



DART+ Maynooth Line

Iarnród Éireann

Preliminary Options Selection Report

Executive Summary

MAY-MDC-GEN-ROUT-RP-Y-0001

18 AUGUST 2020



EXECUTIVE SUMMARY

ES1.1 DART+ Overview

The DART+ Programme comprises of a number of rail improvement projects that will provide frequent, modern and fully electrified services to Drogheda on the Northern Line, Hazelhatch - Celbridge on the Kildare Line, Maynooth and M3 Parkway on the Maynooth/Sligo Line, while improving southern DART services as far as Greystones. The DART+ Programme also includes the purchase of new electrified fleet.

The DART+ Programme will have a transformative effect in improving rail services in the Greater Dublin Area (GDA). The DART+ Programme will increase the length of the existing DART network from 50km to 150km of railway corridor through the upgrades and extensions of existing lines.



Figure ES-1 DART+ Programme Capacity Improvements

The DART+ Programme is consistent with and supports Project Ireland 2040, the National Development Plan 2017 to 2028, the National Planning Framework and the Climate Action Plan 2019. DART+ is a key deliverable measure in the Climate Action Plan 2019 to achieve targets for modal shift.

It will provide additional capacity by utilizing existing infrastructure with targeted improvement works:

- This greatly improved integrated transport system will encourage a move away from private cars to public transport;
- It will assist in achieving targets for the reduction in greenhouse gas emissions; and
- Enable transition to a low carbon and climate resilient society.

DART+ delivers on each of the three pillars of sustainable development:

- **Social:** Increased passenger capacity and train frequency: Thus enabling all sectors of society to quality public transport network. It will also provide people with options over the travelling by private car thereby alleviation of road congestion and improving quality of life.

- **Environmental:** Building a more sustainable city region: Electric trains will positively assist in the decarbonization of the transport sector and enable a transition to a low carbon society. It will also future proof the public transport network: The DART+ programme will significantly upgrade the existing infrastructure and improve multimodal connectivity through interchange with other public transport networks.
- **Economic:** The DART+ programme will bring fast, frequent, reliable and sustainable transport services to existing communities along the routes, making it easier to travel for work, education or leisure purposes. It will also help to facilitate the development of new communities and development that will greatly benefit from the connectivity that DART+ will deliver.

ES1.2 DART+ Maynooth Line Overview

On the Maynooth and M3 Parkway Lines, DART+ will introduce electrified high capacity trains at increased frequency for all stations between Maynooth/ M3 Parkway to Dublin City Centre (40km corridor). The overall scope of the DART + Maynooth Line project includes the following key elements of infrastructural work:

- Electrification and re-signalling of the Maynooth & M3 Parkway line from City Centre to Maynooth (40km approx.);
- Capacity enhancements at Connolly (platforms, junctions & station modifications) to increase train numbers per hour;
- Capacity enhancements in the Docklands, incorporating a new station at Spencer Dock, to better serve all routes entering the city centre and to improve interchange with Luas;
- Closure of level crossings and the provision of bridge crossings where required;
- Construction of a new DART Depot facility west of Maynooth Station for the maintenance and stabling of trains;
- Development of an interchange station with MetroLink at Glasnevin serving both the Maynooth Line.

All civil engineering and bridge studies into the development of options and the assessment of these options and the Emerging Preferred Options for the overall scheme are currently underway.

The preliminary options assessment studies have led to the identification of the Emerging Preferred Options as presented below.

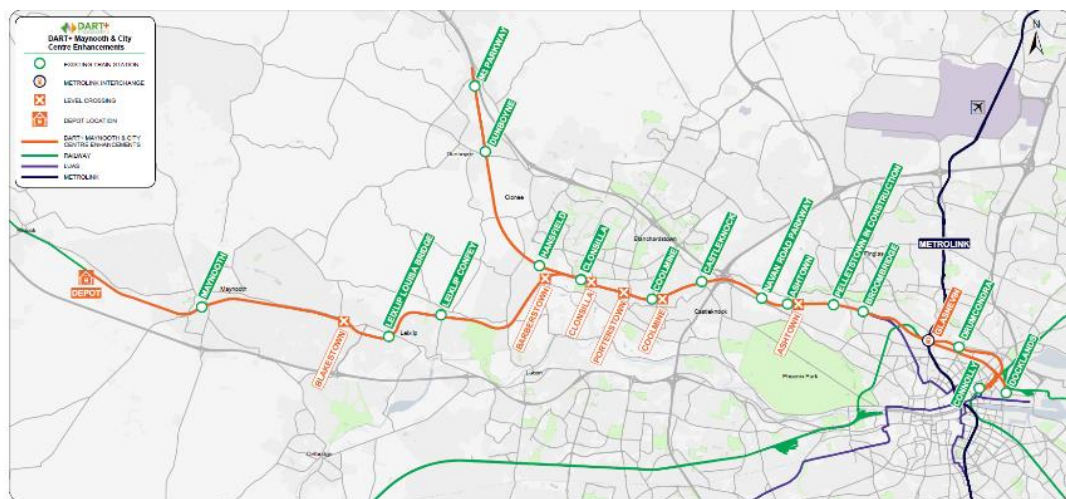


Figure ES-2 Schematic of DART+ Maynooth Maynooth Line Extents

To describe the project, it has been divided into sections describing the project in an east west direction, as follows:

1. General Linear Works
2. City Centre Enhancements (Connolly Station & Docklands Station)
3. City Centre Enhancements (Connolly Station & Docklands Station - Phibsborough / Glasnevin)
4. Phibsborough / Glasnevin – Clonsilla Station
5. Clonsilla Station – Maynooth Depot
6. Clonsilla Station – M3 Parkway

This report has been produced to provide interim characterisation of the options selection process for the project at the time of advancing the first round of public consultation. It summarizes the current status of the process for the principal elements of the project. Given the largely online nature of much of the project some elements have greater impact beyond the core railway corridor than others and require more extensive options assessment. This includes the infrastructure proposals necessary to replace level crossings. It is noted that greater detail is presented in the report on such elements than others. The End to End Emerging Preferred Route is illustrated in the Layout Figures included in Annex ES 1.1 to this report. The figures are numbered, typically, from east to west and references are added throughout the Executive Summary to the relevant figures.

ES1.3 General Linear Works

A number of elements of the works will be common to all sections of the project. In order to avoid repetition the following is a summary of these 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. Each of the following elements will be required along all sections included in the linear works:

- Overhead electrification equipment will be required to provide electrical power to the network's new electrified train fleet. This will be similar in style to that currently used on the DART network;
- Bridge clearances – Where existing bridges do not provide the necessary headroom for provision of the overhead electrification of the lines the following options are being considered on a case by case basis to facilitate the provision of the necessary clearances for electrical equipment at existing bridges:
 - Demolition of the existing structure to accommodate new structures with appropriate online or offline vertical realignments;
 - Modification of the existing bridge structure with modification to the bridge decks;
 - Lowering the rail track;
 - Provision of specialist electrical solutions with reduced clearance;
 - Or a combination of the above.
- Substations will be required at intervals along the full length of the line to provide power to the network;
- Signalling upgrades and additional signalling will be required to the upgraded infrastructure;
- Improving boundary walls and fencing to ensure public safety due to the electrification of the line. This will require increasing the height of walls in some instances to provide the necessary protection and physical segregation between public areas and the railway corridor.



Figure ES-3 OHLE Infrastructure

- Utility diversions, vegetation management and other ancillary works provided for along the length of the project.

ES1.4 City Centre Enhancements (Connolly Station & Spencer Dock Station)

ES1.4.1 Connolly Station (See Annex ES 1.1: Figure 01)

Connolly Station is one of the main railway stations in Dublin and a focal point for the Iarnród Éireann network.

The station today consists of four terminal platforms, (numbered 1 - 4), primarily for Northern Line services, including the Enterprise service to Belfast. Platform 4 can also be used for Sligo services, via Ossory Road Junction and Maynooth. Three through platforms (numbered 5-7) connect the Loop Line to the Northern line and the Phoenix Park Tunnel and Maynooth lines via Ossory Road Junction and Phibsborough. The station complex also includes a number of stabling roads (train parking) and maintenance facilities, primarily used to service the Enterprise train sets. The station facilitates Intercity, Commuter and DART services.

The principal objective of the project at Connolly station is to achieve the maximum level of service of 23 trains per hour per direction. The key issue with the current layout is that the terminal platforms are on the east side of the station, while the loop line through platforms are on the west of the station. The station capacity is constrained by the number of trains and by track crossing conflicts. DART+ is seeking to modify the northern throat of Connolly Station rail lines with additional crossovers and track modifications to facilitate an increase in the station capacity. These modifications will facilitate additional operational flexibility at Connolly Station. As well as the track reconfiguration it is proposed to upgrade the platforms and the station itself to provide greater capacity for the predicted increase in passenger demand.



Figure ES-4 Connolly Station looking North

The emerging preferred option in respect of Connolly Station is a Do Minimum proposal in respect of alterations to track alignments with all track modifications carried out within the existing railway viaduct boundary. It includes for minor alterations to platforms and egress provisions. Details of the emerging preferred station alterations are illustrated in Figure ES-4.

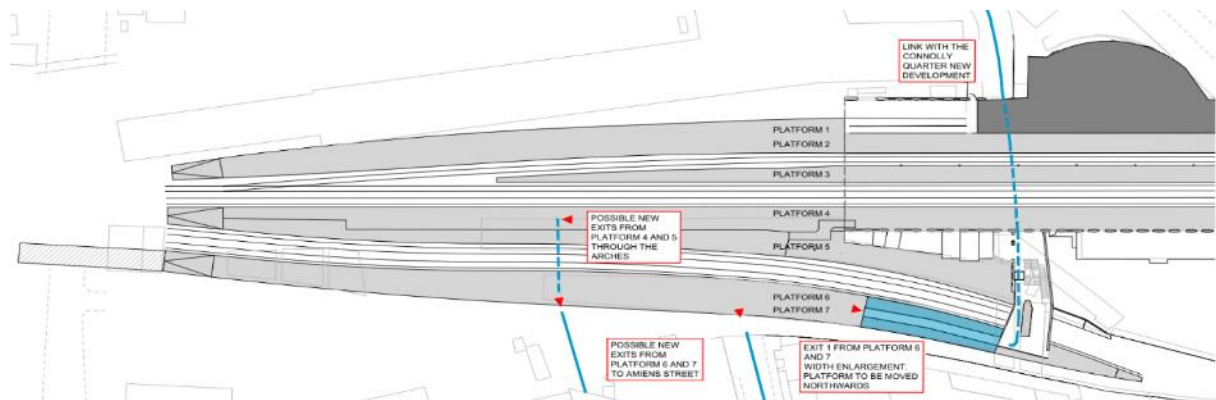


Figure ES-5 Emerging Preferred Station Alterations

ES1.4.2 Spencer Dock Station (See Annex ES 1.1: Figure 01)

Southeast of Connolly Station lies Docklands Station which operates as an overflow terminus station to Connolly Station in the morning and evening peak times. DART+ seeks to enable Connolly and Docklands Stations to work more effectively together.

Subject to further assessment, DART+ is seeking to construct a new station at Spencer Dock adjacent the Luas Stop to increase the overall rail capacity in the City Centre, to better serve the Docklands area and to maximise the interchange potential with Luas.

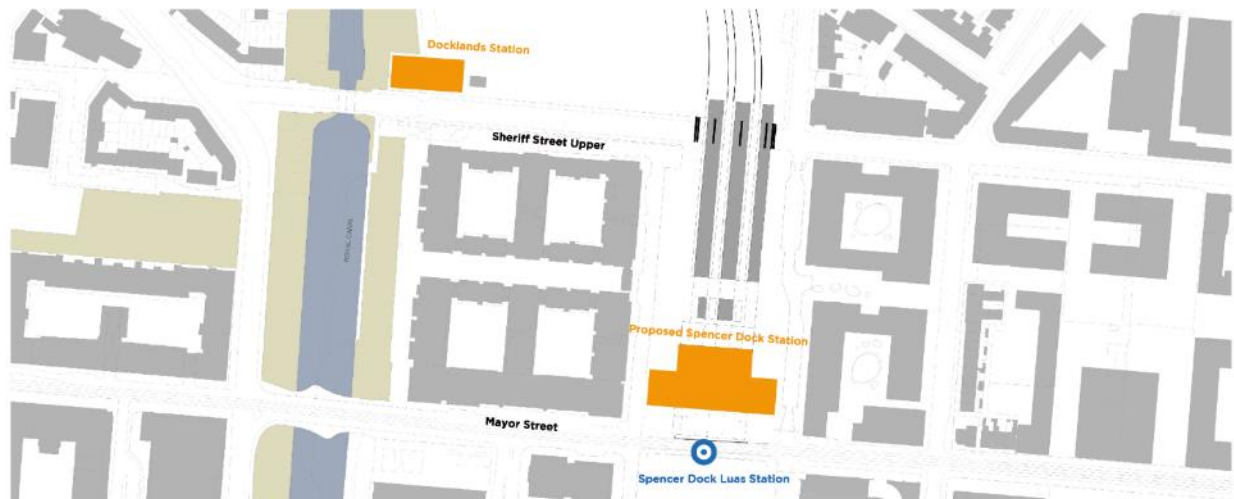


Figure ES-6 Emerging Preferred Option: Spencer Dock Station

ES1.4.3 City Centre to Phibsborough / Glasnevin (See Annex ES 1.1: Figure 03)

It is proposed that both of the existing lines between Connolly and Docklands to Phibsborough/Glasnevin will be electrified with the installation of overhead electrical equipment, associated upgrades, resignalling, telecoms and electricity substations as required.

The two lines are the Maynooth line which lies next to and to the north of the Royal Canal and the Phoenix Park Tunnel line which runs to the north of Croke Park and through Drumcondra Station. Both of these lines converge at Phibsborough/Glasnevin, to the west of Cross Guns Bridge.

At Phibsborough/Glasnevin, a new fully integrated station serving both the DART+ Maynooth Line Project and the proposed MetroLink project is proposed. Iarnród Éireann and Transport Infrastructure Ireland (TII) are collaborating to provide this station which will comprise:

- DART+ surface station. The station will have an eastwest orientation on both Iarnród Éireann lines (Maynooth Line and Pheonix Park Tunnel Line);
- MetroLink underground station will have a northsouth orientation;
- A shared concourse with full passenger integration;
- Street level access and public realm improvements

See [here](#) for link to Metrolink Website

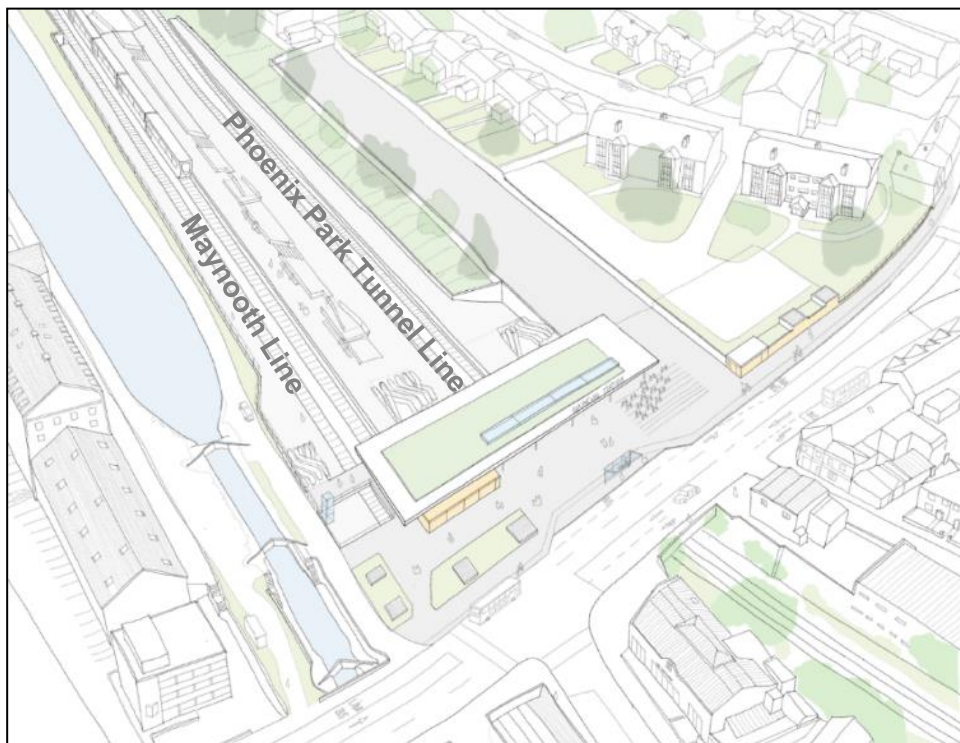


Figure ES-7 Proposed Glasnevin Station

A number of issues arise in the vicinity of OBD226, the North Strand Bridge in respect of the effective delivery of capacity enhancements. Specific constraints include:

- The proximity of the Royal Canal to the railway. It runs parallel to and is located immediately south of the railway;
- The existing railway underbridge (UB225) carrying the Newcomen Chord over the royal canal. This is an opening bridge and is located immediately adjacent to OBD226;
- The reduced clearances available under OBD226;
- The presence of a low point in the railway alignment in the vicinity of OBD226;
- Preexisting drainage problems on the railway in the vicinity of OB226.

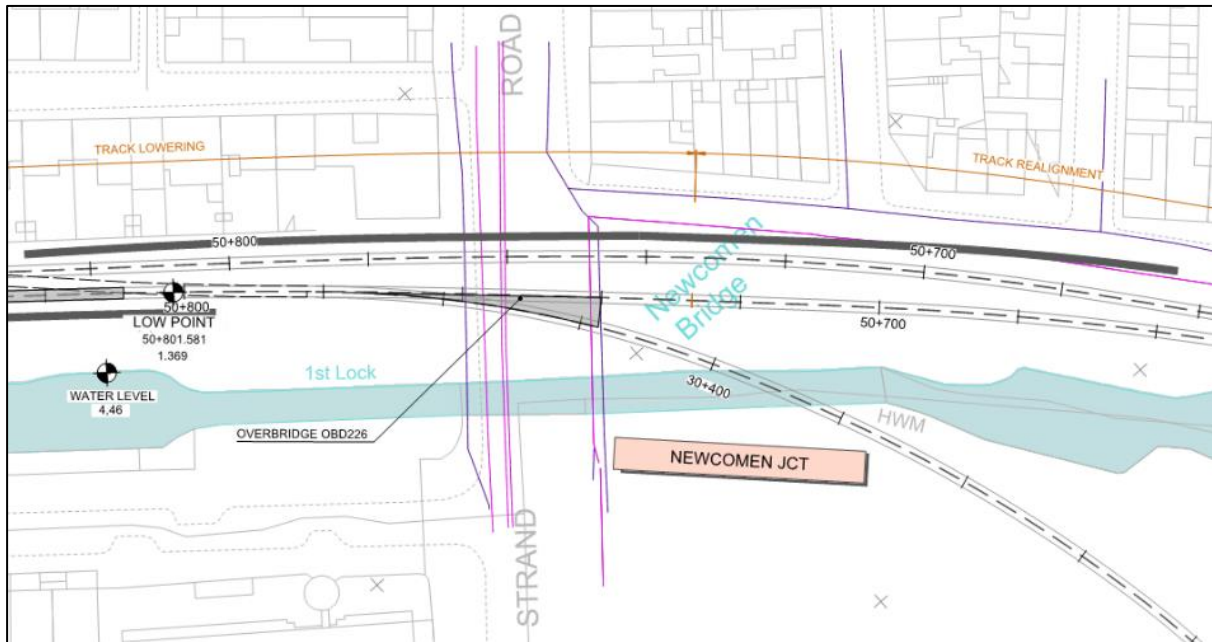


Figure ES-8 Newcomen Junction (See Annex ES 1.1: Figure 01)

The emerging preferred design at this location includes the following principal elements:

- Remove the Newcomen Chord from the railway network;
- Realign the Maynooth Line through OBD226 to provide adequate clearance for electrification;
- Carry out works to address the preexisting drainage problems and to accommodate the lowered track alignment.

The following provisions are proposed as part of the emerging preferred design at other bridges on the City Centre to Phibsborough / Glasnevin section of the project to address limited clearance for OHLE:

- OBD227 Ch 50+550: Reduced Clearance Envelope;
- OBD225 Clarkes Bridge Ch51+020: Bridge and/or track modification work;
- OBD224 Clonliffe Bridge Ch51+500: Bridge and/or track modification work;
- OBD223 Binns Bridge Ch51+940: Bridge and/or track modification work;

(See Annex ES 1.1: Figures 01 to 03)

The bridges will typically require parapet walls to be heightened where directly over the railway to provide containment and protection in respect of the OHLE.

ES1.5 Glasnevin Junction to Clonsilla Junction

Between Phibsborough / Glasnevin and Clonsilla Station the Maynooth line runs alongside the Royal Canal. The line then passes through Broombridge Station, where it interfaces with the Luas. Travelling in a westerly direction the line along this section includes the following stations: Ashtown Station, Navan Road Parkway Station, Castleknock Station, Coolmine Station and Clonsilla Station. (See Annex ES 1.1: Figures 04 to 09)

Level Crossing Replacements

The level crossings along this section of the railway corridor is constraining train capacity on the railway corridor by having to share road capacity for vehicles, pedestrians and cyclists. In order to provide a modern transportation network and to achieve the required increase in train capacity it is proposed to be permanently close the four level crossings along this section.

It is not possible to retain the level crossings in their current form. The permanent closure is necessary to achieve the proposed increased train frequency proposed by DART+

The closure of these level crossings will improve train efficiencies, safety and remove road interfaces and the associated delays caused by the road network. Their closure will also remove the periodic blockages on the road system, which is currently very pronounced in this area especially in the morning and evening peak commuter periods (For example Coolmine Level Crossing is closed for approximately 40 minutes between 08.00-09.00 each weekday)

Following an option selection process, that included developing and assessing a number of options/alternatives at each of these locations, the Emerging Preferred Options at each location was established. The description of the level crossing replacement along this section of the Maynooth line, are described in the following sections at Ashtown, Coolmine, Portersown and Clonsilla level crossings.

ES1.5.1 Ashtown Level Crossing



Figure ES-9 Ashtown Option 2 - Emerging Preferred Option at Ashtown Level Crossing Replacement

The Emerging Preferred Option at this location is a full vehicular road bridge with pedestrian and cycle facilities, to offset the permanent level crossing closure. The new bridge is deemed necessary to maintain traffic flows and mitigate against community severance. The new road bridge runs under the railway and the canal to the west of the existing Ashtown Level Crossing along the line of the Mill lane. (See Annex ES 1.1: Figure 05)

We have presented below a sectional elevation along the scheme looking west to illustrate the proposed works.

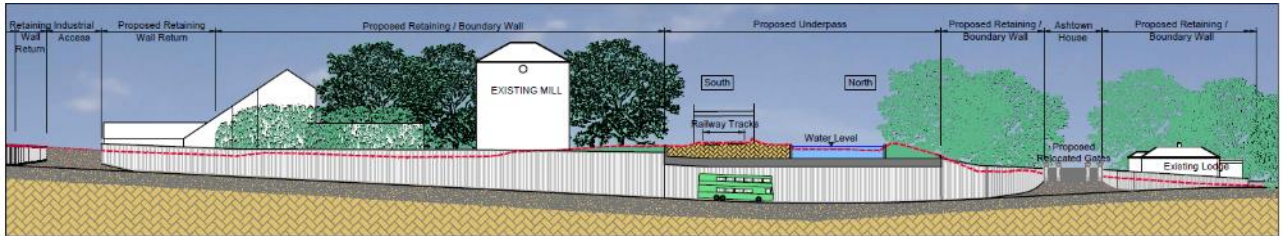


Figure ES-10 Ashtown Emerging Preferred Option Sectional Elevation Looking West

ES1.5.2 Coolmine Level Crossing

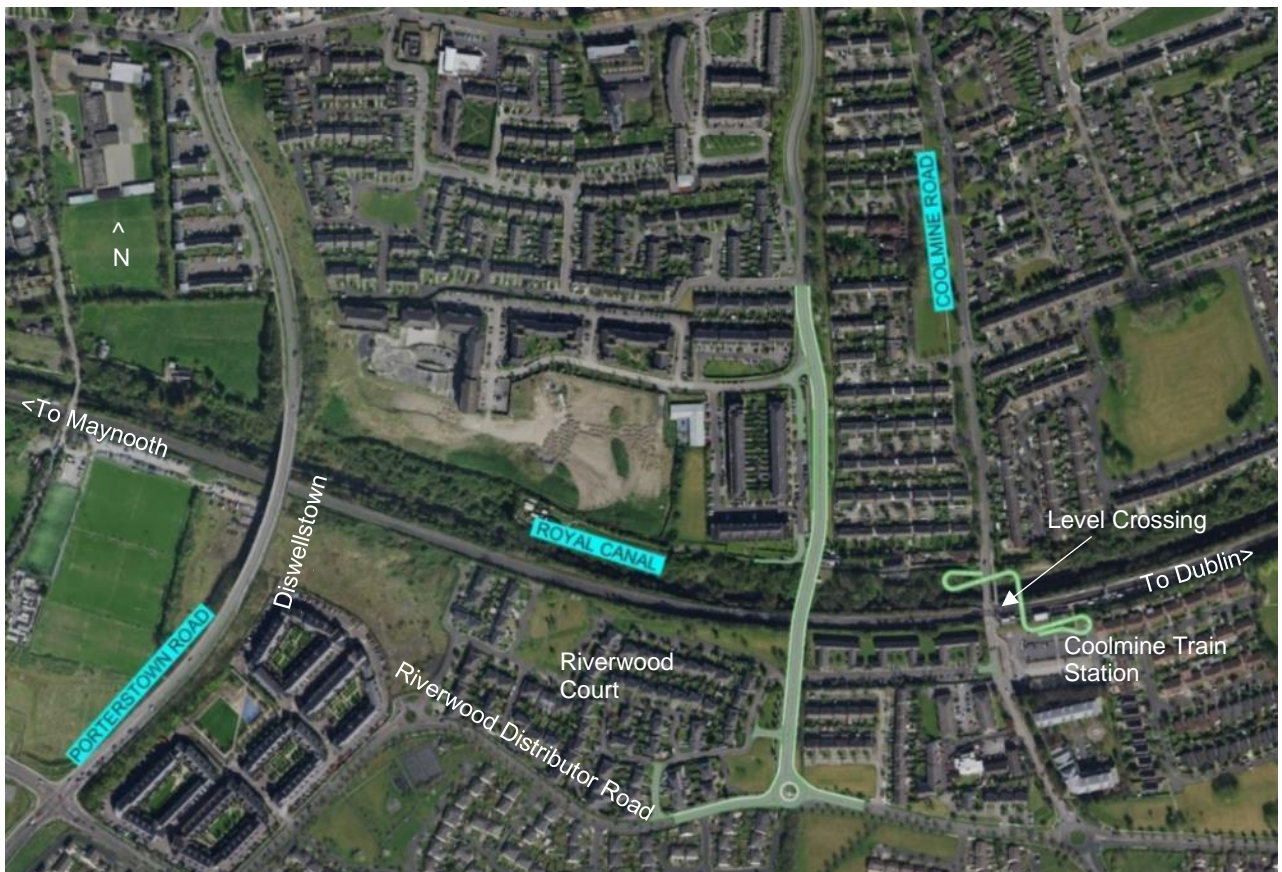


Figure ES-11 Coolmine Option 3 - Emerging Preferred Option Coolmine Level Crossing Replacement

The Emerging Preferred Option provides a new road bridge over the railway line and canal connecting to the north of St. Mochta's Grove / Station Court and to the south of the Riverwood Court Road. A new standalone pedestrian and cycle bridge will be provided over the railway line immediately adjacent to Coolmine Station.

At Coolmine the maintenance of road access north-south across the railway is important due to the high level of traffic using the existing road. The proposed replacement roadway will provide a critical link for traffic flows between Castleknock/Carpenterstown to the south with Blanchardstown/Coolmine to the north. (See Annex ES 1.1: Figure 08)

We have presented below a sectional elevation along the proposed roadway and bridge to illustrate the proposed works.

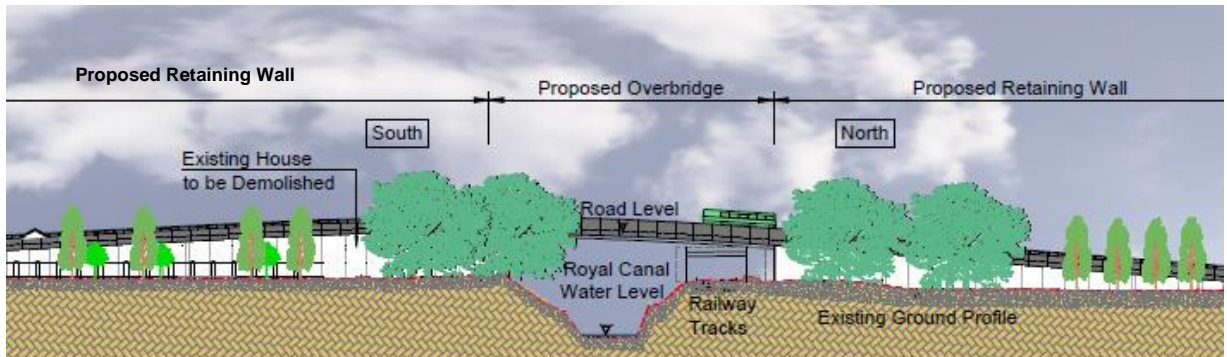


Figure ES-12 Coolmine Emerging Preferred Option: Road Bridge - Sectional Elevation

The proposed pedestrian cycle bridge associated with the proposed roadbridge is presented below in sectional elevation looking west to illustrate nature of the proposed works.

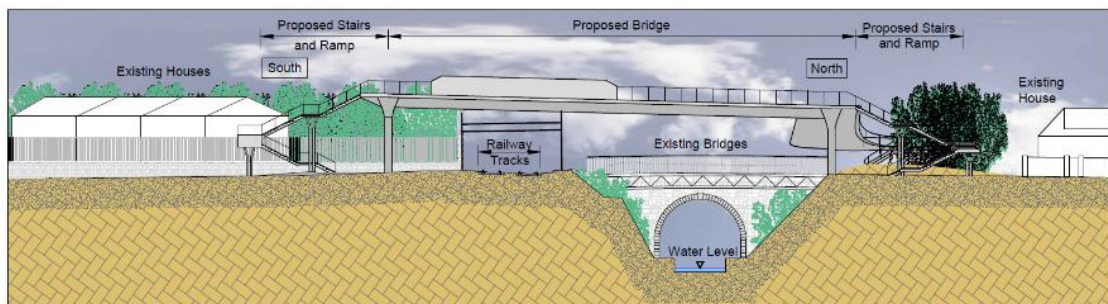


Figure ES-13 Coolmine Emerging Preferred Option: Cycle Bridge - Sectional Elevation

ES1.5.3 Porterstown Level Crossing



Figure ES-14 Porterstown Option 2 - Emerging Preferred Option Porterstown Level Crossing Replacement

The Emerging Preferred Option provides a new pedestrian and cycle bridge over the rail at the existing crossing. Vehicular traffic will utilise the existing local road network including the Diswellstown Road (R121 at Dr. Troy bridge).

Porterstown Road is a narrow local road with single lane bridge crossing the canal. Traffic levels on Porterstown Road are very low. The Diswellstown Road / Dr Troy Bridge were built to provide the necessary level of traffic linkage from north to south communities and provide the primary passage for road users crossing the railway. (See Annex ES 1.1: Figure 08)

The proposed pedestrian cycle bridge is presented below in sectional elevation looking west to illustrate nature of the proposed works.

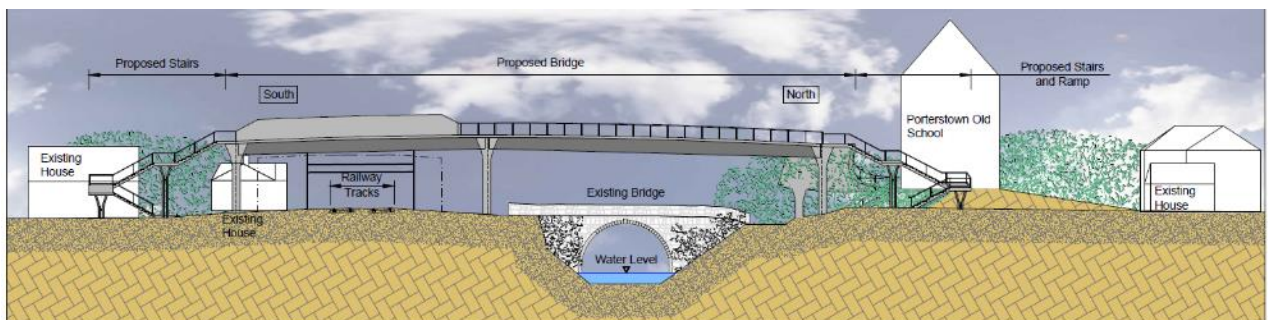


Figure ES-15 Porterstown Emerging Preferred Option: Cycle Bridge - Sectional Elevation

ES1.5.4 Clonsilla Level Crossing



Figure ES-16 Clonsilla Option 1 - Emerging Preferred Option Clonsilla Level Crossing Replacement

The Emerging Preferred Option provides a new pedestrian and cycle bridge over the railway to the west of the existing level crossing. Given the low traffic flows utilising the crossing combined with the proposed new road bridge at Barberstown to the west and the Diswellstown Link Road to the east of the crossing, a new pedestrian and cyclist bridge is considered the optimal solution.

The proposed pedestrian cycle bridge is presented below in sectional elevation looking west to illustrate nature of the proposed works.

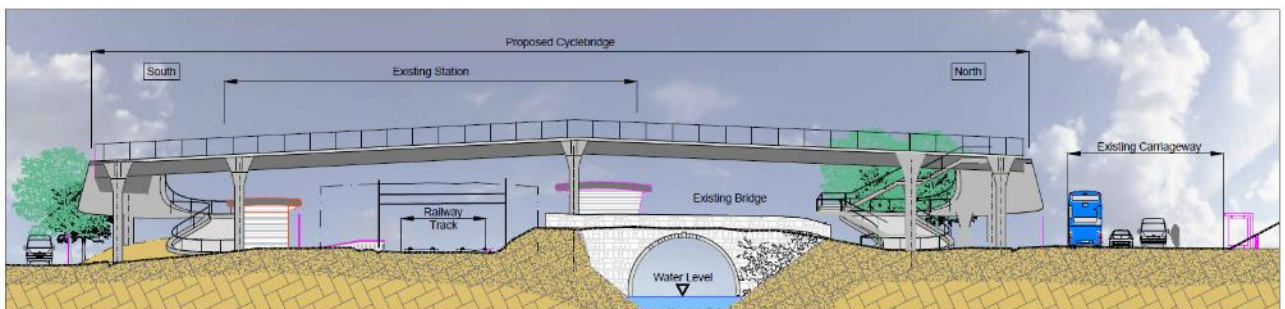


Figure ES-17 Clonsilla Emerging Preferred Option: Cycle Bridge - Sectional Elevation

ES1.5.5 Bridge Alterations

Bridges at Castleknock and Broombridge have been identified as having insufficient clearance to accommodate the overhead electrical equipment while further bridges are currently being assessed to confirm clearances. It is likely that the Emerging Preferred Design for the bridges at Castleknock and Broombridge will include for replacement of the bridges to facilitate electrification.

The following provisions are proposed as part of the emerging preferred design at other bridges on the Glasnevin Junction to Clonsilla Junction section of the project to address limited clearance for OHLE:

- OBG7A West M50 Roundabout Ch 65+460 Reduced OHLE Clearance Envelope;
- OBG7C East M50 Roundabout Ch 65+640 Reduced OHLE Clearance Envelope;
- OBG9 Old Navan Road Bridge Ch 65+720: Bridge and/or track modification work.

(See Annex ES 1.1: Figure 07)

The bridges will typically require parapet walls to be heightened where directly over the railway to provide containment and protection in respect of the OHLE.

ES1.6 Clonsilla Junction – Maynooth Depot

This section of the scheme continues from west of Clonsilla Station through to the new proposed maintenance and stabling depot located west of Maynooth. Immediately west of Clonsilla Station, the railway diverges, with the mainline continuing westwards to Maynooth & Sligo, and a branch line continuing northwards towards Dunboyne & M3 parkway. The Maynooth Line and M3 Parkway branchline will be electrified as part of this project. (See Annex ES 1.1: Figures 10 to 19)

Between Clonsilla Station and the proposed Depot the existing rail line continues parallel and to the north of the Royal Canal, passing through Leixlip Confey Station, Leixlip (Louisa Bridge) Station, and Maynooth Station.

In this section of the scheme there are two existing level crossings which have been identified for closure at Barberstown and Blakestown.

ES1.6.1 Barberstown Level Crossing



Figure ES-18 Barberstown Option 4 - Emerging Preferred Option Barbertown Level Crossing Replacement

The Emerging Preferred Option provides a new road bridge over the railway line and canal, southwest of the current level crossing and connecting the existing R121 to the east of the rail to the Barberstown Lane to the west of the rail line. (See Annex ES 1.1: Figure 10)

ES1.6.2 Blakestown Level Crossing



Figure ES-18a Blakestown - Emerging Preferred Option – No Replacement Infrastructure

The Emerging Preferred Option is not to provide replacement infrastructure following the closure of the level crossing. Access and diversions will be via the local road network and R449 to the east of the crossing. (See Annex ES 1.1: Figure 14)

ES1.6.3 Bridge Alterations

The Jackson's Bridge (protected structure) to the West of Maynooth just south of the R148 crossing the railway line and Royal Canal has been identified as having insufficient clearance for overhead electrical equipment. The location also includes crossing of the Lyreen river and the area has been subject to flooding in the past. Options here include track lowering, bridge reconstruction and offline diversion of the railway with the construction of new bridges. The option to reconstruct Jacksons bridge at a higher level is currently the emerging preferred. Other bridges in this section are currently being investigated and surveyed to confirm clearances and potential options for improving electrical clearance.

The following provisions are proposed as part of the emerging preferred design at other bridges on the Clonsilla Junction to Maynooth Depot section of the project to address limited clearance for OHLE:

- OBG13 Collins Bridge Ch 72+700: Bridge and/or track modification work;
- OBG14 Cope Bridge Ch 74+600: Bridge and/or track modification work;
- OBG16 Louisa Bridge Ch 76+450 Bridge and/or track modification work;
- OBG18 Pike Bridge Ch 79+930: Bridge and/or track modification work.

(See Annex ES 1.1: Figures 10 to 19)

The bridges will typically require parapet walls to be heightened where directly over the railway to provide containment and protection in respect of the OHLE.

ES1.6.4 Proposed Twin Track West of Maynooth

Between Maynooth and the proposed Depot the current single-line track will be upgraded to a double-track section. The Emerging Preferred option for this enhancement is for the new track to be located to the south of the existing single line track within CIE property and to the south of the Royal Canal. (See Annex ES 1.1: Figures 16 to 18)

ES1.6.5 Proposed Depot location (Maynooth West)

The proposed Depot will be located to the west of Maynooth and south of the rail line and canal. It will be used for train maintenance and stabling. (See Annex ES 1.1: Figures 18 & 19)



Figure ES-19 Proposed Depot location in Maynooth West

The total length of the proposed Depot along the mainline is just over 2.5km, and the widest section measures approximately 260 metres at the workshop and stabling area. The site facilitates this without truncation of public roads. The total area of the site is approximately 30 hectares.

The proposed Depot and will include the following principal components:

- Main Depot Building with maintenance shed;
- office and administrative building;
- train washing and cleaning facilities and other maintenance facilities;
- a section of test track;
- stabling for trains and storage facilities;
- an electrical substation;
- staff parking and facilities for staff.

The Emerging Preferred Option for providing access to the Depot utilises the existing road network for the majority of route with only minor modifications required. The access will be from the R148 which will require the construction of a new bridge and the demolition of the existing agricultural bridge. The proposed bridge

enables a new connection to the R148 crossing the Royal Canal and the rail line providing the required access to the proposed depot.

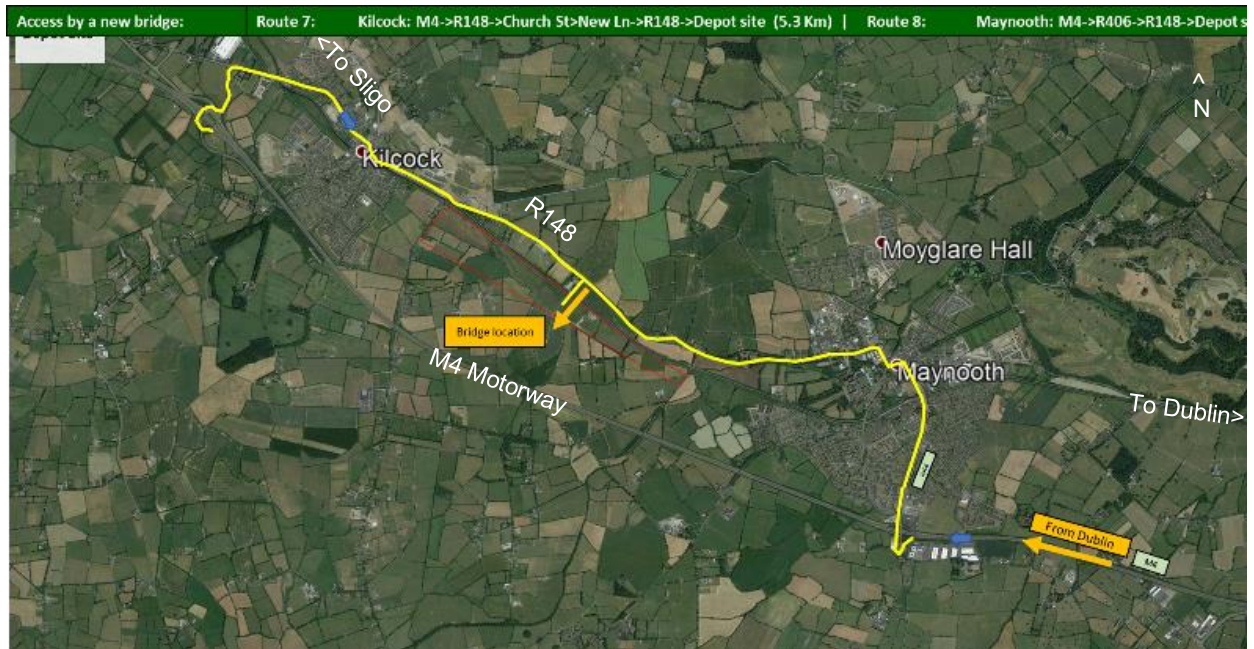


Figure ES-20 Emerging Preferred Access to Proposed Depot location in Maynooth West

ES1.7 Clonsilla Junction – M3 Parkway

West of Clonsilla Station the line splits with a line continuing out towards Maynooth and a line to M3 Parkway. The Pace line spurs northwards passing through Hansfield Station and Dunboyne Station before terminating at M3 Parkway Station which lies to the north of Dunboyne and west of Junction 5 off the M3 Motorway. (See Annex ES 1.1: Figures 20 to 23)

The line will be provided with electrification over the entire section though the installation of overhead electrical equipment, associated upgrades of signals and communications, and the provision of electrical substations as required.

A number of rail bridges are currently being assessed for potential options to provide the necessary clearance for the overhead electrical equipment.

The bridges include:

- OBCN286 Barnhill Bridge Ch 100+700 – Reduced OHLE Clearance Proposed;
- OBCN290 and OBCN290A Dunboyne Bridge, Ch 104+900, – Bridge and/or track modification work.

The bridges will typically require parapet walls to be heightened where directly over the railway to provide containment and protection in respect of the OHLE.

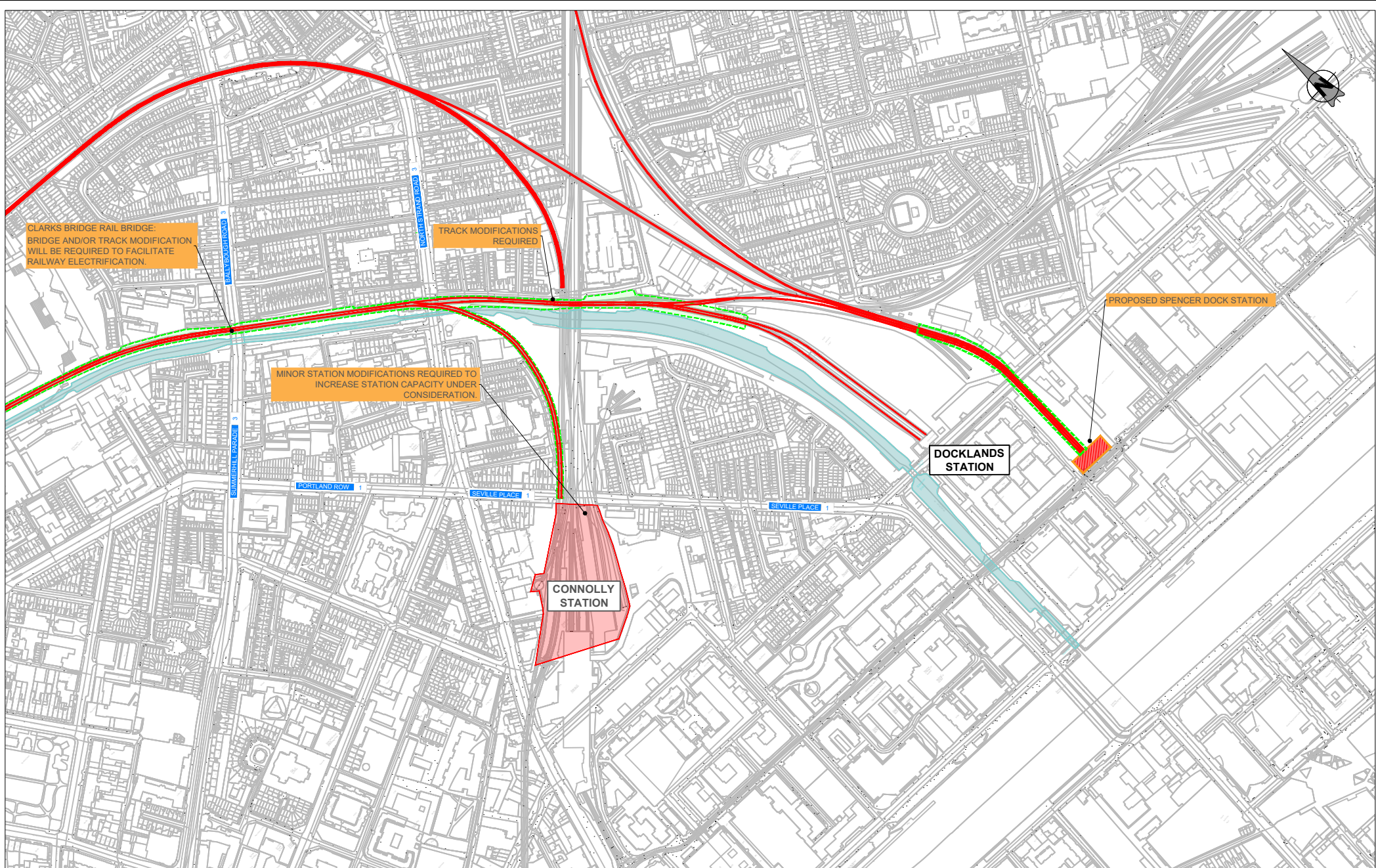
ES1.8 Further Design Development & Option Selection

The preliminary options selection and design development that has been undertaken has led to the development of the Emerging Preferred Option which will be the focus of public consultation.

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 in Autumn 2020.

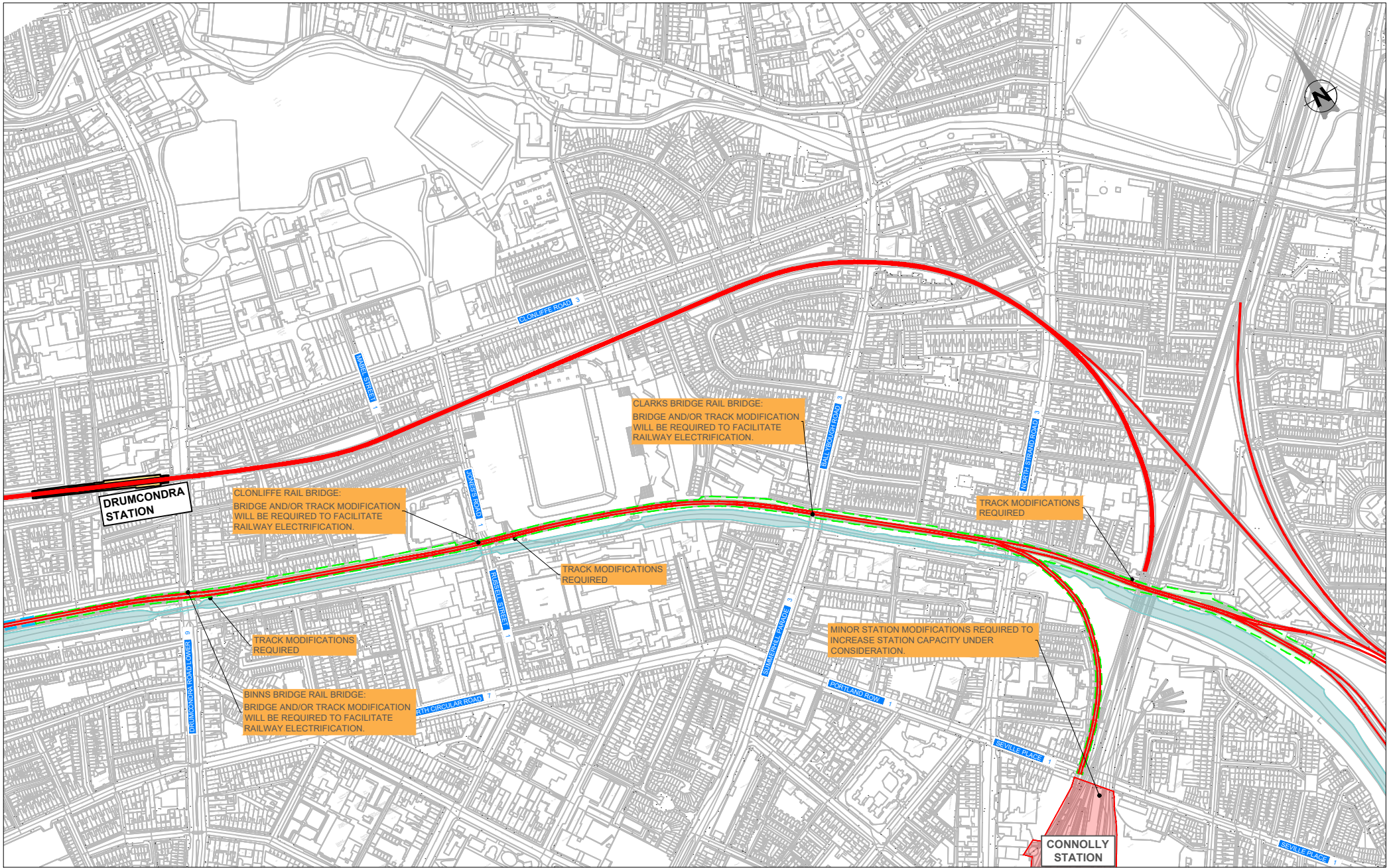
All information gathered by the project team will be used to inform the design development of the project which will be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) (if required), and ultimately the Railway Order application will be submitted to An Bord Pleanála.

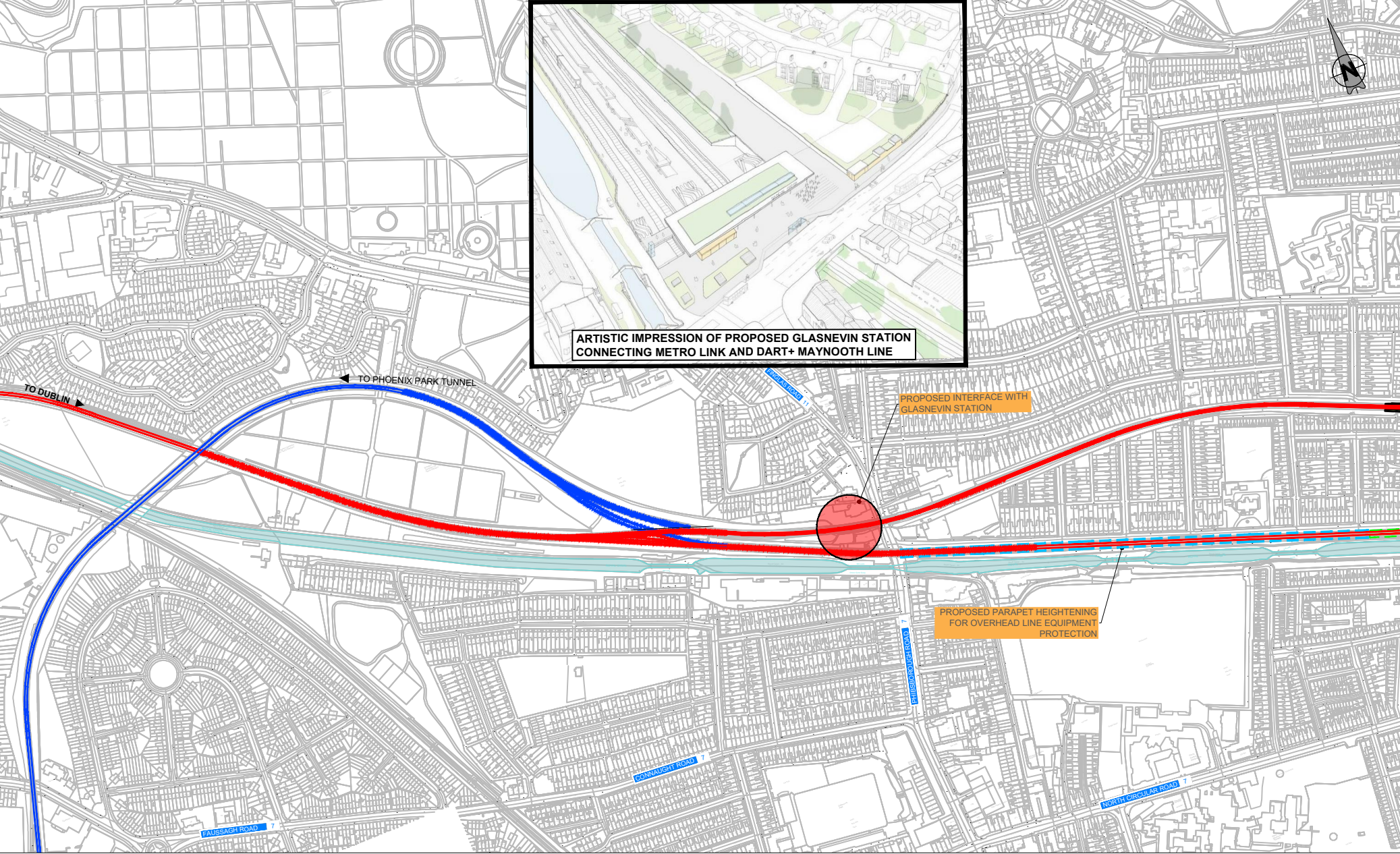
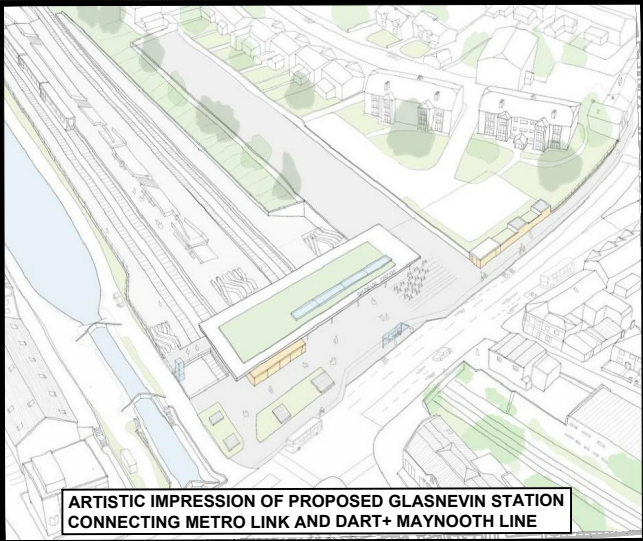


LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

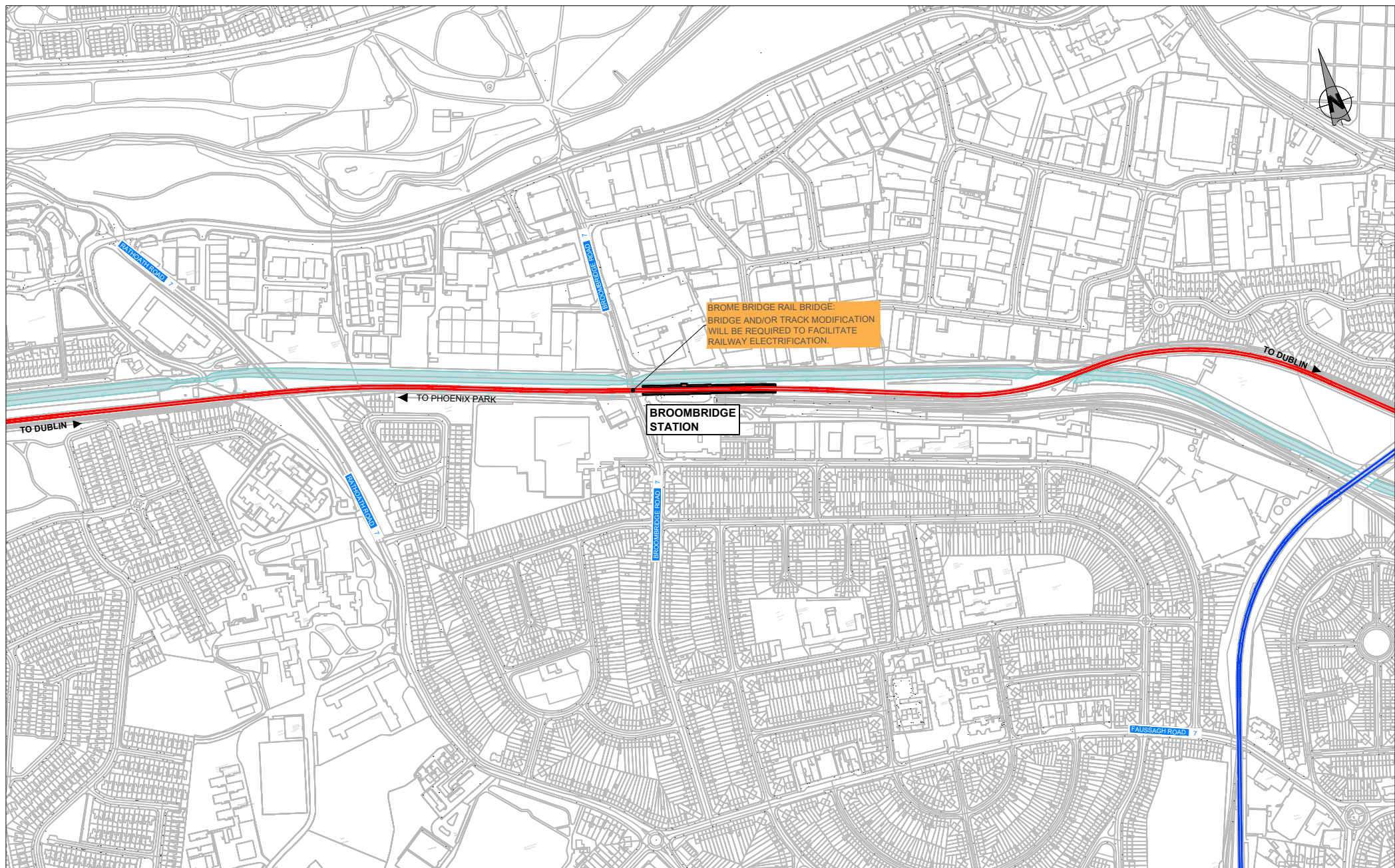
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.





- LEGEND:**
- GENERAL TRACK WORKS
 - EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
 - EXISTING BRIDGE WORKS

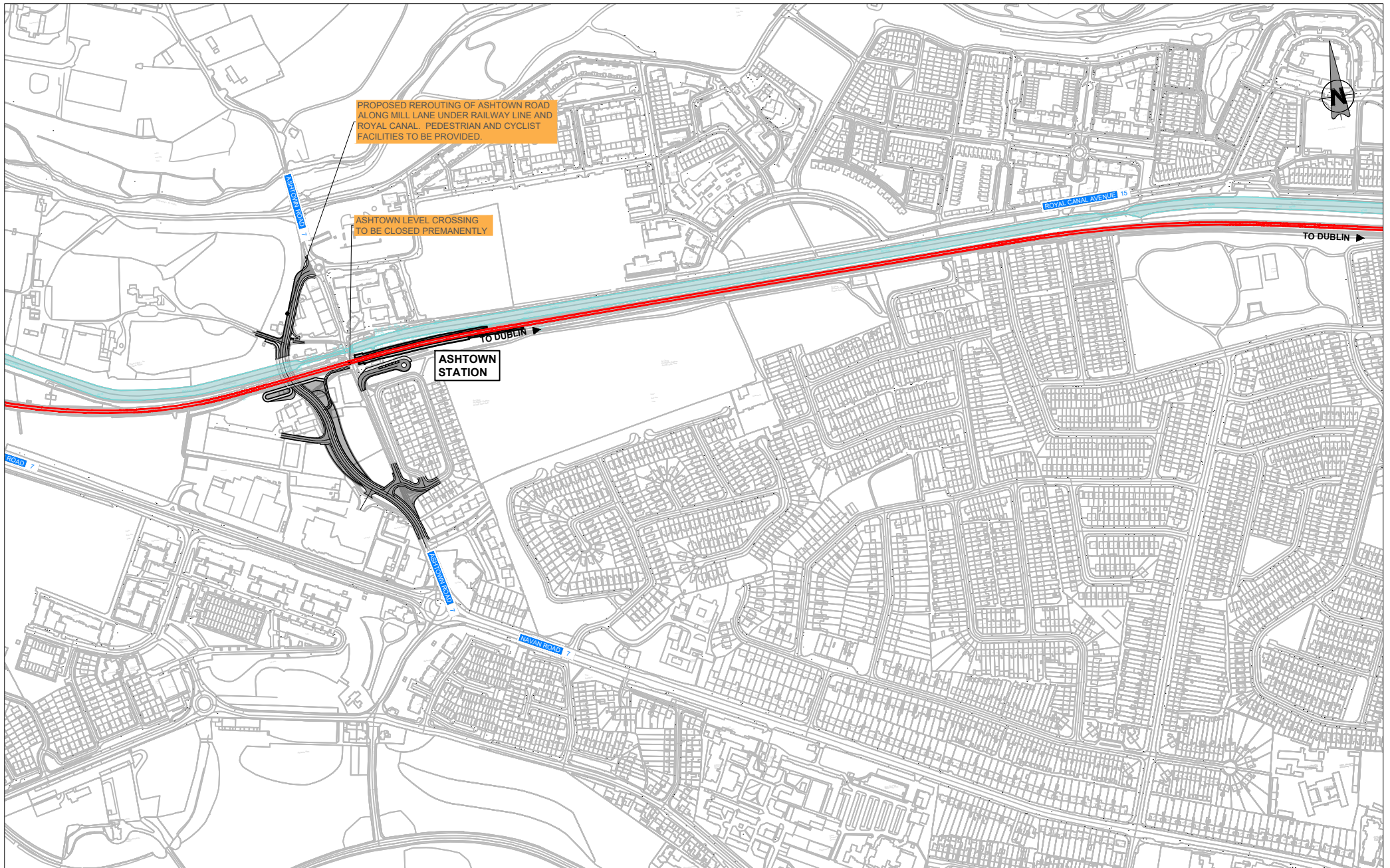
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

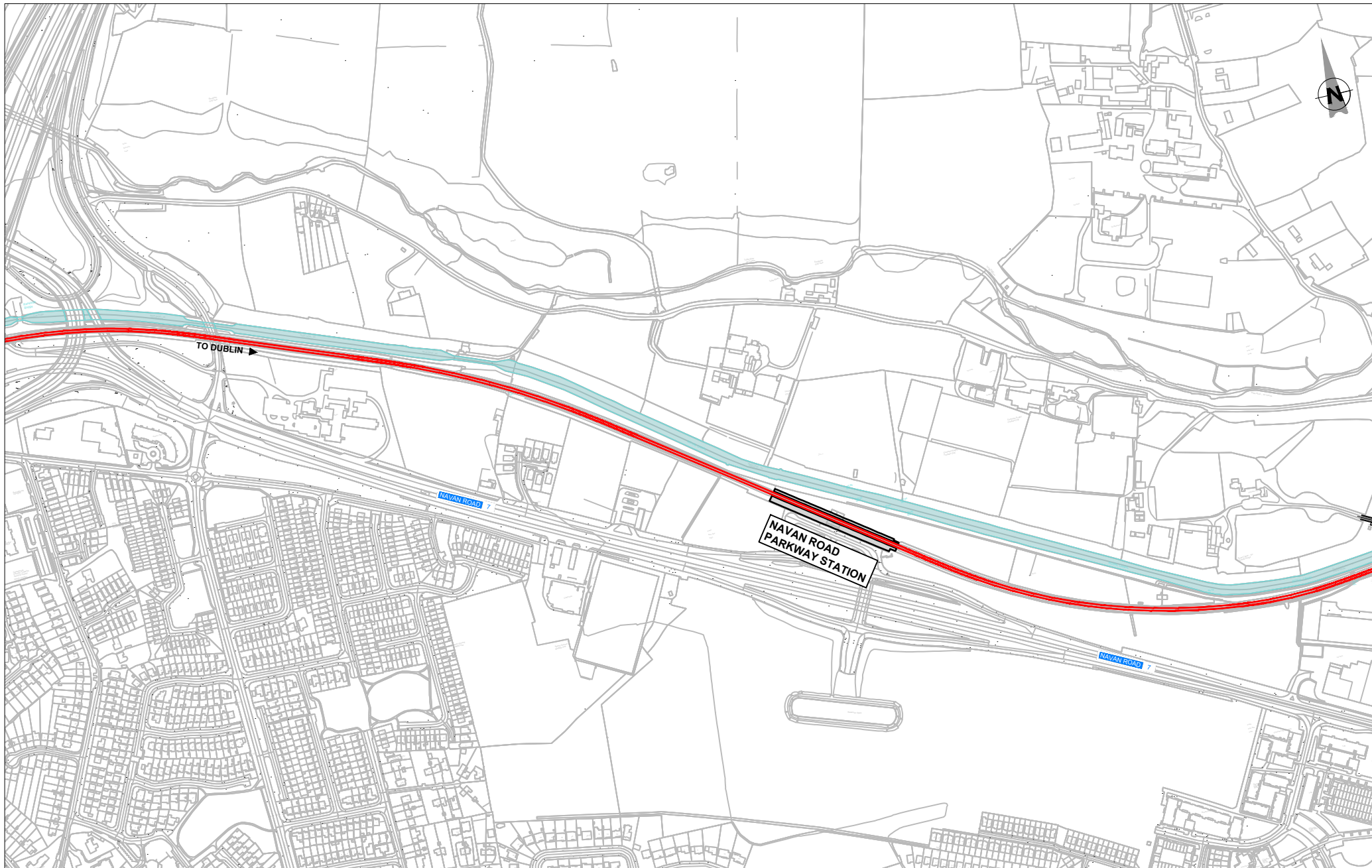
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

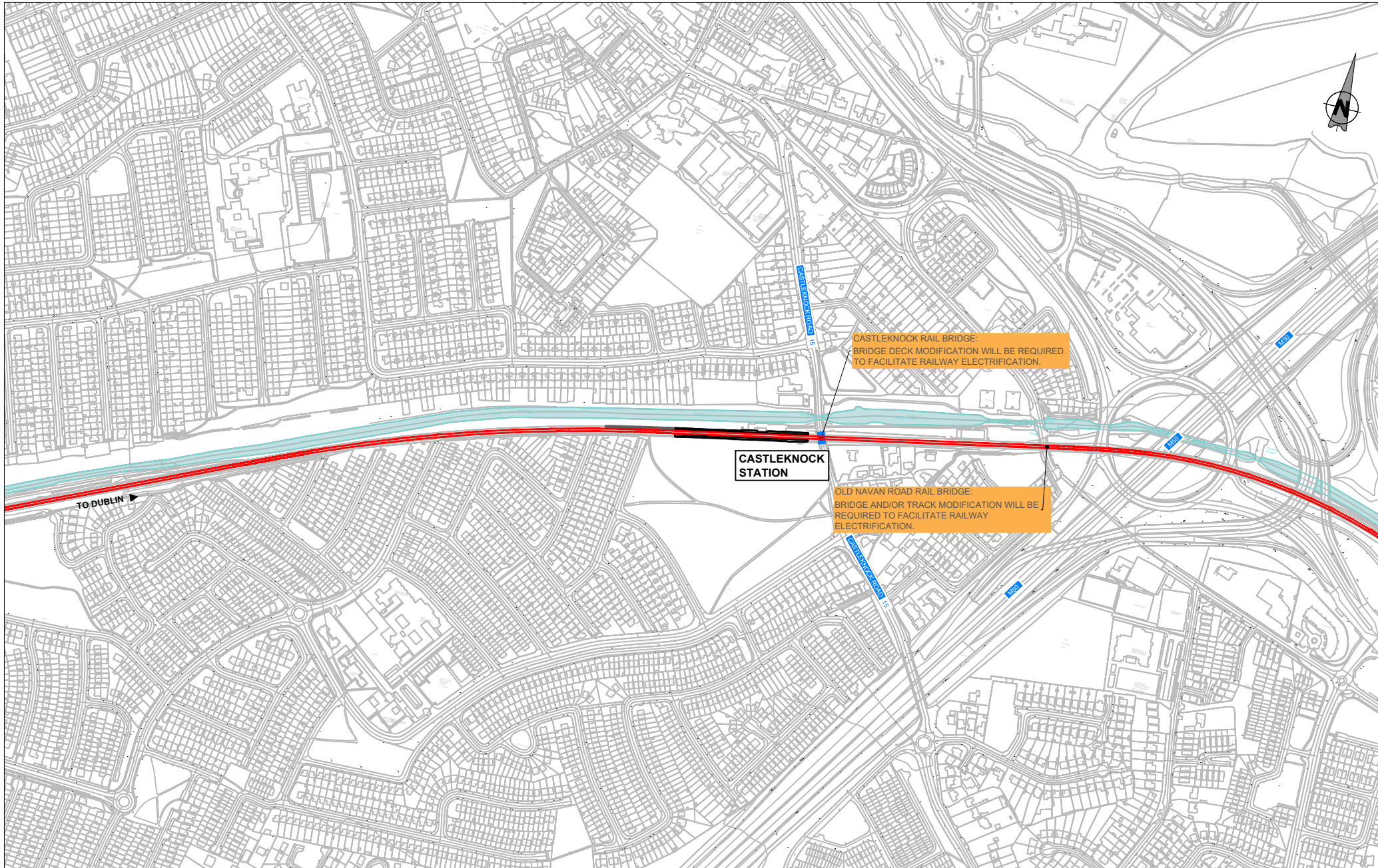
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

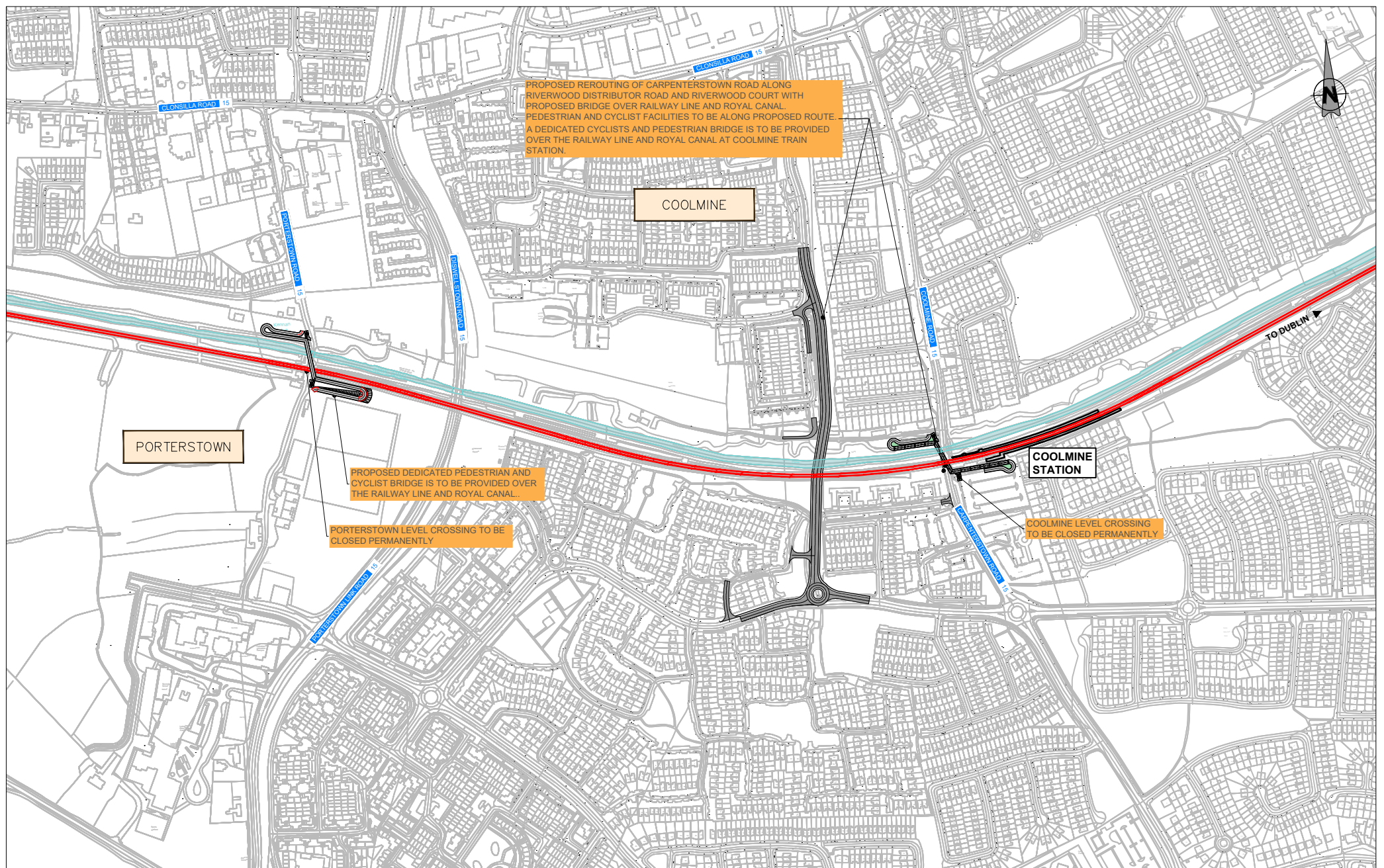
- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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



- LEGEND:**
- GENERAL TRACK WORKS
 - EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
 - EXISTING BRIDGE WORKS

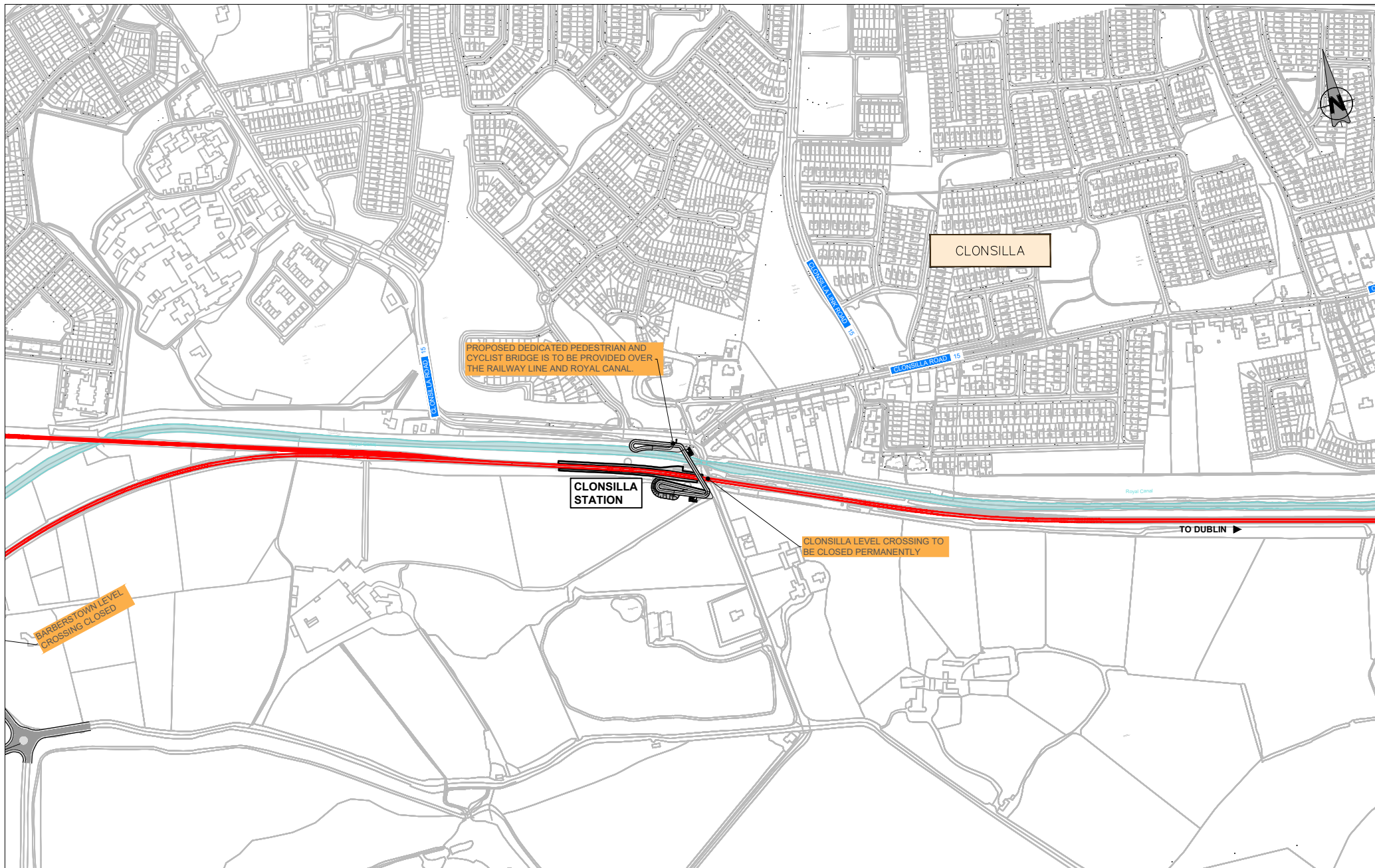
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

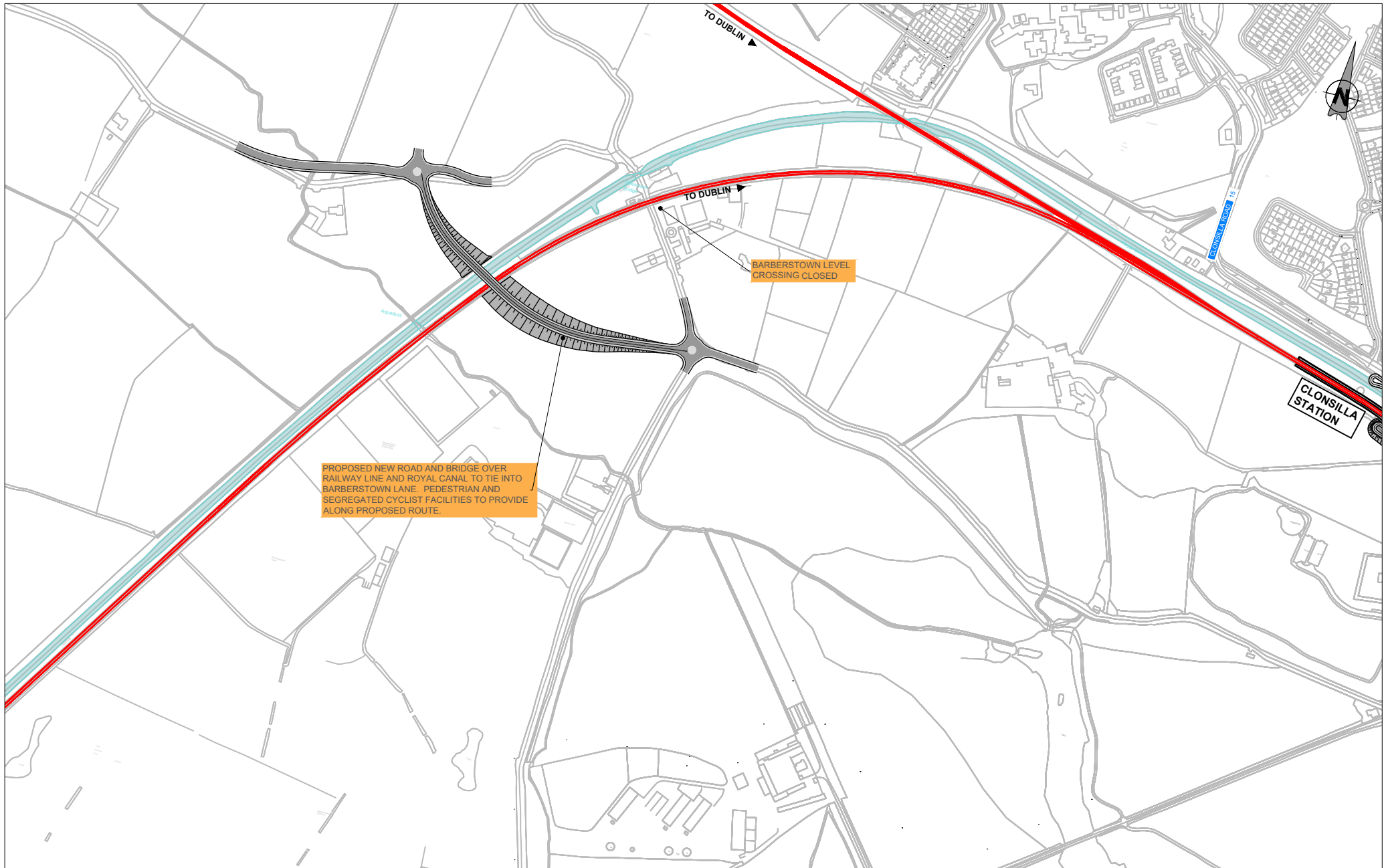
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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



PROPOSED NEW ROAD AND BRIDGE OVER RAILWAY LINE AND ROYAL CANAL TO TIE INTO BARBERSTOWN LANE. PEDESTRIAN AND SEGREGATED CYCLIST FACILITIES TO PROVIDE ALONG PROPOSED ROUTE.

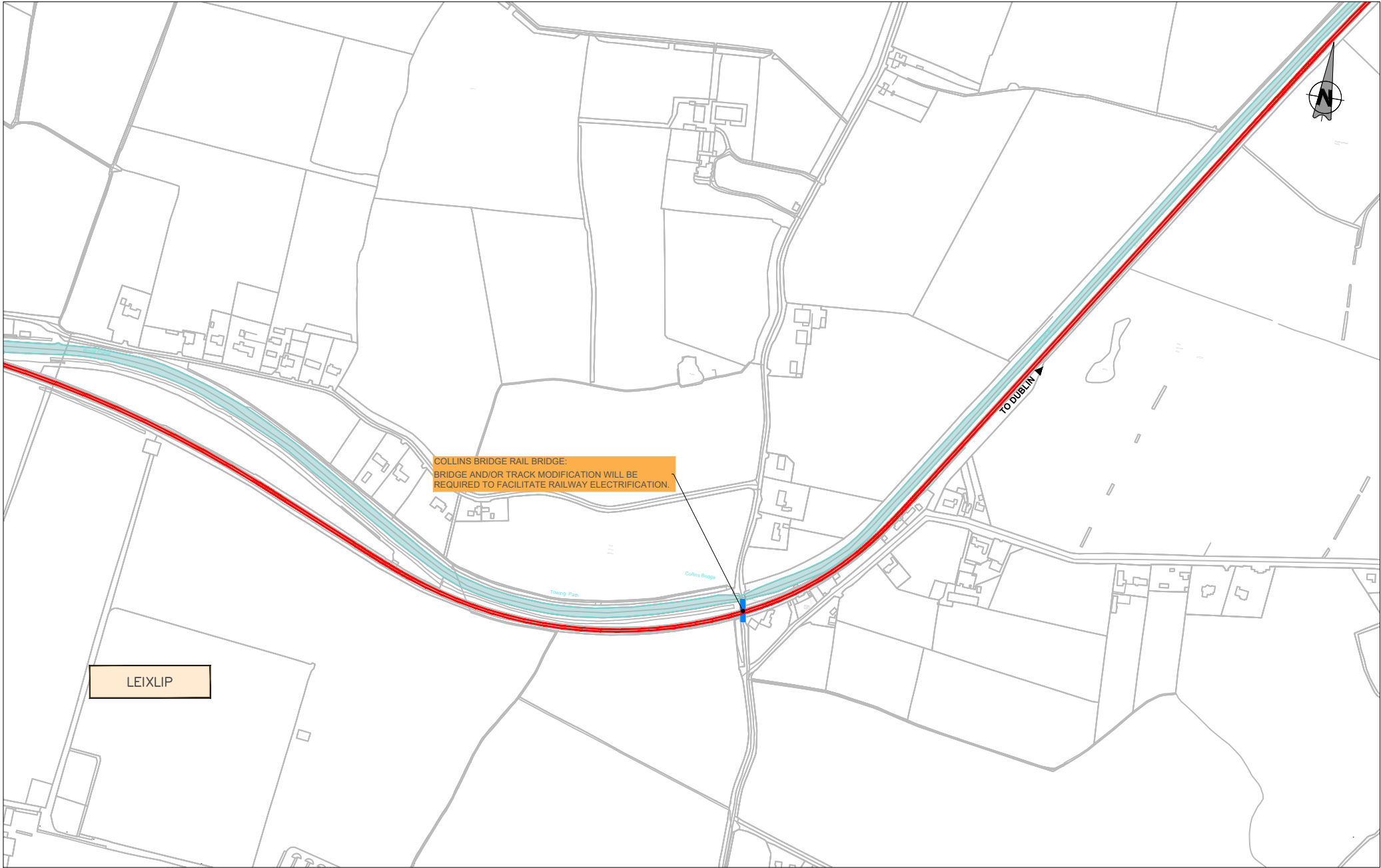
BARBERSTOWN LEVEL CROSSING CLOSED

LEGEND:

- GENERAL TRACK WORKS
- EXISTING BRIDGE WORKS

EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES

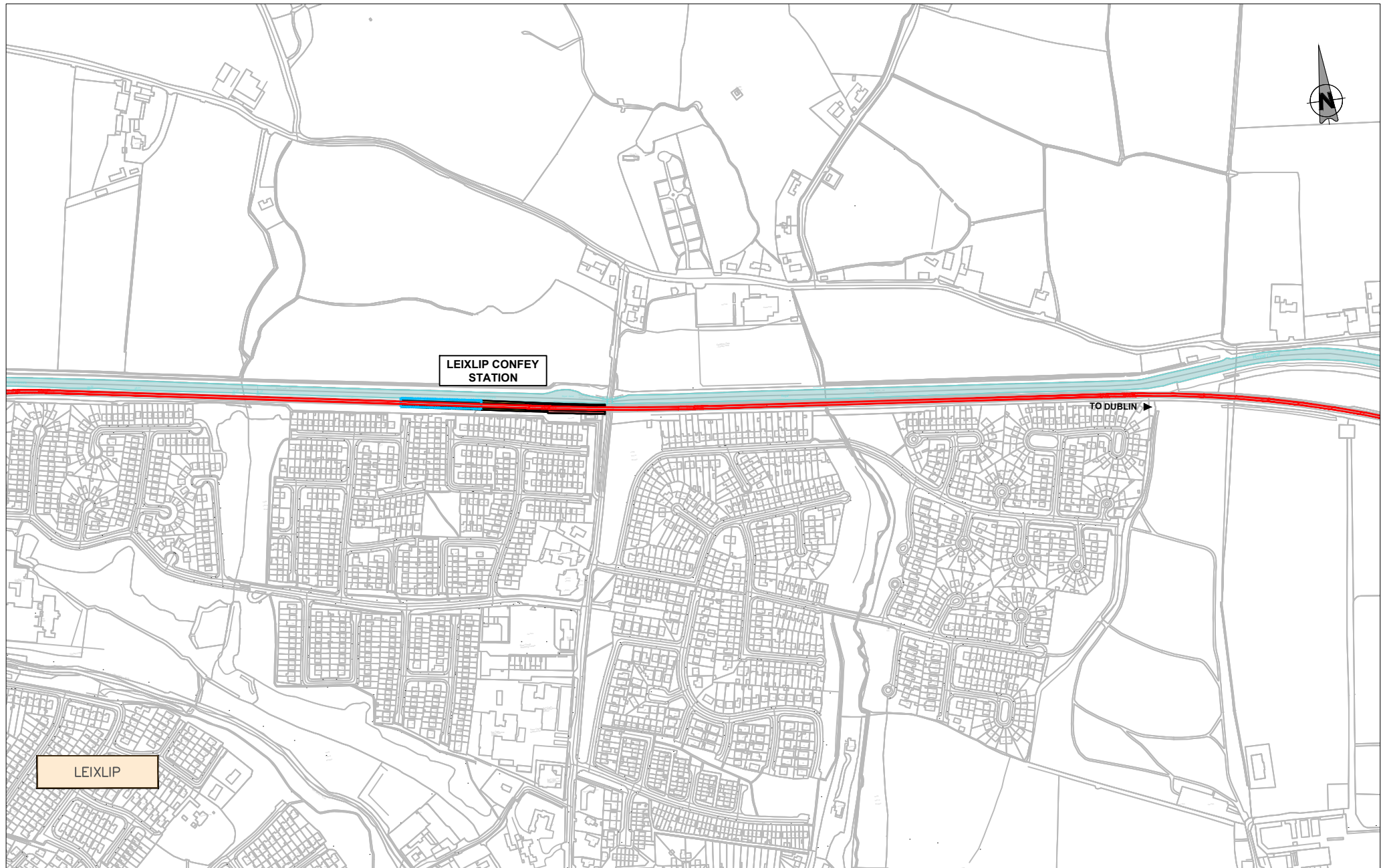
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

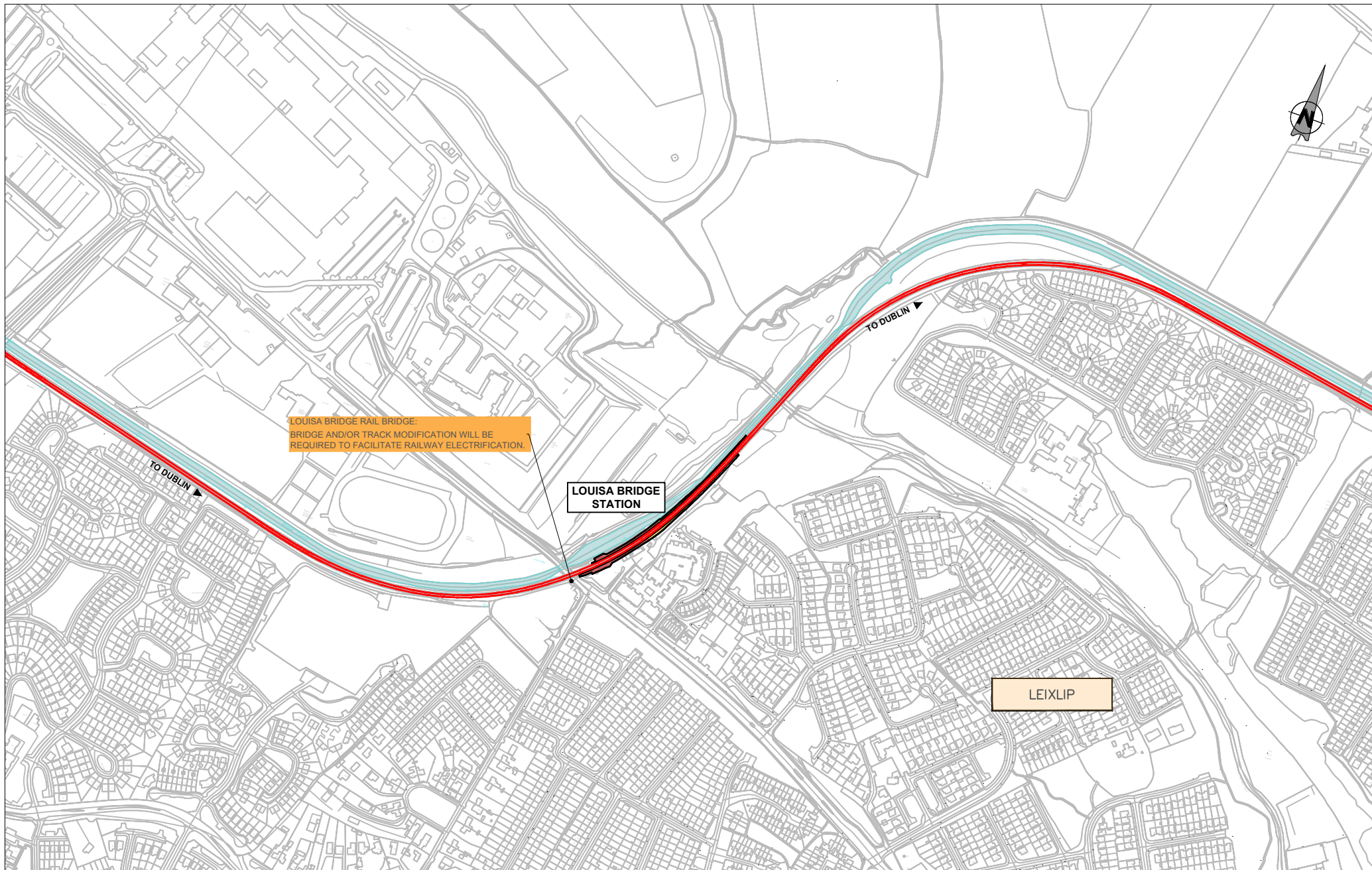
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

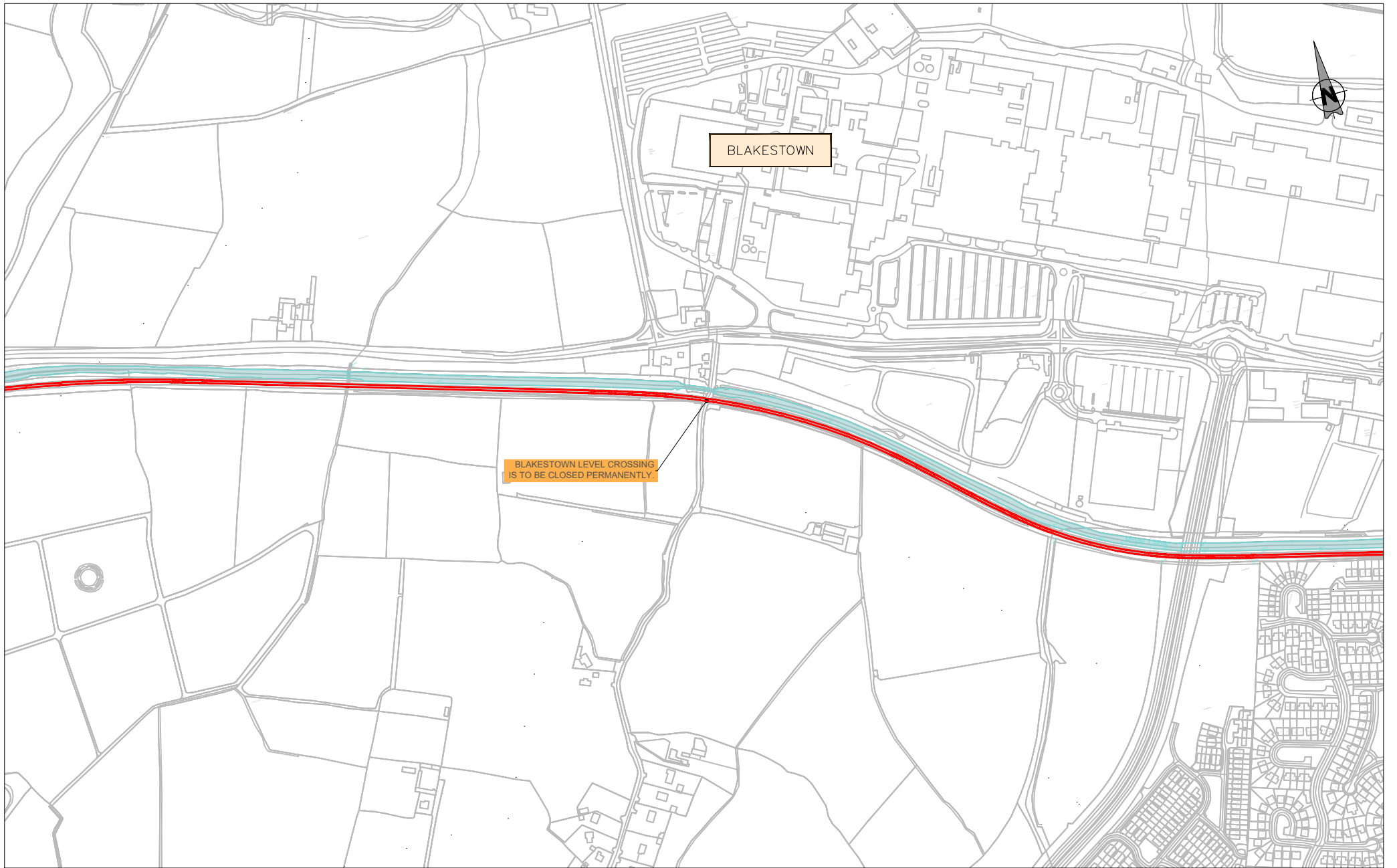
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

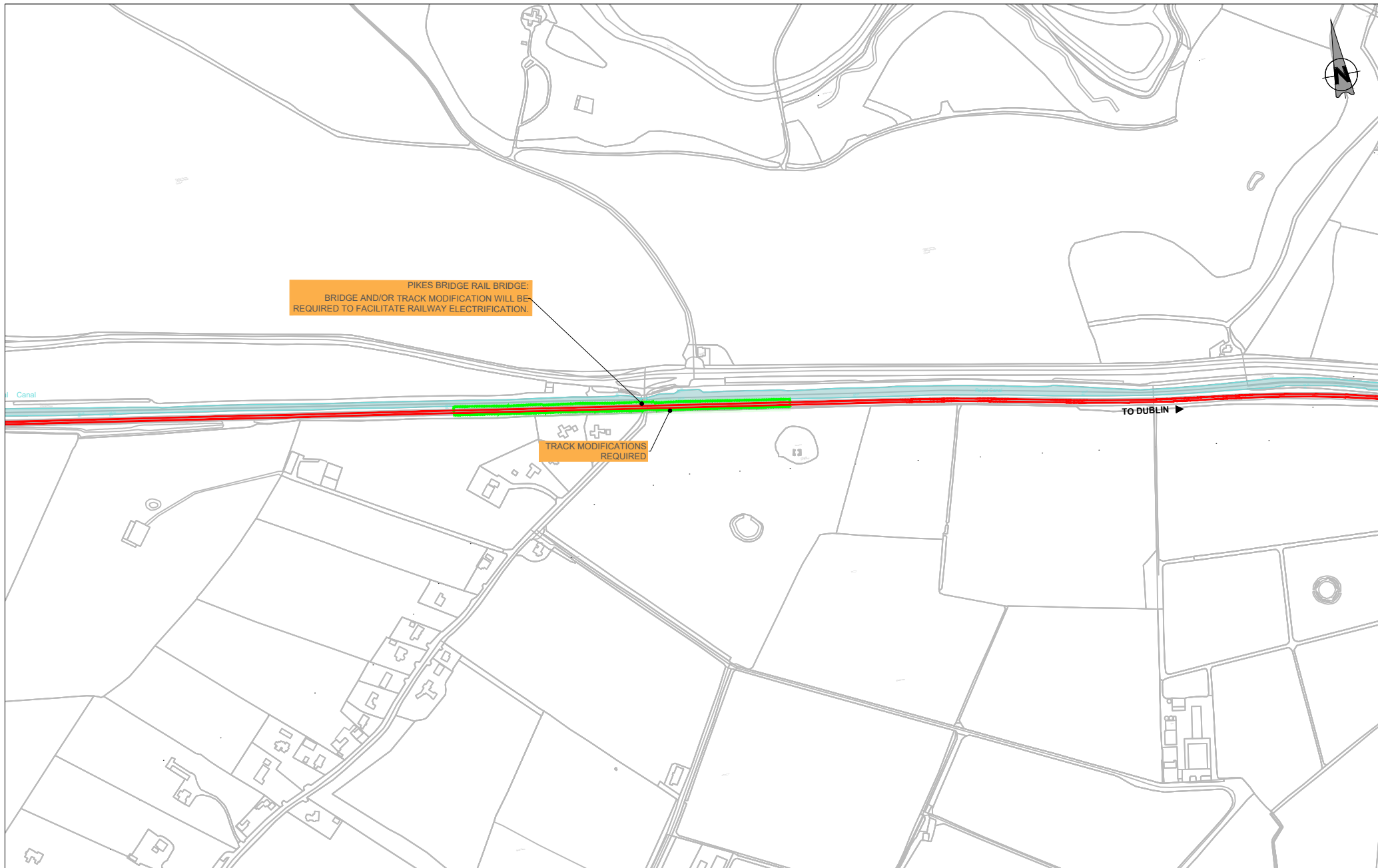
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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

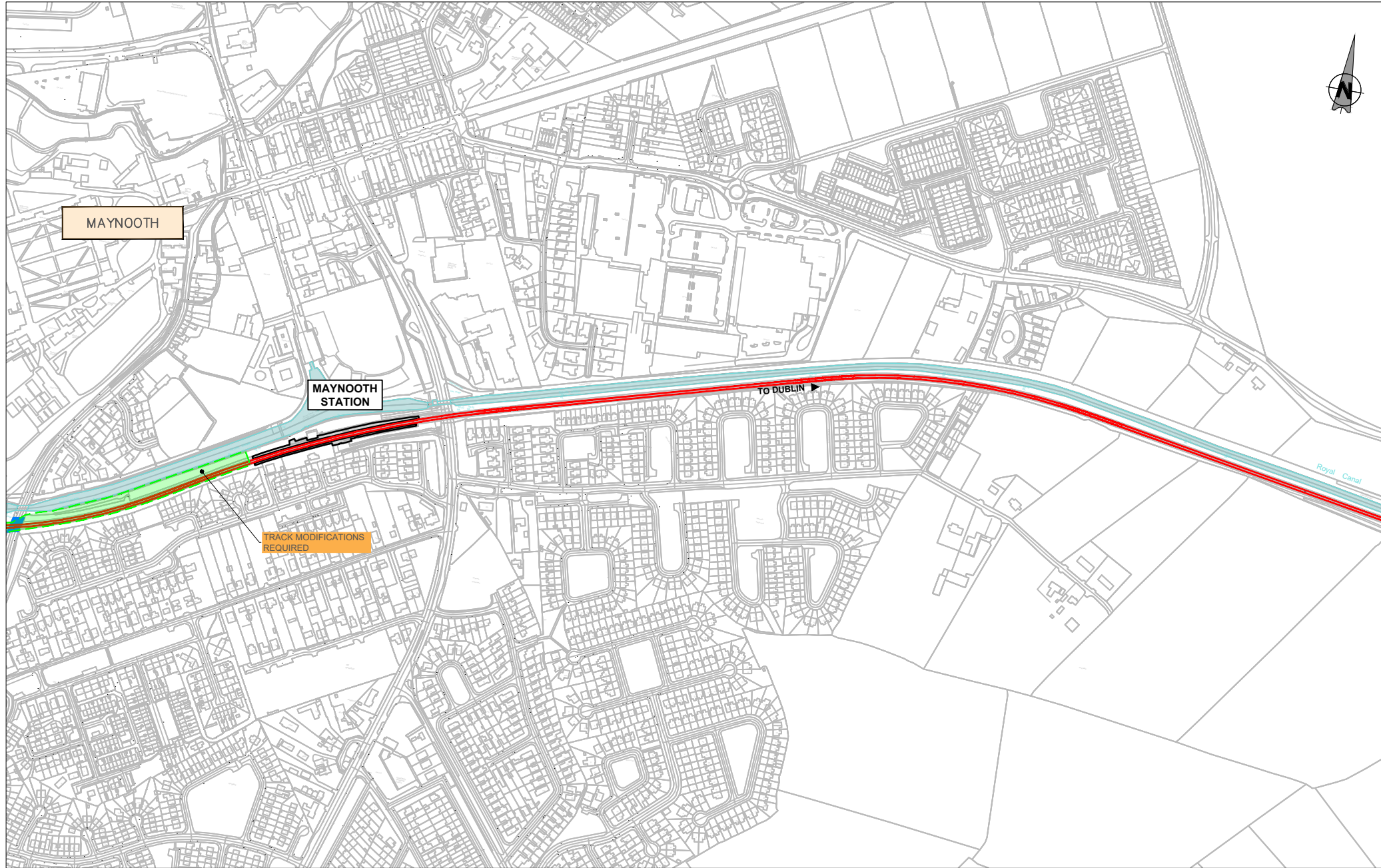


LEGEND:

- GENERAL TRACK WORKS
- EXISTING BRIDGE WORKS

EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES

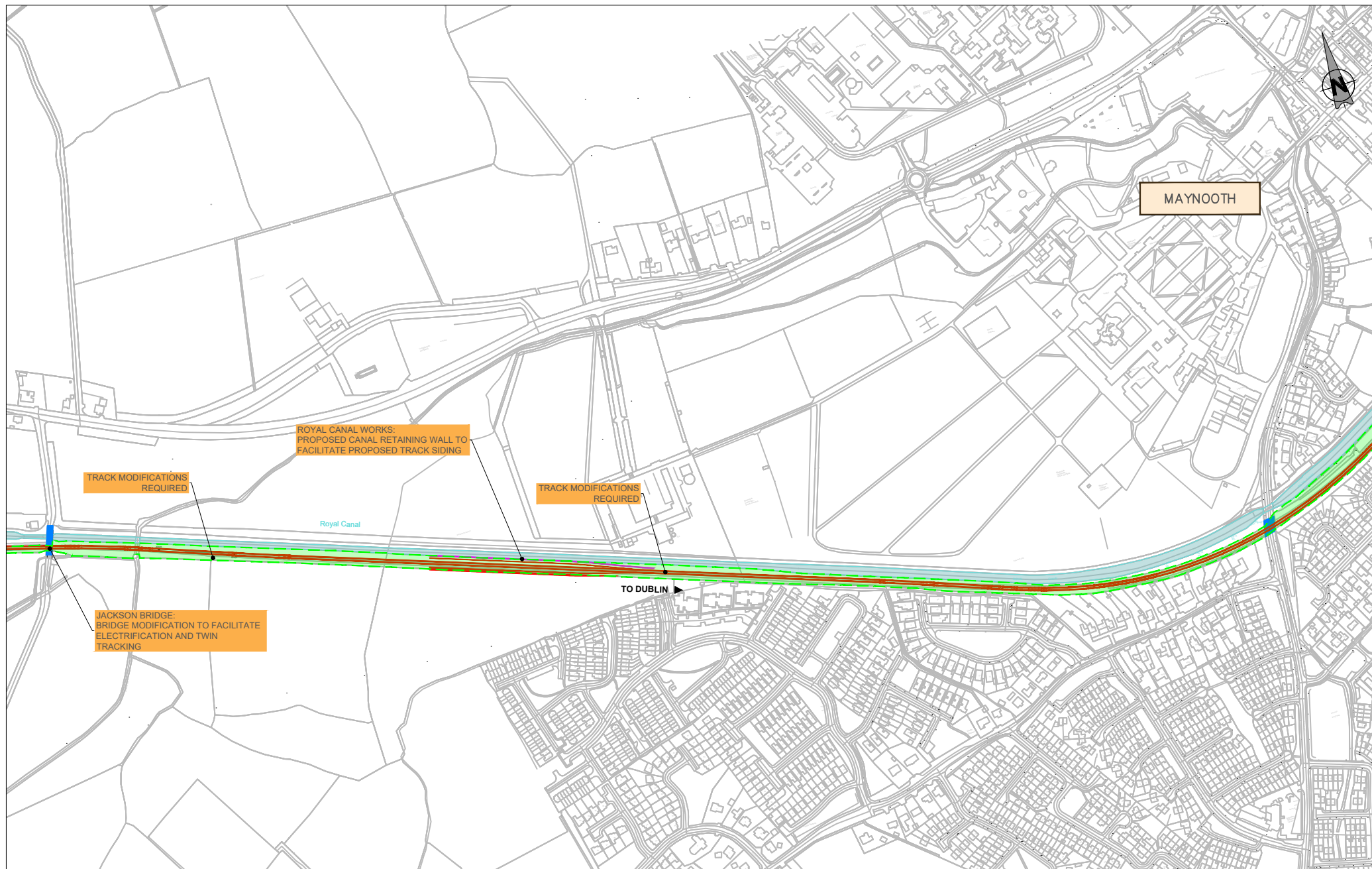
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

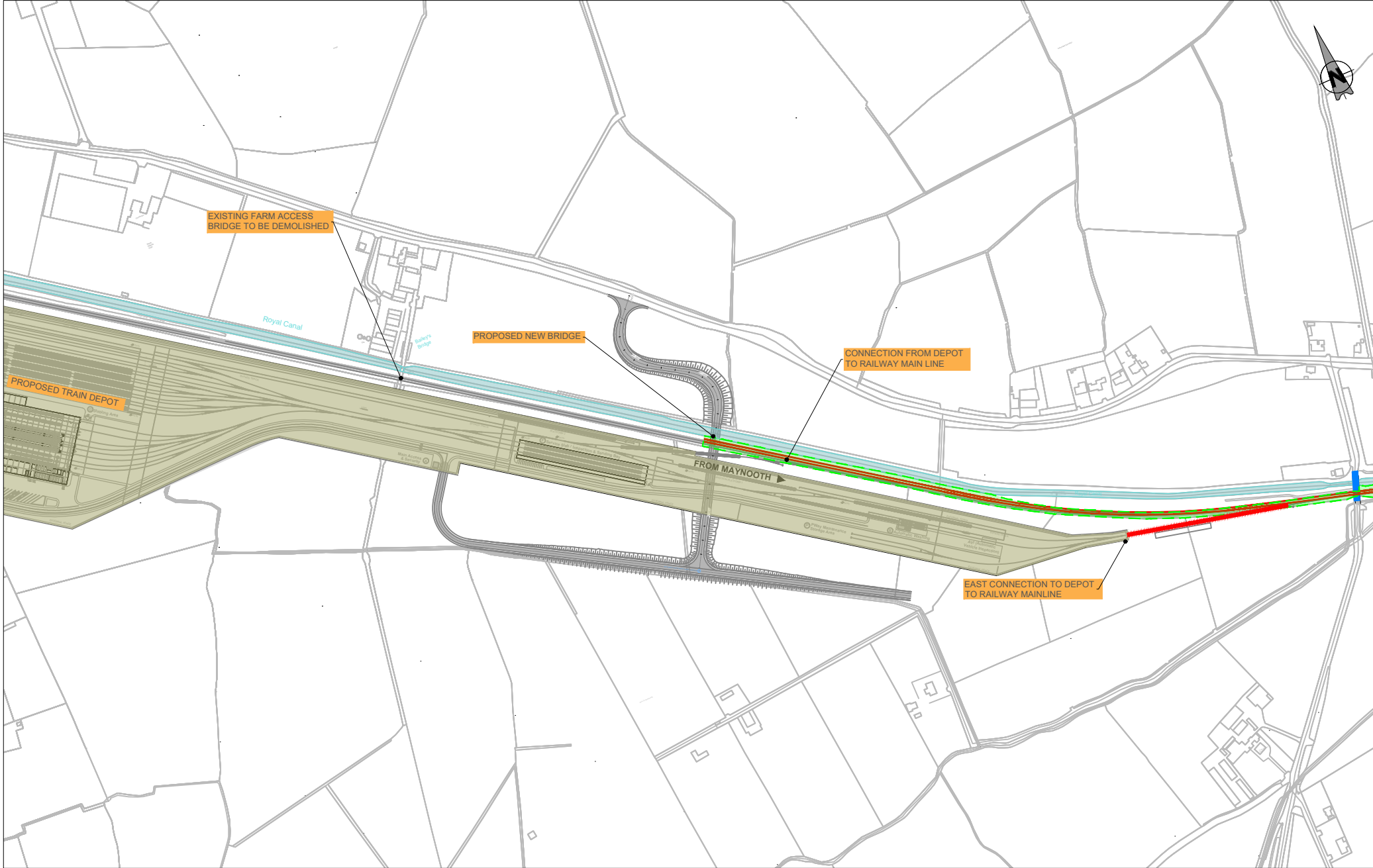
- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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



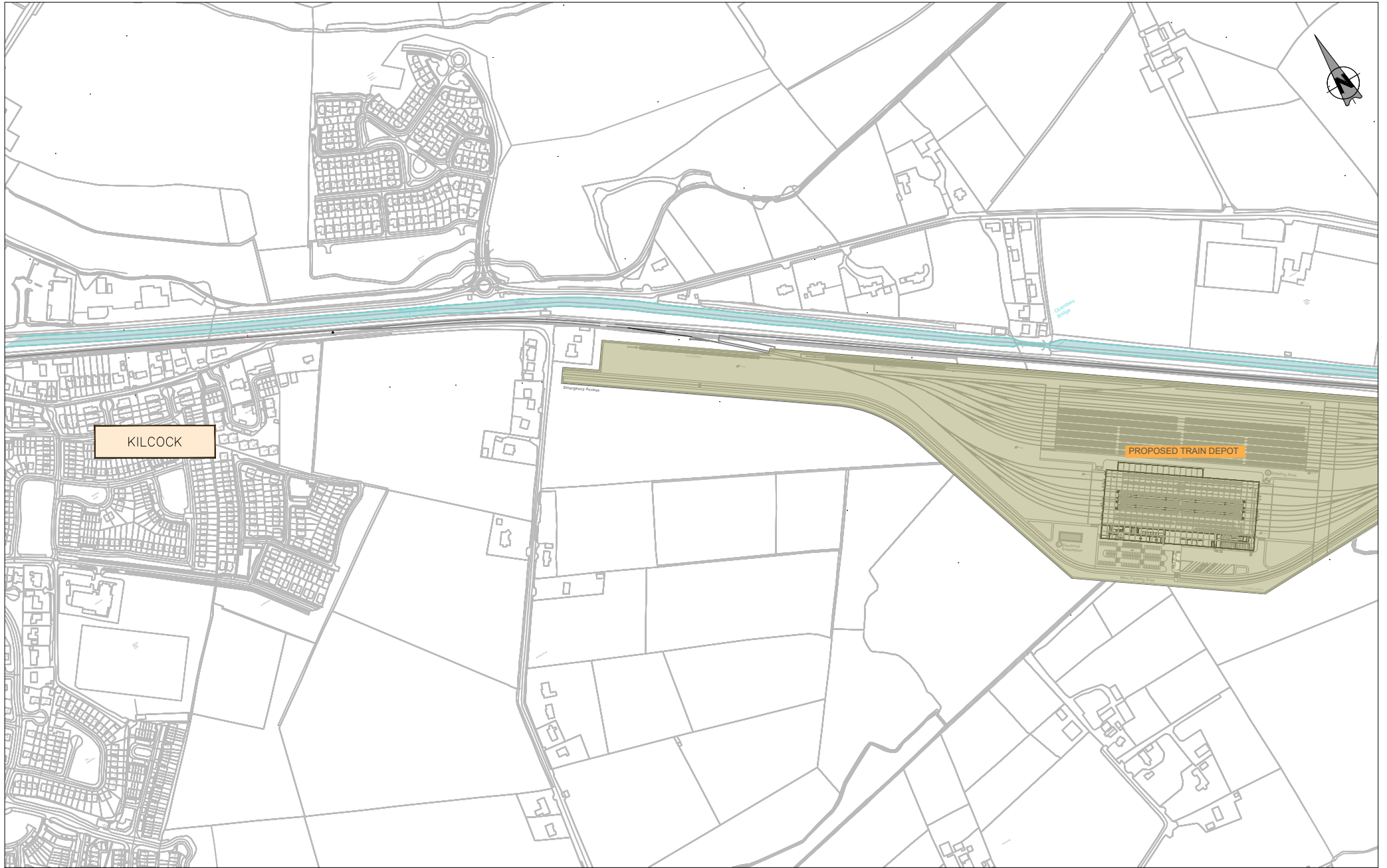
- LEGEND:**
- GENERAL TRACK WORKS
 - EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
 - EXISTING BRIDGE WORKS

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



- LEGEND:**
- GENERAL TRACK WORKS
 - EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
 - EXISTING BRIDGE WORKS

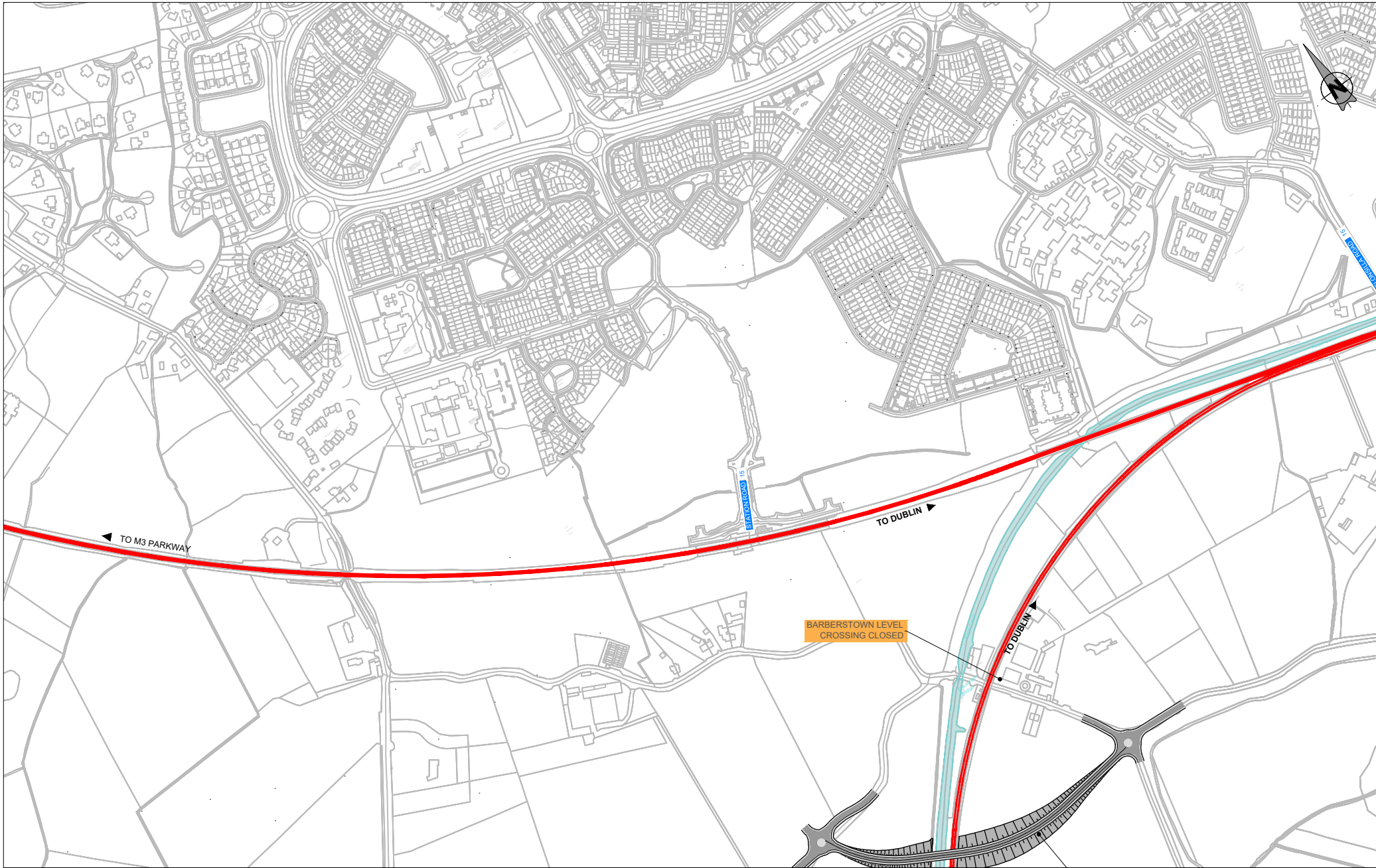
NOTE:
 PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

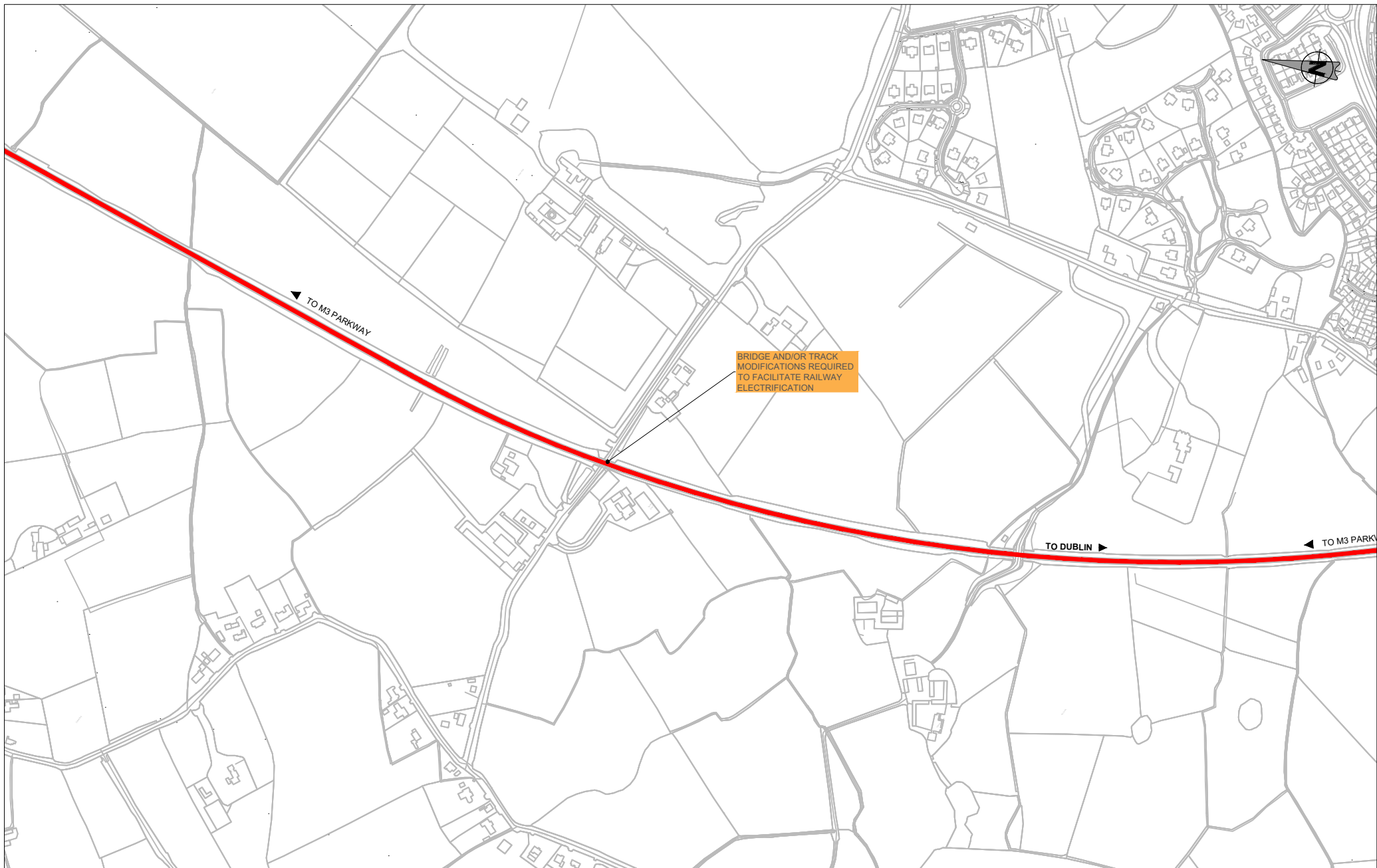
NOTE:
PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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



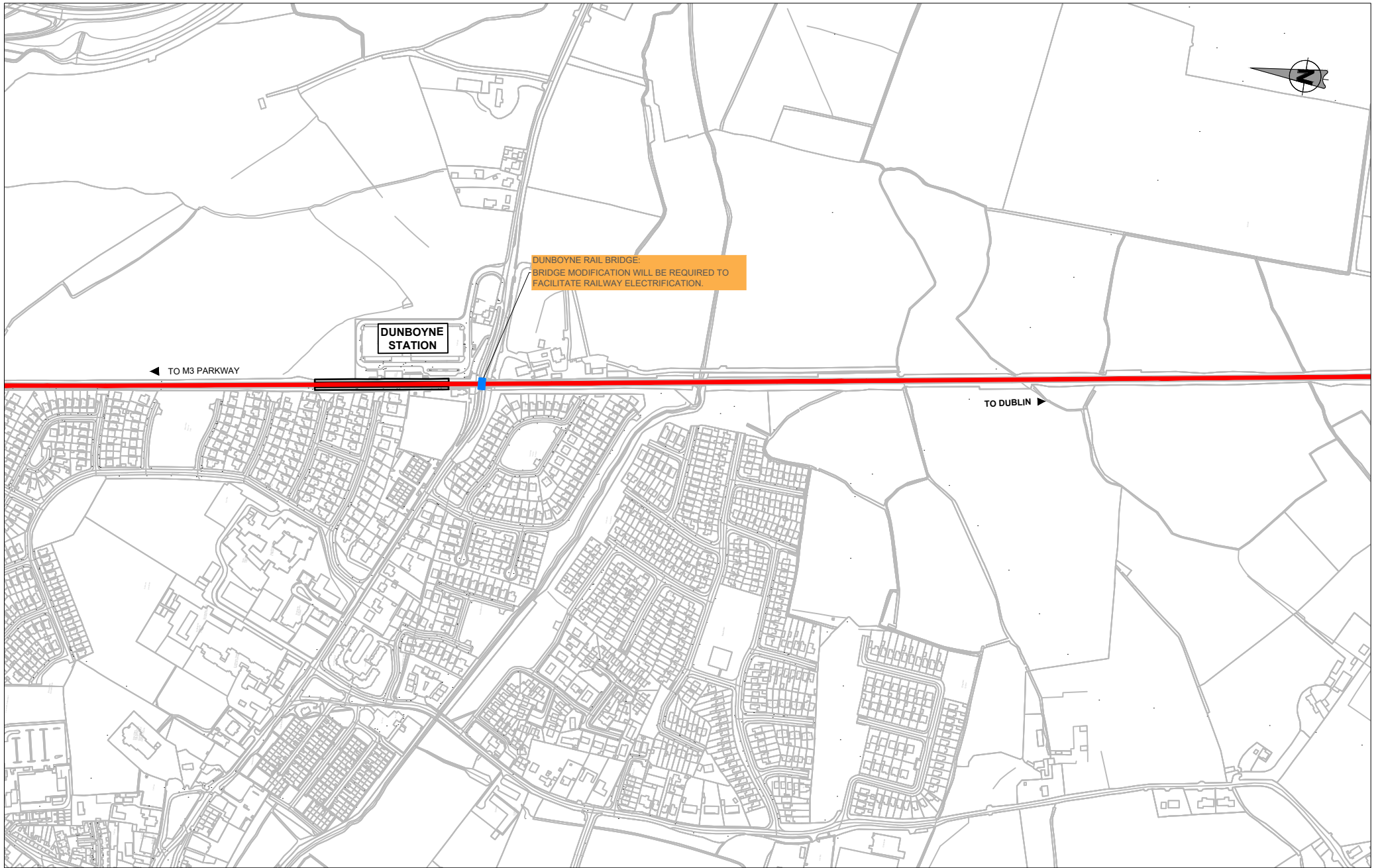
LEGEND:

 GENERAL TRACK WORKS

 EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES

 EXISTING BRIDGE WORKS

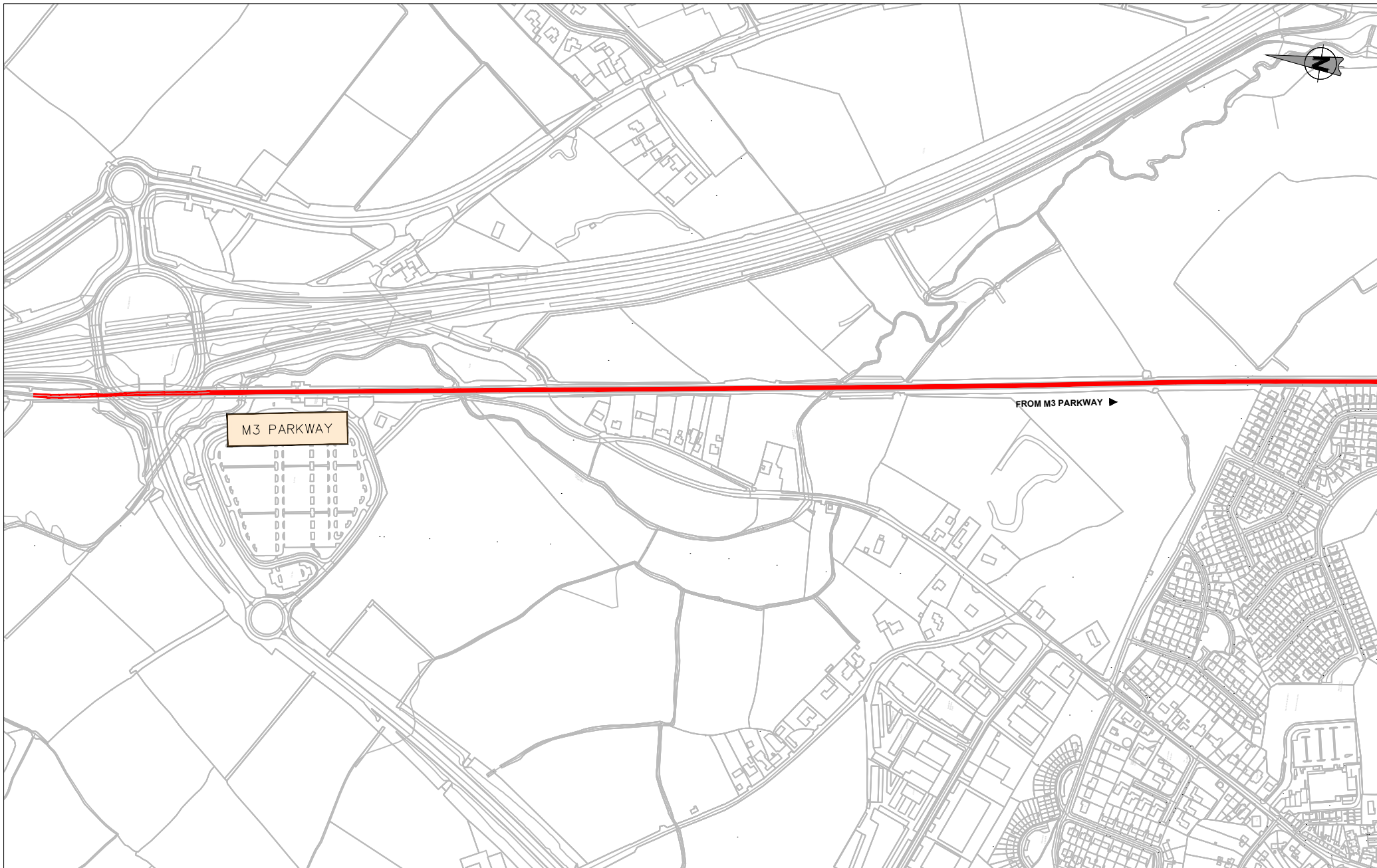
NOTE:
 PARAPET HEIGHTENING WORKS REQUIRED AT ALL BRIDGES FOR OVERHEAD LINE EQUIPMENT PROTECTION.



LEGEND:

- GENERAL TRACK WORKS
- EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES
- EXISTING BRIDGE WORKS

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



LEGEND:

- GENERAL TRACK WORKS
- EXISTING BRIDGE WORKS

EXISTING RAILWAY LINE TO BE ELECTRIFIED WITH OVERHEAD LINES

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