DART+ South West

PUBLIC CONSULTATION BROCHURE

EMERGING PREFERRED OPTION

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Rialtas na hÉireann
Government of Ireland

Tionscadal Éireann
Project Ireland 2040

Co-financed by the Connecting Europe Facility of the European Union

Iarnród Éireann
Irish Rail

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Introduction to DART+ Programme

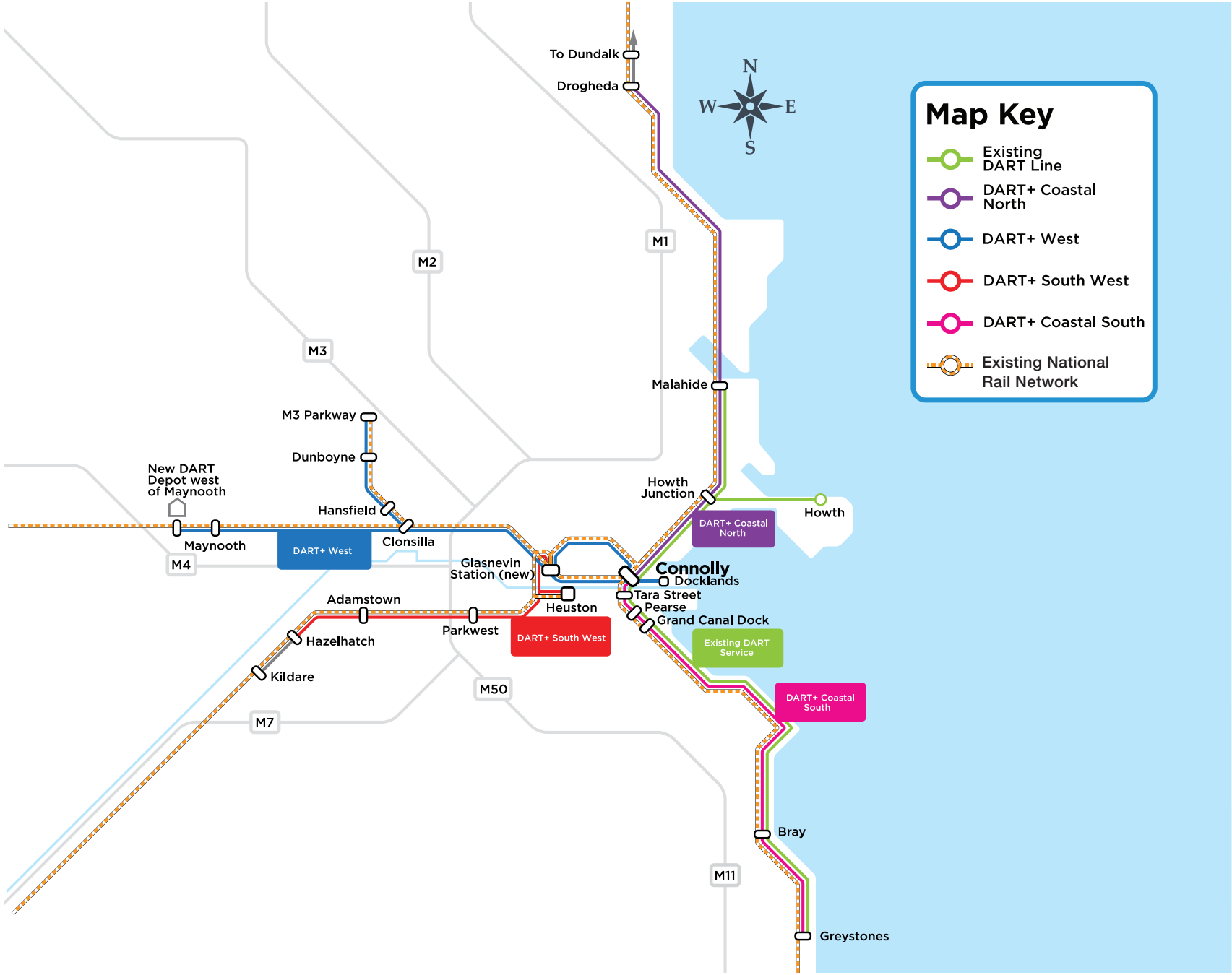
1. Introduction to DART+ Programme

The current DART network is 50km long, extending from Malahide / Howth to Greystones. The DART+ Programme will increase the length of the DART network to 150km of railway corridor through the electrification and upgrade of existing lines transforming commuter train travel in the Greater Dublin Area (GDA). The DART+ Programme also includes the purchase of new train fleet. The DART+ Programme will deliver frequent, modern, electrified services from Dublin City Centre to:

- Maynooth, M3 Parkway
- Hazelhatch & Celbridge
- Drogheda; and
- Greystones

DART+ Programme is a key transportation improvement to form a high quality and integrated public transport system. It will have benefits for the residents of the Greater Dublin Area and also those living in the other regions. It will assist in providing a sustainable transport system and a societal benefit for current and future generations.

DART+ Programme will seek to maximise use of the existing railway corridors and implement a modernisation programme to achieve the capacity increase necessary to meet current and future demands.



Schematic diagram of DART+ Programme extent

Why investment in DART+ Programme is needed

Provides Sustainable Transport Options

- Over-reliance on private car use and increasing congestion in Greater Dublin Area.
- DART trains are more sustainable and cleaner than current diesel trains.

Achieve Climate Change Targets

- Will help reduce the transport sector greenhouse gas emissions which continue to rise.
- Supporting the Government's Climate Action Plan.

Integration of Land-use & Transport Planning

- Co-ordination and integration of spatial planning with rail transport.
- Supporting compact growth and increased densities in the Greater Dublin Area.
- Supports the implementation of the Project Ireland 2040 and the National Planning Framework.

Facilitates Integration with other modes of transport

- Improves integration of rail services with active modes of travel (walking and cycling).
- Enables greater cross-modal journeys through improved integration with other modes – Bus, Luas, proposed MetroLink and Dublin Bikes.

Supporting Economic and Population Growth

- Congestion in Greater Dublin Area is increasing.
- Cost of Time Lost in the Dublin Region is ~ €350million/annum and forecast to rise to €2,000million/annum by 2033.
- Sustainable public transport infrastructure (pedestrian, cycling, bus and rail) will sustain economic and population growth while reducing emissions.

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DART+ South West

2. DART+ South West

The second of the infrastructural projects of the DART+ Programme to be delivered will be the DART+ South West Project.

DART+ South West is seeking to significantly increase rail capacity on the Cork Mainline between Hazelhatch & Celbridge Station to Heuston Station, and to Glasnevin via the Phoenix Park Tunnel Branch Line. This can be achieved by implementing an electrified railway network with high capacity DART trains and increasing the frequency of trains.

Delivery of this project will support existing communities along the railway and support future sustainable development. It will serve all existing stations along the railway corridor between Hazelhatch & Celbridge Station to Heuston Station and Heuston Station to Glasnevin using electrical power that has a lower carbon footprint than the existing diesel trains. The frequency and quality of service will provide a viable transport alternative to communities along the route and help encourage people to migrate from private car use. This will assist Ireland in reducing greenhouse gas emissions from transport and help combat climate change.

The electrification of the rail line will predominantly follow the existing railway corridor. Works outside of Iarnród Éireann lands will be required at a number of locations for some of the scheme elements such as:

- Widening of the railway corridor for four-tracking between Park West & Cherry Orchard Station and Heuston Station;
- Bridge reconstruction and/or improvements;
- Construction of substations (to facilitate the provision of power to the line); and
- Use of land for temporary construction/storage compounds and all ancillary works required for the project.

03

Public Consultation Process

3. Public Consultation Process

Public participation during the design process is a key element to the delivery of major infrastructure projects such as DART+ South West.

This project has a two stage non statutory Public Consultation process. This current consultation is seeking feedback on the **'Emerging Preferred Option'.** As the design process advances and the designs are further developed and matured another public consultation will take place.

Public Consultations are our way of asking you, as potential users of the improved services or those likely to be affected by its development, for your views on our plans, whilst the design process is active. Your local knowledge and comments will inform the emerging preferred design and help us improve the project and ensure it will be a success for you and the communities it will serve.

Public participation is welcomed and encouraged throughout the design development process, which will provide you with the opportunity to learn about the design as it develops and provide feedback which will inform the next stage as appropriate. The main public participation/feedback stages as part of the project development are illustrated in graphical form below and include:

- Public Consultation No. 1 on the Emerging Preferred Option (Spring 2021) - **Current stage**
- Public Consultation No. 2 on the Preferred Option (Summer 2021)
- Statutory Consultation Period as part of the Railway Order application process (Winter 2021/Spring 2022)

Public feedback will be accepted during all stages of the design development and can be submitted through the project website, e-mail address, phone line or by written correspondence. For further details see the **'How to Engage'** section.

Iarnród Éireann invites the public to engage in the design process and all feedback is welcome.

COVID 19

Due to COVID-19 restrictions the first consultation on the **'Emerging Preferred Option'** will be a predominantly digital online public consultation. If COVID-19 restrictions ease further into 2021, the second public consultation event, scheduled for the Summer of 2021, presenting the **'Preferred Option'** to the public may be possible to hold in a physical location.

	Studies & Research	Publications & Milestones	Public Participation
We are here Spring 2021	Options development and appraisal to support identification of 'Emerging Preferred Option'	Preliminary Option Selection Report and identification of 'Emerging Preferred Option	Non-statutory public consultation on the 'Emerging Preferred Option'
Summer 2021	Options Selection Report & identification of 'Preferred Option'	Option Selection Report and 'Preferred Option' identification	Non-statutory public consultation on the 'Preferred Option'
Autumn 2021	Complete design appraisal and statutory documents	Design freeze & planning submission preparation	Stakeholder engagement
Winter 2021/ Spring 2022	Subject to Government approval, submit Railway Order	Issue of planning submissions & Railway Order documents	An Bord Pleanála statutory consultation

Graphic showing public participation as part of the option selection, design and Railway Order application process

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Current Design Status

4. Current Design Status

This brochure explains the current design status of the project, its benefits, potential impacts, and how you can send us your queries, thoughts and ideas.

The design and environmental impact assessment process for the DART+ South West has commenced, and we are at a key early stage in the project. DART+ South West has defined an **'Emerging Preferred Option'** and we would like to canvass public opinion on this design.

Before we proceed any further, we would like your views on the DART+ South West 'Emerging Preferred Option' which is being put forward by Iarnród Éireann as part of this Public Consultation process No. 1.

The '**Emerging Preferred Option'** is the preferred combination of design options that have been identified for each of the elements of the project at this stage of the project development.

Studies are still ongoing in this regard and therefore some site-specific design aspects have yet to be concluded. These studies will be progressed with your local knowledge and will inform the design and help us to improve the project and ensure it will be a success for you and the communities the project will serve.

Following these further studies, assessments, design development and a review of your feedback, the **'Emerging Preferred Option'** will be refined, and the **'Preferred Option'** will be presented at Public Consultation No. 2 due to take place later in 2021.

The project will culminate with a Railway Order application to An Bord Pleanála, in accordance with the Transport (Railway Infrastructure) Act 2001 (as amended). This is essential to secure building consent. It is currently anticipated that the Railway Order application will be submitted to An Bord Pleanála for approval in later 2021 / early 2022.

Your participation and feedback are an essential part of this stage in the design and assessment process.

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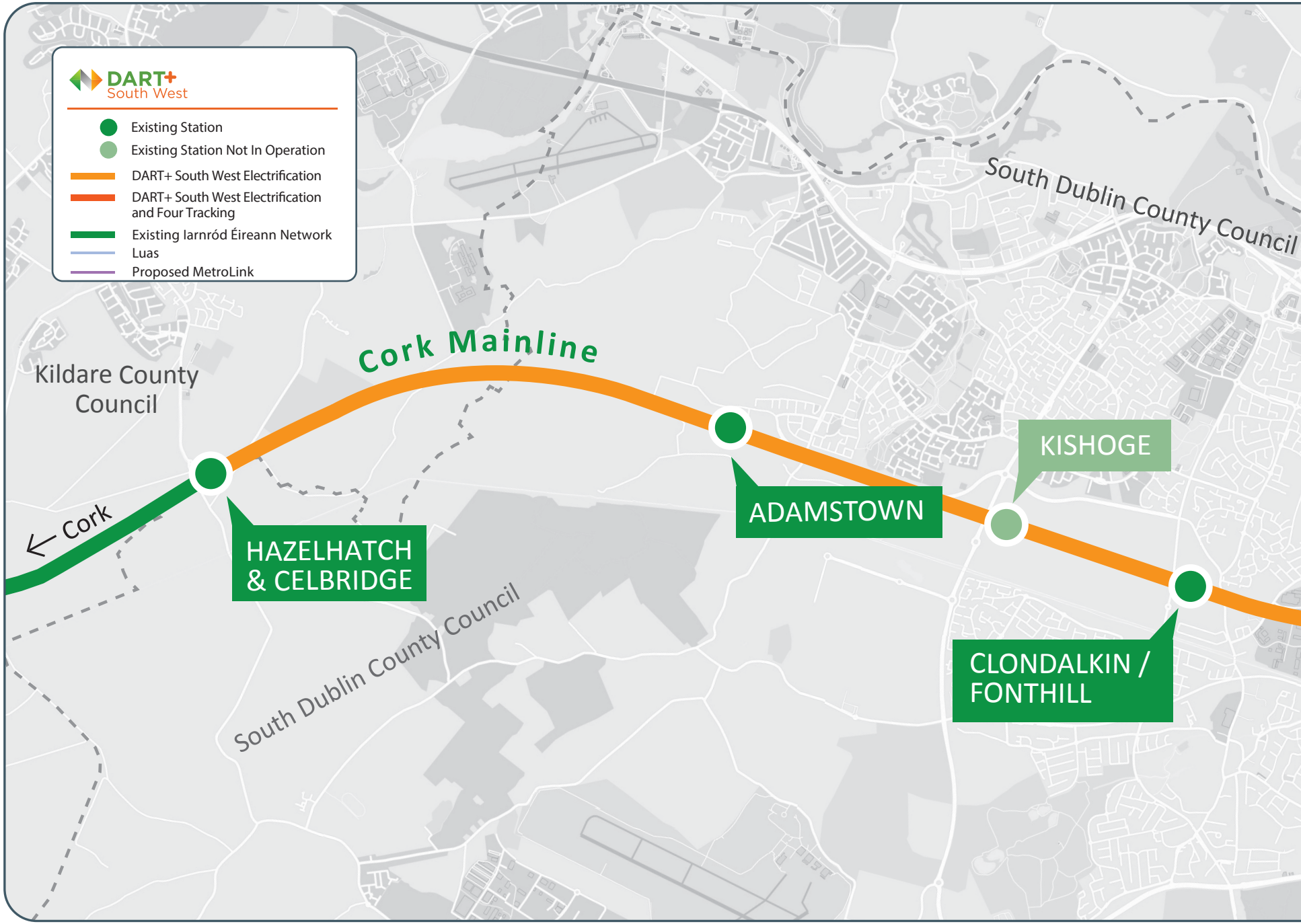
Key Infrastructural Elements

5. Key Infrastructural Elements of DART+ South West

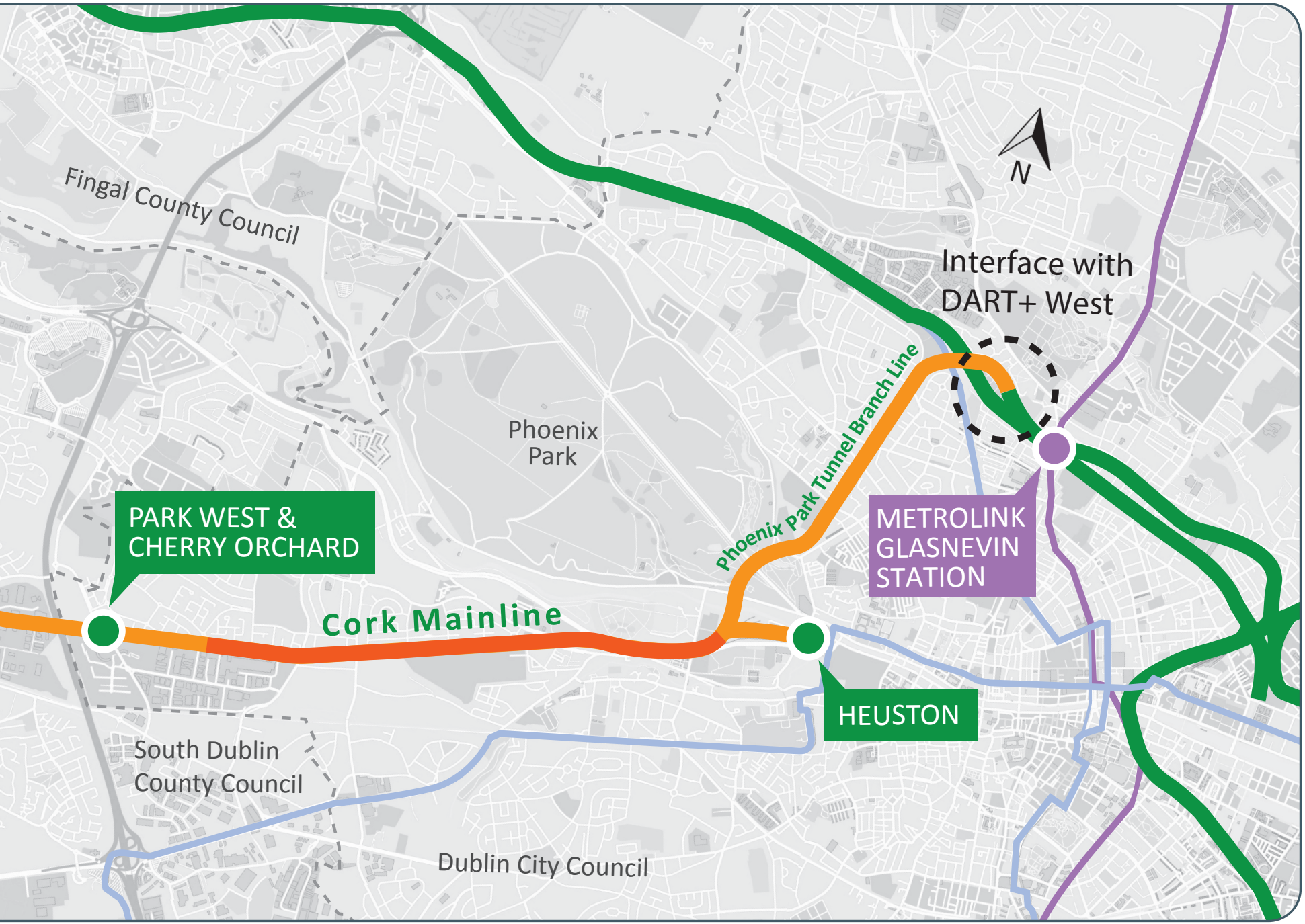
The following is a high-level summary of the key infrastructural elements of the DART+ South West Project:

- Completion of four-tracking from Park West & Cherry Orchard Station to Heuston Station, extending the works completed on the route in 2009.
- Electrification and re-signalling of the line from Hazelhatch & Celbridge Station to Heuston Station and also from Heuston Station to Glasnevin, via the Phoenix Park Tunnel Branch Line, where it will link with the proposed DART+ West
- Undertaking improvements/reconstructions of bridges to facilitate movement of electrified train services.
- Remove rail constraints along the Phoenix Park Tunnel Branch Line.
- Feasibility report and concept design for a potential new Heuston West Station.

- The **'Emerging Preferred Option'** will be compatible with future stations at Kylemore and Cabra, although the construction of these stations is not part of the DART+ South West Project.



Map of proposed DART+ South West


Fingal County Council
N
Interface with
DART+ West
Phoenix
Park
Phoenix Park Tunnel Branch Line
PARK WEST &
CHERRY ORCHARD
METROLINK
GLASNEVIN
STATION
Cork Mainline
HEUSTON
South Dublin
County Council
Dublin City Council

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Benefits of DART+ South West

6. Benefits of DART+ South West

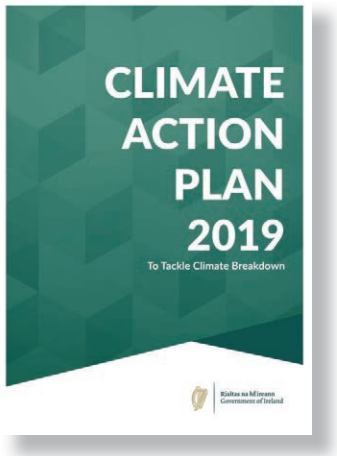
The DART+ South West Project will have far reaching positive transportation effects for communities along the railway corridor. It will facilitate increased train and passenger capacity that is currently constrained on the network. It will transport passengers in high quality trains that are designed to best suit the needs of growing communities, providing all day capacity, but most especially during peak morning and evening commuter periods.

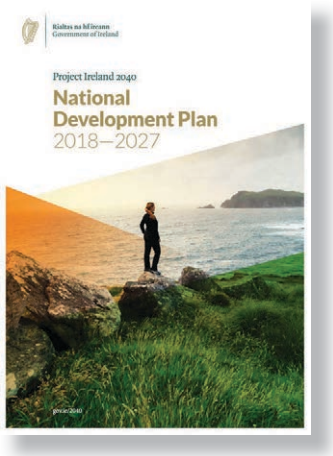
The project will link good quality public transport to sustainable land use management and can also assist in local regeneration, economic development and support the development of new communities along the route. This is a key objective of Project Ireland 2040 and the National Planning Framework. The integration of public transport with sustainable land use planning will reduce the dependency on private car use and ultimately support reductions in greenhouse gas emissions from the transport sector.

Availability of good quality rail transport, which is integrated with other public transport modes (Bus, Luas, and the future MetroLink) as well as walking and cycling infrastructure will have a positive effect on transport patterns and lifestyle factors. The provision of sustainable transport network supports sustainable options for where people live, work, study and access services and amenities. It can promote more active and healthy modes of travel by supporting people to walk or cycle to public transport links for onward transfer to their end destinations.

The DART+ Programme is consistent with Project Ireland 2040, the National Development Plan 2017 to 2028, the National Planning Framework, the Transport Strategy for the Greater Dublin Area 2016-2035 and the Climate Action Plan 2019.

DART+ Programme is a key deliverable measure in the Climate Action Plan 2019 and supports the achievement of targets for mode shift from private car to public transport.





National Policy Drivers

Benefits of DART+ South West

Increase peak passenger capacity from 5,000 to 20,000 per hour per direction and increase train frequency between Hazelhatch & Celbridge Station and Dublin City – facilitating fast, frequent and reliable transport to the surrounding communities.

Enhance public transport opportunities for work, education or leisure purposes.

Facilitate the development and future growth of existing and new communities that will greatly benefit from the connectivity that the DART+ South West will deliver.

Alleviate road congestion.

Build a sustainable and connected city region, supporting the transition to a low carbon and climate resilient society.

Facilitate people to make sustainable travel choices by encouraging a move away from private cars to reliable, efficient and safe public transport network.

Improve multimodal transport connectivity through interchange with the Luas at Heuston Station, Bus Connects and the proposed MetroLink.

Improve journey time reliability.

07

Option Selection Process

7. Option Selection Process

To assist the design development process and to consider various option to determine the **'Emerging Preferred Option'** for DART+ South West, a structured optioneering process has been followed:

- Stage 1 – Preliminary Appraisal of Options (Sifting) followed by
- Stage 2 – Multi-Criteria Analysis of short-listed options.

This structured process evaluates a number of different options and it's based on 'Guidelines on a Common Appraisal Framework for Transport Projects and Programmes' (CAF) published by the Department of Transport March 2016 (updated 2020), TII's Project Management Guidelines (Transport Infrastructure Ireland's Project Management Guidelines 2019) and Iarnród Éireann's Project Approval Guidelines.

Development of Options

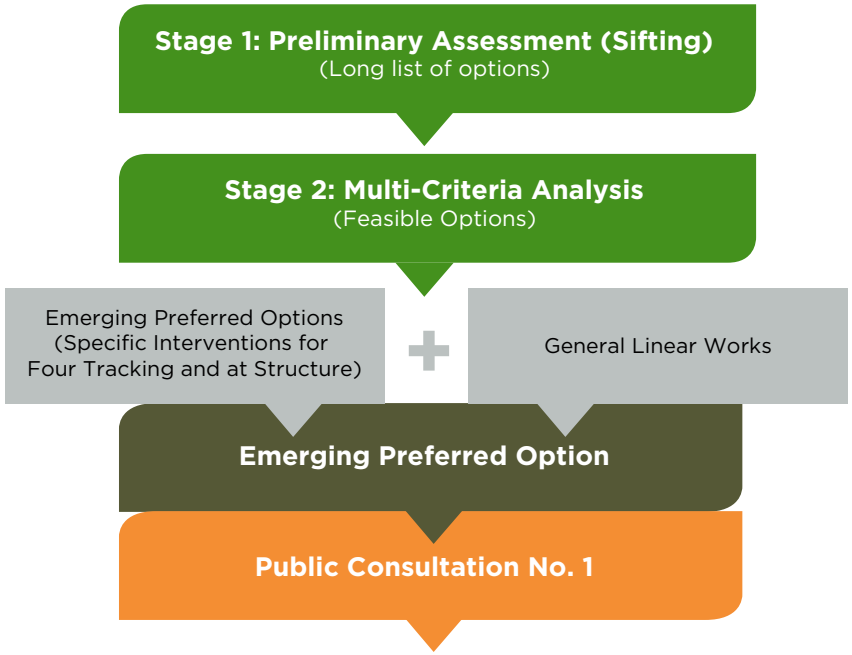
The engineering design will enhance the existing railway network to meet train capacity requirements to cater for current and future projected passenger demand. Many elements of the scheme require option assessment at a local level prior to incorporation into the end to end route determination assessment. Options were developed for the individual components to include the following:

- Four-tracking (involving track enhancement, bridge improvements/reconstructions and other civil works to facilitate movement of electrified train services).

Assessment Methodology

Stage 1 – Preliminary Assessment (sifting process) comprised of the assessment of a long list of options against engineering, economics and environment criteria to evaluate the 'feasibility' of each options to meet the project objectives / requirements. This approach allowed for the long list of options to be filtered to a shorter list of feasible options. All feasible options were brought forward to Stage 2 where they could be explored in greater detail.

Stage 2 – The Multi-Criteria Analysis process comprised of a more detailed multi-disciplinary comparative analysis of the feasible options which passed through Stage 1. The feasible options were assessed against the six appraisal criteria set out in the NTA's Common Appraisal Framework (CAF), namely: economy, safety, environment, accessibility and social inclusion, integration and physical activity. Options were then compared to each other based on whether an option had a 'slight' or 'significant' advantage or disadvantage over other options or whether all options were 'comparable / neutral' leading to the determination of emerging preferred options for the intervention required. The various emerging preferred options in respect of particular elements or interventions were then combined with general linear works needed to upgrade and modernise the railway to make up the end-to-end **'Emerging Preferred Option'.**



Graphic showing the assessment methodology

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The Emerging Preferred Option

8. The Emerging Preferred Option

The starting principle for the project is to upgrade the existing railway corridor and undertake all works, within the railway corridor. This can be achieved over the majority of the route, including building on the groundwork carried out under the original Kildare Route Project which delivered the existing four track system and several reconstructed bridges from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station. The last remaining significant constraint is from Park West area to Heuston Station where the rail corridor reduces to two tracks. Expanding to four tracks will require widening of the rail corridor and this will have a potential impact on adjoining property owners.

The process to determine the 'Emerging Preferred Option', as described in Section 7 - Option Selection Process, has led to the identification of Emerging Preferred Options in respect of works required. These, and general linear works required along the full length of the project, are the key elements of the Emerging Preferred Option.

For the purpose of describing the Emerging Preferred Option, general linear works are described first followed by sections (from west to east) with similar project requirements and resulting levels of works or interventions, as follows:

- General Linear Works.
- Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station.
- Park West & Cherry Orchard Station to Heuston Station.
- East of St John's Road Bridge to Glasnevin Junction.

8.1 General Linear Works

The project will require modernisation and modifications to the existing railway line. There is a range of general linear works required along the full length of the project to enable the electrification of the line and the upgrade of the existing network. These are:

- Overhead electrification equipment (OHLE) will be required along the full extent of the railway line from Hazelhatch & Celbridge Station to Heuston Station and through the Phoenix Park Tunnel Branch Line up to Glasnevin Junction, where it will link with the proposed DART+ West Project. This will be similar to the OHLE currently used on the existing DART network.
- A number of electrical substations will be required at intervals along the rail line to provide power to the network.
- Signalling upgrades and additional signalling will be required to the upgraded infrastructure.
- Where existing bridges do not provide the necessary height for overhead electrification of the lines or width for four tracking, options are being considered on a case-by-case basis, these include:
  - Provision of specialist electrical solutions for the OHLE with reduced clearance;
  - Lowering the rail track under the bridge;
  - Modification of the existing structure;
  - Removal of the existing structure and provision of a replacement structure; or
  - A combination of the above.
- Overhead electrified line protection works will be required at all existing rail overbridges.
- Interfaces with existing utilities, boundary treatments (including new retaining walls), drainage works, vegetation management and other ancillary works will be required along the length of the project.

View of typical section of twin track electrified rail line

8.2 Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

The works carried out under the original Kildare Route Project between 2006 and 2009 provided the main groundwork for DART+ South West including the existing four track system and several reconstructed bridges.

The Emerging Preferred Option for this circa 11km section comprises the general linear works as outlined in Section 8.1. The electrification works can be run under the existing bridges with no / minimal intervention in the bridge structures and minor localised track lowering works and use of specialist OHLE solutions to achieve the required clearance. All these works can be accommodated within the existing rail corridor.

Existing Four Track System

8.3 Park West & Cherry Orchard Station to Heuston Station

The section between Park West & Cherry Orchard Station and Heuston Station requires electrification and widening to four tracks. To meet these project requirements, the track corridor must be widened, and the physical surroundings must be altered. Extending to four tracks in this area will require an increase in the width of the existing rail corridor outside of lands owned by Iarnród Éireann, potentially interfering with property rights (on a permanent and / or temporary basis).

Following an option selection process that included developing and evaluating a number of options at each location, the Emerging Preferred Option for each location was established. These are described below:

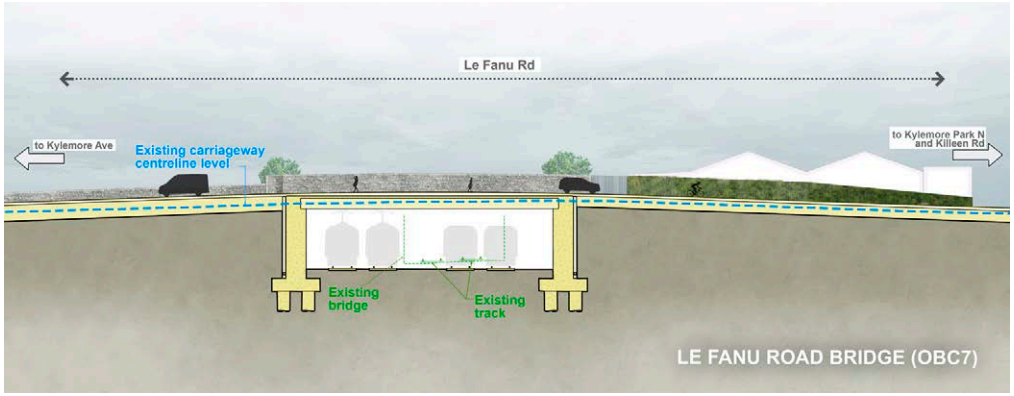
8.3.1 Area around Le Fanu Bridge

The rail corridor on the Cork Mainline between Cherry Orchard Footbridge and Le Fanu Road Bridge currently comprises three existing tracks and at Le Fanu Road Bridge narrows to two existing tracks. Increasing to four tracks requires the realignment of the existing tracks and an increase in the overall railway corridor width. Le Fanu Road Bridge is a narrow arch structure and is inadequate in both span length and height for the four tracks and electrification infrastructure.

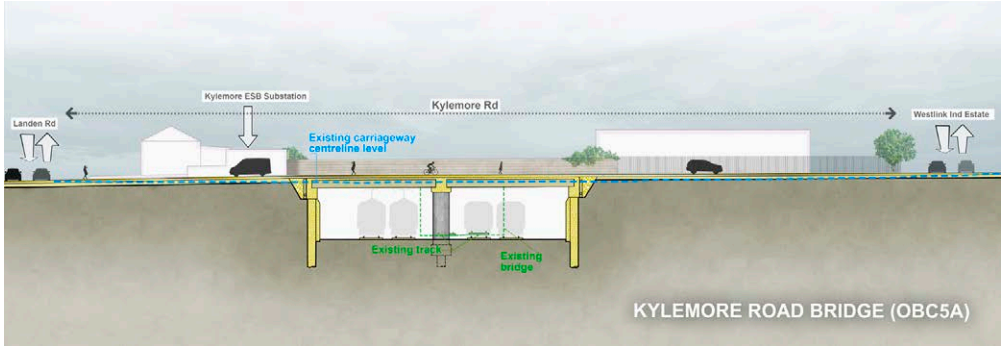
The Emerging Preferred Option replaces the bridge with a longer span or spans to facilitate the additional width required for the additional tracks. To overcome the lack of height available for the electrification infrastructure, the road level will be raised in combination with lowering the rail track. Retaining walls are required to the north and south of the corridor adjacent to the new bridge to allow the widening of the corridor while minimising the impact on the adjacent properties. The raising of the road level will also mean that retaining walls will be required along the road to the north of the railway.

The proposed replacement bridge will be a modern structure that will provide segregation for pedestrians, cyclists and improved sightlines and will be a significant improvement on the existing situation for all road users.

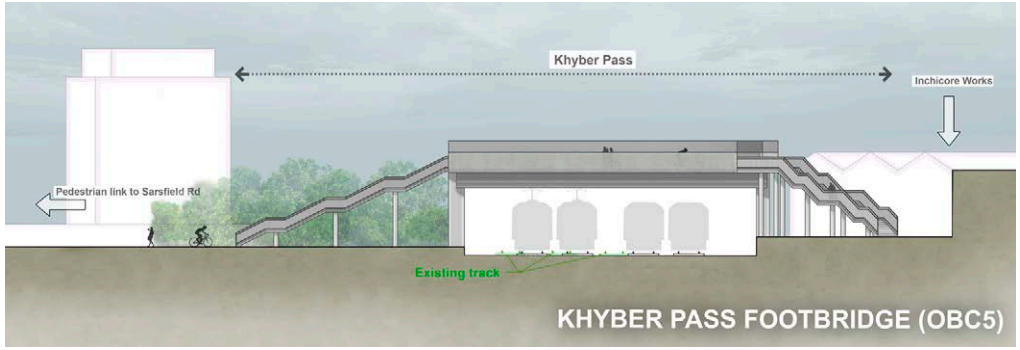
The proposed new bridge is presented below in sectional elevation looking east.



Emerging Preferred Option for Le Fanu Road Bridge



Emerging Preferred Option for the Kylemore Road Bridge



Emerging Preferred Option for Khyber Pass Footbridge

8.3.2 Area around Kylemore Road Bridge

This section of the railway comprises two existing tracks and one bridge structure (Kylemore Road Bridge). The bridge does not have adequate span length to fit four tracks and is not high enough for the DART line electrification infrastructure to pass under. There are a number of constraints in this area including:

- The railway corridor is bounded on both sides by soil slopes.
- To the north and south of the bridge are road junctions and access points that that significantly restrict alterations that may be required to the road geometry.
- Kylemore Road is a potential route for a future LUAS line. Therefore, the design must consider this potential new infrastructure.
- The west of Kylemore Road Bridge has been identified for a potential future railway station to the west of the bridge. The designs for this area must not prejudice its delivery in the future.

The Emerging Preferred Option for Kylemore Road Bridge replaces the bridge with a longer span to facilitate the additional track width. To overcome the lack of height available for the electrification infrastructure, the road level will be raised in combination with lowering the rail track.

Retaining walls are required to the north and south of the corridor to allow the widening of the corridor while minimising the impact on the adjacent properties. The raising of the road level will also mean that retaining walls will be required along the road to the north and south of the railway.

The proposed new bridge is presented above in sectional elevation looking east.

8.3.3 Area around Inchicore Works

The railway in this area (between Kylemore Road Bridge and Sarsfield Road Bridge) comprises two mainline tracks which are joined by two additional short tracks (or sidings) connected to the Inchicore Depot. The existing tracks through the area would not provide the required four tracking while maintaining the functionality of the depot. Therefore, the laying of additional tracks is required, which in turn requires the realignment of the existing tracks and an increase in the railway corridor width in this area.

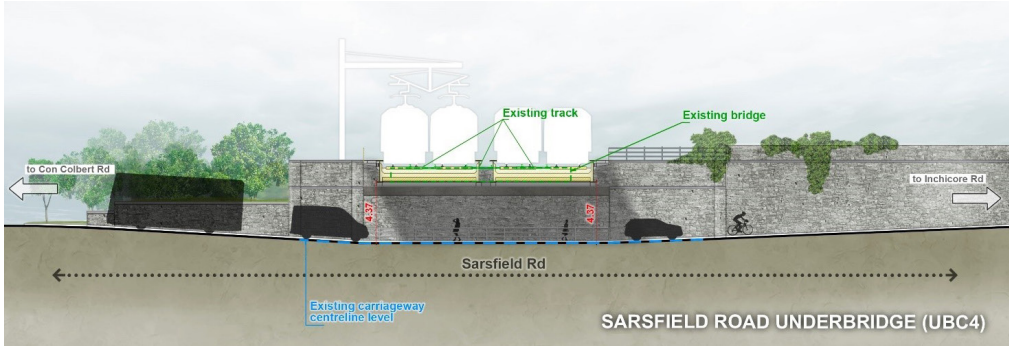
The Emerging Preferred Option focuses this enhancement of the corridor to the south requiring the demolition / modification of some Iarnród Éireann facilities within the Inchicore Depot. There is potential interference to third party property rights but further design development and technical and construction related solutions will seek to minimise this.

8.3.3.1 Khyber Pass Footbridge

Khyber Pass Footbridge is an existing pedestrian overbridge linking Inchicore Works to Sarsfield Road to the north. The existing structure has three tracks beneath it and is not wide enough to safely accommodate an increase to four tracks.

The Emerging Preferred Option provides a new pedestrian bridge with sufficient height and width to meet the requirements for four-tracking and electrification. The extent of works may potentially interfere with property rights in the immediate area but further design development and technical and construction related solutions will seek to minimise this.

The proposed new pedestrian bridge is presented above in sectional elevation looking east towards Heuston Station.



Emerging Preferred Option for Sarsfield Road Bridge

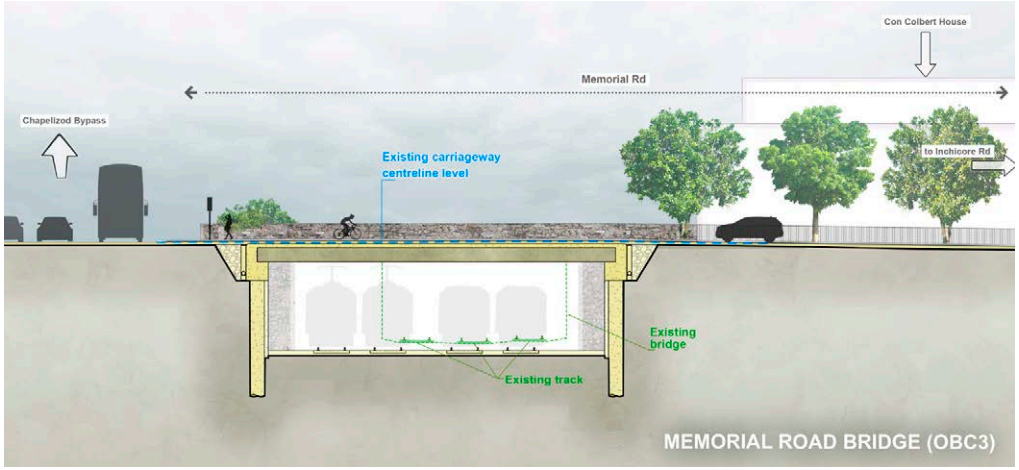
8.3.4 Sarsfield Road Bridge Area

Sarsfield Road Bridge carries the railway over Sarsfield Road. Both the bridge and the railway corridor in this area comprise three mainline tracks and are not wide enough to carry the fourth track that is required.

The Emerging Preferred Option replaces the existing bridge deck with two parallel bridge decks, one for the Intercity service and one for the DART service. The existing walls along Sarsfield Road would be mostly left untouched by the construction works. The proposed bridge is presented above in sectional elevation looking east towards Heuston Station.

There is potential interference to third party property rights but further design development and technical and construction related solutions will seek to minimise this.

Heading east of the bridge the corridor will predominantly be widened to the north to add a fourth track (into the embankment between the railway and Con Colbert Road).



Emerging Preferred Option for Memorial Road Bridge

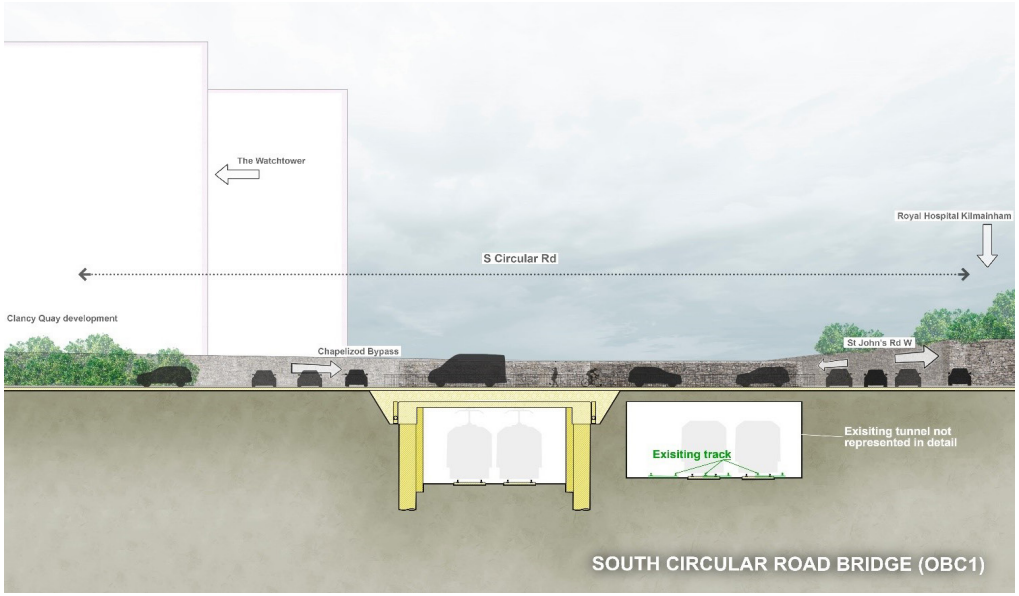
8.3.5 Area around Memorial Road Bridge

The existing Memorial Road Bridge is too short in span length to accommodate the additional fourth track, so a longer span bridge is required. The existing bridge also does not have the height required to accommodate the electrification infrastructure beneath the bridge. The bridge is very close to the Con Colbert dual carriageway so any increases in the height of the road would have an impact on the dual carriageway.

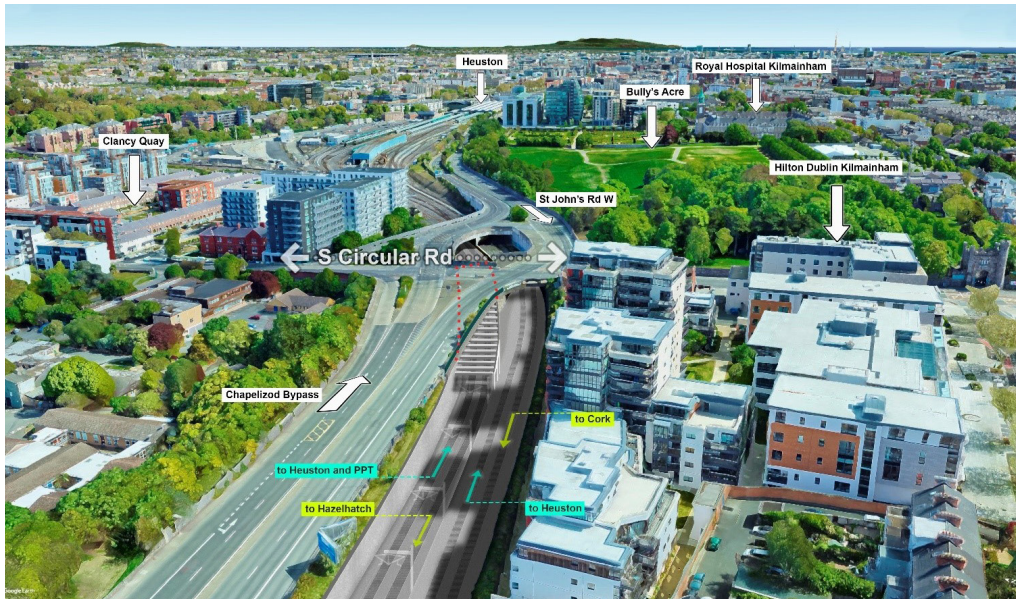
The Emerging Preferred Option replaces the bridge with a longer span bridge. In addition, the rail tracks will be lowered to facilitate the electrification infrastructure beneath the new bridge. The masonry retaining walls on the southern side would need to be strengthened due to the lowering of the track and new retaining walls would be required along the northern side.

The permanent way boundary wall along Con Colbert Road will need to be reconstructed to a higher containment standard and height, as it will be removed to provide retaining wall construction access.

The proposed bridge is presented above in sectional elevation looking east towards Heuston Station.



Emerging Preferred Option for South Circular Road Bridge



Aerial View of Emerging Preferred Option for South Circular Road Junction

8.3.6 South Circular Road Junction Area

This area extends from Memorial Road Bridge to the South Circular Road Junction. There are two major bridge structures in this area which are part of the junction namely South Circular Road and St. John's Road Bridge. St. John's Road Bridge has an adequate span length to enable a layout with the minimum four tracks requirement and is high enough for the electrification infrastructure required for DART. South Circular Road Bridge does not have adequate span length to fit four tracks and is not high enough for the electrification infrastructure to pass under.

The Emerging Preferred Option leaves South Circular Road Bridge in place and includes the construction of a new structure to the north of the existing bridge. The new structure would be for the new DART tracks and the existing Intercity service would continue under the existing South Circular Road Bridge. The new structure requires retaining walls to be constructed on both sides beyond the junction area to the west.

The South Circular Road Junction is extremely busy and frequently has traffic queues, so any works in this area are likely to impact traffic. In order to minimise impact on traffic during the works, the construction will be carried out in phases, utilising all available road space to safely divert all road users around the affected area.

The new structure will accommodate DART trains. This means that the existing South Circular Road Bridge would not need to be electrified and the track levels can be left as they are currently.

The proposed intervention is presented above in sectional elevation looking east towards Heuston Station. In addition, an aerial view of the Emerging Preferred Option for the South Circular Road Junction is also presented above.

8.3.7 Heuston Station and Yard

Heuston Station currently does not have any provisions for electrification. Platforms and sidings within the Heuston area are to be electrified to receive the DART+ Fleet. These works will require re-arrangement to provide access to the new DART platforms and to update access to inter-city tracks.

In terms of permanent way works, the constraints on track work in Heuston Station are predominantly those posed by the need to maintain the operational capability.

In the station area, platforms and sidings will be electrified as required for the DART services.

All works can be undertaken within land owned by Iarnród Éireann.

8.4 East of South John's Road Bridge to Glasnevin Junction

This area extends from the east of St John's Road Bridge and northwards over the River Liffey via the Liffey Bridge and under Conyngham Road Overbridge where it enters the Phoenix Park Tunnel.

Close to the junction of the Cabra Road and Navan Road the line exits the Phoenix Park Tunnel and continues north under several road bridges as follows: McKee Barracks Bridge, Blackhorse Avenue Bridge, Old Cabra Road Bridge, Cabra Road Bridge, Fassaugh Road Bridge, Royal Canal and LUAS Twin Arch, the Maynooth Line Twin Arch and Glasnevin Cemetery Road Bridge. The line then continues east and interfaces with the proposed DART+ West Project at Glasnevin Junction.

A requirement of the DART+ South West Project is to investigate the feasibility of a new station at Heuston West, at the site of the existing Platform 10, located to the north west of the greater Heuston Station complex adjacent to the Liffey Bridge. A preliminary assessment for the station has been undertaken by the project team and concept design options are being considered.

The Emerging Preferred Option for Liffey Bridge features electrification and retention of the existing fixed track system.

The existing twin tracks along the Phoenix Park Tunnel Branch Line will be electrified. DART+ South West is currently undertaking surveys and analysis along this section, including within the tunnel, to understand the current characteristics and constraints. The Emerging Preferred Option will follow the existing rail corridor and may involve track lowering and/or bridge modifications at certain locations to achieve the height requirements for electrification.

The specific interventions at each bridge along this rail section will be based on the analysis of survey data and presented at Public Consultation No. 2.

Northern and Southern Portals to the Phoenix Park Tunnel and view of inside tunnel

09

Transport Integration

9. Transport Integration

The DART+ South West Project will provide high frequency electrified railway transit services running from Hazelhatch & Celbridge Station to Heuston Station, and to Glasnevin via the Phoenix Park Tunnel Branch Line.

The project will link Iarnród Éireann, DART, Dublin Bus, Luas, MetroLink and Dublin Bike services to create a fully integrated public transport system in the Greater Dublin Area.

Public Transport Integration

Public Transport Links

DART+ South West is planned to enhance access and movement of pedestrian and cyclists and reduce reliance on private car. DART+ South West will integrate with the Metropolitan Cycle Network where potential interfaces are identified.

DART+ South West will form a high-capacity spine of a fully integrated public transport system with links to the other public transport modes including Dublin Bus, Bus Eireann, Luas and as well as linking major transport hubs, the project will provide public transport interchanges at:

- Heuston Station to the Luas Red line; and
- Glasnevin / Phibsborough to the proposed MetroLink and BusConnects schemes.

The project will also secure enhanced passenger access to several of Dublin's higher education institutions as well as enhancing passenger access to other major city attractors such as the Guinness Storehouse.

Increase peak passenger capacity from 5,000 to 20,000 per hour per direction and increase train frequency

10

Issues to Consider

10. Issues to Consider

All possible efforts will be made to sensitively address issues and challenges associated with the project at the earliest stages of the design process and public consultation. Several potential issues are detailed below, and the public consultation and stakeholder engagement phases will help us to better understand some of the issues and challenges we face.

Property Acquisition

The DART+ South West Project will predominantly seek to confine the railway improvement works within the existing railway corridor. However, where works and modifications are required outside of the existing corridor, some land acquisition may be required i.e. widening of the railway corridor for four-tracking between Park West & Cherry Orchard Station and Heuston Station and the provision of new electrical substations.

We are now embarking on an extensive programme of consultation with the potentially affected property owners and if your property is likely to be directly affected by the works you should already have heard from us, separately. Our Community Liaison Officer will be available throughout the process to ensure you are regularly updated on the current proposals and your views are taken into consideration as we progress to the **'Preferred Option'.**

Environmental Impacts

The project will involve changes to the local environment during both the construction and operation stages, which will result in both temporary and permanent impacts. In order to maintain daytime passenger services during the construction programme night-time works will be necessary. The design process will make every effort to ensure that negative impacts are avoided, reduced or mitigated as far as practicable, and positive impacts are maximised.

Bridge Improvements/Reconstruction

Several bridges on the existing line have been identified as having insufficient height for the electrical equipment as well as width to accommodate four-tracking. Works on these bridges will be needed to accommodate the DART+ South West Project.

Electrification of the Line

Overhead line electrification equipment will be required to provide electrical power to the DART trains. This will involve considerations such as:

- The supply of power from the grid which will need to be agreed and assessed as part of the Railway Order application process.
- The development of substations along the line to provide the power over the proposed circa 20km electrification, with associated land and access requirements.
- The equipment carrying the power lines require certain height clearances from the trains. Several bridges on the existing line have been identified as having insufficient height for this electrical equipment. A range of options are being considered at these locations some of which include modifications to protected structures.
- Boundary walls and fencing along the existing railway may need to be changed. Where necessary wall heights may need to be increased to ensure public safety and the railway is maintained. This is especially relevant due to the erection of overhead electrical lines, to prevent any potential that the public could come in contact with electricity.

11

Next Steps

11. Next Steps

Further Design Development & Option Selection

The preliminary options selection and design development that has been undertaken has led to the development of the **'Emerging Preferred Option'** which is the focus of this public consultation stage.

Once the public consultation process is complete all feedback and submissions received will be reviewed and assessed as part of the next stage of the design development. Following a full appraisal of the feedback, a public consultation report will be prepared to document this process and it will be incorporated into the Options Selection Report.

Further studies, assessments and consultations will lead to development of the **'Preferred Option'** which will be presented to the public at Public Consultation later in 2021.

All information gathered by the project team will be used to inform the design development of the project which will be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) (if required), and ultimately the Railway Order application will be submitted to An Bord Pleanála.

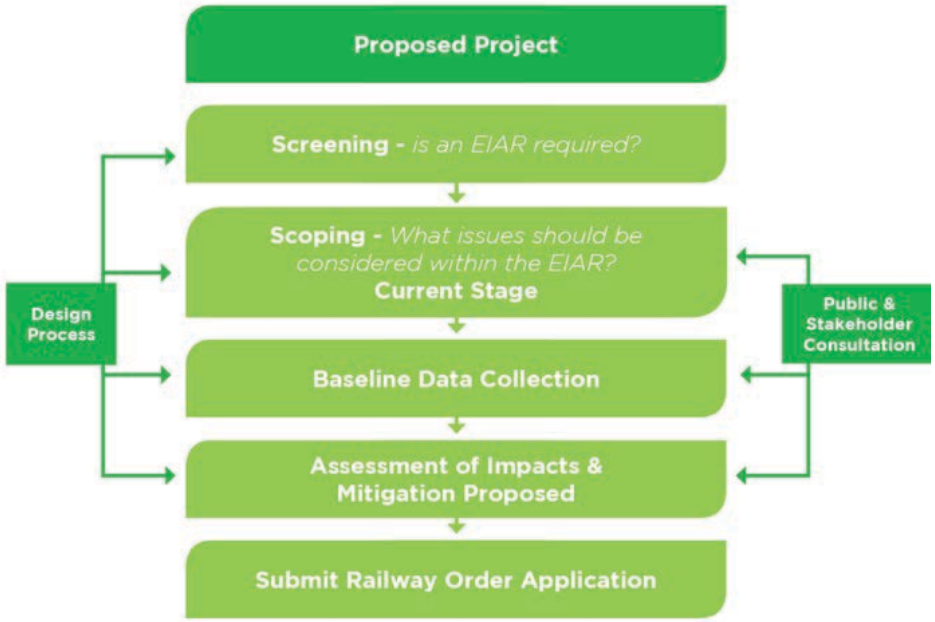
The Railway Order Process

The application to An Bord Pleanála for a Railway Order is broadly similar to the planning process which most people are familiar.

The Railway Order application process is set out in the Transport (Railway Infrastructure) Act 2001 (as amended) and the application will be made to An Bord Pleanála. The Environmental Impact Assessment Report (EIAR) will detail the nature and extent of the proposed project and identify and describe the impacts on the environment. It will also detail measures which will be taken to avoid, reduce and/or monitor these impacts. Following the submission of the Railway Order application to An Bord Pleanála, the public are invited through public notices to make submissions which will be duly considered by An Bord Pleanála as part of the decision making process.

We expect that An Bord Pleanála will conduct an oral hearing, to provide the public with further participation in the decision making process for this project. At an oral hearing the Iarnród Éireann project team will provide responses to submissions and will be available for questioning. Any person or body may make a submission or observation in writing to the Board in relation to the Railway Order application including the EIAR and the Compulsory Purchase land requirements.

We expect to make the application to An Bord Pleanála in later 2021 / early 2022.



The EIA Process leading to submission of Railway Order to An Bord Pleanála

12

How to Engage

12. How to Engage

This consultation is our way of asking you, as potential users of the service or those likely to be affected by its development, for your views on our plans. Your local knowledge will inform the emerging design, help us to improve the scheme and ensure it will be a beneficial for you and the communities the route will serve.

The consultation period is now open, full details including closing dates for receipt of submission are available on the project website.

Please contact us via the following means:

Website | www.dartplus.ie

Email | DARTSouthWest@irishrail.ie

Phone line | (01) 284 1029

Postal Address

If you would prefer to write to us, please send it or any correspondence to:

Community Liaison Officer,

DART+ South West,

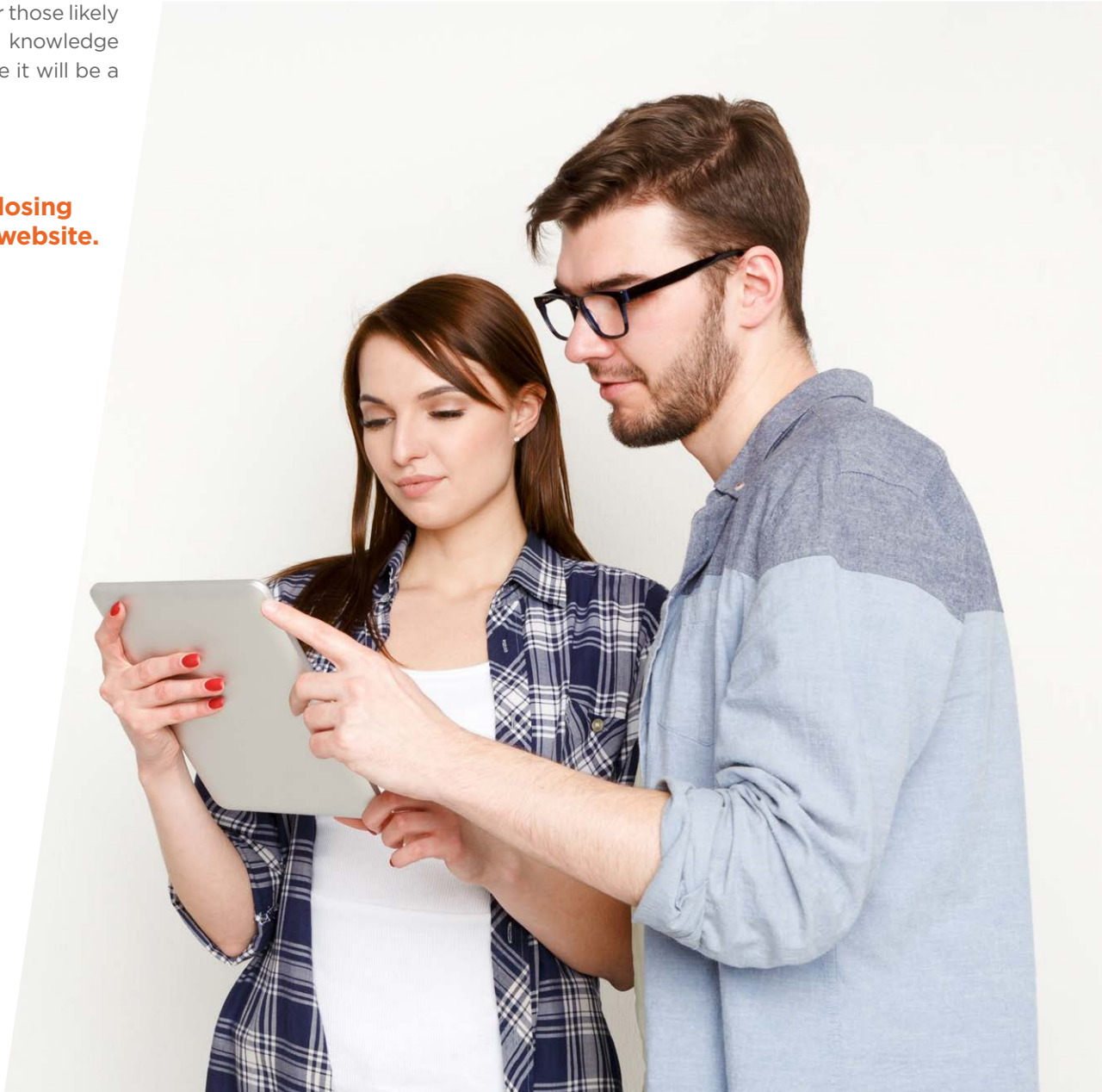
Iarnród Éireann,

Inchicore Works,

Inchicore Parade,

Dublin 8.

D08K6Y3

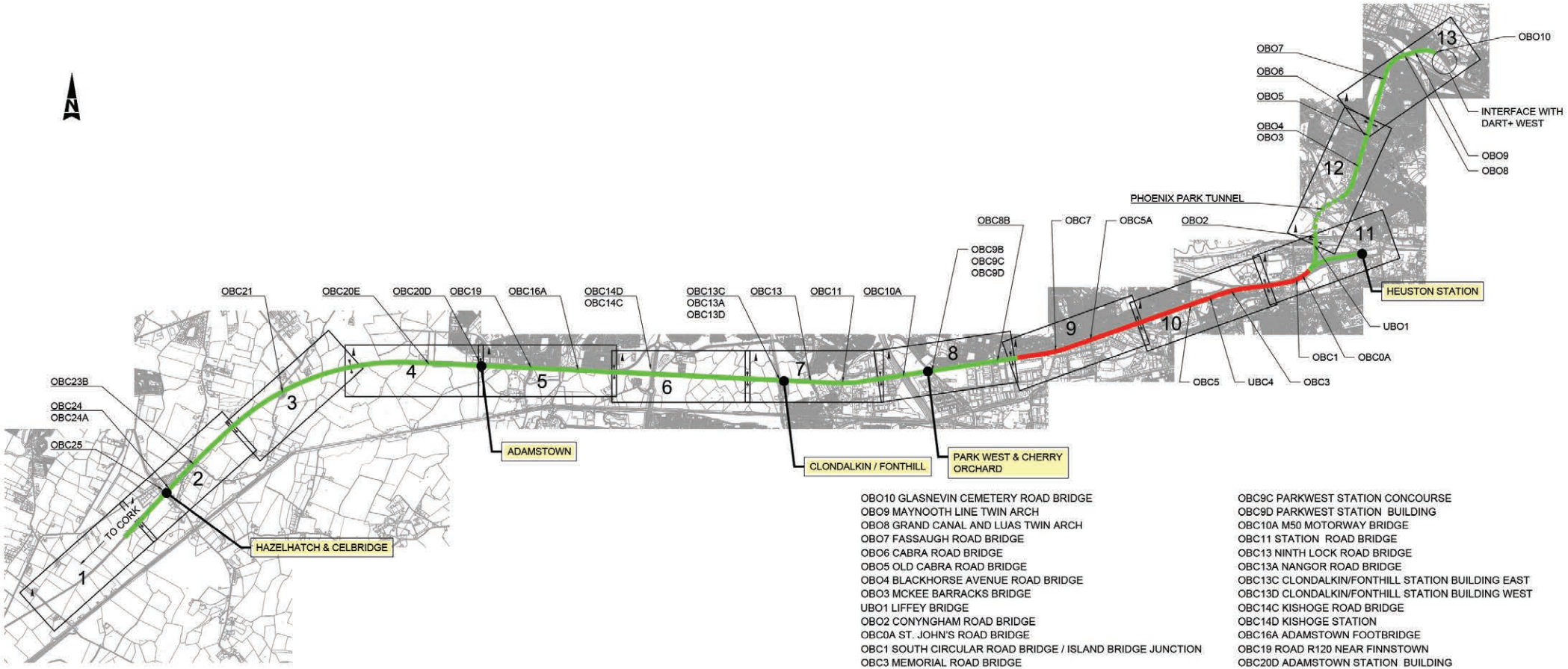


13

Alignment Figures

DART+ SOUTH WEST

EMERGING PREFERRED OPTION - KEY PLAN



OBO10 GLASNEVIN CEMETERY ROAD BRIDGE
OBO9 MAYNOOTH LINE TWIN ARCH
OBO8 GRAND CANAL AND LUAS TWIN ARCH
OBO7 FASSAUGH ROAD BRIDGE
OBO6 CABRA ROAD BRIDGE
OBO5 OLD CABRA ROAD BRIDGE
OBO4 BLACKHORSE AVENUE ROAD BRIDGE
OBO3 MCKEE BARRACKS BRIDGE
UBO1 LIFFEY BRIDGE
OBO2 CONYNGHAM ROAD BRIDGE
OBC0A ST. JOHN'S ROAD BRIDGE
OBC1 SOUTH CIRCULAR ROAD BRIDGE / ISLAND BRIDGE JUNCTION
OBC3 MEMORIAL ROAD BRIDGE
UBC4 SARSFIELD ROAD BRIDGE
OBC5 KHYBER PASS BRIDGE
OBC5A KYLEMORE ROAD BRIDGE
OBC7 LE FANU ROAD BRIDGE
OBC8B FOOTBRIDGE CHERRY ORCHARD
OBC9B PARK WEST AVENUE ROAD BRIDGE
OBC9C PARKWEST STATION CONCOURSE
OBC9D PARKWEST STATION BUILDING
OBC10A M50 MOTORWAY BRIDGE
OBC11 STATION ROAD BRIDGE
OBC13 NINTH LOCK ROAD BRIDGE
OBC13A NANGOR ROAD BRIDGE
OBC13C CLONDALKIN/FONTHILL STATION BUILDING EAST
OBC13D CLONDALKIN/FONTHILL STATION BUILDING WEST
OBC14C KISHOGE ROAD BRIDGE
OBC14D KISHOGE STATION
OBC16A ADAMSTOWN FOOTBRIDGE
OBC19 ROAD R120 NEAR FINNSTOWN
OBC20D ADAMSTOWN STATION BUILDING
OBC20E CROWLEY'S ROADBRIDGE
OBC21 STACUMMY ROAD BRIDGE
OBC23B NEW FOOTBRIDGE STRALEEK
OBC24 HAZELHATCH FOOTBRIDGE
OBC24A NEW HAZELHATCH FOOTBRIDGE
OBC25 HAZELHATCH R405 ROAD BRIDGE

LEGEND:

- EXTENT OF DART+ SOUTH WEST
- FOUR TRACKING
- EXISTING STATIONS
- OBXX EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
- UBXX EXISITING BRIDGE / ROAD / RIVER UNDER RAILWAY CORRIDOR

All elevations are in metres and relate to OSi Geoid Model (OSGM02) Malin Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).

DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS, TUC RAIL, Supported by: rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S	AK	DM	DM

Project Code: | Issuer: ATK | QMS Code:

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION KEY PLAN MAP

Drawing File Name: DP-04-23-DWG-RO-TTA-07200 | Version: V01 | Status: S3

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LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
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DART+ South West

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v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: ATKINS (TYPSA, Supported by rps)

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
	ATK	

Project Title: **DART+ SOUTH WEST**

Drawing Title: EMERGING PREFERRED OPTION - MAP 1 OF 13 HAZELHATCH

Drawing File Name: DP-04-23-DWG-RO-TTA-07201 | Version: v01 | Status: S3

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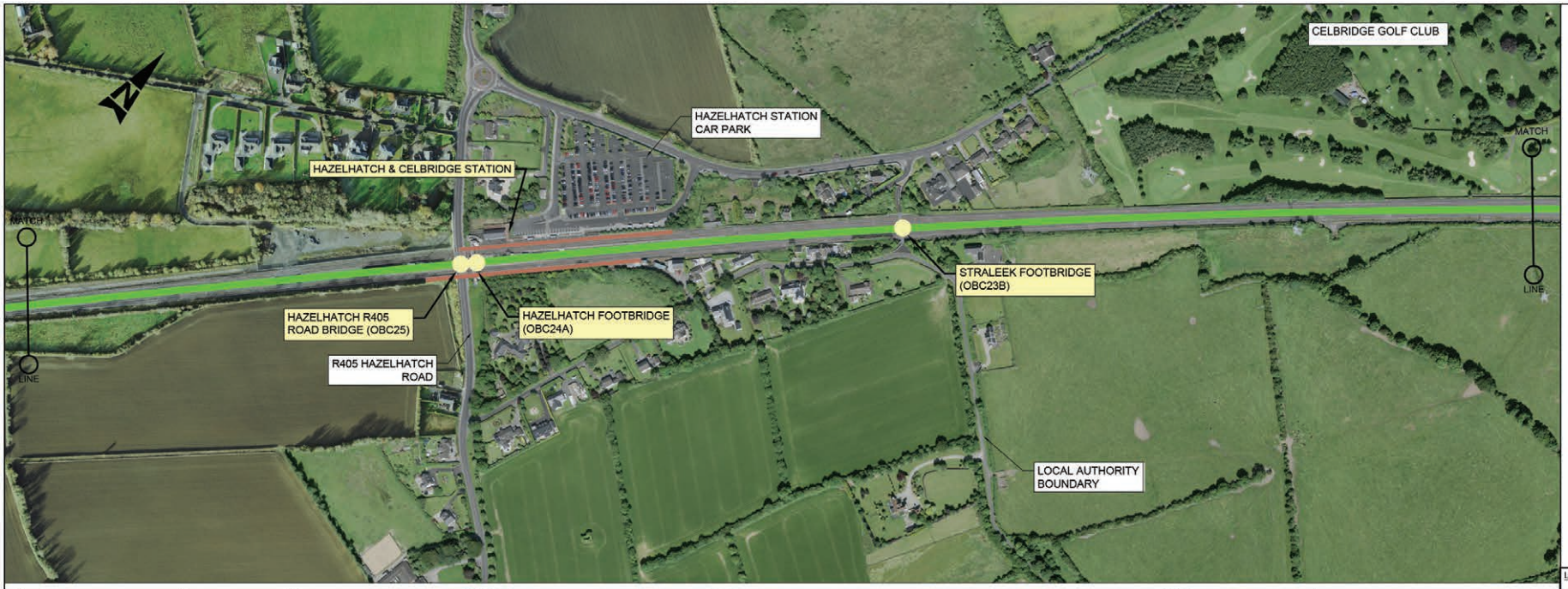

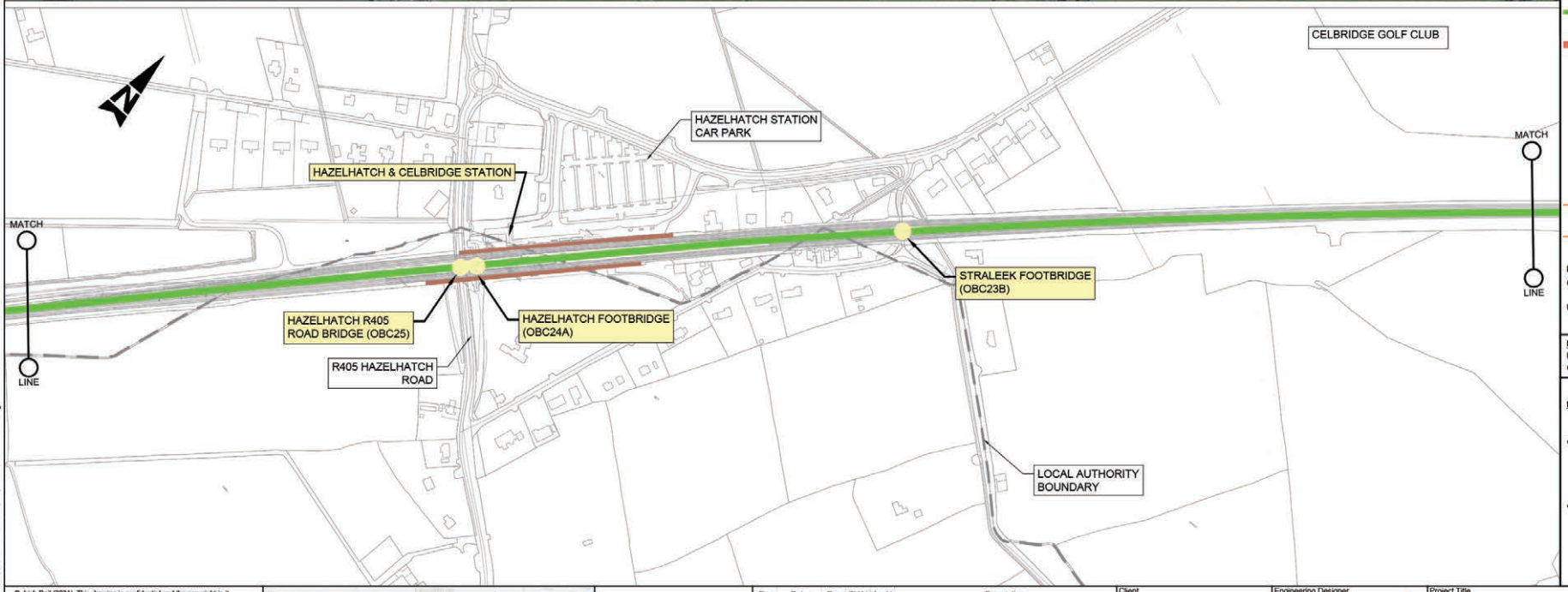

LEGEND:

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BRIDGES:

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DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS (Member of the SNC-Lavalin Group) — Supported by: rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 2 OF 13
HAZELHATCH & CELBRIDGE STATION AND SURROUNDS

Drawing File Name	Version	Status
DP-04-23-DWG-RO-TTA-07202	v01	S3

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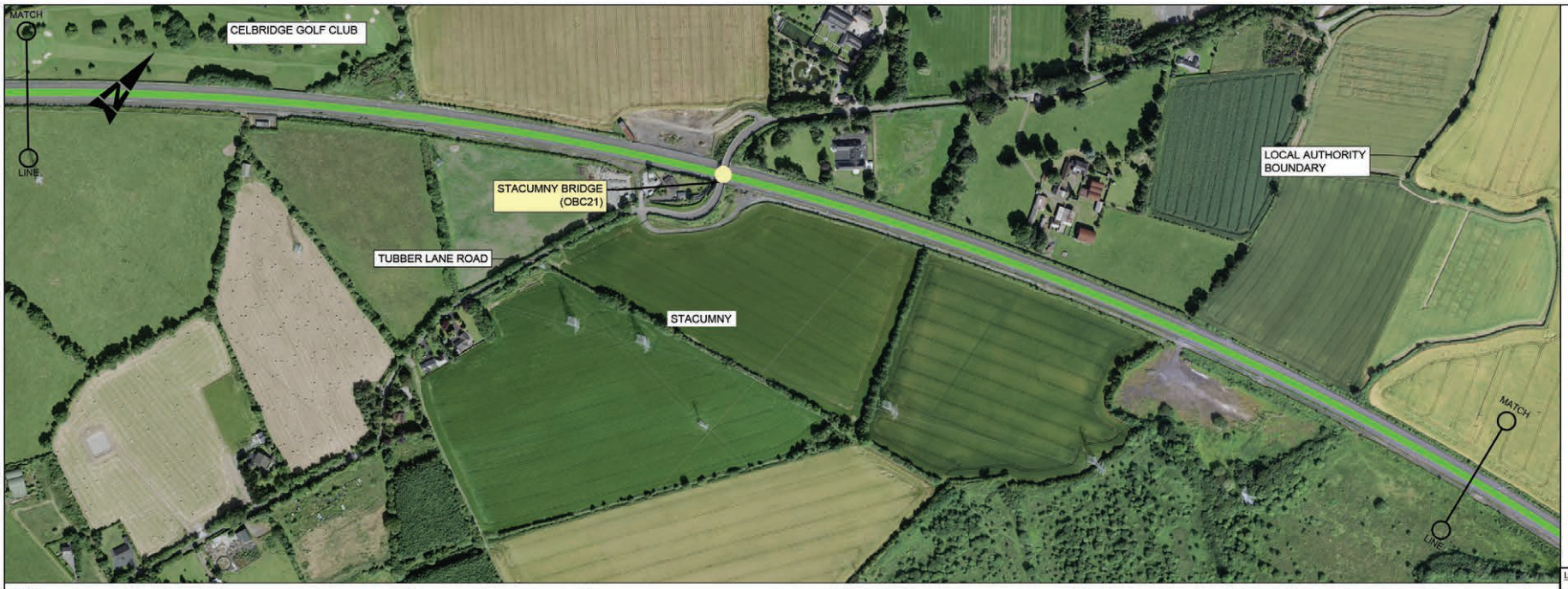

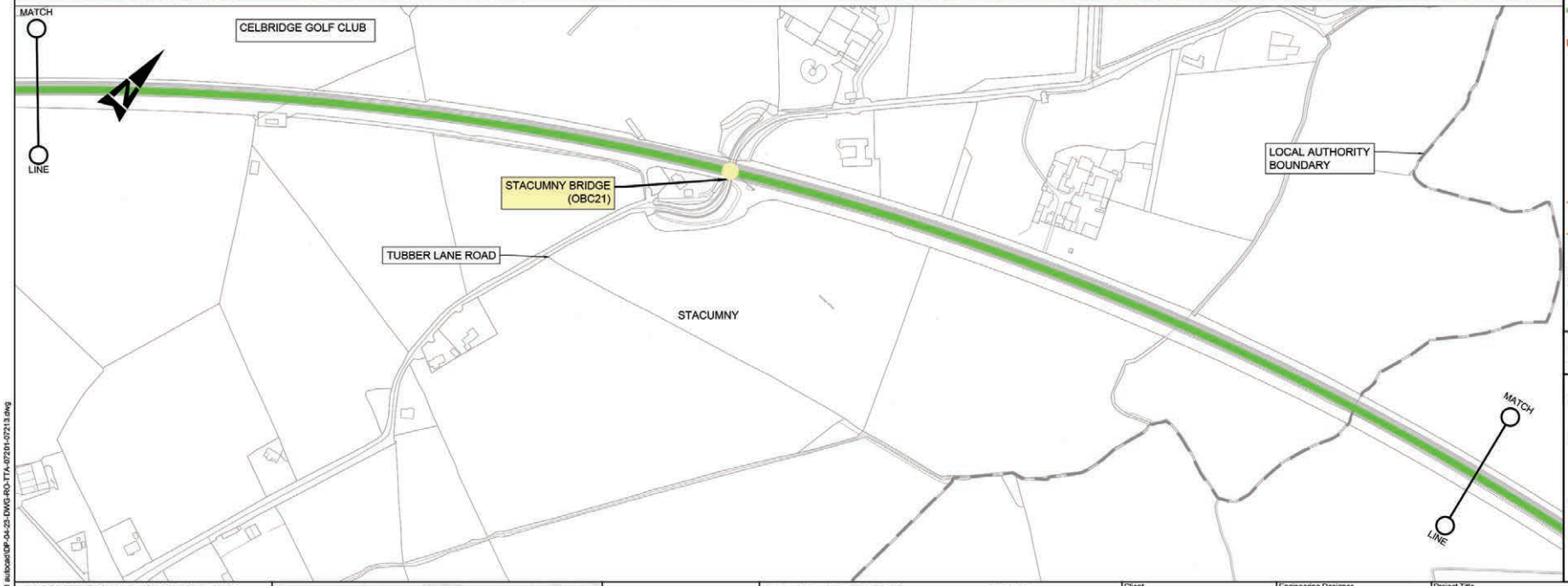

LEGEND:

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DART+ South West
NTA
2040

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS, TUC RAIL, Supported by CPS

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 3 OF 13
STACUMMY LANE AND TUBBER LANE ROAD AND SURROUNDS

Drawing File Name: DP-04-23-DWG-RO-TTA-07203 | Version: v01 | Status: S3

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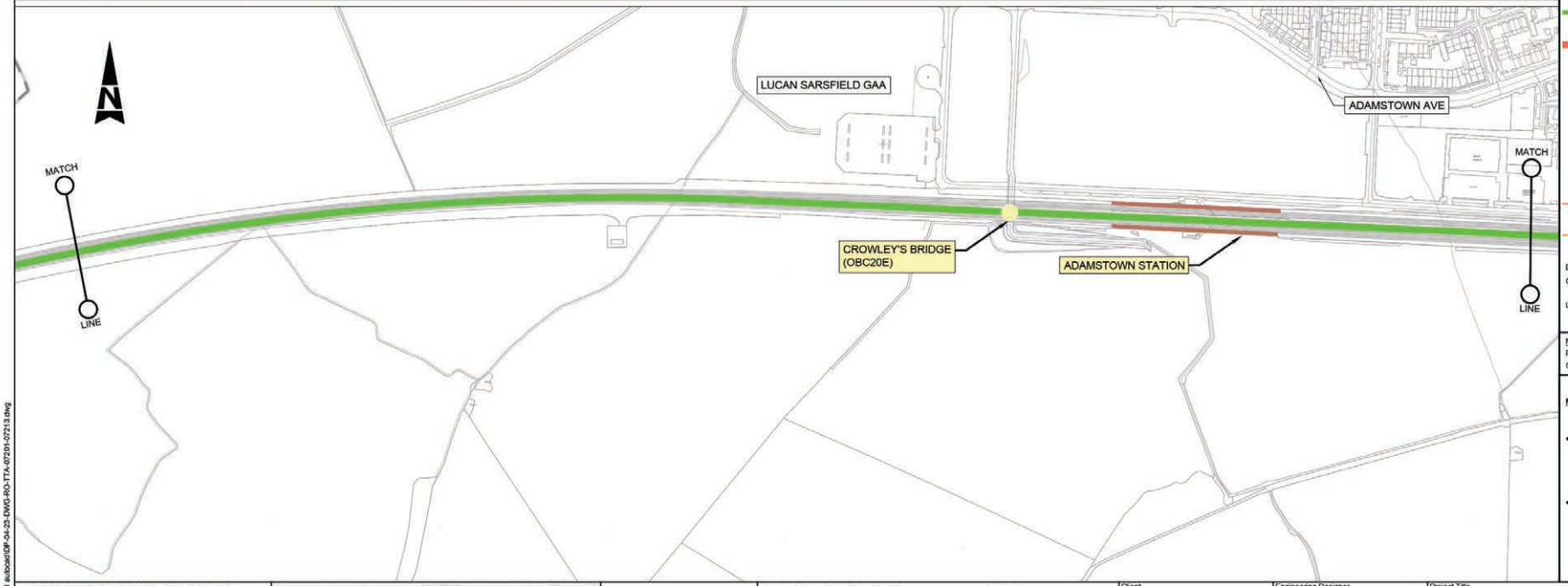

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DART+ South West

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Client: Iarnród Éireann Irish Rail

Engineering Designer: ATKINS (Member of the SNC-Lavalin Group) — TYPSA — Supported by: CPS

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 4 OF 13 ADAMSTOWN

Drawing File Name: DP-04-23-DWG-RO-TTA-07204 | Version: v01 | Status: S3

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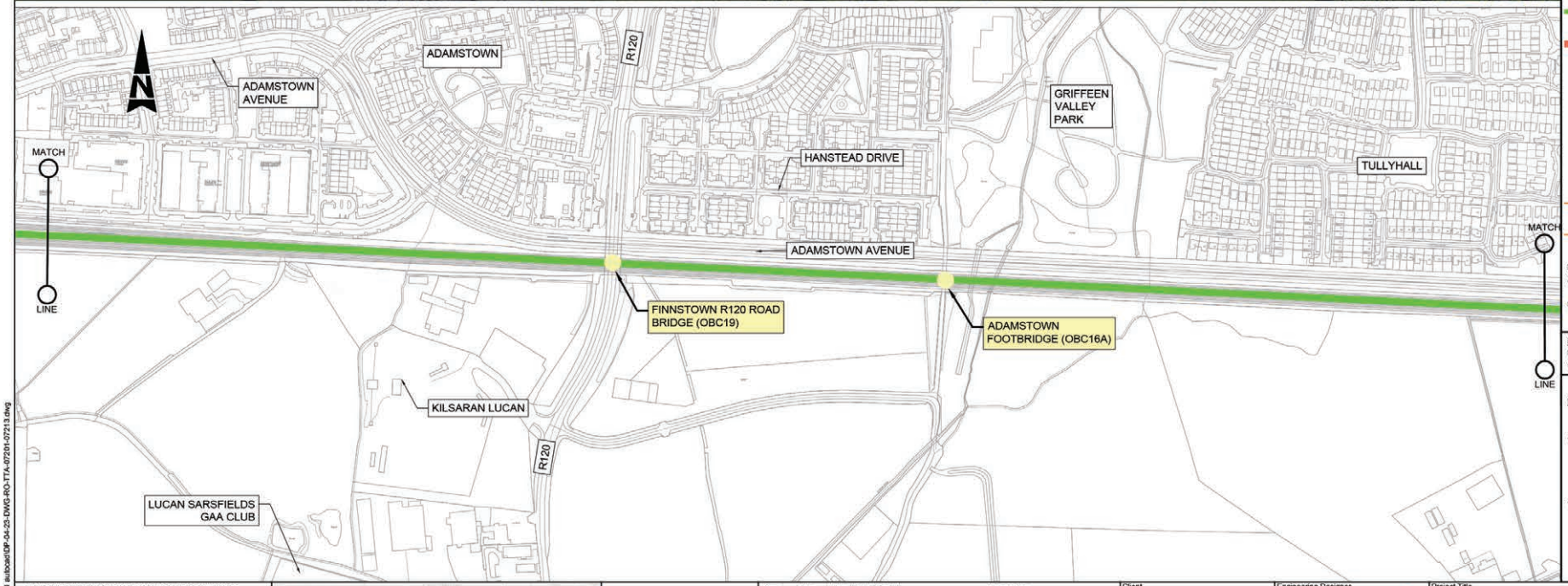

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DART+ South West

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v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS / TGC RAIL — Supported by rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 5 OF 13
ADAMSTOWN TO TULLYHALL

Drawing File Name: DP-04-23-DWG-RO-TTA-07205 | Version: v01 | Status: S3

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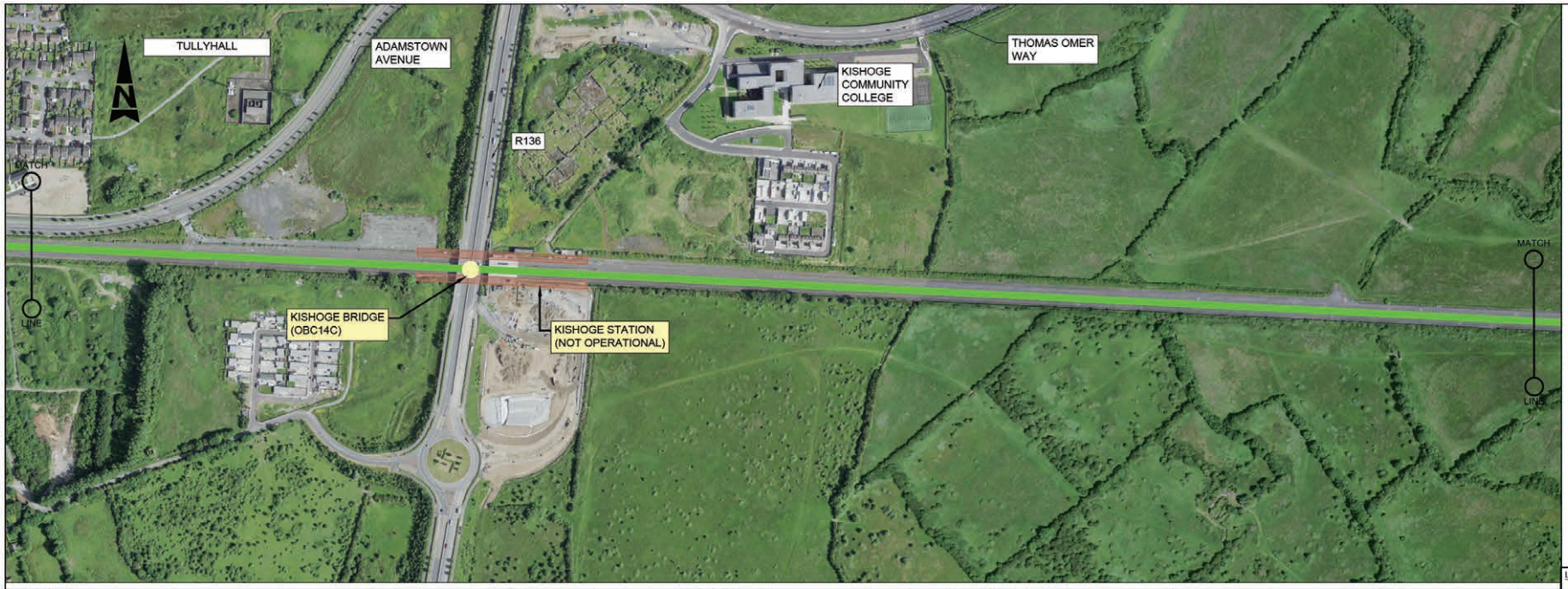

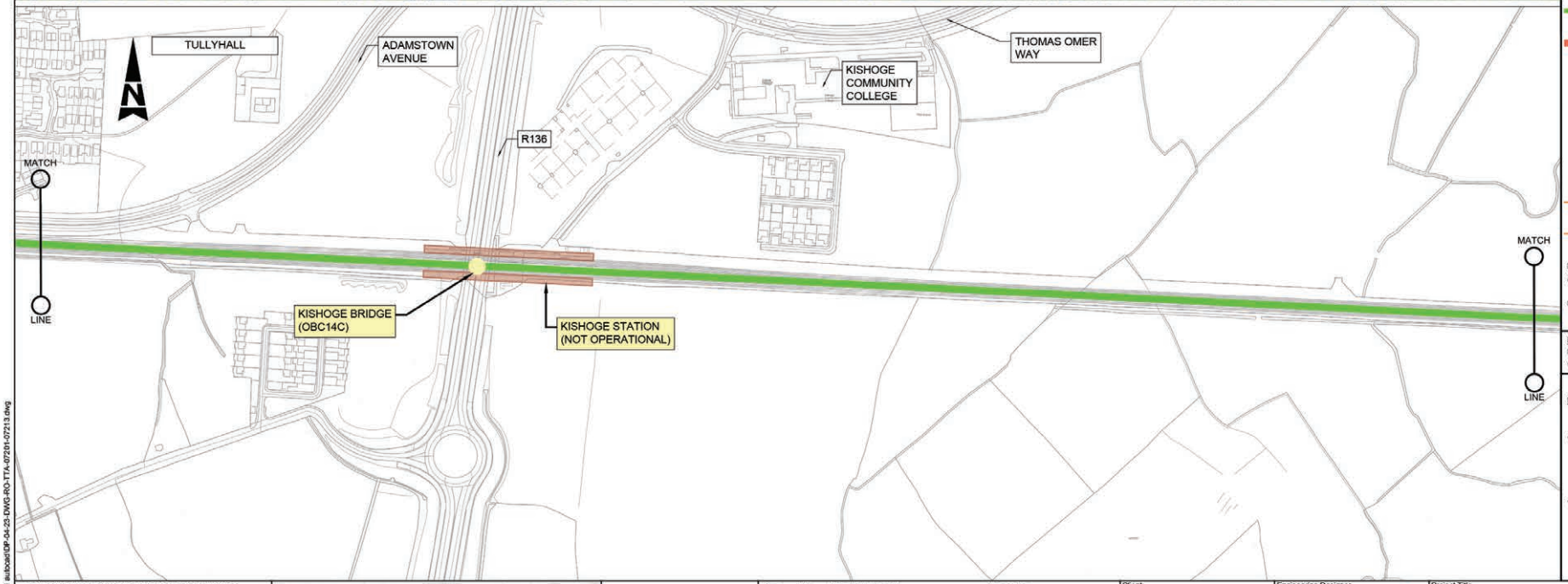

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

NOTE: **INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.**

- NOT ALL DESIGN DETAIL OR CONSTRUCTION RELATED DETAILS ARE KNOWN AT THIS TIME, E.G, SUBSTATION LOCATIONS, CONSTRUCTION COMPOUNDS, TEMPORARY BRIDGE REQUIREMENTS, TEMPORARY UTILITY DIVERSIONS AND OTHER ELEMENTS.
- POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS IS BASED ON THE LEVEL OF INFORMATION AND DESIGN AVAILABLE AT THIS TIME. FURTHER WORK INCLUDING DETAILED DESIGN AND TECHNICAL AND CONSTRUCTION RELATED SOLUTIONS WILL SEEK TO MINIMISE POTENTIAL INTERFERENCE WITH PROPERTY RIGHTS.

All elevations are in metres and relate to OSi Geoid Model (OSGM02) Malin Head as defined by existing Project Control.
All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).

DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS / TUC RAIL — Supported by CPS

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 6 OF 13 KISHOGE

Drawing File Name: DP-04-23-DWG-RO-TTA-07206 | Version: v01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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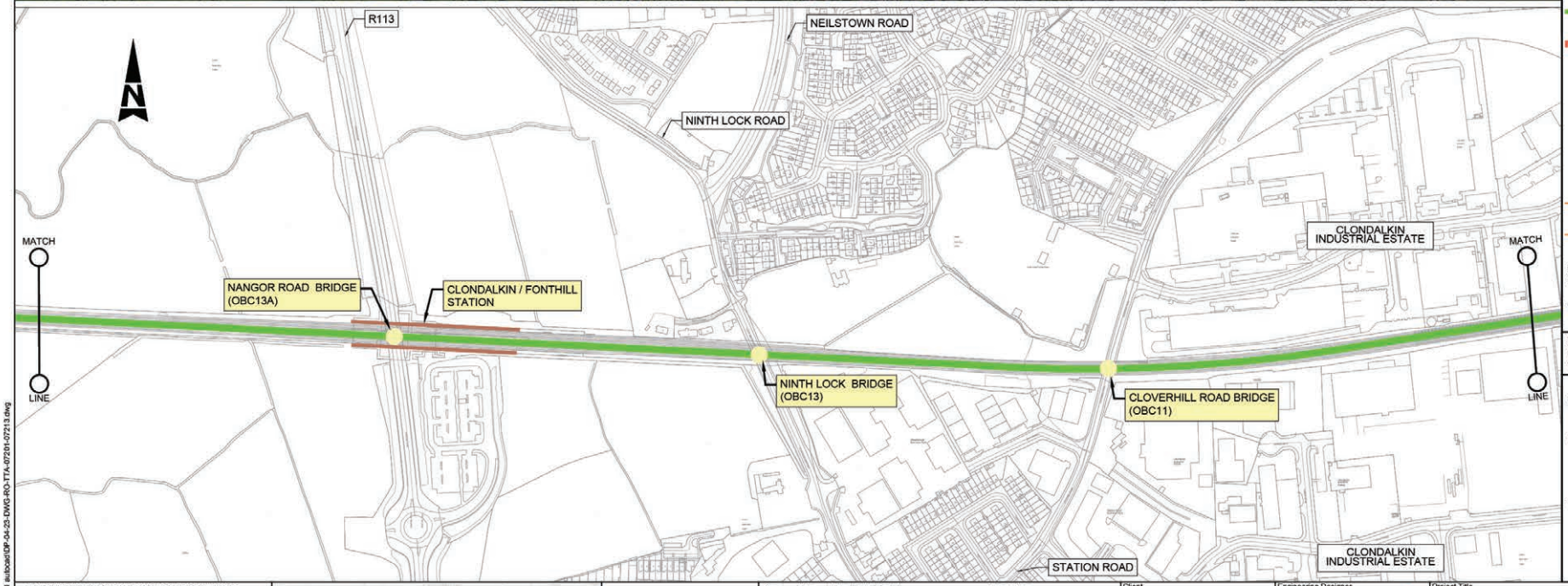

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
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- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

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DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS / TUC RAIL — Supported by rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: **DART+ SOUTH WEST**

Drawing Title: EMERGING PREFERRED OPTION - MAP 7 OF 13
CLONDALKIN / FONTHILL STATION TO CLONDALKIN INDUSTRIAL ESTATE (WEST SIDE OF THE M50)

Drawing File Name: DP-04-23-DWG-RO-TTA-07207 | Version: v01 | Status: S3

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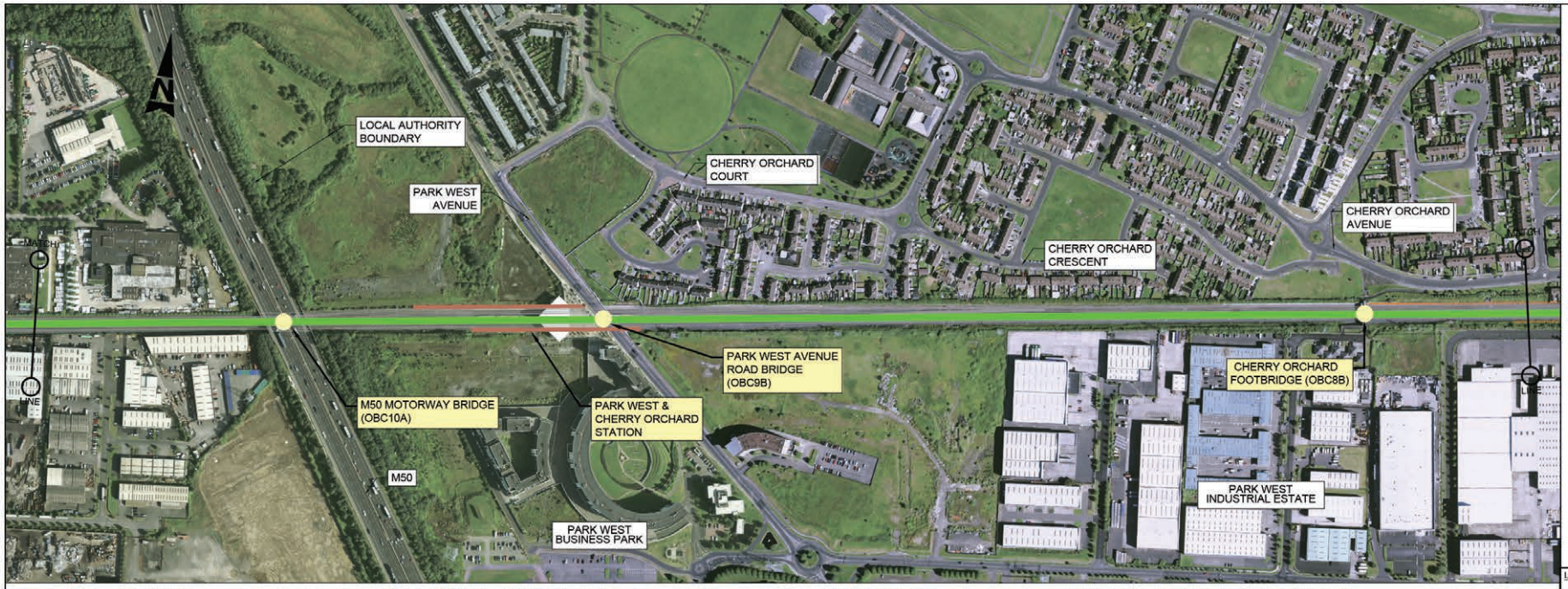
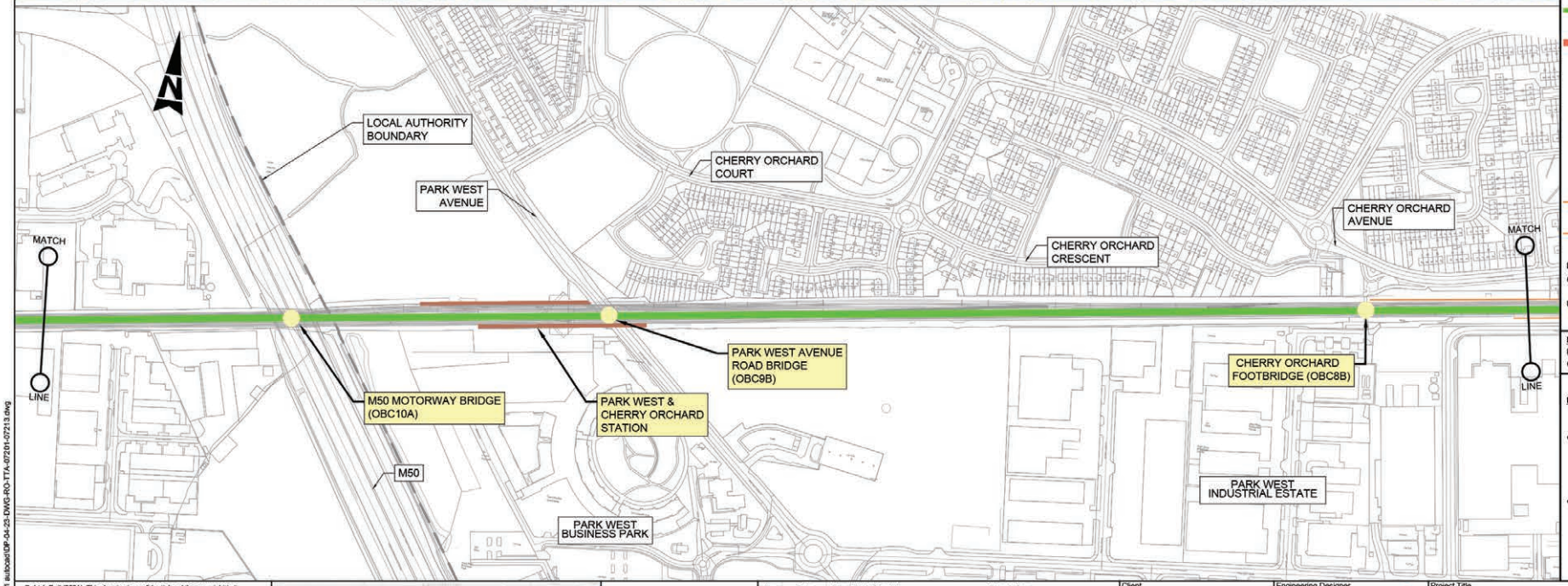
DO NOT SCALE USE FIGURED DIMENSIONS ONLY





LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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All elevations are in metres and relate to OSi Geoid Model (OSGM02) Malin Head as defined by existing Project Control. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).

DART+ South West

NTA

2040

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS, TUC RAIL, Supported by rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: **DART+ SOUTH WEST**

Drawing Title: EMERGING PREFERRED OPTION - MAP 8 OF 13
CLONDALKIN INDUSTRIAL ESTATE TO PARK WEST

Drawing File Name: DP-04-23-DWG-RO-TTA-07208 | Version: v01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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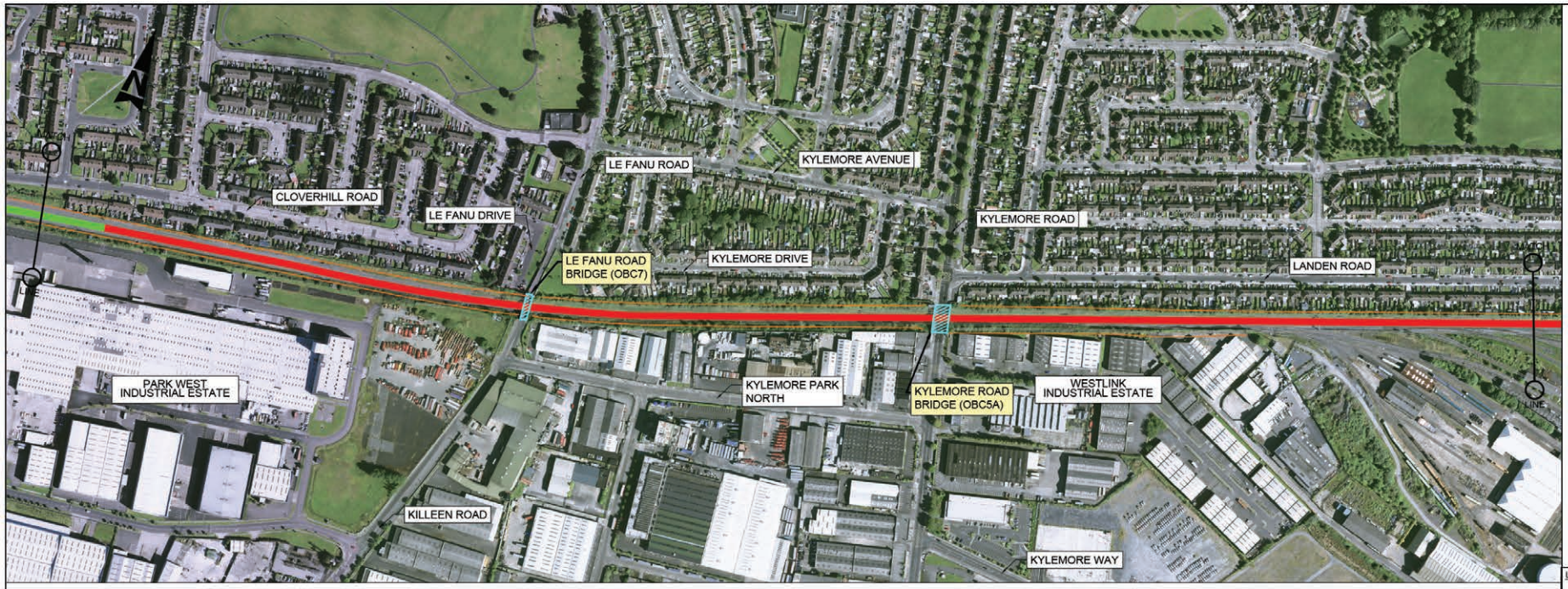

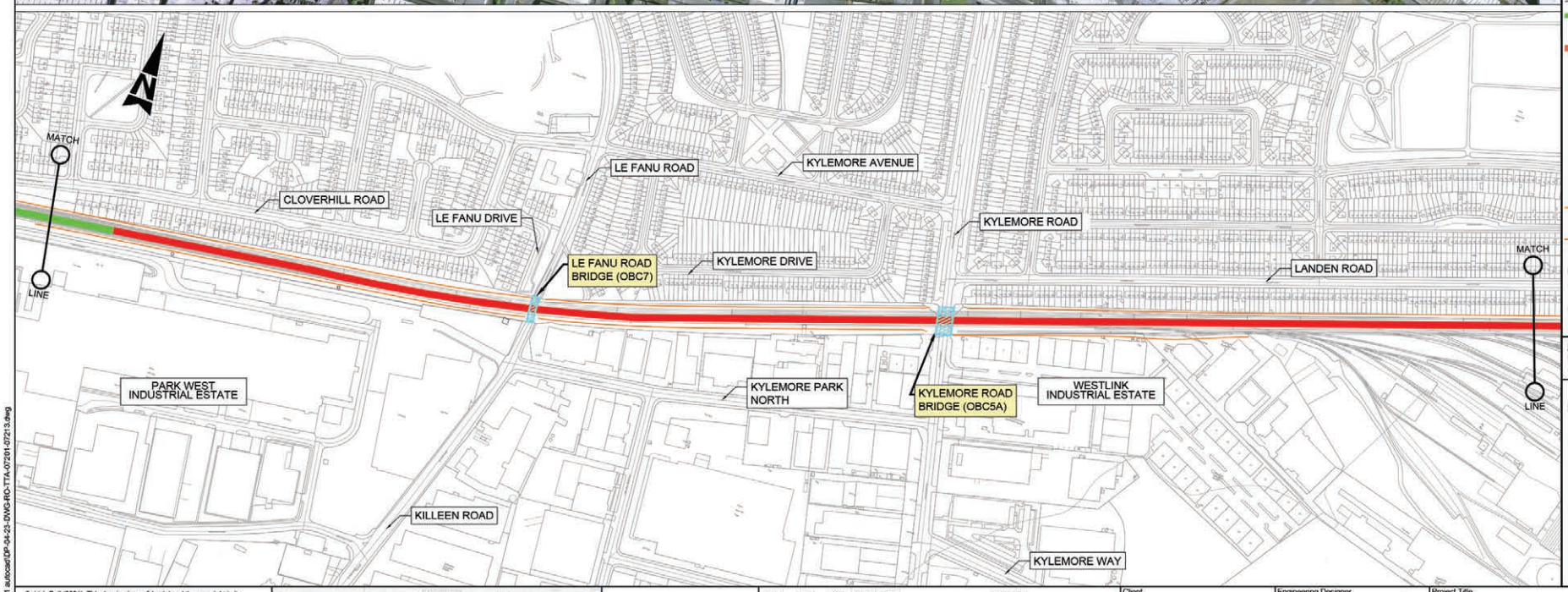

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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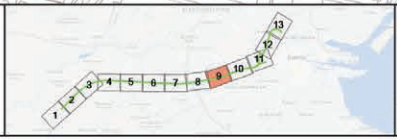

DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS / TUC RAIL / rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 9 OF 13
PARK WEST INDUSTRIAL ESTATE,
INCLUDING CLOVER HILL ROAD TO INCHICORE WORKS

Drawing File Name: DP-04-23-DWG-RO-TTA-07209 | Version: V01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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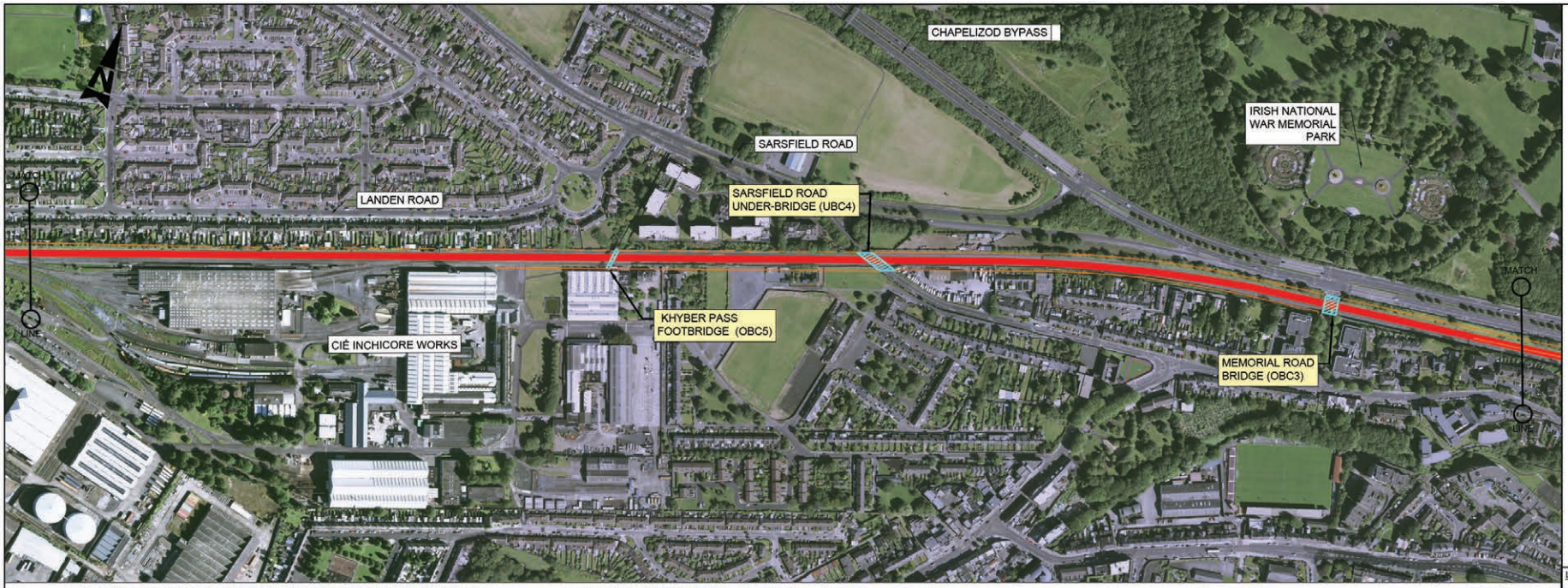

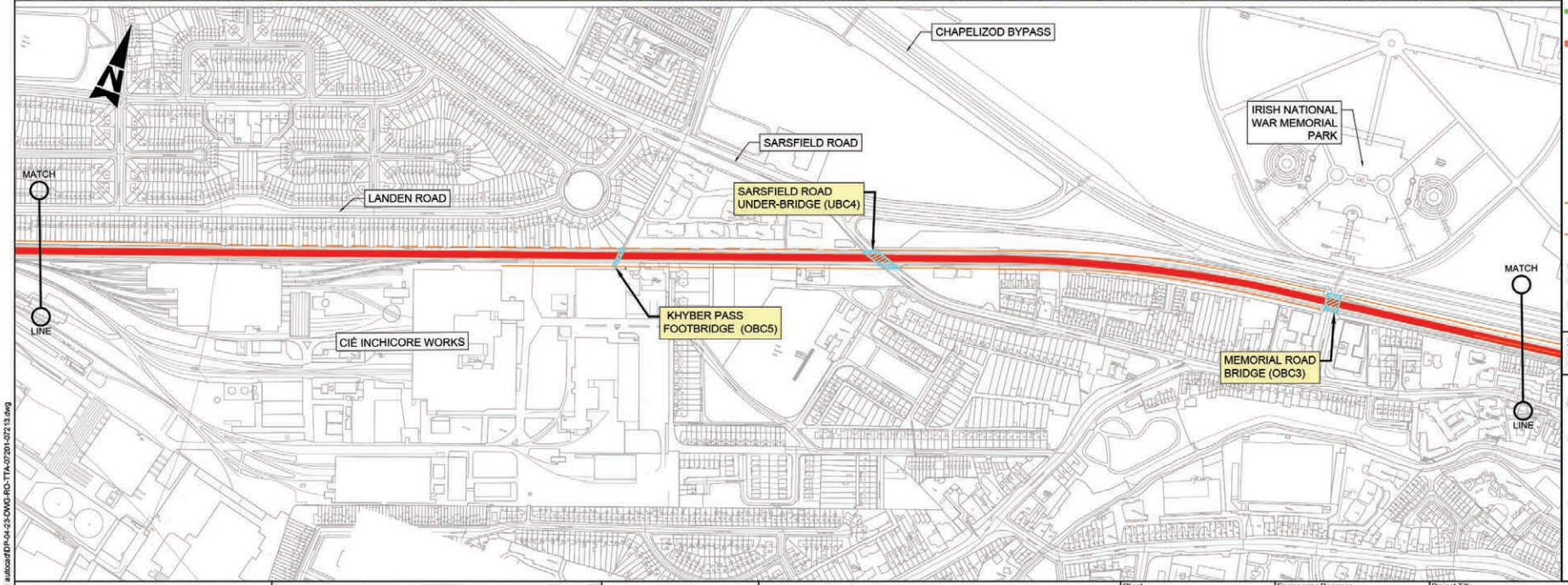

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR

UBXX EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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DART+ South West

NTA

Rev	Date	Dm	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA, ATKINS, TUC RAIL, Supported by: rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: **DART+ SOUTH WEST**

Drawing Title: EMERGING PREFERRED OPTION - MAP 10 OF 13
INCHICORE WORKS, INCLUDING
LANDEN ROAD TO MEMORIAL GARDENS

Drawing File Name: DP-04-23-DWG-RO-TTA-07210 | Version: v01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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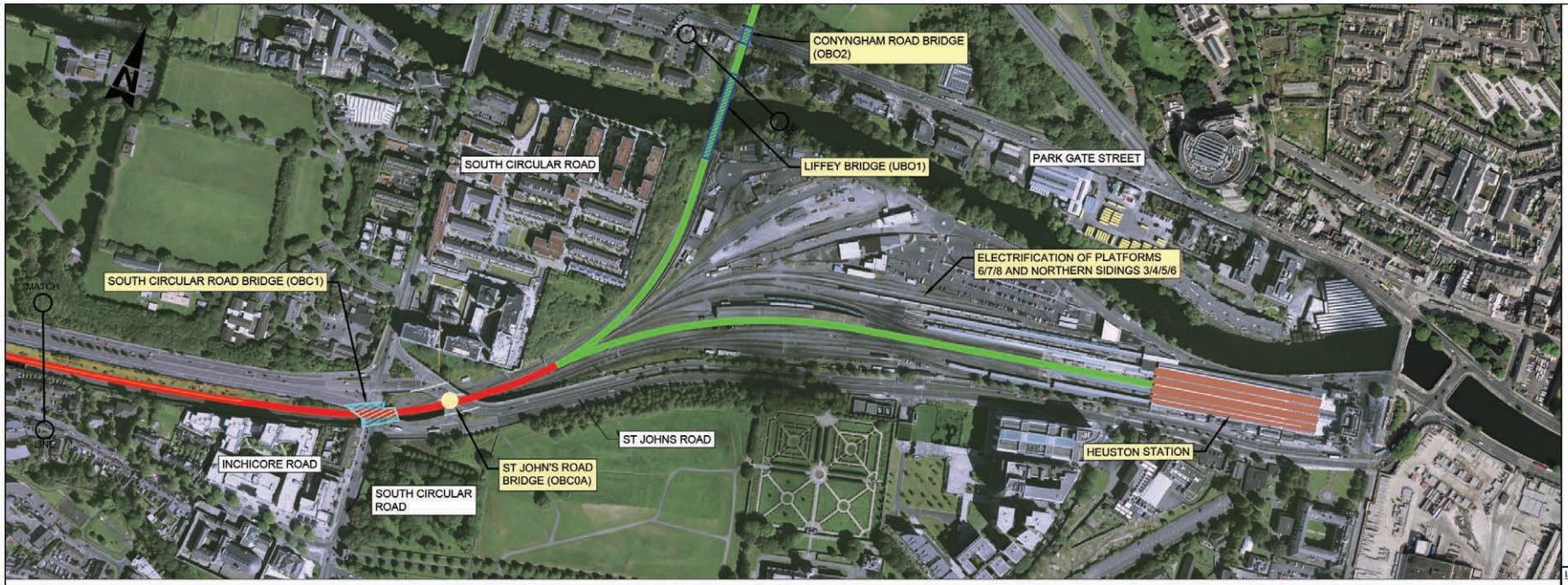

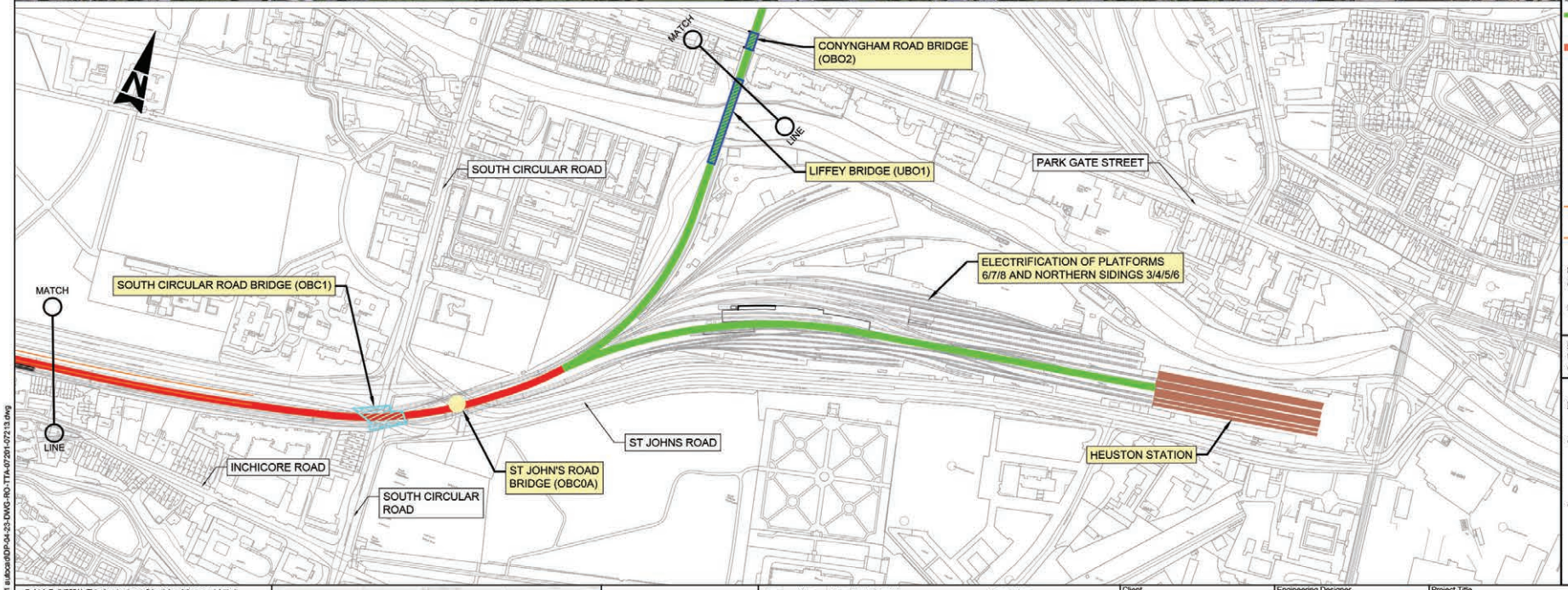

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
- WORKS / INTERVENTION REQUIRED
- MINOR WORKS REQUIRED
- EXISTING STATION
- RETAINING WALL REQUIRED
- EXISTING WALL TO BE RETAINED WHERE POSSIBLE (SUBJECT TO DESIGN DEVELOPMENT)

BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
PROTECTION WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT WORKS

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All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active GPS station Tallaght College (TLLG).

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DART+ South West
NTA
Ireland 2040

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: ATKINS (Member of the SNC-Lavalin Group) TYPSA TUC RAIL Supported by rps

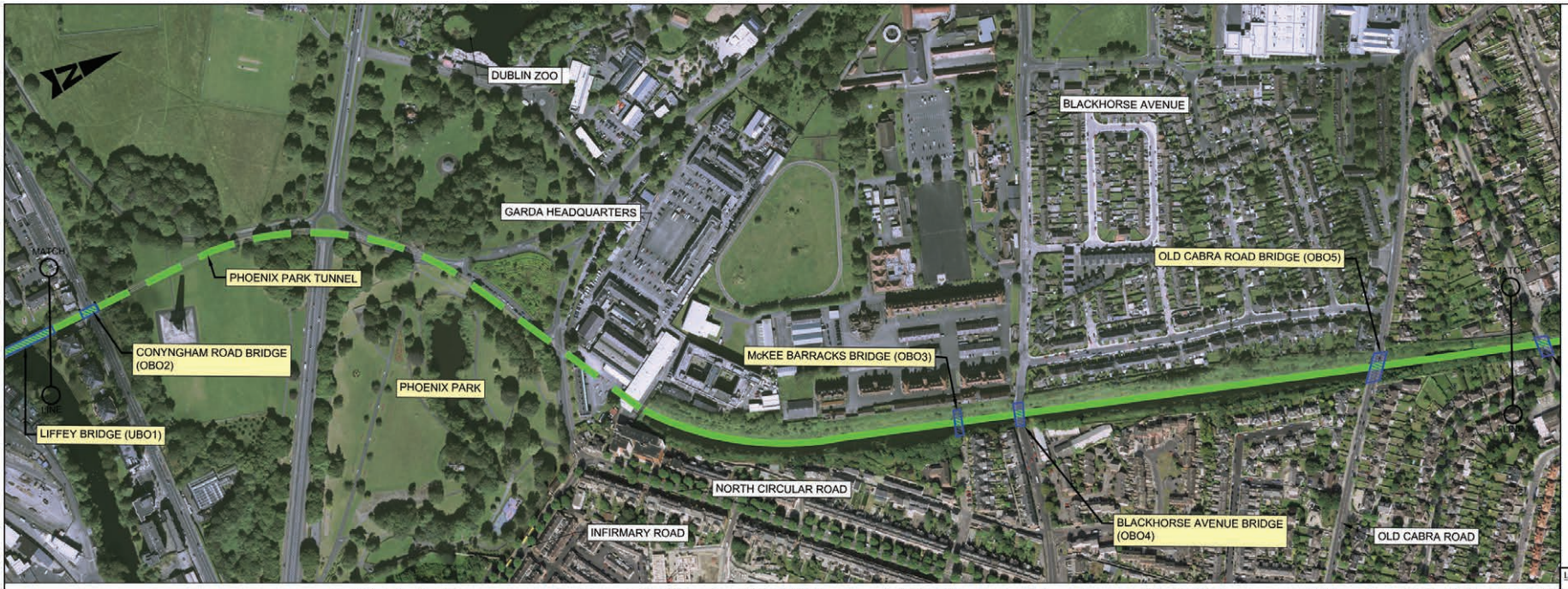
Project Title: DART+ SOUTH WEST

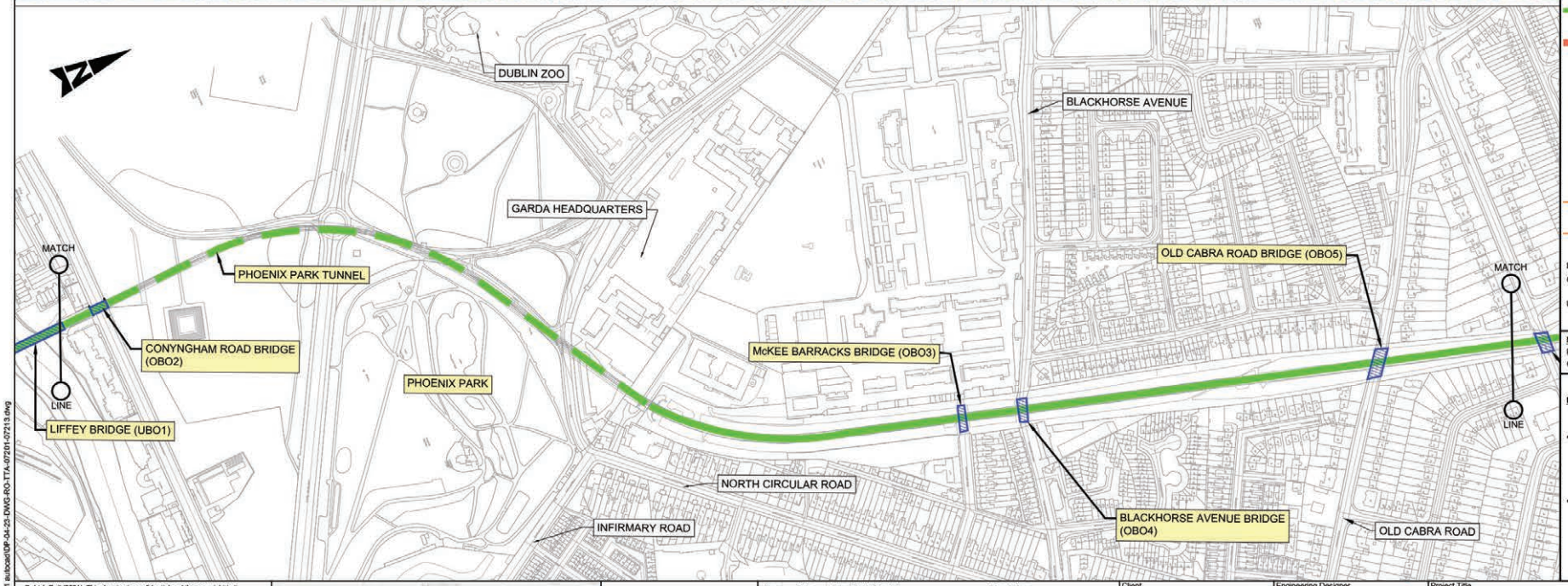
Drawing Title: EMERGING PREFERRED OPTION - MAP 11 OF 13
MEMORIAL GARDENS TO EAST OF PHOENIX PARK TUNNEL

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code	Drawing File Name	Version	Status
—	ATK	—	DP-04-23-DWG-RO-TTA-07211	v01	S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY





LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
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- EXISTING STATION
- RETAINING WALL REQUIRED
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BRIDGES:

OBXX EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR

UBXX EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
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NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS (Member of the SNC-Lavalin Group) / TUC RAIL — Supported by rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code | Issuer: ATK | QMS Code

Project Title: **DART+ SOUTH WEST**

Drawing Title: EMERGING PREFERRED OPTION - MAP 12 OF 13
EAST OF PHOENIX PARK TUNNEL TO CABRA ROAD BRIDGE

Drawing File Name: DP-04-23-DWG-RO-TTA-07212 | Version: v01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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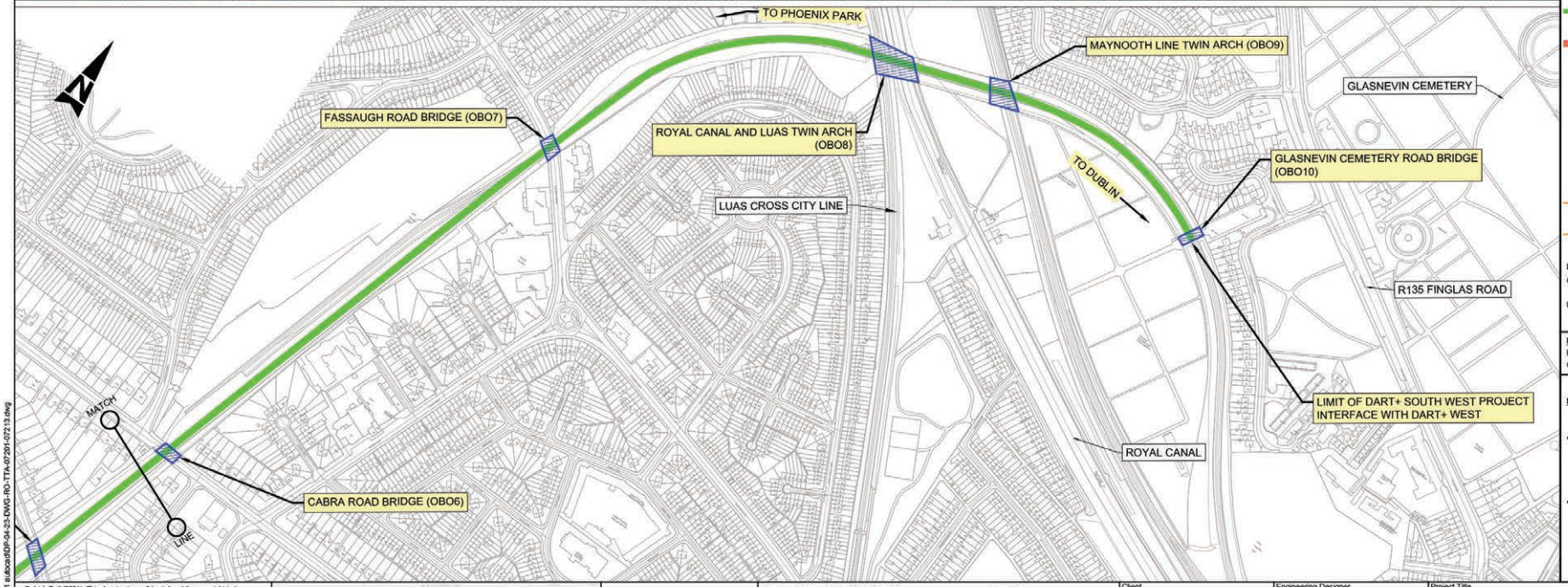

LEGEND:

- ELECTRIFICATION WITHIN EXISTING RAIL CORRIDOR
- FOUR TRACKING AND ELECTRIFICATION
- SIGNIFICANT WORKS / INTERVENTION REQUIRED (INCLUDING BRIDGE RECONSTRUCTION)
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BRIDGES:

OBXX	EXISTING BRIDGE / ROAD OVER RAILWAY CORRIDOR
UBXX	EXISTING BRIDGE / ROAD/RIVER UNDER RAILWAY CORRIDOR

NOTE:
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NOTE: INFORMATION IS PRESENTED FOR PUBLIC CONSULTATION NO. 1.

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DART+ South West

Rev	Date	Drn	Chk'd	App'd	Description
v01	22.04.21	AK	DM	DM	FOR PUBLIC CONSULTATION No 1

Client: Iarnród Éireann Irish Rail

Engineering Designer: TYPSA / ATKINS (Member of the SNC-Lavalin Group) / TUC RAIL — Supported by: rps

Date	Scale	Drawn	Checked	Approved
22.04.21	N.T.S.	AK	DM	DM

Project Code	Issuer	QMS Code
—	ATK	—

Project Title: DART+ SOUTH WEST

Drawing Title: EMERGING PREFERRED OPTION - MAP 13 OF 13
CABRA ROAD BRIDGE TO GLASNEVIN

Drawing File Name: DP-04-23-DWG-RO-TTA-07213 | Version: V01 | Status: S3

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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DART+ South West

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Rialtas na hÉireann
Government of Ireland

Tionscadal Éireann
Project Ireland 2040

Co-financed by the Connecting Europe Facility of the European Union

Iarnród Éireann
Irish Rail