

Eimear Reilly

From: Eimear Reilly
Sent: Wednesday 10 May 2023 10:12
To: LandUsePlanning@tii.ie
Subject: RE: TII Submission - ABP ref no: NA06S.316119 DART+ South West Electrified Railway Order 2022

Good morning Tara

The Board acknowledges receipt of your email. A formal acknowledgement of receipt of your submission will issue in due course.

Kind regards

Eimear

-----Original Message-----

From: SIDS <sids@pleanala.ie>
Sent: Wednesday, May 10, 2023 9:59 AM
To: Eimear Reilly <e.reilly@pleanala.ie>
Subject: FW: TII Submission - ABP ref no: NA06S.316119 DART+ South West Electrified Railway Order 2022 -----Original Message-----
From: Bord <bord@pleanala.ie>
Sent: Wednesday, May 10, 2023 9:49 AM
To: SIDS <sids@pleanala.ie>
Subject: FW: TII Submission - ABP ref no: NA06S.316119 DART+ South West Electrified Railway Order 2022 -----Original Message-----
From: Landuse Planning <LandUsePlanning@tii.ie>
Sent: Wednesday, May 10, 2023 9:38 AM
To: Bord <bord@pleanala.ie>
Cc: Landuse Planning <LandUsePlanning@tii.ie>
Subject: TII Submission - ABP ref no: NA06S.316119 DART+ South West Electrified Railway Order 2022

To whom it may concern,

I attach TII's Submission related to DART+ South West Electrified Railway Order 2022, ABP Ref no.: NA06S.316119.

I would appreciate acknowledgement of receipt.

Regards

Tara Spain
Head of Land Use Planning .
Transport Infrastructure Ireland.
Email: LandUsePlanning@tii.ie

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An Bord Pleanála
64 Marlborough Street
Dublin 1
D01V902

By email: bord@pleanala.ie

Dáta|Date 10 May 2023

Ár dTag|Our Ref. TII23-122375

Do dTag|Your Ref. NA06S.316119

Re: DART+ South West Electrified Railway Order 2022

Dear Sir/Madam,

Transport Infrastructure Ireland (TII) acknowledges receipt of referral of the DART+ South West Railway Order application (Hazelhatch & Celbridge Station to Heuston Station, and Heuston Station to Glasnevin) by Córas Iompair Éireann.

TII's observations seek to address the safety, capacity and strategic function of the national road network and Luas in accordance with TII's statutory functions and the provisions of official policy. Future Luas, Metro, Dart, Rail and BusConnects alignments are a matter for the NTA. To that effect TII provides the following commentary for consideration.

Project Ireland 2040, National Development Plan, 2021 – 2030, outlines the key sectoral priority of maintaining Ireland's existing national road network to a robust and safe standard for users. Government matches the NDP to *National Strategic Outcome no. 1. Compact Growth, 2. Enhanced Regional accessibility, 4. Sustainable Mobility, 6. High-quality International connectivity, and 8. Transition to a Low Carbon and Climate Resilient Society* of the National Planning Framework. The significant investment required for Luas to 2040 as part of asset protection is further reflected in the National Investment Framework for Transport in Ireland (NIFTI).

The requirement to protect the capacity, safety and efficiency of the existing national road network is reflected in the *Eastern & Midland Regional Assembly Regional Spatial & Economic Strategy, 2019-2031*, specifically at Section 5.6 Integrated Land Use and Transportation Guiding Principle; "*The strategic transport function of national roads and associated junctions should be maintained and protected.*"

Having regard to government policy, this observation identifies the interactions of the proposed railway order with the national road and light rail networks, sets out potential impacts arising and their appropriate treatment in order the proposed Dart + South West scheme shall proceed complimentary to, and integrated with the national road network and Luas.

Format of submission:

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1.0 SUMMARY OF POTENTIAL INTERACTION OF THE PROPOSED RAILWAY ORDER WORKS WITH THE NATIONAL ROAD AND LIGHT RAIL NETWORKS.

The Railway Order application contains a Draft Railway Order alongside a Railway Order Book of Reference and Railway Order Drawings. The Railway Order Drawings are in 3 Books; *Book 1 Railway Works Plan*, *Book 2 Property Plan* and *Book 3 Structures Plans* (categorised into *General Arrangements*, *Linear Works* and *Specific Locations*). In Books 1 and 2 there are a total of 17 no. drawing sheets, numbered to match nominated areas where sheets 1 to 14 capture works proposed from Hazelhatch & Celbridge Station to Dublin City Centre (Heuston Station); and sheets 15 to 17 for works from Heuston station to Glasnevin. The proposed Railway Order project is divided into 4 no. zones (Zone A to D) in the EIAR submitted with the Railway Order application.

The proposed Railway Order works will interact with the national road network schemes carriageways and structures, and the light rail network tramways, tramstops and associated under and overground services at three locations:

- at the M50 between junctions 7 (with the N4) and 9 (with the N7),
- at the eastern side of Heuston Station where Luas Red Line runs and Heuston Tramstop is located, and
- at the *Royal Canal and Luas Twin Arch bridge under which the railway line travels and over which Luas Green Line, the Royal Canal, and Royal Canal Way travel.*

A summary of identified interactions is at table 1.

Table 1 Summary of interactions of proposed railway order with the national road and light rail networks

| Proposed Dart + South West Geographical Zones | | Proposed Dart + South West Railway Works Plan No. (Dwg. No.) | Summary National Road or Light Rail interface |
|--|---|---|--|
| Zone A | <i>Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station</i> | Works Layout Plan No. WP 001 (Dwg. No. DP-04-23-DW-RO-TTA-18801) | <p>Identified interface with the M50 at and in the vicinity of Ronanstown Railway Bridge over which the M50 travels.</p> <p>Proposed temporary construction compound and proposed permanent substation and substation compound indicated along the western side of the M50 adjacent to M50 Ronanstown Railway Bridge (TII Structure ID IC-M50-010.00).</p> <p>Works are proposed to the rail line under the M50 bridge at this location, including parapet walling to the bridge (identified in the submitted application as <i>M50 Motorway Bridge ref. OBC10A</i>).</p> |
| Zone C | <i>Heuston Yard & Station (incorporating new Heuston West Station)</i> | 002 - Works Layout Plan No. WP 014 (Dwg. No. DP-04-23-DW-RO-TTA-18815) | <p>Identified interface with Luas Red Line at Heuston Station Tramstop.</p> <p>Proposed works to Heuston Station accesses whose eastern elevation and accesses are contiguous with Luas Redline and Heuston Station Tramstop.</p> <p>Includes indication of 'Access point' uncoded) to a compound at Heuston Station adjacent to the southern side of the Luas Line at Sean Heuston Bridge.</p> |
| Zone D | <i>Liffey Bridge to Glasnevin Junction (Phoenix Park Tunnel Branch Line)</i> | 002 - Works Layout Plan No. WP 017 (Dwg. No. DP-04-23-DW-RO-TTA-18817) | <p>Identified interface with Luas Green Line by works to railway line through Royal Canal and Luas Twin Arch railway bridge over which Luas, the Royal Canal, and Royal Canal Way travel.</p> <p>Proposed Track Works and Electrification on rail under bridge over which Luas travels. Identified in the submitted application as <i>Royal Canal and Luas Twin Arch (bridge) ref. OBO8</i>.</p> <p>Track lowering works, excavation and retaining structures and drainage installations under and adjacent to bridge.</p> |

Please see Appendix 1 of this submission for a rendition of the works proposed to occur at or in proximity to the national road and light rail networks as part of the Railway Order.

It is noted that the Draft Railway Order identifies within its Schedules, land, structures, airspace, and substratum that may be acquired on a temporary or permanent basis and rights for access or easements that may be made or extinguished.

Appendix 2 summarises the occurrence of the land parcels identified within the Railway Order at the above TII asset interface locations. In summary:

- The lands adjacent to the M50 upon which a temporary construction compound and permanent electricity substation are to be installed are indicated to be lands owned by Dublin City Council. The *Ronanstown Railway Bridge*, part of the M50, is indicated in Dublin City Council and CIE ownership with an area to the north of the bridge indicated in Dublin City Council, TII and M50 Concession Ltd. (the M50 PPP Company) ownership. Occupiers are not recorded.
- No lands owned or occupied by TII at Heuston Station lie within the scheme boundaries.
- No lands owned or occupied by TII at *Royal Canal and Luas Twin Arch (bridge)* are indicated part of the Scheme, however it is noted that electrification upgrade of the railway line will occur under the bridge over which Luas travels and substratum of land up to the edge of that bridge and the tramway is indicated to be acquired as part of the Scheme.

The proposed works include physical works capable of impacting the national road and light rail networks directly or indirectly and the electrification of railway lines running alongside, under or over the national road and, or light rail network where electromagnetic compatibility (EMC) is required.

It is critical to the safe and efficient operation of the national road and light rail networks during and after the proposed works that any potential impacts of the proposed works and electrified railway lines are adequately mitigated as part of the Railway Order.

TII notes that a Construction Environmental Management Plan (CEMP) at Appendix 5.1 of the submitted EIAR and presents the approach and application of environmental management and mitigation for the construction phase. It is noted that the current documentation states that it does not describe mitigation measures which relate to operation and decommissioning which are provided in the mitigation sections of the individual chapters of the EIAR and summarised at Chapter 27 of the EIAR. TII consider it is appropriate that mitigation for the protection of the national road and light rail networks are recorded in a revised CEMP.

2.0 NATIONAL ROAD NETWORK

One of TII's core functions is to deliver modern, efficient, and safe network of national roads. This part of the TII submission is made having regard to official policy for development at or near national roads as outlined in the DoECLG *Spatial Planning and National Roads Guidelines* for Planning Authorities (2012).

TII as the national roads authority set development guidance and standards for traffic and road assessments and construction that may be necessary by reason of proposed development location, scale, or typology.

Elements of the national road network are operated and managed by a combination of (Public Private Partnerships) PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities in association with TII. Any crossing of the national road network, including by under or over pass will require prior consultation with TII and compliance with all relevant TII standards as detailed within the TII publications website www.tiipublications.ie.

Proposed Railway Order works interactions with the national road network are summarised at Table 1 of this submission. The interaction identified is set out below.

2.1 Proposed Railway Order (Zone A), Interactions with the M50, indicated on Proposed Works Layout Plan 01.

Book 1 of the Railway Order Drawings contains *Works Layout Plan No. WP01* indicates proposed works along the railway line that crosses the M50 the most heavily trafficked national primary national route.

The Railway Scheme crossing of the M50 between junctions 7 (N4) and 9 (N7) is indicated on submitted drawings under *M50 Motorway Bridge ref. OBC10A*. TII records this bridge, part of the M50, as *Ronanstown Railway Bridge (TII Structure ID IC-M50-010.00)*.

TII notes that it is proposed to install a temporary construction compound along the eastern side of the M50 immediately north of *Ronanstown Railway Bridge*. Part of this compound will be permanent utilised to install a proposed substation with welfare facilities.

Book 3 Structures Plans of the proposed *Railway Order Drawings* provides greater details of elements of *Book 1 Works Layout Plans*, grouped into *General Arrangements*, *Linear Works*, and *Specific Locations*. These drawings also form the main part of *Volume 3A Technical Figures* of the submitted EIAR. Table 2 below is a summary of details relating to the works proposed at this section of the M50 within Book 3.

Table 2 Summary of Book 3 Structures Plans proposals in the vicinity of the proposed crossing of the M50 under Ronanstown Railway Bridge

| Proposed Railway Order Drawings, Book 3 - General Arrangement Drawings | | | |
|---|-------------------------|--|--|
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| DP-04-23-DWG-RO-TTA-18848 | VER01 | Construction Compounds Location Overview | Indicates Existing, Main and Satellite Compounds proposed for use during construction and operation phases of the scheme. <ul style="list-style-type: none">Indicates a Main Compound ID CC-SUB-3A-21363-A, ref. Park West (Substation)Indicates a Main Compound ID CC-SET-3A-21363-A, ref. Park West |

| Proposed Railway Order Drawings, Book 3 - Linear Works Drawings | | | |
|---|-------------------------|---|---|
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| <i>DP-04-23-DWG-RO-TTA-18895</i> | <i>01</i> | <i>Boundary Treatment M50 And Park West Sheet 10 of 17</i> | <ul style="list-style-type: none"> • <i>Replace existing M50 parapets [on M50 Ronanstown Railway Bridge] to provide a minimum height of 1.8m and IPX2 rated</i> • <i>New 3.6m high palisade fence for new Park West substation compound (include access gates</i> • <i>Indicates the Ronanstown Railway Bridge as M50 Motorway Bridge (OBC10A)</i> |
| Proposed Railway Order Drawings, Book 3 - Specific Drawings (no. 04 Park West) | | | |
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| <i>DP-04-23-DWG-RO-TTA-18856</i> | <i>01</i> | <i>Park West Substation Building Location Plan and Layout</i> | <ul style="list-style-type: none"> • <i>Indicates single storey substation with welfare facilities building whose rear (western) elevation runs alongside the M50.</i> • <i>Further indicates possible route of 2 x 38kV incoming supplies from ESB to be confirmed and palisade boundary fencing.</i> |
| <i>DP-04-23-DWG-RO-TTA-18857</i> | <i>01</i> | <i>Park West Substation Building Plan and Elevations</i> | <ul style="list-style-type: none"> • <i>Indicates single storey substation with welfare facilities building</i> |

2.1.1 M50 Ronanstown Railway Bridge (TII Structure ID IC-M50-010.00), identified in submitted plans as M50 Motorway Bridge ref. OBC10A.

As noted at the outset and summarised at Appendix 2 of this submission, *Book 2 Property Plans* of the Railway Order Drawings indicates that the bridge may be subject to temporary possession.

This bridge is part of the M50 which is subject to a PPP maintenance contract over the area of the national road reservation. Consultation via Transport Infrastructure Ireland (TII), with the PPP Contractors is required, in relation to any works proposed that affect the motorway and national roads and associated junctions in terms of operational requirements such as timetabling.

The M50, including this bridge, is a critical part of the motorway and national primary road network. Therefore, potential construction and operation stage impacts on the safety, capacity and efficiency of the national road network must be carefully coordinated and managed in consultation with the Network Management section of Transport Infrastructure Ireland.

The submitted EIAR at Chapter 5 Construction Strategy identifies the M50 Ronanstown Railway Bridge as EIAR structure ref. OBC10A. In *Table 5.4 Structures within the Zone Requiring Intervention* of the EIAR, the intervention recorded for the bridge is "Parapets to be upgraded to meet safety requirements" subject to "Note 1" as follows:

"Note 1: The Project Team has carried out Technical Engagement with TII in relation to the M50 Motorway Bridge. The proposed works will:

- *Comply with TII Publications (Standards) in accordance with relevant TII Publications (Technical) for any works that impact the national road pavement, structures and infrastructure including drainage.*
- *Consultation with the M3 PPP Contractor and fulfilment of requirements to complete their 3rd party protocols, via the relevant road authorities and TII will be completed in advance of proposed works where access for the construction period and any subsequent monitoring and maintenance*

in relation to any works proposed, including temporary and permanent signage, that affect the national road and associated junctions in terms of operational requirements, timetabling, etc.

Continued Consultation with TII will take place in connection with the proposed works to ensure that all necessary approvals will be in accordance with TII requirements."

TII acknowledges the above note and recorded "technical engagement" with TII undertaken in 2022 under TII ref. TII22-120134 which was subsequent to TII EIAR Scoping response issued in December 2021 under TII ref. TII21-116127.

The Railway Order proposes works consisting of the electrification of the railway line. In this regard, works no. 10.02 of the proposed Order is *"Works to M50 Road Bridge (OBC10A) to facilitate Overhead Line Electrification comprising bracket fixings to underside of bridge."* TII observes that the submitted application does not appear to include depictions or descriptions of the methodology for, or type of fixings proposed to the underside of the M50 Ronanstown Railway Bridge which like parapet works is a proposed direct intervention to this bridge, an essential part of the M50. This is of particular concern to TII as the Authority is unable to assess potential impact from fixings and is unable to identify in the application, a similar mitigation commitment for these fixings as exists for the parapet works to the bridge.

As already advised as part of technical engagement under TII ref. TII22-120134., it is appropriate and necessary for the protection of the national road network function that all of the works proposed consisting of parapet and underside fixings to the *M50 Ronanstown Bridge* (ref. OBC10A in the application) be captured, undergo detailed design and execution in accordance with TII Publications standards prior to any decision being made on this application.

2.1.2 Proposed Temporary construction compound and *Park West Substation* Compound adjoining M50, identified in submitted plans as M50 Motorway Bridge ref. OBC10A.

Four new substations are proposed for Zone A. These include *Park West Substation* described at subsections 4.6.8.3.4. and 5.3.5.4 of the submitted EIAR proposed on a rectangular site perpendicular to the railway line to the south, with the M50 forming the western boundary of the along which the rear elevation of the substation is indicated to run. Further proposed to the immediate north and east of the substation compound are temporary construction compound areas as described in subsection 5.3.9.8 of the submitted EIAR. The proposed substation is single storey, with no rear (M50 side) openings to hold electrical equipment and welfare facilities. Boundary fenceline treatments are indicated for both the permanent and temporary compounds alongside the M50 but it is unclear where and how these will be installed relative to the existing boundary treatment of the M50 at this location which is part of the motorway and must be protected.

The drainage and boundary treatment proposals part of the proposed works have the potential to impact on the capacity and efficiency of the drainage regime and existing boundary treatment provided for the national road network.

Based on the information submitted with the application, TII are unable to ascertain or evaluate whether national road interactions within the PPP M50 maintained area, and all associated infrastructure assets including lighting, signage, boundary treatments and drainage arrangements have been considered appropriately in the proposals. In addition, TII advise that this element of the proposal was not outlined in pre-planning discussions.

TII recommends that prior to a decision being made on this Order that the construction management and maintenance approaches for the temporary construction compound and *Park West Substation* Compound adjoining M50, identified in submitted plans as M50 Motorway Bridge ref. OBC10A are outlined in sufficient detail to demonstrate the safeguarding of national road infrastructure is in accordance with TII Publications. Consultations with TII will be required.

2.2 Potential impact of proposal interactions with the M50, at M50 Ronanstown Railway Bridge (application ref. ref. OBC10A) and by proposed Park West Substation and concordant construction compounds.

The proposed railway order works to the M50 Ronanstown Bridge (identified as structure ref. OBC10A in the submitted application) include proposed increase in parapet heights and installation of fixings to the underside of the bridge deck. This bridge is part of the M50 national road network. In addition, the proposed Park West Substation and its compound and adjoining temporary construction compound are indicated located along the eastern side of the M50. These proposed elements of the scheme and associated works have the potential to impact the national road network.

In this regard, it is noted that the submitted EIAR only appears to record the requirement to comply with TII Publications standards for the national road network, including structures and services in relation to the parapet works to the M50 Ronanstown Bridge. A matching commitment is not provided for the proposed fixings to the underside of that bridge, nor for potential interactions with the national road network including its services such as boundary treatments and drainage in respect of the substation and construction compounds immediately north east of that bridge called Park West substation and Park West Construction Compound. A Construction Environmental Management Plan (CEMP) is submitted with the EIAR as an appendix to Chapter 5 that further does not appear to identify specific methods or techniques proposed for mitigation of potential impact for works traversing or in proximity to the national road network.

To ensure the strategic function of the M50 motorway, in the vicinity of the proposed is safeguarded the following is advised:-

- Compliance with TII Publications (Standards) in accordance with relevant TII Publications (Technical) will be required for any work that may impact the national road pavement, structures and infrastructure including drainage. In particular, Design Reports for any works on, over or within the motorway reservation will be required to be prepared and submitted as a Departure Application in accordance with TII publication GE-GEN-01005 and PE-PMG-02041 and any works to structures forming part of the national road network requires TII Technical Acceptance in accordance with TII publication DN-STR-03001.
- Access for the construction period and any subsequent monitoring and maintenance in relation to any works proposed, including temporary and permanent signage, that affect the national road and associated junctions in terms of operational requirements, timetabling, etc. will require prior consultation with the MMarC Network A and M50 PPP Contractors and fulfilment of requirements to complete their 3rd party protocols, via the relevant road authorities and TII.
- Separate structure approvals/permits and other licences may be required in connection with the proposed works, including where temporary modification to the road network may be required.

It is appropriate that the applicant be required to outline specific mitigation and monitoring commitments for potential impact on the national road network to be reflected in the revisions to the EIAR at *Chapter 05 Construction Strategy*, and in the proposed CEMP at Appendix 5.1 of the EIAR.

2.3 Revision of submitted EIAR and associated documentation required.

Proposed works will interface with the national road network in areas managed by PPP Contactor. Any works proposed potentially impacting the national road network including pavement, structures and associated services are required to demonstrate to the satisfaction of TII, compliance with TII Publications (Standards) in accordance with relevant TII Publications (Technical). In this regard, it is noted that TII Publications do not appear identified at Chapter 05 *Construction Strategy* of the submitted EIAR nor in the CEMP submitted as Appendix 5.1. The submitted CEMP is described at section 1.1. *Purpose of the CEMP* as presenting "...the minimum environmental management requirements..." and recording appropriate mitigation and monitoring controls".

It is also noted that Chapter 06 *Traffic and Transportation* of the submitted EIAR references TII Design Manual for Roads and Bridges (DMRB). This set of TII standards was subsumed as part of TII Publications, a suite of technical publications available at <https://www.tiipublications.ie/> . TII Publication no. GE-INT-01029 *Introduction to the TII Publications System*, refers.

In view of the requirements of the *Spatial Planning and National Roads Guidelines for Planning Authorities* (DoECLG, 2012) and the maintenance of strategic function and safety the national road network for all road users, TII requests that the matters highlighted above be reflected in revised drawings and documentation for both construction and operation phases of the proposed development. In particular, details of works to national road network structures and the M50 motorway should be provided, and any proposed mitigation should be recorded at *Chapter 05 Construction Strategy* and *Appendix 5.1 Construction Environmental Management Plan (CEMP)* of the EIAR.

The resolution of the foregoing matters prior to a decision being made on this Order and their reflection in revised documentation to form part of the proposed development is essential to avoid detrimental impact on the capacity, safety, or efficiency of the national road network, is in the interests of sustainable development, and the promotion of an integrated approach to land use and transportation planning.

2.4 National Road network Considerations.

The proposed order includes works proposed to be carried out on, and in close proximity to the national road network, which includes structures and associated services such as drainage that must be subject to co-ordination with and the prior approval of TII.

Subject to the resolution of the items listed above in sections 2.1 - 2.3 , TII recommends the following conditions should be considered to form part of the Order in the event of approval of the proposal in respect of proposed works no. 10.01, 10.02, 10.03, 10.04, 10.05 and 10.06 in the interests of the protection of the safety, capacity, and efficiency of the national road network:

1. Development shall be undertaken in accordance with TII Publications. Prior to commencement of development, plans and details of works on, or in the vicinity of the national road network required under TII Publications shall be submitted for the written agreement of the planning authority in consultation with TII.
2. Prior to commencement of development, the Construction Environmental Management Plan (CEMP) shall be submitted for the written agreement of the planning authorities subject to the written agreement of TII. The CEMP will reflect mitigation and monitoring for the national road network.
3. Prior to commencement of development, a construction traffic management plan including access to services, shall be submitted for the written agreement of the planning authorities subject to the written agreement of TII and shall:-
 - a) demonstrate consultation with the M50 PPP Contractor, via TII and the relevant road authorities, and
 - b) include detailed information on traffic management, including signage (static and VMS) to ensure the strategic function of the national road network is protected.

Where revisions to the proposed scheme application documentation arise as a result of this submission consideration, it is understood and accepted that additional / new mitigation measures that ameliorate potential significant negative impact on the national road network may form the subject of agreements between TII, the M50 PPP Contractor and the developer.

3.0 LIGHT RAIL NETWORK – LUAS

This part of the TII submission is concerned with ensuring the safe and efficient operation and maintenance of the Luas service. Unlike buses, trams require fixed tracks, overhead lines, fixings and associated under and over ground services infrastructure, including trackbed and surfaces, which are complex and costly to alter. In addition, changes to this infrastructure and the implementation of amended street finishes and traffic management practices can create disruption to the Luas network service which should be avoided or ameliorated. These are important considerations that have implications for the practical implementation of this proposed scheme.

This submission is made having regard to:-

- *TII's Code of engineering practice for works on, near, or adjacent the Luas light rail system*, and
- *Light Rail Environment - Technical Guidelines for Development*, TII Publication no. PE-PDV-00001.

Proposed Railway Order works potential interactions with Luas are set out in this submission at Appendix 1 and summarised at Table 1. Interactions identified are set out below.

3.1 Proposed Railway Order (Zone C), Interactions with Luas Red Line and Heuston Tramstop, indicated on Proposed Works Layout Plan 14.

Book 3 Structures Plans of the proposed *Railway Order Drawings* provides greater details of elements of *Book 1 Works Layout Plans*, grouped into *General Arrangements*, *Linear Works*, and *Specific Locations*. These drawings also form the main part of *Volume 3A Technical Figures* of the submitted EIAR. Table 3 below is a summary of details relating to the works proposed to the east of Heuston Station where Heuston Tramstop and Luas Red Line occur within Book 3.

Table 3 Summary of *Book 3 Structures Plans* proposals in the vicinity of the eastern side of Heuston Station and Luas Heuston Tramstop and Red Line

| Proposed Railway Order Drawings, Book 3 - General Arrangement Drawings | | | |
|--|-------------------------|--|--|
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| DP-04-23-DWG-RO-TTA-18848 | VER01 | Construction Compounds Location Overview | <p>Indicates Existing, Main and Satellite Compounds proposed for use during construction and operation phases of the scheme.</p> <ul style="list-style-type: none"> • Indicates a Main Compound ID CC-PW-3I-21376-A, ref. Heuston West (Main) <p>Further indicates 2 no. Satellite Compounds:-</p> <ul style="list-style-type: none"> • ID CC-PW-3I-21376-B, ref. Heuston West (Attenuation) • ID CC-PW-3J-21376-C, ref. Heuston West (P-Way) |
| Proposed Railway Order Drawings, Book 3 - Linear Works Drawings | | | |
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| DP-04-23-DWG-RO-TTA-18899 | 01 | Boundary Treatment (including Heuston Station) Sheet 14 of 17 | <ul style="list-style-type: none"> • Indicates Heuston Station and Existing CIE Property Ownership Boundary west of Luas Heuston Tramstop. |
| Proposed Railway Order Drawings, Book 3 - Specific Drawings (no. 12 Heuston West) | | | |
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| DP-04-23-DWG-RO-TTA-18971 | 01 | Heuston West Station Bus Set-Down, Pedestrian Transfer Route and Cycleway Upgrades | <ul style="list-style-type: none"> • Resurfacing and rearrangement of access to Heuston Station at Sean Heuston Bridge. |

The Works Layout Plan No. WP14 indicates an access point for construction traffic at the far north eastern reaches of Heuston Railway Station. Luas Green Line runs over this bridge and parallel to the eastern elevation of Heuston

Railway Station where Heuston Tramstop is located. The proposed Railway Order includes Works no. 14.17 in the vicinity of the Luas Line, Heuston Tramstop and Sean Heuston Bridge consisting of “*Enhancement of existing public transport, pedestrian and cycling access to serve the new Heuston West Station....*”.

It is acknowledged and accepted that multi-modal access to Heuston Railway Station already exists at this location, however expected road closures, and under and overground works for proposed works have the potential to impact Luas infrastructure including trackbed, rails and Luas Overhead Conductor System (OCS) and associated under and overground services; Luas passenger services; and passenger access to Luas.

TII advise that in accordance with TII’s *Code of practice of engineering practice for works on, near, or adjacent the Luas light rail system*”, that the proposed works will require specific construction methodology approach, co-ordinated with TII and the Luas Operator to ensure protection of the asset and minimal Luas service disruption.

The submitted EIAR at *Chapter 06 Traffic and Transportation* identifies *Operational Impact on Public Transport – Luas* at subsection 6.5.13 as long term, negative and negligible.

TII consider that it is not apparent in the submitted EIAR that dedicated mitigation for construction traffic and associated traffic management at Luas in the vicinity of the current multimodal accesses to Heuston Railway Station, Heuston Tramstop, Luas Green Line and Sean Heuston Bridge are identified or reflected either at *Chapter 05 Construction Strategy* or *Chapter 06 Traffic and Transportation*, or in the submitted *Construction Environmental Management Plan (CEMP)* at Appendix 5.1.

The works associated with the access improvement proposals for Heuston Station have the potential to impact on the capacity and efficiency of the Luas network infrastructure and associated services, on passenger services, and passenger access to Heuston Tramstop and transportation routes in the vicinity of that Tramstop.

TII recommend that *Chapter 06 Traffic and Transportation* identifies *Operational Impact on Public Transport – Luas* at subsection 6.5.13 be amended and revised to take account of TII’s *Code of practice of engineering practice for works on, near, or adjacent the Luas light rail system*”, and require specific construction methodology approach, co-ordinated with TII and the Luas Operator to ensure protection of the asset and minimal Luas service disruption to be provided prior to the commencement of development.

3.2 Proposed Railway Order (Zone D), Interactions with Luas Green Line, indicated on Proposed Works Layout Plan 17.

Book 3 Structures Plans of the proposed *Railway Order Drawings* provides greater details of elements of *Book 1 Works Layout Plans*, grouped into *General Arrangements*, *Linear Works*, and *Specific Locations*. These drawings also form the main part of *Volume 3A Technical Figures* of the submitted EIAR. Table 4 below is a summary of details relating to the works proposed at OBO8 a bridge under which the rail line travels, and over which Luas Green Line runs within Book 3.

Table 4 Summary of Book 3 Structures Plans proposals in the vicinity of OBO8 over which Luas Green Line runs.

| Proposed Railway Order Drawings, Book 3 - General Arrangement Drawings | | | |
|---|-------------------------|---|--|
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| - | - | - | - |
| Proposed Railway Order Drawings, Book 3 - Linear Works Drawings | | | |
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information indicated |
| DP-04-23-DWG-RO-TTA-18902 | 01 | Boundary Treatment Cabra to Glasnevin Junction Sheet 17 of 17 | <ul style="list-style-type: none"> Indicates Proposed Track Works & Electrification at Royal Canal and Luas Twin Arch (OBO8) over which Luas runs |

| Proposed Railway Order Drawings, Book 3 - Specific Drawings (no. 13 OBO8 and OBO9) | | | |
|---|-------------------------|-------------------------------------|--|
| Dwg. No. | Dwg. Version No. | Dwg. Title | Information Indicated |
| <i>DP-04-23-DWG-RO-TTA-18865</i> | <i>01</i> | <i>OBO8 to OBO9 Drainage Layout</i> | <ul style="list-style-type: none"> Indicates proposed perforated pipe(s) installation under railway track in OBO8, over which Luas travels. |

The electrification of the railway line under the Luas light railway line at the Royal Canal and Luas Twin Arch Bridge (OBO8) appears to include the following direct works elements located under Luas:-

1. Bracket fixings to underside of the bridge recorded as Proposed Railway Order Works no. 17.07.
2. Excavation of the railway line to facilitate greater height for installation of Rail OHLE under OBO8 recorded at EIAR *Chapter 04 Description of the Project* and presumed to form part of Proposed Railway Order Works no. 17.02.
3. Installation of upgraded underground drain alongside railway track under the bridge to OBO8 recorded at submitted drawing *OBO8 to OBO9 Drainage Layout (Dwg. No. DP-04-23-DWG-RO-TTA-18865)*, *Chapter 04 Description of the Project* and presumed to form part of Proposed Railway Order Works no. 17.02.

In addition, the railway order works schedule includes works ref. 17.02 stated to consist of ensuring clearances for track electrification to include signalling and telecommunications infrastructure and 17.03 and 17.04 stated to consist of earth moving and retaining structures installation adjacent to OBO8 over which Luas travels. These are works elements located under or adjacent to Luas:-

4. Electrification of railway line under Luas light rail tramway an already electrified line holding associated signalling and associated telemetry and telecommunications communications services recorded as Proposed Railway Order Works no. 17.02.
5. Earthmoving and retaining structures and drainage installation adjacent to OBO8 over which Luas travels, including acquisition of lands to the south west of the bridge for this purpose, recorded as Proposed Railway Order Works no. 17.03 and 17.04.

The works identified above and recorded at Appendix 1 of this submission have matching potential direct, indirect and cumulative impacts on Luas infrastructure and services including: by construction access and vibration from proposed earthworks around and under OBO8; by structural works and fixing methodology associated with the installation of OHLE fixings on the underside of OBO8 over which Luas travels; and by EMC impacts arising from electrification and telecommunications services installation along the railway line running under OBO8.

3.2.1 Potential Luas impact of excavation, drainage and track lowering works under and adjacent to Luas Line.

Works are proposed to lower the railway occur at structure ref. OBO8 over which Luas travels. Associated works such as excavation for greater horizontal railway area and drainage will occur adjacent to and under Luas as part of the proposed works.

The submitted EIAR does not appear to contain any specific mitigation for the protection of Luas and its associated services during track lowering and associated excavation and retaining structures installation works at Chapters *05 Construction Methodology*, *14 Noise and Vibration* or *27 Summary of Mitigation and Monitoring Measures*, or in *Appendix 5.1 Construction Environmental Management Plan (CEMP)*. TII advise that in accordance with TII's "Code of practice of engineering practice for works on, near, or adjacent the Luas light rail system", that prior to any decision being made on this application the proposed works will require the preparation of a specific construction methodology approach, co-ordinated with TII and the Luas Operator to ensure appropriate mitigation of potential construction impacts for the protection of the asset and minimal Luas service disruption.

3.2.2 Potential Luas impact of electrification of the railway line under and adjacent to Luas Line.

The electrification of the railway line under Luas light railway requires works to the vertical alignment of the railway and includes for the proposed installation of Overhead Line Equipment (OHLE) fixings to structure ref. OBO8 over which Luas travels. The proposal includes for the installation of telecommunications services and equipment as part of the scheme.

Luas is a light railway with under and overground electrical, signalisation and telecommunications services and infrastructure that is sensitive to disruption from vibration and Electromagnetic Interference (EMI). EIAR *Chapter 22 Electromagnetic Compatibility and Stray Current* considers EMI. TII observes with concern that matters related to Luas Electromagnetic Compatibility and Stray Current are not addressed.

The baseline methodology is set out ahead of a description of the receiving environment with a summary of consultations, mitigation, residual and cumulative impacts in this section of the EIAR. It is noted that at subsection 22.3.5.1.3 *Baseline Rating* includes features applicable to Luas including “*signalling on rail networks*” as having a “*very high*” sensitivity rating with respect to *EMF* (Electromagnetic Fields) and *Stray Current* at tables 22.4 and 22.5 respectively.

It does not however appear that Luas is considered amongst the land uses identified in the EMF study area for the project at *Subsection 22.4. Receiving Environment, 22.4.1. Current Baseline Environment*. In addition, neither TII nor the Luas operator appear to be identified amongst the land users at EIAR subsection 22.3.6 *Consultation* for which it is proposed to continue individual engagement for mitigation of potential EMF impacts with those land users that have “‘medium’ sensitivity or above (based on their potential to have critical sensitive equipment).” These land users are referred to at subsection 22.7 *Monitoring* where it is committed that “*a stray current monitoring system at each traction substation*” and “*... third parties with potentially sensitive equipment will be engaged as specified in Section 22.3.6 to ensure that any risks of EMI are identified.*” It further appears that Luas is not considered at subsections 22.8. *Residual Effects* or 22.9. *Cumulative effects*.

The submitted EIAR further does not appear to contain any specific mitigation for the protection of Luas and its associated services during the construction and operation of the proposed electrified railway at Chapters 05 *Construction Methodology*, 14 *Noise and Vibration*, 22 *Electromagnetic Compatibility and Stray Current* or 27 *Summary of Mitigation and Monitoring Measures*, or in *Appendix 5.1 Construction Environmental Management Plan (CEMP)*.

TII considers the following matters need to be addressed prior to a decision being made on this order:

- Having regard of the electrified nature of Luas and the proposed works and their potential to interact with one another, monitoring to ensure no significant negative impact on Luas power and systems is necessary and appropriate mitigation. Revised documentation is required which shall outline that the design for the electrification of the railway line alongside and under the Luas alignment shall ensure that all EMI aspects have been fully considered, incorporated, and mitigated against by way of detailed EMI compatibility studies that considers both operational systems and sensitive equipment. Any temporary or permanent potential impacts to Luas infrastructure will require full plans and details to be prepared, assessed, and agreed by TII prior to any decision being made on this application.

TII advises that the location of existing Luas underground and overground equipment require adequate clearances from an Electromagnetic Interference (EMI), accessibility and fault scenario perspective. The proximity of any proposed under and overground electrification apparatus and services may give rise to potential impacts that may negatively impact Luas services. In view of the proposed close proximity of both electrified sections (proposed electrified railway and Luas), careful consideration needs to be given to potential failure scenarios of the Rail OHLE and/or Luas OCS at structure OBO8 and its vicinity and any associated impacts to the safety of people, staff, and infrastructure and any adjacent equipment (Luas or Rail). Any temporary or permanent potential impacts to Luas infrastructure associated with the item above will require full plans and

details to be prepared, assessed, and agreed by TII, in accordance with TII's *Code of engineering practice for works on, near, or adjacent the Luas light rail system*.

- In addition, TII highlight that it is appropriate for the protection of Luas and its services that monitoring and appropriate mitigation of potential operational impact be identified and recorded as part of the EIAR and Order. TII requests that the matters highlighted above be reflected in revised drawings and documentation for both construction and operation phases of the proposed development. In particular, any proposed mitigation should be recorded at *Chapter 05 Construction Strategy, Appendix 5.1 Construction Environmental Management Plan (CEMP)* that includes a commitment to prepare a construction traffic management plan, *Chapter 22 Electromagnetic Effects and Stray Current* and *Chapter 27 Mitigation and Monitoring Measures* of the EIAR.

3.3 Luas Technical Considerations

The proposed order includes works proposed to be carried out on, and in close proximity to Luas infrastructure that may necessitate alteration and relocation of Luas infrastructure, which includes underground services that must be subject to the prior approval of TII.

Any works adjacent to or interfacing with Luas infrastructure shall be carried out in accordance with TII's *Code of engineering practice for works on, near, or adjacent the Luas light rail system*. There is a requirement to obtain a permit from the Luas operator in accordance with the Light Railway (Regulation of Works) Byelaws 2004 (S.I. number 101 of 2004) for works, including temporary works such as hoarding, at Luas infrastructure interface. For the avoidance of doubt; Luas infrastructure includes both the fixed line and the Overhead Conductor System (OCS).

The resolution of the foregoing matters included in 3.1 - 3.2 prior to a decision being made on this Order and their reflection in revised documentation to form part of the proposed development is essential to avoid detrimental impact on the capacity, safety, or operational efficiency of the light rail network, is in the interests of sustainable development, and the promotion of an integrated approach to land use and transportation planning.

Subject to the resolution of the above matters and the requirement to integrate the safe and efficient operation of a proposed development with light rail, TII recommends the following conditions should be considered to form part of the Order in the event of approval of the proposal in respect of proposed works no. 14.17, 17.02, 17.03, 17.04 and 17.07 :

1. Overhead Conductor System (OCS) poles are located on / or adjacent to the proposed scheme. Prior to commencement of development, the following plans and details shall be submitted for the written agreement of the planning authority subject to the written agreement of TII:
 - (i) OCS pole protection and safety distances, and / or
 - (ii) Existing, temporary, and subsequent permanent fixings.The developer shall be liable for all costs associated with the removal and reinstatement of the Luas related infrastructure.
2. Prior to commencement of development, the Construction Environmental Management Plan (CEMP) shall be submitted for the written agreement of the planning authorities subject to the written agreement of TII. The CEMP will contain a method statement to resolve all Luas interface issues that shall:-
 - (i) identify all Luas alignment interfaces,
 - (ii) contain a risk assessment for works associated with the interfaces, including all electrification fault scenarios and
 - (iii) contain mitigation measures for unacceptably high risks, including electromagnetic interference (EMI) and vibration and settlement monitoring regime if necessary.

The method statement shall be in accordance with TII's "*Code of engineering practice for works on, near, or adjacent the Luas light rail system*."

3. All works associated with removal, temporary and final installation of Luas infrastructure are to be undertaken outside of Luas operational hours, under system shutdown and Overhead Conductor System isolation with prior agreement with TII and the Luas Operator as required.
4. Prior to commencement of development, a Construction Traffic Management Plan including access to services, shall be submitted for the written agreement of the planning authorities subject to the written agreement of TII. The Construction Traffic Management Plan shall include identification of mitigation measures to protect operational Luas infrastructure.
5. The Luas operator/TII will require 24hr access to Luas infrastructure. Prior to the commencement of development, the developer shall enter into an access and maintenance agreement with TII.
6. The developer or contractor will be required to apply for a works permit from the Luas Operator by virtue of the Light Railway (Regulation of Works) Byelaws 2004 (S.I. number 101 of 2004) which regulates works occurring close to the Luas infrastructure in accordance with TII's *"Code of engineering practice for works on, near, or adjacent the Luas light rail system"*. The developer shall be liable for all of TII's costs associated with the removal and reinstatement of Luas related building fixings and infrastructure. The permit application will require prior consultation, facilitated by the Luas operator, Transdev.

Where revisions to the proposed scheme application documentation arise as a result of this submission consideration, it is understood and accepted that additional / new mitigation measures that ameliorate potential significant negative impact on Luas may form the subject of agreements between TII, Luas Operator and the developer.

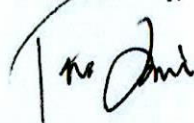
Conclusion

The content of this submission and revisions requested by TII are submitted to be in the interests of the capacity, safety and efficiency of national roads and Luas and therefore the protection of the strategic capacity of the national road and light rail transport networks.

TII trusts that the foregoing comments will be of assistance to the Board in considering the Railway Order.

Please acknowledge receipt of this submission.

Yours faithfully,



**Tara Spain,
Head of Land Use Planning.**

APPENDIX 1 – Extracts of the Proposed Railway Order Book of Reference, Schedule 1 Railway works and works authorised by this Order
Works that may interact with TII assets.

| Extracts from Proposed Railway Order | | | Summary National Road or Light Rail interface |
|--------------------------------------|-----------|---|---|
| Works Layout Plan No. | Works No. | Description | |
| 10 | 10.01 | Proposed Railway Electrification - No Track Work but includes railway signalling and telecommunications infrastructure as well as installation of overhead electrification equipment for the 2 No. northern lines. | <p>Identified interface with the M50 at and in the vicinity of <i>Ronanstown Railway Bridge over which the M50 travels.</i></p> <p>Proposed temporary construction compound and proposed permanent substation and substation compound indicated along the western side of the M50 adjacent to M50 <i>Ronanstown Railway Bridge (TII Structure ID IC-M50-010.00).</i></p> <p>Works are proposed to the rail line under the M50 bridge at this location, including parapet walling to the bridge (identified in the submitted application as <i>M50 Motorway Bridge ref. OBC10A</i>).</p> |
| 10 | 10.02 | Works to M50 Road Bridge (OBC10A) to facilitate Overhead Line Electrification comprising bracket fixings to underside of bridge. | |
| 10 | 10.03 | Modifications to the M50 Road Bridge (OBC10A) parapets providing compliance with OHLE infrastructure safety requirements. | |
| 10 | 10.04 | Establish a permanent Park West electrical substation compound that will also be used temporarily as a construction compound. The compound will be accessed via an existing access point on Park West Avenue. Works will involve fencing / hoarding and may also include site offices, welfare facilities, storage facilities, workshops, parking and storage of certain construction plant and equipment. | |
| 10 | 10.05 | Construction of Park West electrical substation to enable electrification of the 2 No. northern lines. It will be located within a dedicated compound with permanent access from an existing access point on Park West Avenue. | |
| 10 | 10.06 | Establish a temporary construction compound to facilitate the construction of the Park West electrical substation. The temporary Compound will also include a track access point to support adjacent track electrification works. Works will include fencing / hoarding, site offices, welfare facilities, storage facilities, workshops, parking and storage of certain construction plant and equipment. The compound will be accessed via an existing access point on Park West Avenue. | |
| 14 | 14.17 | Enhancement of existing public transport, pedestrian and cycling access to serve the new Heuston West Station. Works will include: a revised bus / taxi set down area and revised cul-de-sac roundabout; Localised approach road realignment (enabling segregation of cyclists from passengers and buses); the existing pedestrian route between Heuston West and Heuston Station will be upgraded (including localised widening, road crossing upgrades, signage, and line marking); raised islands and footpath widening at vulnerable user road crossing points. | <p>Identified interface with Luas Red Line at Heuston Station Tramstop.</p> <p>Proposed works to Heuston Station (14.17) whose eastern elevation and accesses are contiguous with Luas Redline and Heuston Station Tramstop.</p> <p>Includes indication of 'Access point' uncoded) to a compound at Heuston Station adjacent to the southern side of the Luas Line at Sean Heuston Bridge.</p> |
| 17 | 17.07 | Minor works on Royal Canal and Luas Twin Arch Bridge (OBO8) to facilitate electrification comprising bracket fixings to underside of the bridge. | |
| 17 | 17.02 | Proposed Track Works and electrification – Includes track works to facilitate electrification clearance to structures and cutting slopes. Works will include signalling and telecommunications infrastructure installation and the installation of overhead electrification equipment for both of the lines. Track drainage will be upgraded along the length of the section. | <p>Proposed Track Works and Electrification on rail track under Luas, to include fixings to underside of bridge over which Luas travels. Identified in the submitted application as <i>Royal Canal and Luas Twin Arch (bridge) ref. OBO8.</i></p> <p>Identified potential indirect and cumulative vibration and bridge structure impact on Luas as works proposed will consist of earth moving and retaining structures installation adjacent to OBO8 over which Luas travels.</p> |
| 17 | 17.03 | Excavating into the toe of cutting slopes and construction of new retaining walls to facilitate electrification clearance, telecommunication and drainage works. | |
| 17 | 17.04 | Stabilisation of existing railway cutting by means of soil nailing. After clearing the face and top of cuttings of all vegetation; soil nails will be drilled approximately every 1m (vertically and horizontally) using machinery operating from the toe of the cutting (the maximum extent is indicated by the purple shaded area on the Works Layout Plan). This will be done in advance of any retaining wall installation at the toe of cuttings. | |

APPENDIX 2 – Land parcels identified in the vicinity of TII assets (M50 and Luas) in *Book 2 - Property Plans* of the application with summary descriptions from Schedules of Draft Railway Order

| Property Plan No. | Property Plan Ref. | Location | Land Parcel Ref. | Type of acquisition proposed / Railway Order Schedule | Owners or Reputed Owners | Lessees or Reputed Lessees | Occupiers |
|-------------------|--------------------|---|--------------------|---|---|----------------------------|-----------|
| 10 | 18830 | Area adjacent to the north of the M50 indicated for temporary construction compound | DSW.18830.T.3(GH) | Temporary land acquisition / Fourth Schedule | <ul style="list-style-type: none"> Dublin City Council The Right Honourable The Lord Mayor Aldermen and Burgesses of Dublin | - | - |
| 10 | 18830 | Area adjacent to proposed substation compound the north of the M50 indicated for temporary construction compound | DSW.18830.T.3(EK) | Temporary land acquisition / Fourth Schedule | <ul style="list-style-type: none"> The Right Honourable The Lord Mayor Aldermen and Burgesses of Dublin | - | - |
| 10 | 18830 | Proposed substation compound (includes part of parcel indicated as ref. DSW.18830.R.3(IE) to provide gravel driveway to temporary construction compound and substation) | DSW.18830.P.3(FZ) | Permanent land acquisition / Second Schedule (Part 1) | <ul style="list-style-type: none"> The Right Honourable The Lord Mayor Aldermen and Burgesses of Dublin | - | - |
| 10 | 18830 | Ronanstown Bridge | DSW.18830.T.250(O) | Temporary land acquisition / Fourth Schedule | <ul style="list-style-type: none"> Dublin City Council Córas Iompair Éireann (CIÉ) | - | - |
| 10 | 18830 | Land adjacent to the northern side of the rail line at Ronanstown Bridge | DSW.18830.T.249(B) | Temporary land acquisition / Fourth Schedule | <ul style="list-style-type: none"> Dublin City Council M50 Concession Ltd Transport Infrastructure Ireland (TII) | - | - |
| | | | DSW.18830.T.249(C) | Temporary land acquisition / Fourth Schedule | <ul style="list-style-type: none"> Dublin City Council M50 Concession Ltd Transport Infrastructure Ireland (TII) | - | - |
| 17 | 18837 | Adjacent to south western side of Luas tramway at tunnel | DSW.18837.S.286(A) | Substratum land to be acquired / Third Schedule | <ul style="list-style-type: none"> Bachelors Ltd | | |