

# **Environmental Impact Assessment Report (EIAR)**

## **Volume 6 of 6: Appendices**

### **(Appendix A7.2) Traffic Management Plan**

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### Acronyms and Abbreviations

Acronym	Meaning
AADT	Annual Average Daily Traffic
AILS	Abnormal and Indivisible Loads
BPS	Booster Pumping Station
BPT	Break Pressure Tank
CC	Construction Compound
DTTAS	Department of Transport Tourism & Sport
EIAR	Environmental Impact Assessment Report
ESB	Electricity Supply Board
FWD	Falling Weight Deflectometer
GPS	Global Positioning System
HV	Heavy Vehicle
LV	Light Vehicle
PSD	Pipe Storage Depot
RWI&PS	Raw Water Intake and Pumping Station
TII	Transport Infrastructure Ireland
TMO	Traffic Management Operative
TMP	Traffic Management Plan
TPR	Termination Point Reservoir
TTM	Temporary Traffic Management
WTP	Water Treatment Plant

## **1. Introduction**

### **1.1 Background**

1. In support of Chapter 7 (Traffic & Transport) of the Environmental Impact Assessment Report (EIAR), this Traffic Management Plan (TMP) has been prepared to outline the road safety measures to be undertaken during the Construction Phase of the proposed Water Supply Project Eastern & Midlands Region (herein referred to as the Proposed Project).
2. This document is a 'living document'. Therefore, any changes which may occur in the planning process and in the detailed construction programme can be incorporated into future iterations of the TMP, as can input from the contractor(s), the detailed design team and Uisce Éireann. The commitments included within the EIAR and this document are the minimum commitments that the Contractor(s) shall follow, and others will be developed during the Construction Phase in consultation with the various stakeholders, including the local authorities.
3. This TMP is supported by figures presented in Annex A of this report. The TMP also makes reference to figures which support Chapter 4 (Proposed Project Description) of the EIAR; these figures are included in Volume 5 of the EIAR.

### **1.2 Objectives**

4. The TMP is an appendix to the EIAR as part of the planning documents and been prepared prior to the appointment of a Contractor, material suppliers and final Construction Phase programme to minimise the Construction Phase traffic impacts.
5. The primary objectives of this TMP are to:
  - Outline minimum road safety measures to be undertaken at site access/egress locations during the Construction Phase, including approaches to such access/egress locations
  - Demonstrate to the developer, contractor and suppliers, the need to adhere to the relevant guidance documentation for such works.
6. The document will be updated on an on-going basis during the Detailed Design and Construction Phase with reference to the particulars and conditions of the Planning Application and associated EIAR.

### **1.3 Relevant Documentation**

7. The appointed Contractor shall comply with the requirements of:
  - Traffic Signs Manual - Chapter 8 - Temporary Traffic Measures and Signs for Roadworks - Department of Transport, Tourism and Sport, August 2019 (or any subsequent update of the standards that will be in place at the time of the Construction Phase)
  - Guidance for the Control and Management of Traffic at Road Works - Department of Transport, N.R.A and Local Government Management Services Board, second edition 2010
  - Guidelines for Managing Openings in Public Roads - Department of Transport, April 2017
  - S.I. No. 423/2008 - Safety, Health and Welfare at Work (Construction) (Amendment) (No. 2) Regulations 2008
  - S.I. No. 43/2013 - Road Traffic (Construction and Use of Vehicles) (Amendment) Regulations 2013
  - Transport Infrastructure Ireland (TII) Rural Road Link Design, DN-GEO-03031 (TII 2013).

8. These guidance documents shall be read in conjunction with primary Safety, Health & Welfare at Work legislation including the Act 2005, the Safety, Health and Welfare (Construction) Regulations 2013 (S.I. No. 291 of 2013), and any amendment to them.

## **2. Site Location and Existing Conditions**

### **2.1 Site Location**

9. The Project Component Overview Maps (Figures 4.2 to 4.60, included in Volume 5 of the EIAR), details the following project information:
- The location of the proposed Construction Working Width
  - The location of the proposed Raw Water Intake and Pumping Station (RWI&PS) site
  - The location of the proposed Raw Water Rising Mains (RWRMs) site
  - The location of the proposed Water Treatment Plant (WTP) site
  - The location of the proposed Break Pressure Tank (BPT) site
  - The location of the proposed Booster Pumping Station (BPS) site
  - The location of the proposed Flow Control Valve (FCV) site
  - The location of the proposed Termination Point Reservoir (TPR) site
  - The agreed Haul Roads on the national, regional, and local roads
  - The location of the proposed Construction Phase related infrastructure, including:
    - The locations of the proposed Construction Compounds
    - The locations of the proposed Pipe Storage Depots
  - Proposed access and egress locations along the Construction Working Width and Infrastructure Sites.

### **2.2 Routing of Construction Phase Traffic**

10. The traffic associated with the Proposed Project will utilise the agreed Haul Roads for all deliveries of pipes, valves, pipe bedding, imported and exported material, etc. Given the volume of pipe material to be delivered, it is not considered feasible, or practical, for pipe material to be delivered directly to the point of installation, given the logistical scale of the Proposed Project. Therefore, as outlined in Chapter 5 (Construction & Commissioning) of the EIAR, the pipes will be delivered directly to the Pipe Storage Depots and stored or prepared for onward journey to the required location along the Construction Working Width.
11. The Construction Compounds will provide the appointed Contractor(s) central strategic hubs for plant, material, labour movement, general storage, administration, logistical support and the technical design staff. The agreed Haul Roads that the appointed Contractor(s) will utilise are shown in Figures 1 to 18, included in Appendix A7.1 Annex B (reproduced in Annex A). Within Chapter 7 (Traffic and Transport), the construction compounds have been described as either principal or satellite. The difference relates to the function of the compounds, whereby satellite construction compounds will provide materials storage and support plant and workers along the route to allow for an efficient construction programme.

### **2.3 Existing Road Network**

12. The Traffic and Transport Assessment (Appendix A7.1 of the EIAR) describes the existing surrounding road network, which includes an analysis of 31 junctions along the Haul Roads within the seven administrative areas that the Proposed Project is located in.
13. Analysis of the 31 junctions indicated that 8 junctions would exceed the design capacity of 0.85 RFC during the Construction Phase peak year. Of these, Junctions 18, 30, and 50 are predicted to experience significant increases in RFC, queue lengths, and delays, necessitating mitigation measures.

### 3. Construction Phase Trip Generation

14. The trip generation during the Construction Phase of the Proposed Project is based on vehicular movements related to the delivery of construction materials, removal of excavated material for disposal/recovery and construction staff movements onto and around the site. Traffic resulting from the Construction Phase of the Proposed Project has been estimated for the construction period of 2028 to 2032.
15. The Construction Phase traffic will be distributed across four different construction sections and 54 access point locations at the infrastructure sites and along the Construction Working Width. The six proposed T-junctions at the infrastructure sites, namely RWI&PS, WTP, BPT, BPS, FCV and TPR provide permanent access during the Construction and Operational Phases.
16. As described in Chapter 5 (Construction & Commissioning) of the EIAR, the Construction Compounds (CC) and Pipe Storage Depots (PSD) associated with each construction section are as per Table 3.1.

**Table 3.1: Assumed Sections for the Proposed Project - Water Supply Infrastructure**

Section	Key Project Elements included in Section	Associated Construction Compounds	Associated Pipe Storage Depots
Section 1	RWI&PS, Raw Water Rising Mains and WTP.	CC0 RWI&PS CC1 WTP	-
Section 2	Treated Water Pipeline between TW – 0 and TWA 2000, including the BPT.	CC2 Lisgarriiff CC3 BPT	PSD1 Carrigatogher
Section 3	Treated Water Pipeline between TWC – 2000 and TWC – 7860 (R420), including the BPS	CC4 BPS CC5 Killananny	PSD2 Toora PSD3 Boveen PSD4 Fortel PSD5 Derrinboy PSD6 Derryweelan
Section 4	Treated Water Pipeline between TWC – 7860 (R420) and TWE – 17870 (TPR) including the TPR	CC6 Drummond CC7 TPR	PSD8 Rathlumber PSD9 Graiguepottle PSD10 Barberstown Upper

#### 3.1 Construction Phase Staffing Levels

17. Construction Phase staff estimated at the Construction Compounds, which will act as the appointed Contractor's central strategic (operational) hub for plant, material and labour movement, general storage, administration, logistical support and technical (design) staff, as described in Chapter 5 (Construction & Commissioning) of the EIAR. Table 3.2 is a reproduction of Table 5.8 (Numbers of Workers Deployed On-Site – Construction Peak) which identifies the numbers working on various element of the Proposed Project.

**Table 3.2: Reproduction of Table 5.8 in Chapter 5 (Numbers of Workers Deployed On-Site - Construction Peak)**

Works Area	No. of Workers
RWI&PS	50
WTP	150
BPT	60
BPS	60
FCV	20
TPR	60

Works Area	No. of Workers
RWRMs	50
Treated Water Pipeline from the WTP to the BPT	200
Treated Water Pipeline from the BPT to the TPR	400
38 kV Uprate Works	15

18. All construction staff will arrive to a Construction Compound by private car (shared or single occupancy) and will be shuttled to access points via shuttle buses carrying an average of 12 staff per bus.
19. As shown in Table 5.11 in Chapter 5 (Construction & Commissioning), the principal Construction Compounds (CC1, CC2, CC5 and CC6) will have 300 no. designated parking spaces in each compound. The Satellite Compounds (CC0, CC3, CC4 and CC7) will have 57-62 no. designated parking spaces. All 9 no. Pipe Storage Depots will have 25 parking spaces. There are 20 no. designated parking spaces provided at the FCV. The principal Construction Compounds have the largest number of parking as it acts as the central strategic hub for plant/material/worker movement, general storage, administration, logistical support, technical (design) staff, etc. The Parking will not be permitted along the side of any road.

### 3.2 Proposed Material Deliveries

20. Most of the traffic generated during the Construction Phase of the Proposed Project are envisaged to include the following elements:
- Pipe deliveries (including pipe fittings, Line Valves, Air Valves and Washout Valves)
  - Temporary roads within the Construction Working Width (including stone and geogrid)
  - Pipe bedding
  - Sheet piles (where pipeline is located within peat)
  - Disposal and/or recovery of material.
21. As described in Chapter 4 (Proposed Project Description) of the EIAR, the construction of the infrastructure sites can be summarised by the following elements:
- Excavation of material for building foundations and tanks
  - Reinforced concrete works
  - Structural steel/concrete building frames
  - Building walls (concrete/blockwork)
  - Prefabricated cladding panels to walls and roofs of buildings
  - Prefabricated steel tanks.
22. Proposed material sources and disposal/recovery sites will be determined on selection of the appointed Contractor(s) and relevant suppliers. The proposed Haul Roads have been determined following consultation with the relevant local authorities and are detailed in Figures 1 to 18 (Appendix A7.1 Annex B, reproduced in Annex A). Use of these routes will be a contractual requirement imposed on the appointed contractor(s). Where material sources and disposal/recovery sites are established by the appointed Contractor(s) and are not located along the designated Haul Roads off the national road network, the appointed Contractor(s) shall consult and agree in writing any amendments to Haul Roads with the various local authorities.

### **3.3 Envisaged Construction Equipment**

23. Construction equipment and vehicles required for each construction element will be delivered to site by appropriate vehicles. Details of proposed construction equipment and vehicles are detailed in Chapter 5 (Construction & Commissioning) of the EIAR. Further details, as well as details of material sources and disposal/recovery sites, will be confirmed and outlined in the future iterations of this TMP which will be developed by the appointed Contractor(s).

### **3.4 Abnormal Loads**

24. The Road Traffic (Construction and Use of Vehicles) Regulations 2013, sets out the maximum permitted weights and dimensions of mechanically propelled vehicles and trailers. In exceptional circumstances, for example the carriage of abnormal and indivisible loads (AILs), the legal limits on weights and dimensions may be exceeded.
25. No abnormal loads are proposed for the Proposed Project. However, in the case that any change occurs to the design the following shall be adhered to. Where it is proposed to carry a load which is such that the gross weight or axle weights are in excess of the legal limits or the dimensional or projecting limits are breached, a permit must be obtained from the relevant local authority or authorities through whose functional area(s) the load would be carried. The abnormal load and Haul Road must be detailed in the applications made for such transports and will be managed in consultation with the Road Traffic Authorities and the Gardaí. Any specific requirements arising as a result of the licensing and permitting process will take precedence over the provisions of this TMP.

## 4. Pavement Condition Surveys, Cross Section Constraints and Construction Phase Remediation

### 4.1 Pavement Condition Surveys

26. Through the scoping process, commitments have been made to the local authorities regarding the completion of pavement condition.
27. Uisce Éireann will undertake pre-construction and post-construction visual pavement surveys on the Haul Roads. Where the Pavement surveys conclude that damage on the roadway is attributable to the Construction Phase of the Proposed Project, Uisce Éireann will fund the necessary repairs and rehabilitation of any damage caused by the construction traffic; details of which will be agreed with the Roads Authority.
28. For the proposed regional and local Haul Roads in County Kildare, it will be a contractual requirement that the appointed Contractor(s) undertake Falling Weight Deflectometer (FWD) surveys pre and post-construction (at 50 metre centres minimum in each traffic lane). FWD testing involves a load pulse which is achieved by dropping a constant mass onto a loading plate and deflection is recorded at varying distances from the plate. In turn the FWD testing utilises the deflection to determine the condition of the pavement layers and subgrade.

### 4.2 Cross Section Constraints

29. Site visits were carried out in January and February 2018 in order to determine Haul Roads characteristics. Additional site visits also took place in February 2024. Existing cross section constraints for two-way heavy goods vehicle (HV) movements along Haul Roads were determined as shown in Table 4.1.
30. A pinch point was identified where the road width narrowed to 5.3m or less.

**Table 4.1: Pinch Point Identified**

Haul Road	Width (m)
R494 (west of Nenagh)	5.2
R493 (west of Nenagh)	5
L4022	4.4
L8032	3
R491	4.4
R490	5.4
L1064 (BPT access Road)	4.6
R490	5.1
R490	4.4
L4004	5.1
R421	4.1
R440	5.3
R421	5.3
L2027	4.6
R421	4.2
L1014	4.6
R420	4.6

Haul Road	Width (m)
R421	5.3
R442	4.8
R401	4
R401	5.4
R441	5.2
L5025	5.2
L1017	5.2
R408	5.4
Unknown local Road (East R406)	5.2
L2008	5.1
R120	5.4
R405	5.4
R499	5.1
L8014	5.1
L7004	5
Unknown Local Road (Between L7004 and L3003)	4.1
Unknown Local Road (Between L7004 and L3003)	3.6
L3003	4.8
Unknown Local Road (Ballyboy Road)	4.9
L2002	4.8
L5026-3	5
R499	5.4
L8014	5.1
L7004	5
Unknown Local Road (Between L7004 and L3003)	3.6
L3003	4.8
Unknown Local Road (Ballyboy Road)	4.9
L2002	4.8
L5026-3	5.4
L8014	5.1
L7004	5
Unknown Local Road (Between L7004 and L3003)	4.1

31. Therefore, in order to utilise the Haul Roads during the Construction Phase at the locations identified in Table 4.1, a priority system or a convoy system will be put in place as part of the construction TMP.
32. Road closures greater than 48 hours have been identified at several locations, as itemised in Section 3.3 of EIAR Appendix A5.4 (Schedule of Crossings), and further explained in Section 7.4 of Chapter 7 of the EIAR. These road closures are required for the following reasons:
- Construction of a water connection to the BPT
  - Construction of ducts for underground cabling, for the provision of power to the BPS
  - Construction of ducts for underground cabling for the provision of power to the Line Valve at TWA-10660.

#### **4.2.1 Priority System**

33. There are a number of sections of road where land and property constraints close to the road locally reduce carriageway width (i.e. pinch points identified in Table 4.1). Some bridge parapets also reduce the width locally, so that two HVs cannot safely pass at such points. In these instances, a priority system will be put in place to allow the right of way to the laden vehicle, with signage warning drivers to this effect, and provision for a pause point for the yielding vehicle. This will form part of the Construction Phase Traffic Management Plan to be developed by the appointed Contractor(s).

#### **4.2.2 Convoy System**

34. In order to restrict the volume of traffic exiting onto the Haul Roads noted to have constraints (identified in Table 4.1), a convoy system will be put in place. The Traffic Management Operative (TMO) located at the access points along the Construction Working Width and at the infrastructure sites will restrict movements of HV's exiting these sites. A communication system will be put in place so the TMO can control the release of the convoy (maximum of five HVs in any one convoy). The convoy will have a short separation between each HV, so that the impact on local vehicles is kept to a minimum. This will form part of the Construction Phase Traffic Management Plan to be developed by the appointed Contractor(s).

#### **4.2.3 Passing Bays**

35. To assist the movement of HVs during construction gaining access to the BPT, five Temporary Passing Bays will be constructed along the L1064. These Passing Bays are intended for use during the construction of the BPT only and would be removed when construction is complete, with existing hedgerows reinstated. The passing bays should be constructed as per requirements set out in TII DN-GE-03031 (May 2023).

### **4.3 Access Preparation**

36. It is anticipated that a number of the proposed access points will not conform to sight line visibility splay requirements as set out by the Transport Infrastructure Ireland (TII) Publication (Standards) or in Local/County Development Plans. Where the visibility splay is constrained at an access point the following shall apply:

- A TMO will be provided at accesses where there are constraints to the visibility splay requirements. The TMO will be available to control the access and egress to and from the site access
- An additional contractual requirement will also be included to ensure the appointed Contractor(s) that they will not be permitted to undertake loading and unloading activities off the side of the existing road network.

37. The proposed permanent new access junctions to the six Infrastructure sites (RWI&PS, WTP, BPT, BPS, FCV and TPR) will be constructed in accordance with the geometry and visibility requirements as shown in Figure 4.62, Figure 4.64, Figure 4.67, Figure 4.68, Figure 4.69, and Figure 4.71 (Volume 5 of the EIAR).

### **4.4 Construction Phase Remediation - Road Reinstatement**

38. The requirement to undertake road reinstatements will be tied to the requirements of the pre, and post-Construction Phase pavement condition surveys. Uisce Éireann will fund the appropriate reinstatement repairs and rehabilitation where these surveys conclude that damage was caused by the Construction Phase of the Proposed Project.

39. The extents of such work will be determined by the aforementioned condition surveys and agreement with Uisce Éireann. Such works will be required to mitigate against the ongoing deterioration of existing road pavements and foundations as a result of Construction Phase related traffic. In the event that such a condition is imposed on the Proposed Project, it will be a contractual requirement that the appointed Contractor(s) liaise with the local authority to agree:
- Schedule of pavement condition surveys
  - Type of pavement condition surveys
  - Thresholds under which road reinstatement and pavement overlays will be required to be undertaken
  - Requirements for monitoring and reporting.
40. Regular visual monitoring of the Haul Roads will be undertaken by the appointed Contractor(s) to inform the local authorities of any deterioration to the Haul Roads and where the repair is required during the Construction Phase.
41. The appointed Contractor(s) to also consult with all PPP Companies, Motorway Maintenance and Renewal Contracts, to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is maintained

## **5. Traffic Management Plan – Roles and Responsibilities**

### **5.1 Introduction**

42. The implementation and organisation of traffic management along the specified Haul Roads are critical components of the works to be undertaken during the Construction Phase of the Proposed Project.
43. At the time of writing this report, details relating to the appointed Contractor(s), suppliers, etc. are yet to be confirmed. The Proposed Project has the potential to be undertaken in a series of works areas, with works being undertaken concurrently within each works area. It is expected that for the effective management of Construction Phase related project traffic, a 'Project Logistics Management Group' will be established.

### **5.2 Project Logistics Management Group**

44. A Project Logistics Management Group will be established to co-ordinate stakeholders and manage all project related logistics activities. The Project Logistics Management Group organisational structure is envisaged to include representatives of Uisce Éireann, the appointed Contractor(s), haulage Contractor(s), and transport management consultant(s). Those bodies involved in the Project Logistics Management Group will have the following defined roles and responsibilities:

#### **5.2.1 Uisce Éireann Representatives**

45. The main responsibilities of the Uisce Éireann Representatives are:
- Leadership, planning and resourcing
  - Project Contractor(s) and schedule interface
  - Approval and acceptance of appointed Contractor(s)
  - External interfaces for statutory, legal and local issues associated with the Proposed Project
  - Road infrastructure monitoring and improvement
  - Addressing complaints
  - Managing external affairs.

#### **5.2.2 Main Contractor(s)**

46. The main responsibilities of the Main Contractor(s) are:
- Transport operational planning and resourcing
  - Health, safety and environmental management, documentation compilation, review and update
  - Compliance with measures in the TMP
  - Local infrastructure HV balancing and optimisation (logistics management)
  - Management of pipeline and haulage Contractor(s)
  - Haulage Contractor(s) safety and welfare, both on-site and off-site
  - Compliance with project objectives, policies and procedures
  - Implementation and maintenance of temporary road signage
  - Compliance with the contract in terms of Haul Road restrictions.

### **5.2.3 Haulage Contractor(s)**

47. The main responsibilities of the Haulage Contractor(s) are:

- Management of plant equipment and load securing
- Driver welfare
- Legal responsibilities, haulage permits, tax, insurance, licenses and the like
- Compliance with project objectives, policies, and procedures.

### **5.2.4 Transport Management Consultant(s)**

48. The main responsibilities of the Transport Management Consultant(s) are:

- Preparation and updating of approved TMPs
- Haul Road surveys
- TMP compliance, audits, and reports.

## **5.3 Personnel Roles and Responsibilities**

49. Due to the size of the Proposed Project, the roles and responsibilities in the context of traffic management shall be shared among the contractor team and their sub-consultants as the contractor sees fit, The personnel organisational structure is envisaged to include Uisce Éireann representatives, transport manager, transport foreman, TMOs, appointed Contractor representative(s) and individual drivers, with their roles and responsibilities outlined below:

### **5.3.1 Uisce Éireann Clients Representatives**

50. The main responsibilities of the Uisce Éireann Representatives are:

- Accountable for clients and appointed Contractor's responsibilities
- Health, safety and environmental leadership
- Interfaces with transport manager and appointed Contractor representatives
- Provide leadership, guidance, and support to appointed Contractors
- Interface with appointed Contractors to balance and optimise HV movements on local road infrastructure
- Manage any external issues
- Updating and submission of TMP to statutory authorities
- Emergency response management
- Monitors and reports on local Haul Road pavement condition.

### **5.3.2 Transport Manager**

51. The main responsibilities of the appointed transport manager are:

- Individual responsible for all transport operational activities (HV and light vehicles (LV))
- Health, safety and environmental responsibility (logistics)
- Interfaces with client's representatives
- Management of abnormal loads
- Preparation of specific load plans

- Attendance at logistic management meetings
- Co-ordination of logistics with project schedule requirements
- Reporting to client's representatives on any issues.

### **5.3.3 Transport Foreman**

52. The main responsibility of the appointed transport foreman are:

- Co-ordinate the transport management operatives
- Site based co-ordination
- Accident control
- Ensuring that HV drivers comply with their duties
- Supervision of erection and maintenance of the signage requirements of the Construction Phase TMP.

### **5.3.4 Transport Management Operative(s) (TMO)**

53. The main responsibilities of the appointed TMOs are:

- Control access to all project related sites by HV and LV traffic (temporary traffic controls)
- Liaise with the transport foreman
- Accident control (on-site incident reporting, signalling and diversion controls)
- Erection and maintenance of the signage requirements of the Construction Phase TMP.

### **5.3.5 Contractor Representative(s)**

54. The main responsibilities of the appointed contractor(s) representative(s) are:

- Appointed individual for contractor logistics activities
- Health, safety, and environmental compliance and responsibility
- Preparation of contractor haulage requirements
- Attendance at logistics management meetings
- Employee transfers, car-pooling and bus transfers.

### **5.3.6 Site Team Supervisor(s)**

55. The main responsibilities of the appointed site team supervisor(s) are:

- Appointed individual for overseeing members on construction team
- Health, safety, and environmental compliance and responsibility
- Liaise with the contractor(s) representative
- Attendance at logistics management meetings
- Employee transfers, car-pooling and bus transfers.

### **5.3.7 Safety Officer(s)**

56. The main responsibilities of the appointed safety officers(s) are:

- Direct link between the employer and employees on issues that may be identified through workplace inspections

- Health, safety, and environmental compliance and responsibility
- Liaise with the contractor(s) representative
- Attendance at logistics management meetings.

#### **5.3.8 Individual Drivers**

57. The main responsibilities of each driver are:

- Their complete vehicle and load
- Any passenger's safety and welfare
- Compliance with legal requirements
- Compliance with company and project policies and procedures
- Compliance with TMP
- Emergency response (on-site).

#### **5.4 Risk Management**

58. The appointed Contractor(s) for the Construction Phase of the Proposed Project will, in conjunction with the Project Logistics Management Group, prepare risk assessments as part of thorough Health and Safety Risk Reviews of the Haul Road operations proposed by the Main Works Contractor(s). These reviews will:

- Identify the risks
- Identify the appropriate mitigation measures
- Understand and define how the actions resulting from the identified mitigations are best allocated between the stakeholders, according to the responsibilities outlined in Section 5.3
- Monitor the implementation of the identified mitigation measures
- Re-evaluate the risks, the mitigation measures, and the effect of completed mitigation measures.

## **6. Traffic Management Plan – Specific Requirements**

### **6.1 Introduction**

59. The appointed Contractor(s) will be contractually required to comply with of the commitments imposed within this TMP. Commitments have been made at the Planning Stage of the Proposed Project on the following issues, which are described in more detail in the following sections. Commitments described in this section will be further developed by the appointed Contractor(s) and agreed with the Roads Authority, prior to works commencing on site, and included in the future Construction Phase TMP:

- Site access and egress – access points
- Site specific temporary traffic management measures
- Road closures
- Electricity Supply from Electricity Supply Board (ESB) Birdhill 38 kV Substation to RWI&PS and WTP
- Electricity Supply from ESB Birr Substation to BPS
- Timing of material deliveries to site
- Traffic management speed limits
- Road cleaning
- Monitoring
- Enforcement of the TMP.

### **6.2 Consents, Licences, Notifications And Permissions**

60. The key consents, licences, notifications, and permissions likely to be required for the Proposed Project with regards to traffic and roads are summarised as:

- Abnormal loads – as stated in Section 3.4 no abnormal loads are proposed for the Proposed Project. However, in the case that any change occurs to the design a permit must be obtained from the relevant local authority or authorities
- Road opening licences for underground cable works etc
- Approval of temporary traffic management plans
- Road closures and diversions
- Permission for works outside of standard construction operation hours agreed upon with relevant local authority or authorities
- Permission from the Motorway Maintenance and Renewal Contractor (MMaRC)/Public Private Partnership Contractor (PPP) on the relevant national roads.

61. The above list is non-exhaustive but identifies the key consents, licenses, notifications, and permissions required for the Proposed Project. This list will be further populated as required through planning compliance and stakeholder engagement to ensure that any further consents are identified as early as possible and do not impact on the construction programme.

### 6.3 Site Access and Egress - Access Points

62. At the proposed access points listed in Table 6.1 and Table 6.2, the access junction will be maintained in order to provide suitable visibility splays. These maintenance works may include removing and trimming of existing foliage. Such works will only be carried out once the proposed improvement works have been assessed and approved by a qualified ecologist. The proposed access points along the Construction Working Width are detailed in Figure 4.2 to Figure 4.60 (Volume 5 of the EIAR).

**Table 6.1: Access Points to the Construction Working Width and Infrastructure Sites**

Access and Egress ID	Crossing Reference	Chainage (approx.)	Project Component Overview Figure
AE051	N/A	N/A	Figure 4.7
AE052	N/A	N/A	Figure 4.7
AE053	N/A	N/A	Figure 4.7
AE054	N/A	N/A	Figure 4.7
AE001	R494	Access Road for the RWI&PS	Figure 4.7
AE002	R494	RW – 800	Figure 4.7
AE003	R445	Access Road for the WTP	Figure 4.7
AE004	R445	TW – 1900	Figure 4.8
AE041	R445	TW – 4100	Figure 4.9
AE005	R445	TW – 12700	Figure 4.11
AE006	R494	TW – 16700	Figure 4.12
AE007	R495	TW – 18500	Figure 4.13
AE008	R493	TW – 21500	Figure 4.14
AE049	N/A	TW – 28900	Figure 4.16
AE009	N52	TW – 29000	Figure 4.16
AE010	R490	TW – 34700	Figure 4.18
AE011	L1058	Access Road for the BPT	Figure 4.18
AE012	R491	TWA – 2000	Figure 4.19
AE013	R491	TWA – 5000	Figure 4.20
AE014	Unnamed Local Road	TWA – 5700	Figure 4.20
AE015	Unnamed Local Road	TWA – 6100	Figure 4.20
AE016	R492	TWA – 11400	Figure 4.21
AE017	N62	TWA – 14100	Figure 4.22
AE018	Unnamed Local Road	TWA – 23600	Figure 4.25
AE019	R440	TWA – 27900	Figure 4.27
AE047	L3003	TWB – 1200	Figure 4.27
AE020	Unnamed Local Road	TWB – 7400	Figure 4.32
AE021	R421	TWB – 18700	Figure 4.35
AE022	N80	TWC – 100	Figure 4.38
AE023	R420	TWC – 7800	Figure 4.40
AE024	Unnamed Local Road	TWC – 13400	Figure 4.41
AE025	R402	TWC – 19200	Figure 4.43
AE026	R400	TWC – 19800	Figure 4.43
AE027	R402	TWC – 24800	Figure 4.45
AE028	R401	TWD – 3600	Figure 4.46

Access and Egress ID	Crossing Reference	Chainage (approx.)	Project Component Overview Figure
AE029	R403	TWD – 16200	Figure 4.50
AE030	L5025	TWD – 21500	Figure 4.51
AE031	L1017	TWD – 26400	Figure 4.53
AE032	L1017	TWD – 28700	Figure 4.53
AE033	R407	TWE – 100	Figure 4.55
AE034	R408	TWE – 3900	Figure 4.56
AE035	R406	TWE – 7700	Figure 4.57
AE036	R403	TWE – 8400	Figure 4.57
AE037	L1016	TWE – 12000	Figure 4.58
AE038	L5064	TWE – 12600	Figure 4.59
AE039	R405	TWE – 14900	Figure 4.59
AE040	R120	Access Road for the TPR	Figure 4.60

**Table 6.2: Access and Egress for Tunnelling Equipment**

Access and Egress ID	Access from Road	Nearest Haul Road	Crossing ID Being Accessed	Chainage (approx.)	Project Component Overview Figure
AE042	R499	R445	RDX007	TW – 6040	Figure 4.9
AE044	L8014	R421	WCX031	TWA – 25140	Figure 4.26
AE043	Unnamed Local Road	N52	WCX036	TWB – 11840	Figure 4.33
AE048	Unnamed Local Road	N80	WCX039	TWB – 24650	Figure 4.37
AE045	Unnamed Local Road	N80	WCX039	TWB – 25070	Figure 4.37
AE050	L1020	R420	RDX077	TWC – 9000	Figure 4.40
AE046	Unnamed Local Road	R403	WBX078	TWD – 14360	Figure 4.50

63. As stated in Section 4.3 of this plan, it is anticipated that a number of the proposed access points will not conform to sight line visibility splay requirements as set out by the Transport Infrastructure Ireland's (TII) Publication (Standards) or in Local/County Development Plans and mitigation will be required in advance of access use to make it suitable for use by construction traffic.

## 6.4 Site Specific Temporary Traffic Management Measures

64. The specific details of each temporary traffic measure will be developed by the appointed Contractor(s) for each site access, in consultation with the Roads Authority, An Garda Síochána and other emergency services, before being submitted to the Roads Authority for formal approval, prior to any works taking place.

65. Signage for temporary traffic measures will be provided in accordance with the Department of Transport's Traffic Signs Manual, August 2019 - Chapter 8 - Temporary Traffic Measures and Signs for Roadworks (or any subsequent update of the standards that will be in place at the time of the Construction Phase).

66. Advanced warning signs will be used to alert drivers to the unexpected road layout ahead (i.e. the roadworks, site access, etc.). All permanent road signs contrary to the proposed roadworks will be covered for the duration of the works and uncovered on removal of the temporary traffic management measures.

67. Any requirement for a traffic lane closure will be controlled by an active traffic management system (i.e. temporary traffic signals or Stop & Go/Téigh discs). An Garda Síochána will be consulted prior to the implementation of the active traffic management system. The operation of a manual Stop & Go/Téigh system will be undertaken by trained personnel, wearing suitable high visibility garments. This approach will apply to the road crossing locations outlined in Table 3.1 and Table 3.3 of Chapter 5, Appendix A5.4. Table 3.1 sets out the open trench excavations, which comprise the majority of the road crossings and are expected to require closures of between 24 and 48 hours.
68. The operators of the traffic management system will be in verbal contact (i.e. walkie talkie) and preferably inter-visible. At the location of the lane closure, queue lengths will be estimated initially with onsite measurements to determine the necessary warning distance for approaching drivers. The signage shall be adjusted as necessary to maintain effectiveness.
69. The maximum length of the active traffic management area (i.e. including taper lengths, which is the required length for the reduction in width of a single lane or hard shoulder) shall be no more than 500m in length for the proposed shuttle system. In order to reduce traffic delays, it may be necessary to limit the works site to shorter lengths, if queuing delays are encountered. The optimum traffic lane width will be 3.25m, with a minimum width of 3.0m. Reduction of the temporary traffic lane width below these parameters may result in the requirement for marshalling of larger vehicles (i.e. HV and buses), or alternatively implementing a diversion route for traffic, which, following consultation with the Road Authority, An Garda Síochána and other emergency services, shall be approved by the Road Authority.
70. Where roadworks impede dwelling access onto the road network, the residents will be instructed on how to egress the property at times when a shuttle system is in operation. The appointed Contractor(s) will provide a TMO at accesses where the motorist is having difficulty following the instructions.
71. Where reasonably practicable, consideration will be given to appropriately amending the traffic management measures to deal with:
  - Particularly high traffic volumes due to sporting or other events
  - Adverse weather conditions
  - Emergency access
  - Times when work is not in progress.
72. If the night-time or weekend temporary traffic management (TTM) measures varies from the daytime plan, a separate TTM will be prepared for approval by the Roads Authority.
73. On completion of the works, the traffic management measures will be removed when the road is safe and free from obstructions, all reinstatement of road surfacing is completed and all permanent signs, road markings and other items are in place.
74. Where a temporary speed limit is deemed appropriate by the appointed Contractor(s) to facilitate Construction Phase activities along the roads serving the Proposed Project, it will be a contractual requirement that the appointed Contractor(s) liaise with the relevant Roads Authority for the purpose of obtaining a temporary speed limit.
75. Any crossing of the existing motorway network will require a Section 38<sup>1</sup> for TII approval.

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<sup>1</sup> Road Traffic Act 1994 (as amended)

76. It will be a contractual requirement that the appointed Contractor(s) to liaise with TII regarding the delivery of heavy vehicles (HVs) from the designated port along the national road network to the Pipe Storage Depots, and adjust HV delivery schedules, as necessary.
77. Additionally, traffic movements may be monitored through site traffic logs, GPS tracking of HV vehicles, and coordination with the Traffic Management Team to ensure the restrictions are being observed in practice.
78. To mitigate the effects Construction Phase HVs during the peak construction activity period on the surrounding road network, where temporary significant impacts are anticipated at Junction 18 (5 weeks), Junction 30 (4 weeks), and Junction 50 (5 weeks) during peak construction periods, it is proposed to limit the number of HVs for essential deliveries only.
79. Further, the arrivals and departures of the HV during the peak hours will be monitored regularly through site traffic logs, GPS tracking, and coordination with the Traffic Management Team to ensure the limited movements of HVs during the peak hours.
80. In line with Section 3.3 of Appendix 5.1 Construction Environmental Management Plan, the contractor would liaison with Uisce Éireann and the Traffic Management Team to review the HV movements during the peak hours, agree peak-hour timelines, and ensure the monitoring of HVs takes place regularly to mitigate the temporary effects of the HVs during peak construction activity period on the surrounding road network.
81. The movements of HV movements during peak period will be monitored on a daily basis.
82. Two existing weight restrictions along the Haul Roads will be incorporated into the contractual requirements that the appointed Contractor(s) will have to adhere to:
  - County Offaly - A 3-axle restriction is imposed along the L1014, off the R402, between Daingean and Walsh Island
  - South Dublin - A school time weight restriction of 12.5T is imposed along a section of the R120 in Lucan village between the times of 08:00 and 09:30 and 13:00 and 16:00 Monday to Friday (school year only).

## 6.5 Road Closures

83. The proposed Haul Roads have been determined following consultation with the relevant local authorities and are detailed in Figures 1 to 18 (Appendix A7.1 Annex B, reproduced in Annex A). As outlined in EIAR Chapter 5 (Construction & Commissioning), the method of construction at each road crossing is determined with reference to the road standard and traffic volume, road width, availability of alternative road diversion for the duration of the crossing, and topography where a road is at a much higher elevation to the surrounding land through which the pipeline is passing. The method of construction at a road crossing will be one of three types:
  - Trenchless crossing
  - Conventional open-cut trenching where the road has to be closed for the duration of the crossing
  - Conventional open-cut trenching where the road is the principal means of access servicing one or more properties. Access to the properties is maintained by providing a bypass across the Construction Working Width for the duration of the crossing.

84. Road closures greater than 48 hours have been identified at several locations, as itemised in Section 3.3 of EIAR Appendix A5.4 (Schedule of Crossings). These road closures are required for the following reasons:
- Construction of a water connection to the BPT
  - Construction of ducts for underground cabling, for the provision of power to the BPS
  - Construction of ducts for underground cabling for the provision of power to the Line Valve at TWA - 10660.
85. One road closure will be undertaken at a time, when the surrounding road network will be required for the diversion route. The proposed Traffic Management and diversion route for the underground cabling is shown in Figure 19 (1 to 21) and Figure 20 (Annex A).
86. Where road closures are proposed outside of night time/ weekends, diversion routes will be assessed by the Contractor(s) appointed Traffic Management Team to confirm the route proposed will have minimum impact on road capacity. Local access must be maintained at all times for all users, including emergency vehicles.

#### **6.5.1 Diversion / Routing Options During Road Closures**

87. At all open cut road crossings (e.g. RDX 001) the method of construction will result in a road closure between 24 and 48 hours. Therefore, as discussed in EIAR Chapter 5 (Construction & Commissioning), at each road crossing there are two types of closures:
- A diversion will be required (example in Image 6.1)
  - An alternative route or diversion will be provided by providing a temporary road bypass (4m in width) across the Construction Working Width for the duration of the crossing (example in Image 6.3).
88. Examples of suitable route diversion options at representative road crossing locations are outlined in the following sections. The appointed Contractor(s) will agree individual traffic management plans for all road crossings.
89. At the time of the Construction Phase and in advance of a required road closure, the appointed Contractor(s) will consult and comply with the Roads Authority, An Garda Síochána and other emergency services to agree a suitable diversion route prior to implementing a road closure. The appointed Contractor(s) will be contractually required to adhere to the advertising and consultation requirements of the Road Authority.
90. Construction of road crossings will be carried out prior to the main construction in order to allow for neighbouring roads to be utilised as a diversion route.
91. The following sections set out the diversion options that are available for various road/traffic conditions.

##### **6.5.1.1 Road Closure of a Regional Road with Nearby Alternative Equivalent Route**

92. The road crossing at RDX001 is located on a R494 regional road. The traffic count in 2022 reported Annual Average Daily Traffic (AADT) of 5685 vehicles (4% HV). As shown in Image 6.1, there is a nearby regional road (R496), which can be considered as an alternative equivalent diversion route.

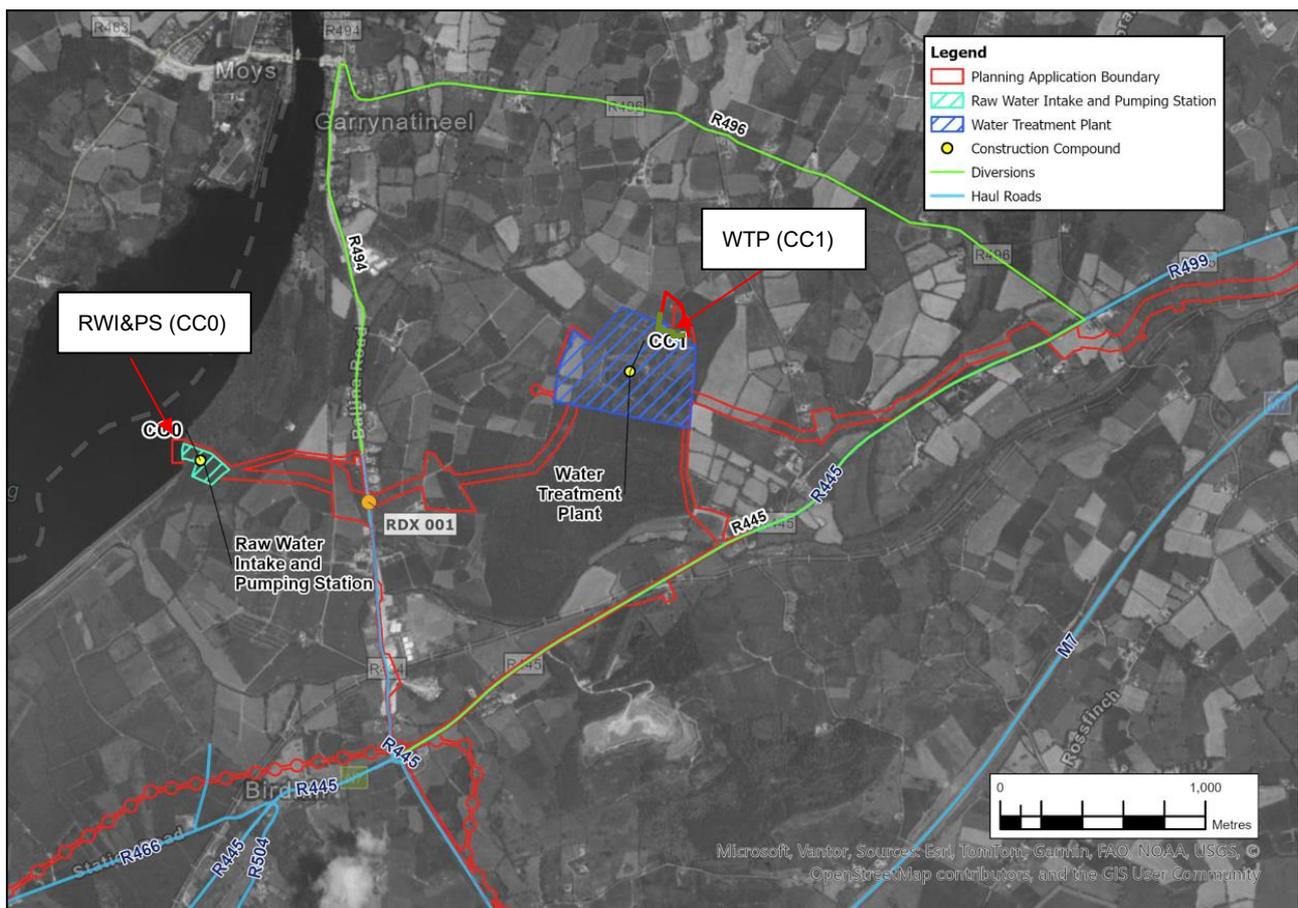


Image 6.1: Diversion Route Via Alternative Equivalent Route

### 6.5.1.2 Liaison with Landowners

93. The road crossing at RDX006 is located on a private road, serving access to farmland where there is no diversion route or alternative access to these lands (Image 6.2). This type of road closure will require the landowner to amend their farm operations so that access during the road closure will be to the north of the road closure only. The appointed Contractor(s) will be required to consult and agree timings with the landowner. An agreement with the landowner to amend farm operations during the proposed road closure will be put in place before the Contractor(s) is appointed, to remove any potential delay of the works.

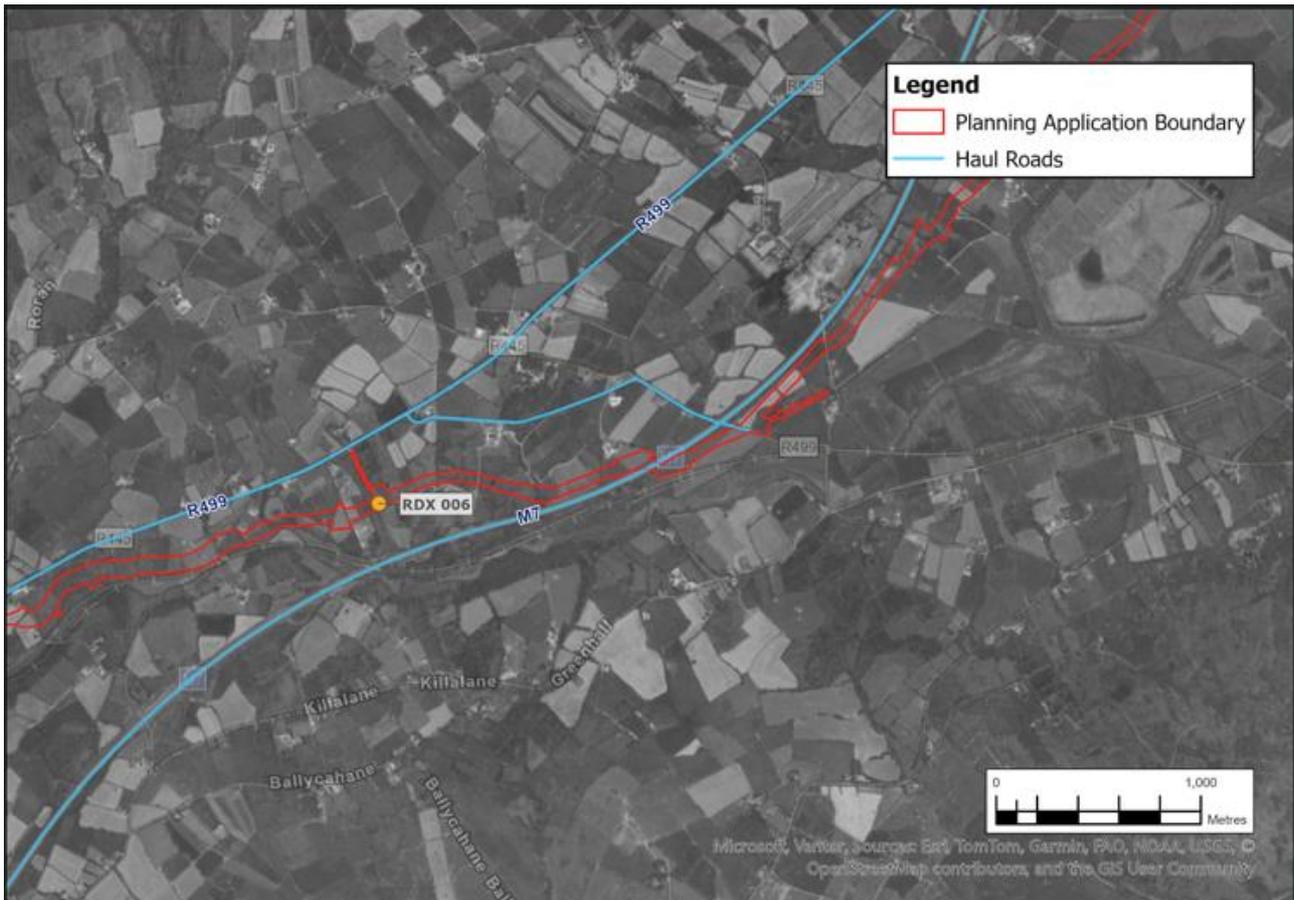


Image 6.2: Further Liaison with Landowner(s)

### 6.5.1.3 Cul-de-sac

94. The local road for RDX033 has numerous houses on both sides of the road and terminates as a cul-de-sac with no link roads along its route, as shown in Image 6.3. Hence, there are no options for a diversion route during construction of the road crossing. It will be a contractual requirement that the appointed Contractor(s) construct temporary measures to ensure access to all properties is maintained at all times. This will likely require temporary access roads to be constructed within the Construction Working Width and around the excavation at the road crossing.



**Image 6.3: Cul-de-sac**

#### 6.5.1.4 Haul Road through Celbridge (night-time & limited hours only)

95. In consultation with Kildare County Council (Celbridge), it was agreed to allow Construction Phase generated traffic through Celbridge at night and for a limited period in the morning, in order to allow access to the Construction Working Width (RDX109 and RDX110 – see Image 6.4). Further consultation confirmed the access to the Construction Working Width through Celbridge shall be within following hours:

- 20:00 to 07:00
- Between 10:00 to 11:30.

96. The appointed Contractor(s) will consult and agree with the local authority, the appropriate timing outside the normal hours when access to the Construction Working Width can be achieved.

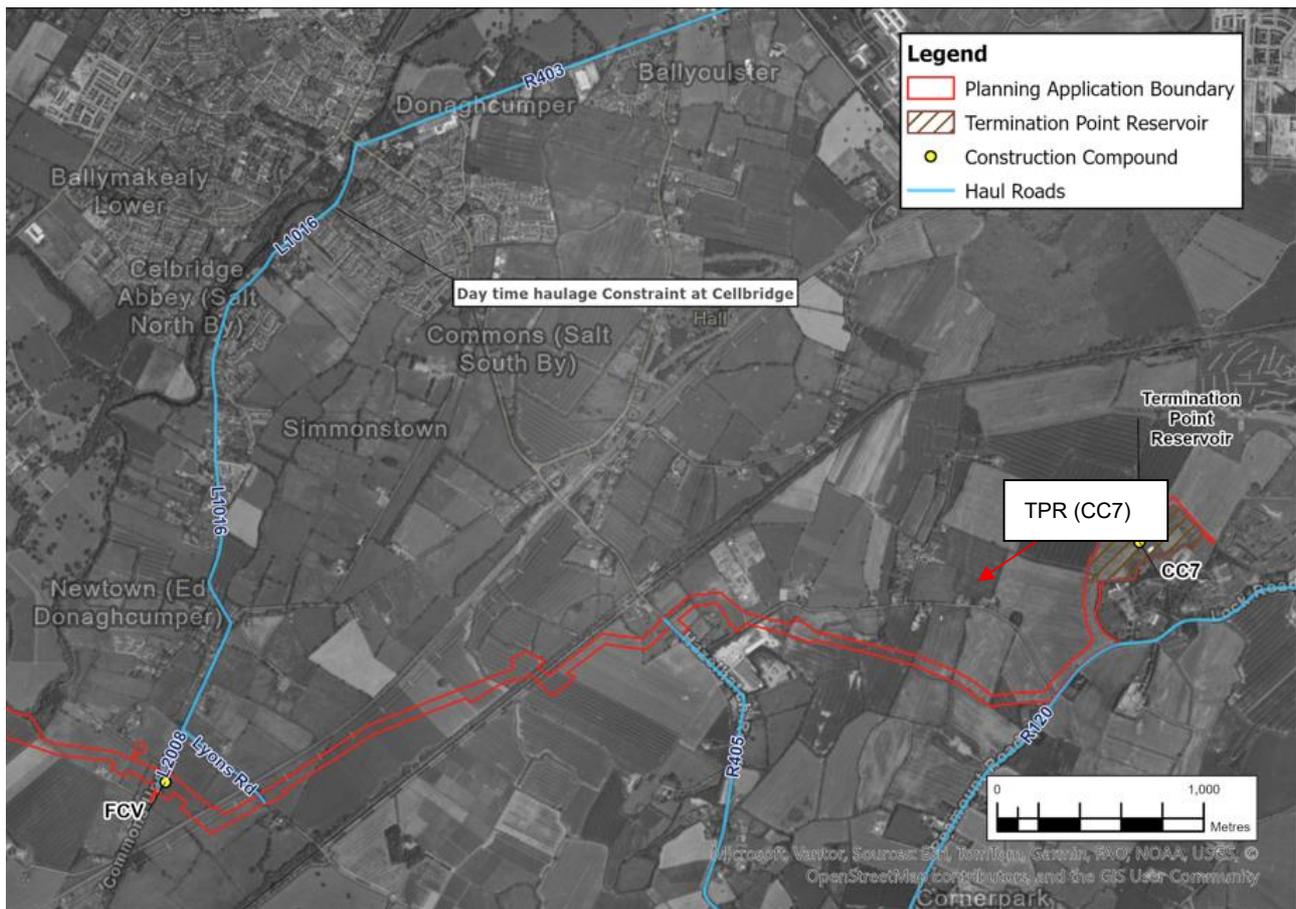


Image 6.4: Daytime Restrictions of Haul Road through Celbridge

## 6.6 Electricity Supply from ESB Birdhill 38 kV Substation to RWI&PS and WTP

97. An electricity supply is to be provided from the ESB Birdhill 38 kV Substation to the RWI&PS and WTP. This will require works to lay ducting and pull through cables along the following roads:

- R445 - 2no. bundles of underground cable ducts (for 38 kV cables) will be installed, for the most part along the westbound hard shoulder. In order to cross the railway line, the ducting is proposed to be routed off the R445 and constructed under the railway (using trenchless technology systems), before returning to the R445
- R494 - 2no. ducts (for 20 kV cables) will be installed for the most part within the southbound traffic lane. In order to cross the railway line and the Kilmastulla River, the ducting will be routed off the R494 and constructed under the railway and river (using trenchless technology systems), before returning to the R494.

98. The appointed Contractor(s) will reinstate the trench within the road pavement in accordance with the Guidelines for Managing Openings in Public Roads (Department of Transport, Tourism and Sport (DTTAS), April 2017, Revision 1) and agreement with the Roads Authority.

## 6.7 Electricity Supply from ESB Birr Substation to BPS

99. An electricity supply is to be provided from the ESB Birr Substation to the BPS. This will require works to lay ducting and pull through cables along the R440 regional road and L3003 local road.

100. The appointed Contractor(s) will reinstate the trench within the road pavement in accordance with the Guidelines for Managing Openings in Public Roads (DTTAS, April 2017, Revision 1) and agreement with the Roads Authority.

## **6.8 Footways and Cycleways**

101. Pedestrian and cyclist routes will be maintained throughout the construction period. These will be routed away, and delineated, from the works area. Safety risks to the public will not increase because of construction activity.

102. Temporary pathways and cycle ways will be installed where appropriate and access for the mobility impaired maintained.

103. Where the existing level of service cannot be maintained in the vicinity of the construction sites, an alternative route will be designated, be clearly visible, be safe and be signed and have the level of service required to cater for the pedestrian demand.

## **6.9 Timing of Material Deliveries to Site**

104. As outlined in Chapter 5 (Construction & Commissioning) of the EIAR, the typical working hours for the Construction Phase will be:

- Monday to Friday - 07:00 to 19:00
- 08:00 to 16:30 on a Saturday.

105. It will be necessary to move occasional exceptional loads involving prefabricated tanks, specials, or precast concrete outside of normal hours, or at night, and this will be done in conjunction with Gardai and the Roads Authorities.

106. In order to reduce impacts on local communities and residents adjacent to the proposed sites, it is proposed that:

- The appointed Contractor(s) will liaise with the management of other construction projects who may be using the same haul roads and the local authority to co-ordinate deliveries
- The appointed Contractor(s) will agree a programme with Uisce Éireann to schedule deliveries in such a way that Construction Phase activities and delivery activities do not run concurrently, e.g. avoiding pouring of concrete on the same day as other material deliveries, in order to avoid conflict of various delivery vehicles.
- It will be part of the contractual requirements that the appointed Contractor(s) amend HV deliveries to alternative approved haul routes on the days of any major agricultural shows, sports events, that have the potential to cause larger than normal traffic volumes on the existing road network, in the vicinity of the Proposed Project
- The appointed Contractor(s) will be required to interact with members of the local community as part of their contractual requirements to ensure that deliveries will not conflict with sensitive events, such as funerals and major sporting events
- The appointed Contractor(s) will agree a programme with Uisce Éireann to ensure HV deliveries avoid passing schools at opening and closing times, where it is reasonably practical. There may be times of large concrete pours or other essential continuous operation whereby the continuous delivery of material will be required
- The appointed Contractor(s) will liaise with the local authorities to mitigate the effects of additional traffic causing delay at junctions and on the road network that have exceeded capacity during AM and PM Peak hours. The junctions and locations on the road network six in total are as follows:
  - Junction 18 (mini-Roundabout in Birr)

- Junction 30 (Roundabout in Tullamore)
- Junction 50 (Roundabout in Clane)
- Link Y- R421 (Offaly)
- Link AL- R400 (Offaly)
- Link AF- R422 (Laois)
- Measures to manage traffic at these junctions will include the installation of temporary signals to optimise junction movements and the restriction of HV movements where necessary to reduce congestion risks.
- Traffic Assessment assumed HV movements would be limited to 25% during AM and PM peak hours; however, to further reduce congestion risks, additional restrictions on HV movements will also need to be implemented.
- The appointed Contractor(s) will be required to prepare and implement a Workplace Travel Plan during the Construction Phase. This plan will promote the use of public transport, cycling, and walking where feasible, and will encourage carpooling among workers.

## **6.10 Traffic Management Speed limits**

107. Adherence to posted/legal speed limits will be emphasised to all staff, suppliers and contractors during induction training. In speed zones greater than 60km/h, drivers of construction vehicles and HVs will be instructed that vehicular movements in sensitive locations, such as schools and local community areas, shall be restricted to 60km/h. Such advisory speed limits will only apply to Construction Phase haulage traffic and shall not apply to general traffic. It is not proposed to signpost such speed limits in the interest of clarity for local road users. Monitoring of compliance will be undertaken as per set out in Section 6.12.

## **6.11 Road Cleaning**

108. Regular visual surveys of the road network in the vicinity of the sites will be required to be carried out by the appointed Contractor(s). Where identified and required, as part of the contractual requirements the appointed Contractor(s) shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction/delivery vehicles. It will be a requirement of the works contract that the appointed Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles. In addition, the cleaning of delivery lorries such as concrete delivery lorries shall be carried out at the material storage yard.

## **6.12 Monitoring**

109. During scoping consultations, all the local authorities specified the need to implement Global Positioning System (GPS) monitoring of haulage traffic on the Haul Roads.

110. Uisce Éireann will implement the use of a GPS system in order to track all HV traffic. Further consideration will be given to the matter of 3<sup>rd</sup> party contractors who do not have a contract with Uisce Éireann. In such instances, Uisce Éireann will impose a condition in the contract that the appointed Contractor(s) only use licenced and permitted hauliers (3<sup>rd</sup> party contractors) with lorries equipped with GPS tracking. It will also be a requirement that the haulier makes this tracking data available to Uisce Éireann for a reasonable period after the lorry has entered/left the Construction Working Width, Pipe Storage Depot and Construction Compounds (data retention time limit to be agreed). Uisce Éireann can also carry out periodic audits to make sure that the appointed Contractor(s) are compliant with this condition.

111. In the scenario of non-compliance in the use of permitted Haul Roads to/from the Proposed Project, the non-compliance will be recorded by Uisce Éireann and investigated. Where a haulage driver is found to have deviated from the agreed Haul Roads, a penalty system under the contract will be acted upon. The driver will also be re-inducted, and the map of agreed Haul Roads again highlighted to the driver.
112. It is not proposed to monitor LVs however drivers will be encouraged to use appropriate routes to reduce construction traffic in the wider road network.

### **6.13 Construction Logistics**

113. A Logistics Management Plan (or similar) will be prepared and implemented by the Contractor(s) to manage the transport to/from and onsite of employees and materials required for the construction of the Proposed Project. The Logistics Management Plan (or similar) will set out measures, where practicable, to reduce distances travelled, optimise journeys and use low emission modes of transport or vehicles (e.g. electric vehicles) to reduce greenhouse gas emissions associated with transport.
114. The Logistics Management Plan will set out measures with the aim to achieve the vehicle occupancy rates set out in Appendix A7.1 (Traffic and Transportation Assessment). This will include the following:
- Incentivise car sharing to increase vehicle occupancy
  - Disincentivise single car occupancy
  - Promote bus travel between construction sites and accesses.

### **6.14 Enforcement of the TMP**

115. All project staff and material suppliers will be required to adhere to the TMP. As outlined above, as part of the contractual requirements, the appointed Contractor(s) will agree and implement monitoring measures to monitor the effectiveness of the TMP, and compliance will be monitored by the Resident Engineering staff on behalf of Uisce Éireann. Inspections/spot checks will also be carried out by the appointed Contractor(s) to ensure that all project staff and material suppliers follow the agreed measures adopted in the TMP.

## **7. Emergency Procedures During the Construction Phase**

116. In the case of an emergency, the following procedure will be followed:

- Emergency Services will be contacted immediately by dialling 112
- Exact details of the emergency/incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner
- Follow the instructions of the local authorities and An Garda Síochána
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer
- Where required, appointed site first aiders will attend the emergency immediately
- The Safety Officer will ensure that the emergency services are enroute.

117. It is important that during the Construction Phase, emergency services can gain ready access to any property along the Haul Road or in the vicinity of any of the infrastructure sites or can gain priority usage of any Haul Road. Emergency procedures will be agreed and contact numbers provided to the local Emergency Services. On being notified of a priority condition, all construction vehicles will be directed to give right of way to the emergency vehicles, until the need for priority access has passed.

118. With respect to an emergency condition arising on any of the infrastructure sites, priority access to and from these sites will be given to ambulances or fire tenders.

119. The local emergency services will be provided with mapping of the Chainage Marker system, so that it can be used for rapid direction of emergency vehicles to any incident location along the Haul Road, or at any of the infrastructure sites.

### **7.1 Unplanned Events**

120. In order to address unforeseen events, the following incidents have been considered:

- Incident along the proposed Haul Roads
- Incident at the proposed T-junctions to the proposed infrastructure sites
- Incident within the proposed infrastructure sites.

121. The unplanned events that could occur include road collisions, flooding and/or an oil spillage along a Haul Road. In such an event, competent personnel such as the local authorities, An Garda Síochána and other emergency services will be involved, setting up designated diversion routes to mitigate the unplanned event.

122. In the event of an incident occurring along any of the Haul Roads, the emergency diversion routes provided by An Garda Síochána will be utilised.

123. An incident at the access or egress at the proposed infrastructure sites is similar to the occurrence of an incident along the Haul Roads. An Garda Síochána emergency diversion routes will be utilised, and the facility operators will also contact the construction-related traffic drivers to inform them of the significance of the incident and the necessary protocols.

124. Where an incident occurs within the infrastructure sites, emergency protocols in place at the infrastructure sites will be enacted and onsite personnel will respond in accordance with these protocols.

125. In order to estimate the likelihood of the above-mentioned incidents, a Preliminary Health and Safety Risk Assessment has been carried out (Table 7.1).

126. It will be a contractual requirement for the appointed Contractor(s) to undertake detailed risk assessments to feed into the detailed development of future iterations of the TMP.

**Table 7.1: Unplanned Events - Outline Risk Assessment**

Outline Risk Assessment			
Hazards and Risks	Personnel at Risk from the Hazards	Risk Control	Responsible Persons
Road collision on the Haul Roads	<ul style="list-style-type: none"> <li>Public</li> <li>Drivers of vehicles travelling to/from facility</li> <li>Vulnerable road users (pedestrians and cyclists)</li> </ul>	<ul style="list-style-type: none"> <li>Maintain hedgerow to maintain optimum visibility</li> <li>Maintain road signage and add signage where necessary</li> <li>Maintain road surfacing and improve where necessary</li> <li>Maintain lighting along road and improve where necessary</li> <li>Implementing traffic management measures (e.g. at access points, pinch points, crossings)</li> </ul>	Local authority /Contractor
Pavement deterioration on the Haul Roads, e.g. potholes	<ul style="list-style-type: none"> <li>Public</li> <li>Drivers of vehicles travelling to/from facility</li> <li>Vulnerable road users (pedestrians and cyclists)</li> </ul>	<ul style="list-style-type: none"> <li>Maintain road pavement condition and repair any ravelling, bleeding, rutting, surface distortion, cracking or surface openings that occur during the works</li> </ul>	Local authority
Road flooding on the Haul Roads	<ul style="list-style-type: none"> <li>Public</li> <li>Drivers of vehicles travelling to/from facility</li> <li>Vulnerable road users (pedestrians and cyclists)</li> </ul>	<ul style="list-style-type: none"> <li>Maintain the existing road drainage system and maintain the surface characteristics of the existing pavement to ensure adequate macrotexture to provide drainage paths for surface water to escape</li> <li>Provide additional drainage measures such as soak pits, swales, gullies, or inlets to open drains if surface water is sitting on the carriageway</li> </ul>	Local authority
Snow/frost on road	<ul style="list-style-type: none"> <li>Public</li> <li>Drivers of vehicles travelling to/from facility</li> <li>Vulnerable road users (pedestrians and cyclists)</li> </ul>	<ul style="list-style-type: none"> <li>Maintain a stock of salt and chips and apply prior to snow/frost fall</li> <li>Apply temporary signage where need to notify public of risk and /or road closures</li> </ul>	Local authority
Injury within the site i.e. slip/trip or fall	<ul style="list-style-type: none"> <li>Employees of the facility</li> <li>Drivers of HVs from external facilities</li> </ul>	<ul style="list-style-type: none"> <li>Adequate training provided to personnel</li> <li>Walkways to be maintained and kept clear</li> </ul>	Appointed Contractor(s)
Collision within the site i.e. vehicle or personnel struck by vehicle	<ul style="list-style-type: none"> <li>Employees of the facility</li> <li>Drivers of HVs from external facilities</li> </ul>	<ul style="list-style-type: none"> <li>Personnel use internal walkways</li> <li>Personnel wear high-vis</li> <li>Regular supervision of HV's will be enforced by the Project Supervisor Construction Stage (PSCS) to enforce safe procedures</li> </ul>	Appointed Contractor(s)

## **8. Review and Updating**

127. This TMP has been developed for the Planning Stage, so that the necessary steps are taken throughout the planning proposals to support an efficient, safe transportation operation, with the least practicable impact upon vulnerable road users and traffic along Haul Roads, or on the surrounding road network.
128. The TMP is a living document and will be developed further through the Detailed Design and Construction Phase, with ongoing consultation with the local authority, An Garda Síochána and other Emergency Services and other stakeholders. Updates to the TMP will provide detail on the measures that will be put in place for reactively and proactively managing the traffic management throughout the construction of the Proposed Project and will be based on the measures in this document and the EIAR as a minimum.

## **9. References**

Department of Transport, National Roads Authority and Local Government Management Services Board (2010). Guidance for the Control and Management of Traffic at Road Works, Second Edition.

Department of Transport, Tourism and Sport (2017). Guidelines for Managing Openings in Public Roads.

Department of Transport, Tourism and Sport (2019). Traffic Signs Manual - Chapter 8 - Temporary Traffic Measures and Signs for Roadworks.

## **Annex A. Figures**

# Environmental Impact Assessment Report (EIAR)

## Volume 6 of 6: Appendices

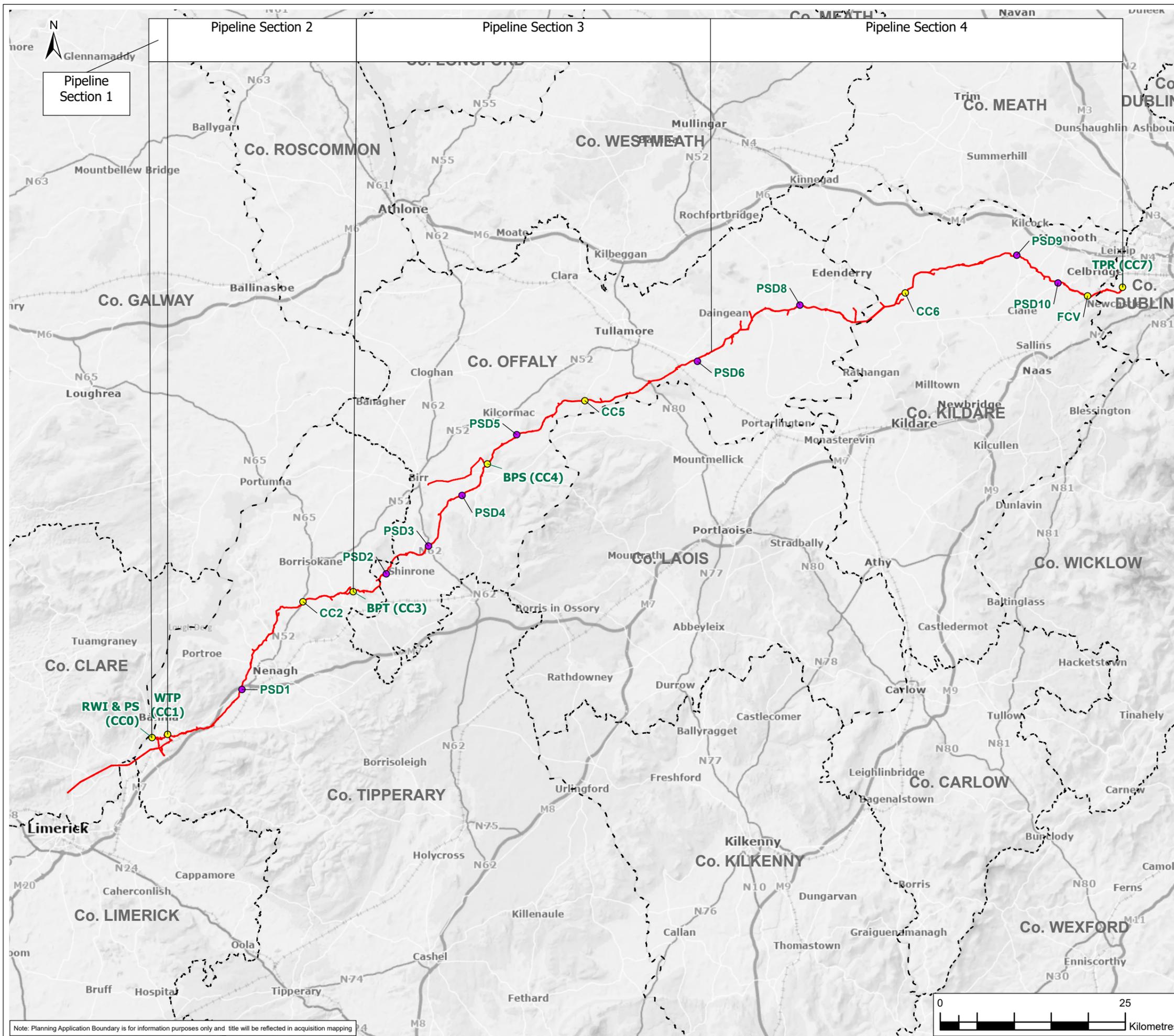
### (Appendix A7.2) Annex A

Document no: 32105801/EIARA7.2

Version: Final

December 2025

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- Legend**
- Planning Application Boundary
  - Construction Compound
  - Pipe Storage Depot
  - County Boundary

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Client

Project

Water Supply Project  
Eastern and Midlands Region

Drawing Title

A7.2 Figure 1  
Project Component Overview

Drawing Status

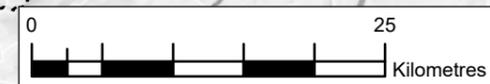
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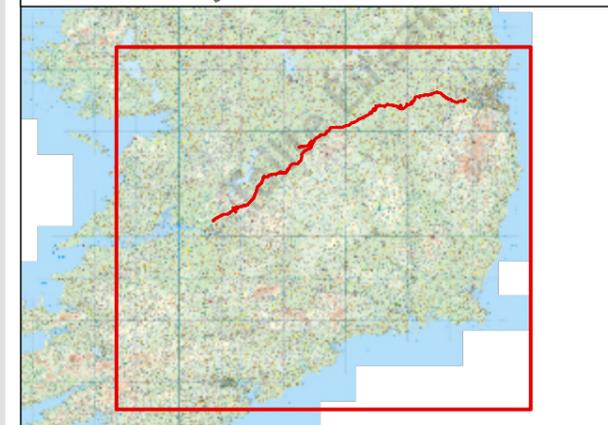
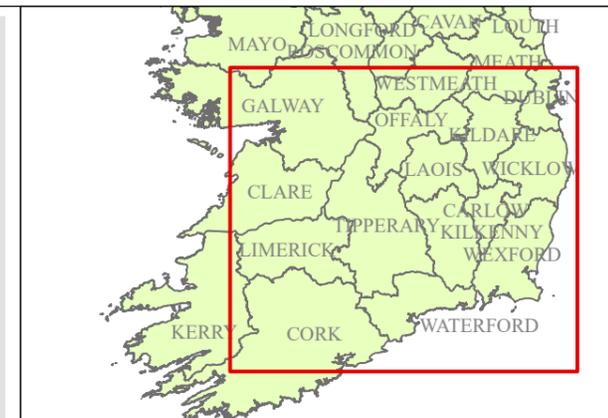
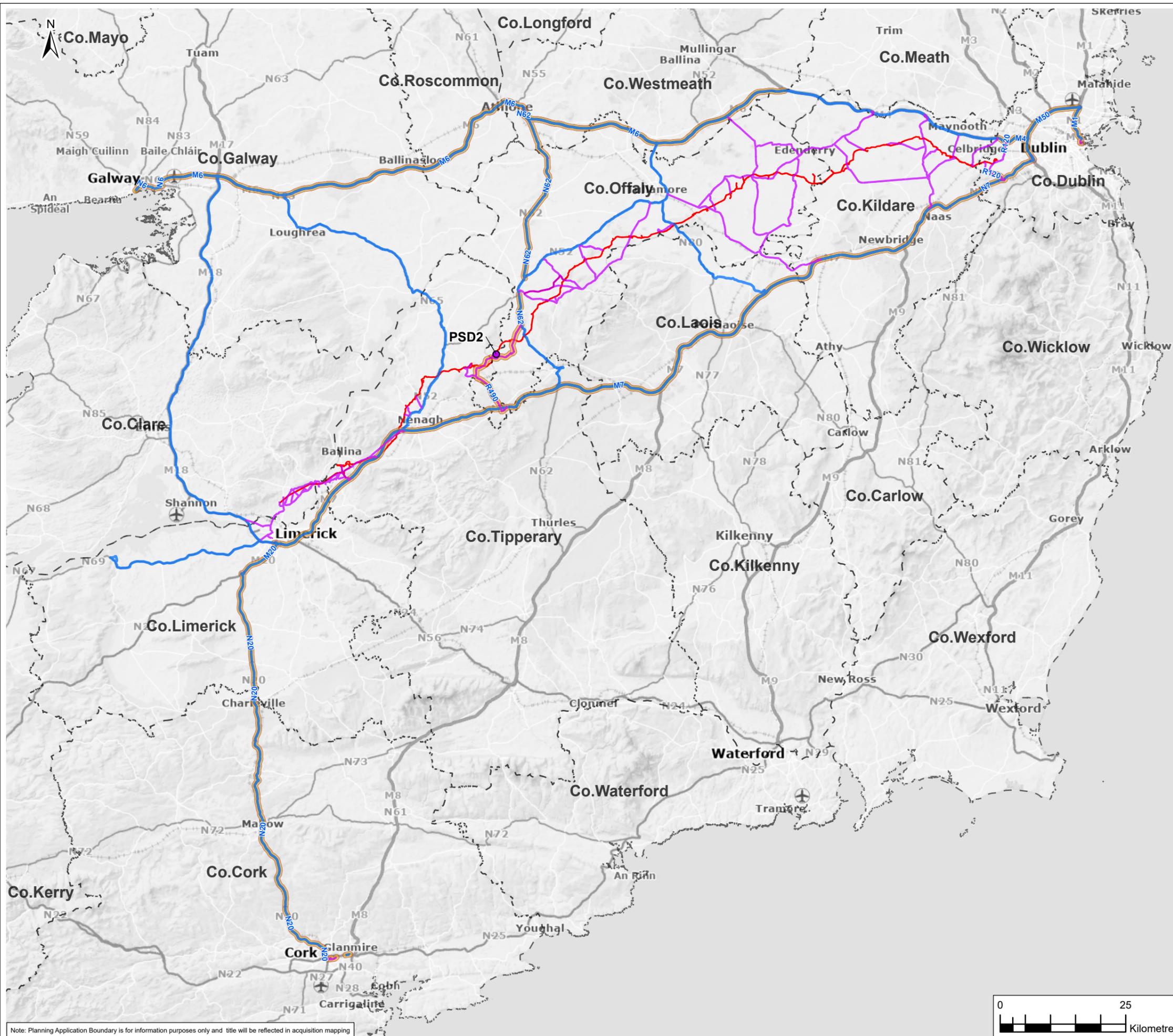
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- Minor Haul Roads
- Haul Roads for PSD2
- County Boundary

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PSD2 Haul Roads

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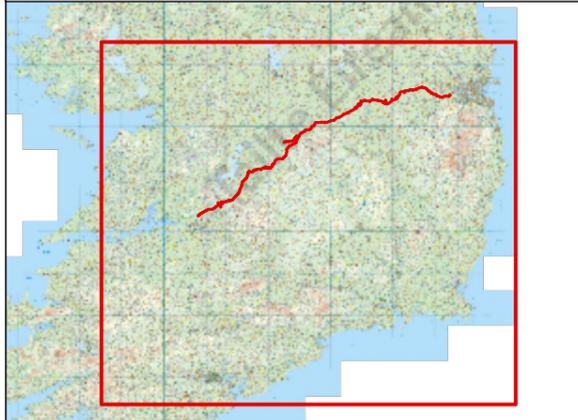
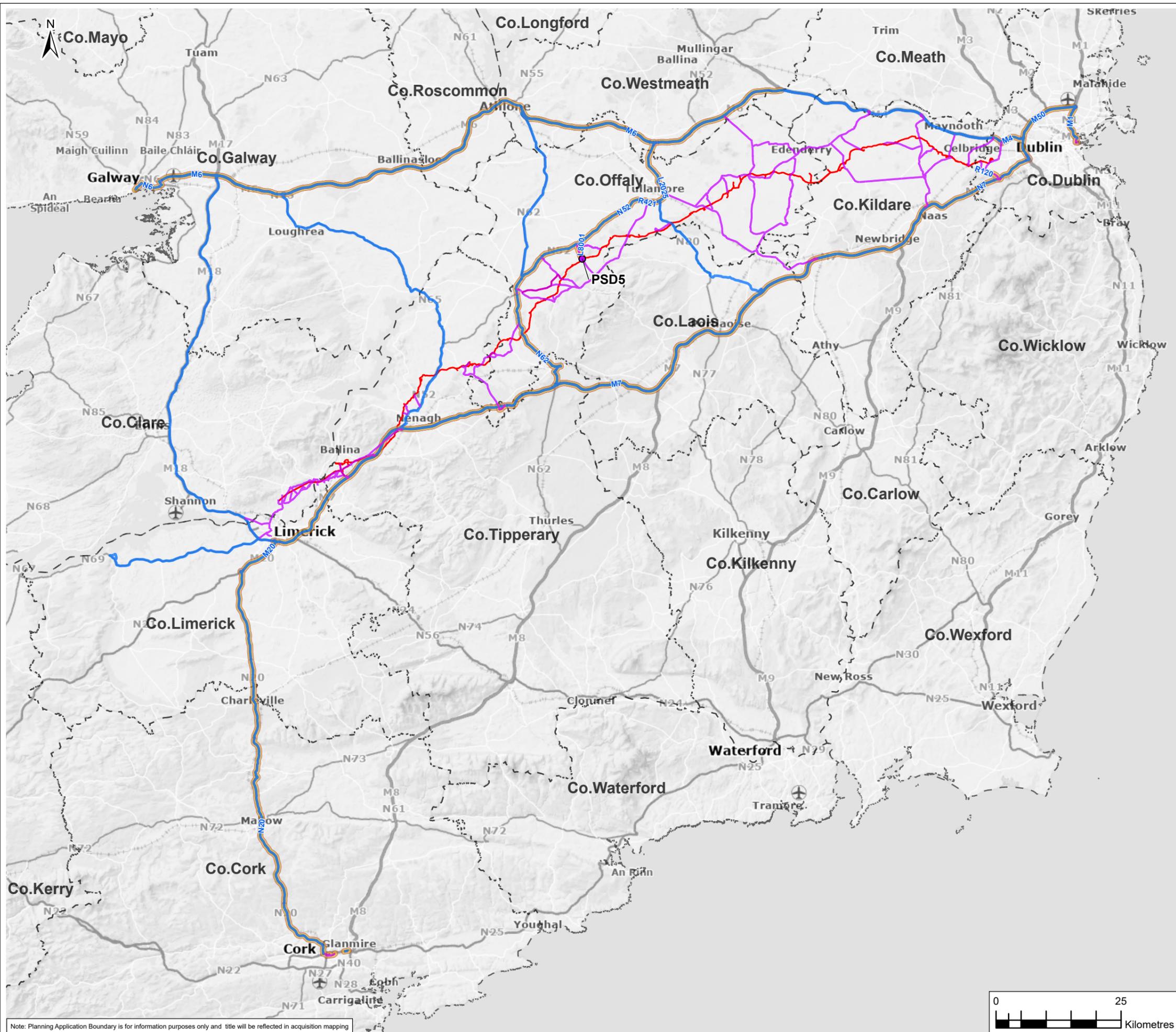


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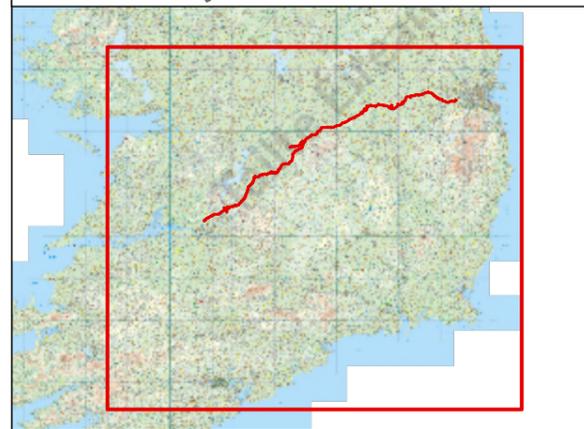
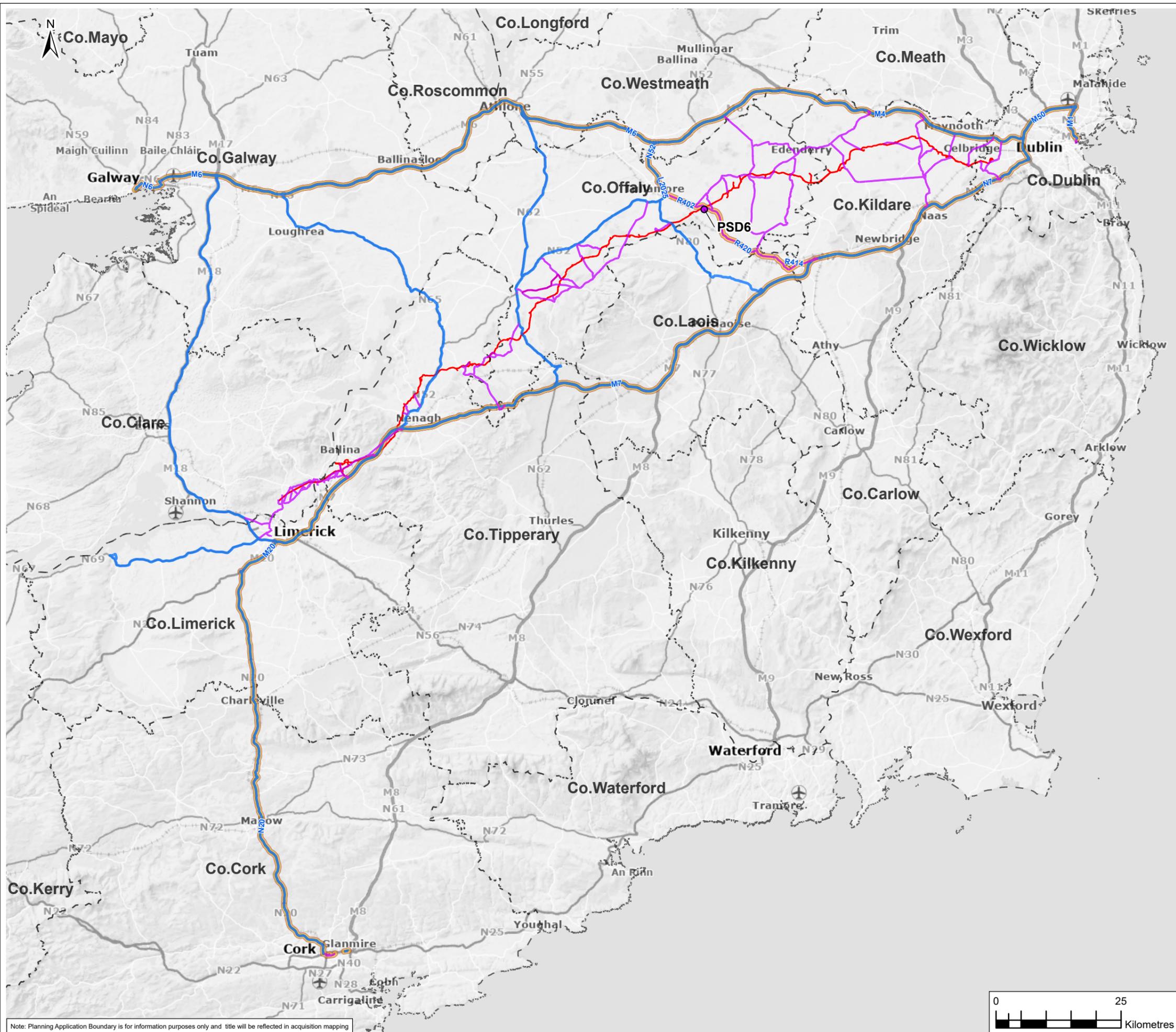
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  - County Boundary

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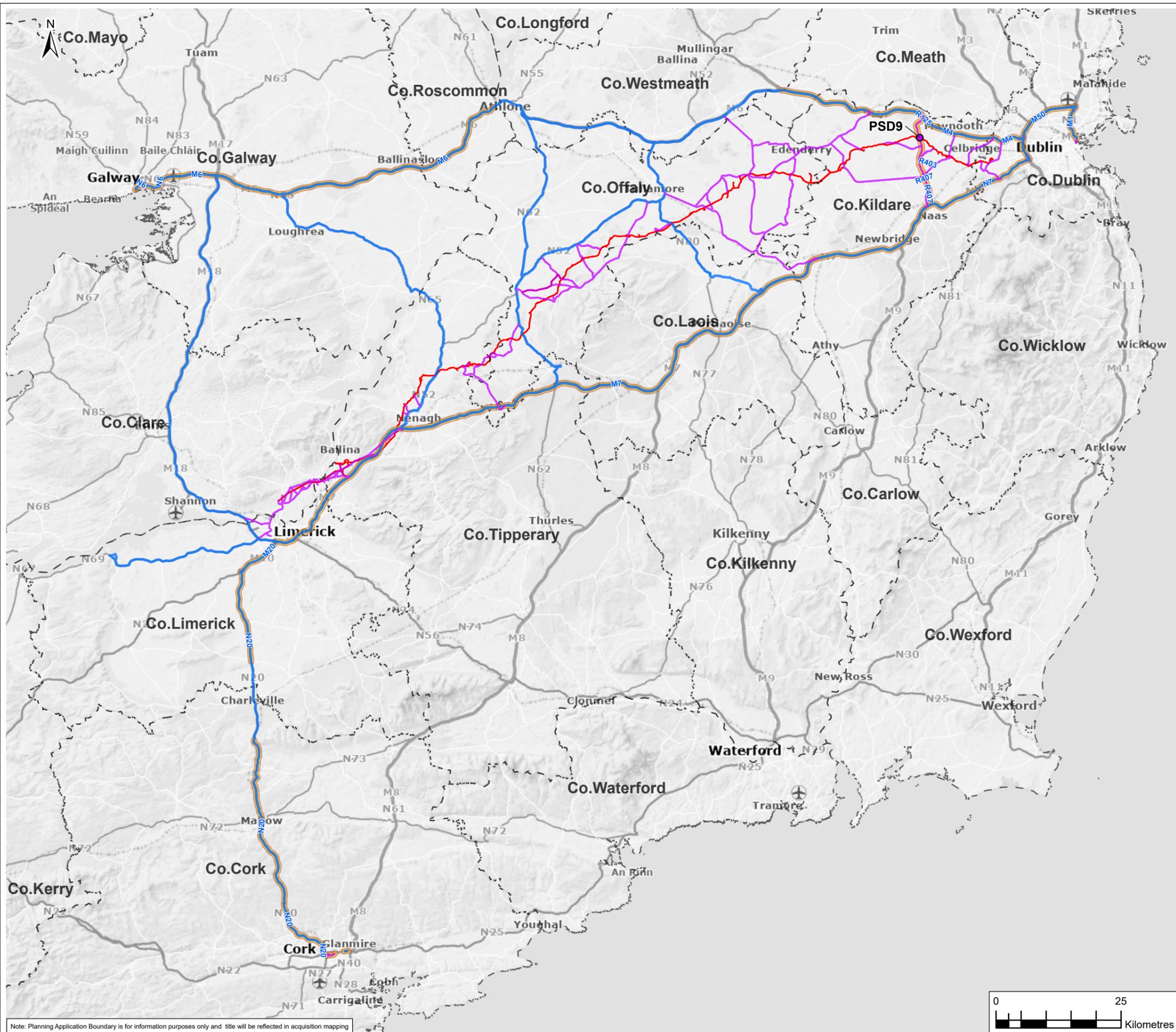
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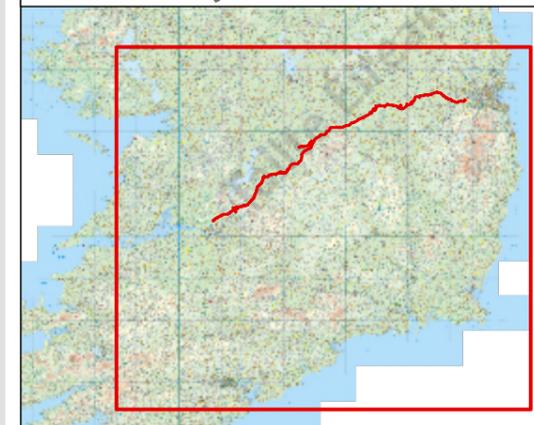
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  - Haul Roads for PSD9
  - County Boundary

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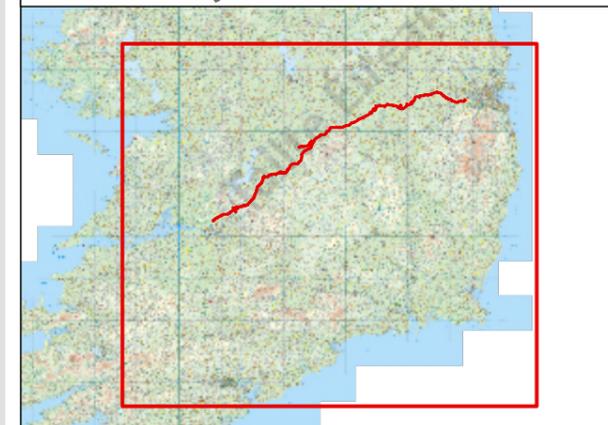
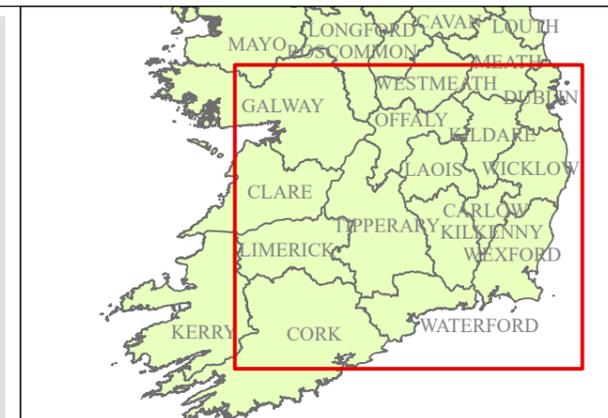
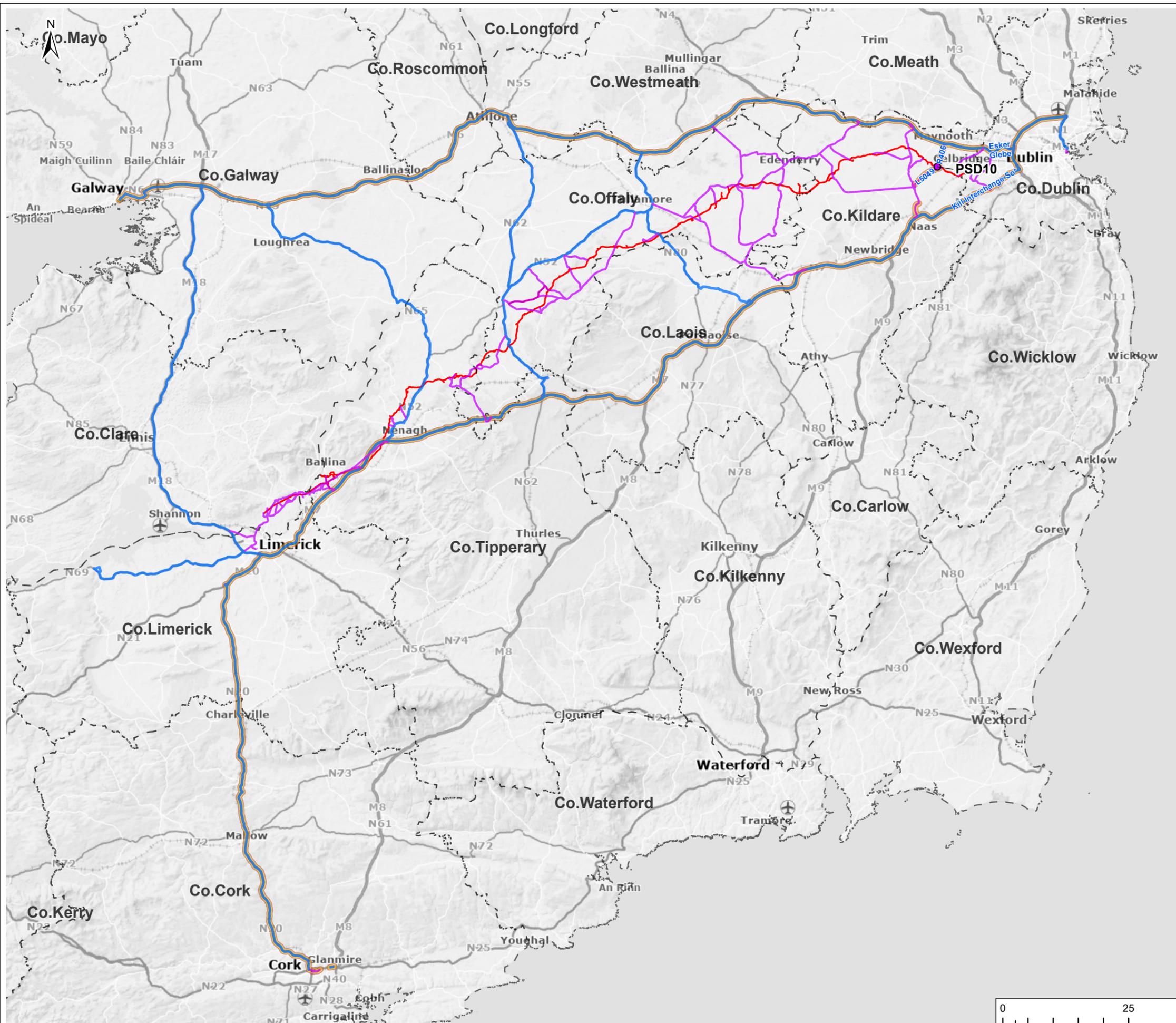
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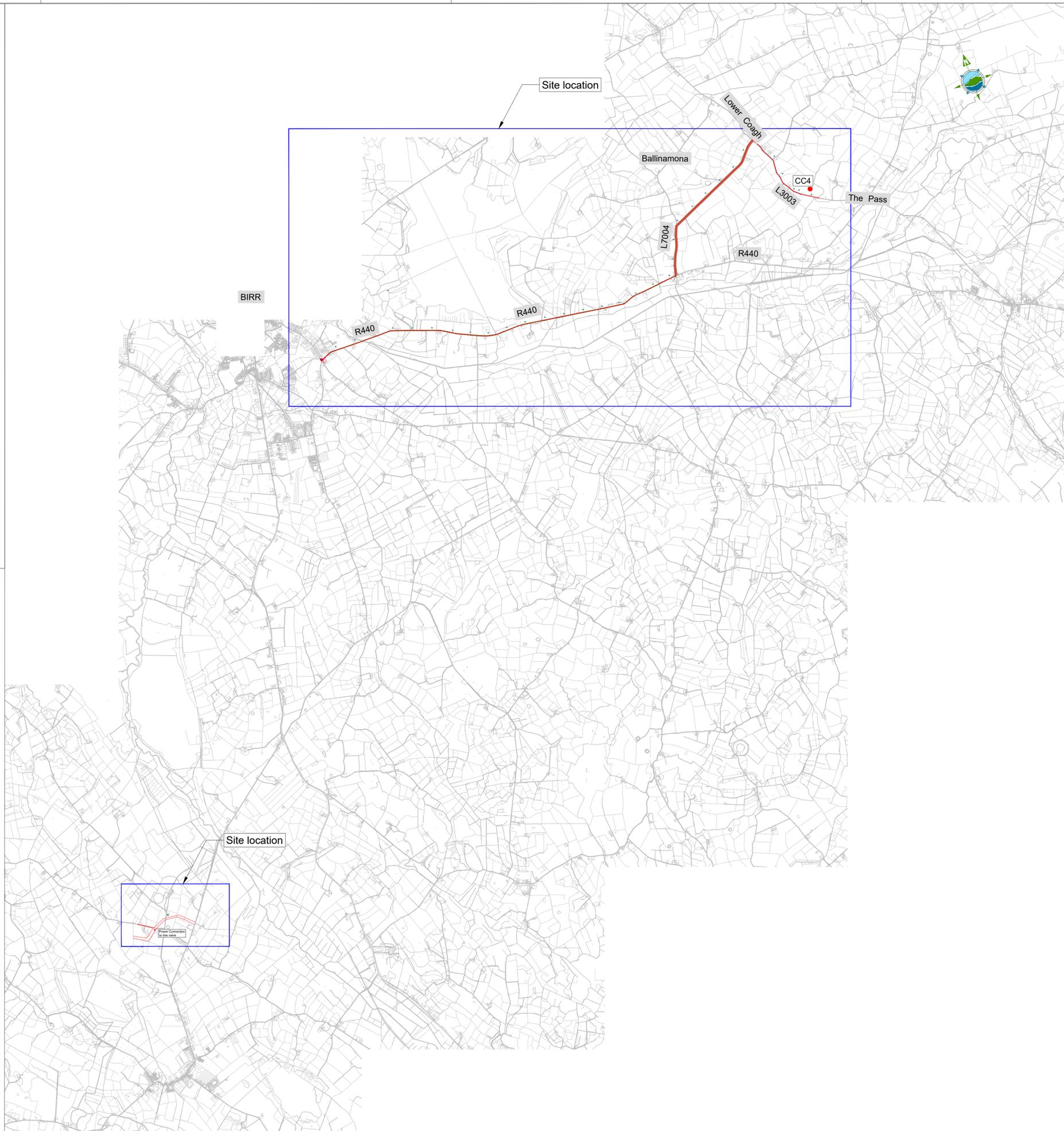












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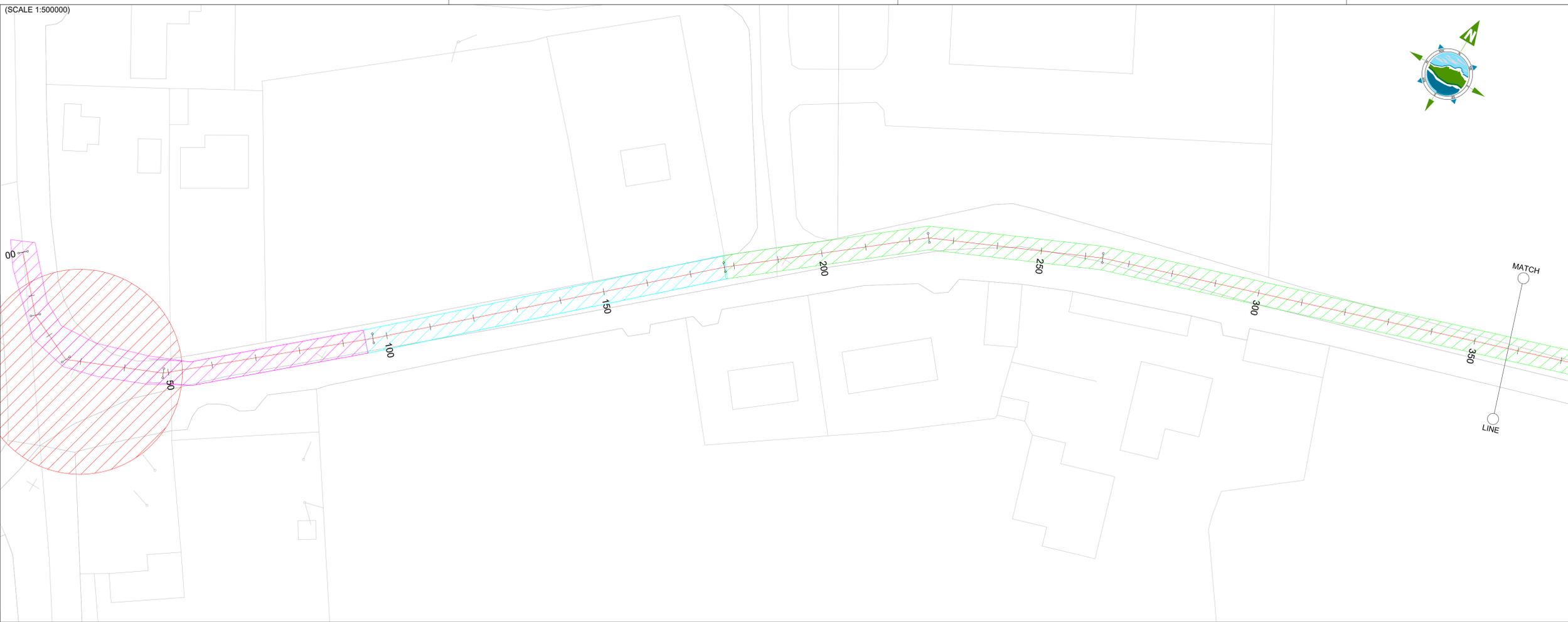
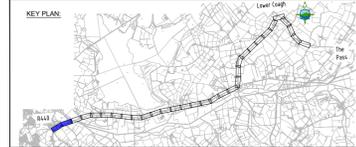
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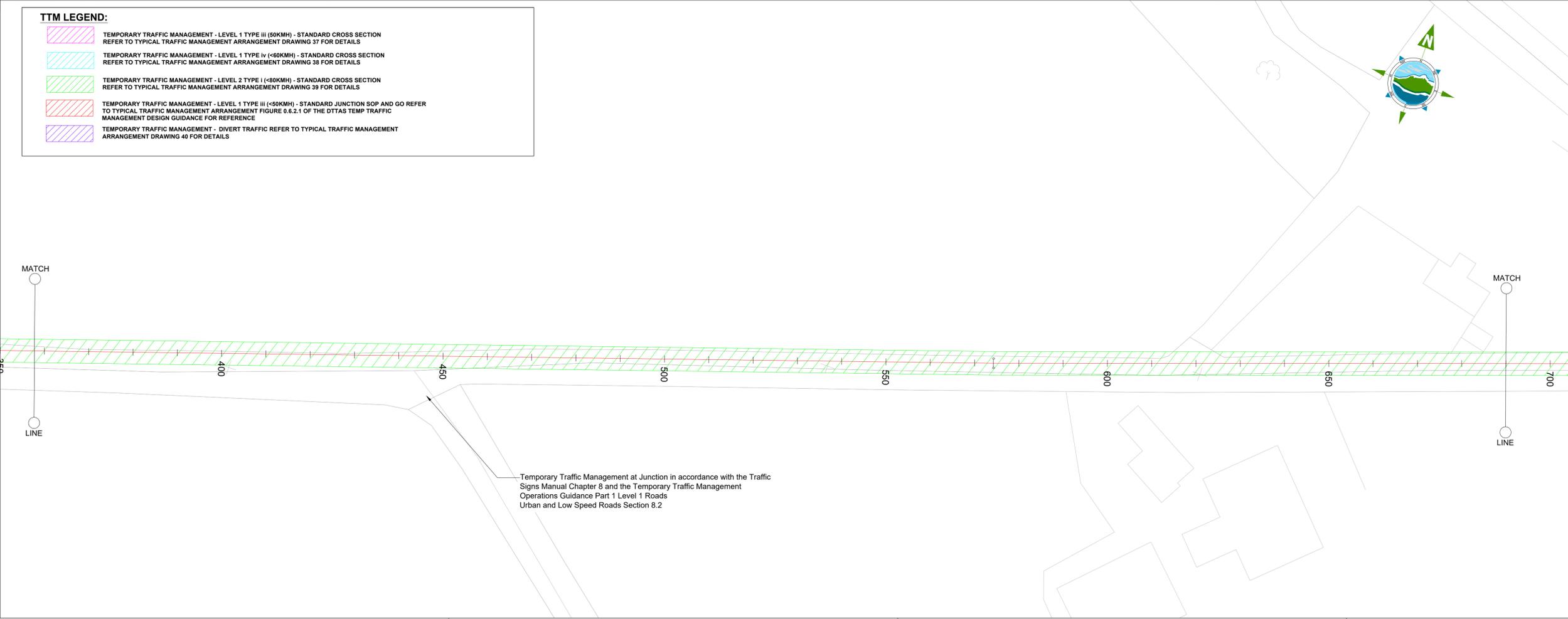
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-  TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



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EASTERN AND MIDLANDS REGION

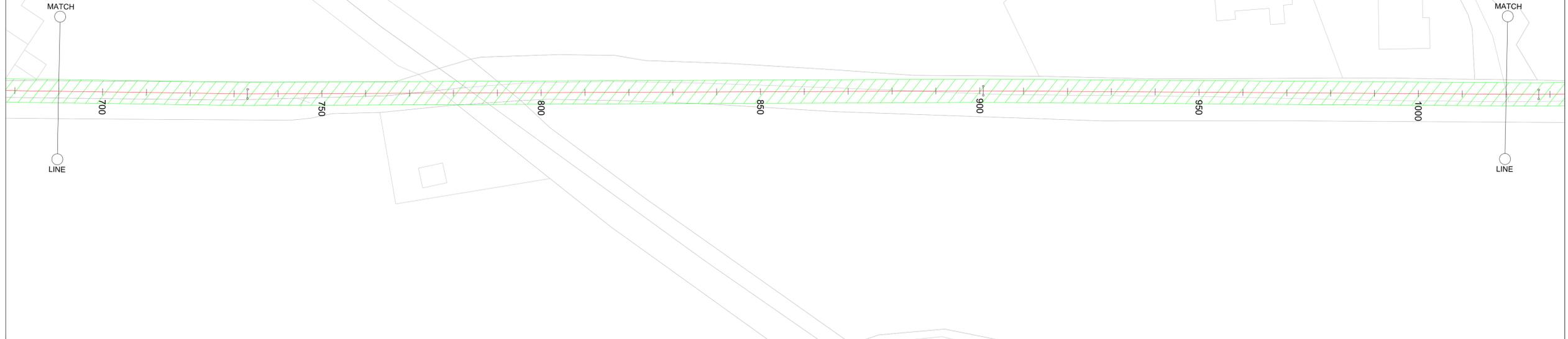
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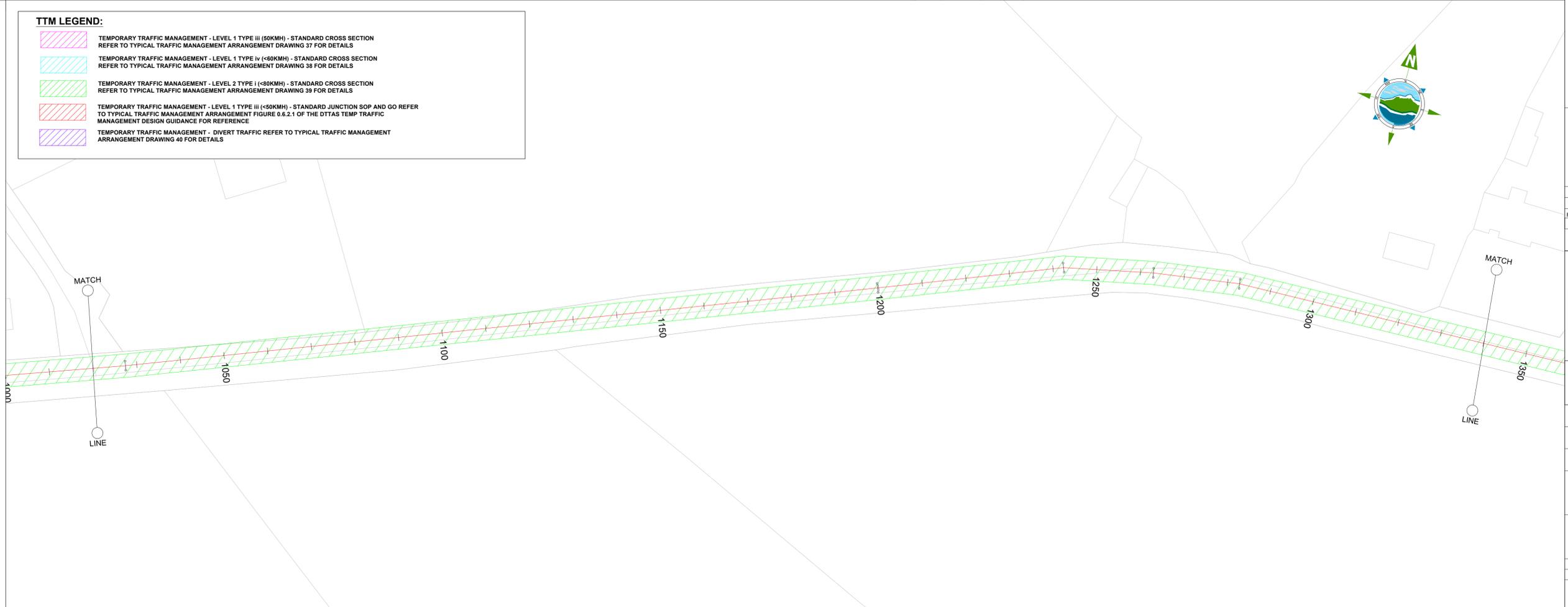
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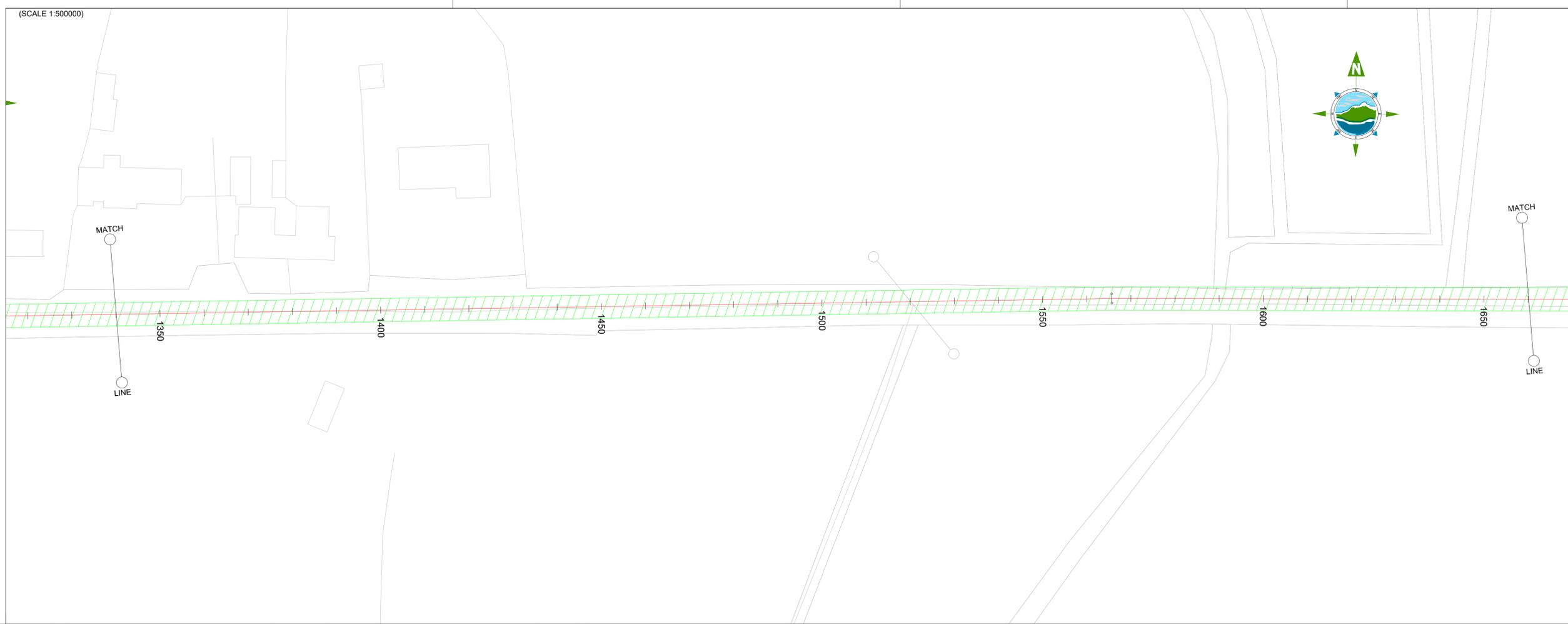
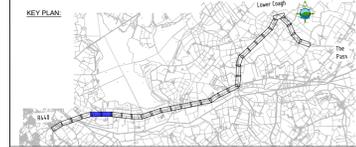
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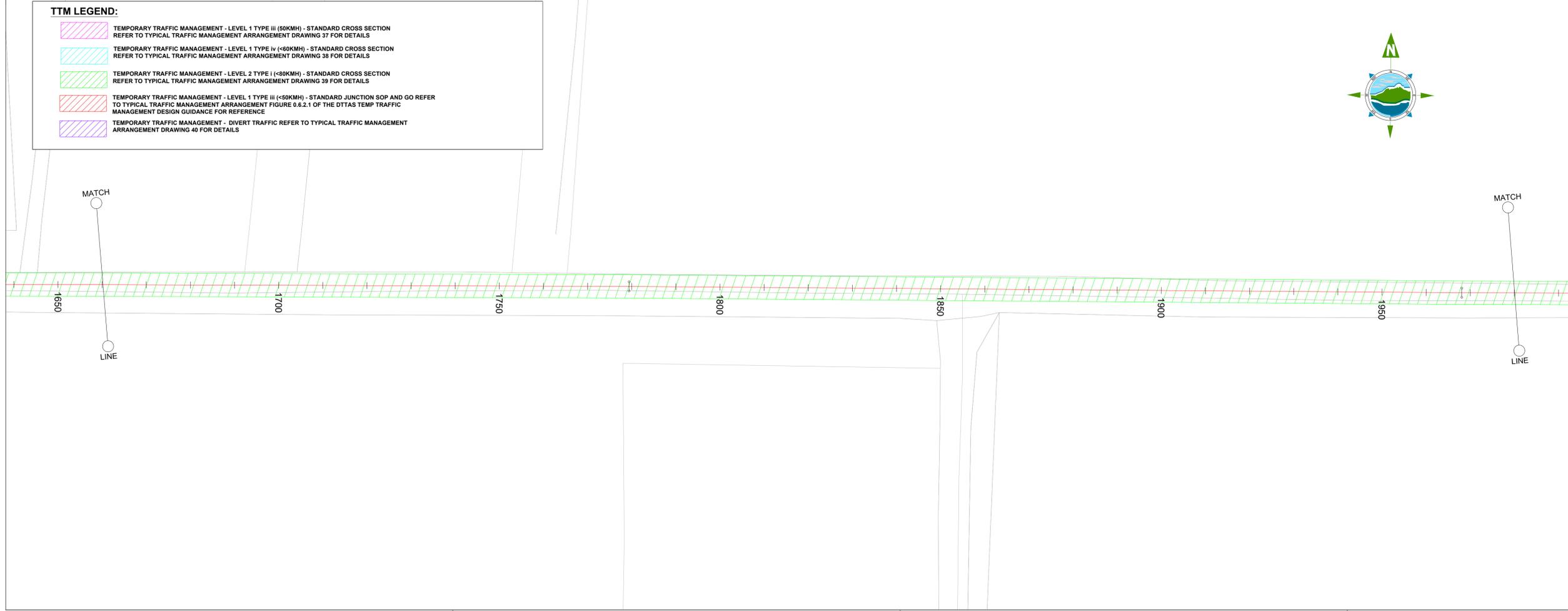
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F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd.	Date

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# Jacobs TOBIN

Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 DO NOT SCALE

Project Title: WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 04 of 21

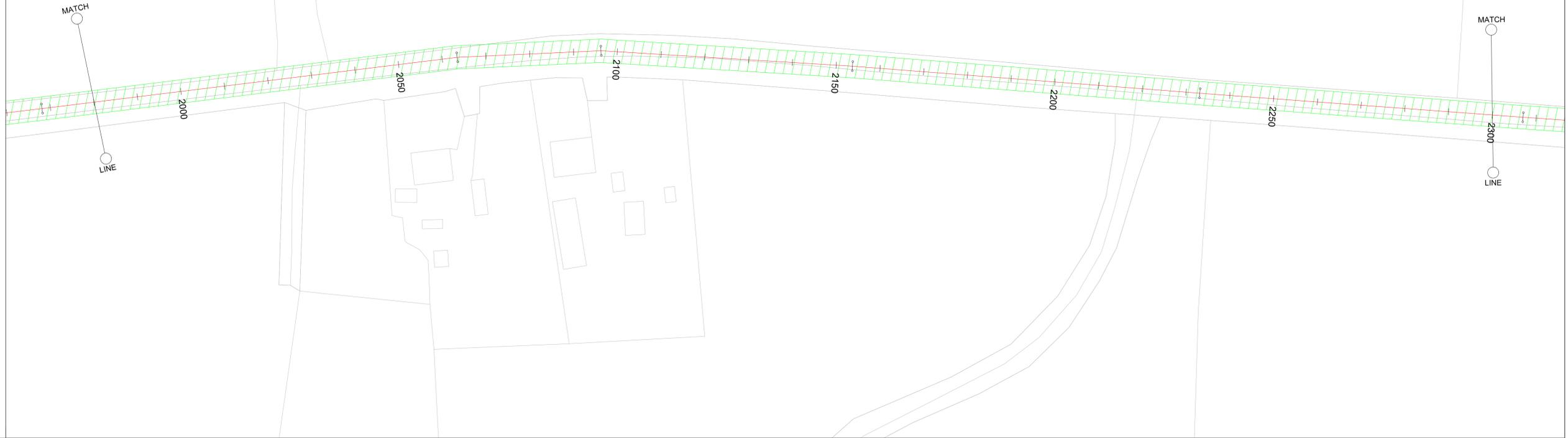
Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318

Drawing No. 32105801/04

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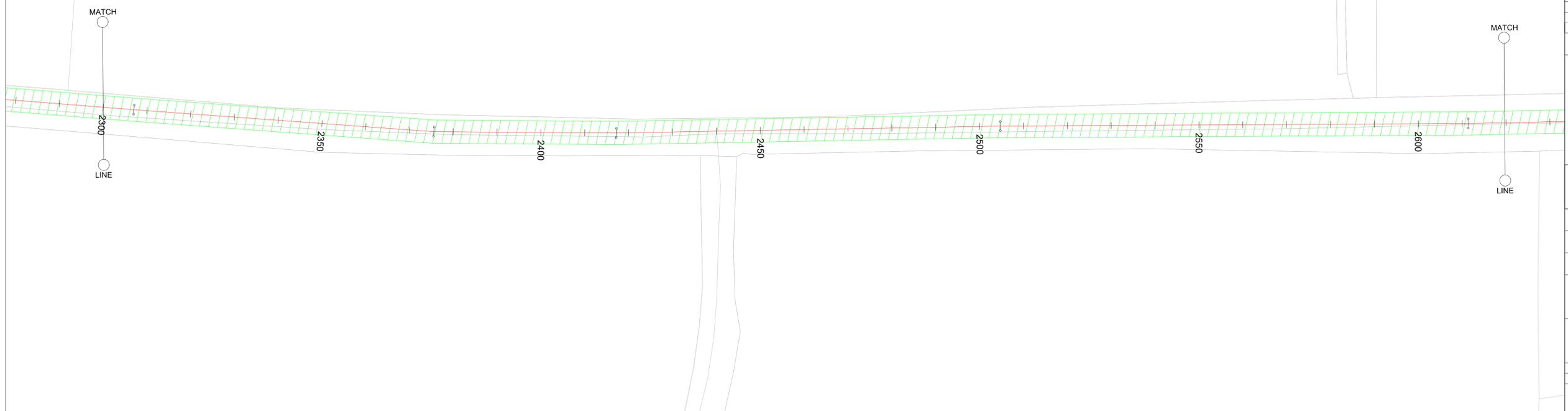
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A1



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	20.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 **DO NOT SCALE**

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

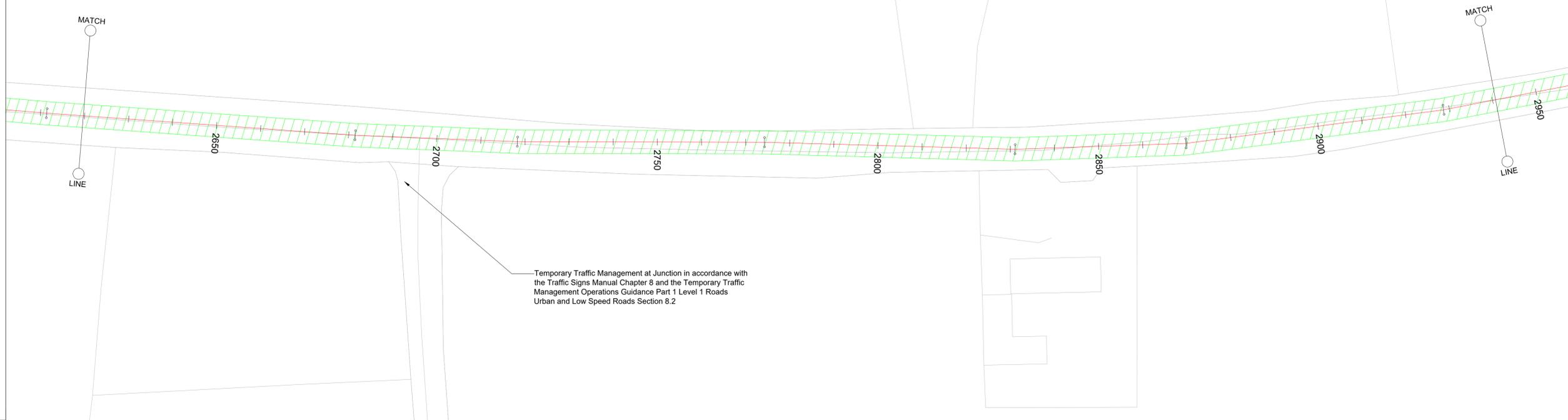
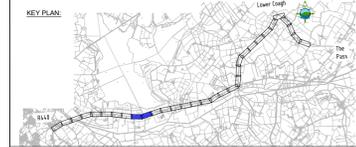
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**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 05 of 21**

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318  
Drawing No.  
**32105801/05**

(SCALE 1:500000)

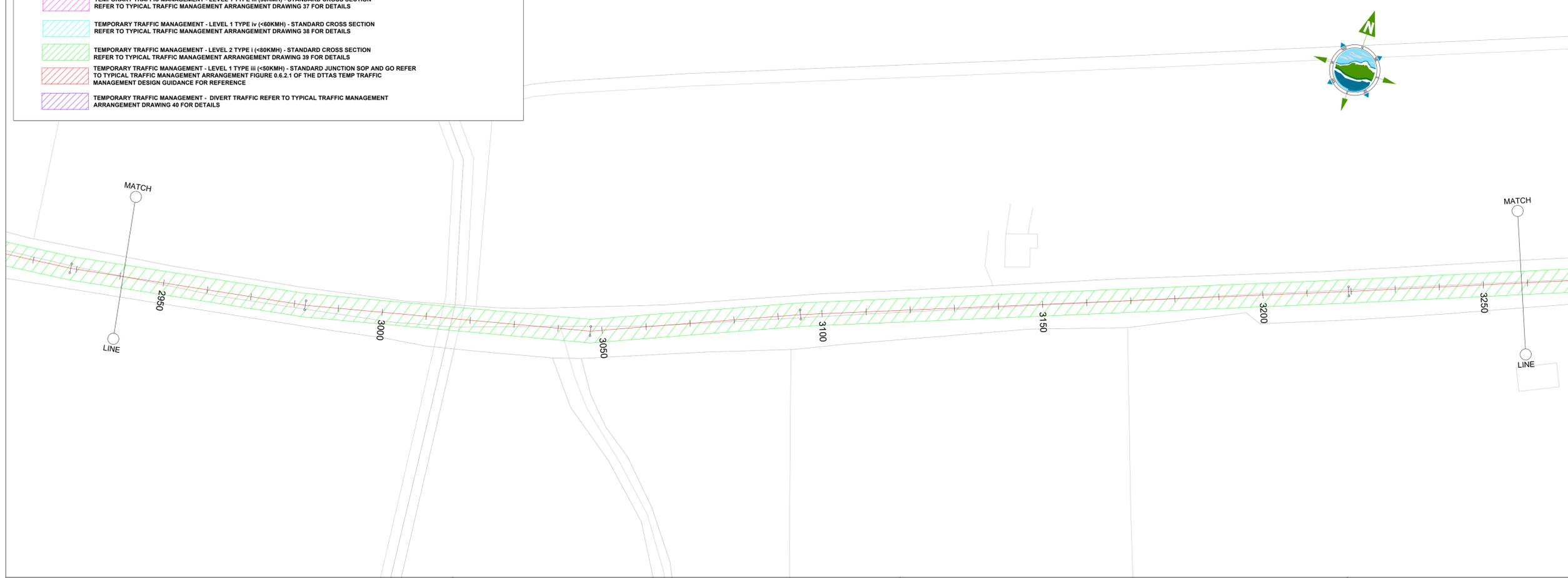
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A1



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iv (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE i (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	20.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 **DO NOT SCALE**

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

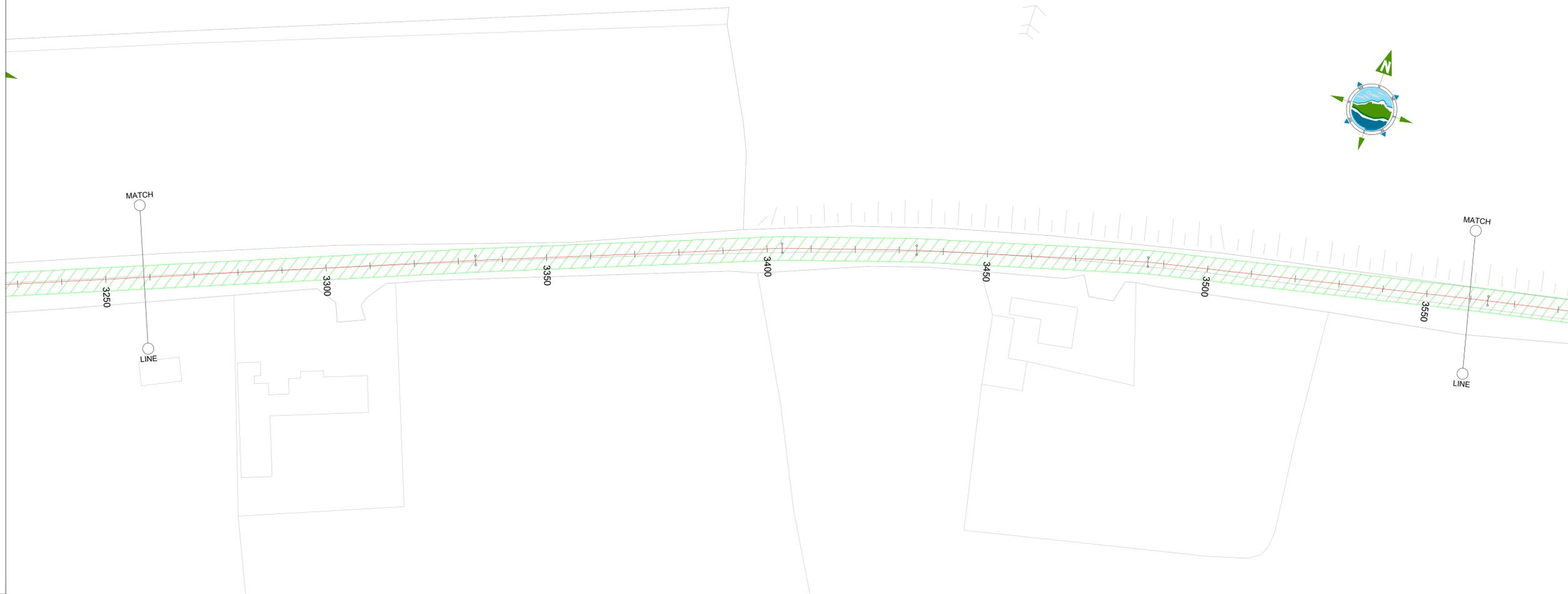
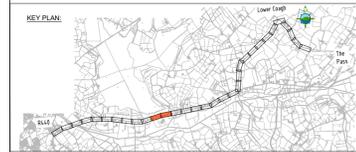
Drawing Title  
**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 06 of 21**

Drawing Status: Final - Planning Application  
Drawing No. 32105801 Client No. 9318  
Drawing No. **32105801/06**

(SCALE 1:500000)

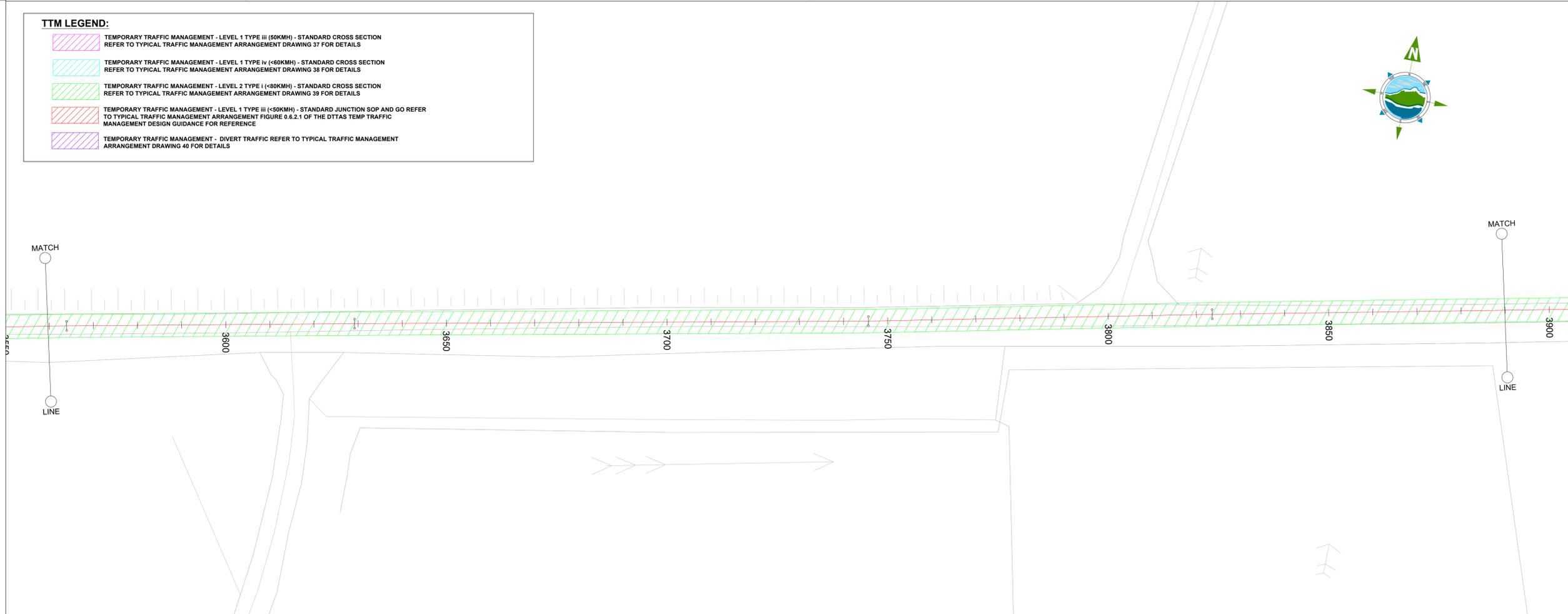
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A1



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<math>50\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iv (<math>40\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE i (<math>40\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<math>50\text{KM/H}</math>) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25

Rev	Description	Drawn	Chk'd	App'd	Date

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Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1      DO NOT SCALE

Project Title: WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 07 of 21

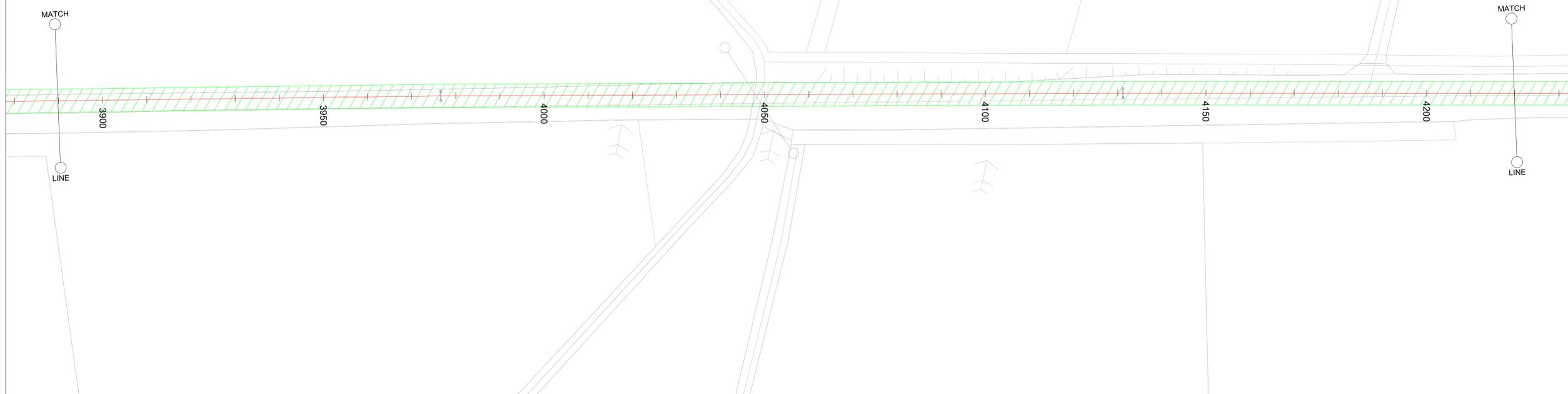
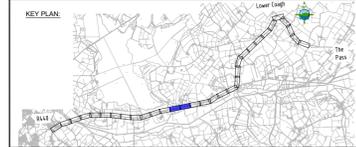
Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801      Client No. 9318

Drawing No. 32105801/07

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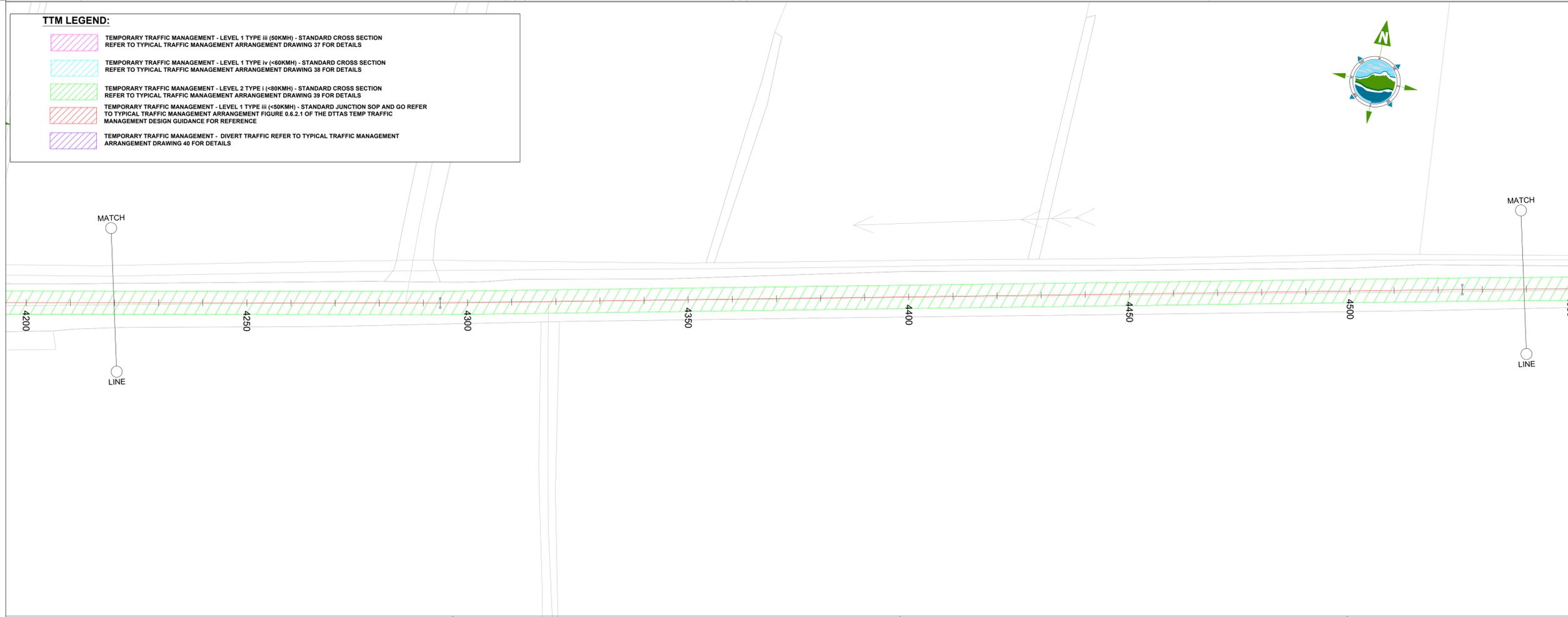
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A1



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math>50\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<math><60\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<math><80\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math><50\text{KM/H}</math>) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd.	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1      DO NOT SCALE

Project Title  
WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

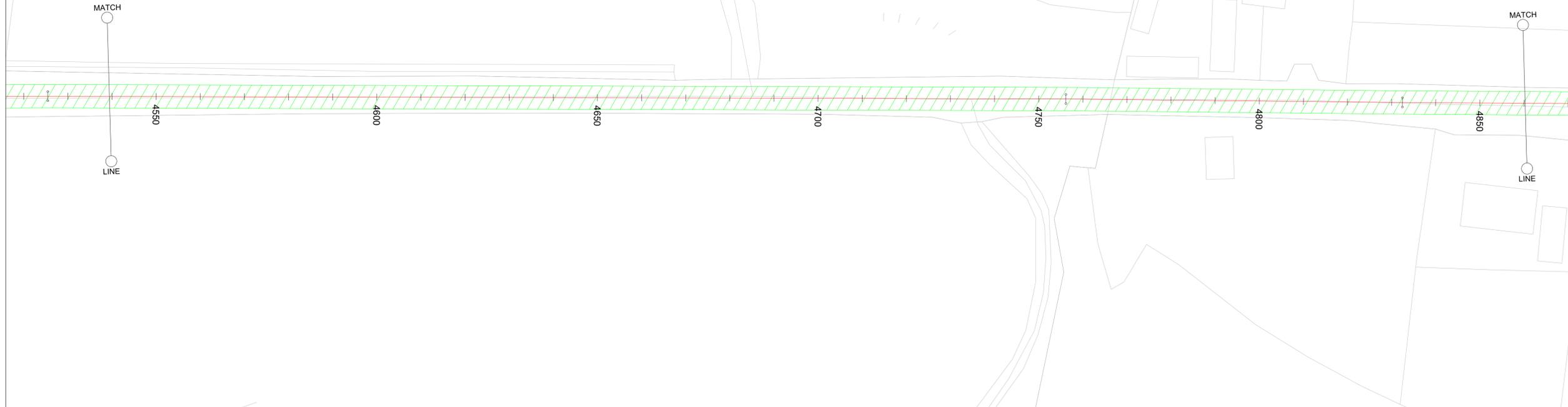
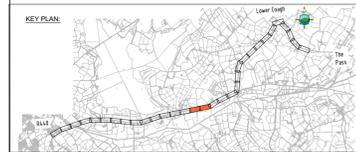
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Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 08 of 21

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801      Client No. 9318  
Drawing No.  
32105801/08

(SCALE 1:500000)

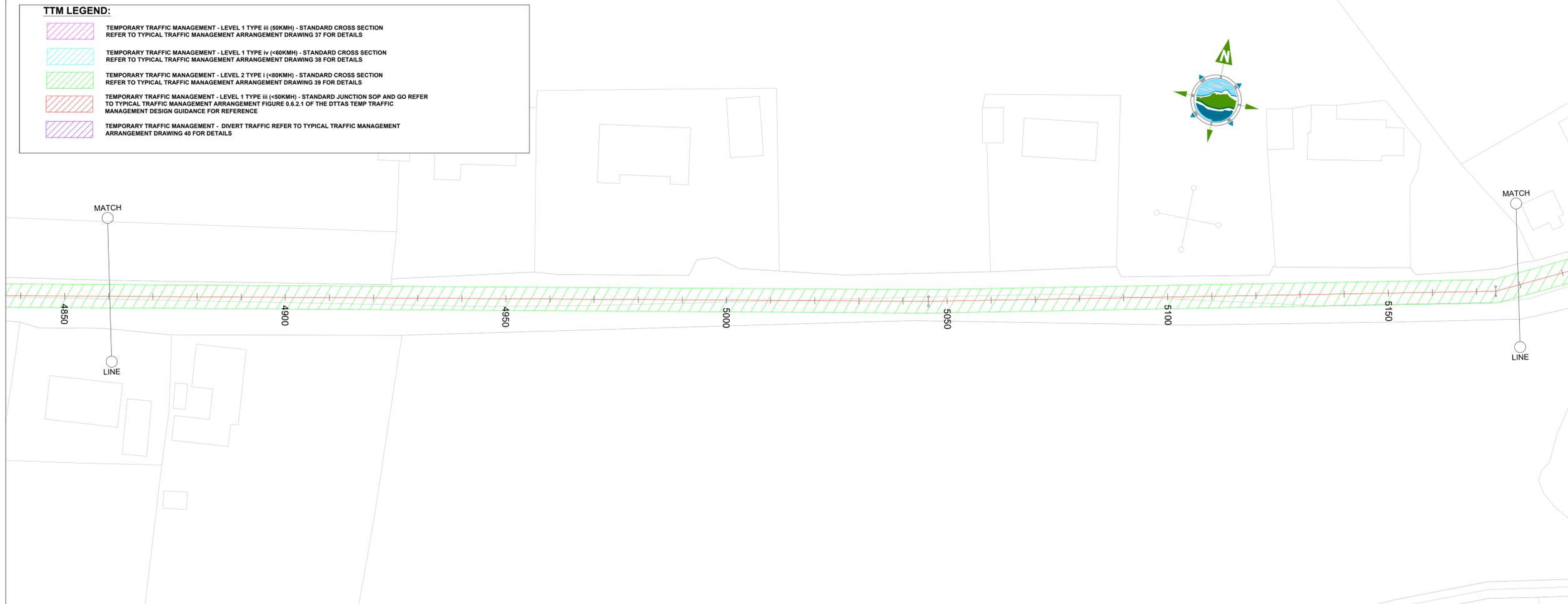
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**A1**



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD CROSS SECTION  
REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION  
REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<80KM/H) - STANDARD CROSS SECTION  
REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER  
TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC  
MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT  
ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By	Drawn By	Checked By	Approved By
JL	JL	MR	MR
Date	Date	Date	Date
17/11/2025	17/11/2025	17/11/2025	17/11/2025

Scale: AS SHOWN @ A1 **DO NOT SCALE**

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

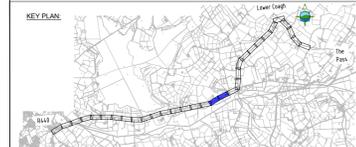
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**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 09 of 21**

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318  
Drawing No.  
**32105801/09**

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**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math>50\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<math>40\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<math>30\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math>50\text{KM/H}</math>) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 9.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1      DO NOT SCALE

Project Title: WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

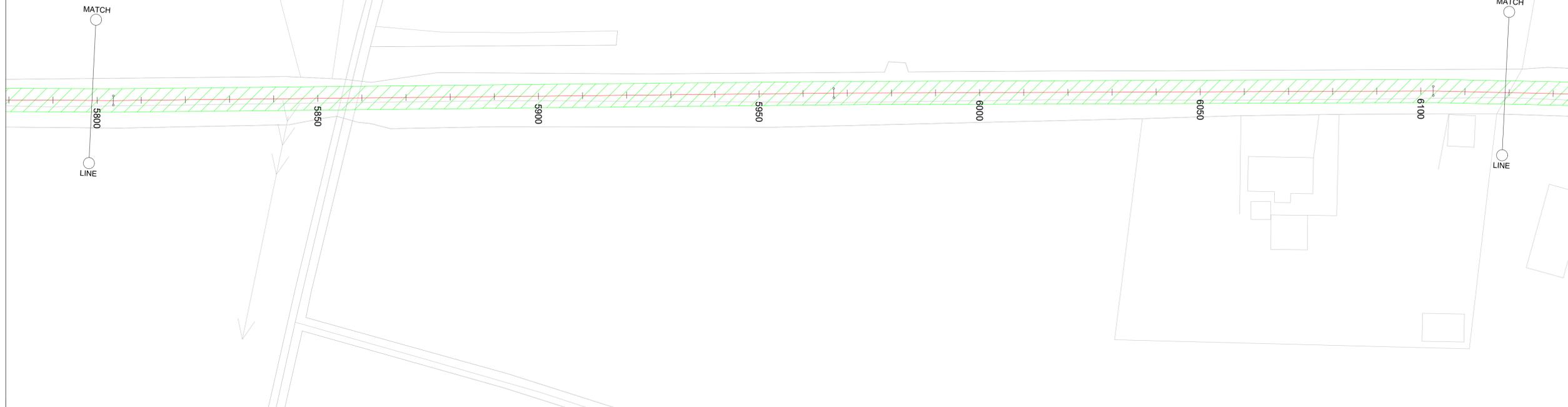
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BPS Traffic Management and Diversion Route  
Sheet 10 of 21

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801      Client No. 9318  
Drawing No. 32105801/10

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**TTM LEGEND:**

	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
	TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS

F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 DO NOT SCALE

Project Title: WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

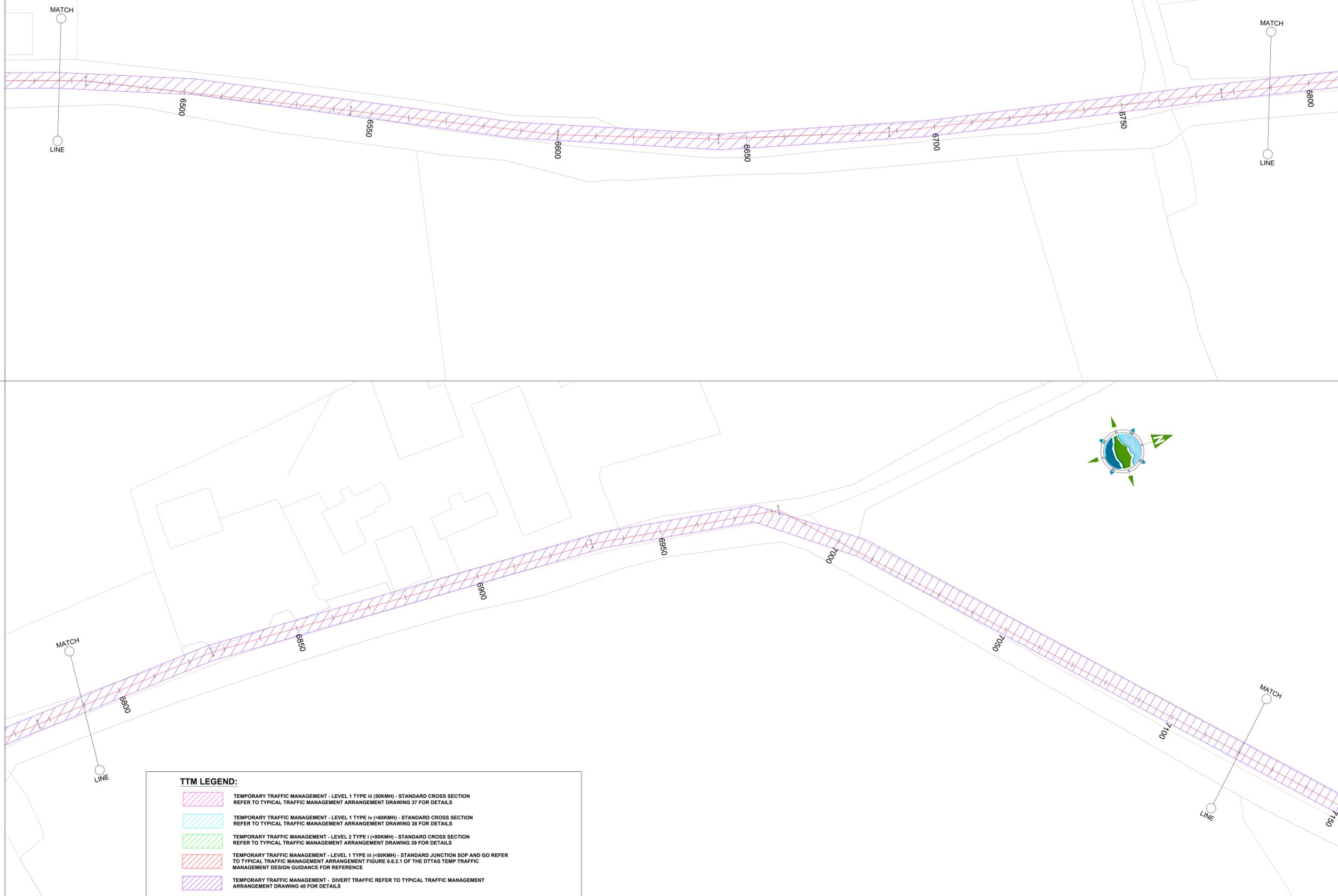
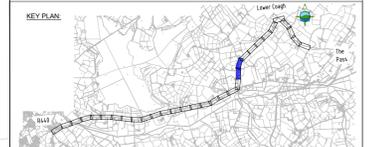
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Drawing Status: Final - Planning Application  
Drawing No.: 32105801/11  
Client No.: 9318

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**TTM LEGEND:**

	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
	TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
	TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS

F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale AS SHOWN @ A1 DO NOT SCALE

Project Title WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

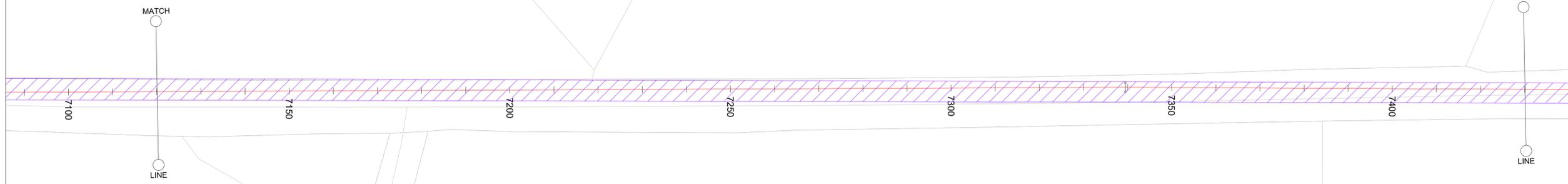
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Drawing Status Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318  
Drawing No. 32105801/12

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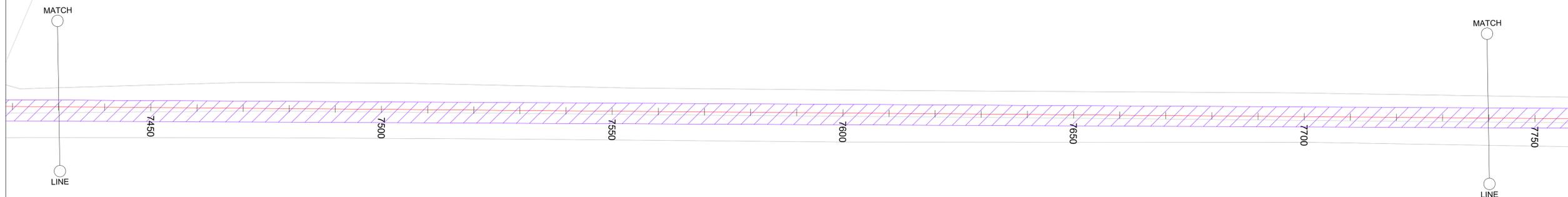
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**A1**



**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iv (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE i (<80KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1      DO NOT SCALE

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

Drawing Title  
**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 13 of 21**

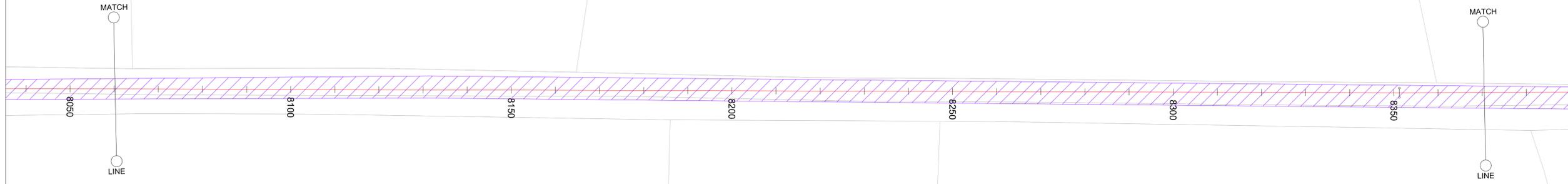
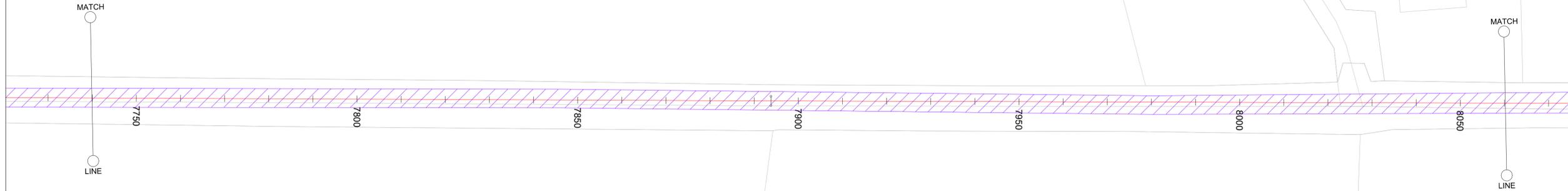
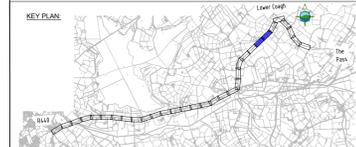
Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801      Client No. 9318

Drawing No.  
**32105801/13**

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A1



**TTM LEGEND:**

-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math>60\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<math>60\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<math>30\text{KM/H}</math>) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<math>60\text{KM/H}</math>) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
-  TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS

F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale  
AS SHOWN @ A1

DO NOT SCALE

Project Title  
WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

Drawing Title  
Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 14 of 21

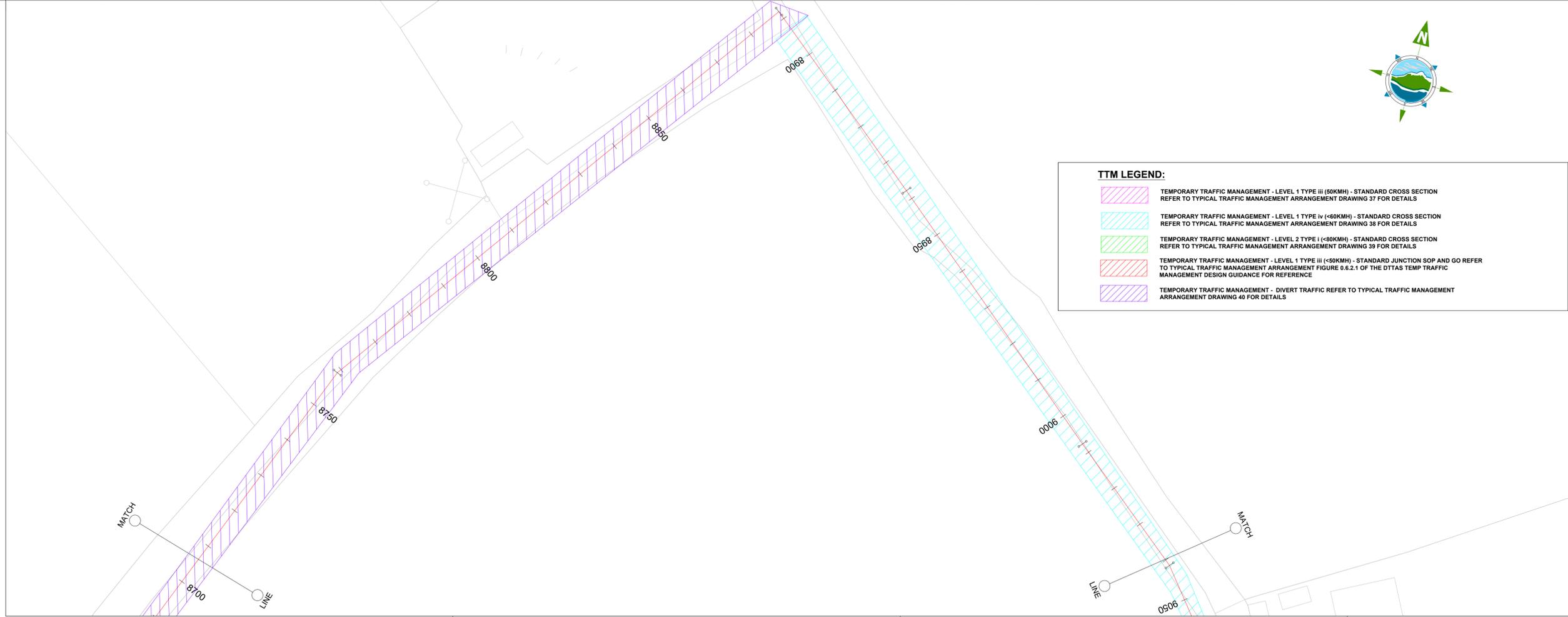
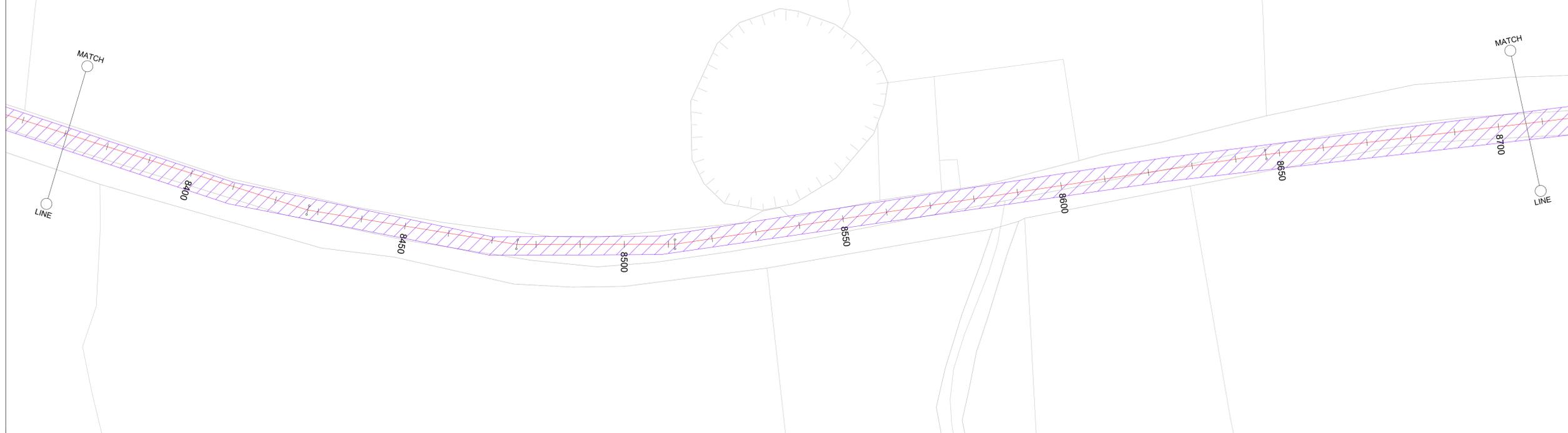
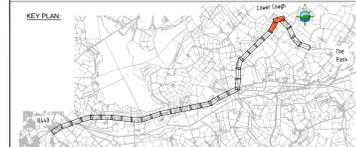
Drawing Status Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318

Drawing No.  
32105801/14

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**TTM LEGEND:**

-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<60KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
-  TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS

F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 DO NOT SCALE

Project Title: WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19 BPS Traffic Management and Diversion Route Sheet 15 of 21

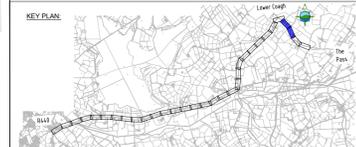
Drawing Status: Final - Planning Application  
Drawing No. 32105801 Client No. 9318

Drawing No. 32105801/15

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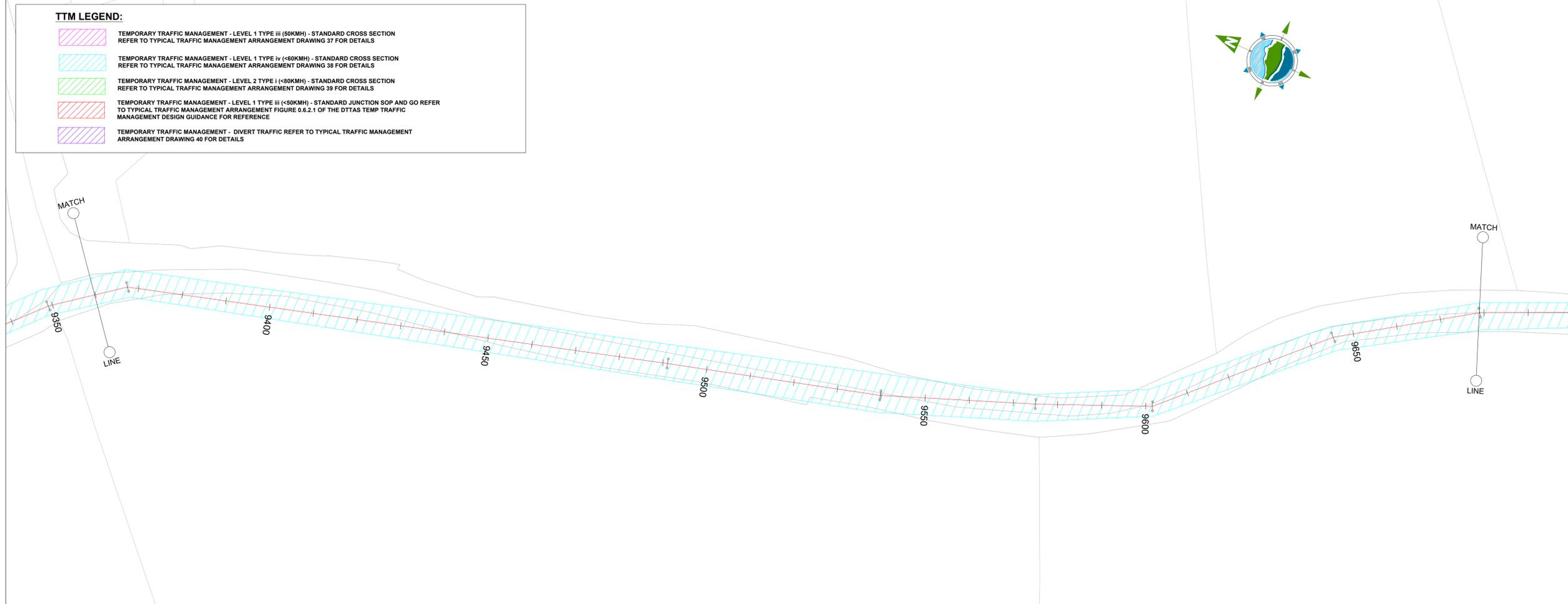
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**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<80KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
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Originated By	Drawn By	Checked By	Approved By
JL	JL	MR	MR
Date	Date	Date	Date
17/11/2025	17/11/2025	17/11/2025	17/11/2025

Scale: AS SHOWN @ A1      DO NOT SCALE

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

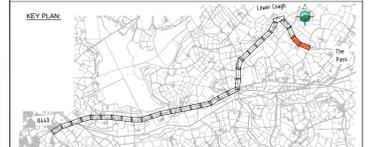
Drawing Title  
**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 16 of 21**

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801      Client No. 9318  
Drawing No.  
**32105801/16**

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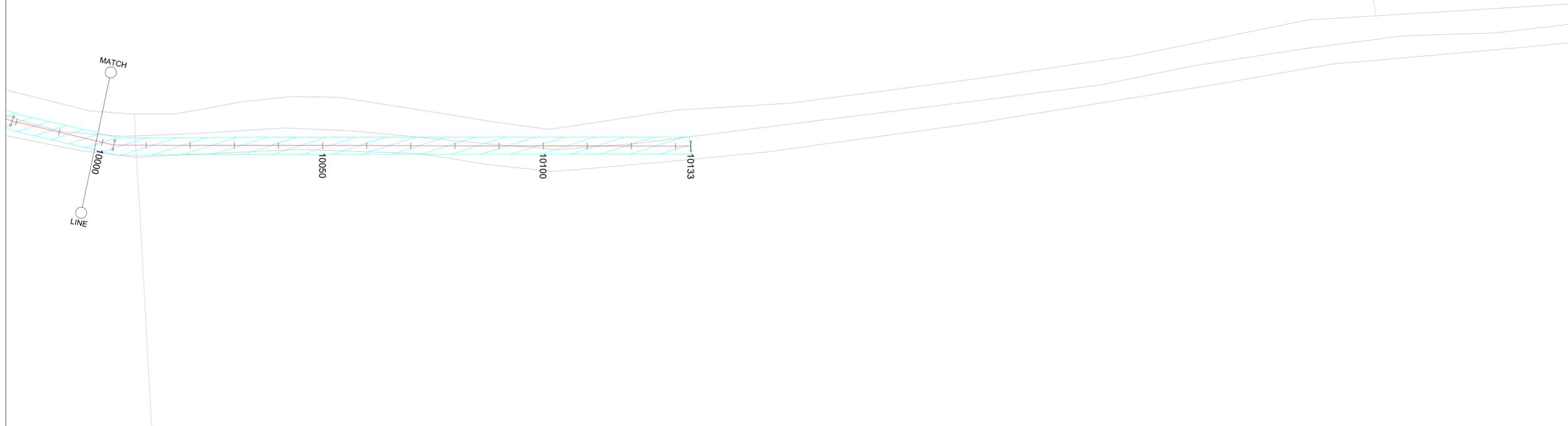
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**TTM LEGEND:**

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 37 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE IV (<60KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<80KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE III (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 0.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
- TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS



F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

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Project Title  
WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

Drawing Title  
Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 17 of 21

Drawing Status: Final - Planning Application  
Drawing No. 32105801      Client No. 9318  
Drawing No. 32105801/17

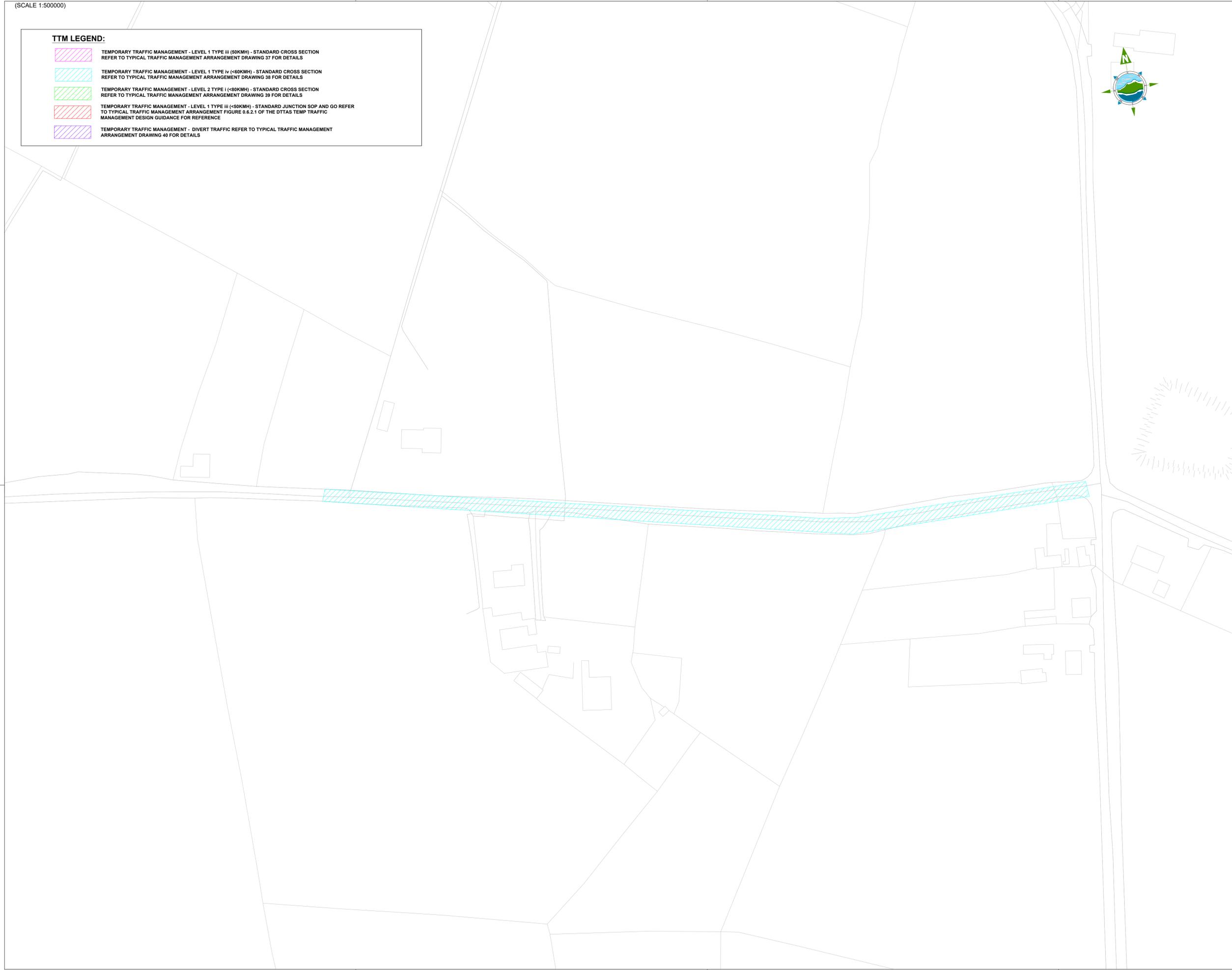
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-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iv (<50KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 38 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2 TYPE I (<80KM/H) - STANDARD CROSS SECTION REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 39 FOR DETAILS
-  TEMPORARY TRAFFIC MANAGEMENT - LEVEL 1 TYPE iii (<50KM/H) - STANDARD JUNCTION SOP AND GO REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT FIGURE 6.6.2.1 OF THE DTTAS TEMP TRAFFIC MANAGEMENT DESIGN GUIDANCE FOR REFERENCE
-  TEMPORARY TRAFFIC MANAGEMENT - DIVERT TRAFFIC REFER TO TYPICAL TRAFFIC MANAGEMENT ARRANGEMENT DRAWING 40 FOR DETAILS

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F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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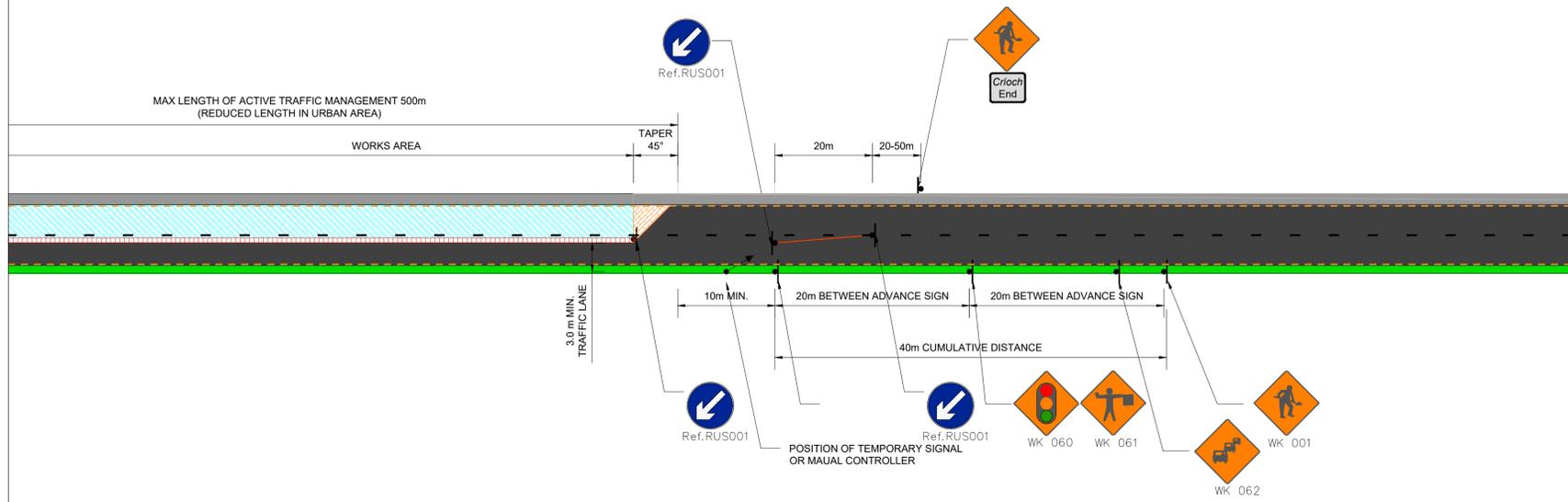
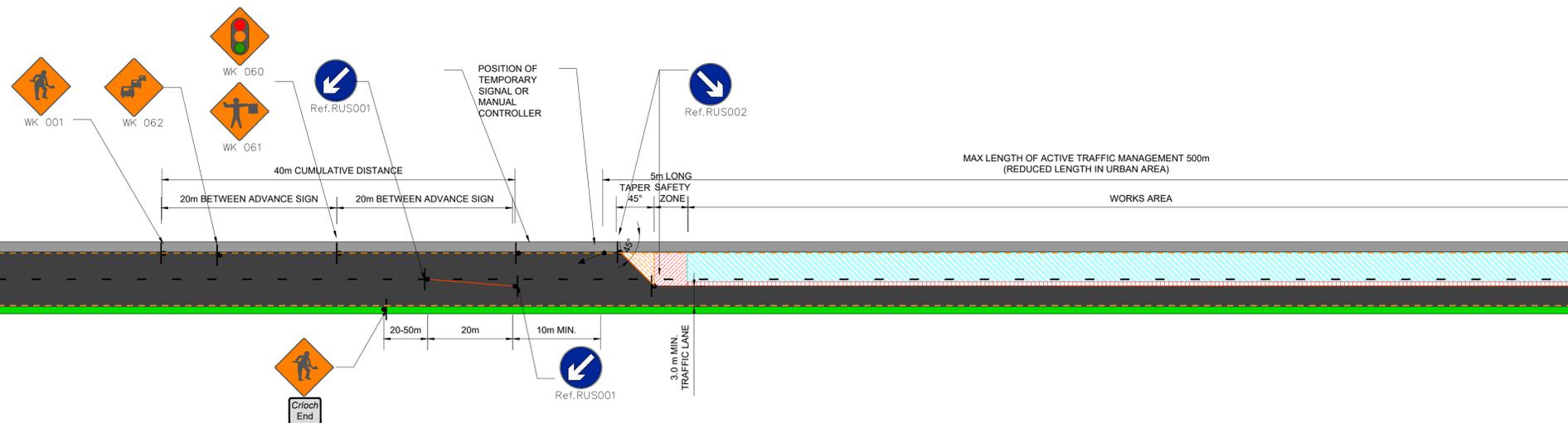
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Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

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AS SHOWN @ A1 **DO NOT SCALE**

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

Drawing Title  
**Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 18 of 21**

Drawing Status Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318  
Drawing No.  
**32105801/18**



NOTES:

- All traffic management layouts utilised shall comply with the requirements of the following:
  - Department of Transport Tourism and Sports Traffic Signs Manual Chapter 8, Temporary Traffic Management Design Guidance and Temporary Traffic Management Operations Guidance.
  - Working hours restricted Monday to Friday between the hours of 09:15 to 18:00, Saturday from 08:00 to 16:30. With no working on Sundays and public holidays. Exception the Employer's Representative's may consent to works outside these hours after any necessary consultation. A minimum of 7 days' notice is required from the contractor when seeking such consent. For night works a minimum of 3 days notice is required.
  - All public roads affected by the execution and completion of the works, unless otherwise specified, shall, unless otherwise permitted remain open to two-way traffic during peak traffic periods of 07:30 to 09:30 and 16:30 to 18:30 Monday to Saturday, all non-working time, and other times as required and confirmed in writing by the Employer's Rep.
  - The Contractor shall put in place suitable traffic management for night time works to facilitate opening of the carriageway to two way traffic including all associated lighting and lamps.
  - Maximum length of active traffic management including 45° tapers is 500m.
  - 20m length of cones shall be provided in advance of the temporary traffic light system along the road center line. Additional sign WK 060 may be positioned 15 to 20m from this point.
  - WK 072 slippery road signs to be provided adjacent to unfinished road surface with supplement plate P 085 unfinished road surface.
  - WK 073 loose chippings road signs shall be provided as appropriate.
  - Ramps between existing and works areas resulting in a level distance shall be warned of by suitable WK 070 Hump or Ramp warning signs at the hazard.
  - Temporary traffic lights and signage shall be erected at evenings and weekends.

The layouts contained on these drawing do not supercede the above documents. When designing or planning a traffic management layout reference should be to the above documents.  
All roadwork layouts to include a cautionary speed limit of 55km/h (except surfacing dressing 25km/h) at the start of the works and repeated at intervals throughout the works.  
Where a lateral safety zone cannot be provided a convoy shuttle system must be employed to ensure that traffic speeds past the works.  
The layouts shown are not to scale. Refer to Tables 8.2.2.7 in chapter 8 and details provided within the relevant standards.  
Appropriate road marking traffic management shall be provided for as described in the TTM Operations Guidance Part 2 document. In the absence of permanent road marking and studs, the Contractor shall provide temporary studs or lamps as agreed with the Employers Representative.

LEVEL 2 (i) TYPE A:

- Advanced Warning Signage:
  - Sign Size:
    - 1.1.1. Diamond Warning Sign (mm) = 600
    - 1.1.2. Circular Regulatory Sign (mm) = 600
  - Sight Visibility (m) = 90
  - Number of Signs = 4
  - Cumulative Distance (m) = 480
  - Distance between Advance Warning Signs (m) = 120
- Taper:
  1. Lane taper = 45° (for shuttle traffic controlled layouts)
  2. Hard shoulder taper rate = 1 in 40
- Cones:
  1. Cone height (mm) = 750
  2. Taper Spacing (m) = 3
    - 3.2.1. Except at shuttle traffic controlled layouts with cone spacing at 1m centres.
  - 3.3. Longitudinal spacing (m) = 12
- Lamps (unlit areas only)
  1. Taper Spacing (m) = 6
  2. Longitudinal Spacing (m) = 24
- Safety Zone:
  1. Longitudinal (m) = 45
  2. Lateral (m) = 1.2
- Lane Width (m) = 3.3 (optimum)

LEGEND:



F03	Final - Planning Application	JL	MR	MR	12.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Ch'kd	App'd	Date

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Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 12/11/2025	Date 12/11/2025	Date 12/11/2025	Date 12/11/2025

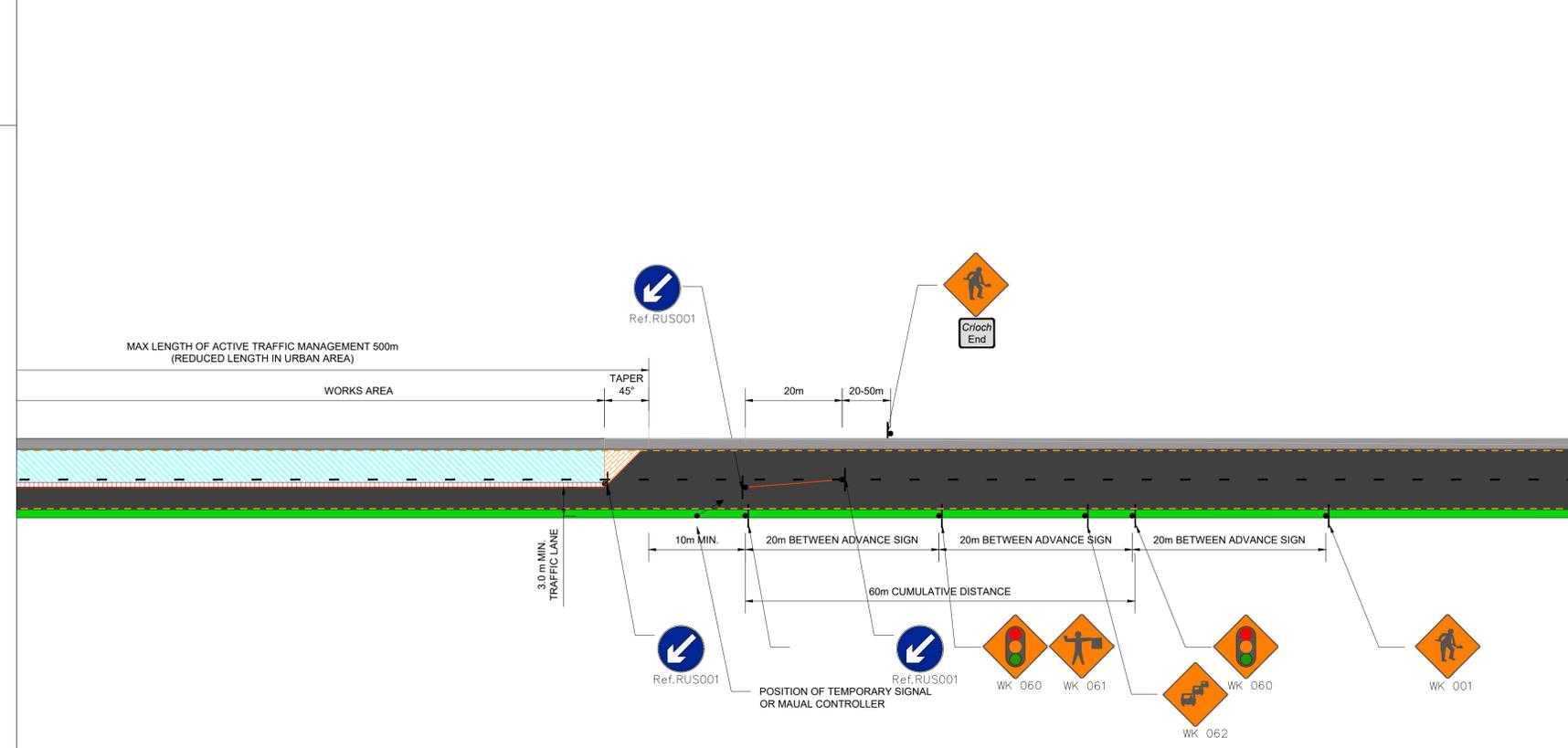
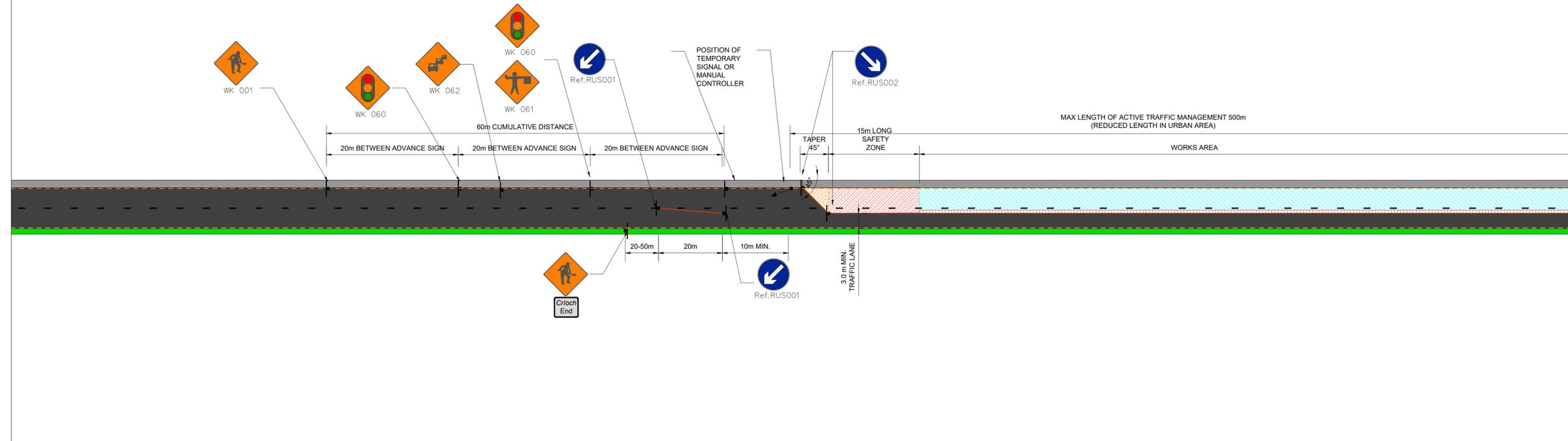
Scale: AS SHOWN @ A1 DO NOT SCALE

Project Title: WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19  
BPS Traffic Management and Diversion Route  
Sheet 19 of 21

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318

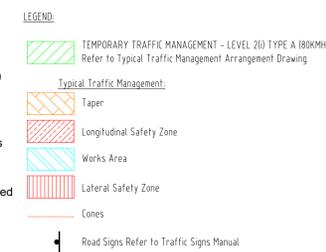
Drawing No. 32105801/19



- NOTES:**
- All traffic management layouts utilised shall comply with the requirements of the following:
    - Department of Transport Tourism and Sports Traffic Signs Manual Chapter 8, Temporary Traffic Management Design Guidance and Temporary Traffic Management Operations Guidance.
    - Working hours restricted Monday to Friday between the hours of 09:15 to 18:00, Saturday from 08:00 to 16:30. With no working on Sundays and public holidays. Exception the Employer's Representative's may consent to works outside these hours after any necessary consultation. A minimum of 7 days' notice is required from the contractor when seeking such consent. For night works a minimum of 3 days notice is required.
    - All public roads affected by the execution and completion of the works, unless otherwise specified, shall, unless otherwise permitted remain open to two-way traffic during peak traffic periods of 07:30 to 09:30 and 16:30 to 18:30 Monday to Saturday, all non-working time, and other times as required and confirmed in writing by the Employer's Rep.
    - The Contractor shall put in place suitable traffic management for night time works to facilitate opening of the carriageway to two way traffic including all associated lighting and lamps.
    - Maximum length of active traffic management including 45° tapers is 500m.
    - 20m length of cones shall be provided in advance of the temporary traffic light system along the road center line. Additional sign WK 060 may be positioned 15 to 20m from this point.
    - WK 072 slippery road signs to be provided adjacent to unfinished road surface with supplement plate P 085 unfinished road surface.
    - WK 073 loose chippings road signs shall be provided as appropriate.
    - Ramps between existing and works areas resulting in a level distance shall be warned of by suitable WK 070 Hump or Ramp warning signs at the hazard.
    - Temporary traffic lights and signage shall be erected at evenings and weekends.

The layouts contained on these drawing do not supercede the above documents. When designing or planning a traffic management layout reference should be to the above documents.  
 All roadwork layouts to include a cautionary speed limit of 55km/h (except surfacing dressing 25km/h) at the start of the works and repeated at intervals throughout the works.  
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 The layouts shown are not to scale. Refer to Tables 8.2.2.7 in chapter 8 and details provided within the relevant standards.  
 Appropriate road marking traffic management shall be provided for as described in the TTM Operations Guidance Part 2 document. In the absence of permanent road marking and studs, the Contractor shall provide temporary studs or lamps as agreed with the Employers Representative.

- LEVEL 2 (i) TYPE A:**
- Advanced Warning Signage:
    - Sign Size:
      - 1.1.1. Diamond Warning Sign (mm) = 600
      - 1.1.2. Circular Regulatory Sign (mm) = 600
    - Sight Visibility (m) = 90
    - Number of Signs = 4
    - Cumulative Distance (m) = 480
    - Distance between Advance Warning Signs (m) = 120
  - Taper:
    - 6.1. Lane taper = 45° (for shuttle traffic controlled layouts)
    - 6.2. Hard shoulder taper rate = 1 in 40
  - Cones:
    - 3.1. Cone height (mm) = 750
    - 3.2. Taper Spacing (m) = 3
      - 3.2.1. Except at shuttle traffic controlled layouts with cone spacing at 1m centres.
    - 3.3. Longitudinal spacing (m) = 12
  - Lamps (unlit areas only)
    - 4.1. Taper Spacing (m) = 6
    - 4.2. Longitudinal Spacing (m) = 24
  - Safety Zone:
    - 5.1. Longitudinal (m) = 45
    - 5.2. Lateral (m) = 1.2
  - Lane Width (m) = 3.3 (optimum)



F03	Final - Planning Application	JL	MR	MR	12.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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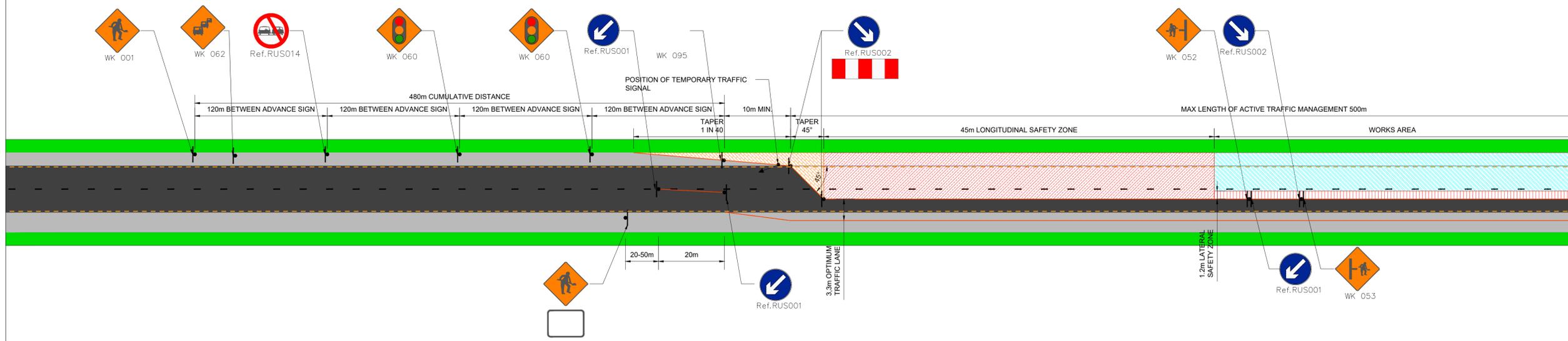
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JL	JL	MR	MR
Date	Date	Date	Date
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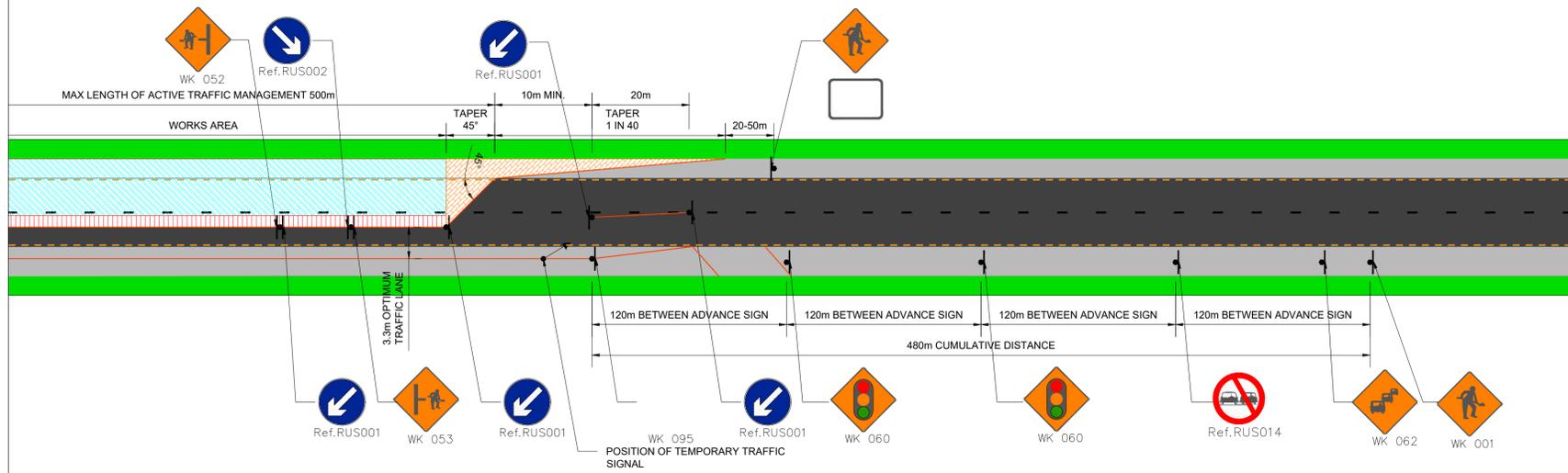
Project Title: WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19 BPS Traffic Management and Diversion Route Sheet 20 of 21

Drawing Status: Final - Planning Application  
 Jacobs Tobin No. 32105801 Client No. 9318  
 Drawing No. 32105801/20



Typical Traffic Management for Single Carriageway Roadworks ( Level 2(i) Type A )  
Signal Controlled Shuttle System  
R440 CH 18m to 6170m



Typical Traffic Management for Single Carriageway Roadworks ( Level 2(i) Type A )  
Signal Controlled Shuttle System  
R440 CH 18m to 6170m

NOTES:

- All traffic management layouts utilised shall comply with the requirements of the following:
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  - Working hours restricted Monday to Friday between the hours of 09:15 to 18:00, Saturday from 08:00 to 16:30. With no working on Sundays and public holidays. Exception the Employer's Representative's may consent to works outside these hours after any necessary consultation. A minimum of 7 days' notice is required from the contractor when seeking such consent. For night works a minimum of 3 days notice is required.
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  - The Contractor shall put in place suitable traffic management for night time works to facilitate opening of the carriageway to two way traffic including all associated lighting and lamps.
  - Maximum length of active traffic management including 45° tapers is 500m.
  - 20m length of cones shall be provided in advance of the temporary traffic light system along the road center line. Additional sign WK 060 may be positioned 15 to 20m from this point.
  - WK 072 slippery road signs to be provided adjacent to unfinished road surface with supplement plate P 085 unfinished road surface.
  - WK 073 loose chippings road signs shall be provided as appropriate.
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  - Temporary traffic lights and signage shall be erected at evenings and weekends.

The layouts contained on these drawing do not supercede the above documents. When designing or planning a traffic management layout reference should be to the above documents. All roadwork layouts to include a cautionary speed limit of 55km/h (except surfacing dressing 25km/h) at the start of the works and repeated at intervals throughout the works. Where a lateral safety zone cannot be provided a convoy shuttle system must be employed to ensure that traffic speeds past the works.

The layouts shown are not to scale. Refer to Tables 8.2.2.7 in chapter 8 and details provided within the relevant standards. Appropriate road marking traffic management shall be provided for as described in the TTM Operations Guidance Part 2 document. In the absence of permanent road marking and studs, the Contractor shall provide temporary studs or lamps as agreed with the Employers Representative.

LEVEL 2 (i) TYPE A:

- Advanced Warning Signage:
  - Sign Size:
    - 1.1.1. Diamond Warning Sign (mm) = 600
    - 1.1.2. Circular Regulatory Sign (mm) = 600
  - Sight Visibility (m) = 90
  - Number of Signs = 4
  - Cumulative Distance (m) = 480
  - Distance between Advance Warning Signs (m) = 120
- Taper:
  1. Lane taper = 45° (for shuttle traffic controlled layouts)
  2. Hard shoulder taper rate = 1 in 40
- Cones:
  - 3.1. Cone height (mm) = 750
  - 3.2. Taper Spacing (m) = 3
    - 3.2.1. Except at shuttle traffic controlled layouts with cone spacing at 1m centres.
  - 3.3. Longitudinal spacing (m) = 12
- Lamps (unlit areas only)
  - 4.1. Taper Spacing (m) = 6
  - 4.2. Longitudinal Spacing (m) = 24
- Safety Zone:
  - 5.1. Longitudinal (m) = 45
  - 5.2. Lateral (m) = 1.2
- Lane Width (m) = 3.3 (optimum)

LEGEND:

- TEMPORARY TRAFFIC MANAGEMENT - LEVEL 2(i) TYPE A (800MM) Refer to Typical Traffic Management Arrangement Drawing
- Typical Traffic Management:
  - Taper
  - Longitudinal Safety Zone
  - Works Area
  - Lateral Safety Zone
  - Cones
- ROAD SIGNS REFER TO TRAFFIC SIGNS MANUAL

F03	Final - Planning Application	JL	MR	MR	12.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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# JACOBS TOBIN

Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 12/11/2025	Date 12/11/2025	Date 12/11/2025	Date 12/11/2025

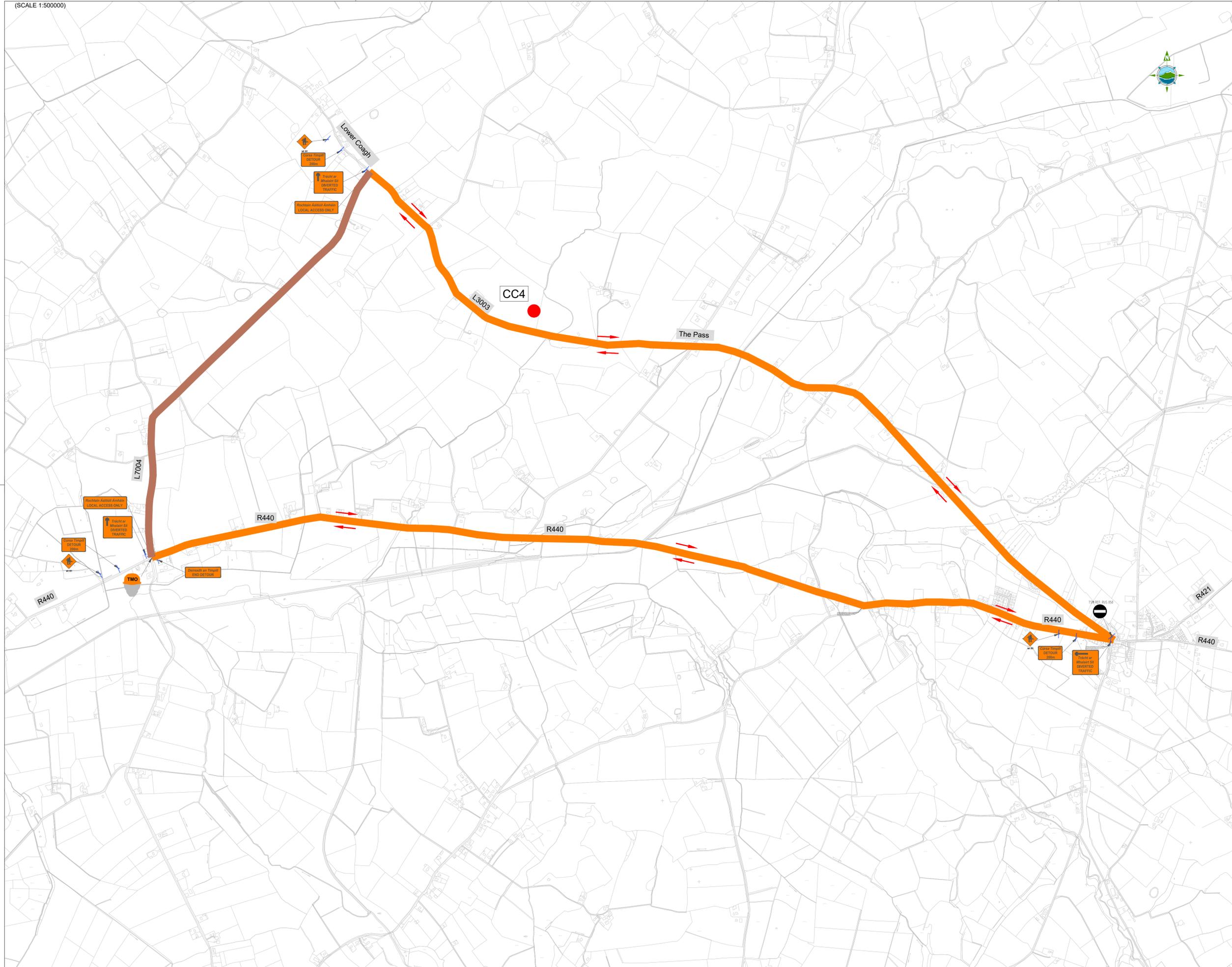
Scale: AS SHOWN @ A1 DO NOT SCALE

Project Title: WATER SUPPLY PROJECT EASTERN AND MIDLANDS REGION

Drawing Title: Figure 19 BPS Traffic Management and Diversion Route Sheet 21 of 21

Drawing Status: Final - Planning Application  
Jacobs Tobin No. 32105801 Client No. 9318

Drawing No. 32105801/21



**LEGEND:**

- DIVERSION ROUTE
- ROAD CLOSED (LOCAL ACCESS ONLY)
- TRAFFIC MANUAL OPERATIVE
- DIRECTION OF TRAFFIC
- TEMPORARY TRAFFIC SIGNS
- ROAD NAMES

**NOTE: ALL SIGNS HAVE BEEN DESIGNED IN ACCORDANCE WITH TII PUBLICATIONS - TSM CH 8 & CH 5**

F03	Final - Planning Application	JL	MR	MR	17.11.25
F02	Final - Planning Application	JL	MR	MR	23.09.25
F01	Final - Planning Application	JL	MR	MR	25.08.25
Rev	Description	Drawn	Chk'd	App'd	Date

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# JACOBS TOBIN

Originated By JL	Drawn By JL	Checked By MR	Approved By MR
Date 17/11/2025	Date 17/11/2025	Date 17/11/2025	Date 17/11/2025

Scale: AS SHOWN @ A1 **DO NOT SCALE**

Project Title  
**WATER SUPPLY PROJECT  
EASTERN AND MIDLANDS REGION**

Drawing Title  
**Figure 20  
BPS Traffic Management and Diversion Route  
Sheet 01 of 01**

Drawing Status: Final - Planning Application  
 Jacobs Tobin No. 32105801 Client No. 9318  
 Drawing No. 32105801/01