The background features a vibrant red field with several abstract geometric elements. In the top-left, there's a green quarter-circle and a blue arc. The top-center has a large white circle with a blue border. The top-right shows a dark blue horizontal bar and a white arc. The bottom-left contains a blue vertical shape with a white circle and a dark blue section. The bottom-right is dominated by a large green quarter-circle and a red arc with a white border.

Appendix J6
Preliminary Design Report
Ringsend Structure 04

Preliminary Design Report – Consultation

STA-1b

Categories 1, 2 & 3

Scheme

Name and Location: Busconnects Infrastructure Delivery – Project D

Structure(s)

Name and nature of the Structure(s): Ringsend 04 Walkway

Preliminary Design Report

Reference BCIDD-ROT-STR-ZZ-0016-XX-00-RP-CB-0018

Revision L01

Date Feb-2022

Submitted by

Signed:



Name: Fernando Fernandez

Position: (Structures Team Leader)

Organisation: Roughan & O'Donovan – TYP SA Consulting Engineers

Date: 23/05/2022

Structures Section confirmation of consultation:

Signed: _____

Name: _____

Position: _____

Date: _____

RINGSEND TO CITY CENTRE CORE BUS CORRIDOR SCHEME

PRELIMINARY DESIGN REPORT – RINGSEND 04

TABLE OF CONTENTS

| | | |
|-----------|--|----------|
| 1. | INTRODUCTION | 1 |
| 1.1 | Brief | 1 |
| 1.2 | Background Information..... | 1 |
| 1.3 | Previous Studies..... | 1 |
| 2. | SITE & FUNCTION..... | 2 |
| 2.1 | Site Location..... | 2 |
| 2.2 | Function of the Structure..... | 2 |
| 2.3 | Choice of Location | 2 |
| 2.4 | Site Description and Topography..... | 2 |
| 2.5 | Vertical and Horizontal Alignments | 2 |
| 2.6 | Cross-Sectional Dimensions on the Alignments..... | 2 |
| 2.7 | Existing Underground and Overground Services | 3 |
| 2.8 | Geotechnical Summary..... | 3 |
| 2.9 | Hydrology and Hydraulic Summary..... | 3 |
| 2.10 | Archaeological Summary | 4 |
| 2.11 | Environmental Summary..... | 4 |
| 3. | STRUCTURE & AESTHETICS | 5 |
| 3.1 | General Description of Recommended Structure | 5 |
| 3.2 | Aesthetic Considerations | 5 |
| 3.3 | Proposals for the Recommended Structure | 5 |
| 3.3.1 | Proposed Category..... | 5 |
| 3.3.2 | Span Arrangements..... | 5 |
| 3.3.3 | Minimum Headroom Provided | 5 |
| 3.3.4 | Approaches (incl. Run-on Arrangements)..... | 5 |
| 3.3.5 | Foundation Type | 5 |
| 3.3.6 | Superstructure..... | 5 |
| 3.3.7 | Articulation Arrangements (Joints and Bearings)..... | 5 |
| 3.3.8 | Vehicle Restraint System..... | 5 |
| 3.3.9 | Drainage..... | 6 |
| 3.3.10 | Durability | 6 |
| 3.3.11 | Sustainability | 6 |
| 3.3.12 | Inspection and Maintenance..... | 6 |
| 4. | SAFETY..... | 8 |
| 4.1 | Traffic Management during Construction | 8 |

| | | |
|-----------|---|-----------|
| 4.2 | Safety during Construction..... | 8 |
| 4.3 | Safety in Use | 8 |
| 4.4 | Lighting..... | 8 |
| 5. | COST..... | 9 |
| 5.1 | Budget Estimate in Current Year (incl. Whole Life Cost)..... | 9 |
| 6. | DESIGN ASSESSMENT CRITERIA..... | 10 |
| 6.1 | Actions..... | 10 |
| 6.1.1 | Permanent Actions | 10 |
| 6.1.2 | Snow, Wind and Thermal Actions..... | 10 |
| 6.1.3 | Actions relating to Normal Traffic..... | 10 |
| 6.1.4 | Actions relating to Abnormal Traffic..... | 10 |
| 6.1.5 | Footway Live Loading..... | 10 |
| 6.1.6 | Provision for Exceptional Abnormal Loads | 10 |
| 6.1.7 | Accidental Actions | 10 |
| 6.1.8 | Actions during Construction..... | 10 |
| 6.1.9 | Any Special Loading not Covered Above..... | 10 |
| 6.2 | Authorities Consulted..... | 10 |
| 6.3 | Proposed Departures from Standards..... | 11 |
| 6.4 | Proposed Methods of Dealing with Aspects not Covered by Standards | 11 |
| 7. | GROUND CONDITIONS | 12 |
| 7.1 | Geotechnical Summary..... | 12 |
| 8. | DRAWINGS & DOCUMENTS | 13 |
| 8.1 | List of All Documents Accompanying the Submission | 13 |

APPENDIX 1 Photographs

APPENDIX 2 Drawings

APPENDIX 3 Relevant Extracts from Ground Investigation Report

APPENDIX 4 Other Relevant Documentation/Reports

1. INTRODUCTION

1.1 Brief

Roughan & O'Donovan-TYPSA have prepared this report for the National Transportation Authority (NTA) for the design of the Ringsend 04 walkway as part of the Busconnects Infrastructure Delivery – Project D.

1.2 Background Information

The proposed scheme for Ringsend to City Centre aims to provide enhanced walking, cycling and bus infrastructure, which will enable and deliver efficient, safe and integrated sustainable transport movement to this corridor.

Priority for buses is provided along the entire route consisting primarily of dedicated bus lanes in both directions, with alternative measures proposed at particularly constrained locations along the scheme. Cycle tracks and footpaths will also be provided separated from the bus lanes. At constrained points, it is necessary to build new structures or widen the existing ones to provide adequate space for the new road layout.

This document relates to the Preliminary Design Report in respect of the Ringsend 04 walkway in accordance with DN-STR-03001 (April 2019). A location drawing of this structure within the scheme is provided in the Appendices, as well as a general arrangement drawing of the proposed bridge.

This structure is being proposed to increase the available space for pedestrians on Custom House Quay.

Photographs of the structure are included in Appendix 1.

1.3 Previous Studies

Reports prepared and published for this structure to date include:

- BCIDD-ROT-STR-ZZ_0016-XX_00-RP-CB-0014 – Structures Options Report: Ringsend 04
- BCID-ROT-ERW-GI_0016-RP-CR-0001 – Geotechnical Interpretive Report: Ringsend Corridor

2. SITE & FUNCTION

2.1 Site Location

The Ringsend 04 walkway is situated alongside the proposed White Water Rafting Centre buildings at Custom House Quay, immediately east of the Sean O'Casey pedestrian bridge. The site location plan is included in Appendix 2.

2.2 Function of the Structure

The objective of the new structure is to provide a pedestrian walkway alongside Custom House Quay, where the Bus Connects proposal involve the provision of bus lanes and cycle lane creating a pinch-point in terms of fitting these new lanes into the existing space while leaving space for pedestrians. It will also create an interesting and attractive space over the River Liffey.

2.3 Choice of Location

The location of the structure was chosen to facilitate the proposed Ringsend to city centre corridor taking into account the layout and roadway requirements in terms of space for proposed lanes, footpaths, maximum slopes, etc.

2.4 Site Description and Topography

The site of the proposed structure is located in an urban area, close to Dublin's city centre. Consequently, there are existing buildings and infrastructure in the direct vicinity of the new structure. The aforementioned White Water Rafting Centre East & West buildings are new buildings that will be adjacent to the proposed walkway, and its foundations will be used as the proposed walkway's support.

2.5 Vertical and Horizontal Alignments

Horizontal and vertical road alignments at the bridge location are described below. The proposed general arrangement drawings can be seen in Appendix 2.

Horizontal Alignment

The walkway is running parallel to Custom House Quay.

Vertical Alignment

The proposed vertical alignment at the location of the walkway follows the alignment of the existing road.

2.6 Cross-Sectional Dimensions on the Alignments

The proposed mainline cross sections at the structure location are shown in Table 2.1. and Table 2.2.

Table 2.1: Ringsend 04 Cross-Section (West area)

| Parameter | Value |
|-------------------------|---------------|
| Footpath | 6.00m |
| Out-to-Out Width | 6.00 m |

Table 2.2: Ringsend 04 Cross-Section (East area)

| Parameter | Value |
|-------------------------|---------------|
| Footpath | 4.25 m |
| Out-to-Out Width | 4.25 m |

2.7 Existing Underground and Overground Services

A list of the existing services located in close proximity to the Ringsend 04 bridge is outlined below.

Low and Medium Voltage Electricity Lines

ESB low voltage underground lines are present in the vicinity of the structure's location. These may need to be diverted following discussions with ESB.

High Voltage Electricity Lines

Desktop services tracking to date indicate low and medium voltage underground lines in the vicinity of the structure which may need to be diverted following discussions with the ESB. There appear to be no high voltage lines, however, these will need to be verified by the Contractor on site.

Telecommunications

No conflicts were found in the vicinity of the structure; however, these will need to be verified by the Contractor on site.

Water Supply

Water mains are present in the vicinity of the structure's location. It is not envisaged any disruption/affection to these services. Ongoing discussions with Irish Water will be in place.

Gas Networks

No conflicts were found in the vicinity of the structure; however, exact locations will need to be verified by the Contractor on site.

2.8 Geotechnical Summary

The existing site investigation information for the area has been taken from the Geological Survey of Ireland (GSI) website and the British Geological Survey (BGS) website, including the Quaternary and Bedrock Geology of Dublin and Depth of Bedrock digital maps.

At the date of this report there is a GI contract available that aims to assess the geology of the site and determine the ground properties and conditions to enable the design of Bus Connects Core Bus Corridors.

2.9 Hydrology and Hydraulic Summary

The footbridge will have minimal effect on the hydrology in the area. Although it is a cantilever footpath over River Liffey, this will not be affected as it is well above the water level.

2.10 Archaeological Summary

An Environmental Impact Assessment Report (EIAR) is currently being prepared that considers archaeological impacts along the mainline alignment.

2.11 Environmental Summary

An Environmental Impact Assessment Report (EIAR) is currently being prepared and it considered the mainline alignment at the structure location and its impact on the environment and local communities. All likely significant environmental effects are assessed, and mitigation is proposed as necessary in the Environmental Impact Assessment Report.

3. STRUCTURE & AESTHETICS

3.1 General Description of Recommended Structure

The Ringsend 04 walkway shall be a steel elevated cantilever walkway with a metal grating deck finish.

3.2 Aesthetic Considerations

The structure form is typical for platforms as there are many walkways similar to the proposed Ringsend 04 within the area. Therefore, it is perfectly integrated into its surroundings.

The width of the walkway meets the intention to design a comfortable footpath, increasing the available space for pedestrian within the area.

Architectural pedestrian parapets are proposed to enhance the overall aesthetic of the structure.

3.3 Proposals for the Recommended Structure

3.3.1 Proposed Category

The proposed walkway is a Category 2 structure.

3.3.2 Span Arrangements

The walkway has an overall length of 121m. The walkway runs parallel to the road with a bend at the eastern end to tie into the existing footpath. Span dimensions are as described on the drawings included in Appendix 2.

3.3.3 Minimum Headroom Provided

Not applicable.

3.3.4 Approaches (incl. Run-on Arrangements)

Not applicable.

3.3.5 Foundation Type

The cantilever walkway is anchored back to the proposed quayside buildings piled foundations and supported on a spreader beam atop the existent quay wall.

3.3.6 Substructure

The steel deck superstructure will be directly supported on the proposed foundations.

3.3.7 Superstructure

The bridge deck will be consisting of steel beams with metal deck surface finished.

3.3.8 Articulation Arrangements (Joints and Bearings)

The structure will be designed to avoid the use of joints and elastomeric bearings. There will be no requirement for any articulation of the structure.

3.3.9 Vehicle Restraint System

All parapets will comply with TII DN-REQ-03034 (historical ref. NRA TD19) and EN 1317. The parapet proposed for this structure is a pedestrian parapet. The parapets shall be provided with infilling such that the parapet will not have footholds.

3.3.10 Drainage

Due to the nature of the deck, it is not necessary to provide additional drainage system as the rainwater will discharge through the opening of the metal deck grating.

3.3.11 Durability

The proposed structure will be designed to achieve the required 120 years design life.

In addition, the specification of suitable materials will enhance durability and reduce the maintenance liability. The following measures are proposed:

- Durable concrete to be provided in accordance with TII DN-STR-03012 (formerly BD 57).
- Exposed concrete to be surface impregnated and buried concrete surfaces to be waterproofed in accordance with the TII Specification for Road Works.
- Contract Documents should make allowance for impregnation and coating of steel beams to prevent corrosion.

3.3.12 Sustainability

Life cycle sustainability assessment (LCSA) has been considered for the detailed design of the proposed bridge to enable a cost-effective and sustainable solution since the construction until the end of service life, with a minimal impact on the surrounding environment.

The proposed structure is a cantilever walkway integral with its substructure, removing the needs for expansion joints and elastomeric bearings. The bridge deck consists of steel structure with a metal finished deck which is considered a more sustainable solution than a similar concrete structure for the following reasons:

- Due to the lightness of steel structures, it will transmit lower load to the foundation, which means the structure can be anchored to the proposed buildings' foundations and be supporting atop the existing quay wall without the need for piling in the river.
- At the end of the structure's service life, the fact that it is made of steel means that it can be 100% recycled, whereas concrete structures need to be taken to a landfill site.

3.3.13 Inspection and Maintenance

The inspection of bridges shall be carried out in accordance with TII procedures by suitably qualified personnel who shall be responsible for providing the relevant equipment and establishing traffic management appropriate to the type of inspection being carried out.

Inspection of most parts of the walkway can be done from deck level. Inspection of the soffit of the proposed walkway shall be carried out from the River Liffey.

Superstructure

Structural steelwork will require regular inspection and maintenance, with major maintenance (paint system) required every 20 years.

Substructures

The substructures consist of in situ reinforced concrete, which should not incur any substantial maintenance costs.

Parapets

The parapet design is yet to be agreed with the Client. Nevertheless, it shall employ materials with low to none maintenance requirements (i.e. glass, galvanised steel parapets, etc.).

4. SAFETY

4.1 Traffic Management during Construction

Traffic management will not be required during construction.

4.2 Safety during Construction

The Designer will comply with the General Principles of Prevention (of accidents) as specified in the First Schedule of the Safety, Health and Welfare at Work (General Application) Regulation and liaise with the Project Supervisor for the Design Stage (PSDP) appointed by the Client and the Project Supervisor appointed for the Construction Stage as required by the "Safety, Health and Welfare at Work (Construction) Regulations, 2013".

4.3 Safety in Use

Walkway parapets will be designed as pedestrian parapets in accordance with IS EN1317, the headroom and cross section will be designed in accordance with TII DN-GEO- 03036 (historical ref. TD 27).

4.4 Lighting

Lighting under the bridge is not required. Lighting over the bridge will be provided in accordance with BS-5489-1.

5. COST

5.1 Budget Estimate in Current Year (incl. Whole Life Cost)

The estimated cost for the construction of the bridge is 1,670,000€

Basis of Cost Estimate

The cost estimate has been produced on the following basis:

- Figures are given in Euro and are based on 2019 rates (excluding VAT) – TII Schedule of Rates 2019 (CC-GMP-00054);
- Excludes land acquisition and rights of way;
- Excludes preliminaries;
- The Construction Cost Estimate does not include for fees associated with the following:
 - Additional SI and Topo;
 - Environmental Assessment;
 - Detailed Design and Checking;
 - Contract Administration;
 - Site Supervision during Construction.

6. DESIGN ASSESSMENT CRITERIA

6.1 Actions

The structure will be designed in accordance with IS EN 1991 Eurocode 1: Actions on Structures and, in particular, Part 1-1: General Actions, Part 1-3: Snow Loads, Part 1-4 Wind Loads, Part 1-5 Thermal Actions, Part 1-6 Execution, Part 1-7 Accidental Actions and IS EN 1991 Part 2 Traffic Loads on Bridges as amended by the relevant Irish National Annexes.

6.1.1 Permanent Actions

The following nominal densities will be adopted:

- Reinforced concrete 25 kN/m³
- Structural steelwork 77 kN/m³
- Pavement 23 kN/m³
- Backfill to structures 20 kN/m³

6.1.2 Snow, Wind and Thermal Actions

Snow action may be ignored due to the geographical location as outlined in IS EN 1990:2002 + NA:2010. Thermal actions Approach 2 will be used in accordance with clause NA.2.3 of the Irish National Annex to IS EN 1991-1-5. Wind load will be assessed in accordance with IS EN 1991-1-4:2005 and the associated National Annex.

6.1.3 Actions relating to Normal Traffic

None.

6.1.4 Actions relating to Abnormal Traffic

None.

6.1.5 Footway Live Loading

The structure will be designed for footway loading in accordance with IS EN 1991-2 load model LM4 (crowd loading). This consists of a uniformly distributed load (q_{fk}) of 5kN/m² and a concentrated load (Q_{fwk}) of 20kN as defined in section 5 of IS EN 1991-2 and the Irish National Annex.

6.1.6 Provision for Exceptional Abnormal Loads

None.

6.1.7 Accidental Actions

Accidental actions will be considered in accordance with I.S. EN 1991-1-7. Accidental presence of vehicles on the bridge in accordance with I.S. EN 1991-2.

6.1.8 Actions during Construction

The design shall take account of any adverse loading during construction as outlined in IS EN 1991-1-6 and its National Annex.

6.1.9 Any Special Loading not Covered Above

None.

6.2 Authorities Consulted

The following is a list of Authorities to be consulted as part of the scheme:

- Local Authorities – Dublin City Council;

- ESB;
- Gas Networks Ireland;
- Irish Water.

6.3 Proposed Departures from Standards

There are no existing departures applied for at this stage of the design process.

6.4 Proposed Methods of Dealing with Aspects not Covered by Standards

Agreed departures to be incorporated into the design – however at this stage no departures have been applied for.

7. GROUND CONDITIONS

7.1 Geotechnical Summary

The existing site investigation information for the area has been taken from the Geological Survey of Ireland (GSI) website and the British Geological Survey (BGS) website, including the Quaternary and Bedrock Geology of Dublin and Depth of Bedrock digital maps.

With regard to the expected riverbed ground conditions a desktop study was carried out to assess same. The study comprised a review of GSI information which had records of several previous site investigations carried out both upstream and downstream of the site. The closest and most relevant of these investigations was carried out by IGSL at the Sean O'Casey bridge location back in 2003 approximately 120m upstream of the boardwalk river piling.

The riverbed ground conditions encountered during this investigation (at the bridge piers) comprised the following:

- 1.6 to 2.2m of soft SILT
- Underlain by 10 to 12m of hard BOULDER CLAY (Glacial Till)
- Underlain by LIMESTONE Bedrock

The 2003 investigation indicated riverbed levels at the northern bridge pier were -7.25m OD (Borehole 4). To give context to this level the top of the quay walls in the area of the quayside buildings are at approximately 3.2m OD.

It was also reviewed the Macken Street Bridge Site Investigation undertaken in 2000. This investigation was approximately 300m downstream. The riverbed level at Borehole MB12 as -7.6m OD. The thickness of Boulder clay however was much less at between 3.4m to 4m with the rock head occurring at a shallower depth.

An intrusive site investigation will therefore be required on the footprint of the 3 river piles to determine the depth of boulder clay.

If the ground conditions are similar to Sean O'Casey then the pile would most likely be founded in the boulder clay. If, however there is shallower rock (as per Macken Street) then a rock socket would be required.

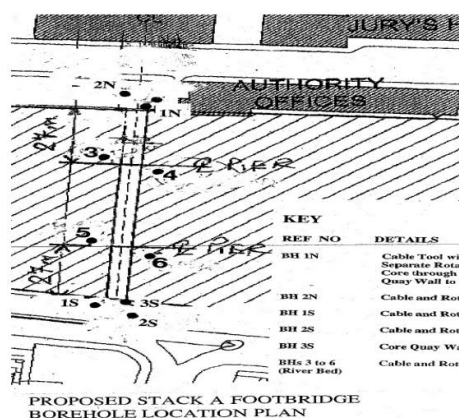


Figure 12.1. 2003 IGSL Site Investigation at the Sean O'Casey Bridge

8. DRAWINGS & DOCUMENTS

8.1 List of All Documents Accompanying the Submission

Appendix 1 – Photographs:

(2No. of photos)

Appendix 2 – Site Location and Drawings

- BCIDD-ROT-STR_KP-0016_XX_00-DR-SS-0001 – CBC 16 Ringsend to City Centre Core Bus Corridor Scheme – Bridges and Retaining Structures - Key Plan
- BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0007 – Ringsend 04 General Arrangement.
- BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0008 – Ringsend 04. Sections

Appendix 3 – Relevant Extracts from Ground Investigation Report

(Not available)

Appendix 4 – Other Relevant Documentation/Reports

(Not Used)

APPENDIX 1 PHOTOGRAPHS

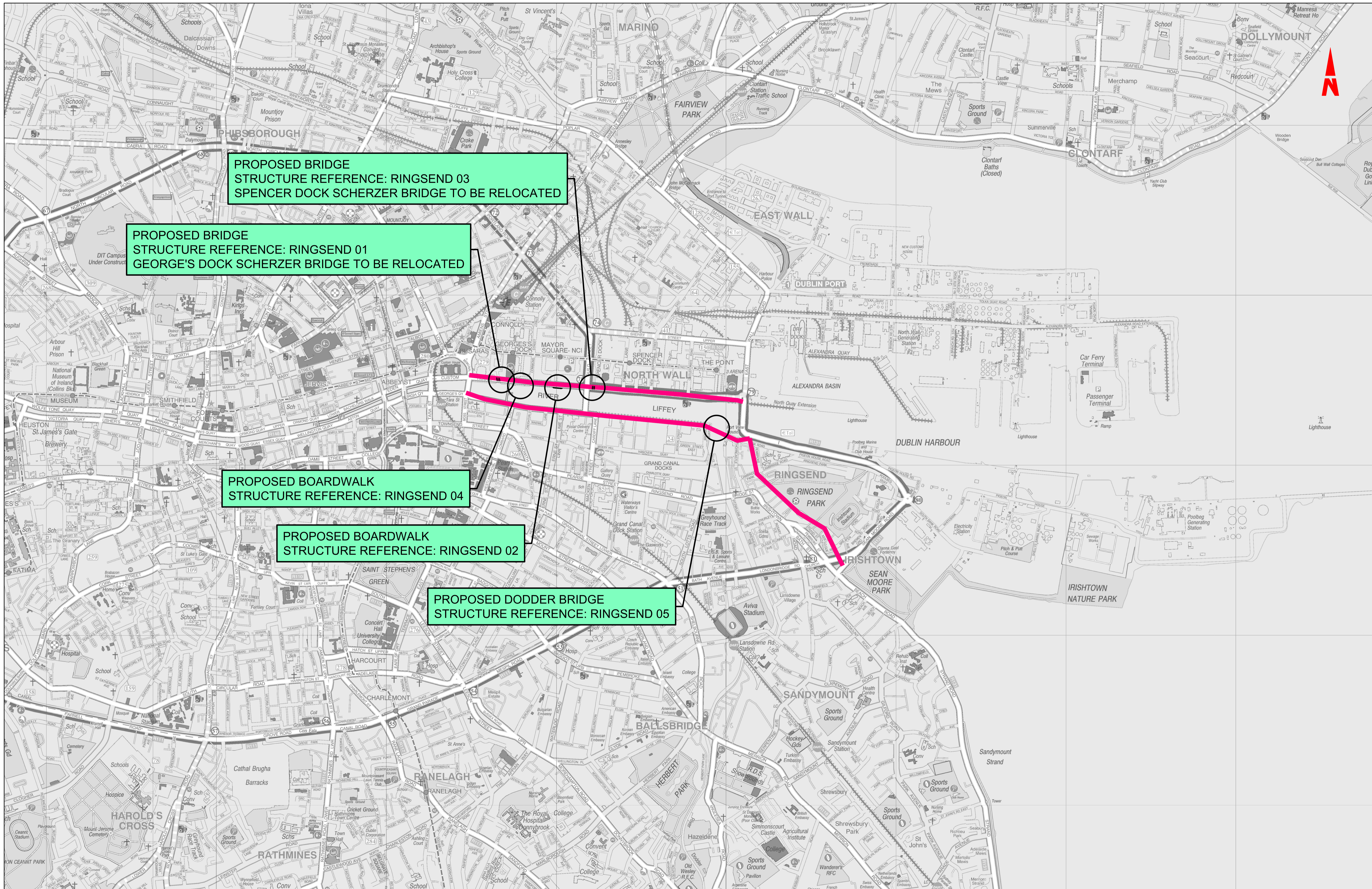


Sean O'Casey Bridge – Looking from Ringsend 04 location



Location of the proposed Ringsend 04 Walkway – Looking from East side

APPENDIX 2 DRAWINGS



PROPOSED BRIDGE
STRUCTURE REFERENCE: RINGSEND 03
SPENCER DOCK SCHERZER BRIDGE TO BE RELOCATED

PROPOSED BRIDGE
STRUCTURE REFERENCE: RINGSEND 01
GEORGE'S DOCK SCHERZER BRIDGE TO BE RELOCATED

PROPOSED BOARDWALK
STRUCTURE REFERENCE: RINGSEND 04

PROPOSED BOARDWALK
STRUCTURE REFERENCE: RINGSEND 02

PROPOSED DODDER BRIDGE
STRUCTURE REFERENCE: RINGSEND 05

Disclaimer
 a. © National Transport Authority (NTA) 2020. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the title block. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2020/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, which every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



| Rev | Date | Dn | Chk'd | App'd | Description |
|-----|------------|-----|-------|-------|---------------------------------------|
| L01 | 02/07/2021 | JGE | EFD | SMG | ISSUE FOR APPROVAL |
| L02 | 09/02/2022 | JGE | EFD | SMG | ISSUE FOR PHASE 3: PRELIMINARY DESIGN |

W.I.P.

Client
NTA
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer
IJROD
 IODRAN & O'DRISCOLL
 TVPSA

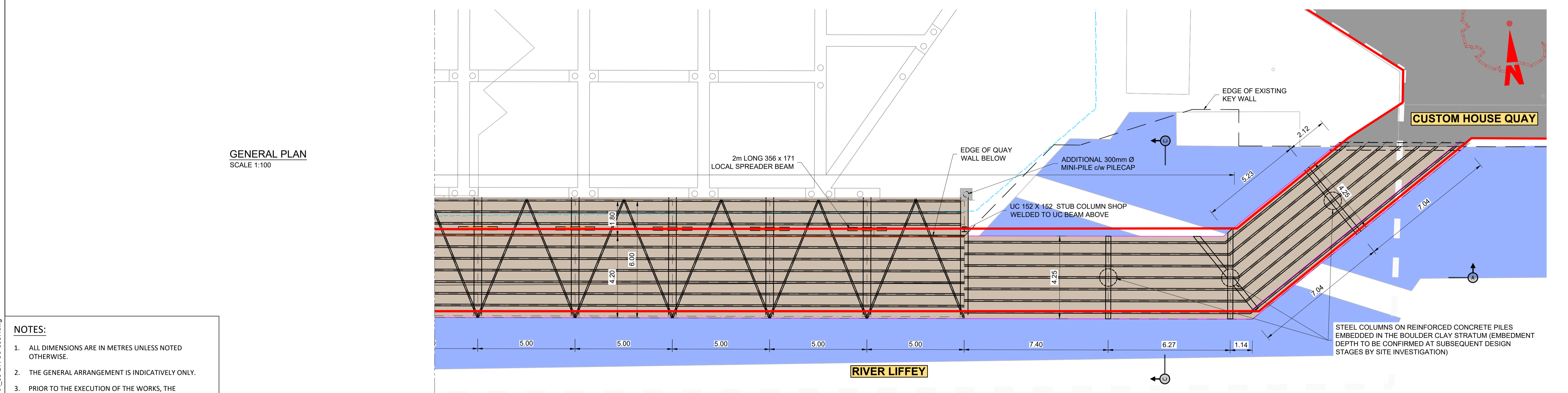
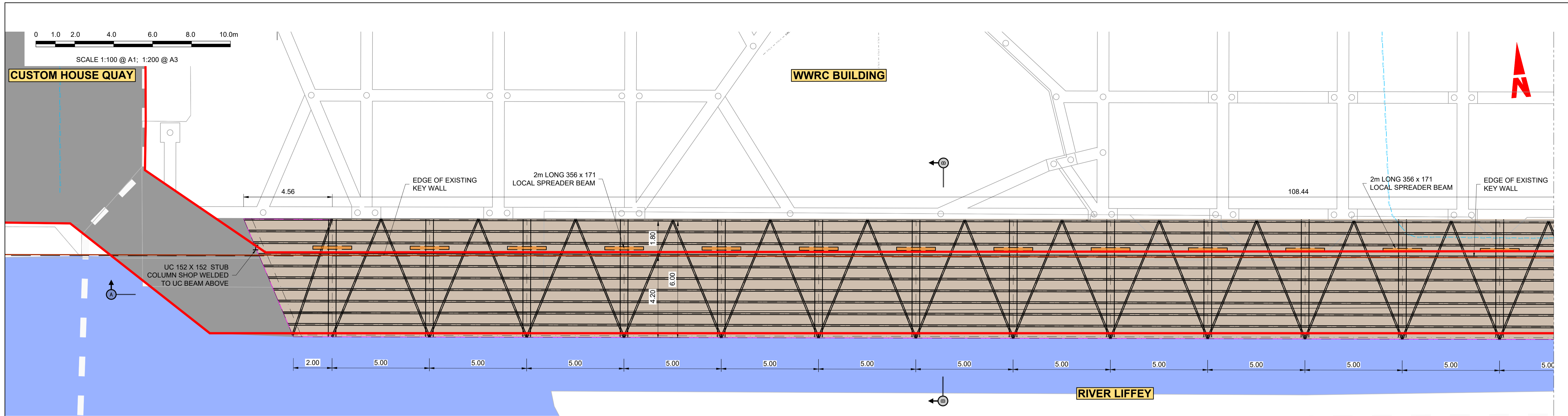
Date: 09/02/2022
 Scale: 1:10000 @ A1
 1:20000 @ A3

Drawn: JGE
 Checked: EFD
 Approved: SMG

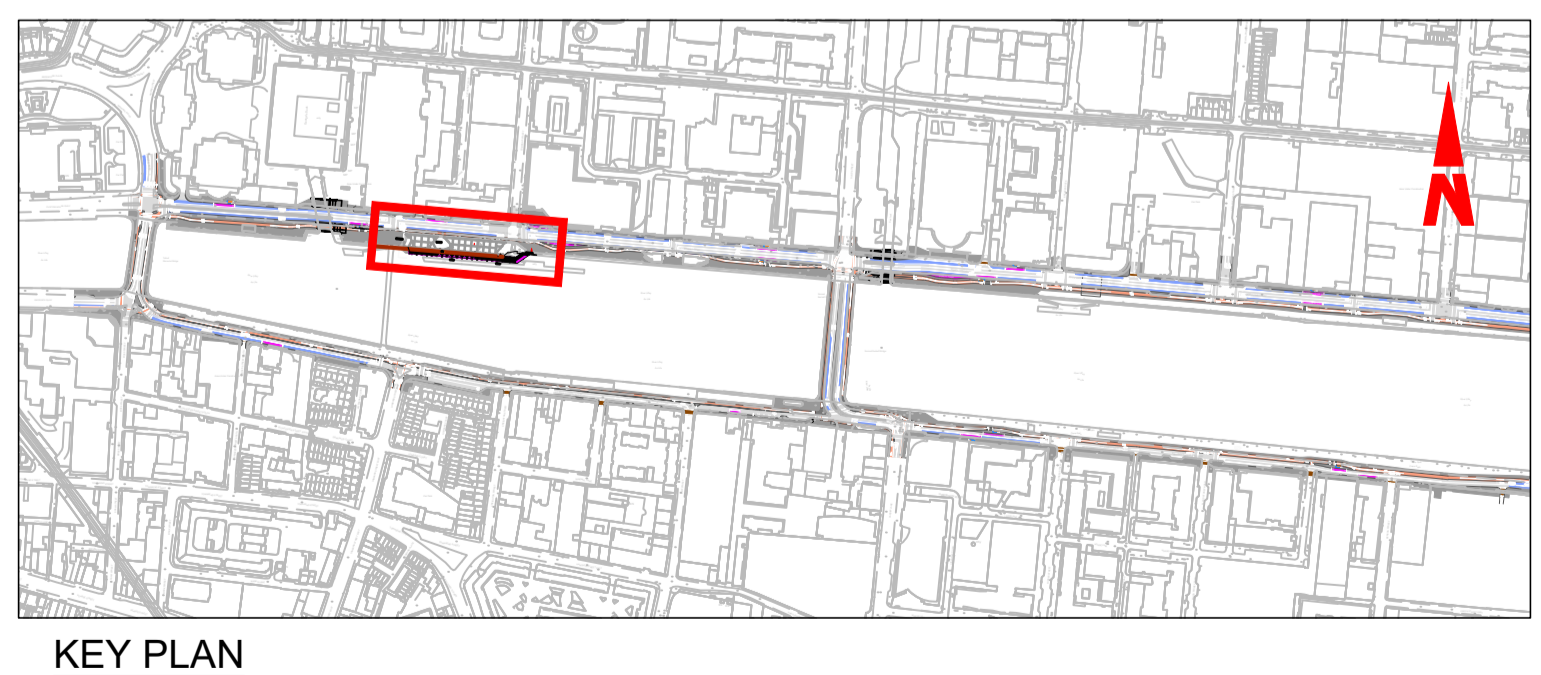
Project Code: BCIDD
 Originator Code: NTA

QMS Code

| Programme Title | | | |
|--|--|--------------|--------|
| BUSCONNECTS DUBLIN | | | |
| CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | |
| Drawing Title | | | |
| CBC 16 | | | |
| RINGSEND TO CITY CENTRE CORE BUS CORRIDOR SCHEME | | | |
| BRIDGES & RETAINING STRUCTURES | | | |
| KEY PLAN | | | |
| Drawing File Name | | Sheet Number | Status |
| BCIDD-ROT-STR_KP-0016_XX_00-DR-SS-0001 | | 01 of 01 | A |
| Rev | | | |
| L02 | | | |



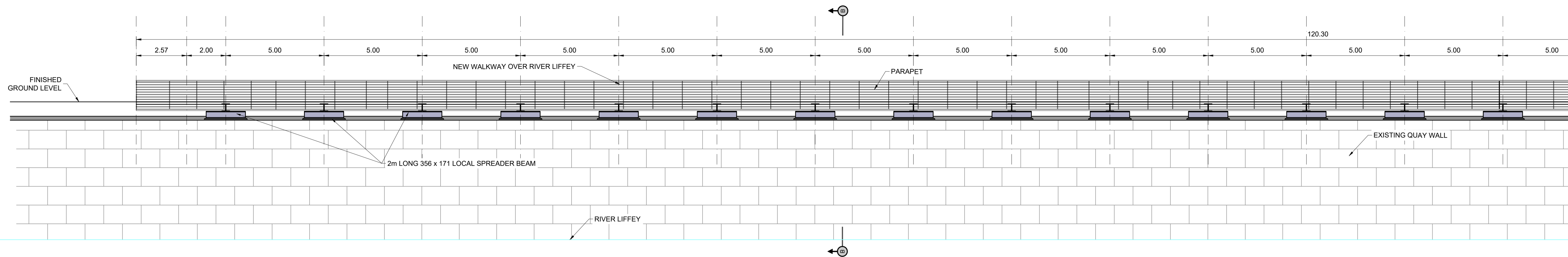
- NOTES:**
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 2. THE GENERAL ARRANGEMENT IS INDICATIVELY ONLY.
 3. PRIOR TO THE EXECUTION OF THE WORKS, THE CONTRACTOR MUST CHECK ON SITE THE GEOMETRY AND DIMENSIONS OF THE EXISTING STRUCTURAL ELEMENTS. SHOULD THE CONTRACTOR FIND ANY DISCREPANCY WITH THOSE INDICATED IN THE DRAWINGS, THEN IT SHALL BE COMMUNICATE IMMEDIATELY TO THE PROJECT DIRECTOR PRIOR COMMENCING CONSTRUCTION WORKS.
 4. TEMPORARY FENCING SHOULD BE ERECTED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 5. ALL BURIED SURFACES TO BE WATERPROOFED IN ACCORDANCE WITH THE TII SPECIFICATION FOR ROAD WORKS.
 6. FOUNDATION DETAILS SUBJECT TO CONFIRMATION OR RECEIPT OF G.I.
 7. SAFETY BARRIER IN ACCORDANCE WITH DN-REG-03034
 8. SERVICES SHOWN INDICATIVELY ONLY. THE CONTRACTOR SHALL IDENTIFY THE SERVICES ON SITE PRIOR COMMENCING CONSTRUCTION WORKS.



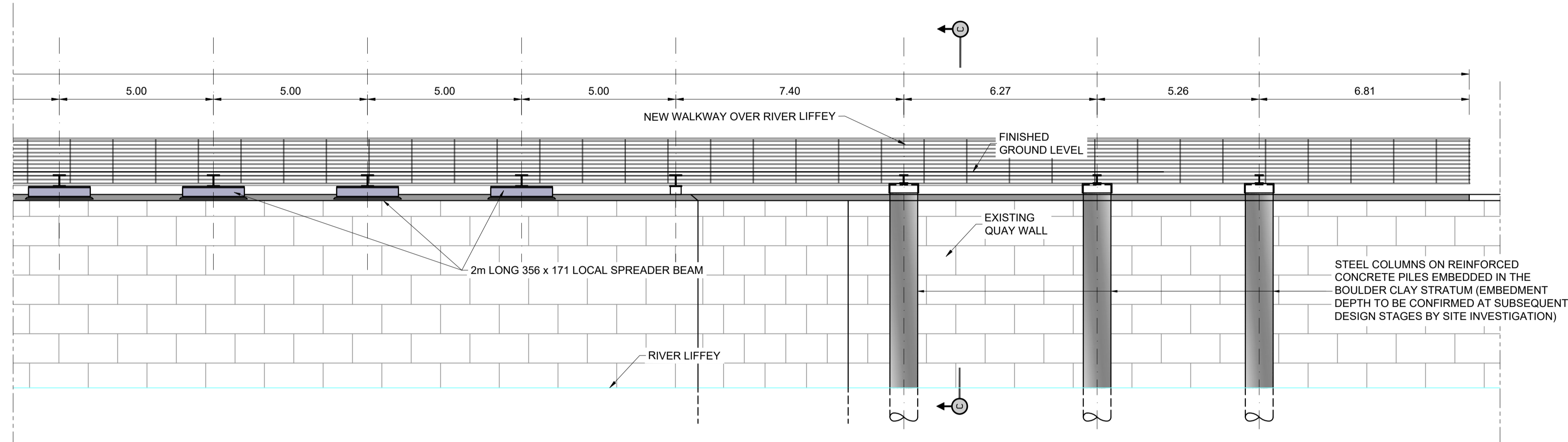
| | | | | | | | | | | | | | | |
|--|--|---|--|--|--|---|--|---|--|--|---|-------------------------|-----------------------|--|
| <p>Disclaimer</p> <p>a. © National Transport Authority (NTA) 2020. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.</p> <p>b. This drawing is to be used for the design element identified in the titlebox. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.</p> <p>c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2020/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSI Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.</p> <p>d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.</p> <p>e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.</p> | | <p>Rev Date Dwn Chk'd App'd</p> <p>L01 02/07/2021 JGE EFD SMG</p> <p>L02 16/11/2021 JGE EFD SMG</p> | | <p>Description</p> <p>OPTION REPORT</p> <p>PRELIMINARY DESIGN REPORT</p> | | <p>Client</p> <p>NTA</p> <p>Údarás Náisiúnta Iompair</p> <p>National Transport Authority</p> | | <p>Engineering Designer</p> <p>IROD</p> <p>TYPSA</p> | | | <p>Programme Title</p> <p>BUSCONNECTS DUBLIN</p> <p>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p> | | | |
| <p>Date</p> <p>16/11/2021</p> | | <p>Scale</p> <p>1:100 @ A1</p> <p>1:200 @ A3</p> | | <p>Drawn</p> <p>JGE</p> | | <p>Checked</p> <p>EFD</p> | | <p>Approved</p> <p>SMG</p> | | <p>Drawing Title</p> <p>RINGSEND TO CITY CENTRE CORE BUS CORRIDOR SCHEME</p> <p>STRUCTURES</p> <p>RINGSEND 04. GENERAL ARRANGEMENT</p> | | | | |
| <p>Project Code</p> <p>BCIDD</p> | | <p>Originator Code</p> <p>ROT</p> | | <p>QMS Code</p> | | <p>Drawing File Name</p> <p>BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0007</p> | | | | <p>Sheet Number</p> <p>01 of 01</p> | | <p>Status</p> <p>S3</p> | <p>Rev</p> <p>L02</p> | |

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

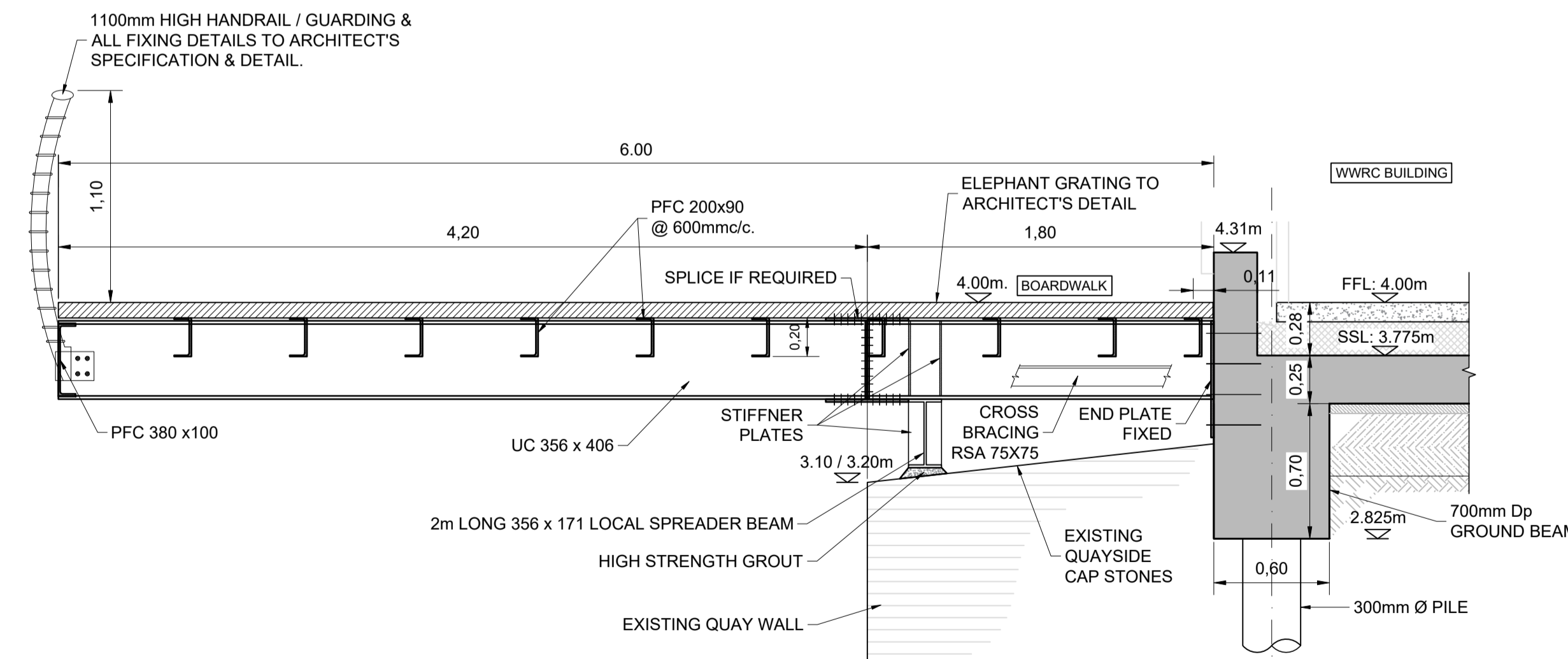
I:\projects\ypsa.es\RD6823-WP\RS-2-GRPH\DRW\16-RINGSEND\BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0007.dwg



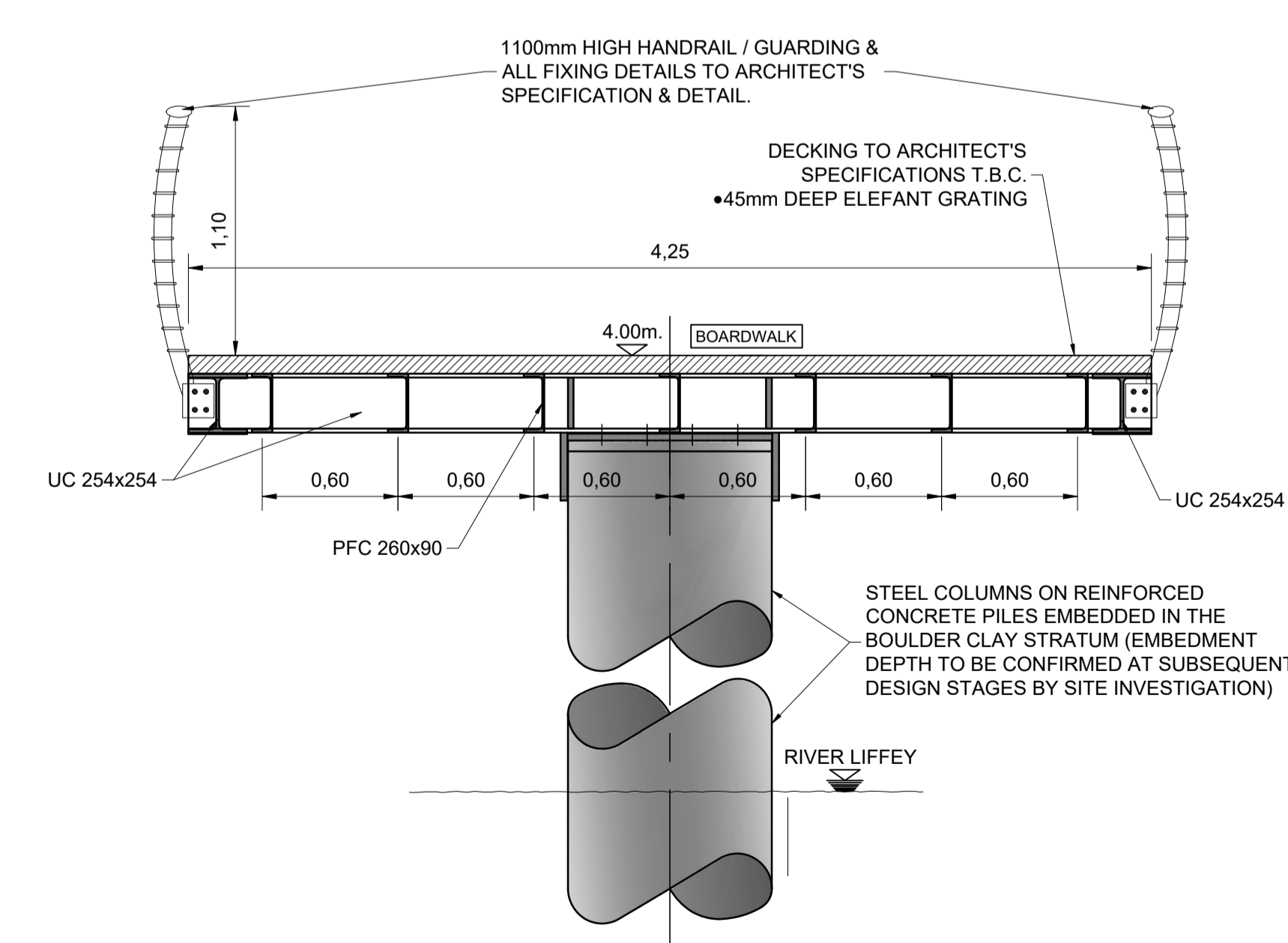
SECTION A-A. ELEVATION VIEW
SCALE 1:100



SECTION A-A. ELEVATION VIEW
SCALE 1:100



SECTION B-B. TYPICAL SECTION
SCALE 1:25



SECTION C-C. TYPICAL SECTION
SCALE 1:25

- NOTES:**
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 2. THE GENERAL ARRANGEMENT IS INDICATIVELY ONLY.
 3. PRIOR TO THE EXECUTION OF THE WORKS, THE CONTRACTOR MUST CHECK ON SITE THE GEOMETRY AND DIMENSIONS OF THE EXISTING STRUCTURAL ELEMENTS. SHOULD THE CONTRACTOR FIND ANY DISCREPANCY WITH THOSE INDICATED IN THE DRAWINGS, THEN IT SHALL BE COMMUNICATED IMMEDIATELY TO THE PROJECT DIRECTOR PRIOR COMMENCING CONSTRUCTION WORKS.
 4. ALL BURIED SURFACES TO BE WATERPROOFED IN ACCORDANCE WITH THE TII SPECIFICATION FOR ROAD WORKS.
 5. FOUNDATION DETAILS SUBJECT TO CONFIRMATION OR RECEIPT OF G.I.
 6. SAFETY BARRIER IN ACCORDANCE WITH SAFETY BARRIER IN ACCORDANCE WITH DN-REG-03034
 7. STRUCTURAL STEEL ELEMENTS:
- STEEL S355
 8. SERVICES SHOWN INDICATIVELY ONLY. THE CONTRACTOR SHALL IDENTIFY THE SERVICES ON SITE PRIOR COMMENCING CONSTRUCTION WORKS.

Disclaimer
a. © National Transport Authority (NTA) 2020. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
b. This drawing is to be used for the design element identified in the title block. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2020/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSI Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.
d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.
Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



| Rev | Date | Drn | Chk'd | App'd | Description |
|-----|------------|-----|-------|-------|---------------------------|
| L01 | 02/07/2021 | JGE | EFD | SMG | OPTION REPORT |
| L02 | 16/11/2021 | JGE | EFD | SMG | PRELIMINARY DESIGN REPORT |

Client
NTA
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer
PROD
TYPSA

| Programme Title | | | | |
|---|--|--------------|--------|-----|
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| 01 RINGSEND TO CITY CENTRE CORE BUS CORRIDOR SCHEME STRUCTURES RINGSEND 04. SECTIONS | | | | |
| Drawing File Name | | Sheet Number | Status | Rev |
| BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0008 | | 01 of 01 | S3 | L02 |

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

I:\projects\ypsa.es\RD682\3-WPR\3-2-GRPH\DRW\16-RINGSEND\BCIDD-ROT-STR_ZZ-0016_XX_00-DR-SS-0008.dwg

APPENDIX 3
RELEVANT EXTRACTS FROM GROUND INVESTIGATION REPORT

(Not available)

APPENDIX 4 OTHER RELEVANT DOCUMENTATION/REPORTS

(Not used)