OPW
Oifig na nOibreacha Poiblí
Office of Public Works

River Bride (Blackpool) Certified Drainage Scheme

Environmental Impact Assessment Report Addendum

October 2022

MKO

RYAN HANLEY

Contents

1 INTRODUCTION

This addendum to the EIAR is prepared in response to Item 1 of the further information requested from the Department of Public Expenditure and Reform (DPER) on the 22nd of February. This required:

> *'An assessment of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme.'*

This addendum to the EIAR for the River Bride (Blackpool) Certified Drainage Scheme provides that assessment.

To fully address the further information request, the cumulative and in-combination assessments as presented in the 2018 EIAR has been updated to include an assessment of any additional projects or land uses that may not have been present or proposed in 2018. It also takes account of assessments that were undertaken in the addendum to the EIAR that was prepared in November 2020 in response to a request for supplementary information by The Department of Public Expenditure and Reform.

A new search of relevant projects was undertaken as described in Section 2 below. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects when interacting with one another and when considered cumulatively and in combination with other projects and land uses was considered.

2 METHODOLOGY FOR THE UPDATED CUMULATIVE AND IN-COMBINATION ASSESSMENT OF THE PROJECT

In order to update the cumulative and in-combination assessment that was presented in the 2018 EIAR for the scheme and in the Addendum that was prepared in November 2020, a comprehensive review of the Cork City Council planning register, Cork County Council planning register, and An Bord Pleanála website was undertaken in July 2022. A list of all projects considered in the cumulative and in-combination impact assessment is provided in Appendix 1 of the Addendum.

The potential for significant cumulative effects to occur when the proposed development is considered in combination with other projects and land uses is assessed in relation to each chapter in the original EIAR in the following sections. Further to the FI request from DPER, particular attention is paid to the potential for significant effects to occur when the proposed development is considered cumulatively with the Lower Lee Flood Relief Scheme (which is not yet fully designed or finalised) and the Morrison's Island Public Realm and Flood Defence Project.

The Lower Lee (Cork City) Drainage Scheme is the statutory title for the Scheme that is often referred to as The Lower Lee Flood Relief Scheme (LLFRS). An EIS for this scheme was prepared in 2016 and was presented at exhibition. The 2016 EIS for this scheme was reviewed as part of the cumulative assessment that was presented in the 2018 EIAR for the River Bride (Blackpool) Certified Drainage Scheme.

Whilst the Lower Lee (Cork City) Drainage Scheme has not yet been finalised, the most up to date information regarding the scheme has been used to inform this cumulative assessment. In addition, the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018) along with all other relevant documentation was used to inform this cumulative assessment.

3 DESCRIPTION OF THE SCHEME

The Proposed Scheme for the River Bride (Blackpool) Certified Drainage Scheme comprises of a combination of flood walls, culverting a section of open channel, bridge replacement, embankment construction and other minor works. The Scheme will be designed to provide protection for properties in the study area from the 1% Annual Exceedance Probability (AEP) flood event (also known as the 1 in 100-year flood event). The design of the proposed works is adaptable for future climate change in accordance with Office of Public Works guidance in relation to climate change. The scheme also includes an allowance for freeboard.

The proposed works are detailed on the scheme drawings included in Appendix 3A of the EIAR (2018) and are described generally in Chapter 3 of the EIAR (2018). Since the EIAR was prepared in 2018, drawings of the proposed light wells in the proposed culvert at Orchard Court have been prepared and are included as Appendix 2 to this addendum. These light wells were always proposed but further detail has now been developed and is provided here for reference.

4 POPULATION AND HUMAN HEALTH

The assessment of Cumulative effects on Population and Human Health that is set out in Section 4.5 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information request from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Population and Human Health when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects when interacting with one another and when considered cumulatively and in combination with other projects and land uses was considered.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on population and human health were identified as a result of the proposed scheme.

4.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

It is noted that the Lower Lee Flood Relief Scheme is currently at design stage. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition. Any changes to the scheme will be fully assessed individually, cumulatively and in combination with other plans and projects (including the River Bride (Blackpool) Scheme) in the EIAR that accompanies the finalised scheme. Thus, it will take full account of the finalised River Bride (Blackpool) Scheme in its assessment of cumulative or in-combination effects.

In addition, the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018) was also reviewed.

It is noted that all predicted residual effects on Population and Human Health are at most, short term and slight during the construction phase for the River Bride, Morrison's Island, and Lower Lee schemes. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant negative effects when considered in combination or cumulatively with other projects.

Employment and Economic Activity

Both the EIAR for the River Bride (Blackpool) scheme and the 2016 EIS for the Lower Lee predict a slight/Moderate residual effect. The proposed development in combination with the Lower Lee Flood Relief Scheme (LLFRS) and the Morrison's Island Public Realm and Flood Defence Project will contribute to short term employment during the construction stages and provide the potential for increased long-term

employment from existing and future development/activities as a result of the flood protection offered to these areas. **This results in a cumulative, long-term, significant, positive effect.**

Tourism

As standalone projects or cumulatively, the construction phase of projects will have a short-term slight to moderate negative impact on tourism as nuisance from construction traffic is unavoidable. Phased development will be employed to allow for construction traffic to be managed and to minimise the volume of construction traffic using the road network at any one time. There will be a cumulative short-term slight negative residual impact on tourism. However, the permanent flood protection offered to local tourist attractions by the proposed development in combination with the LLFRS and Morrison's Island Flood Defence Project will have a cumulative long-term slight to moderate positive impact, as they will not need to close down for repairs after flood events.

Health and Safety

The proposed development, in combination with the LLFRS and the Morrison's Island Public Realm and Flood Defence Project will have a cumulative long-term significant positive impact in terms of health and safety for reasons discussed in Section 4.6.3.1 of the EIAR.

Property Values

The proposed flood relief scheme in combination with the proposed the LLFRS and the Morrison's Island Public Realm and Flood Defence Project will provide increased protection to residential and commercial premises in Blackpool and many other parts of the wider Cork City area. This will be likely to increase the value of properties in the area. A long-term significant positive cumulative impact is anticipated.

No other predicted residual effects of either scheme had the potential to result in significant effects when the schemes were considered in combination or cumulatively with other projects.

5 BIODIVERSITY

The assessment of effects on Biodiversity that is set out in Sections 5.4 and 5.5 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on biodiversity when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list, which is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Biodiversity when interacting with one another and when considered cumulatively and in combination with other projects and land uses was considered.

Following the undertaking of the updated cumulative and in-combination assessment, there was no change to the overall conclusion of the previous assessment and no significant cumulative effects on biodiversity were identified as a result of the proposed scheme.

5.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

5.1.1 Lower Lee Flood Relief Scheme

Whilst both the River Bride and Lower Lee flood relief schemes are designed to minimise effects on Biodiversity, the residual effects of each on ecological receptors were assessed and the potential for significant cumulative effects to occur was considered. The receptors with potential to contribute to a cumulative impact are described below.

It is noted that the Lower Lee Flood Relief Scheme is currently at the design stage and has not yet been finalised. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition. The finalised Lower Lee Flood Relief Scheme will be fully assessed individually, cumulatively and in combination with other plans and projects (including the River Bride (Blackpool) Scheme) in the EIAR that accompanies the finalised scheme. Thus, it will take full account of the finalised River Bride (Blackpool) Scheme in its assessment of cumulative or in combination effects with other plans and projects.

Terrestrial and Aquatic Habitat

Both the EIAR for the River Bride (Blackpool) scheme and the 2016 EIS for the Lower Lee predict a slight/Moderate residual effect on these receptors. As stated above, there is an ongoing design process associated with the Lower Lee Flood Relief Scheme, which is not yet finalised. However, it is anticipated that any changes to the scheme since it was exhibited in 2016 are likely to be relatively minor design alterations and will include measures to mitigate effects on terrestrial and aquatic habitats. It should also be noted that there is no sensitive terrestrial habitat connectivity between the two schemes, which converge with one another

within a heavily urbanised environment. Neither are there any significant instream activities proposed where the schemes are in close proximity to one another. On the basis of the information available, significant cumulative effects on terrestrial and aquatic habitats are unlikely.

The finalised Lower Lee Flood Relief scheme will be fully assessed individually, cumulatively and in combination with other plans and projects (including the River Bride (Blackpool) Scheme) in the EIAR that accompanies that scheme. Thus, it will take full account of the River Bride (Blackpool) Scheme in its assessment of cumulative or in combination effects with other plans and ensure that no potential for significant cumulative effect exist in this regard.

Otter, Bats and Fisheries

Following the precautionary principle, the EIAR for the River Bride (Blackpool) scheme and subsequent addendum, when considered alone, cannot exclude the potential for significant residual effects on otter, bats and fisheries to occur. The 2016 EIS for the Lower Lee Flood Relief Scheme, when considered alone, predicts Slight/Moderate effects on both otter and fisheries and a slight impact on bats. Therefore, the potential for the schemes to result in significant effects when considered in combination or cumulatively with each other and/or other projects was assessed. Details of this assessment are provided below.

The 2018 EIAR concludes that significant residual effects on fisheries persist following mitigation only through impacts on localised salmonid habitat in the Bride (north) catchment region, which is separated from the River Lee by the Blackpool culverts and all indirect effects on downstream habitats will be minimised to insignificance through the application of mitigation as set out in the EIAR and related addendum. Similarly, potentially significant residual effects on bats are associated with an identified bat roost that is located on the Glenamought River. This is separated from the River Lee by the urban environment surrounding the River Bride. It is unlikely that this significant effect will extend downstream to the River Lee. Thus, there is no potential for significant cumulative effects on these localised receptors when considered in combination with any other projects, including the Lower Lee Flood Relief Scheme.

In respect of otter, there is potential overlap between the population on the River Lee and the River Bride. It is noted that there is an ongoing design process associated with the Lower Lee Flood Relief Scheme, which is not yet finalised. However, it is anticipated that any changes to the scheme since it was exhibited in 2016 are likely to be relatively minor design alterations and will not result in any potential for additional impacts on otter and significant effects are not anticipated. On the basis of the information available, significant cumulative effects on otter are unlikely.

The finalised Lower Lee Flood Relief Scheme will be fully assessed individually, cumulatively and in combination with other plans and projects (including the River Bride (Blackpool) Scheme) in the EIAR that accompanies the finalised scheme. Thus, it will take full account of the finalised River Bride (Blackpool) Scheme in its assessment of cumulative or in combination effects with other plans and ensure that no potential for Significant cumulative effect on otter exists. This cumulative assessment is based on the most current available information on the Lower Lee Flood Relief Scheme.

No other predicted residual effects on either scheme had the potential to result in significant effects when the two schemes were considered in combination or cumulatively with other projects.

5.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that all predicted residual effects on biodiversity are at most, temporary and

slight. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

6 LAND, SOILS, AND GEOLOGY

The assessment of Cumulative effects on Land, Soils, and Geology that is set out in Section 6.6 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Land, Soils, and Geology when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Land, Soils, and Geology when interacting with one another was considered.

It is considered that the design of the proposed River Bride (Blackpool) Certified Drainage Scheme, the scale of the works and the implementation of effective mitigation and best practice will ensure that the proposed development, when considered on its own, will minimise as much as possible significant impacts on land use, soils and geology. Overall, the reduced risk of flooding will have a positive impact on land use in the Blackpool area. The proposed project has been considered also, in combination with both the LLFRS and Morrison's Island projects. Following a detailed assessment of the receiving environment, and the potential for any further impacts when considered in combination with any or all of the above plans and projects, it was found that there was no potential for significant cumulative or in-combination impacts on Lands, soils and geology as a result of the proposed works.

6.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

6.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is currently at detail design stage. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition.

Whilst both schemes are designed to minimise effects on Land, Soils, and Geology, the residual effects on certain receptors were assessed in both documents and the potential for cumulative effects to occur was identified. These receptors are described below.

Hydromorphology

The EIAR for the River Bride (Blackpool) scheme predicts significant residual effects on the channel hydromorphology over a 1km stretch of the River Bride as a result of the sediment controls at the Sunbeam Industrial Estate. The potential significant effect is limited to this section of the River Bride. The 2016 EIS for the Lower Lee Flood Relief Scheme predicts Slight residual effects on hydromorphology within the River Lee but no negative effects are anticipated on the River Bride as a result of that project. Since the River Bride

scheme will have no effects on the hydromorphology of the River Lee, and the LLFRS will have no effect on the hydromorphology of the River Bride, there is no potential for cumulative or in-combination effects on hydromorphology.

No other predicted residual effects of either scheme had the potential to result in significant effects when the two schemes were considered in combination or cumulatively with other projects.

6.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that all predicted residual effects on Land, Soils, and Geology are at most, temporary and slight to moderate. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

7 HYDROLOGY AND HYDROGEOLOGY

The assessment of Cumulative effects on Hydrology and Hydrogeology that is set out in Section 7.5 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Hydrology and Hydrogeology when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Hydrology and Hydrogeology when interacting with one another was considered.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on hydrology or hydrogeology were identified as a result of the proposed scheme.

7.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

It is considered that the design of the proposed River Bride (Blackpool) Certified Drainage Scheme, the scale of the works and the implementation of effective mitigation and best practice will ensure that the proposed development, when considered on its own, will minimise as much as possible significant impacts on Water Quality, Hydrology and Hydrogeology. The proposed project has been considered also, in combination with a number of plans and projects. Following a detailed assessment of the receiving environment, the potential for any further impact when considered in combination with any or all of the above plans and projects. Potential impacts on Hydrology and Hydrogeology associated with proposed project are, at worst, temporary and slight. It was found that there was no potential for significant cumulative impacts on Water as a result of the proposed works.

7.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is currently at detail design stage. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition. Following a review of the 2016 EIS, and current proposed design documents, it is noted that all predicted residual effects on hydrology and hydrogeology are at most, temporary and slight. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

7.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that all predicted residual effects on hydrology and hydrogeology are at most, temporary and slight. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

8 AIR QUALITY AND CLIMATE/NOISE AND VIBRATION

The assessment of Cumulative effects on Air Quality and Climate/Noise and Vibration that is set out in Section 8.4.3 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Air Quality and Climate/Noise and Vibration when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Land, Soils, and Geology when interacting with one another was considered.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on Air Quality and Climate/Noise and Vibration were identified as a result of the proposed scheme.

8.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

The residual impact of the proposed development on air quality it predicted to be temporary and negligible during the construction phase and imperceptible during the operation phase. It is predicted that the proposed development will have a short term, imperceptibly, negative impact on climate as a result of greenhouse gas emissions during construction. Residual noise and vibration impacts during the construction phase are expected to be temporary, localised and imperceptible at most locations. At dwellings close to proposed works zones, particularly adjacent to dredging and embankment construction areas, impacts are likely to be slight negative to noticeable negative. Impacts may increase to noticeable negative or substantial negative where piling methods other than pressed-in piles are used. However, it should be noted that these impacts will be entirely short term in nature, lasting several days or weeks locally in most cases.

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

8.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is currently at detail design stage. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition.

Whilst both schemes are designed to minimise effects on Air Quality, Climate, Noise, and Vibration, the residual effects on certain receptors were assessed in both documents and the potential for cumulative effects to occur was identified. These receptors are described below.

Air Quality

The construction phase of the proposed development, in combination with the construction phase of the Lower Lee FRS will have the potential to negatively impact on air quality of the area. The mitigation measures employed during the construction phase of the proposed development will minimise as much as possible the contribution that it will make towards impacting on air quality. Based on the 2016 EIS for the Lower Lee FRS the likely air quality impacts associated with that scheme are short term, imperceptible, and negative during the construction phase. In the unlikely event that the proposed development is constructed at the same time as the Lower Lee FRS, there is the potential for a short-term imperceptible negative cumulative impact in terms of air quality and dust for reasons discussed in Section 8.4.2.1 of the EIAR.

Climate

The proposed development, in combination with the Lower Lee FRS, has the potential to have a short-term imperceptible negative cumulative impact on climate as a result of vehicle emissions during the construction phase.

Noise & Vibration

In the unlikely event of the proposed development and the Lower Lee FRS being constructed simultaneously, there is a potential for a moderate short-term negative cumulative noise impact. The construction phase of the proposed development will implement the mitigation measures listed in 8.4.2.3 of the EIAR, thereby minimising the potential cumulative impact that this project could have. Any impacts from the proposed development will be temporary and transient in nature as the works progress along the river channel. Impacts will also differ between receptors, depending on distance to the works areas, and the type of works being carried out in the area. Given the mitigation measures being implemented for this project, and depending on the receptor in question, there is potential for no impact or a short-term, imperceptible to slight, negative, cumulative impact.

Whilst the potential for cumulative or in-combination effects exists, the mitigation measures listed in the EIAR for the proposed development and the nature and scale of the proposed works comprising the Lower Lee FRS will ensure that there will be no potential for the finalised Lower Lee Flood Relief Scheme to result in significant effects when considered cumulatively or in combination with the River Bride (Blackpool) Certified Drainage Scheme.

No other predicted residual effects on either scheme had the potential to result in significant effects when the two schemes were considered in combination or cumulatively with other projects.

8.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that all predicted residual effects on Air Quality, Climate, Noise, and Vibration are at most, short term and slight. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

9 LANDSCAPE

The assessment of Cumulative effects on Landscape that is set out in Section 9.6.5 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Landscape when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Landscape when interacting with one another was considered.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on Landscape were identified as a result of the proposed scheme.

9.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below.

9.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is still at the design stage and has not yet been finalised. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition.

The Lower Lee FRS contains a number of flood relief measure to be implemented long the River Lee in Cork City, as well as in the rural lands west of the city, from Inniscarra in the west to Albert Quay in the City. The majority of the flood defence works proposed as part of the Lower Lee FRS will not be visible in conjunction with the proposed measures associated with the River Bride (Blackpool) Scheme. The main works for the Lower Lee FRS will be along the riverside of the North and South channels. In terms of visual effects, these are unlikely to be visible from the same location, rather in a sequential way - for example, a viewer travelling or walking from Blackpool to the City Centre along the N20 would be likely to see the various flood defences from both projects on this journey, but not at the same time. Cumulative effects as a result of this project are considered Imperceptible.

No other predicted residual effects on either scheme had the potential to result in significant effects when the two schemes were considered in combination or cumulatively with other projects.

9.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that all predicted residual effects on Landscape are at most, temporary, slight, negative during the construction phase and positive during the operation phase. Furthermore, there is no intervisibility between the proposed (River Bide) development and the Morrison's Island Public Realm and

Flood Defence Project. Cumulative effects as a result of this proposed development, in combination with the Morrison's Island Public Realm and Flood Defence Project are considered Imperceptible.

9.2 CONCLUSION

It is considered that while these projects are themselves large scale projects, the combination of the proposed River Bride (Blackpool) certified drainage scheme with the Lower Lee FRS and Morrison's Island Public Realm and Flood Defence Project will not have a significant negative cumulative landscape or visual effect. The cumulative visual effects of the project with the Lower Lee flood relief scheme, the Morrison's Island Public Realm and Flood Defence Project, and the proposed Strategic Development Zone at Monard, are likely to be sequential, as opposed to visible from the same location, while the proposed residential development at the Sunbeam factory site will be visible from within the study area, but it is considered that visual effects will range from Imperceptible to Slight, where they do occur.

Notwithstanding the fact that highly localised slight to moderate negative landscape effects may occur, in terms of cumulative landscape effects, the changes to the overall landscape character and fabric of the area as a result of this scheme, in combination with the large-scale projects mentioned above, will not be significant and are anticipated to be Imperceptible.

10 CULTURAL HERITAGE

The assessment of Cumulative effects on Cultural Heritage that is set out in Section 10.7 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Cultural Heritage when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Cultural Heritage when interacting with one another was considered.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on Cultural Heritage were identified as a result of the proposed scheme.

10.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below. No potential accumulation of impacts resulting in a combined significant adverse cumulative impact on the cultural heritage resource was identified.

10.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is still at the design stage and has not yet been finalised. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition.

The Lower Lee FRS contains a number of flood relief measure to be implemented long the River Lee in Cork City, as well as in the rural lands west of the city, from Inniscarra in the west to Albert Quay in the City. The majority of the flood defence works proposed as part of the Lower Lee FRS will not be visible in conjunction with the proposed measures outlined in the EIAR for the proposed development. The main works for the Lower Lee FRS will be along the riverside of the North and South channels. In terms of visual effects, these are unlikely to be visible from the same location, rather in a sequential way - for example, a viewer travelling or walking from Blackpool to the City Centre along the N20 would be likely to see the various flood defences from both projects on this journey, but not at the same time. Cumulative effects as a result of this project, in combination with the River Bride (Blackpool) Certified Drainage Scheme, are considered Imperceptible.

10.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that is predicted that there will be no likely significant adverse impacts on Cultural Heritage. As such there is no potential for significant cumulative effects as a result of the proposed River Bride (Blackpool) Certified Drainage Scheme, in combination with the Morrison's Island Public Realm and Flood Defence Project.

11 MATERIAL ASSETS

The assessment of Cumulative effects on Material Assets that is set out in Section 11.5 of the EIAR for the River Bride (Blackpool) Certified Drainage Scheme (May 2018) and in the Addendum that was prepared in November 2020 was reviewed in the undertaking of this updated cumulative and in-combination assessment.

The further information requested from the Department of Public Expenditure and Reform (DPER) required only assessment of the River Bride (Blackpool) Scheme, in combination with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme. To fully address the further information request, consideration was given to the potential for any new projects or changing land uses to result in significant effects on Material Assets when considered cumulatively or in-combination with the proposed development.

A new search of relevant projects was undertaken as described in Section 2 above. The projects considered included those listed in the 2018 EIAR and the updated list that is provided in Appendix 1. The potential for all elements of the proposed development to result in cumulative effects on Material Assets when interacting with one another was considered.

An assessment of the likely impacts of the proposed River Bride (Blackpool) Certified Drainage Scheme is provided in Chapter 11 of the EIAR. It is anticipated that residual impacts on services such as gas, electricity, telecommunication, water distribution, and the drainage network will be at worst imperceptible and neutral in effect. In most instances no residual impact is anticipated.

In terms of construction traffic, it is anticipated that the proposed closure of the Watercourse Road at Blackpool Church and Maddens Buildings to facilitate the proposed works is likely to cause a moderate to significant temporary impact to the flow of traffic in Blackpool. However, there will be no residual impact once the proposed scheme is completed. Relatively short, localised delays are likely to be encountered by motorists at the locations of proposed works in the immediate vicinity of the road network. This impact will be a short-term impact and there will be no residual impact on completion of the proposed works.

Following the undertaking of the updated cumulative and in-combination assessment, no significant cumulative effects on Material Assets were identified as a result of the proposed scheme.

11.1 SPECIFIC ASSESSMENT OF POTENTIAL FOR IN-COMBINATION EFFECTS WHEN CONSIDERED ALONGSIDE THE LOWER LEE AND MORRISON'S ISLAND SCHEMES

Given that the request for further information specifically requires consideration of the in-combination effects of this scheme with the Lower Lee Flood Relief Scheme and the Morrison's Island scheme, additional detail on this assessment is provided below. No potential accumulation of impacts resulting in a combined significant adverse cumulative impact on Material Assets was identified.

11.1.1 Lower Lee Flood Relief Scheme

It is noted that the Lower Lee Flood Relief Scheme is currently at final design stage. It is further noted that an EIS for this Scheme was prepared in 2016 and was presented at exhibition.

Economic Development and Property Values

The proposed flood relief scheme was assessed in combination with the LLFRS. The Proposed Scheme will provide increased protection to residential and commercial premises in Blackpool. This allows for the regeneration and economic development of the area as identified within the LAPs. Property values will be maintained or increased and the ability to obtain housing insurance will be greatly improved. Similarly, the

proposed Lower Lee FRS will provide increased protection to commercial and residential premises in Cork City. Overall, a long-term significant positive cumulative impact is anticipated.

Transport, utilities, and Waste Management Infrastructure

Impacts on transport infrastructure, utilities and waste management are unlikely to occur cumulatively as a result of the proposed works. Any impacts on infrastructure and water associated with either the proposed scheme or the Lower Lee FRS will be temporary and are not likely to occur at the same time. Therefore, no residual impact is anticipated in combination with the Lower Lee FRS or other projects.

11.1.2 Morrison's Island Public Realm and Flood Defence Project

Following a review of the Environmental Report for the Morrison's Island Public Realm and Flood Defence Project (2018), it is noted that is predicted that all predicted residual effects on material assets, including traffic, are at most, temporary and moderate. As such, if the schemes are constructed at different times, there is no potential for any effects when considered in combination with each other or cumulatively with other projects. In addition, given the nature and scale of the predicted residual effects, if they were constructed simultaneously, there is still no potential for significant effects when considered in combination or cumulatively with other projects.

Economic Development and Property Values

The proposed development was assessed in combination with the Morrison's Island Public Realm and Flood Defence Project. The Proposed Scheme will provide increased protection to residential and commercial premises in Blackpool. This allows for the regeneration and economic development of the area as identified within the LAPs. Property values will be maintained or increased and the ability to obtain housing insurance will be greatly improved. Similarly, the proposed Morrison's Island project will provide increased protection to commercial premises in Cork City. Overall, a long-term significant positive cumulative impact is anticipated.

Transport, utilities, and Waste Management Infrastructure

Impacts on transport infrastructure, utilities and waste management are unlikely to occur cumulatively as a result of the proposed works. Potential Impacts on infrastructure and water are temporary and will not result in residual impact in combination with the Morrison's Island project or other projects.

Appendix 1:

Projects Considered in the Cumulative and In Combination Assessment

Planning Ref	Applicant	Lodgement Date	Description	Location
N/A	OPW	N/A	Lower Lee (Cork City) Drainage Scheme	Cork City from Inniscarra Road to Albert Quay
N/A	Cork City Council	N/A	Morisson's Island Public Realm and Flood Defence Project	Morrisons Island, Cork City
2241112	Carra Shore Hotel (Camden Place) Limited	20/05/2022	Permission for alteration/modification of the 191 no. bedroom hotel with 10 no. long-stay suites.	The former McKenzies , /Circuit Courthouse , Camden Quay Camden Place
1938200	Christian Brothers College Board of Management	11/01/2019	Permission for the construction of a new 5 storey school house comprising 8 no. classrooms, library, digital suite, 4 no. offices, school hall and associated facilities	Christian Brothers College Sidney Hill , Wellington Road Cork T23FY09 , and 7A St. Patrick's Hill
1536308	Edmund Rice Schools Trust	27/02/2015	Two storey extension to the eastern end of the Christian Brothers College	Christian Brothers College , Sidney Hill , Wellington Road
1938262	Phyluma Limited	19/02/2019	Changes to upgrade the Merchants Quay Shopping Centre. The changes involve alterations to the elevations on the St. Patrick's Street and part of the Merchants Quay frontages	1-5 St. Patrick's Street , Merchant's Quay , Cork
1938589	Tower Development Properties Ltd	31/07/2019	Redevelopment of the Custom House ... to provide a 240-bedroom hotel, 25 no. hotel serviced suites, and a range of commercial uses including retail, office, food and beverage, distillery, tourism and leisure.	North Custom House Quay and , South Custom House Quay , Custom House Street
1737563	HQ Developments Limited	06/09/2017	Redevelopment of a site at Horgan's Quay to provide for a mixed use residential, office, hotel and retail development with ancillary creche, landscaping and public realm works resulting in the creation of 4 no. public spaces with an area of 5,080 m2, services and site development works.	Horgan's Quay , Railway Street , Lower Glanmire Road
2140280	Eichsfeld Limited	11/06/2021	The proposed development will consist of the construction of 31 no. apartments over 6 storeys.	Old Furniture Store , 11-13 Watercourse Road , Blackpool

2241009	Recreate Shandon CLG	08/04/2022	Works to the former Shandon Butter Market, Protected Structure PS077, and for change of use from a Craft Centre to a Technology Hub and Enterprise Centre by Recreate Shandon CLG	Former Butter Market , /Craft Centre , Exchange Street
1938366	The Board of Management of Scoil Cholmcille	29/04/2019	3 storey extension to side of existing school comprising 3 no. classrooms and associated facilities including reorganisation of existing road and parking	Scoil Cholmcille , Blarney Street , Cork
2039048	Compass Homes	24/01/2020	Demolition of existing structures and the construction of 42 no apartments comprising 23 no one bedroom apartments, 18 no two bedroom apartments, and 1 no. three bedroom apartment within four blocks	Brocklesby St , Blackpool
1938650	Citidwell Homes Ltd	28/08/2019	Residential development of 53 no. two and three storey dwellings (change of site layout and increase in density by 8 no. units (from 45 permitted to 53 proposed)	The lands of the former , St Finbarr's Seminary (a protected structure) , Farranferris Farranree
1737392	HRP Construction LTD	21/04/2017	Demolition of the existing industrial buildings on site and the construction of 81 no. residential units at a site which formed part of the former sunbeam factory complex.	Lands which formed part of the former Sunbeam Fact , Redforge Road , Blackpool
1938211	Eirgrid PLC	22/01/2019	Construction of a new 110kV Gas Insulated Switchgear (GIS) building, located entirely within the footprint of the existing Kilbarry 110 kV Substation	Kilbarry 110kV Substation , Old Whitechurch Road , Kilnap Cork
1938352	Noel Deasy Cars Ltd	15/04/2019	New single storey detached service workshop along with attached illuminated building signage at their existing premises at New Mallow Road, Cork.	Noel Deasy Cars Ltd , New Mallow Road , Cork
1838182	McDonald's Restaurants of Ireland Limited	20/12/2018	Development for at McDonald's Restaurant, Commons Road, Blackpool, Cork.	McDonald's Restaurant , Commons Road , Blackpool
1436179	Barry Coleman	07/11/2014	Development of 6 semi-detached dwellings and all ancillary car parking, landscaping and site development works at the former Garda Station, Old Mallow Road, Blackpool, Cork	Former Garda Station , Old Mallow Road , Blackpool
184449	John Maguire, Jim Maguire	22/02/2018	Construction of 2 no. dwellinghouses and associated site works	Carhoo, Whitechurch, Co. Cork,
2039085	Lorraine Carroll	11/02/2020	Permission to (A) Construct a dwelling house, (B) Construct a new access road, (C) Install a septic tank with percolation area and (D) All associated site works.	Kilcully , Whites Cross , Co.Cork

165043	Rosemount Estate Amenity Company Ltd	04/05/2016	Residential development of five number houses with individual waste water treatment systems and associated site works	Rosemount Estate (lands adjoining) , Kilcully , Co. Cork
1938655	O'Leary and O'Sullivan Developments (Cork) Ltd.	30/08/2019	Construction of 74 no. residential units and all associated site development works, drainage, and landscaping and amenity area.	Coppenger Fields , Dublin Pike , Ballincrokig
2140038	O Leary and O Sullivan Developments Ltd.	26/03/2021	Proposed development will consist of construction of 96 no. residential units, 1 no. crèche, associated car parking, landscaping and amenity areas at Dublin Pike and Ballyhooly Road, Ballincrokig, Cork.	Dublin Pike and Ballyhooly Road , Ballincrokig , Cork
2039717	Dave McSweeney	03/12/2020	Permission to construct 4 detached dwellings with individual treatment plants and associated site works on a site of 0.75Ha. All works to be carried out at Lower Killeens Road, Killeens, Cork	Lower Killeens Road , Killeens , Co.Cork
2240976	O Flynn Construction (Horlans) Ltd	29/03/2022	Proposed development will consist of 94 no. residential housing units with associated car parking, 2 no. commercial units, 1 no. retail unit and 1 no. creche.	Coolymurraghue , Upper Leemount , Kerry Pike
187417	Kerry Pike Lands Limited	21/12/2018	Construction of 20 no. dwelling houses (changes and amendments to part of the development approved originally under Planning Reg. Nos. 92/291 and 92/292) consisting of changes to the site layout, house types and levels	Clonlara, Coolymurraghue, Kerrypike, Co. Cork
2240915	Glenwood Property Development Ltd	10/03/2022	Development at a site at Ballycannon, Kerrypike, Cork will consist of the demolition of an existing boundary wall and gated access, and 2 no. existing animal shelters; the construction of a 2-storey commercial building including signage, with ground floor pharmacy and 1 no. medical consulting room	Ballycannon , Kerry Pike , Cork
194570	Balkalin Limited	08/03/2019	Construction of 21 No. dwelling houses and all associated ancillary development works including access, roads, parking, footpaths	Coolymurraghue, Kerry Pike, Co. Cork,
1637209	Sick & Sore Limited	19/12/2016	The mooring of a vessel for use as a restaurant and hotel; modifications to the quay wall	Penrose Quay , Cork
1737497	Trigon Hotels Ltd.	14/07/2017	10-year permission for full planning permission for the redevelopment and refurbishment of the Metropole Hotel and former P.J. O' Hea site	Metropole Hotel , MacCurtain Street , Harley St and

2039165	International Investment ICAV	12/03/2020	Redevelopment of the Leisureplex site, No.1 MacCurtain Street and Brian Boru Street, Cork to provide for a 171 bedroom hotel	Leisureplex site , No.1 MacCurtain Street , and Brian Boru Street
1938338	Karamex Limited	08/04/2019	Demolition of all buildings and structures; the construction of a two building office development, consisting of a six storey over ground floor building to Penrose Quay, with part rooftop terrace	Site bounded by Alfred Street to the North , Penrose Quay to the South , the under construction Penrose Dock development to
2140076	Cork Simon Community	09/04/2021	Site works at the corner of Alfred Street and Railway Street, Cork. The proposed development will consist of 6 no. 2-bedroom apartments, 43 no. 1-bedroom apartments, 29 no. studio apartments	Corner of Alfred Street , and Railway Street , Cork
1838009	Tetrarch Capital Ltd	02/08/2018	House, to facilitate a hotel-development of 165 no. bedrooms of between 3-7 storeys plus rooftop plant, principally accessed from Deane Street, as well as Parnell Place, with ground floor reception area, restaurant/bar, retail unit, foodhall and café/retail unit	Site bounded by 7/8 & , 9 Parnell PlaceDeane Street , & Oliver Plunkett Street Lower
2140435	Primark Limited and O Flynn Construction (Cork) Unlimited Company	19/08/2021	Reconfiguration and alterations to the existing layout to provide for 2 floors of retail, with ancillary storage, office and staff uses, and plant and equipment on the 2nd and 3rd floors	No.s 27-34 St.Patricks Street , No.s 99-102 Oliver Plunkett , Street No.s 1-4 Cook Street &
2140068	University College Cork and Tyndall National Institute	09/04/2021	Development of a new research facility at the site at: University College Cork, Distillery Fields, North Mall, Cork T23XA50	University College Cork , Distillery Fields , North Mall
2240929	Hanmer Limited	14/03/2022	Alterations to the student accommodation building permitted by An Bord Pleanala Reference ABP 307605-20 (as amended by ABP-309858-21) and all ancillary site development works	Nos. 92-96 , North Main Street , Cork
1636779	Good Shepherd Services Limited	02/03/2016	Demolition of a portion of the existing residential centre buildings, significant alterations to the existing including lobby and canopy fronting onto Grattan Street, construction of a new 4-storey extension	Edel House , Grattan Street , Cork

1637064	BAM Property Ltd.	12/09/2016	Amendments to the development previously granted planning permission, reference no.10/34698, PL28.239383	The Former Beamish , and Crawford Brewery , South Main Street
1737436	BAM Property Limited	26/05/2017	Mixed use hotel and office development with a total gross floor area of 22,698 m2, which is an alteration and modification of the mixed use development permitted by 08/32886 and PL.28.229832 at the Former Government Buildings, Sullivan's Quay, Cork	Former Government Buildings , Sullivan's Quay , Cork
2140406	City Properties (Cork) Limted	05/08/2021	Construction of a mixed-use office and retail development with primary access from Grand Parade with service/ancillary access from Saint Augustine Street	The Queens Old Castle , 84-89 Grand Parade , Cork City
1737406	Summix WSC Developments Ltd	28/04/2017	Development measuring 9,458 sq m, which will range in height from part 2 to part 6 no. Storey's on a site at The Former Square Deal premises, Washington Street West, Cork City	The Former Square Deal Premises (Prot. Struc.) , (Bounded by Washington Street Woods Street , Lynch's Street and Little Hanover Street)
1737472	The Mercy University Hospital Cork Foundation	19/06/2017	demolition of no's 7,8,9&10 Wood's Street, Cork City, and for the construction of a new Cancer Care Centre and all associated site works on a 0.02 Ha site	7-10 , Wood's Street
2241158	University College Cork	03/06/2022	construction of a two storey extension to the south of the existing building (area175.5m2)	The Granary Theatre , Dyke Parade , Cork
1536482	Watfore Ltd.	10/07/2015	renovation and extension of No.18 and 19 south terrace to provide for office accomodation (c. 310 sqm); provision of a mixed use development including a building of c.22,401 sqm ranging from 4-6 storeys	Site Of former brooks builders merchants bounded by Copley street , Stables lane , Union (or cotter) Quay and south terrace
1938327	University College Cork	01/04/2019	single storey extension consisting of 4 No. offices and 1 no. store at UCC Enterprise Centre, Distillery Fields, North Mall, Cork	UCC Enterprise Centre , Distillery Fields , North Mall
2140116	University College Cork and Tyndall National Institute	23/04/2021	development of a pedestrian and cycle bridge at Lee Maltings, Dyke Parade, Cork T12PX46 to North Mall, Cork T23XA50	University College Cork , Distillery Fields North Mall Cork , T23XA50 crossing to Lee Maltings
2240919	University College Cork	10/03/2022	Proposed gym extension to the north east of the existing Mardyke Arena facility at Mardyke Walk, Cork, by University College Cork	Mardyke Arena , University College Cork , Mardyke Walk
1838154	University College Cork	30/11/2018	Construction of a new flood defence wall on the southern and western site boundary, involves the removal of 3 existing trees,	Castlewhite Apartments Site , (including Castlewhite

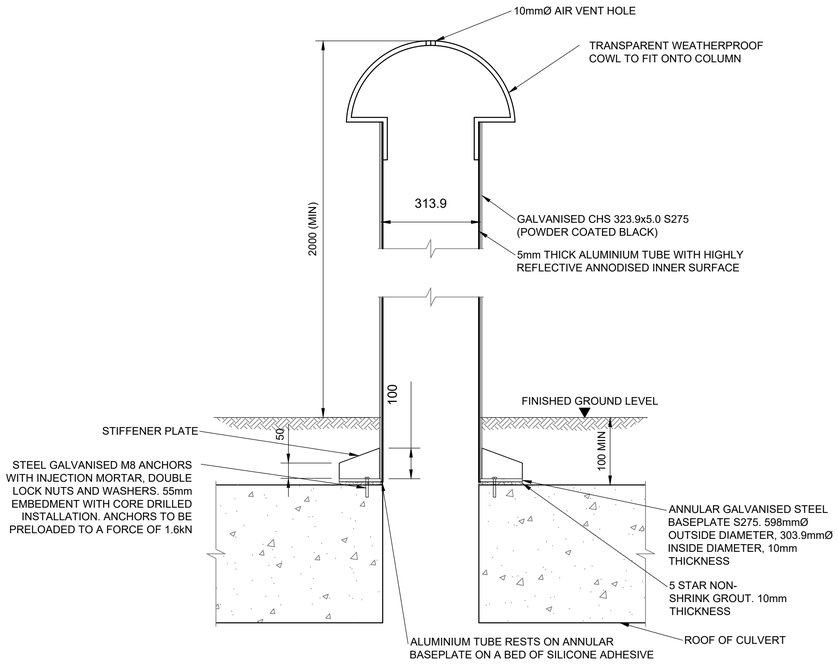
			removal of an existing palisade fence on the western boundary of the site, and partial demolition of existing walls	Apartments Brighton Villas , Western Road and Gaol Walk
1737328	Xiu Lan Hotels LTD	16/03/2017	Additions and alterations to the Kingsley Hotel, Carrigrohane road, to provide an additional 63 no. guest rooms, new gym, administration offices and meeting rooms	The Kingsley Hotel , Carrigrohane Road , Cork
2140553	Health Service Executive (HSE)	07/10/2021	Demolition of single storey structure; construction of a single storey extension; the construction of a two storey extension in the Carraig Mor Centre	Carraig Mor Centre , Shanakiel Road , Sundays Well
2039581	John Coleman	07/10/2020	Construct 8 No. single-storey dwellings at Mile Stream, Shanakiel, Cork, including all associated site development and landscaping works.	Mile Stream , Shankiel
2039067	Irish Water	31/01/2020	Construction of a new off line sedimentation tank to upgrade existing sedimentation tank at existing Lee Road Water Treatment Facility	Lee Road Water Treatment Plant , Lee Road , Cork
1737279	Moneda Developments Limited	13/02/2017	The proposed development will consist of the partial demolition, redevelopment and extension of the existing former Good Shepherd Convent, Orphanage and Magdalene home buildings to facilitate a residential development of 234no. apartments.	The Former Good Shepherd Convent site , Convent Anenue And Buckston Hill , Sunday's Well
1938221	Dan O' Brien	30/01/2019	Construction of 4 no. residential units and all associated ancillary site development	Buxton Hill , adjacent to Upper Janemount Terrace , Sunday's Well Road
1938320	KMR Developments Ltd	26/03/2019	Construction of 29 No. dwellinghouses, connection to public services and all associated site works at Pope's Road	Pope's Road , Blackpool , Cork
1838138	Barcrest Developments Ltd.	22/11/2018	Demolition of 18 no. dwellings and the construction of 18 no. terraced dwellings	Millfield Cottages , Off Redforge Road , Blackpool
2140732	Fair Valley Development Limited	10/12/2021	Construction of 46 no. residential units, a community centre/creche and all ancillary site development works, landscaping and amenity areas at Fairfield Meadows	Fairfield Meadows , Upper Fairhill , Commons
2140702	Leeside Quays Ltd.	02/12/2021	Proposed mixed-use development comprising 4 no. new buildings and the conversion of the Odlum's Building, all in the South Docklands of Cork City	Lands between Kennedy Quay , (North) Marina Walk (South) , Victoria Road (West) and Mill Road (East)

N/A	Cork City Council	N/A	Cork City Centre Movement Strategy – amendments on key streets such as McCurtain Street, Merchants Quay, South Mall, North Main Street, South Main Street, Proby's Quay and North Mall	Amendments on key streets such as McCurtain Street, Merchants Quay, South Mall, North Main Street, South Main Street, Proby's Quay and North Mall
N/A	TII	N/A	Dunkettle Interchange Upgrade	Dunkettle Interchange, Inchera, County Cork
N/A	Cork City Council	N/A	Harleys Street Bridge between St Patricks' Quay and Merchants Quay	Between St Patricks' Quay and Merchants Quay
1838015	BAM Property Limited	10/08/2018	Event Centre and Access Bridge	South Main St., Cork
N/A	CIÉ	N/A	Kent Station Re-Development	Kent Station, Lower Glanmire Rd, Cork
N/A	Cork City Council	N/A	St Patrick's Quay Coach Parking	St Patrick's Quay,Cork City
N/A	N/A	N/A	Navigation House/Albert Quay Office Developments	Navigation Square, Albert Quay, Ballintemple, Cork
N/A	Cork City Council	N/A	Albert Quay East – Contra-Flow Bus Lane	Albert Quay East, Ballintemple, Cork
N/A	N/A	N/A	Grand Parade Quay – Proposed World War 1 Memorial	Grand Parade Quay, Cork
N/A	Irish Water	N/A	Lee Road Waterworks – new water treatment plant	Lee Rd, Sunday's Well, Cork
N/A	Port of Cork	N/A	Port of Cork Ringaskiddy Re-Development Scheme	Ringaskiddy, Co. Cork
N/A	Cork NRO	N/A	N28 Motorway Upgrade Scheme	Cork to Ringaskiddy
N/A	NTA	N/A	BusConnects - Route C - Blackpool to City - NTA Bus Connects Project	Blackpool to Cork City
N/A	NTA	N/A	Bus Connects - Route D (Hollyhill to City) - NTA Bus Connects Project	Hollyhill to Cork City
N/A	Cork City Council	N/A	Northern Distribution Road (Multi Modal Route)	Cork City
N/A	Cork City Council	N/A	Knapp's Square and Lower John's Street Area Pedestrian and Cycle Measure - NTA Active Travel scheme	Knapp's Square and Lower John's Street
N/A	Cork City Council	N/A	MacCurtain Street Public Transport Improvement - NTA Active Travel scheme	MacCurtain Street, Cork

N/A	**Cork City Council**	**N/A**	**Knockpogue Avenue Active Travel Improvement Works - NTA Active Travel scheme**	**Knockpogue Avenue, Cork**
N/A	**Cork City Council**	**N/A**	**Nash's Boreen Pedestrian and Cycle Upgrade Scheme - NTA Active Travel scheme**	**Nash's Boreen, Cork**

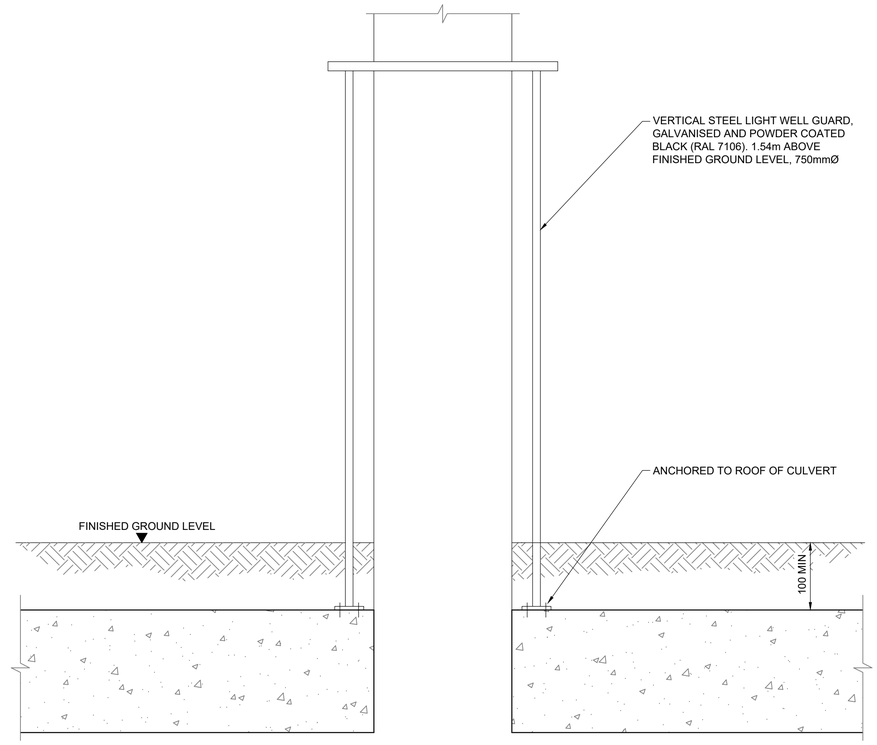
Appendix 2:

Otter Light Well Detail Drawings



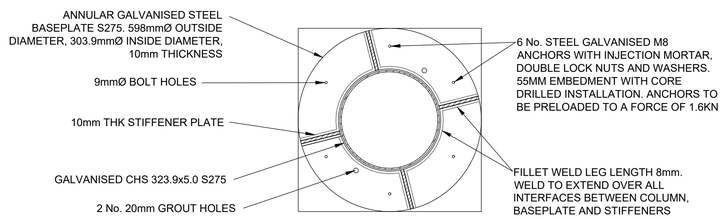
LIGHT WELL DETAIL

SCALE 1:10



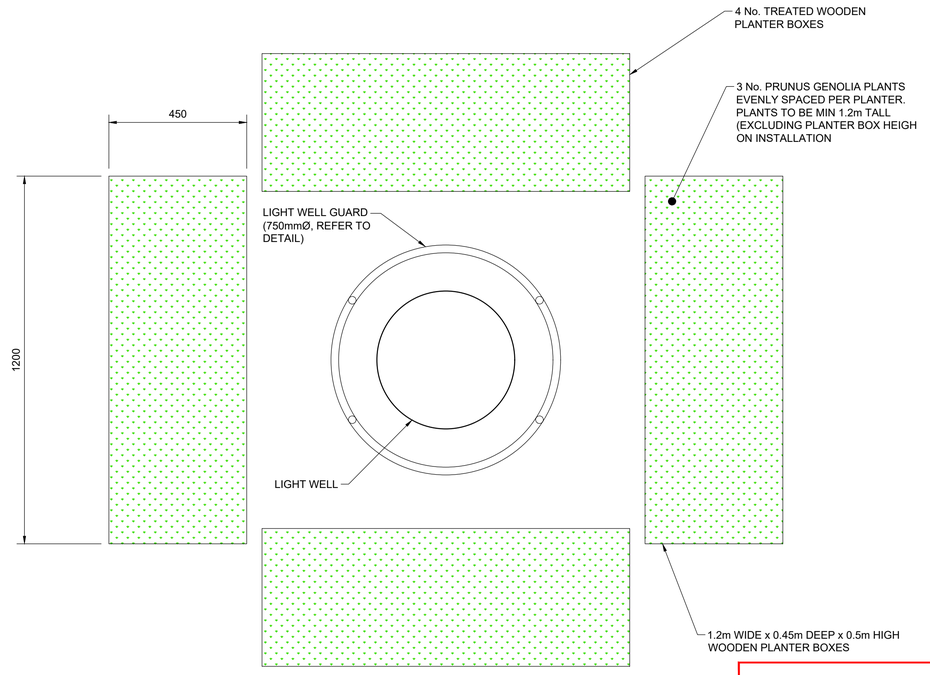
LIGHT WELL PROTECTION DETAIL

SCALE 1:10



LIGHT WELL - BASE PLAN

SCALE 1:10



PLAN

SCALE 1:10

DRAFT ARUP

NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RIVER BRIDE (BLACKPOOL) CERTIFIED DRAINAGE SCHEME DRAWINGS.

Rev	Date	By	Chkd	Appd
D1	30/04/21	EG	EK	KL
Tender - DRAFT				

ARUP
Tionscadal Éireann Project Ireland 2040
One Albert Quay
Cork, Ireland
Tel +353 (0)21 422 3200
www.arup.com

Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Title

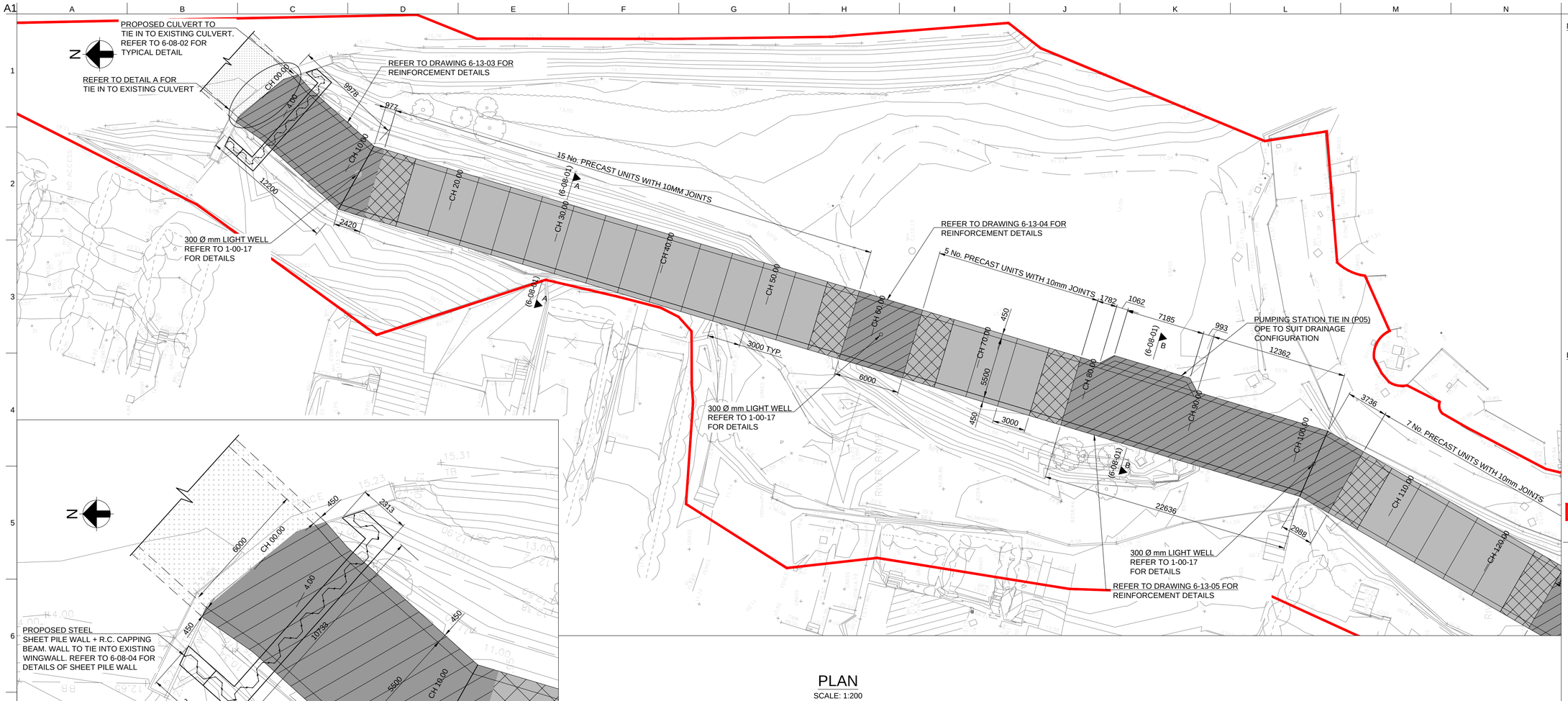
River Bride (Blackpool)
Certified Drainage Scheme
Phase 1

Drawing Title

Otter Light Well
Details

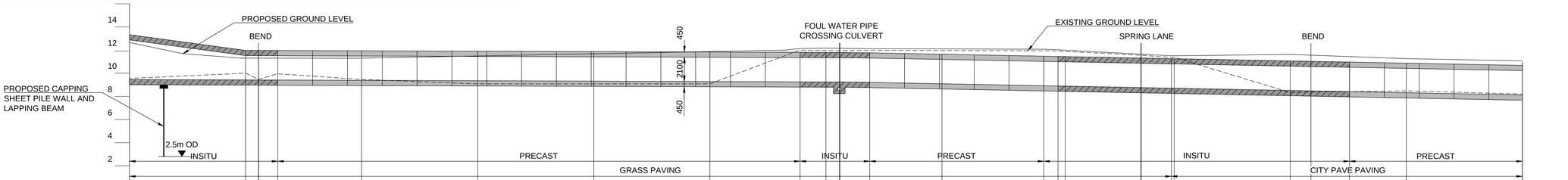
Scale at A1	Not To Scale
Role	Civil
Suitability	Tender
Arup Job No	264842-00
Rev	D1
Name	1-00-17

Do not scale



PLAN
SCALE: 1:200

DETAIL A
SCALE: 1:100



CHAINAGE (m)	0.00	10.00	11.11	12.77	20.00	30.00	40.00	50.00	57.77	60.00	61.18	63.77	70.00	78.77	80.00	80.61	87.14	89.75	90.00	100.00	101.78	105.11	110.00	120.00
PROPOSED INVERT LEVEL (m OD)	9.450	9.415	9.412	9.406	9.381	9.347	9.313	9.278	9.251	9.219	9.215	9.207	9.088	8.918	8.894	8.882	8.756	8.705	8.700	8.506	8.471	8.408	8.313	8.119
PROPOSED FORMATION LEVEL (m OD)	9.000	8.966	8.962	8.956	8.931	8.897	8.863	8.828	8.801	8.769	8.790	8.757	8.638	8.468	8.444	8.432	8.306	8.255	8.250	8.056	8.452	7.958	7.863	7.699
TOP OF BOX CULVERT (m OD)	13.324	11.966	11.962	11.956	11.931	11.897	11.863	11.832	11.801	11.796	11.790	11.757	11.638	11.468	11.444	11.432	11.306	11.255	11.250	11.056	11.022	10.958	10.863	10.669
PROPOSED GROUND LEVELS (m OD)	13.57	12.22	12.21	12.21	12.18	12.15	12.11	12.08	12.13	12.16	12.07	12.11	12.09	12.07	12.02	12.01	11.68	11.50	11.50	11.618	11.555	11.438	11.258	11.050
EXISTING GROUND LEVELS (m OD)	9.55	10.00	9.47	9.95	9.46	9.08	9.08	9.08	12.00	12.03	11.94	11.98	11.96	11.94	11.89	11.88	11.55	11.37	11.37	8.33	8.39	8.405	8.48	8.19

LONGITUDINAL SECTION
SCALE: 1:200

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 1-00-00.
2. THIS DRAWING IS TO BE USED FOR THE DESIGN ELEMENT IDENTIFIED IN THE TITLE BOX ONLY
   ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
3. INFORMATION RELATING TO THE LOCATION OF EXISTING SERVICES IS GIVEN FOR THE CONTRACTOR'S ASSISTANCE AND IS INTENDED FOR GUIDANCE ONLY; NO GUARANTEE IS GIVEN ON ITS ACCURACY AND COMPLETENESS.
4. REFER TO SITE CLEARANCE DRAWINGS 6-02-01 TO 6-02-03 FOR EXCAVATION EXTENTS.
5. FOR DETAILS OF CONNECTIONS BETWEEN CULVERT SECTIONS REFER TO DRAWING 1-00-07.
6. FOR IN SITU SECTIONS MOVEMENT JOINTS ARE TO BE LOCATED AT EQUAL SPACING ALONG THE SECTION OF CULVERT. MAXIMUM SPACING BETWEEN JOINTS TO BE 12m. REFER TO DRAWING 1-00-07 FOR DETAILS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
8. FOR SETTING OUT INFORMATION REFER TO 6-12-01.
9. NO VEHICULAR LOADING ON FOOTPATH OVER CULVERT IN PARK BETWEEN CHAINAGE 60 AND 90

LEGEND:

- PRECAST CULVERT TYPE A (REFER TO DRAWING No. 6-13-01 FOR REINFORCEMENT DETAILS)
- PRECAST CULVERT TYPE B (REFER TO DRAWING No. 6-13-02 FOR REINFORCEMENT DETAILS)
- INSITU CULVERT
- SITE OF POSSESSION (DENOTES BOUNDARY OF WORK ZONE)
- CH 0.000 STRUCTURE CHAINAGE CORRESPONDING TO LONGITUDINAL SECTIONS

KEY PLAN

D1	30/04/21	UY	EK	KL
DRAFT				
Rev	Date	By	Chkd	Appd

ARUP
Tionscadal Éireann Project Ireland 2040
One Albert Quay
Cork, Ireland
Tel +353 (0)21 427 7670 Fax +353 (0)21 427 2345
www.arup.com

Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Title

River Bride (Blackpool)
Certified Drainage Scheme
Phase 1

Drawing Title

C06_B03 Orchard Court Culvert
General Arrangement
Culvert Layout (1 of 3)
Plan & Longitudinal Section

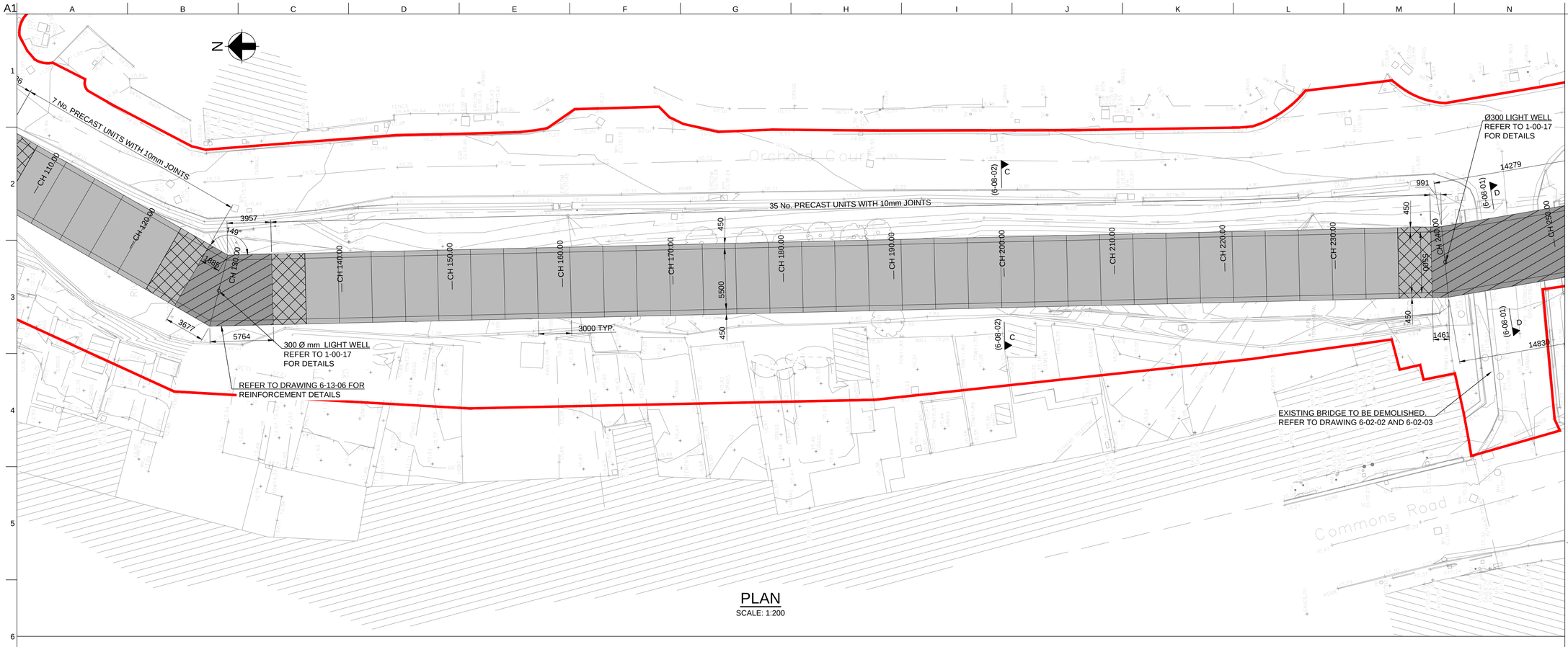
Scale at A1	Scale 1:200
Role	Civil Structures
Suitability	Tender

Arup Job No	Rev
230436-10	D1

Name
6-07-01

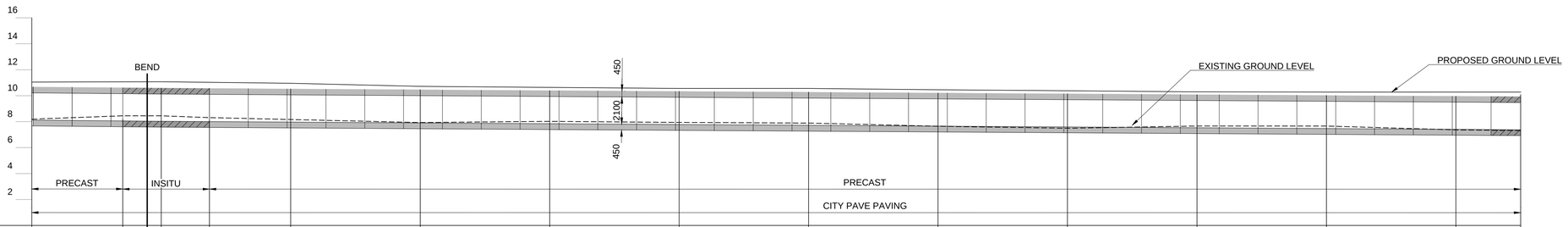
DRAFT ARUP

A1



PLAN

SCALE: 1:200



CHAINAGE (m)	120.00		127.02	128.91	130.00	133.71	140.00		150.00		160.00		170.00		180.00	190.00	200.00	210.00	220.00	230.00	235.00			
PROPOSED INVERT LEVEL (m OD)	8.119		8.055	8.035	8.029	8.005	7.966		7.904		7.841		7.778		7.716	7.653	7.590	7.528	7.465	7.402	7.371			
PROPOSED FORMATION LEVEL (m OD)	7.699		7.605	7.585	7.579	7.555	7.516		7.454		7.391		7.328		7.266	7.203	7.140	7.078	7.015	6.952	6.921			
TOP OF BOX CULVERT (m OD)	10.669		10.605	10.588	10.579	10.555	10.516		10.454		10.391		10.328		10.265	10.203	10.140	10.078	10.015	9.952	9.921			
PROPOSED GROUNG LEVELS (m OD)	11.050		11.067	11.071	11.074	11.029	10.953		10.715		10.665		10.514		10.560	10.453	10.379	10.295	10.252	10.276	10.209			
EXISTING GROUND LEVELS (m OD)	8.19		8.50	8.50	8.45	8.31	8.17		7.93		8.02		7.94		7.89	7.645	7.49	7.72	7.66	7.37	7.31			

LONGITUDINAL SECTION

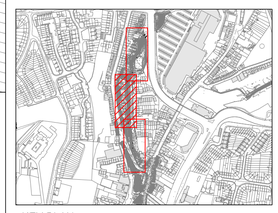
SCALE: 1:200

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 1-00-00.
2. THIS DRAWING IS TO BE USED FOR THE DESIGN ELEMENT IDENTIFIED IN THE TITLE BOX ONLY
   ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
3. INFORMATION RELATING TO THE LOCATION OF EXISTING SERVICES IS GIVEN FOR THE CONTRACTOR'S ASSISTANCE AND IS INTENDED FOR GUIDANCE ONLY; NO GUARANTEE IS GIVEN ON ITS ACCURACY AND COMPLETENESS.
4. REFER TO SITE CLEARANCE DRAWINGS 6-02-01 TO 6-02-03 FOR EXCAVATION EXTENTS.
5. FOR DETAILS OF CONNECTIONS BETWEEN CULVERT SECTIONS REFER TO DRAWING 1-00-07.
6. FOR IN SITU SECTIONS MOVEMENT JOINTS ARE TO BE LOCATED AT EQUAL SPACING ALONG THE SECTION OF CULVERT. MAXIMUM SPACING BETWEEN JOINTS TO BE 12m. REFER TO DRAWING 1-00-07 FOR DETAILS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
8. FOR SETTING OUT INFORMATION REFER TO 6-12-01.
9. NO VEHICULAR LOADING ON FOOTPATH OVER CULVERT IN PARK BETWEEN CHAINAGE 60 AND 90

LEGEND:

- PRECAST CULVERT TYPE A (REFER TO DRAWING No. 6-13-01 FOR REINFORCEMENT DETAILS)
- PRECAST CULVERT TYPE B (REFER TO DRAWING No. 6-13-02 FOR REINFORCEMENT DETAILS)
- INSITU CULVERT
- SITE OF POSSESSION (DENOTES BOUNDARY OF WORK ZONE)
- CH 0.000 STRUCTURE CHAINAGE CORRESPONDING TO LONGITUDINAL SECTIONS



KEY PLAN

Rev	Date	By	Chkd	Appd
D1	30/04/21	UY	EK	KL

DRAFT

ARUP

Tionscadal Éireann Project Ireland 2040

One Albert Quay
Cork, Ireland
Tel +353 (0)21 427 7670 Fax +353 (0)21 427 2345
www.arup.com

Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Title

River Bride (Blackpool)
Certified Drainage Scheme
Phase 1

Drawing Title

C06_B03 Orchard Court Culvert
General Arrangement
Culvert Layout (2 of 3)
Plan & Longitudinal Section

Scale at A1: Scale 1:200

Role: Civil Structures

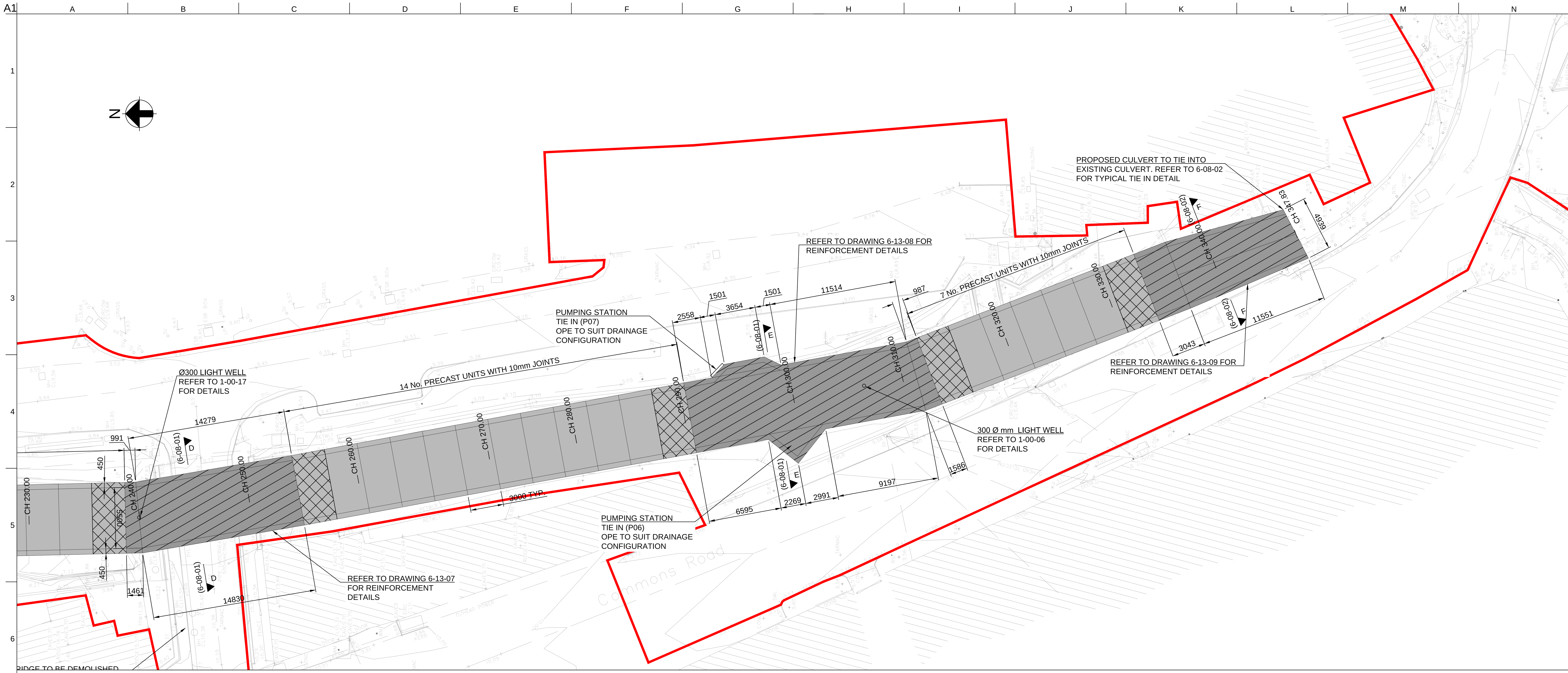
Suitability: Tender

Arup Job No: **264842-00**

Rev: **D1**

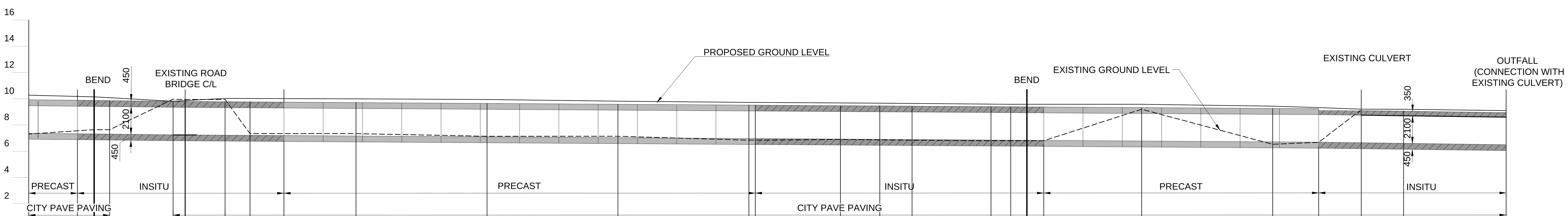
Name: **6-07-02**

DRAFT ARUP



PLAN

SCALE: 1:200



CHAINAGE (m)	235.00	240.00	241.18	246.03	246.94	250.00	251.92	254.48	260.00	270.00	280.00	290.00	290.48
PROPOSED INVERT LEVEL (m OD)	7.371	7.318	7.305	7.253	7.243	7.224	7.211	7.195	7.160	7.095	7.032	6.969	6.965
PROPOSED FORMATION LEVEL (m OD)	6.921	6.868	6.855	6.803	6.793	6.774	6.761	6.745	6.710	6.745	6.582	6.519	6.515
TOP OF BOX (m OD)	9.921	9.868	9.855	9.803	9.793	9.774	9.761	9.745	9.710	9.656	9.582	9.519	9.515
PROPOSED GROUNG LEVELS (m OD)	10.209	10.142	10.099	9.923	9.965	10.025	10.019	10.011	9.994	9.944	9.814	9.722	9.719
EXISTING GROUND LEVELS (m OD)	7.31	7.64	7.64	9.97	9.97	9.94	7.49	7.34	7.34	7.14	7.14	6.84	6.84

CHAINAGE (m)	296.96	300.00	302.45	308.48	310.00	311.23	312.51	320.00	330.00	333.51	336.76	340.00	347.83
PROPOSED INVERT LEVEL (m OD)	6.924	6.902	6.888	6.850	6.841	6.833	6.825	6.777	6.713	6.690	6.648	6.604	6.500
PROPOSED FORMATION LEVEL (m OD)	6.474	6.455	6.538	6.400	6.391	6.383	6.375	6.327	6.263	6.340	6.198	6.155	6.050
TOP OF BOX (m OD)	9.474	9.455	9.338	9.400	9.391	9.383	9.375	9.327	9.263	9.140	9.198	9.155	9.050
PROPOSED GROUNG LEVELS (m OD)	9.680	9.662	9.640	9.584	9.570	9.571	9.572	9.579	9.439	9.325	9.210	9.200	9.100
EXISTING GROUND LEVELS (m OD)	6.90	6.87	6.84	6.87	6.87	6.88	6.80	9.20	6.53	6.68	9.17	9.10	9.08

LONGITUDINAL SECTION

SCALE: 1:200

Do not scale

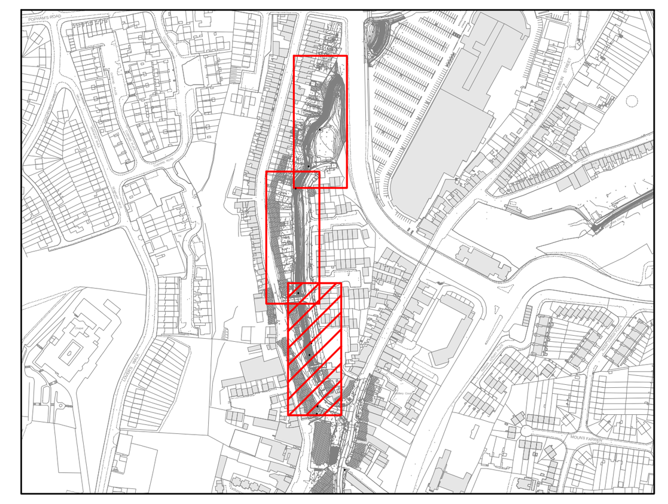
DRAFT ARUP

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING 1-00-00.
2. THIS DRAWING IS TO BE USED FOR THE DESIGN ELEMENT IDENTIFIED IN THE TITLE BOX ONLY
   ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
3. INFORMATION RELATING TO THE LOCATION OF EXISTING SERVICES IS GIVEN FOR THE CONTRACTOR'S ASSISTANCE AND IS INTENDED FOR GUIDANCE ONLY; NO GUARANTEE IS GIVEN ON ITS ACCURACY AND COMPLETENESS.
4. REFER TO SITE CLEARANCE DRAWINGS 6-02-01 TO 6-02-03 FOR EXCAVATION EXTENTS.
5. FOR DETAILS OF CONNECTIONS BETWEEN CULVERT SECTIONS REFER TO DRAWING 1-00-07.
6. FOR IN SITU SECTIONS MOVEMENT JOINTS ARE TO BE LOCATED AT EQUAL SPACING ALONG THE SECTION OF CULVERT. MAXIMUM SPACING BETWEEN JOINTS TO BE 12m. REFER TO DRAWING 1-00-07 FOR DETAILS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
8. FOR SETTING OUT INFORMATION REFER TO 6-12-01.
9. NO VEHICULAR LOADING ON FOOTPATH OVER CULVERT IN PARK BETWEEN CHAINAGE 60 AND 90

LEGEND:

- PRECAST CULVERT TYPE A (REFER TO DRAWING No. 6-13-01 FOR REINFORCEMENT DETAILS)
- PRECAST CULVERT TYPE B (REFER TO DRAWING No. 6-13-02 FOR REINFORCEMENT DETAILS)
- INSITU CULVERT
- SITE OF POSSESSION (DENOTES BOUNDARY OF WORK ZONE)
- CH 0.000 STRUCTURE CHAINAGE CORRESPONDING TO LONGITUDINAL SECTIONS



KEY PLAN

Rev	Date	By	Chkd	Appd
D1	30/04/21	UY	EK	KL
DRAFT				

ARUP — Tionscadal Éireann Project Ireland 2040

One Albert Quay
Cork, Ireland
Tel +353 (0)21 427 7670 Fax +353 (0)21 427 2345
www.arup.com

Client: OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Title
River Bride (Blackpool) Certified Drainage Scheme Phase 1

Drawing Title
C06_B03 Orchard Court Culvert General Arrangement Culvert Layout (3 of 3) Plan & Longitudinal Section

Scale at A1: Scale 1:200
Role: Civil Structures
Suitability: Tender
Arup Job No: 264842-00
Rev: D1
Name: 6-07-03