only be ascertained "*where no reasonable scientific doubt remains*".

The "*precautionary principle*" applies to all of the legal tests in AA, i.e., in the absence of objective information to demonstrate otherwise, the worst-case scenario is assumed. Where the tests established by Article 6(3) cannot be satisfied, Article 6(4) applies (see explanation in Section 2.2 below).

2.1.3 Competent Authority

The requirements of Articles 6(3) and (4) are transposed into Irish law by, inter alia, Part 5 of the European Communities (Birds and Natura Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) ("the Planning and Development Acts"). As per the second sentence of Article 6(3), it is the "*competent national authorities*" who are responsible for carrying out AA and, by extension, for determining which plans and projects require AA. The competent authority in each case is the body responsible for authorising a plan or project, e.g. local or other public authorities (including TII), An Bord Pleanála, the Environmental Protection Agency (EPA) or a Government Minister. In all cases, it is the competent authority who is ultimately responsible for determining whether or not a plan or project requires AA and for carrying out the AA, where required.

2.2 Appropriate Assessment Process

The AA process can be described as being made up of three distinct stages, as described below, the need to progress to each stage being determined by the outcome of the preceding stage.

Stage 1: Screening – This stage involves a determination by the competent authority as to whether or not a given plan or project required AA. As explained in Section 2.1, AA is required in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site, but for which the possibility of likely significant effects on one or more Natura 2000 sites cannot be excluded. The CJEU's Judgment on *Eco Advocacy v. An Bord Pleanála* (C-721/21) and the *Opinion* of Advocate General Kokott in the same case set out the principles for identifying any aspects of a plan or project which may constitute what the CJEU termed in *People Over Wind* (C-323/17) "*measures intended to avoid or minimise harmful effects on a Natura 2000 site*" and, as such, cannot be taken into account in making an AA Screening determination. Consideration of the potential for in-combination effects is also required at this stage.

Stage 2: Appropriate Assessment – This stage involves a detailed assessment of the implications of the plan or project, individually and in combination with other plans and projects, for the integrity of the Natura 2000 site(s) concerned. This stage also involves the development of appropriate mitigation to address any adverse effects and an assessment of the significance of any residual impacts following the inclusion of mitigation. In *Kelly v. An Bord Pleanála* (IEHC 400), the High Court ruled that a lawful AA must contain complete, precise, and definitive findings based on examination and analysis, and conclusions and a final determination based on an evaluation of the findings. In the same judgment, the High Court stressed that, in order for the findings to be complete, precise, and definitive, the AA must be carried out in light of best scientific knowledge in the field and cannot

have gaps or lacunae. In *Holohan v. An Bord Pleanála* (C-461/17), the CJEU clarified that AA must "*catalogue the entirety of habitat types and species for which a site is protected*" (i.e. the qualifying interests of the site) and assess the implications of the plan or project for the qualifying interests, both within and outside the site boundaries, and other, non-qualifying interest habitats and species, whether inside or outside the site boundaries, "*provided that those implications are liable to affect the conservation objectives of the site*". The proposer of a plan or project requiring AA is furnishes the competent authority with the scientific evidence upon which to base its AA by way of a Natura Impact Statement (NIS) or Natura Impact Report (NIR). If it is not possible to ascertain that the plan or project will not adversely affect one or more Natura 2000 sites, authorisation can only be granted subject to Article 6(4).

Stage 3: Article 6(4) – If a plan or project does not pass the legal test at Stage 2, alternative solutions to achieve its aims must be considered and themselves subject to Article 6(3). If no feasible alternatives exist, authorisation can only be granted where it can be demonstrated that there are imperative reasons of overriding public interest (IROPI) justifying its implementation. Where this is the case, all compensatory measures must be taken to protect the overall coherence of Natura 2000.

The three stages described above are illustrated in Figure 2-1 below.

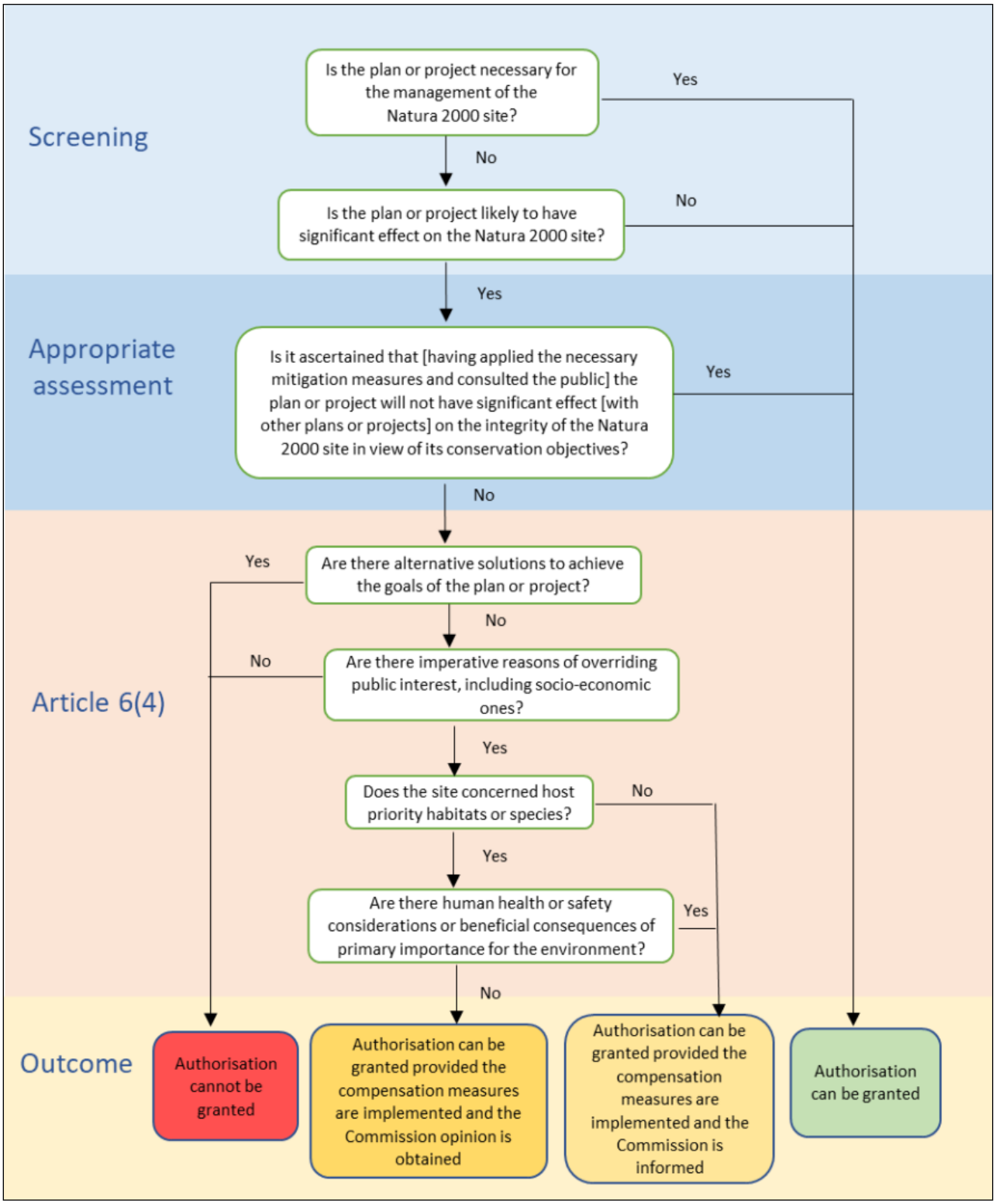

Figure 2-1 - Stages of the Appropriate Assessment process (EC, 2021a).

3. Methodology

3.1 Sources of Guidance

This report was prepared with due regard to the relevant European and Irish legislation, case law and guidance, including but not limited to: -

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. *Official Journal of the European Communities* L 206/7-50.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. *Official Journal of the European Union* L 20/7-25.
- European Communities (Birds and Natural Habitats) Regulations, 2011. *S.I. No. 477/2011* (as amended) ("the Habitats Regulations").
- Planning and Development Act, 2000. *No. 30 of 2000* (as amended) ("the Planning and Development Acts").
- Planning and Development Regulations, 2001. *S.I. No. 600/2001* (as amended) ("the Planning Regulations").
- EC (2019). *Managing Natura 2000 sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC.* European Commission, Brussels. *Official Journal of the European Union* C 33/1-62.
- EC (2021a). *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, Brussels. *Official Journal of the European Union* C 437/1-107.
- EC (2021b). *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive. C (2021) 7301.* European Commission, Brussels.
- DG Env (2022). *Guidance document on assessment of plans and projects in relation to Natura 2000 sites – A summary.* Directorate-General for Environment, European Commission, Brussels. Publications Office of the European Union, Luxembourg.
- DEHLG (2010a). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Revised 11/02/2010.* Department of the Environment, Heritage and Local Government, Dublin.
- DEHLG (2010b). *Circular NPW 1/10 & PSSP 2/10. Dated 11/03/2010.* Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2021). Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. *National Parks & Wildlife Service Guidance Series* 1, Department of Housing, Local Government and Heritage, Dublin.
- Mullen, E., Marnell, F. and Nelson, B. (2021). Strict Protection of Animal Species – Guidance for Public authorities on the Application of Articles 12 and 16 of the EU Habitats Directive to development/works undertaken by or on behalf of a Public Authority. *National Parks & Wildlife Service Guidance Series* 2, Department of Housing, Local Government and Heritage, Dublin.
- OPR (2021). *Appropriate Assessment Screening for Development Management. OPR Practice Note PN01.* Office of the Planning Regulator, Dublin.

- Case law, including *Waddenzee* (C-127/02), *Sweetman v. An Bord Pleanála* (C-258/11), *Kelly v. An Bord Pleanála* (IEHC 400), *Commission v. Germany* (C-142/16), *People Over Wind* (C-323/17), *Holohan v. An Bord Pleanála* (C-461/17), *Eoin Kelly v. An Bord Pleanála* (IEHC 84), *Heather Hill* (IEHC 450) and *Eco Advocacy v. An Bord Pleanála* (C-721/21).

- Sundseth, K. and Roth, P. (2014). *Article 6 of the Habitats Directive – Rulings of the European Court of Justice.* Ecosystems LTD (N2K Group), Brussels.

3.2 Desk Study

Baseline data regarding the receiving environment, including Natura 2000 sites, was gathered through a thorough desk study.

The boundaries of Natura 2000 sites were downloaded from *NPWS: Maps and Data* (https://www.npws.ie/maps-and-data). Information on sites, including their overall structures and functions, qualifying interests, conservation objectives and threats/pressures and activities therein, was found in the Site Synopsis, Natura 2000 Standard Data Form, Conservation Objectives and supporting documents for each site. Spatial data for site-specific conservation objectives of Natura 2000 sites, and boundary data for other designated sites, such as Natural Heritage Areas, was also retrieved from *NPWS: Maps and Data.* Reporting under Article 17 of the Habitats Directive (NPWS, 2019a-c; *Article 17 web tool*) and Article 12 of the Birds Directive (*Article 12 web tool*) provided further information on the habitats and species concerned at the national level.

Information relating to recent and historical records of species was obtained from the National Biodiversity Data Centre (NBDC) *Biodiversity Maps* (https://maps.biodiversityireland.ie/Map), while data for other features of the natural environment, e.g. known occurrences of non-qualifying interest Annex I habitats and the Department of Agriculture Food and the Marine's forest inventory, were viewed on *NPWS: Maps and Data*. Spatial data for known populations of Freshwater Pearl Mussel (*Margaritifera margaritifera*) received from the National Parks & Wildlife Service (NPWS) was also reviewed. TII also provided an extract from Tailte Éireann's National Land Cover Map (https://www.tailte.ie/en/surveying/products/professional-mapping/national-land-cover-map/) for all areas within 200m of the proposed works.

The Environmental Protection Agency (EPA) map viewer *EPA Maps: Water* (https://gis.epa.ie/EPAMaps/ Water) and spatial data for river, lake, canal, transitional and coastal waterbodies downloaded from the *EPA Geoportal* (https://gis.epa.ie/GetData/Download) was used to identify any hydrological connection between the proposed works and Natura 2000 sites or connected features. Satellite and aerial imagery from Google Earth, Bing Maps and Tailte Éireann was reviewed to identify hedgerows, treelines and other potential ecological features.

In order to inform the assessment of potential in-combination effects, planning applications from the surrounding area were reviewed using the *National Planning Application Database* (https://housinggovie.maps.arcgis.com/apps/webappviewer), An Bord Pleanála's *Map Search* (https://www.pleanala.ie/en-ie/map-search) and the *EIA Portal* (https://www.gov.ie/en/publication/9f9e7-eia-portal/).

3.3 Site Visits

An initial site visit to characterise the stream corridor and surrounding habitats was undertaken by AtkinsRéalis ecologists Owen O'Keefe and Caroline Downey on 26th January 2024. Owen O'Keefe visited the site for a second time during a site meeting with the geotechnical and hydromorphology team on 27th August 2024. Habitats were classified with reference to *A Guide to Habitats in Ireland* (Fossitt, 2000) and the *Interpretation Manual of European Union Habitats* (DG Env, 2013). The primary aim of the survey was to gather baseline data relating to the potential ecological constraints on the proposed works with particular emphasis on the potential presence of qualifying interests of Natura 2000 sites. The survey also included checks for invasive alien plant species, e.g.

Japanese Knotweed (*Fallopia japonica*), and any evidence of protected mammals, particularly Otter (*Lutra lutra*), as well as recording of any incidental observations or evidence of presence of birds and other fauna.

3.4 Statement of Authority

This report was prepared by Owen O'Keefe and reviewed by Paul O'Donoghue.

Owen O'Keefe is a Senior Ecologist at AtkinsRéalis. Owen holds a BSc (Hons) in Ecology from University College Cork (2015) and is a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). He has 9 years' professional experience in ecological consultancy, specialising in river ecosystems and Appropriate Assessment.

Caroline Downey is a Graduate Ecologist holding a BSc (Hons) in Ecology and Environmental Biology from University College Cork. Caroline has worked in ecological consultancy since the beginning of 2023, with a broad knowledge of Appropriate Assessment, Natura Impact Statements, Ecological Impact Statements and ecological theory and legislation, resultant of her BSc and work to date. A focus of Caroline's has been assisting Appropriate Assessment Screenings, supporting the preparation of AA and NIS, and undertaking of a range of surveys including invasive species, mammals, habitats and botanical surveys. Caroline assisted with the January 2024 site visit for this project.

Paul O'Donoghue is an Associate Director at Atkins. Paul holds a BSc (Zoology), MSc (Behavioural Ecology) and a PhD (Avian Ecology and Genetics). Paul is a Chartered member of the Society for the Environment (CEnv) and a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Paul has over 18 years' experience in ecology; including extensive experience in the preparation of Habitat Directive Assessments / Natura Impact Statements (i.e., Appropriate Assessment under Article 6(3) of the EU Habitats Directive).

4. Receiving Environment

This section provides an overall description of the natural environment in the vicinity of the proposed works and is not limited to Natura 2000 sites.

4.1 Habitats, Species and Ecological Corridors

As noted in Section 1.2.2 above, Loher Bridge is located at ITM Grid Ref. 450921 561889, where the N70 Ring of Kerry Road crosses the Loher stream. The area uphill (north-east) of the road is designated as part of the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC and is a mosaic of wet and dry heath ('dry siliceous heath'/'wet heath' - HH1/HH3) which is grazed by sheep, with several small streams 'eroding/upland rivers' (FW1) (see Figure 4-1 below). The proposed works do not involve any activities or access on this side of the road, i.e. there will be no works or access within the SAC.

Downstream of Loher Bridge lands are not within the SAC. Approximately 2m downstream of the bridge, the stream flows over a waterfall formed by the edge of the bridge apron (see Figure 4-2). Downstream of this point, where the proposed works are located, the stream is bound by a residential property ('buildings and artificial surfaces' - BL3 - and a garden with 'amenity grassland' and 'flower beds and borders' - GA2/BC4) to the north-west, and farmland ('wet grassland' - GS4) to the south-east. Within this section, the stream has a high gradient and is within a steep-sided gorge formed by incision during high-flow events (see Figure 4-3). As such, it is still classed as FW1. The bed substrate is predominantly cobbles and boulders with no aquatic vegetation present (see Figure 4-4 and Figure 4-5). The riparian zone downstream of the bridge is characterised as a very narrow strip (on both banks) of *Fuchsia magellanica* and other garden shrubs ('ornamental/non-native shrub' - WS3).

The stream discharges to the sea at Ballinskelligs Bay, which is part of the Ballinskelligs Bay and Inny Estuary SAC, c. 1.3km downstream (see Figure 4-6).

Figure 4-1 - View upstream from Loher Bridge, showing grazed heathland in the SAC.

Figure 4-2 - Waterfall immediately downstream of Loher Bridge, as viewed from downstream.

Figure 4-3 - View downstream along the stream from Loher Bridge in August (left) and January (right).

Figure 4-4 - Typical sample section of the Loher stream within the works area.

Figure 4-5 - View downstream from the end of the proposed works in August (left) and January (right).

Figure 4-6 - View towards Hog's Head and Ballinskelligs Bay from upstream of Loher Bridge.

As can be seen from the above photos, the riparian zone of the stream is narrow and the vegetation is dominated by the non-native shrub *Fuchsia magellanica*, along with some Bramble (*Rubus fruticosus* agg.). The non-native perennial Montbretia (*Crocosmia* × *crocosmiiflora*) is also abundant along the edges of the stream and throughout its riparian zone. While both *Fuchsia* and Montbretia are both non-native species, neither is listed on the Third Schedule to the Habitats Regulations or the *List of invasive alien species of Union concern*[1] and both are very common and widespread along streams and roads in south-western Ireland, often occurring together. Further downstream (beyond the works area), the non-native Japanese Knotweed (*Reynoutria japonica* syn. *Fallopia japonica*) is known to be present along a large proportion of the stream's length. This species is listed on the Third Schedule to the Habitats Regulations but has not been observed within the works area or in close proximity to the works area (based on the desk study and site visits).

The proposed works are not within a within a *Margaritifera*-sensitive area and there are no records of Freshwater Pearl Mussel (*Margaritifera margaritifera*) from the Loher stream or its catchment. Furthermore, given the high-energy character of this stream, with large substrate particle size and high substrate mobility, it is not considered to provide suitable habitat for Freshwater Pearl Mussel. The stream is also considered unlikely to support host fish for mussel glochidia. Therefore, the stream is not considered to be capable of supporting a Freshwater Pearl Mussel population.

The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (located upstream of Loher Bridge and outside of the works area) is designated for Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*) and Atlantic Salmon (*Salmo salar*). However, the Loher stream is likely unsuitable for all life stages of lampreys or spawning by salmon. The large substrate particle size and high substrate mobility make it unsuitable for spawning by any of these species. Given the high gradient of the stream along its whole length and its apparently unstable hydrological regime, it is considered unlikely that there are any sections with suitable spawning habitat for any of the species or any juvenile habitat for lampreys. It is also unlikely that there is suitable nursey habitat for earlier life stages of these species, i.e. lamprey ammocoetes or salmon parr. Furthermore, the waterfall at the bridge apron (downstream of the SAC boundary) represents an impassable barrier for all migratory fish species. The stream is also considered to be very limited in its potential to support other fish species of conservation interest, e.g. European Eel (*Anguilla anguilla*) or Brown Trout (*Salmo trutta*). The likely absence of fish from the stream further limits its potential to support species which rely on them as a source of food, e.g. Otter (*Lutra lutra*), which is also a qualifying interest of the SAC.

During the site walkover, no evidence of Otter was observed, e.g. holts, couches, slides, prints or spraints. Given the likely absence of any prey species in the Loher stream, Otter is unlikely to have any feeding opportunities in the vicinity of the proposed works. While the stream is connected to suitable foraging habitat and potential holting opportunities at its mouth at Ballinskelligs Bay, no suitable feeding or holting habitat occurs upstream of the proposed works. As such, otters are unlikely to commute through the works area.

Crevices which could be used by roosting bats are present within the masonry arch barrel of Loher Bridge. These were marked with red spray paint by a specialist bat surveyor during a previous inspection of the bridge. While potential roost features exist, the suitability of the surrounding landscape for foraging by bats, including Lesser Horseshoe Bat (*Rhinolophus hipposideros*), which is also a qualifying interest of the SAC, is limited due to its very exposed aspect and the lack of woodland, treelines and hedgerows. No works are proposed to the bridge. Other than the stream corridor itself, there are no linear features of ecological value (e.g. hedgerows or treelines) providing ecological connectivity for mobile species such as bats. This includes the N70 road, which is bound by low stone walls with low-growing vegetation, predominantly grasses, heathers (Ericaceae), Gorse (*Ulex* spp.), Bramble, *Fuchsia* and Montbretia, not forming hedgerows. There are very few trees in the surrounding landscape, mostly those planted as shelter for dwellings, which are mostly non-native species. There are no woodlands.

[1] Commission Implementing Regulation (EU) 2016/1141 of 13 July 2016 adopting a list of invasive alien species of Union concern pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council. *Official Journal of the European Union* L 189/4-8.

5. Natura 2000 Sites

5.1 Zone of Influence

The "*Zone of Influence*" of a plan or project is the area which may experience ecological effects as a result of its implementation, including any ancillary activities. The various impacts of a plan or project will each have their own characteristics, e.g., nature, extent, magnitude, duration etc. Accordingly, the area subject to each impact ("zone of impact") will vary depending on characteristics of the impact and the presence of pathways for its propagation. Ecological features within or connected to one or more zones of impact could, depending on their sensitivities, be affected by the plan or project under consideration. The area containing such features may be regarded as the Zone of Influence. As such, in establishing the Zone of Influence for a plan or project, regard must be had to the characteristics of its potential impacts, potential pathways for impacts and the sensitivities of ecological features in the receiving environment.

In its guidance on selecting which Natura 2000 sites to include in the AA Screening, *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities* (DEHLG, 2010a) recommends inclusion of sites in the following three categories: -

- Any Natura 2000 sites within or adjacent to the plan or project area,
- Any Natura 2000 sites within the Zone of Influence of the plan or project (generally within 15km for plans, to be established on a case-by-case basis for projects, having regard to the nature, scale and location of the project, the sensitivities of the ecological receptors and the potential for in-combination effects), and
- Following the precautionary principle, any other Natura 2000 sites for which the possibility of significant effects cannot be excluded, e.g., for a project with hydrological impacts, it may be necessary to check the full extent of the catchment for Natura 2000 sites with water-dependent qualifying interests.

In addition, *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2021) recommends consideration of Natura 2000 sites hosting fauna which could move to the plan or project area or its zone(s) of impact, and the potential for the plan or project to sever ecological connectivity within or between Natura 2000 sites. *Appropriate Assessment Screening for Development Management* (OPR, 2021) emphasises the importance of employing the source-pathway-receptor model (rather than arbitrary distances such as 15km) when selecting Natura 2000 sites for inclusion in the AA Screening.

Based on the nature, scale and location of the proposed development and the baseline conditions in the receiving natural environment, the zones of impact of the proposed development were defined as: -

- For direct impacts, all areas within and immediately adjoining the red-line boundary.
- For temporary disturbance to birds and other fauna, and the spread of invasive species, all areas within a buffer of 500m from the red-line boundary.
- For water quality impacts, the Loher stream and its tributaries (Ballinskelligs Bay is not included due to the vast dilution capacity of this coastal waterbody relative to the scale of the proposed works).
- For indirect impacts, any other areas with potential ecological connectivity to the above zones of impact, e.g. connected wetlands and waterbodies.

The Zone of Influence was defined as sum of the above zones of impact.

Using QGIS, spatial data for waterbodies and catchments from *EPA Geoportal* were viewed in conjunction with aerial imagery from *Bing Maps* to identify pathways and zones of impact from the proposed development, and other potential ecological connections to the wider landscape. These were then mapped in relation to designated sites using spatial data from *NPWS: Maps and Data* (see Figure 5-1). In addition, the Zone of Influence was examined to identify any other sites, habitats, species or sensitive ecological features with potential ecological connections to these zones of impact.

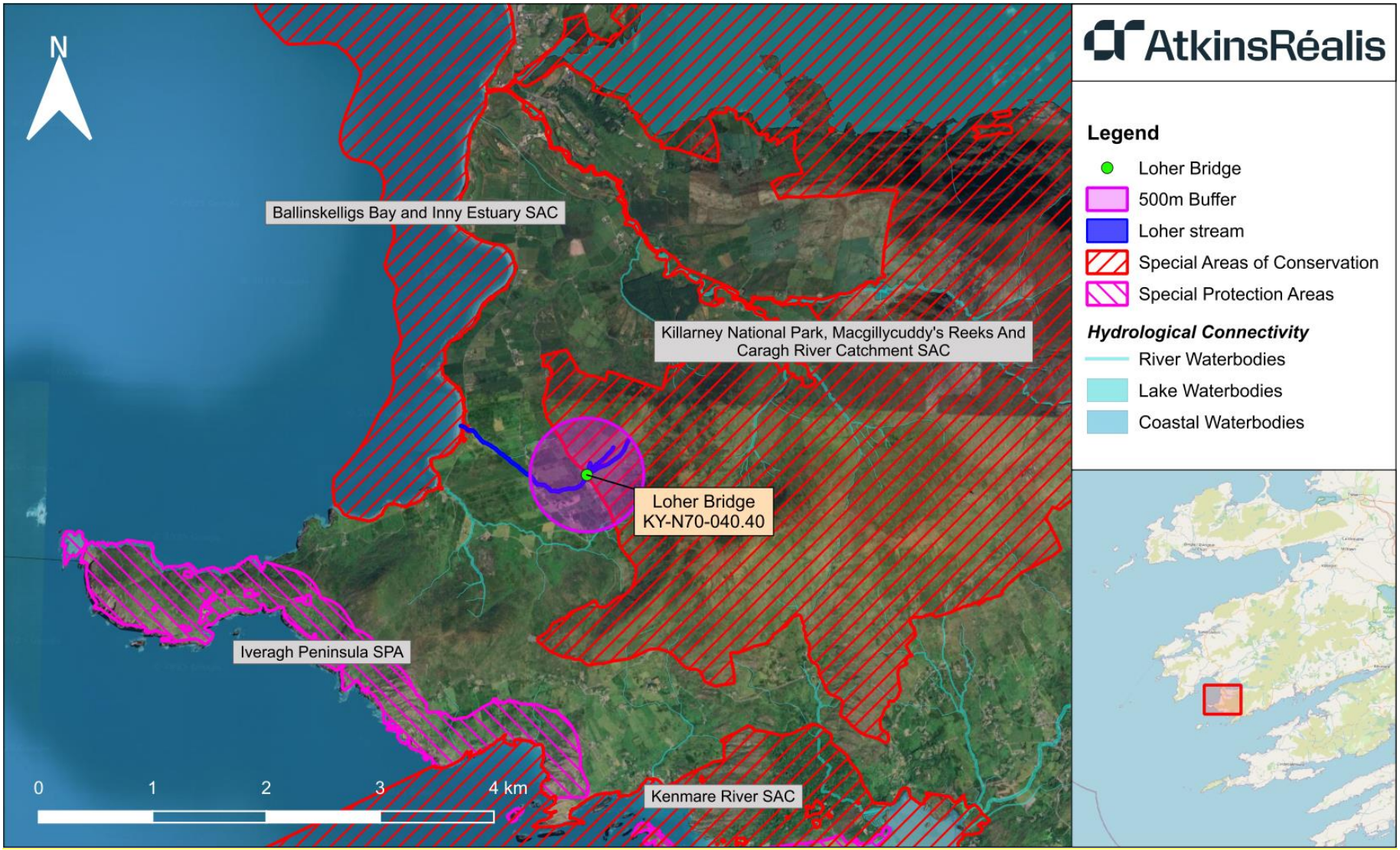

Figure 5-1 - Zones of impact from the proposed development in relation to the boundaries of Natura 2000 sites.

5.2 Site Descriptions

The descriptions of Natura 2000 sites presented in this section are based on the Site Synopsis, Conservation Objectives and Natura 2000 Standard Data Form documents for the sites concerned, augmented by information from the supporting documents available on the site-specific pages of the NPWS website.

Annex I habitat types marked with an asterisk (*) are “priority habitat types”, i.e., natural habitat types in danger of disappearing and for the conservation of which the EU has a particular responsibility given the proportion of their natural ranges falling within the European territory of Member States.

5.2.1 Ballinskelligs Bay and Inny Estuary SAC

Overview

The following description is taken from the Site Synopsis for the site (NPWS, 2013a).

> “*This site is located at the western end of the Iveragh Peninsula, Co. Kerry, close to the town of Waterville. It comprises the marine waters of Ballinskelligs Bay, as far out as the five-fathom line, some adjoining terrestrial areas and the estuary of the River Inny upstream to Breahig townland. The site extends from Horse Island at the western end of the bay round to Rineen Point at its south-eastern side. Much of the site comprises shallow marine water, Ballinskelligs Bay, but it also supports a wide variety of other habitats, including intertidal mud/sand flats, sandy beaches, shingle, tidal river channels, sea cliffs, wet and dry grassland, freshwater marshes, swamps, cut-away bog, scrub, Bracken and saltmarsh.*”

> “*The site is of considerable conservation significance, particularly for the presence of two types of saltmarsh listed on Annex I of the E.U. Habitats Directive and of a population of Petalophyllum ralfsii, a species listed on Annex II of this Directive. Additionally, the site is of significance for the nationally important populations of Common Scoter and Ringed Plover that use it.*”

Qualifying Interests and Conservation Objectives

The Ballinskelligs Bay and Inny Estuary SAC was selected for the following qualifying interests: -

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330)
- Mediterranean salt meadows (*Juncetalia maritimi*) (1410)
- Petalwort (*Petalophyllum ralfsii*) (1395)

The conservation objectives of the Ballinskelligs Bay and Inny Estuary SAC are as follows (NPWS, 2014): -

- To maintain the favourable conservation condition of ‘Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)’ and ‘Mediterranean salt meadows (*Juncetalia maritimi*)’ in the Ballinskelligs Bay and Inny Estuary SAC.
- To restore the favourable conservation condition of Petalwort in the Ballinskelligs Bay and Inny Estuary SAC.

The Conservation Objectives document for the site (NPWS, 2014) also states the following: “*Please note that this SAC overlaps with Iveragh Peninsula SPA (004154) and is adjacent to Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC (000365). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.*”

Threats, Pressures and Activities

Human usage of the site includes fishing and tourist activities (NPWS, 2013a). Table 5-1 below lists the threats, pressures and activities with negative impacts on the site, as per its Natura 2000 Standard Data Form (NPWS, 2019d).

Table 5-1 - Threats, pressures and activities with negative impacts on the Ballinskelligs Bay and Inny Estuary SAC.

Rank	Threat, pressure or activity (code)	Threat, pressure or activity (description)	Inside, outside or both
High	G02.01	golf course	outside
Low	A08	Fertilisation	both
Low	E01	Urbanised areas, human habitation	outside
Low	E01.03	dispersed habitation	outside
Medium	A04	grazing	outside
Medium	C01.01	Sand and gravel extraction	inside
Medium	C01.01.02	removal of beach materials	inside
Medium	F02.03	Leisure fishing	inside
Medium	G01.02	walking, horse-riding and non-motorised vehicles	inside

NPWS (2019d) and Eionet (2024).

5.2.2 Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC

Overview

The following description is taken from the Site Synopsis for the site (NPWS, 2013b).

> "*This very large site encompasses the mountains, rivers and lakes of the Iveragh Peninsula, and the Paps Mountains which stretch eastward from Killarney towards Millstreet. The majority of the site is in Co. Kerry, with a small portion in Co. Cork. This is the most mountainous region in Ireland and includes Carrauntoohil, the highest peak in the country at 1,039 m. The underlying geology is almost entirely Old Red Sandstone, although Carboniferous limestone occurs on the eastern shores of Lough Leane, and rhyolitic lavas occur above Lough Guitane. The dramatic sandstone ridges and valleys have been shaped by glacial processes and many of the lakes are impounded by glacial moraines. Located close to the Atlantic in the south-west of Ireland, the site is subject to strong oceanic influences. Generally, Lusitanian flora and fauna is well-represented, while the high peaks and cliffs support arctic-alpine relicts.*"

> "*Overall, the site is of high ecological value because of the diversity, quality and extensiveness of many of the habitats, and impressive list of rare species of flora and fauna. In recognition of its importance the Killarney National Park has been designated a World Biosphere Reserve.*"

Qualifying Interests and Conservation Objectives

The Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC was selected for the following qualifying interests: -

- Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) (3110)
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea* (3130)
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (3260)
- Northern Atlantic wet heaths with *Erica tetralix* (4010)
- European dry heaths (4030)
- Alpine and Boreal heaths (4060)
- *Juniperus communis* formations on heaths or calcareous grasslands (5130)
- Calaminarian grasslands of the *Violetalia calaminariae* (6130)
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) (6410)
- Blanket bogs (* if active bog) (7130)
- Depressions on peat substrates of the *Rhynchosporion* (7150)
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (91A0)
- *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) (91E0)
- **Taxus baccata* woods of the British Isles (91J0)
- Kerry Slug (*Geomalacus maculosus*) (1024)
- Freshwater Pearl Mussel (*Margaritifera margaritifera*) (1029)
- Marsh Fritillary (*Euphydryas aurinia*) (1065)
- Sea Lamprey (*Petromyzon marinus*) (1095)
- Brook Lamprey (*Lampetra planeri*) (1096)
- River Lamprey (*Lampetra fluviatilis*) (1099)
- Atlantic Salmon (*Salmo salar*) (1106)
- Lesser Horseshoe Bat (*Rhinolophus hipposideros*) (1303)
- Otter (*Lutra lutra*) (1355)
- Killarney Fern (*Trichomanes speciosum*) (1421)

- Slender Naiad (*Najas flexilis*) (1833)

- Killarney Shad (*Alosa fallax killarnensis*) (5046)

The conservation objectives of the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC are as follows (NPWS, 2017): -

- To maintain the favourable conservation condition of 'Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation', '*Juniperus communis* formations on heaths or calcareous grasslands', 'Calaminarian grasslands of the *Violetalia calaminariae*', Kerry Slug, Sea Lamprey, Brook Lamprey, River Lamprey, Atlantic Salmon, Lesser Horseshoe Bat, Otter, Killarney Fern and Slender Naiad in the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC.

- To restore the favourable conservation condition of 'Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)', 'Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea*', 'Northern Atlantic wet heaths with *Erica tetralix*', 'European dry heaths', 'Alpine and Boreal heaths', '*Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)', 'Blanket bogs (* if active bog)', 'Depressions on peat substrates of the *Rhynchosporion*', 'Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles', '*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)', '**Taxus baccata* woods of the British Isles', Freshwater Pearl Mussel, Marsh Fritillary and Killarney Shad in the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC.

The Conservation Objectives document for the site (NPWS, 2017) also states the following: "*Please note that this SAC overlaps with Killarney National Park SPA (004038) and Iveragh Peninsula SPA (004154) and is adjacent to Ballinskelligs Bay and Inny Estuary SAC (000335), Castlemaine Harbour SAC (000343), Castlemaine Harbour SPA (004029), Blackwater River (Cork/Waterford) SAC (002170) and Blackwater River (Kerry) SAC (002173). […] The conservation objectives for this site should be used in conjunction with those for the overlapping and adjacent sites as appropriate.*"

Threats, Pressures and Activities

The main land use within the site is grazing by sheep. In and around the National Park deer grazing is also common. The extensive grazing has caused damage to many of the terrestrial habitats, resulting in degradation of heath and blanket bogs and prevention of woodland regeneration. In the upland habitats the erosion caused by grazing is exacerbated by the exposed nature of the terrain. Apart from grazing, the woodlands are particularly threatened by Rhododendron (*Rhododendron ponticum*) invasion: approximately two thirds of the oak woodlands are affected, although a Rhododendron removal programme is underway in the National Park. The yew wood has been adversely affected by heavy grazing for many years, but it is intended to control this in the near future by erection of a deer fence. The bogs are sensitive to grazing and are also threatened by turbary, burning and afforestation. Most of the lakes are very acid-sensitive and therefore vulnerable to afforestation within the catchment areas. Lough Leane has been subject to some eutrophication, although water quality appears to have improved since phosphates were removed from the sewage in 1985.

Table 5-2 below lists the threats, pressures and activities with negative impacts on the site, as per its Natura 2000 Standard Data Form (NPWS, 2018).

Table 5-2 - Threats, pressures and activities with negative impacts on the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC.

Rank	Threat, pressure or activity (code)	Threat, pressure or activity (description)	Inside, outside or both
Low	A03	mowing / cutting of grassland	inside
Medium	A04	grazing	outside
High	A04	grazing	inside
Medium	A08	Fertilisation	outside
Low	A08	Fertilisation	inside
Medium	B	Sylviculture, forestry	inside
Medium	B	Sylviculture, forestry	outside
Medium	C01.03	Peat extraction	inside
Medium	E01	Urbanised areas, human habitation	outside
Low	E01.03	dispersed habitation	outside
Medium	E01.03	dispersed habitation	inside
Low	F02.03	Leisure fishing	inside
Medium	F03.01	Hunting	inside
Low	G01.02	walking, horse-riding and non-motorised vehicles	inside
Low	G02.01	golf course	outside
Medium	G02.06	attraction park	inside
High	I01	invasive non-native species	inside
Medium	J01	fire and fire suppression	inside
Medium	K01.01	Erosion	inside

NPWS (2018) and Eionet (2024).

6. Likely Significant Effects

6.1 Identification of Likely Significant Effects

The identification of likely effects in this section follows the “source-pathway-receptor” model. According to this model, for an effect to exist, all three of the following criteria must be met: -

- Some aspect of the plan or project must act as a source of an impact,
- There must be a pathway capable of conveying the impact to a receptor, and
- The receptor must be sensitive to the impact.

Types of impacts likely to arise from the proposed works and potential pathways for those impacts are outlined and illustrated in Section 5.1 and receptors are described in Section 5.2. The following subsections analyse the specific effects on each receptor and evaluate their significance in view of the relevant conservation objectives.

6.1.1 Ballinskelligs Bay and Inny Estuary SAC

Likely significant effects on the Ballinskelligs Bay and Inny Estuary SAC are identified, in view of the conservation objectives of the site, in Table 6-1 below.

Table 6-1 - Identification of potential impacts on the Ballinskelligs Bay and Inny Estuary SAC (LSE = likely significant effect).

Qualifying interest	Identification of likely significant effect	LSE
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	As illustrated in the mapping provided in NPWS (2014), the main occurrence of saltmarshes in this SAC is along the Inny Estuary, which is c. 7km north-west of the proposed works. Given this distance, the dilution capacity of Ballinskelligs Bay, the dominance of outward flow from the estuary and the fact that saltmarshes are only periodically inundated, the hydrological connection between the proposed works and these habitats is extremely weak. Furthermore, given the small scale and short duration of the proposed works and weakness of the hydrological connection, there is no risk of significant impacts on these habitats. In addition, following a thorough review of aerial imagery, suitable conditions for either of these saltmarsh types are very unlikely to occur closer to the proposed works. Therefore, the possibility significant effects on the conservation objectives for these qualifying interests can be excluded at this stage.	No
Mediterranean salt meadows (*Juncetalia maritimi*)		No
Petalwort	As identified in Campbell *et al*. (2013) and NPWS (2014), the nearest known occurrence of this species, which has very specific habitat requirements and is only found in damp calcareous dune slacks and machair (Campbell et al., 2013), is within a dune slack west of Inny Ferry, c. 7km north-west of the proposed works. There is no hydrological or other ecological connection between the proposed works and this location. No suitable habitat for this species occurs in close proximity or connected to the proposed works. Therefore, there are no pathways for impacts to this qualifying interest and the possibility significant effects on its conservation objective can be excluded at this stage.	No

6.1.2 Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SPA

Likely significant effects on the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SPA are identified, in view of the conservation objectives of the site, in Table 6-2 below.

Table 6-2 - Identification of potential impacts on the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC. LSE = likely significant effect.

Qualifying interest	Identification of likely significant effects	LSE
Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)	The nearest example of this qualifying interest to the proposed works is Lough Dreenaun, c. 3km north-eat of the proposed works (NPWS, 2017). This lake is in a separate catchment to the proposed works. Therefore, the possibility of any direct or indirect impacts or any significant effects can be ruled out at this stage.	No
Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea*	The nearest lake of the *Littorelletea uniflorae* or *Isoëto-Nanojuncetea* type is Lough Brin in the Kerry Blackwater catchment, c. 31km north-east of the proposed works. As there is no hydrological or other connectivity to this or any other lake supporting this habitat type, the possibility of any direct or indirect impacts or any significant effects can be ruled out at this stage.	No
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	All rivers and streams in the SAC are assumed by NPWS to represent this habitat type, including the stretches of the Loher stream within the SAC, i.e. the stretches upstream of the bridge and therefore outside the works area. However, the character of the stream is such that no instream macrophytes are present. No works will occur within the SAC boundary, only downstream of it. Thus, there will be no direct or indirect impact on any of the attributes of the site-specific conservation objective for this habitat type (which cover habitat extent and distribution, hydrological regime, substrate particle size, water quality, species composition, and floodplain connectivity) in any watercourse within the SAC. Therefore, significant effects can be ruled out at this stage.	No
Northern Atlantic wet heaths with *Erica tetralix*	These are generally on the hillsides and mountains within the SAC, including in the vicinity of the proposed works, on the eastern (uphill) side of the road. Tailte Éireann's National Land Cover Map (extract provided by TII) shows that the areas upstream/uphill of Loher bridge are a mosaic of dry and wet heath, and this was confirmed during the site visits. As there will be no access or works activities on this side of the road, the possibility of any significant impacts can be ruled out at this stage.	No
European dry heaths		No
Alpine and Boreal heaths		No
Juniperus communis formations on heaths or calcareous grasslands	This terrestrial habitat type does not occur in close proximity to the proposed works. It is generally restricted to the more isolated parts of the SAC, e.g. headlands and islands of the Upper Lake and Muckross Lake. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No
Calaminarian grasslands of the *Violetalia calaminariae*	Examples of the habitat type occur at the disused copper mine on the north shore of Muckross Lake and at Ross Island, at a former copper and lead mine. This habitat type does not occur in close proximity to the	No

Qualifying interest	Identification of likely significant effects	LSE
	proposed works. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)	The area of wet grassland on the south-eastern (left-hand) bank of the stream downstream of the bridge has some potential to correspond to this Annex I habitat type. However, the area is both very small and outside the SAC boundary, and any impacts would be temporary, with recovery of vegetation in the short term. Therefore, the possibility of any significant effect on the conservation objective can be ruled out at this stage.	No
Blanket bogs (* if active bog)	Neither of these peatland habitats occur in close proximity to the proposed works. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No
Depressions on peat substrates of the *Rhynchosporion*		No
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	None of these three woodland habitat types occur in close proximity to the proposed works. The nearest possible examples are found along the southern and eastern shores of Lough Currane and the slopes above, and the woods at Derrynane (part of a separate SAC in a separate catchment). Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No
*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)		No
**Taxus baccata* woods of the British Isles		No
Kerry Slug	No suitable habitat for this species occurs in the vicinity of the proposed works. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No
Freshwater Pearl Mussel	The proposed works are not within any *Margaritifera*-sensitive Area and there are no records of this species in the Loher stream. The nearest such areas and nearest known pearl mussel populations are in the Cummeragh and Isknagahiny/Capall catchments (upstream of Lough Currane). There are no pathways for any direct impacts or water quality impacts to these pearl mussel populations. In addition, the Loher stream does not provide suitable habitat for this species as the substrate is extremely mobile. Therefore, the possibility of any impacts on Freshwater Pearl Mussel can be excluded.	No
Marsh Fritillary	The only known colony of this species within the SAC is located c. 50km to the east, between Lough Lene and Muckross Lake (NPWS, 2017). However, NBDC *Biodiversity Maps* shows records of adult butterflies and there larval foodplant, Devil's-bit Scabious (*Succisa pratensis*), in the same hectad as the proposed works, and potentially suitable habitat occurs in the vicinity, e.g. in the wet grassland where the site access and compound. However, given the nature, small scale and short duration of	No

Qualifying interest	Identification of likely significant effects	LSE
	the works, and the very large distance from the known SAC populations, the possibility of any significant impacts can be ruled out at this stage.	
Sea Lamprey	The stream is largely unsuitable for all life stages of Sea Lamprey, Brook Lamprey, River Lamprey and Atlantic Salmon. Within the works area (all of which is downstream of the SAC boundary), the large substrate particle size and high substrate mobility make it unsuitable for spawning by any of these species. There is also no suitable nursery habitats for lamprey ammocoetes or salmon parr in the stream. Given the high gradient of the stream along its whole length and its apparently unstable hydrological regime, it is considered unlikely that there are any sections with suitable spawning habitat for any of the species or any juvenile habitat for these species. Furthermore, the waterfall formed by the bridge apron, in its current state, likely prevents any access to the reaches of the Loher stream within the SAC by any of these migratory fish species. Therefore, the possibility of significant effects on the conservation objective for any of these species can be ruled out at this stage.	No
Brook Lamprey		No
River Lamprey		No
Atlantic Salmon		No
Lesser Horseshoe Bat	No potential roosts were identified within or in close proximity to the works area during any of the site visits (the bridge contains roost features suitable for other bat species but not Lesser Horseshoe). The nearest records of this species on the NBDC Biodiversity Maps are from Derrynane Woods, which are beyond the c. 2.5km core foraging zone for this species. Furthermore, there are no treelines or other linear features in close proximity to the works area which could support feeding or commuting corridors for bats, and the surrounding area is very exposed. Given the lack of suitable habitat for this species, possibility of significant impacts or effects can be ruled out.	No
Otter	Given the likely absence of any prey species in the Loher stream, Otter is unlikely to have any feeding opportunities in the vicinity of the proposed works. While the stream is connected to suitable foraging habitat and potential holting opportunities at its mouth at Ballinskelligs Bay, no suitable feeding or holting habitat occurs upstream of the proposed works. As such, the stream is unlikely to act as a commuting corridor for otters. In addition, no evidence of otters, e.g. holts, couches, slides, prints or spraints, were observed during the site visits. Therefore, the possibility of significant impacts or effects on Otter can be ruled out.	No
Killarney Fern	No suitable habitat for this species occurs in the vicinity of the proposed works. While the Loher stream and its tributaries have very steep banks and small gorges, their size, aspect and degree of exposure make them unsuitable for this species. Therefore, the possibility of any impacts can be ruled out at this stage.	No
Slender Naiad	The nearest known possible occurrence of this aquatic macrophyte is in Lough Adoolig, c. 18km north-east of the proposed works, on the upper reach of the Cummeragh River. No suitable habitat occurs nearer the proposed works. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No

Qualifying interest	Identification of likely significant effects	LSE
Killarney Shad	As this species is restricted to Lough Leane, which is outside the Zone of Influence of the proposed works. Therefore, the possibility of any impacts or effects can be ruled out at this stage.	No

6.2 Summary

On the basis of objective information presented in Sections 3, 4, and 5, the evaluation in Section 6.1 has found that there are no impacts likely to arise from the proposed development which could give rise to likely significant effects on the qualifying interests of Natura 2000 sites concerned, in view of their conservation objectives.

7. Potential In-combination Effects

7.1 Requirement for Assessment

The requirement for AA arising out of Article 6(3) of the Habitats Directive covers plans and projects that, "*either individually or in combination with other plans or projects*", are likely to have a significant effect on one or more Natura 2000 sites. This means that AA is required for any plan or project that, in combination with other plans or projects, would have a significant effect on one or more Natura 2000 sites, irrespective of the presence or absence of such effects from that plan or project on its own. Therefore, regardless of the significance of the effects of the plan or project individually, the potential for significant effects in combination with other plans and projects must be considered in all cases.

7.2 Approach and Methodology

The objective of this requirement is to capture significant effects potentially arising from the cumulation or other interaction of non-significant effects from multiple plans and projects. Consequently, the assessment of potential in-combination effects is not a pair-wise assessment, rather, it considers the totality of the effects arising from all plans and projects affecting the Natura 2000 site(s) in question. In identifying the plans and projects to be included in this assessment, it is important to define an appropriate geographical scope and timescale over which potential in-combination effects are to be considered and the sources of information to be consulted, as described below. It is also important to consider the nature of the interactions between effects, which may be additive, antagonistic, synergistic or complex.

7.2.1 Geographical Scope

In defining the geographical scope for identifying potential in-combination effects, it is important to remember that effects are evaluated in view of the conservation objectives of the Natura 2000 site(s) concerned. As such, two or more effects relating to the same conservation objective for a given Natura 2000 site would combine even if their geographical extents did not overlap. For example, the loss of a small area of an Annex I habitat type listed as a qualifying interest of a Natura 2000 site would combine with the loss of an entirely unconnected area of the same habitat type from a remote part of the same site to produce an in-combination effect, the significance of which would need to be evaluated in view of the relevant conservation objective. On that basis, the scope of the assessment of in-combination effects extends to all plans and projects affecting the same conservation objectives as the plan or project under consideration, irrespective of whether those effects are significant or not.

However, given the small scale of the proposed works and localised extents of their impacts, it was deemed sufficient in this case to include only areas in close proximity to the proposed works and their zone of impact in the geographical scope for identifying potential in-combination effects. For larger-scale plans and projects, this was extended to the full Zone of Influence of the proposed works.

7.2.2 Timescale

The proposed works will be completed by the end of June 2025 at the latest. Given the nature and magnitude of their effects (none of which are significant), there will be complete recovery within a short period following their completion, with none remaining beyond the end of 2025. On that basis, there are no effects from the proposed works which could act in combination with effects from other plans and projects beyond the end of 2025. Therefore, other plans and projects considered in this assessment included those with potential effects between now and the end of 2025.

7.2.3 Sources of Information

The following sources of information were consulted to gather information on other plans and projects: -

- *Kerry County Development Plan, 2022-2028.* Kerry County Council, Tralee.
- *National Planning Application Database* <https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de> [accessed via an ArcGIS Feature Service in QGIS3 on 24/01/2025].
- *Kerry County Council Online Planning Enquiry* <https://www.kerrycoco.ie/planning/online-planning-enquiry/> [accessed 24/01/2025].
- *EIA Portal* <https://www.gov.ie/en/publication/9f9e7-eia-portal/> [accessed via an ArcGIS Feature Service in QGIS3 on 24/01/2025].
- *EPA Maps (Water)* <https://gis.epa.ie/EPAMaps/Water> [accessed 24/01/2025].
- *An Bord Pleanála Map Search* (https://www.pleanala.ie/en-ie/map-search) [accessed 24/01/2025].

7.3 Assessment

7.3.1 Plans

The current Kerry County Development Plan (CDP) set out the policies and objectives of Kerry County Council with regard to the proper planning and sustainable development within its functional area for the period from 2022 to 2028. Volume 6 of the CDP includes a Biodiversity Action Plan (BDP) for the county, also covering the period 2022-2028. The CDP went through an AA process, as detailed in the Natura Impact Report (NIR) included in Volume 5. The AA identified the sensitivities of Natura 2000 sites in Co. Kerry plus a 15km buffer, and the aspects of the CDP with potential to adversely affect those sites. Amendments were recommended and then incorporated into the CDP "*to ensure that the policies and objectives proposed and supported by the CDP are underpinned by the principles of sustainability of which the protection of Natura 2000 European Sites forms part*". As such, the adopted CDP provides for the protection of Natura 2000 sites (and biodiversity more generally). Therefore, there will be no significant effects from the proposed works in combination with the CDP and, furthermore, the CDP will itself reduce the risk of in-combination effects arising from other projects.

7.3.2 Projects

7.3.2.1 Large-scale Projects

The review of the *EIA Portal* and *An Bord Pleanála Map Search* found no projects within the Zone of Influence of the proposed works. No other large-scale projects were identified on either the *National Planning Application Database* (NPAD) or the *Kerry County Council Online Planning Enquiry*. There are no EPA Licensed Facilities operating within the Zone of Influence of the proposed works (searched on *EPA Maps: Water*). Therefore, there will be no significant effects from the proposed works in combination with other large-scale projects.

7.3.2.2 Small-scale Projects

Small-scale projects in the vicinity of the proposed works were identified through the NPAD and *Kerry County Council Online Planning Enquiry* system. There are several small-scale development applications or permissions within the Zone of Influence of the proposed works. These include the construction of a new sheep house, and a number of one-off residential projects, including construction of new dwellings, alteration of existing dwellings, mostly extensions,

renovations of ruined or derelict dwellings, change of use from agricultural buildings to dwellings, and installation of new septic tanks. These projects will have to comply with the *Code of Practice: Domestic Wastewater Treatment Systems (Population Equivalent ≤10)* (EPA, 2021). These developments have conditions attached to their planning permission relating to sustainable development, such as septic tanks and clean surface water run-off. Therefore, it is not anticipated that these projects that have been granted permission will have any significant effects in combination with the proposed works.

7.3.3 Other Activities

Farmers and landowners may also undertake general agricultural operations in areas adjacent to the proposed works and along watercourses, which could potentially give rise to impacts of a similar nature to those arising from the proposed development. This could potentially result in additional an increased risk to water quality. Many agricultural operations are periodic, not continuous in nature, and qualify as Activities Requiring Consent (ARCs) that require consultation with the NPWS in advance of the works, e.g., reclamation, infilling or land drainage within 30m of a river, removal of trees or any aquatic vegetation within 30m of a river, and harvesting or burning of reed or willow. Agricultural operations must also comply with the European Communities (Environmental Impact Assessment) (Agriculture) Regulations, 2011 (as amended) in relation to:

- Restructuring of rural land holdings,
- Commencing use of uncultivated land or semi-natural areas for intensive, and
- Land drainage works on lands used for agriculture.

Stage 2 AA is required under Regulation 9 if it is likely to have a significant effect on a Natura 2000 site. The drainage or reclamation of wetlands is controlled under the Planning and Development (Amendment) (No. 2) Regulations, 2011 and the European Communities (Amendment to Planning and Development) Regulations, 2011. Therefore, any in-combination effects from agricultural operations and the proposed works are not likely to be significant.

7.4 Conclusion

As detailed in the preceding sections, it can be concluded that, based on both the location and scale of the proposed works, it will not give rise to significant effects on any of the Natura 2000 sites within the Zone of Influence, in combination with other plans or projects.

8. Conclusion

This AA Screening Report has examined the details of the proposed non-routine maintenance works at Loher Bridge, Co. Kerry and the Natura 2000 sites in their Zone of Influence. It has analysed the potential impacts of the proposed works on the receiving natural environment and evaluated their effects, both individually and in combination with other plans and projects, in view of the conservation objectives of the relevant Natura 2000 sites. This report has been prepared in line with the Habitats Directive, as transposed into Irish law by the Habitats Regulations, relevant case law and guidance from the European Commission, the relevant Government Departments, and the Office of the Planning Regulator, on the basis of objective information and adhering to the precautionary principle.

Following the assessment detailed in this report, it is concluded that the proposed works will not, either individually or in combination with other plans or projects, give rise to impacts which would constitute significant effects on the Ballinskelligs Bay and Inny Estuary SAC, Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC or any other Natura 2000 site, in view of their conservation objectives. Therefore, it recommended that Transport Infrastructure Ireland, as the competent authority, may determine that Appropriate Assessment is not required in respect of the proposed works. Should any aspect of the proposed works be materially changed, a new AA Screening Report would be required.

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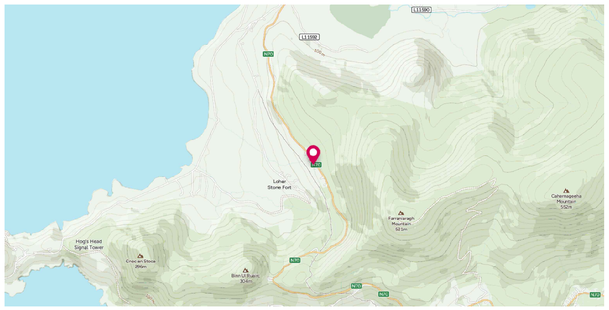
APPENDICES

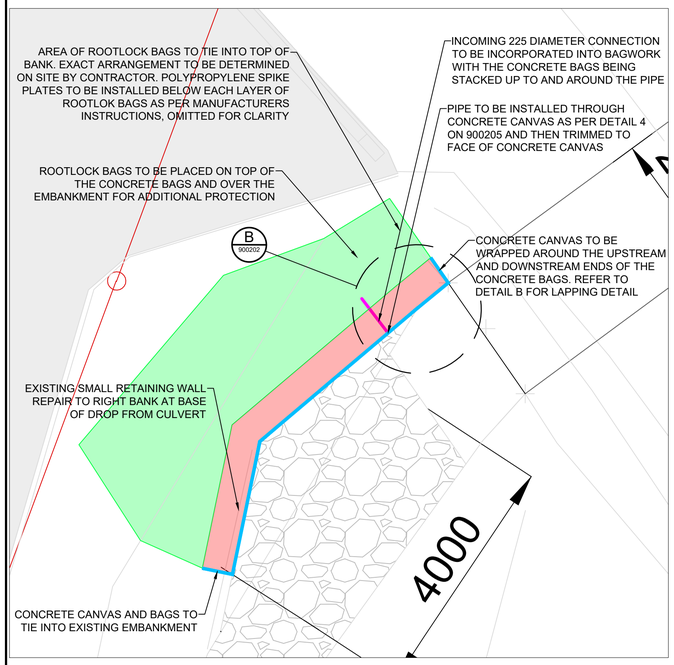
Appendix A. Drawings

Millimetres 0 10 100

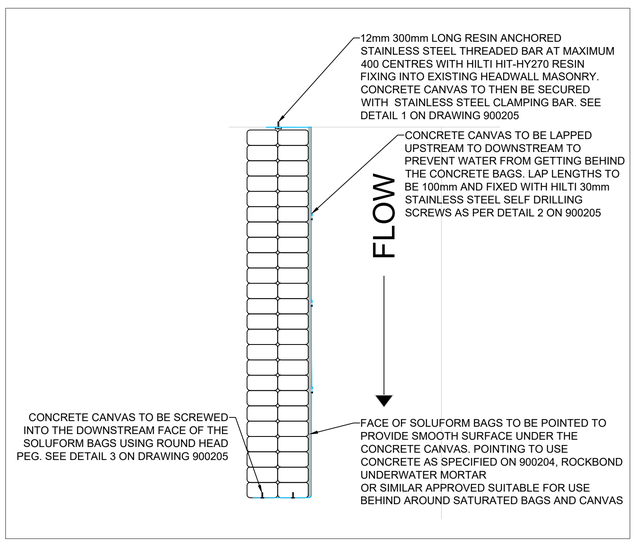
DO NOT SCALE



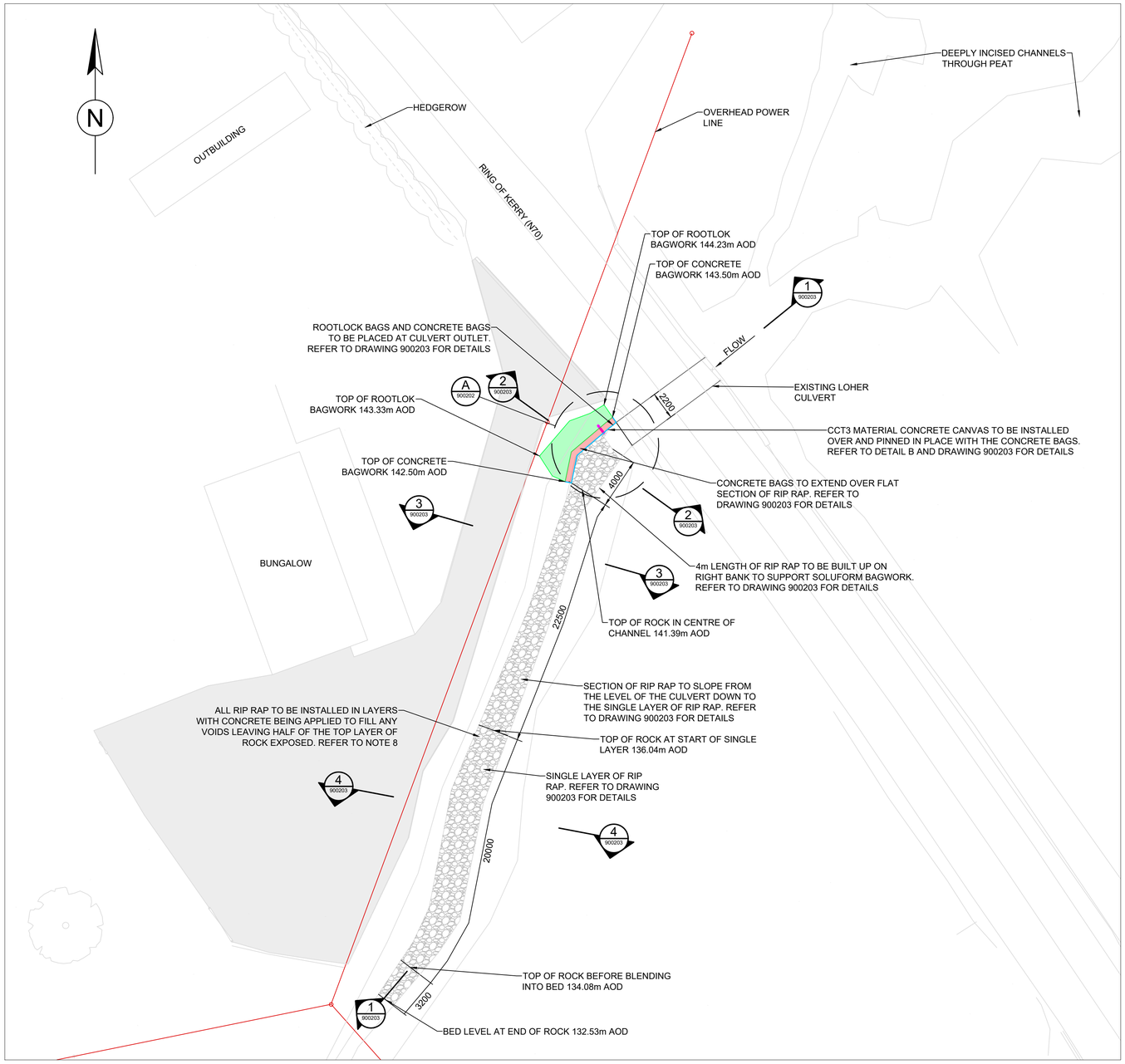
2 / 900202 LOCATION PLAN
NTS



A / 900202 CULVERT EXIT DETAIL
1:50



B / 900202 INDICATIVE CONCRETE CANVAS LAPPING DETAIL
NTS



1 / 900202 GENERAL ARRANGEMENT PLAN
1:200

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

UNSTABLE CHANNEL BANKS
HIGH FLOWS IN WATERCOURSE
MOVEMENT OF RIP RAP
COLLISION AT SITE ACCESS
OVERHEAD POWER CABLE

MAINTENANCE/CLEANING

AS CONSTRUCTION

DECOMMISSIONING/DEMOLITION

AS CONSTRUCTION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:
1. TO BE READ IN CONJUNCTION WITH DRAWING 5219386-ATK-XX-XX-DR-CE-900203, 900204 & 900205.
2. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS OTHERWISE STATED.
3. ALL LEVELS ARE IN METERS RELATIVE TO ORDNANCE DATUM (mAOD) WHERE RELEVANT UNLESS OTHERWISE STATED.
4. CONCRETE CANVAS TO BE CCT3 MATERIAL SUPPLIED BY CONCRETE CANVAS® OR SIMILAR APPROVED. SEE DETAILS 1, 2, 3 & 4 ON DRAWING 900205 FOR INSTALLATION DETAILS.
5. CONCRETE BAGS TO BE SUPPLIED BY SOLUFORM OR SIMILAR APPROVED. REFER TO DETAILS 8 & 9 ON DRAWING 900205 FOR HYDRATION AND INSTALLATION INSTRUCTIONS.
6. ROOTLOK BAGS TO BE SUPPLIED BY GEOGROW OR SIMILAR APPROVED. SEE DETAILS 5, 6 & 7 ON DRAWING 900205 FOR INSTALLATION DETAILS.
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9. UTILITY SEARCH TO BE UNDERTAKEN PRIOR TO CONSTRUCTION AND DESIGNER CONSULTED IF ANY AFFECTED SERVICES ARE IDENTIFIED.
10. TRIAL PIT TO BE UNDERTAKEN IN CHANNEL BED BELOW WATERFALL. ONCE OVERPUMPING IS IN PLACE FOR THE WORKS IN THE PRESENCE OF A GEOTECHNICAL ENGINEER TO ALLOW FOR A SETTLEMENT ASSESSMENT.
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12. LARGER LOOSE ROCKS ON BED TO BE MOVED TO THE SIDES OF THE CHANNEL PRIOR TO PLACEMENT OF IMPORTED ROCK OR CONCRETE.
13. REFER TO DRAWING 5219386-ATK-XX-XX-DR-CE-900204 FOR RIP-RAP SPECIFICATION.

LEGEND:
- PLACED RIP RAP
- EXISTING CULVERT
- OVERHEAD POWER LINE
- ROOTLOCK BAGS
- CONCRETE BAGS
- CONCRETE CANVAS
- EXISTING PIPE
- EXISTING DRIVEWAY

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: CLIENT REVIEW & APPROVAL
Suitability: S3

AtkinsRéalis
Chadwick House
Birchwood Park
Warrington
WA3 6AE
Tel: +44 (0)1925 238000
Fax: +44 (0)1925 238500
www.atkinsrealis.com

Client: TRANSPORT INFRASTRUCTURE IRELAND

Project Title: LOHER BRIDGE CULVERT

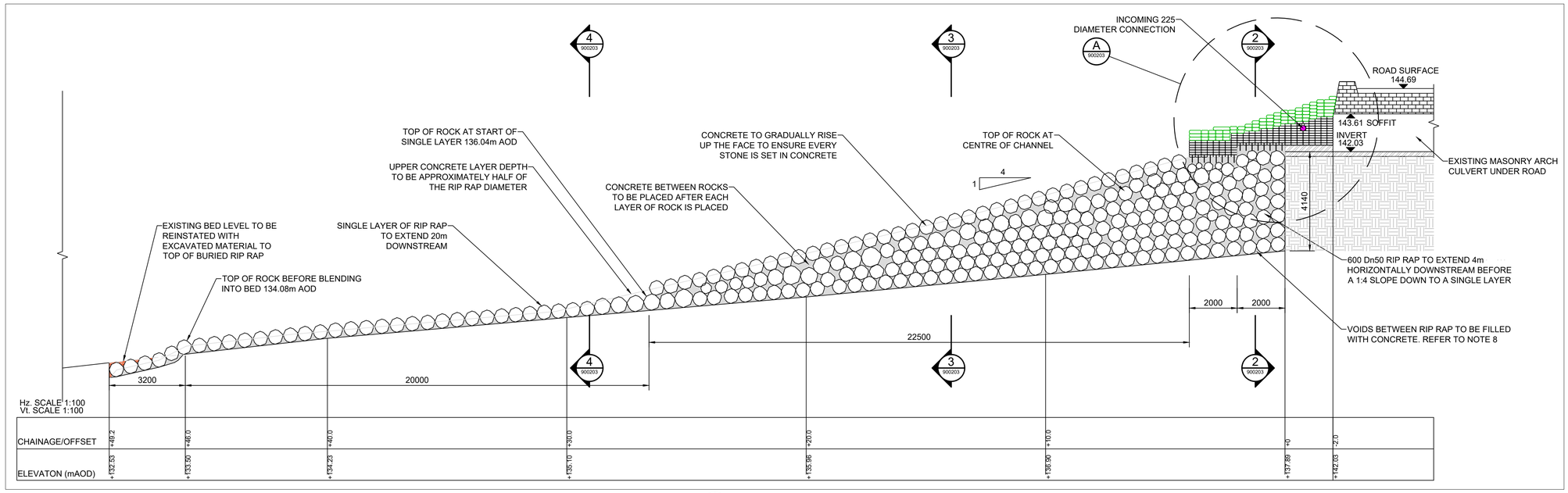
Drawing Title: GENERAL ARRANGEMENT

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	AW	AH	SB	AB
Original Size	Date	Date	Date	Date
A1	19/12/24	19/12/24	19/12/24	19/12/24

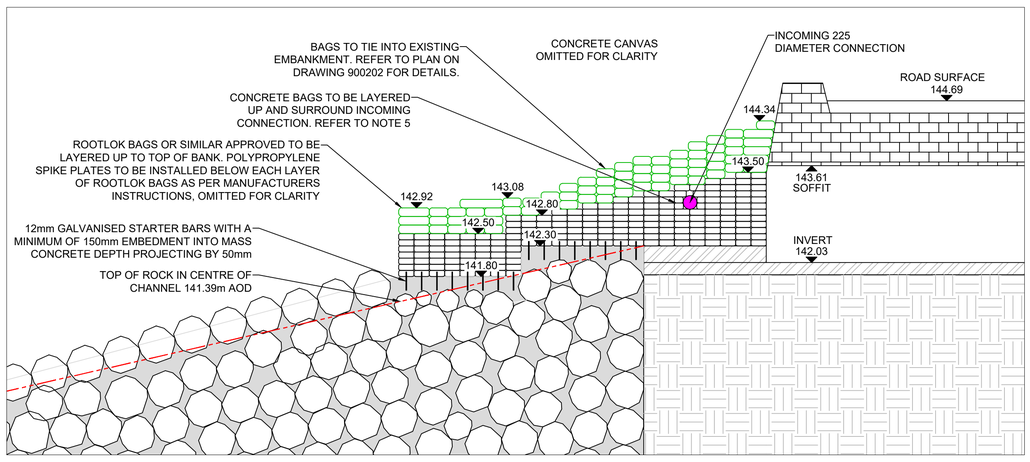
Drawing Number: 5219386-ATK-XX-XX-DR-CE-900202
Revision: P02

Internal Project Number: 5219386

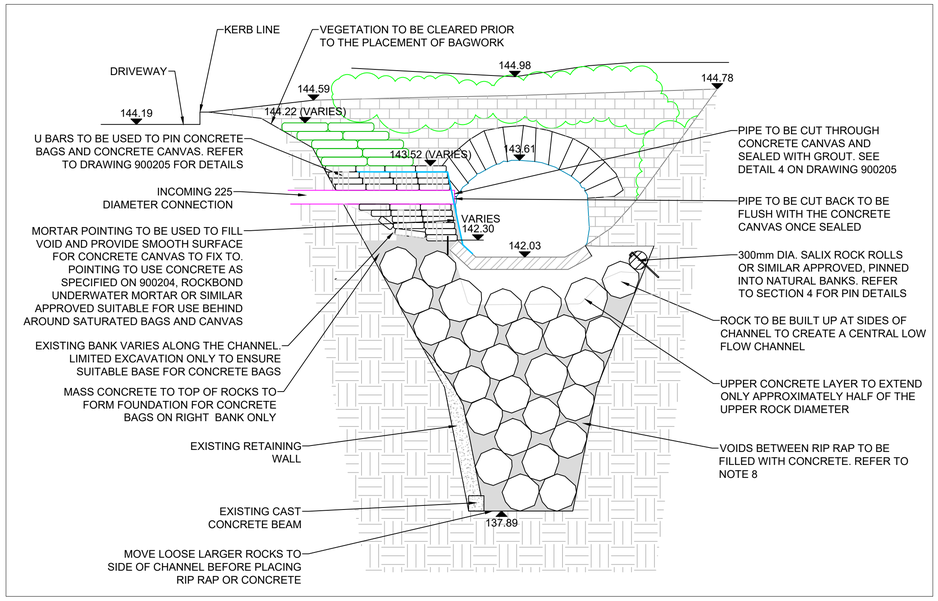
DO NOT SCALE



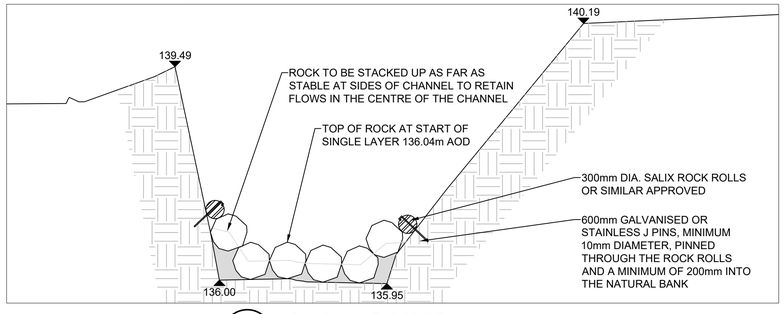
1 900203 LONG SECTION
1:100



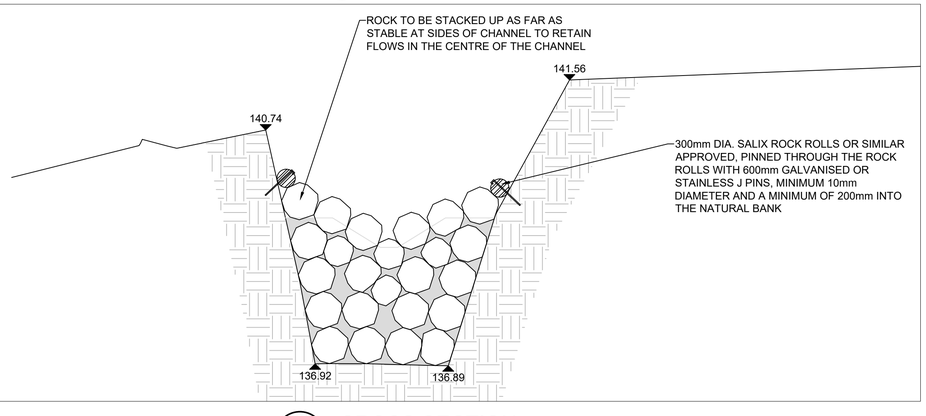
A 900203 DETAIL A
1:50



2 900203 ELEVATION OF WATERFALL
1:50



4 900203 CROSS SECTION
1:50



3 900203 CROSS SECTION
1:50

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION
UNSTABLE RIVER BANKS
HIGH FLOWS IN WATERCOURSE
MOVEMENT OF RIP RAP
COLLISION AT SITE ACCESS
OVERHEAD POWER CABLE

MAINTENANCE/CLEANING
AS CONSTRUCTION

DECOMMISSIONING/DEMOLITION
AS CONSTRUCTION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:
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13. REFER TO DRAWING 5219386-ATK-XX-XX-DR-CE-900204 FOR RIP-RAP SPECIFICATION.

LEGEND:
- EXISTING CONCRETE RETAINING WALL
- EXISTING EMBANKMENT
- CONCRETE INFILL
- MASONRY INVERT
- REINSTATED BED MATERIAL
- CONCRETE CANVAS
- VEGETATION
- EXISTING PIPE
- REINSTATED CHANNEL BED LEVEL
- ROOTLOCK BAGS
- CONCRETE BAGS
- ROCK ROLLS

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: CLIENT REVIEW & APPROVAL
Suitability: S3

AtkinsRéalis
Chadwick House
Birchwood Park
Warrington
WA3 6AE

Tel: +44 (0)1925 238000
Fax: +44 (0)1925 238500
www.atkinsrealis.com

Client: TRANSPORT INFRASTRUCTURE IRELAND

Project Title: LOHER BRIDGE CULVERT

Drawing Title: SECTIONS

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	AW	AH	SB	AB
Original Size	Date	Date	Date	Date
##	19/12/24	19/12/24	19/12/24	19/12/24

Drawing Number: 5219386-ATK-XX-XX-DR-CE-900203
Revision: P02

Internal Project Number: 5219386

Millimetres 100 10 0

DO NOT SCALE

RIP RAP

1. RIP-RAP SHALL BE HARD, DENSE, DURABLE, UN-WEATHERED NATURAL ROCK, COMPATIBLE WITH THE LOCAL GEOLOGY AND FREE FROM LAMINATIONS, WEAK CLEAVAGE PLANES OR CHEMICAL DECOMPOSITION. IT SHALL BE ABLE TO WITHSTAND LONG EXPOSURE TO WEATHERING, IN PARTICULAR WETTING / DRYING, FREEZING/THAWING AND ABRASION WITHOUT BEING LIABLE TO DECOMPOSITION OR DISINTEGRATION. ONLY CLEAN STONE SHALL BE USED IN THE WORKS AND IT SHALL BE CAPABLE OF BEING HANDLED AND PLACED WITHOUT UNDUE FRACTURE OR DAMAGE.

2. ALL RIP-RAP SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS;

	PROPERTY	REQUIREMENTS	TESTED IN ACCORDANCE WITH
A	MASS DENSITY	2.5-2.7 t/m3	EN 13383-2:2002
B	WATER ABSORPTION	0.5-2.0 %	EN 13383-2:2002
C	AGGREGATE ABRASION VALUE (MICRO-DEVAL)	10-20%	EN 1097-1:1996
D	SCHMIDT IMPACT INDEX (% REBOUND)	50-60	ISRM (1988)
E	POINT LOAD STRENGTH	4-8	ISRM (1985)
F	UNCONFINED COMPRESSIVE STRENGTH	120-80 MPa	EN 1926:1999
G	SOUNDNESS LOSS (MgSO4)	2-10%	EN1367

3. WHERE INCLUSIONS OCCUR WITHIN AN OTHERWISE HOMOGENEOUS PIECE OF ROCK, THE MATERIAL COMPRISING THE INCLUSIONS SHALL ALSO COMPLY WITH THESE REQUIREMENTS.

4. RIP-RAP SHALL BE CUBIC/PRISMOIDAL IN SHAPE WITH LENGTH/BREADTH RATIOS (MAXIMUM DIMENSION/MINIMUM DIMENSION) NO GREATER THAN 2.5 FOR 70% OF THE STONES; 3.0 FOR 85% OF THE STONES; AND 3.5 FOR ALL STONES. ANGULAR, BLOCKISH SHAPES ARE PREFERRED.

5. CARE SHALL BE TAKEN IN THE SELECTION OF A SUITABLE QUARRY TO ENSURE CONSISTENCY IN THE QUALITY OF THE ROCK AND IN THE SHAPE, SIZE AND GRADING OF THE RIP-RAP.

6. PRIOR TO THE AGREEMENT TO THE USE OF A PROPOSED SOURCE, THE CONTRACTOR SHALL PROVIDE EVIDENCE OF ROCK SELECTION PROCEDURES IN OPERATION AT THE QUARRY. PRIMARILY THIS EVIDENCE SHALL RELATE TO THE PROCEDURES IN PLACE FOR CONSISTENTLY PRODUCING ANGULAR, BLOCKISH STONES OF THE REQUIRED ROCK QUALITY, FREE OF DEFECTS AND TO THE REQUIRED GRADING. IT MAY ALSO INCLUDE:

a. ASSESSMENTS OF ANY CHANGES ANTICIPATED IN THE GEOLOGY OF THE PRODUCTION FACES DURING THE PROGRESSION OF THE CONTRACT THAT WOULD BE LIKELY TO AFFECT COMPOSITION OR INTEGRITY.

b. EVIDENCE OF THE SELECTION OF A BLASTING PATTERN THAT MINIMISES THE PRODUCTION OF LATENT FRACTURES.

c. EVIDENCE OF ORIENTATION OF STONE PRODUCTION FACES TO MINIMISE THE INFLUENCE OF FRACTURES AND DISCONTINUITIES.

d. LENGTH OF TIME ROCK IS STOCKPILED I.E."CURING TIMES".

e. EVIDENCE OF REJECTION OF OUT-OF-SIZE AND FLAWED MATERIALS PRIOR TO DESPATCH.

f. ANTICIPATED INCIDENCE OF BLOCK FRACTURE ON SITE, BASED EITHER ON CONTROLLED DROP TESTS OR ROCK BREAKAGE DURING TRANSIT.

7. THE MEDIAN NOMINAL DIAMETER (Dn50) OF THE RIP-RAP SHALL BE 600mm. GRADING HM 300-1000kg ACCORDING TO BS EN 13383 - 1:2013. GRADING SHALL COMPLY WITH THE 'THE ROCK MANUAL, CIRIA C683'.

8. RIP-RAP SHALL HAVE A SMOOTH LINEAR GRADING CURVE AND BE WELL GRADED WITHOUT GAPS OR ANY EXCESS OF FINE MATERIAL.

9. WHERE APPLICABLE THE BANKS AND BED TO BE PROTECTED SHALL BE GRADED AS NECESSARY TO FORM THE SUB GRADE FOR THE REVETMENT. ALL VEGETATION SHALL BE REMOVED.

10. THE RIP-RAP LAYER SHALL BE CAREFULLY SELECTED AND PLACED (NOT TIPPED) IN ORDER TO KEEP VOIDS TO A MINIMUM, WITH THE FINER STONES WITHIN THE RIP-RAP BEING USED TO FILL THE VOIDS. PLACING OF THE REVETMENT SHALL COMMENCE AT THE TOE OF THE SLOPE, WORKING UPWARDS. THE STABILITY OF THE FINAL REVETMENT CAN BE IMPROVED BY THE SELECTIVE PLACING OF THE LARGER STONES. THE FALL AND LINE OF THE RIP-RAP SHALL BE SMOOTH AND REGULAR AND THE MATERIAL SHALL BE PLACED AND COMPACTED BY APPROPRIATE PLANT AS WORK PROGRESSES. THE FINAL SURFACE LAYER OF STONES SHALL BE PLACED TO PRODUCE A COMPACT AND NEAT FINISH TO THE LINES AND LEVELS SHOWN ON THE DRAWINGS.

1 / 900204 RIP RAP SPECIFICATION
N/A

1.	MIX REFERENCE	C32/40
	1.A LOCATION	ROCK ARMOUR INFILL
2.	STRENGTH CLASS	C32/40
3.	NOMINAL MAXIMUM SIZE OF AGGREGATE, IN MM (D)	10
4.	TYPES OF AGGREGATE:	
	COURSE	IS EN 12620
	OTHER	N/A
	FINE	IS EN 12620
	OTHER	N/A
5.	SULPHATE CLASS [DELETE AS APPROPRIATE]	XA 1 ~~XA 2~~ XA 3
6.	CEMENT TYPE(S) OR COMBINATIONS COMPLYING WITH	CEM I N CEM I R [CEM III A] COMBINATION OF 50% CEM I WITH 50% GGBS TO BS6699 [CEM III/A] 50%GGBS
	CEM I N	IS EN 197-1
	CEM I R	IS EN 197-1
	CEM I SR	BS 4027
	OTHERS	
7.	EXPOSURE CLASS (AS IN IS EN 206-1) (OR COMBINATIONS) [DELETE AS APPROPRIATE]	X0 ~~XC1, XC2, XC3~~, XC4 XS1, ~~XS2~~, ~~XS3~~ ~~XD1~~, ~~XD2~~, XD3 XF1, XF2, XF3, XF4 XA1, XA2, XA3
8.	CHLORIDE CLASS [DELETE AS APPROPRIATE]	CL 0,40
9.	MINIMUM CEMENT CONTENT, KG/M3	360
10.	MAXIMUM FREE WATER/CEMENT RATIO	0.50
11.	QUALITY ASSURANCE REQUIREMENTS	THIRD PARTY CERTIFICATE
12.	RATE OF SAMPLING INTENDED BY THE PURCHASER FOR STRENGTH TESTING (FOR INFORMATION)	-
13.	OTHER REQUIREMENTS [ALKALI, COLOUR, ETC., AS APPROPRIATE]	COARSE AND FINE AGGREGATES, AND CEMENT TYPE TO BE FROM SIMILAR SOURCES FOR ALL CONCRETE MIXES

2 / 900204 CONCRETE SPECIFICATION
N/A

BAGWORK QUANTITIES

SOLUFORM OR SIMILAR APPROVED CONCRETE BAGS

BASED ON THE TOPOGRAPHICAL SURVEY AND THE DESIGN, THE TOTAL VOLUME OF SOLUFORM CONCRETE BAGWORK IS ESTIMATED TO BE 4.35m3, EACH BAG HAS A VOLUME OF 0.0125M3, REQUIRING 348 BAGS. INCLUDING A 20% RISK ALLOWANCE FOR WASTAGE, EROSION SINCE THE SURVEY AND PLACEMENT ON SITE, THIS GIVES A ROUNDED 420 SOLUFORM OR SIMILAR APPROVED BAGS. THE SOLUFORM BAGS ARE TO BE PINNED THROUGH WITH U PINS, EACH PIERCING 3 LAYERS OF BAGWORK. THE LOWER 3 LAYERS WILL REQUIRE ONE PIN PER 3 BAGS AND THE UPPER LAYERS ONE PIN PER 2 BAGS. BASED ON A HIGH AVERAGE OF 9 ROWS OF BAGS WITH 4 PINS FOR EACH 9 BAGS ALLOW FOR 200 no. 300x100x300mm, 8mm DIAMETER GALVANISED RIBBED U PINS, AS SUPPLIED BY SOLUFORM OR SIMILAR APPROVED.

GEOGROW ROOKLOK OR SIMILAR APPROVED SOIL FILLED BAGS

BASED ON THE TOPOGRAPHICAL SURVEY AND THE DESIGN, THE TOTAL VOLUME OF GEOGROW ROOTLOK BAGWORK IS ESTIMATED TO BE 2.6m3, EACH BAG HAS A VOLUME OF 0.0294m3, REQUIRING 88 BAGS. INCLUDING A 20% RISK ALLOWANCE FOR WASTAGE, EROSION SINCE THE SURVEY AND PLACEMENT ON SITE, THIS GIVES A ROUNDED 110 ROOTLOK OR SIMILAR APPROVED BAGS. THE ROOTLOK BAGS REQUIRE A PLASTIC PLATE BETWEEN EVERY JOIN OF BAGS BETWEEN ALL LAYERS. THIS CAN BE SIMPLIFIED TO 1 PLATE PER 2 BLOCKS, GIVING 55 PLATES, PLUS AN ALLOWANCE FOR PLATESD AT THE CONNECTION TO THE SOLUFORM BAGS, SAY A FURTHER 20, SO 75 SPIKED PLATES WILL BE REQUIRED.

3 / 900204 BAGWORK QUANTITIES
N/A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

UNSTABLE CHANNEL BANKS
HIGH FLOWS IN WATERCOURSE
MOVEMENT OF RIP RAP
COLLISION AT SITE ACCESS
OVERHEAD POWER CABLE

MAINTENANCE/CLEANING

AS CONSTRUCTION

DECOMMISSIONING/DEMOLITION

AS CONSTRUCTION

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NOTES:

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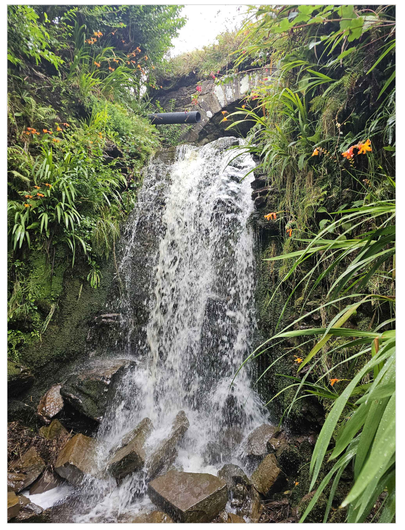

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: CLIENT REVIEW & APPROVAL — Suitability: S3

AtkinsRéalis
Chadwick House
Birchwood Park
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Tel: +44 (0)1925 238000
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Client: TRANSPORT INFRASTRUCTURE IRELAND

Project Title: LOHER BRIDGE CULVERT

Drawing Title: ROCK SPECIFICATION & IMAGES

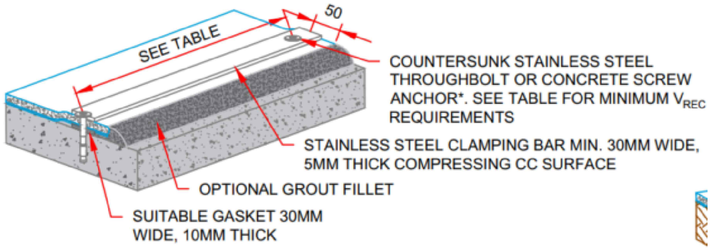
Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	AW	AH	SB	AB
Original Size: A1	Date: 19/12/24	Date: 19/12/24	Date: 19/12/24	Date: 19/12/24

Drawing Number: 5219386-ATK-XX-XX-DR-CE-900204 — Revision: P02

Internal Project Number: 5219386

USER: HICK2140 Date: 28/2/25 16:02:17 Filename: \\wsatkins.com\project\GBEMCW\CE\Projects\Water\20240322 Kerry Culvert Detailed Design\7 WIP\DR - Drawings\Detailed Design Plan.dwg

DO NOT SCALE



* SHOT FIRED NAILS ARE NOT RECOMMENDED

CLAMPING BAR DETAILS

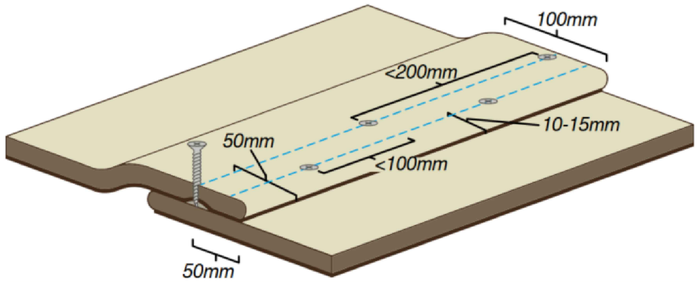
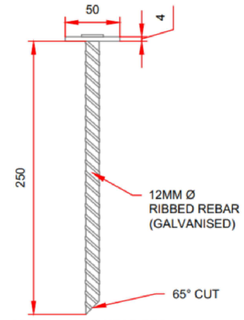


Figure 5.9 Zig Zag joint to prevent edge curling

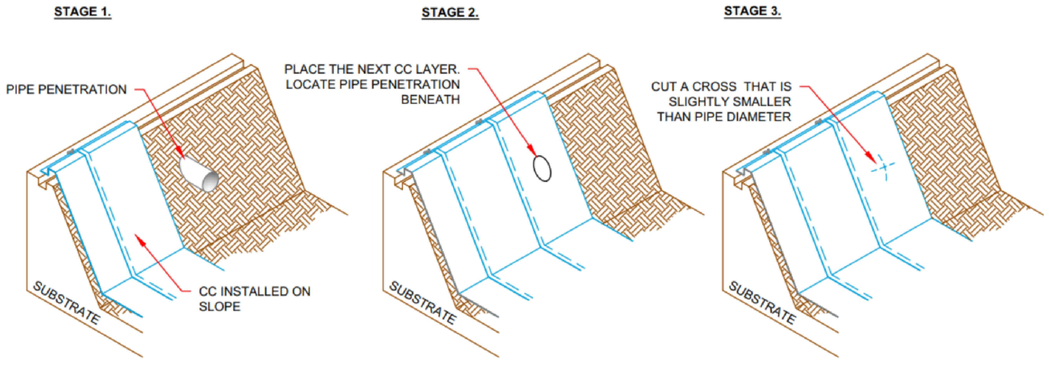


250MM ROUND HEAD PEG

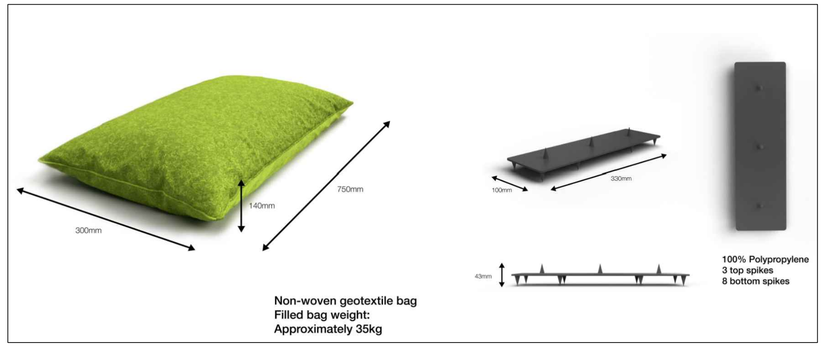
1 / 900205 — CONCRETE CANVAS TO HEADWALL FIXING DETAIL
1:50

2 / 900205 — CONCRETE CANVAS LAP FIXING DETAIL
1:50

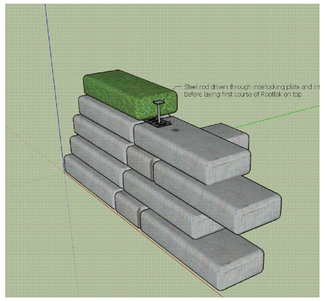
3 / 900205 — DOWNSTREAM CONCRETE CANVAS FIXING DETAIL
1:50



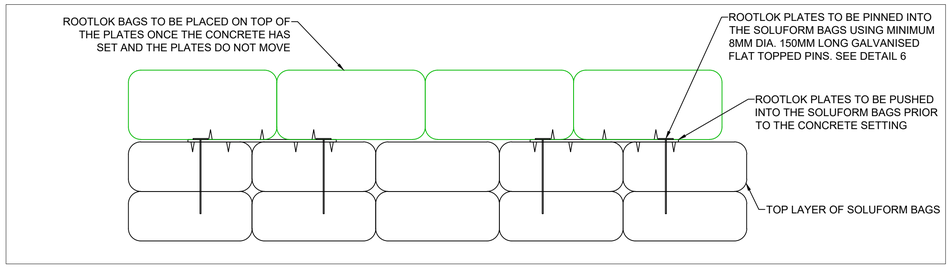
4 / 900205 — CONCRETE CANVAS TO PIPE INTERFACE
1:50



5 / 900205 — ROOTLOK BAGS SPECIFICATION
1:50



6 / 900205 — SOLUFORM TO ROOTLOK INSTALLATION DETAIL 1
NTS



7 / 900205 — SOLUFORM TO ROOTLOK INSTALLATION DETAIL 2
NTS

FOR ABOVE WATER PLACEMENT, SIMILARLY PREFILLED BAGWORK SUPPLIED AS A DRY MIX NEEDS TO BE HYDRATED PRIOR TO PLACEMENT. THIS SHOULD TYPICALLY BE ACHIEVED BY PRE-SOAKING THE LINED BAGWORK IN A BATH OF WATER FOR APPROXIMATELY 15 MINUTES PRIOR TO PLACEMENT. THE WATER SOLUBLE LINER WILL BEGIN TO DISSOLVE IN 5 SECONDS AND IS TYPICALLY FULLY DISSOLVED WITHIN APPROXIMATELY 15 SECONDS, SUFFICIENT ENOUGH TO ALLOW WATER TO READILY SOAK INTO THE DRY MIX TO HARDEN THE CONCRETE. TYPICALLY A 20kg BAG WILL ABSORB AROUND 4L OF WATER DURING THIS PROCESS SO IT IS IMPORTANT TO HAVE A READY SUPPLY OF WATER AVAILABLE AND TO TOP UP AT REGULAR INTERVALS.

WHEN READY TO USE, EACH OF THE BAGS SHOULD BE REMOVED FROM THE PALLET AND FULLY SUBMERGED IN A SUITABLE BATH OF WATER. ONCE HYDRATED, THE BAGWORK CAN BE CAREFULLY LIFTED FROM THE BATH AND EXCESS WATER ALLOWED TO DRAIN. THE PRE-SOAKED BAGWORK SHOULD BE CARRIED , INDIVIDUALLY BY HAND OR USING A WHEEL BARROW, TO THE SITE OF PLACEMENT. THE WORKSITE SHOULD BE APPROACHED FROM THE DRY SIDE, SUCH THAT PRE-SOAKED BAGWORK IS NOT CARRIED OVER OR THROUGH THE WATERCOURSE UNNECESSARILY, WHERE SLIPS, TRIPS OR FALLS COULD RESULT IN BAGWORK BEING DROPPED INTO THE WATER. THE CONTRACTOR'S METHOD STATEMENT SHOULD INCLUDE MEASURES TO ENSURE THAT PRE-SOAKED BAGWORK BAGWORK IS NOT CARRIED THROUGH A WATERCOURSE, UNAVOIDABLY.

8 / 900205 — SOLUFORM BAG HYDRATION INSTRUCTIONS
1:50

EACH BAG SHOULD BE CAREFULLY PLACED HORIZONTALLY, TAKING CARE NOT TO DROP, SNAG OR TEAR THE BAGS ON SHARP OBJECTS. BAGWORK IS TO BE PLACED FLAT AND BUILT UP IN ROWS, TYPICALLY ALTERNATING OR CROSS BONDING BAGWORK. CROSS BONDING IMPROVES THE STRENGTH AND EFFECTIVENESS OF THE FINISHED BLOCKWORK. BAGWORK CAN BE PATTED FLAT OR SHAPED ONCE PLACED, TO IMPROVE THE APPEARANCE OF THE BAGWORK AND REDUCE THE AMOUNT OF VOIDS WITHIN THE FINISHED BLOCKWORK.

AFTER THE SECOND OR THIRD ROW OR BAGS, STEEL REBAR PINS CAN BE PUSHED DOWN VERTICALLY THROUGH THE BAGWORK TO TIE ALL THE BLOCKWORK TOGETHER, WITH ADDITIONAL STEEL USED TO TIE SUBSEQUENT ROWS. PINS CAN BE INSERTED BY HAND, OR IF A HAMMER IS USED, THIS SHOULD BE A RUBBER MALLET. STEELWORK IS NOT ALWAYS NEEDED FOR ABOVE WATER BAGWORK ALTHOUGH WE DO RECOMMEND THAT IT IS USD WHEREVER THE BAGS ARE NEEDED FOR MEDIUM TO LONG TERM WORKS, OR WHERE ADDITIONAL WALL STRENGTH IS NEEDED. 300x100x300mm, 8mm DIAMETER GALVANISED RIBBED U PINS ARE INSERTED EVERY TWO ROWS OF BAGWORK, PIERCING 3 ROWS OF BAGWORK WITH A SINGLE 300mm LONG PIN.

9 / 900205 — SOLUFORM BAG INSTALLATION INSTRUCTIONS
1:50

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

UNSTABLE CHANNEL BANKS
HIGH FLOWS IN WATERCOURSE
MOVEMENT OF RIP RAP
COLLISION AT SITE ACCESS
OVERHEAD POWER CABLE

MAINTENANCE/CLEANING

AS CONSTRUCTION

DECOMMISSIONING/DEMOLITION

AS CONSTRUCTION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

1. TO BE READ IN CONJUNCTION WITH DRAWING 5219386-ATK-XX-XX-DR-CE-900202, 900203 & 900204.
2. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS OTHERWISE STATED.
3. ALL LEVELS ARE IN METERS RELATIVE TO ORDNANCE DATUM (mAOD) WHERE RELEVANT UNLESS OTHERWISE STATED.
4. CONCRETE CANVAS TO BE CCT3 MATERIAL SUPPLIED BY CONCRETE CANVAS® OR SIMILAR APPROVED. SEE DETAILS 1, 2, 3 & 4 FOR INSTALLATION DETAILS.
5. CONCRETE BAGS TO BE SUPPLIED BY SOLUFORM OR SIMILAR APPROVED. REFER TO DETAILS 8 & 9 FOR HYDRATION AND INSTALLATION INSTRUCTIONS.
6. ROOTLOK BAGS TO BE SUPPLIED BY GEOGROW OR SIMILAR APPROVED. SEE DETAILS 5, 6 & 7 FOR INSTALLATION DETAILS.
7. SOIL BAGS, CONCRETE BAGS AND CONCRETE CANVAS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURE INSTRUCTIONS.
8. CONCRETE TO BE A SEMI-DRY MIX WITH LOW AGGREGATE CONTENT TO ENSURE ADEQUATE FLOW BETWEEN VOIDS AND MEET EXPOSURE CLASS XC4 REQUIREMENTS. CONCRETE TO BE C32/40 D10 CLASS. CONCRETE BETWEEN ROCKS TO BE PLACED AFTER EACH LAYER OF ROCK IS PLACED. REFER TO DRAWING 900204 FOR CONCRETE SPECIFICATION.
9. UTILITY SEARCH TO BE UNDERTAKEN PRIOR TO CONSTRUCTION AND DESIGNER CONSULTED IF ANY AFFECTED SERVICES ARE IDENTIFIED.
10. TRIAL PIT TO BE UNDERTAKENIN CHANNEL BED BELOW WATERFALL ONCE OVERPUMPING IS IN PLACE FOR THE WORKS IN THE PRESENCE OF A GEOTECHNICAL ENGINEER TO ALLOW FOR A SETTLEMENT ASSESSMENT.
11. ALL VEGETATION BELOW TOP OF BAG OR CONCRETE LEVELS TO BE TRIMMED PRIOR TO PLACEMENT OF ROCK OR CONCRETE WITHOUT REMOVING THE ROOTS.
12. LARGER LOOSE ROCKS ON BED TO BE MOVED TO THE SIDES OF THE CHANNEL PRIOR TO PLACEMENT OF IMPORTED ROCK OR CONCRETE.
13. REFER TO DRAWING 5219386-ATK-XX-XX-DR-CE-900204 FOR RIP-RAP SPECIFICATION.
14. DETAILS 1, 2 3 AND 4 HAVE BEEN TAKEN FROM CONCRETE CANVAS SPECIFICATION GUIDE AND PRODUCT DETAILS. DETAILS TO BE CONFIRMED WITH MANUFACTURER PRIOR TO CONSTRUCTION.
15. DETAILS 5, 6 AND 7 ARE TAKEN FROM INFORMATION PROVIDED BY ROOTLOK. DETAILS TO BE CONFIRMED WITH MANUFACTURER PRIOR TO CONSTRUCTION.
16. DETAILS 8 AND 9 ARE TAKEN DIRECTLY FROM SOLUFORM HYDRATION AND INSTALLATION INSTRUCTION. DETAILS TO BE CONFIRMED WITH MANUFACTURER PRIOR TO CONSTRUCTION.

Rev.	Date	Description	By	Chk'd	App'd

Drawing Status: CLIENT REVIEW & APPROVAL
Suitability: S3

AtkinsRéalis
Chadwick House
Birchwood Park
Warrington
WA3 6AE

Tel: +44 (0)1925 238000
Fax: +44 (0)1925 238500
www.atkinsrealis.com

Client: TRANSPORT INFRASTRUCTURE IRELAND

Project Title: LOHER BRIDGE CULVERT

Drawing Title: PRODUCT DETAILS

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	AW	AH	SF	AB
Original Size	**Date**	**Date**	**Date**	**Date**
A1	27/02/25	27/02/25	28/02/25	28/02/25

Drawing Number: 5219386-ATK-XX-XX-DR-CE-900205
Revision: P01

Internal Project Number: 5219386

Appendix B. Contractor's Risk Assessment & Method Statement

Risk Assessment Method Statement (RAMS)

1. Project / Site Name:	Loher Bridge	**Job No:**	J2427
Date RAMS Issued:	24/21/25	**RAMS No:**	25
Expiry Date (Max 6 Months)	6 months	**Revision No:**	02

Contractor / Sub-Contractor:	Cumnor Construction	
RAMS prepared by:	Ronan Connolly	
Speciality:	Engineer	
Scope of works:	**Water Management, vegetation clearance, install rip rap, culvert exit works**	
Expected Duration of works:	5 weeks	
Expected Start Date of Works:	T.B.C	
Start time / Finish Time:	08.00	17.00
Restricted times on site:		

2. Declaration by RAMS Author:	**Name:**	**Signature:**	**Date of Visit:**
I have visited the site to assess the workplace hazards & risks and the site-specific requirements / controls required. **(If Applicable)**	Ronan Connolly	*Ronan Connolly*	10/12/24
Cumnor representative who attended the site assessment visit. **(If Applicable)**	Cian O'Mahony	*Cian O Mahony*	10/12/24

Authorised & Vetted by?	**Name:**	**Signature:**	**Date:**
	Mike Varian	*Mike Varian*	10/12/24

Cumnor Site Management will evaluate and accept/reject the above RAMS using the Preliminary Health and Safety Plan where applicable and the Site Specific Health and Safety Plan (SSHSP) in accordance with the Safety Health & Welfare at Work Act 2005 and the Safety, Health and Welfare (Construction) Regulations 2013.

The Risk Assessment Method Statement (RAMS) Log and the master (Hard) copy of the approved RAMS, signed by all relevant operatives should be maintained in a prominent place on site within the Construction H&S Plan / Mobile H&S Plan, and must remain on site for the duration of the works. It is the responsibility of the Sub-contractor to ensure all operatives involved with the specific works, have the RAMS communicated to them and that they confirm through their signature that they understand and comply with the RAMS.

3. Site Rules and Safety Notes:

1. All operatives will be Site Inducted by Cumnor on their first day on site and have a minimum of a valid Safe Pass card/ PTS training, as standard.
2. All works to be carried out within the agreed site boundary
3. All operatives will be required to wear the minimum P.P.E as follows: -

- hard hats, hi-vis vests, safety boots
- hearing protection, gloves, goggles/safety glasses and dust masks to be worn, if required

4. Permission may be required to bring site vehicles / plant / materials onto site.
5. If required, all personnel will seek permission to enter any area where another trade may be operating.
6. Working hours to be strictly within specified site hours.
7. All plant operators to have relative and valid CSCS cards
8. All persons on site to follow the instructions of site management
9. If an operative feel work conditions are unsafe, then they are to **PAUSE** the job / stop works immediately and inform Site Management
10. Any site works areas to be set up will include safety barriers and signage around material storage zones.
11. Welfare facilities will be provided on site.
12. Main access route to site will be from N70.
13. Access / egress points are to be kept always closed and locked out of site hours. Keys will remain with Site foreman at all times
14. All deliveries/collections to site are to take place as per Cumnor Construction Ltd.'s Traffic Management Plan.
15. All vehicles are to abide by Cumnor Constructions Traffic Management Plan.
16. **Under no circumstances are delivery trucks or vans are to be left unattended at any time.**
17. Documentation and items to be kept on site at all times include Medium first aid box, fire extinguisher, Construction H&S Plan and Method Statements signed and dated by all involved in the works, Site Sign in / out Register
18. The qualifications and experience of the ECoW shall include, as a minimum:
    - BSc (Hons) or above in Ecology or a related environmental discipline,
    - Full membership of the CIEEM or equivalent membership of a similar professional body,
    - Demonstrable experience in providing ecological/environmental oversight on construction sites, including sites where IAPS and sensitive watercourses are present.

      Duties of the ECoW shall include:
    - Undertake pre-construction surveys for legally restricted IAPS, any breeding or resting places of species listed on Annex IV to the Habitats Directive, and nesting birds.
    - Prepare an IAPS Management Plan and oversee its implementation, as described below.

- Advise the Contractor on any requirement for a derogation licence under Regulation 54 of the Habitats Regulations due to the presence of breeding or resting places of species listed on Annex IV to the Habitats Directive, as identified during the pre-construction surveys.

19. Notwithstanding that the proposed works will be carried out in late spring and summer, when there is a reduced risk of heavy rainfall, the Contractor shall make daily checks for elevated water levels/flows in the stream and weather warnings or flood alerts from Met Éireann and/or Kerry County Council.

20. Should water levels in the stream or overland flows pose a risk of overwhelming water quality control measures, or a weather warning for extreme rainfall or a flood alert covering County Kerry be in place,

21. Works carrying the greatest risk of pollution, i.e. works involving wet concrete or other cementitious material, shall be suspended.

22. Works may resume once any flood waters have receded and any warning/alert been lifted.

23. Where possible, run-off from outside of the works area shall be intercepted before entering the works area and diverted around it.

The above is a non-exhaustive list and is subject to change as conditions dictate

Assembly point to be agreed upon by site foreman prior to works commencing and all on site informed. Signage to be put in place to avoid confusion in the case of an emergency.

On approval, this RAMS shall be explained to all operatives and signed by all working parties prior to the works commencing.

4. Methodology:

(Outline how the work will take place from arrival on site, to completion of works, step by step in detail to ensure no ambiguity).

(Safety Rules / key Safety Points to be adhered to from Section 3.)

Equipment and Plant Requirements:

- 30-ton long reach tracked excavator
- 13-ton tracked excavator
- 5-ton tracked excavator
- 9-ton dumper
- VW Transporter Van
- Hand tools

Sequence of works:

- Site access
- Site compound
- Water Management
- Vegetation clearance
- Install rip rap
- Works to the culvert exit
- Demobilise

Site access:

- See the proposed locations for site access and a site compound highlighted above
- These lands are privately owned, and these works can only proceed with permission from the landowner to allow Cumnor Construction access to their lands
- Site clearance and removal of vegetation shall be limited to the area required for works. All areas of woodland, scrub and other vegetation to be retained shall be securely fenced off and clearly signposted prior to commencement of works.
- It is proposed an existing entrance, East of the bridge will be used for access.

- A hard standing may need to be created inside the field for deliveries.
- It should be excavated 300mm deep and geotextile placed on the bottom of the excavation.
- The hardstanding will be constructed with a 225mm layer of stone and topped off with a compacted 75mm layer of 804 or similar.
- When works are complete the field will be reinstated.

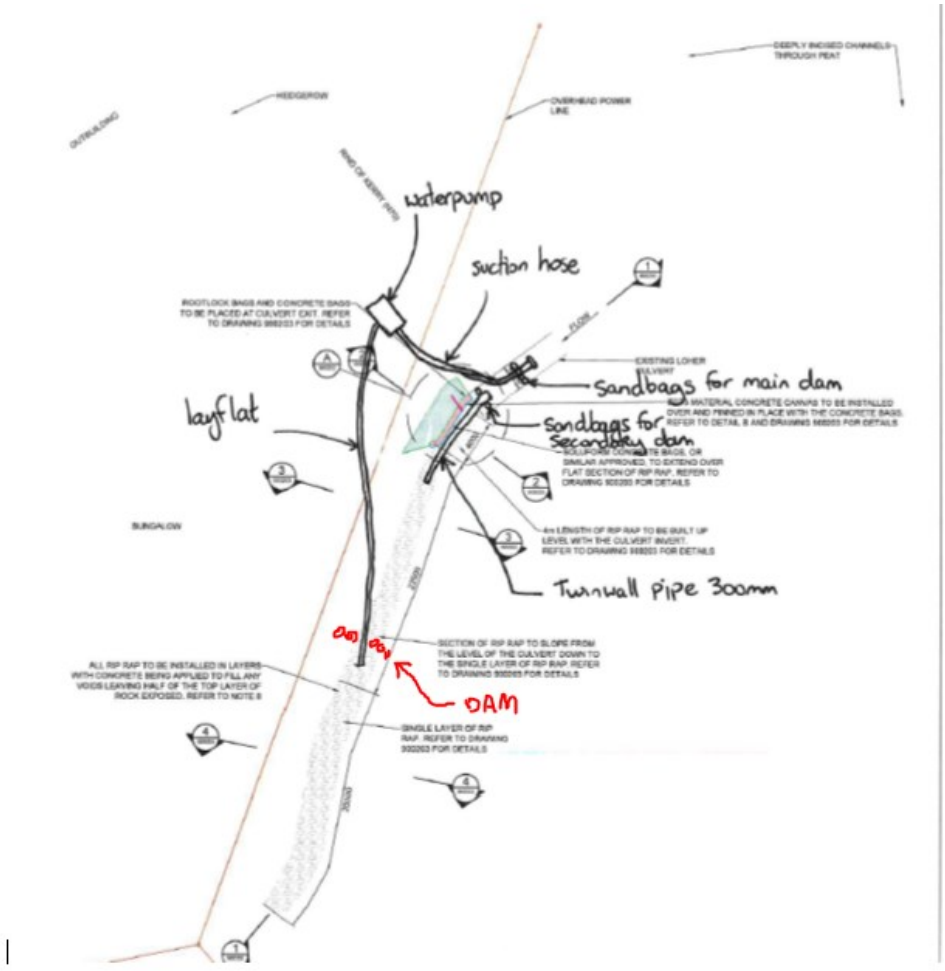
Site compound:

- A site compound will be positioned in a section of unused land
- Storage of any fuels, oils and other hydrocarbons on site shall be in secure tanks/containers bunded to 110% capacity.
- Refuelling shall not be permitted within 50m of any watercourse.
- Plant/ equipment should be parked/stored on drip trays overnight.
- Site management will ensure that all vehicles, plant, equipment and PPE intended for use on site are dry, clean and free from debris and plant material prior to being brought to site.
- Site management shall implement appropriate controls on the movement of machinery and materials
- The compound will be secured using Heras fences
- The compound will be used to securely store plant, welfare facilities and materials
- A 10ft x 8ft storage container will be kept in the compound and will be used to store any flammable or hazardous materials
- Spill kits & drip trays will also be kept in the storage container
- Any spillage of fuels, lubricants or hydraulic oils shall be immediately contained and a pollution control kit used. The contaminated soil shall be removed from the site and properly disposed of
- Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the project and an emergency response plan shall be in place, in case of accidental spillage
- In the event of any spillage of fuels, lubricants or hydraulic oils, the ECoW will be notified immediately

- To reduce hydrocarbon pollution on site machines will not be left idling when not in use, driving on site should be kept to a minimum and all vehicles will be mechanically sound and checked before arriving on site
- When works are complete the compound will be reinstated

Water Management

- Before works commence the weather will be monitored to ensure works are not undertaking during bad weather conditions
- Prior to beginning site management will survey the location of the overhead cables in relation to the working area and they will determine whether goal posts and height restriction poles should be installed to ensure safe working operations
- Tools and equipment will not be cleaned in the watercourse
- Refueling will not be done within 50m of the watercourse
- A dam will be setup upstream using hessian sandbags to catch the water. A 4", 6" or 8" pump will be used to over pump the watercourse downstream during working hours. The size of the pump will be determined by the time of the year the work begins and current water levels at that time.
- The pump will be sitting on a drip tray.
- A secondary dam will be setup using hessian sandbags 3m downstream of the first dam.
- A 300mm twin wall pipe will be positioned in the centre of the secondary dam.
- For out of working hours an opening will be made in the upstream dam to allow water reach the secondary dam. From there the water will travel through the flume which will be setup using 300mm twin-wall pipes. The flume will carry the water downstream beyond the work zone.

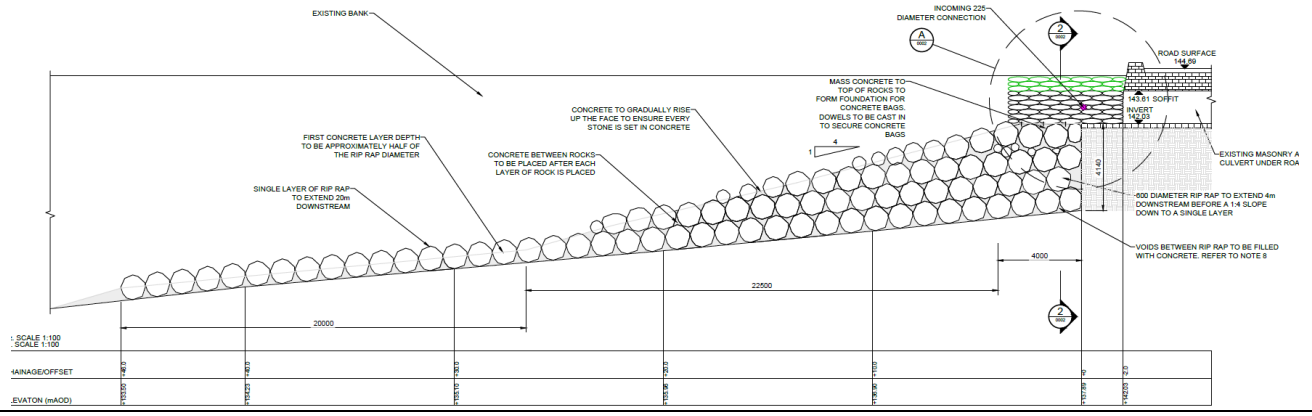


- A dam will be setup downstream at the end of the works area, this dam will capture any soiled water. It will be pumped into a green area 25m from the watercourse to prevent contamination
- Sandbags should only be half filled with sand and tied & sealed to ensure no sand enters the watercourse
- Sandbags should be “walked in” to riverbed to create good seal between sandbags and riverbed
- Sandbags to be built up in stretcher bond to desired height
- Electrofishing will be carried out by IFI if necessary
- Any fish in the isolated area shall be rescued by electrofishing prior to dewatering.
- Any water the seeps through the sandbags will be flow to a sump and will be pumped to a vegetated area adjacent to the bridge for filtration as required
- Pumps shall be screened to prevent the intake of fish
- A secondary pump will be stored on site as a back up
- Works will be done in the dry

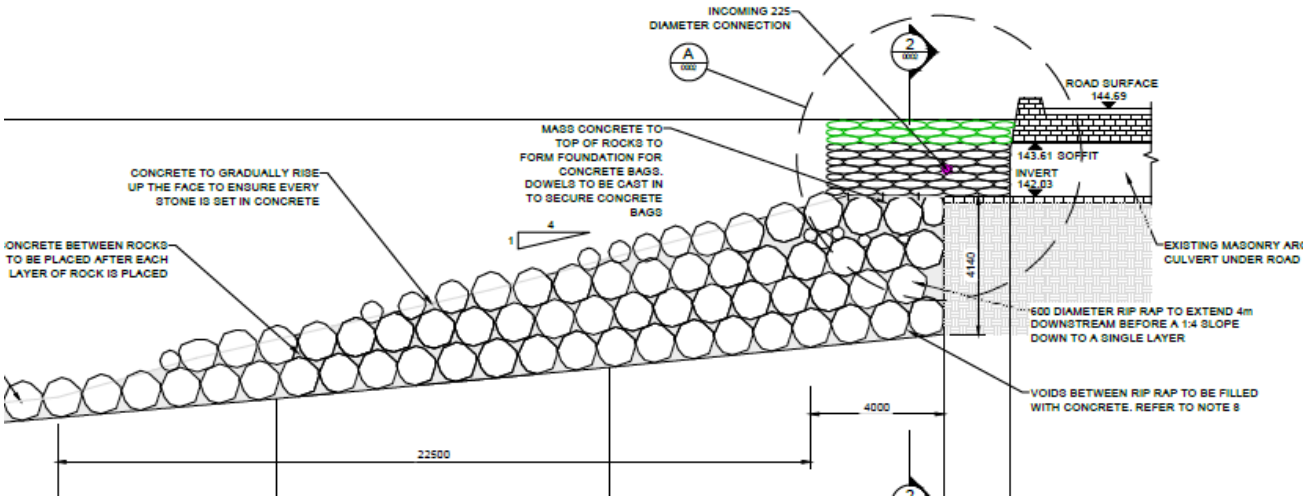
Vegetation Clearance

- Clearing of dense vegetation, including shrubs, bushes, and small trees, to prepare the work area will be done using the tracked excavators and using hand tools where required
- Vegetation is only required to both embankments
- An operative will maintain constant communication between the operator and ground personnel using two-way radios or hand signals
- Vegetation will be stockpiled in designated areas for disposal off site
- Vegetation will be removed to a licensed waste facility

Install rock armour



- Identify any hazards before work commences, e.g soft ground, overhead cables
- Rip rap will be delivered to site and stockpiled for use
- A 9-ton dumper will be used to transport rip rap to the excavator
- Install the bottom layer of rip rap as per the construction drawings using the excavators on site
- Position rip rap along the marked installation area, starting from the bottom (toe) and progressing upwards
- The bottom layer of rip rap will extend 46.9m downstream
- Once the rip rap has been installed, semi dry concrete will be used to fill voids between the rip rap on the bottom layer
- Continue layering rip rap in accordance with the design, ensuring interlocking and minimizing void spaces
- Concrete will be used to fill the voids between each layer
- The rip rap layering will be installed at a 4 to 1 gradient as per the design drawings
-



- Rip rap of specified size and weight as per the design

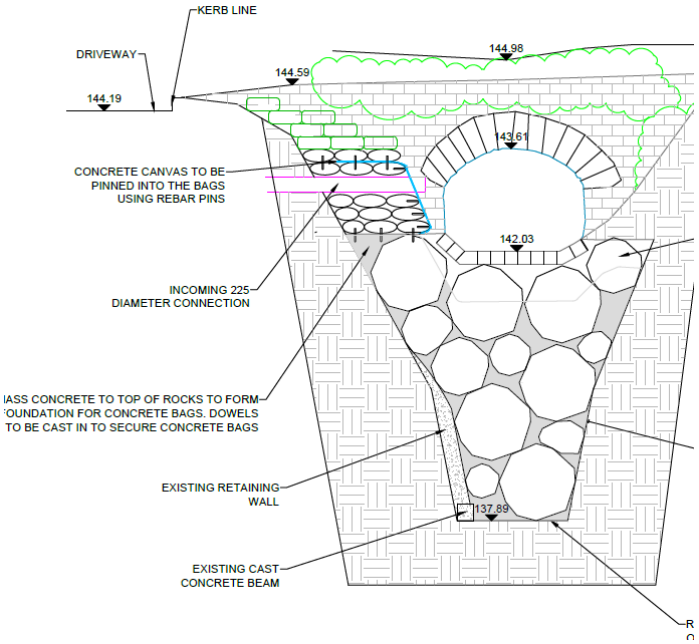
ALL RIP-RAP SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS;

	PROPERTY	REQUIREMENTS	TESTED IN ACCORDANCE WITH
A	MASS DENSITY	2.5-2.7 t/m3	EN 13383-2:2002
B	WATER ABSORPTION	0.5-2.0 %	EN 13383-2:2002
C	AGGREGATE ABRASION VALUE (MICRO-DEVAL)	10-20%	EN 1097-1:1996
D	SCHMIDT IMPACT INDEX (% REBOUND)	50-60	ISRM (1988)
E	POINT LOAD STRENGTH	4-8	ISRM (1985)
F	UNCONFINED COMPRESSIVE STRENGTH	120-80 MPa	EN 1926:1999
G	SOUNDNESS LOSS (MgSO4)	2-10%	EN1367

- Establish exclusion zones and place appropriate signage while rip rap is being installed
- Position the excavators on a stable surface, ensuring the ground is sufficient to take the weight of the machine
- The largest and heaviest rocks at the base of the structure for stability
- The excavator and dumper will be operated by CSCS cardholders

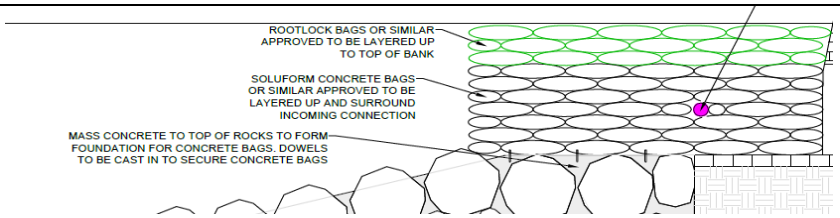
Works to culvert exit

- Install rip rap to apron level of the culvert

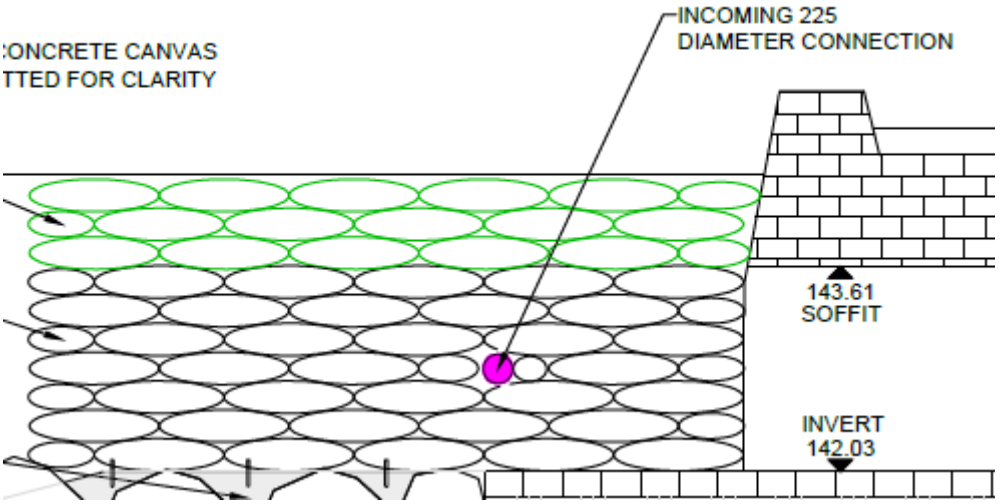


- Strip out any unstable ground on the South West embankment using an excavator
- Remove any waste material off site to a licenced waste facility

- As per the construction drawings pour a concrete footing on top of the rip rap



- Dowels to be cast in the foundation to secure the concrete bags
- Soluform concrete bags or similar approved to be layered up on the South West embankment
- Concrete bags will be installed by hand and built up in stretcher bond to desired height
- An existing 225mm storm water pipe will be built into the wall of concrete bags as per the design
-



- CCT3 concrete canvas will be fitted as per the design surrounding the concrete bags
- The concrete canvas will be lapped correctly and pinned using rebar
- Once the concrete bags are installed, rootlock bags or similar approved will be layered up to the top of the bank
- The rootlock bags will be installed by hand
- Site clean-up
- De-mobilise

Risk Assessment Method Statement

Assessment Date:	10/12/24	Assessed By:	Ronan Connolly	Assessment Review Period:	continuously

Severity of Consequence (S)

1	Insignificant/minor first aid, no time off, no loss
2	Lost time, recoverable, (strain, sprain, laceration, dermatitis)
3	Temporary disability, recoverable (minor fracture, asthma, deafness, concussion)
4	Permanent disability, survivable (major fractures, amputation, head injuries, eye injuries, poisoning)
5	Causing death to one or more people (fatal injuries, occupational cancer, fatal disease/fire)

Likelihood (L)

1	Improbable
2	Low
3	Medium
4	High
5	Almost certain

Risk Level (R)

Low	1 - 4
Moderate	5 - 9
Considerable	10 - 14
High	15 – 19
Critical	20-25

Evaluation Matrix

Severity of Consequence						
	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Likelihood				

Notes on completing the Risk Assessment below:

- **A number of Hazards have been identified on the above mentioned site. Please confirm which may be applicable to your specific works on site. Each hazard is to be completed by entering Y/N in the end column and initial that you have read and understood. If specific relevant hazards have not been noted, the Contractor / Sub-Contractor is obliged to ensure those hazards, including a detailed risk assessment are included in the blank sections below. Additional space has been left if additional controls are required.**

- **If issues arise on site causing unforeseen and additional risks to those completing the works, that job or task will need to be PAUSED until such time that the Risk has been assessed and additional control measures are put in place and documented below reducing the risk associated with said works**

Ref:	Individual Activity Description	Hazards Identified	Persons / Groups at Risk	Risk level Before Controls			Risk Control Measures (Add as required)	Risk level Remaining After Controls			Applicable to job / task Y / N (Initial)
				S	L	R		S	L	R	
1.	• Use of Abrasive Wheels	• Eye / bodily injuries • Injury to other person • Noise induced hearing loss • Damage to materials / services	• All Operators • Members of the Public	3	3	9	• Ensure guards and safety devices are working & in place • Certified operatives only to change abrasive wheels / discs • Safety goggles / glasses (correct EN rating – min BS2092) and suitable ear protection to be worn at all times • Work area to be free of debris and obstructions & item to be cut is securely positioned • Check operations will not affect others in the immediate area either by flying debris or excessive noise • Ensure protection of adjacent materials and services are in place (water, Gas, ESB).	1	3	3	Y
2.	• Access, egress to site and work areas	• Trip hazards, slipping causing a limb injury	• All Operators • Members of the Public	4	2	8	• All access ways into site to be kept clear at all times • Site housekeeping to be enforced to ensure the site is safe and organised	4	2	2	Y

3.	• Using Cement and / or concrete on site	• Severe skin burns • Falls of materials into excavations • Manual handling	• All operators involved in the operation	2	2	**4**	• A MSDS (Material Safety Data Sheet) sheet must be available for materials used • Appropriate PPE to be worn, including glasses for splashing, PVC gloves and wellingtons • Washing facilities and first aid station to be provided for operatives • Restrict time exposed to concrete • Barriers / stop blocks to all excavations • Suitable discharge area for concrete lorries • Safe system of work in place documented and signed by all involved in the works	1	2	**2**	Y
4.	• Dust on Site	• Visibility impairment for drivers causing collision • Personal injury • Silicosis • Dust explosion	• Injury to operators on site • Injury to members of the public	4	2	**8**	• Use equipment that produces minimal dust • Use water to dampen when cutting Issue PPE - dust masks, safety respirators	2	1	**2**	Y

5.	• Use of Electrics on Site	• Electrocution • Damage to cables • Overload causing a fire	• All operators • Members of the public that me be in close proximity of the site	2	4	**8**	• All temporary routes for cabling must be set out beforehand and duct where possible • All portable equipment must be P.A.T tested as per the General Application Regs 2007, part 3: Electricity – Reg 81 (as required) and certs kept on file • All electrical appliances / tools must be visually checked by a competent person before each use • Trailing cables must be tied overhead where possible and not interfere with access routes • All electrical cabinets / boxes must be locked • C02 temporary fire points must be strategically setup around site / buildings • All electrical tools must be a maximum of 110volts • Safe system of work in place documented and signed by all involved in the works	2	2	**4**	N
6.	• Excavations	• Asphyxiation and crushing causing serious harm or death • Damage to adjacent buildings / properties	• Operators involved in the works	3	4	**12**	• Excavation where the depth could cause a collapse then the trench is to protected with shoring system • Edge protection to be in place next to all excavations • All required signage to be in place • Excavations to be inspected on a weekly basis by competent person recorded in the AF3 • For deep excavations, two points of access and egress must be used • Single man work is not permitted • Materials are not to be stored adjacent to excavations • If excavations are deemed unsafe no work is to be done in them until they are made safe • Safe system of work in place documented and signed by all involved in the works	2	2	**4**	Y

7.	• Fires	• Bodily injury • Spread of fire • Property damage • Potential death	• All operators • Member of public in close proximity of the site	2	4	**8**	• No burning of materials anywhere on or around site permitted • All gas bottles must be securely tied and have a Fire point (extinguisher) close at hand • Any explosives are to be protected by close board sheeting • Strategic fire points to be setup around site & through buildings • Temporary fire escape layout plan & evacuation plan to be setup	2	2	**4**	Y
8.	• Use of Ladders on Site	• Operative falling from height • Materials/ Tools falling from height	• All operators	3	3	**9**	• Ladders must be tagged and recorded in GA3 weekly • Ladders must be secured (tied at top) and securely footed • Must extend 1m above stepping off point on scaffolds • Ladders to be used for short term use with 3 points of contact to be on ladder always • Restrict height for ladders and ensure access to pass underneath is stopped • Any defected ladders must never be used • Ladders setup at 1 in 4 (75 deg. angle) • Safe system of work in place documented and signed by all involved in the works	2	2	**4**	Y
9.	• Lifting Equipment	• Dangers to operatives on site • Fall of materials	• All operators • Public in close proximity of site	4	2	**8**	• All lifting equipment must be certified (GA1) and copies of certs kept onsite • Only certified operators to use lifting plant, e.g. cranes, MEWP's etc • Lifting equipment to be checked and recorded in GA2 weekly • Any damaged or worn slings / chains must not be used and disposed of • Temporary barriers must be placed around lifting / sluing areas • Safe system of work in place documented and signed by all involved in the works	1	4	**4**	Y

10.	• Lone Person working on site	• Personal injury to operative and / or illness	• Lone Worker	4	2	**8**	• Where possible, do not use a lone worker setup • Operators must have mobile communication and check in to their supervisor at agreed times • Lone workers must be on a site or location where others are in the vicinity	2	2	**4**	Y
11.	• Manual Handling of materials on site	• Injury to back • Lower limb injury • Arm & Hand injuries	• All operators	4	2	**8**	• All operatives are trained in manual handling. • Use of mechanical aids to lift items where possible, e.g. cable block / teleporter/ Hi-ab • Use of two employees to lift awkward or heavy items • Frequent stretching of the back is encouraged to all employees who are constantly bending.	4	1	**4**	Y
12.	• Noise	• Damage to hearing • Affecting members of the public	• All operators • Members of the public near the ongoing works	4	2	**8**	• PPE must be worn when there is a noise level is above 80dBA • Earplugs to be worn at low level noises • Ear muffs to be worn when operators are using tool/plant that have a high noise level • Operators are not to be exposed to excessively loud noises for extended periods • If possible use other plant and tools that do not have a loud noise level	2	2	**4**	Y

13.	• Operating Plant on Site (Dumpers & Rollers)	• Dangers to other operatives on site • Overturning of plant • Overloading • Injury to driver and others including death	• All operators • Members of the public in close proximity to the ongoing works	2	4	**8**	• Operators must be CSCS certified and trained to use plant • Safety signage and wheel wash measures must be in place for crossing public roads • No unauthorised passengers permitted on plant, e.g. single seat on a dumper only • All plant must have flashing beacons and audible sirens • All plant must have flashing beacons and R.O.P's (roll over protection) bars in place • Care to be taken when reversing and a banksman used where possible • Unattended vehicles must have their engines switched off, gear in neutral and keys out • Extra care to be taken where sloping surfaces are being driven • Do not overload machinery to their stated capacity • Safe system of work in place documented and signed by all involved in the works	1	4	**4**	N

14.	• Operating Plant on Site (Excavator)	• Dangers to other operatives on site • Overturning of excavator • Overhead Services • Underground Services • Injury to driver and others including death	• Operator • Operatives on site • Members of the public	4	4	**12**	• Area to be excavated to be CAT scanned for services by ticketed operator. Drawing and plans to be checked also. Dial before you dig to be consulted. • Operators must be CSCS certified and trained to use plant • Safety signage to be in place • No unauthorised passengers permitted on plant. • All plant must have flashing beacons and audible sirens • Care to be taken when reversing and sluing • Unattended excavator must have the engine switched off and keys out • Extra care to be taken where sloping surfaces are being driven • Do not overload machinery to their stated capacity • All other operatives to remain outside the exclusion zone. • Operator must track on the designated access route as required • Spotter to be in place at all times • Safe system of work in place documented and signed by all involved in the works	1	4	**4**	Y
15.	• Operating Tools on site	• Cuts / Lacerations • Long term deafness • Nerve injuries	• All operators using tools on site	4	2	**8**	• Wear appropriate PPE to include ear defenders and safety glasses / goggles • Only 110volt (max) permitted on site • Erect sound barriers as required • Restrict length of time for use, e.g. mainly vibrating / oscillating tools (check tool specs) • Do not leave tools running	2	1	**2**	Y

16.	• Striking overhead cables	• Injury / Death from contact by plant	• All operators	2	2	**4**	• If vehicles cross under overhead cables then goal post system to be put in place • All operators to be shown location of overhead cables during site induction • Safety signage to erected by overhead cables • All overhead cables to be insulated by ESB if near operator works area	1	4	**4**	Y
17.	• Refuelling plant on site	• Fire / environmental pollution	• All operators involved in the refuelling task	2	2	**4**	• All fuels to be kept in correct containers and clearly labelled & identified • No refuelling to take place in the vicinity of ignition points • Engines must be switched off before any refuelling takes place • Fuel tanks must be double skinned and bunded with lockable valves • Spillage kits must be in close proximity of all tanks and within waste lorries • Storage areas of fuels must have appropriate fire extinguishers • Any spillages must be reported immediately to the Site Supervisor / Safety Manager	1	2	**2**	Y
18.	• Setting out of Traffic Management	• Injury to operator on site by moving vehicles • Injury to members of the public that may be in close proximity of works	• All operators • Members of the public	2	4	**8**	• Install traffic management as per plan issued • Ensure signage and cones are as per approved plan • Operators with CSCS cards to setup traffic management system and inspect on a weekly basis or as required • Safe system of work in place documented and signed by all involved in the works	1	3	**3**	Y

19.	• Preventing unauthorised access to area of works	• Injury to unauthorised person on site • Damage to plant / equipment and materials	• All operators on site • Unauthorised person on site	2	3	**6**	• All site visitors are inducted prior to being in work areas • Operators to notify site management of any unauthorised access to site immediately • Site gates to be closed at all times and locked and checked at close of business • All required signage in place notifying public of works in the area	2	2	**4**	Y
20.	• Vibration	• Numbness & tingling of fingers / hands • Nerve & muscle damage to fingers / hands • White finger (VWF) • Arm vibration (AV)	• All operators involved in the works	2	2	**4**	• Allow only competent persons to use tools • Refer to individual vibration / exposure limits • Wear full PPE to include anti-vibration gloves as required • Reduce length of times using tool • Use tools with low vibration • Safe system of work in place documented and signed by all involved in the works	1	2	**2**	Y
21.	• Working in bad weather conditions	• Operators being injured as a result of the bad weather	• All operators	3	3	**9**	• When there are poor weather conditions all work to stop immediately, foreman to make call if carrying out work is unsafe	3	1	**3**	Y

22.	• Vermin and bird droppings	• Contact with droppings may cause illness and irritations to operative	• All operators involved in works	3	3	**9**	• Suitable PPE to be worn at all times. including full disposable overalls. Gloves to be disposed of after each use – do not re-use gloves / dust masks / disposable suits. • Hands to be washed before eating food, or touching your face as bird droppings may contain **'Salmonella'** (a bacterial infection causing severe diarrhea). • All breaks are to be taken away from the areas contaminated by bird droppings to avoid cross contamination. • Dampen down the bird droppings with water to prevent the creation of dust from the droppings. • Excessive bird droppings can cause a build-up of insects, which can transmit diseases and other infections, so the use of insect repellent is required if this is the case. • Operatives who have pre-existing respiratory conditions are to wear suitable dust masks such as the 3m 6000 series as required. • Operatives with weakened immune systems should not directly do tasks involving bird droppings. • all works involved with areas containing excessive bird droppings are to be supervised sufficiently ensuring controls are in place at all times.	2	2	**4**	Y

5. Emergency Contact Details:

Site First Aider

Name: Paul Herlihy
Tel: 085 7504477

Location of First Aid

A First Aid box will always be located in a Cumnor Site Vehicle

Local Hospital (A&E)

Name: University Hospital Kerry
Address: Tralee, Co. Kerry
Tel: 066 7184000

Local Garda Station

Name: Waterville Garda Station
Address: New Line Road, Waterville
Tel: 066 9474111

Local Fire Brigade Station

Name: Waterville Fire Station
Address: Co. Kerry
Tel: 999 / 112

Other useful numbers

ESB	1850 928960 (Dial before you dig)
ESB (Emergency)	1850 372 999
GAS	1850 427747 (Dial before you dig)
GAS (Emergency)	1850 205050
Eircom	1901 (Dial before you dig)

6. Training Required – *Specific to this Site*

1. **Safe Pass (Mandatory)**
2. **Manual Handling (Mandatory)**

Please State any Special Training requirements below required by Operatives specific to this RAMS i.e. Confined Spaces, Height Rescue, First Aid etc.

1.
2.
3.

Additional Supervision & Duties (incl. Appointed Persons, Temporary Works Coordinator, Authorised Person etc)			
Name	**Role/Responsibility**	**Contact No:**	**Company**

7. P.P.E. (Personal Protective Equipment)
(Specific to this site and relating to the information contained in this RAMS)

P.P.E (Personal Protective Equipment) - Specific to this Site

 Safety Boots To include Ankle support EN ISO 20345:2011 CE S3 SRC Wellingtons EN ISO 20345:2011 S5 SRA	 Hard Hats EN397 EN50365	 Safety Gloves EN 388 levels 4-1-2-1 or 2-1-2-1 Safety Gloves (grey type for vegetation removal) EN 388:2003	 Hearing Protection (for all drilling works, demolition and cutting works) Surefit Ear defenders (for noisy work) EN 352-3:2002 Earplugs (disposable) EN 253-2:2002	 Eye Protection (for all drilling works, demolition and cutting works) Goggles (cutting works) EN 166:2001 Glasses (standard for light cutting) EN 166:1995	**Other:** Hi-Vis vest / jacket - double banded EN ISO 20471 3m Dust mask EN 14387:2004

8. Material Delivery, Storage and Distribution

(Outline safe arrangements for traffic management, delivery, offloading and secure storage – if applicable). Include a step by step sequence on how you will perform the task (Include sketch, drawings & photographs if required.)

1. All material will be delivered to site via the N70 abiding by the approved Traffic Management Plan on site
2.
3.
4.
5.

9. Anticipated Waste Control and Disposal Arrangements (If Applicable)
Cumnor must be notified of waste leaving site

1.

2.

3.

4.

5.

Number of Person's Anticipated on site:	6			
Will any of your workforce be non-English speaking or reading:	**Yes**		**No**	x

How will the contents of this RAMS be communicated to your non-English speaking workforce:

10. Permits Required – Type

High Risk Activities	Work Permit Required

11. Hazardous Substances

Please identify any hazardous substances you will be using or potentially encountering on site

Circle applicable

							
Toxic	Explosive	Asbestos	Corrosive	Hazardous to the environment	Flammable	Pressurised Gas	Other
YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO

Please list any applicable substance below and attach relevant Safety Data sheets:

1.
2.
3.
4.
5.

Please identify details of emergency response to; Spill, Escape and combustion

1.
2.
3.
4.
5.

12. Temporary / Permanent Works Design Certs

Any Required please list below (If Applicable)

13. Work Specific Emergency & Rescue Procedures

Please outline Emergency Rescue Procedures to include details of equipment required and where it can be located

1.
2.
3.
4.
5.

Briefed to: (by signing below I confirm that I have been briefed and understand the Risk Assessment Method Statement for this Job / Task).

No.	Name (Print)	Signature	Date	Company Name
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Witnessed by (Supervisor): I confirm that all personnel who are involved in the task covered by this set of RAMS, have had these RAMS explained to them. Any future operatives to be assigned to this task will also receive communication of these RAMS.

Name:		**Signature:**	
Title:		**Date:**	

Owen O'Keefe
WS Atkins Ireland Limited
Unit 2B
2200 Cork Airport Business Park
Cork
T12 R279

Tel: +353 21 429 0300