Galway County Council

N6 Galway City Ring Road

Phase 3 Peer Review Record & Response

GCOB-9.01.077

Issue 2 | 6 October 2017

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Ove Arup & Partners Ireland Ltd

Arup
15 Oliver Plunkett Street
Cork
Ireland
www.arup.com

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		Name	Design Team	Mary Hurley	Eileen McCarthy
		Signature			
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		Name	Design Team	Mary Hurley	Eileen McCarthy
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Contents

Appendices

1 Introduction

Phase 3 Design and *Phase 4 EIA/EAR & The Statutory Processes* is underway currently for the N6 Galway City Ring Road (i.e. the road component of the N6 Galway City Transport Project) which has been identified as a necessary component of an overall transport solution for Galway City and environs.

The objective of Phase 3 is to develop the design of the N6 Galway City Ring Road to a stage where sufficient levels of detail exist to establish landtake requirement and to progress the scheme through the statutory processes which is the matter of Phase 4.

This document outlines the Phase 3 Peer Review of the N6 Galway City Ring Road.

2 Overview of Peer Review

The Phase 3 Peer Review was held on November 24, 2016 in the N6 Project Office, Galway.

Peer Reviewers:

Paul Moran – NRA Regional Manager, Peer Reviewer
Martin Bourke – NRA Inspector, Peer Reviewer

Attendees:

Kieran Kelly – Transport Infrastructure Ireland, Regional Manager
Michael Timmins – National Roads Project Office, Senior Engineer
Fintan O'Meara – National Roads Project Office, Project Manager
Sean Breathneach – National Roads Project Office, Senior Engineer
Sean Devaney – National Roads Project Office, Executive Engineer
Eileen McCarthy- Arup, Project Manager
Mary Hurley- Arup, Deputy Project Manager
Eimear Keane – Arup, Engineer
Clíodhna Ni Mhurchú – Arup, Engineer
Daniel Mangan – Arup, Engineer
Michael Gaughan – Arup, Engineer

In advance of the peer review, design working papers were issued to the reviewers in accordance with TII Project Management Guidelines. The design working papers included the following documentation:

- Principal Geometrics Parameters Report
- Section 50 OPW Consents
- Regional Fisheries Board Consultation
- BD 2 Structures Reports
- Traffic Modelling Report
- Incremental Assessment

- Stage 1 Road Safety Audit
- Mainline Carriageway Departures & Relaxations
- Junction Strategy Report
- Geotechnical Design and Vertical Alignment Justification Report
- Drainage Strategy
- Pavement Design
- Value Engineering Report and Cost Benefit Analysis Report
- Risk Assessment Report
- Environmental Impacts Summary

The peer review was structured into sections and followed the following format:

- Introduction, overview of scheme, need for scheme
- Consultations to date
- Traffic modelling
- Statutory processes

3 Project Overview

3.1 N6 Galway City Ring Road

The proposed N6 Galway City Ring Road (GCRR) comprises the construction of approximately 5.6km of a single carriageway from the western side of Bearna as far as the Ballymoneen Road and approximately 11.8km of dual carriageway from Ballymoneen Road to the eastern tie in with the existing N6 at Coolagh, Briarhill, and associated link roads, side roads, junctions and structures.

3.2 Need for the Scheme

Junction location and form is a key consideration in terms of how the N6 GCRR will function and how well the N6 GCRR delivers on the project objectives. Traffic analysis shows that the transport solution must be multi-modal catering for the following various demands:

- High proportion of short journeys within the city extents can be accomplished via public transport, cycling or walking i.e. approximately 40% of journeys commencing in the city which remain on the same side of the city as they started are short trips, both in time and distance
- A further 20% of journeys are from one side of the city to the other, again short journeys which are clear targets for a shift to public transport if there is an efficient system available

- Connectivity to the national road network for those on the western side of the River Corrib which is only possible at present by using one of the city centre bridge crossings

Given the multi-modal nature of the trips in the study area, a full transportation study was commissioned in parallel to the work on the N6 GCRR to establish an appropriate solution. This parallel work culminated in the finalisation of the Galway Transport Strategy (GTS), which sets out a series of actions and measures, covering infrastructural, operational and policy elements to be implemented in Galway over the next 20 years.

Galway has a transport problem, due to its reliance on the private car, which has been influenced by the existing public transport network, limited cycling facilities, a large rural hinterland and being the key gateway in and out of Connemara.

Combined with this, it has a road and street network which is ill-suited to the high traffic flows currently prevalent and contributing to increased congestion and delay, affecting quality of life and impacting on the functionality of the city.

To address this, a fundamental shift is needed towards sustainable travel, reducing the dependency on the private car and taking action to make Galway more accessible and connected, enhancing quality of life within the city for all.

The GTS includes an evaluation of transport options for all modes, and has affirmed the strategic need for a ring road and a new crossing of the River Corrib, in order to implement the level of service required for each mode of transport, including walking, cycling, public transport and private vehicle.

The need for the N6 Galway City Ring Road is justified for the following reasons:

- Caters for the strong demand between zones on either side of the city
- Facilitates crossing the River Corrib without negotiating the city centre
- Provides this additional river crossing with connectivity back to the city either side of the bridge crossing
- Attracts traffic from the city centre zone thus facilitating reallocation of road space to public transport leading to improve journey time reliability for public transport
- Facilitates improved city centre environment for all due to reduced congestion, thus encouraging walking and cycling as safe transport modes
- Improves connectivity to the Western Region i.e. the county areas and hinterland beyond the city zone
- Provides essential city street links to better distribute traffic
- Provides connectivity to the national roads via junctions to maximise the transfer of cross-city movements to the new road infrastructure, thus releasing and freeing the existing city centre zone from congestion caused by traffic trying to access a city centre bridge to cross the River Corrib
- Provides a high quality road in accordance with TEN-T designation

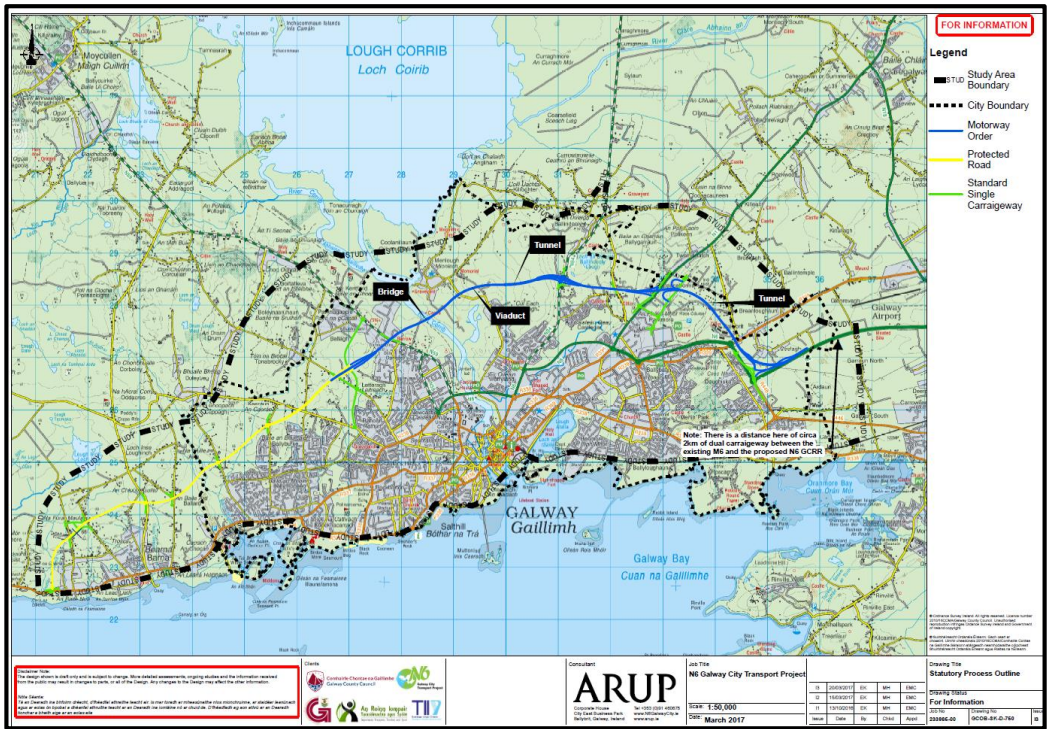


Figure 1 N6 Galway City Ring Road

3.3 Outcomes

The following recommendations were made from the peer review:

1. Provide strong justification for the need for the scheme
2. Ensure justification includes the release of road space in city centre for public transport and other modes
3. Ensure development plans include the GTS
4. Document sensitivity test with the full implemented of GTS

4 Consultations

An overview of the consultations to date was provided. The following recommendations were made:

1. Obtain all necessary licenses
2. Ensure all departures are obtained from TII
3. Document how submissions from the public were addressed in the Environmental Impact Statement (EIS) i.e. how the scheme evolved as a result of the public consultation

4.1.1 National Parks and Wildlife Services (NPWS)

Further consultation took place with NPWS on 29 March 2017 in respect of the final mitigation strategy for N6 GCRR and the protocol for application for derogation licenses. NPWS in Galway recommended a follow-up meeting with their bat expert in respect of derogation licenses for bats. This follow-up meeting took place on 18 April 2017 in Dublin at NPWS offices. NPWS agreed to issue information on the exact protocol for derogation license application. This work will be completed and reviewed by NPWS in advance of submission of planning application to ABP.

NPWS reverted at a further meeting on 3 August 2017 in respect of the protocol to deal with the derogation license and advised seeking an opinion from An Bord Pleanala (ABP) on whether it will be a "draft license to be included with the application to ABP" or whether it is a "final license" but with the proviso that it is subject to planning approval of the scheme.

At a subsequent meeting with ABP on 31 August 2017, ABP confirmed that Galway County Council should send a draft license to NPWS for review and include a copy of same for information in the EIA Report.

5 Traffic Analysis

The junction strategy and traffic analysis was considered with a focus on the following issues:

- Review junction justification again, as appears to be a lot of junctions whilst noting that the N6 GCRR is a strategic route
- Review N17/Parkmore Road junction arrangement as is very busy junction and has potential to be confusing
- Review cross-section provision over single carriageway section

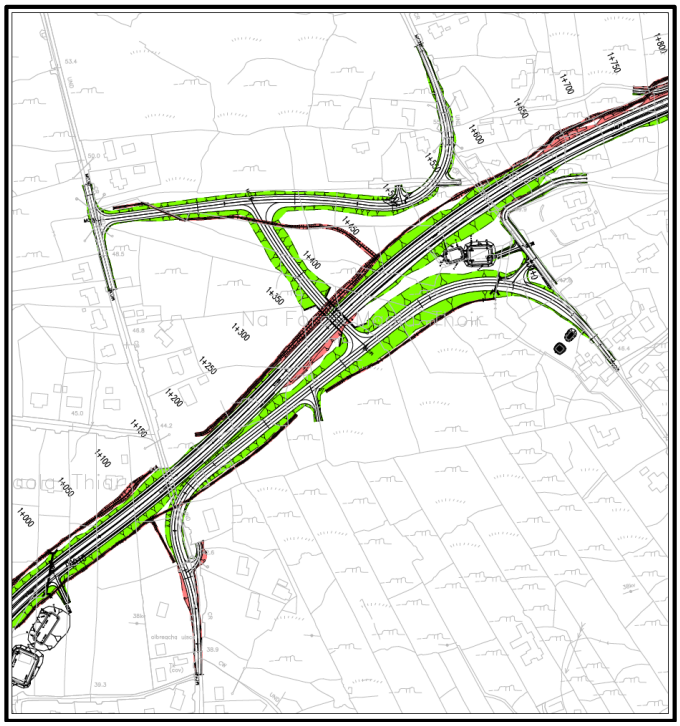
5.1 Junction Rationalisation

Following rationalisation of the junctions on the scheme, an updated series of scheme drawings is shown in Appendix C.

5.1.1 Staggered Junctions at Foraí Maola and Truskey

Given that the national road designation of the proposed ring road was extended to the R336 and the full extent of the Scheme to the R336 is to be designated as part of the TEN-T comprehensive network which effectively gives the single carriageway the status of a strategic route, the two at-grade staggered junctions in Foraí Maola and Troscaigh were reviewed as they serve local traffic as opposed to strategic traffic. This re-examination resulted in the removal of the proposed stagger junctions at the two local roads and their replacement with an overbridge option.

Figure 2: Foraí Maola/Truskey Area



5.1.2 N17/Parkmore Link Road Junction

The complexity of the proposed layout at the N17 Junction prompted its re-evaluation and refinement. This evaluation focused on simplifying the layout whilst maintaining adequate junction capacity. This evaluation resulted in the removal of the westbound merge from the Parkmore Link Road to the N6 GCRR and the removal of the eastbound diverge from N6 GCRR to the Parkmore Link Road. These were removed as the associated traffic volumes could be accommodated via the remaining slip roads and associated link roads.

Figure 3: Refined N17 and Parkmore Link Road Junction

The refined N17 Junction comprises a grade separated junction and associated link roads. The slip termini, as well as all junctions integral to the operation of the junction, are signalised.

5.1.3 Cappagh Road Junction / Ballymoneen Road Junction

Analysis was undertaken to assess the removal of the signalised junction at Cappagh Road. This analysis clearly showed that this junction serves a function as it links the N6 GCRR to the Western Distributor Road which is the correct road hierarchy – strategic road feeding the distributor road. It is also notable that without the Cappagh Road Junction, the Ballymoneen Road has a significant role in distribution of traffic thereafter, and will have issues to distribute all. The closure of Cappagh Road Junction also puts traffic back on the Bearna Road, and into Bearna Village, which is not desirable.

Additional analysis was undertaken to assess the effect of closure of the Ballymoneen Road Junction. This puts significant pressure on the Cappagh Road Junction and also increases the traffic on the N6 GCRR between the Cappagh and Ballymoneen Road junctions. The equal dispersion between the two junctions is lost when either junction is removed.

The conclusion is that both junctions are retained as they are needed for the size of the population that is being served in the area of Knocknacarra.

5.1.4 Outcome

The removal of these junctions reduced the number of junctions on the N6 GCRR to the following:

- Grade-separated junctions at the N6, N17, N84 and N59
- At-grade junctions at Ballymoneeen Road, Cappagh Road, Bearna/Moycullen Road and the R336, i.e. western terminus

5.2 Cross-section provision

A review of the cross-section provision over single carriageway section has been undertaken using the appropriate standards for urban and rural situations.

Rural Road – Ref. DN-GEO-030301 (formerly TD 9) Table 6/1:

- From the R336 to the Bearna – Moycullen Road, the Average Annual Daily Traffic (AADT) at 2039 High Growth is 11,100. Total AADT at 2039 High Growth with GTS is 10,500. This is within the design standards as quoted for single carriageway on Table 6/1.

Urban Road – Ref. UK DMRB TA79/99:

- From Bearna – Moycullen Road to Cappagh Road, the maximum hourly traffic in a single lane in either direction is 1,100 vehicles/hour which is well within the capacity of a single carriageway in an urban environment. The volume to capacity ratios at the junctions at either end of this link are within capacity.
- From Cappagh Road to Ballymoneen Road, the maximum hourly traffic in a single lane in either direction is 950 vehicles/hour which is well within the capacity of a single carriageway in an urban environment. The volume to capacity ratios at the junctions at either end of this link are within capacity.

The recommendation is to retain the single carriageway from Ballymoneen Road to Bearna – Moycullen Road as it is adequate provision for the 2039 High growth scenario.

6 Statutory Process

6.1 Land Acquisition

It is proposed to progress the land acquisition through the statutory process using a Motorway Order and Protected Road Order.

The Protected Road will extend from the western terminal tie-in at the R336 Coast Road to the N59 Letteragh Junction. There will not be a restriction on pedestrians and cyclists on this Protected Road.

The Motorway Order will extend from the N59 Letteragh Junction to the eastern terminal tie-in at the existing N6, Coolagh.

Figure 1 above denotes the extents of each of the above.

6.2 Environmental Impact Assessment

Depending on the time of publication, it will be necessary to address the new legislation in respect of the Environmental Impact Assessment directive.

7 Conclusion

A cross-check against the Project Management Guidelines checklist is provided in **Appendix A.**

A summary of the queries raised by the peer review team, together with the design team responses to close out this Peer Review is included in **Appendix B**.

Appendix A

Checklist of Key Issues

A1 Phase 3 Checklist

A3.5 Design Peer Review - Checklist of Key Issues

No.	Provision	✓
	Scheme Justification	
1	Has the Project Brief been reviewed and updated?	✓
2	Has the Target Cost 1 and the Scheme Budget been agreed?	✓
3	Has the Cost Benefit Analysis been updated?	✓
4	Have the key elements of the Project Appraisal Guidelines been addressed/completed at this stage?	✓
	Road Type and Capacity	
5	Has the proposed road type been determined having regard to the existence of potential future road type of adjacent sections of the corridor and any policy decisions of the overall corridor road type?	✓
6	Is the road type adequate for the possible long-term traffic flows?	✓
7	Is the road type selected justifiable on traffic grounds or on safety grounds?	✓
	Junctions	
8	Is the frequency of junctions excessive? Post Peer Review, this is acceptable	✓
9	Are the junctions unnecessarily serving non-national roads?	Not nat. ✓
10	Are the junctions appropriately sized to cater for traffic in the longer term?	✓
11	Is the junction strategy diluting or compromising the strategic function of the road?	No
	Horizontal Alignment	
12	Is the horizontal alignment optimised with regard to key constraints? (poor ground, contaminated areas, residential/non-residential structures, archaeological sites, rivers, railways, etc.)	✓
13	Does the alignment lead to an excessive number of structures or junctions?	No
14	Is the alignment compatible with, and optimised for, the possibility of developing adjacent schemes on the road corridor?	✓
15	Does the alignment travel adjacent to any railway line, and if so, has Iarnród Éireann been consulted?	No N/A
	Vertical Alignment	
16	Does the vertical alignment provide a smooth flowing profile consistent with the design speed?	✓
17	Is there a balance between earthworks material import and export and if not, has the alignment been optimised for the difference?	✓
18	Where appropriate, has the vertical alignment been designed against maximum flood levels and has an appropriate safety margin been applied?	✓

A3.5 Design Peer Review - Checklist of Key Issues (continued)

No.	Provision	✓
	Geotechnical Issues	
19	Have all quarries within the area been considered? (licensed or unlicensed)	✓
20	If there is contaminated land, has the potential impact been fully considered?	✓
21	Has the extent of soft ground been identified and fully considered?	✓
22	Are there areas of karst, and if so, were measures considered to deal with karst?	✓
23	Has the earthworks been balanced in so far as is possible?	✓
24	Has the disposal of excess material, including peat, been fully considered?	✓
25	Have all well and septic tanks been identified and dealt with?	✓
	Drainage	
26	Has OPW approval been obtained?	✓
27	Have flood levels been established?	✓
28	Have return periods been checked and has the % uplift for climate change been included?	✓
29	Should any section of the route require specific drainage measures, have these been fully designed?	✓
30	Have Rights of Way been included, where necessary, for maintenance to drains etc. outside the land take?	✓
31	Have adequate land take been provided for treatment measures and retention ponds?	✓
32	Have adjacent Local Authorities been contacted to coordinate the proposed drainage works downstream of the road scheme?	✓
	Structures	
33	Is the aesthetic standard appropriate? On-going with Galway City Council in Urban areas	✓
34	For online Improvement Schemes, has the method of bridge construction been fully addressed?	N/A
35	Have excessive skews or excessive spans been avoided?	✓
36	Is level of prescription of structure type and arrangement appropriate?	✓
37	Has a common structure type been adopted to the maximum extent possible?	✓
38	Is there an excessive number of structures provided for landowner access?	No
39	If there are any 'special structures', is the structures type appropriate and justifiable?	✓
40	Is the horizontal alignment leading to an excessive number of structures being required?	No
41	If there are any railway structures, have these been agreed in principle with Iarnród Éireann?	N/A

A3.5 Design Peer Review - Checklist of Key Issues (continued)

No.	Provision	✓
	Archaeological and Environmental Issues	
42	Have all NRA Environmental Standards and Procedures, including Archaeology, been complied with?	✓
43	Are there any NHA's or SAC's within the Preferred Route Corridor, and if so, has sufficient work been done to support the scheme proceeding?	✓
44	Has the Scheme Development Process and Option Choice Process carefully considered the potential of significant Archaeological and Environmental issues arising?	✓
45	Has sufficient Archaeological investigation been carried out to support the scheme proceeding as planned?	✓
46	Have the various Environmental Statutory Agencies been consulted in sufficient detail to clearly establish scheme requirements and effects?	✓
47	Are there any protected species affected by the route and have they been considered in sufficient detail, including cost of mitigation?	✓
48	Is there a definitive list of mitigation measures?	✓
49	Has a robust Noise Model been developed to support Noise Barrier Provision decisions? Post peer review, additional noise modelling completed	✓
50	Are all listed mitigation measures necessary, clear and definable?	✓
	Statutory Authorities	
51	If the project crosses operational (including dis-used but potentially operational) railway land, has such land been excluded from the CPO?	N/A
52	If the project is adjacent to, but does not cross a railway line, has Iarnród Éireann been consulted on railway implications?	N/A
53	Has agreement in principle been reached with CIE/ Iarnród Éireann in relation to the project?	N/A
54	Have consultations been carried out with the National Parks and Wildlife Services and their agreement in principle been obtained?	✓
55	Have consultations been carried out with the relevant Fisheries Board and their agreement in principle been obtained?	✓
56	Have consultations been carried out with other relevant Statutory Authorities and their agreement in principle been obtained?	✓
57	Have consultations been carried out with the Emergency Services to determine need for lay-bys, observation platforms and any requirement for additional emergency access points to the road?	✓
	Landtake	
58	Has the scheme considered the land take requirements at structure locations to facilitate off-line construction where possible?	✓
59	Has the scheme optimised the balance between acquisition of severed land and provision of access structures/roads and accommodation works?	✓

A3.5 Design Peer Review - Checklist of Key Issues (continued)

No.	Provision	✓
60	Has the scheme considered the provision of access to severed portions of land to facilitate future use or resale?	✓
61	Where the scheme crosses, or is adjacent to, a railway line, has the issue of land acquisition for possible closure of level crossings been considered?	N/A
62	Has the land take considered the possible location of a construction compound or compounds?	✓
63	Has the land take considered the need for temporary river or stream diversions for structure construction?	✓
64	Has the land take included for all land necessary to build any required boundary walls or fences including space for any foundations extending onto the non-road side of the boundary wall or fence?	✓
65	If a Motorway Scheme, has the land take included a strip of land (coloured grey on motorway schemes) outside the blue motorway designated lands for all the fence/wall construction along the designated boundary of the blue motorway area?	✓
66	Has the land take included all land necessary to build any accesses required, including regrading of any existing accesses?	✓
67	Has the land take included for any possible watercourse regrading that may be required, and for the construction of any outfall needs?	✓
68	Is the land take sufficient for any attenuation ponds that might be required?	✓
69	Have all the CPO plots been referenced and included in the CPO?	✓
70	Have all sight lines for private accesses and minor roads been included in the CPO?	✓
71	Have all lands required for Accommodation works been included in the CPO?	✓
72	Have all lands required for service diversions been included in the CPO?	✓
	Interaction with Land Use Planning	
73	Is the impact of adjacent land zonings consistent with the strategic transport function of the national road?	✓
74	Have any recent avoidable re-zonings impacted significantly on the land cost of the project?	✓

Eileen McCarthy
20/3/2017.

Appendix B

Peer Review Outcomes Record

B1 Peer Review Outcomes

N6 Galway City Ring Road				
	Phase 3 Peer Review	Date: 24 November 2016	Date: 12 May 2017	Date: 6 October 2017
Ref.	Issues raised	Design Team Response	Design Team Additional Response	Design Team Additional Response
1	Consultations			
1.1	Planning Context			
1.1.1	Status of N6 Galway City Ring Road (GCRR) & Galway Transport Strategy (GTS) in the various Development Plans	Both Galway City and County Development Plans have been varied to incorporate the GTS and the N6 GCRR. Galway County Council Planning Department will address the local area plans once the Variation to the County Plan has been adopted by revoking them and incorporating their objectives into the County Development Plan.		
1.1.2	Proposed Statutory Process for scheme; MO & Protected Rd	It is confirmed that a Motorway Order will be processed from the existing N6 to the N59 Letteragh Junction. A Protected Road Order will be used from N59 Letteragh Junction to the R336 Coast Road.		
1.1.3	Official classification/status of the route as TEN-T for full extent to Coast Road?	The official classification of the N6 Galway City Ring Road is TEN-T Comprehensive from the N6 to the R336 i.e. entirety of scheme. This has been approved with the Department of Transport and the paper work with Europe is in process.		
1.2	ABP			
1.2.1	Feedback on adequacy of AA screening approach	ABP have not reverted on the AA screening as it has not been presented to ABP. The NIS is being reviewed by the legal team appointed by Galway County Council.		
1.2.2	Feedback on scheme justification	To date, ABP have not reverted on the scheme justification.		
1.3	NPWS			
1.3.1	Contingent consents (Bats/Badgers...)	A meeting is scheduled for 29 March 2017 with the NPWS to consult on draft licence application. This draft licence will then be included in the EIS as an appendix.	Further meeting with NPWS experts in relation to licenses. These will all be reviewed by NPWS in advance of application to ABP.	Further meeting with NPWS and ABP in relation to licenses. These will all be reviewed by NPWS in advance of application to ABP, and also included in the application to ABP.
1.3.2	Compensatory Habitats (In severed plots or otherwise..)	Compensatory habitat locations have been identified and will be included within the fenceline for the scheme. This is intended for compensation for Annex I habitat outside the Natura network, as opposed to compensatory habitat in the sense of the Natura network.		
1.3.3	Barn Owls (Specific mitigation measures possible south of Menlo Castle)	The presence of the road within the vicinity of Menlo Castle and the roost is the risk for Barn Owls more so than Barn Owls flying south towards the road. The mitigation strategy includes gating off Menlo Castle to protect the roost site and making the vegetation along the road between the N59 and the N6 less attractive. The possibility of planting a line of trees between the River Corrib Bridge and Menlough Viaduct is currently being investigated to act as a screen for any Barn Owls that do fly south.	This strategy has been developed by John Lusby, who is the leading expert on barn owls in Ireland. A further review took place on 5 April 2017 to get final sign-off on the strategy in combination with the landscape strategy. All mitigation is within the fenceline and is deliverable.	
1.4	IFI			
1.4.1	All requirements considered	All requirements of IFI have been addressed.		
1.5	OPW			
1.5.1	All necessary Section 50s secured	Section 50 approvals have been obtained for all culverts and all bridge crossings of watercourses.		
1.6	Emergency Services			
1.6.1	Provision for emergency response	A hard shoulder is provided for the entire scheme, with the exception of major structures such as tunnels and major bridges/viaducts. In the tunnels, wider lane widths of 3.75m have been utilised to facilitate passing for emergency response.		
1.6.2	Enforcement areas	Dedicated enforcement areas have not been included in the scheme design due to the proximity of junctions and major structures. The infrastructure and communication networks (gantries, gates) provided to accommodate vehicle egress from the mainline in advance of tunnel portals during incidents can facilitate an alternative enforcement methodology. This infrastructure can be utilised to divert vehicles for examination from the mainline carriageway onto adjacent networks where weighbridges and inspection zones can be established. There area four emergency exits proposed on the motorway section of the proposed road development.		
1.6.3	Facilities for over-height vehicles	The clearance of Lackagh Tunnel and the Galway Racecourse tunnel have been increased to accord with TII DMRB. Consequently, the exits now serve as emergency exit routes only. These emergency exit routes accommodate egress from the mainline during tunnel incidents. The operation of these emergency exits will be controlled by an intelligent transportation system.		
1.7	Additional environmental issues			
1.7.1	Ensure to engage with key stakeholders to get support for project.	A list of scheme advocates has been drafted and consultation with these stakeholders will take place in advance of publication.		
1.7.2	Obtain baseline air quality values through monitoring to validate model.	Site specific air quality monitoring is now being undertaken in the vicinity of the N59 Letteragh Junction, Bushypark School, Castlegar School and Galway Clinic to validate the EPA data.		
1.7.3	Add detail of how consultation fed into the Design in Cpt 4 of EIS.	Detail of the public consultations is included in chapter 1. Chapter 4 discusses alternatives considered and text can be included to reflect public consultation and how it informed the design process.		
1.7.4	How have we addressed sustainable design?	We addressed sustainable design as part of value engineering exercise. This included optimisation of tunnel design to shorten it, and replacement of structures with grassed reinforced slopes.		
2	Traffic			
2.1	Cross Section			
2.1.1	Road type adequate for the possible long-term traffic flows; Med Growth 2039 western end 11,155 AADT	The cross section is a single carriageway which is deemed adequate for future population growth scenarios. The western end ties to the R336 Coast Road, which serves southern Connemara. Population increases or opportunities for major employment creation in this area are restricted due to the extensive environmental designations. The Galway County Development also reflects this restriction as contains objectives to preserve these environmental areas.		
2.1.2	Incremental analysis 2034 design year Table 7.5.1. AADT 10,700 Western end single cway	As above, population projections and employment projects in the traffic model are realistic and therefore, a single carriageway is adequate provision.		
2.1.3	Traffic figures assessed for impacts of full implementation of the GTS with the public transport measures in place?	A table is provided in the Phase 3 Traffic Modelling Report, Table 7.3.7, which sets out the traffic figures for the scenario if the full provisions of GTS are implemented in combination with the N6 GCRR.		
2.2	Junctions			
2.2.1	Frequency of junctions appropriate	A full review of the junction justification has been completed. This has resulted in the removal of three junctions over the length of the scheme, two staggered junctions on the single carriageway and the west-facing ramps to/from the Parkmore Link Road.		

N6 Galway City Ring Road				
	Phase 3 Peer Review	**Date: 24 November 2016**	**Date: 12 May 2017**	**Date: 6 October 2017**
Ref.	**Issues raised**	**Design Team Response**	**Design Team Additional Response**	**Design Team Additional Response**
2.2.2	Forai Maola & Troscaigh Jns 1100 & 1500.	These two stagger junctions have been removed. The design has been changed to provide a single overbridge in between both roads.		
2.2.2.1	*Stagger junction appropriate. Remove or Combine*	These junctions have been removed.		
2.2.3	Cappagh Rd 4450	Cappagh Road Junction is retained as a signalised junction at the current location. This junction serves to connect the ring road with the Western Distributor Road. Traffic analysis shows a transfer from the N6 GCRR to the Western Distributor Road at this junction. This is the function of the N6 GCRR to distribute traffic from the national road to the distributor road. Without this link, over 3,600 vehicles per day revert to the R336 through Bearna Village. Therefore, this is retained.		
2.2.3.1	Junction Type TS vs RO	Cappagh Road Junction is a signalised junction for two reasons. Firstly, traffic signals can be designed to give priority to the main traffic movement which is through traffic. Secondly, this is in an urban environment with vulnerable road users crossing this junction and traffic signals better serves their needs.		
2.2.4	N59 JN 7500	The capacity of the N59 junction has been examined. The proposed junction layout operates efficiently and within capacity. A signalised junction prevents total control by the dominant traffic movement during peak hour traffic flows.		
2.2.4.1	*DOS in 2039 at southern jn 79.6% AM Peak? Should this be PM?*	LINSIG modelling of the southern junction shows a maximum Degree of Saturation (DOS) of 86% in the AM peak period (busiest at this junction), based upon a cycle time of 65 seconds. This is within the acceptable capacity threshold for a signalised junction. The level of queuing is predicted to clear in a single cycle and will not impact on any adjoining junctions.		
2.2.5	N84 Headford Rd 12000	The capacity of the N84 junction has been examined. The proposed junction layout operates efficiently and within capacity. A signalised junction prevents total control by the dominant traffic movement during peak hour traffic flows.		
2.2.5.1	*DOS in 2039 northern AM peak 89.6% @110 secs. 29.1 pcu on SB approach*	LINSIG modelling of the northern Junction indicates that the junction would have a maximum Degree of Saturation (DOS) of 86% in the AM peak period (busiest at this junction), based upon a cycle time of 65 seconds. This is within the acceptable capacity threshold for a signalised junction. The mean maximum queues (MMQ) in the AM peak are predicted to be in the order 14.2 pcu on the southbound approach and 10.1 on the northbound approach, while the eastbound approach (off ramp) is predicted to have queue lengths of 2.2 pcu. The level of queuing is predicted to clear in a single cycle and will not impact on any adjoining junctions.		
2.2.5.2	*DOS in 2039 southern PM peak 84.5% @110 secs.14.8pcu on WB off ramp*	LINSIG modelling of the southern junction indicates that the junction would have a maximum Degree of Saturation (DOS) of 85.5% in the PM peak period (busiest at this junction), based upon a cycle time of 65 seconds. This is within the acceptable capacity threshold for a signalised junction. The mean maximum queues (MMQ) at this junction in the PM peak are predicted to be in the order of 2.6 pcu on the southbound approach and 17.2 on the northbound approach. The westbound approach (off ramp) has queues of 8.8 pcu. The level of queuing is predicted to clear in a single cycle and will not impact on any adjoining junctions.		
2.2.5.3	*Proximity to Lackagh Tunnel (Signage, Merge/Diverge conflicts and Over-height diversions)*	The height clearance of Lackagh Tunnel and the Galway Racecourse tunnel have been increased to accord with TII DMRB. Consequently, the tunnels can accommodate average maximum vehicle heights (5.03m) and the exits now serve as emergency exit routes only. These emergency exit routes accommodate egress from the mainline during tunnel incidents. The operation of these emergency exits will be controlled by an intelligent transportation system. The eastbound diverge at the N84 junction has been shortened. This moves the diverge further from the tunnel portal. A departure for this amendment has been received from TII.		
2.2.5.4	*Proximity to N17/Parkmore Junction. N84 WB Merge within 1.0km of N17 EB Diverge*	A minimum weaving length has been provided in accordance with Figure 4/14 of TII DN-GEO-03035. Weaving lengths were increased following the refinement of the N17 grade separated junction.		
2.2.6	**N17/Parkmore junction 14300**			
2.2.6.1	*Form of Double EB Diverge (13580/13850) & Double WB Merge (13350/13550) with N84 WB diverge at 12550 within 1.0km.*	The layout of the N17 junction has been examined and refined. This refinement resulted in the simplification of the junction. This resulted in the removal of the westbound merge from the Parkmore link road to the N6 GCRR and the removal of the eastbound diverge therefrom to the Parkmore link road.	Updated series of plan drawings to reflect final scheme has been added as Appendix C.	Updated series of plan drawings to reflect final scheme has been added as Appendix C.
2.2.6.2	*Queuing and DOS in 2039???*	The capacity of the refined N17 junction has been examined. The proposed junction layout operates efficiently and within capacity. A signalised junction prevents total control by the dominant traffic movement during peak hour traffic flows. LINSIG Modelling indicates that queuing will clear in one cycle and does not impact on the performance of neighbouring junctions.		
2.2.6.3	*Loop radii for WB exit ramp*	Loops have been redesigned to increase radii following removal of the ramps to/from Parkmore Link Road.		
2.2.7	**Coolagh Jn 16400**			
2.2.7.1	*Control type vs Free flow (DOS in 2039 at signals)*	Free flow on N6 GCRR through movement through Coolagh Junction. Long ramps are provided to connect N6 GCRR to existing network at the Coolagh Junction. Some of these ramps are two lanes and all have the ability to become two lanes.		
2.2.7.2	*Assessment of capacity of all Aux diverges to ensure no queuing on mainline*	LINSIG Modelling indicates that queuing will not impact on the performance of neighbouring junctions and will not back up on the mainline. This analysis has been added to the junction strategy report.		
2.2.7.3	*Consideration taken of adjacent land use policies (impacts of fully developed STZ)*	Ardaun will not be serviced from N6 GCRR or from existing N6 between Coolagh Junction and Briarhill or Martin Roundabout. This position has always been the case for Ardaun. Connection between the two land parcels in Ardaun is provided via an overbridge connection over the N6 GCRR, and the cut on N6 GCRR facilitates this.		
2.3	**Additional Traffic Issues**			
2.3.1	Stress test the network - is there adequate resilience in the scheme?	Traffic modellers prepared a further forecast for 30 years post construction completion.		
2.3.2	Evaluate supressed traffic - address this issue	This will be addressed, and Systra to prepare a technical note on this matter. This has also been raised by Galway County Council.		
3	**Design**			
3.1	**Earthworks**			
3.1.1	Balance-alignment optimised	Balanced and all material allocated for reuse, or beneficial land use, or off-site.		
3.1.2	Soft ground identified and fully considered	An extensive ground investigation has been completed. This investigation has highlighted areas of soft ground.		
3.1.3	Contaminated land, potential impact been fully considered	An extensive desktop investigation which was supplemented with a ground investigation has been completed. This investigation has highlighted contaminated lands encountered. The disposal and treatment of contaminated lands will be outlined in the environmental impact statement.		
3.1.4	Disposal of excess material, including peat	The earthworks balance is being updated to reflect the design changes with the removal of the three junctions noted above. Areas have been identified within the fenceline to facilitate this excess material for beneficial re-use and facilities for off-site disposal are also being investigated for inclusion in chapter 7 of the EIS.		
3.1.4.1	*U2 2400 cum in PDR?*	This volume will be revised with the new earthworks balance.		
3.2	**Departures**			
3.2.1	*Status of ALL necessary departures*	All mainline departures have been issued to TII. Five departures were refused, and these are being addressed. The most significant refusals were the height in the tunnel. The vertical alignment has been adjusted to give 5.03m clearance. The side road departures have been submitted to TII also.		

N6 Galway City Ring Road				
	Phase 3 Peer Review	**Date: 24 November 2016**	**Date: 12 May 2017**	**Date: 6 October 2017**
Ref.	**Issues raised**	**Design Team Response**	**Design Team Additional Response**	**Design Team Additional Response**
3.3	**Cost Estimate**			
3.3.1	Central point estimates from TII Rates?	The use of central point estimates was agreed with TII Cost Estimation department.		
3.3.2	Tunnel costs appear very keen	These rates have been checked again and compared against industry standards. The total cost of the tunnels is actually the combination of many separate items within the cost estimate. For clarity, these total costs are presented as follows: Galway Racecourse Tunnel (240m) Cost = €25M Lackagh Tunnel (230m) Cost = €20M.		
3.3.3	Archaeology TSB €1.5m?	This figure has been derived in conjunction with TII Project Archaeologist. On west of River Corrib, rock is close to surface. Rock is granite and minimal archaeology. On east of River Corrib, there is very limited archaeological constraints.		
3.4	**Drainage**			
3.4.1	Alignment designed for max flood levels	The road has been designed to be a certain height above the recorded water level of the 2015/2016 flooding event. At Lackagh Quarry a berm has been included in the design as an additional safeguarding against a flooding event, which brings the protection to the 2m above the recorded water level of the 2015/2016 flooding event.		
3.4.1.1	*Lackagh tunnel ground water level*	Groundwater levels have been monitored along the alignment of the Lackagh tunnel including east and west approaches, which includes summer and winter water levels. This data (to date) shows that during the summer and winter of 2016 and 2017 that the groundwater levels did not reach the construction elevations of the tunnel or its approaches. Groundwater levels during the extreme groundwater levels of 2015/16 reached a peak elevation of 15.7m OD, which identifies that during peak events groundwater would rise above the construction and road level of the tunnel. The tunnel will be constructed to be fully sealed and its approaches will be sealed to 2m above the peak groundwater levels recorded.		
3.4.2	Adequate land take for treatment measures and attenuation ponds. (Rights of Way to outfalls...)	Pollution control measures, attenuation and infiltration ponds have been designed and the footprint including any necessary access for maintenance and outfalls have been included within the fenceline for the scheme.		
3.5	**Landtake**			
3.5.1	43 Residential Properties-all justified	A rigorous evaluation of each property was completed with Lisney and TII Valuations Department. Baseline metrics are agreed and documented to justify acquisition to ensure a fair and equitable evaluation across the full length of the scheme.		
3.5.2	Full Provisions made for impacts on commercial operations-Ballybrit & Clada Water	Compensation for both commercial properties has been evaluated and assessed by Lisney and reviewed by TII Valuations.		
3.5.3	Adequate land for Service diversions, Accom works, sight lines.....	All utility diversions have been designed in consultation with the utility providers. A detailed drawing outlining the agreed works has been issued to them. All accommodation works have been designed in consultation with landowners and also with the assistance of folio details and property ownership information. All accommodation works are designed to ensure comply with design standards for sight lines, visibility splays etc.		
3.5.4	Construction compounds	The location of construction compounds, both full-size compounds and smaller local compounds specific to a particular structure, have been detailed in the EIS and a full assessment of same has been completed by all environmental specialists.		
3.5.5	Details of Safety Fence provision vs forgiving road side.	A full review of the design has been undertaken since Peer Review and Road Safety Audit with a view to flattening slopes to remove safety fence. This has resulted in removal of safety barrier over a significant portion of the single carriageway. However, due to very tight property boundaries, there is limited opportunity to do this along the dual carriageway section.		
3.5.6	Lands necessary for Noise Barrier provision	Adequate lands have been provided for noise barrier provision. On the single carriageway, noise bunds have been incorporated in certain areas also which also serves for landscaping and utilises some excess material.		
3.5.7	Consider providing a maintenance depot in the site compound thereafter. TII have current standards for this.	The full extents of Lackagh Quarry is included within the landtake for the scheme. A maintenance depot is not being included as part of the planning application for the scheme but the land is there if required at a later date. The quarry will be used as a site compound during construction. it will site the tunnel maintenance depot after.		
3.6	**Structures**			
3.6.1	BD02 Process Status	Options reports have been completed for all four major structures. BD02 reports have been submitted to TII for all structures with the exception of the Other Structures as this needs to include the noise barriers and gantry signs and all ancillary structures.		
3.6.1.1	*Table 21 in 14.2.3 Corrib crossing. Why 3 criteria chosen?*	As stated in section 14.1 the decision of the steering committee was to develop Options B and C further based on the bridge architect's recommendation for improvement so that a final assessment can be completed on these two options under "Environment including Aesthetic" versus "Cost" as these two options are ranked equal in the other criteria. The initial options assessment included L&V, Architectural Heritage, Ecology and Hydrology. Options B and C are both equal in terms of hydrology. Landscape and visual and architectural heritage are taken into account in the 3 sub headings outlined in Section 14.2.1 and differentiating factor for ecology is the risk of bird collision with Option C over Option B. This is not as significant a constraint as those consider under the 3 sub headings as mitigation measures can be included for potential bird collisions in terms of the spacing and size of the cables with the arch structure.	BD02 has been issued to TII. TII reverted with commentary and Arup are addressing these comments before final issue.	All reports have been issued to TII and all commentary addressed by Arup. This item is closed.
3.6.1.2	*Equal standing on Option B & C on Aesthetic grounds*	Whilst both options will have different aesthetics both options are considered to be satisfactory aesthetically as both options adhere to good design principles of scale, proportion, order, balance and site integration. A preference of one option over the other is very subjective and as both options adhere to good design principles they are considered to be intermediate in their ranking.		
3.6.1.3	*Retaining walls*	Retaining walls have been reviewed and rationalised where possible. The use of 1:1 slopes instead of retaining walls is also being investigated in the urban environment where aesthetics is an issue in close proximity to dwellings.		
3.6.1.4	*Gantries*			
3.6.1.5	*Noise Barriers (As required and supported by Noise Model)*	Noise barrier locations have been identified and incorporated into the design and landtake checked to ensure adequate space.		
3.6.2	Ballybrit & Lackagh tunnels:			
3.6.2.1	*Optimised for length?*	Both tunnels have been through significant reviews to shorten them. Lackagh Tunnel has reduced from 500m to 240m since EPRC. Ballybrit Tunnel has reduced from 850m to 240m since EPRC.		
3.6.2.2	*Consider providing maintained height of 5.03m vs 4.65m minimum*	The maintained height has been increased to provide 5.03m in both tunnels.		
3.6.2.3	*O&M taken into account*	Yes, O&M has been designed and taken into account in the tunnel costs.		
3.6.2.4	*Restrictions on use of land above Ballybrit tunnel agreed?*	Legal agreement is under control of McCann Fitzgerald and is underway.		
4	**Appraisal**			
4.1	Status of Scheme Business Case	The Business Case has been through audit by TII and the audit is closed out. GCC have submitted three copies of PAG suite of documents to DTTAS.		

Appendix C

N6 GCRR Drawings

C1 Scheme Drawings

A1

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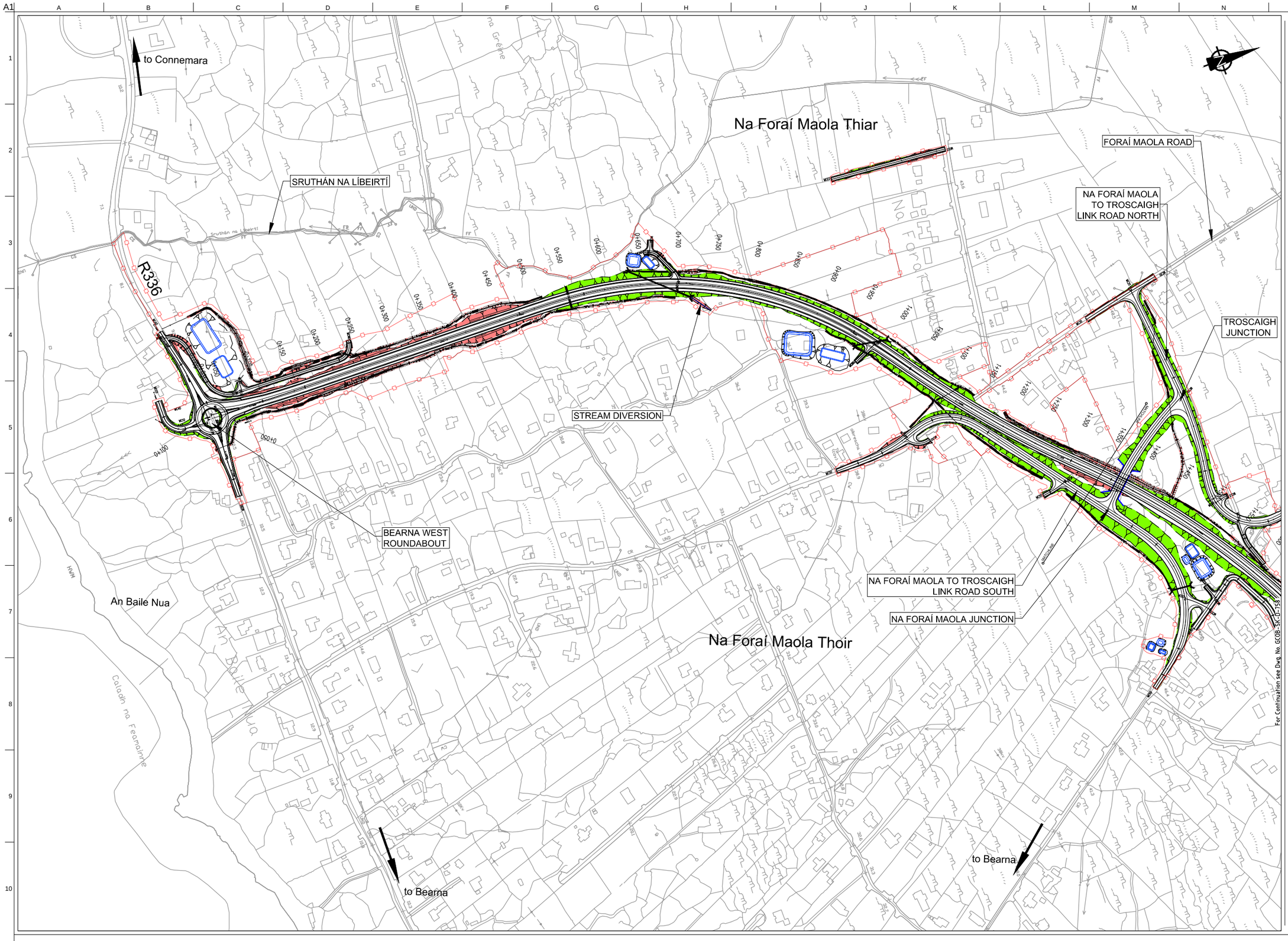

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Galway County Council

N6 Galway City Transport Project

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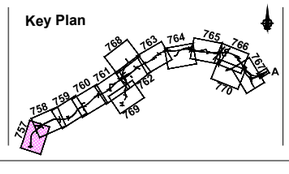
Department Transport, Tourism and Sport

Tionscadail Iompair Éireann
Transport Infrastructure Ireland

Key Plan



Consultant

ARUP

Corporate House
City East Business Park
Ballybrit, Galway, Ireland.

Tel +353 (0)91 460675
www.N6GalwayCity.ie
www.arup.ie

Job Title
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Scale 1:5000 @ A3

Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title
Proposed Road Development Plan Layout
CH.0+000 to CH.1+350
Sheet 1 of 14

Drawing Status
For Information

Job No	Drawing No	Issue
233985	**GCOB-SK-D-757**	**D2**

Do not scale

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A1

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FORAÍ MAOLA ROAD

NA FORAÍ MAOLA TO TROSCAIGH LINK ROAD NORTH

TROSCAIGH JUNCTION

TROSCAIGH ROAD L5387

to Moycullen

An Chloch Scoilte

ANN GIBBONS ROAD L13215

BEARNA TO MOYCULLEN ROAD L1321

TRUSKY STREAM

Troscaigh Thiar

ANN GIBBONS ROAD L13215

BEARNA EAST ROUNDABOUT

TROSCAIGH ROAD L5387

Troscaigh Thoir

BEARNA TO MOYCULLEN ROAD L1321

to Bearna

NA FORAÍ MAOLA TO TROSCAIGH LINK ROAD SOUTH

NA FORAÍ MAOLA JUNCTION

Na Foraí Maola Thoir

to Bearna

For Continuation see Dwg. No. GCOB-SK-D-757

For Continuation see Dwg. No. GCOB-SK-D-759

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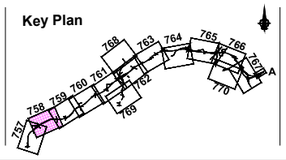
Key Plan



Consultant: ARUP
Corporate House, City East Business Park, Ballybrit, Galway, Ireland.
Tel +353 (0)91 460675
www.N6GalwayCity.ie
www.arup.ie

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D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout
CH.1+350 to CH.2+799
Sheet 2 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-758	D2

Do not scale

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www.N6GalwayCity.ie
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Drawing Title: Proposed Road Development Plan Layout
CH.2+799 to CH.4+300
Sheet 3 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-759	D2

Do not scale

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Cappagh
Ballymoneen
Ballyburke
Binn Bhán
Tor Buí
Fána Búrca
An Cheapach

BEARNA STREAM
CAPPAGH ROAD
STREAM DIVERSION
BALLYMONEEN ROAD JUNCTION
BOLEYBEG BÓITHRÍN
CAPPAGH ROAD JUNCTION
CAPPAGH ROAD
BALLYMONEEN ROAD
WESTERN DISTRIBUTOR ROAD

For Continuation see Dwg. No. GCOB-SK-D-759

For Continuation see Dwg. No. GCOB-SK-D-761

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Drawing Title: Proposed Road Development Plan Layout CH.4+300 to CH.5+800
Sheet 4 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-760	D2

Do not scale

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Ballymoneen

Mincloon

BALLYMONEEN ROAD

RAHOON ROAD

KEERAUN BÓITHRÍN

CLYBAUN ROAD

CLYBAUN ROAD JUNCTION

LETTERAGH ROAD L1323

STREAM DIVERSION

EB DIVERGE

WB MERGE

N59 LINK ROAD SOUTH

For Continuation see Dwg. No. GCOB-SK-D-760

For Continuation see Dwg. No. GCOB-SK-D-761

For Continuation see Dwg. No. GCOB-SK-D-769

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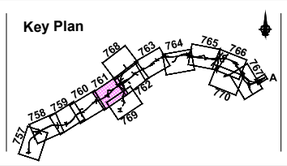
Key Plan



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Corporate House, City East Business Park, Ballybrit, Galway, Ireland.
Tel +353 (0)91 460675
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www.arup.ie

Job Title: N6 Galway City Ring Road

Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout CH.5+800 to CH.7+300
Sheet 5 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-761	D2

Do not scale

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A1

FOR INFORMATION

Legend:

- City Boundary
- Proposed Development Boundary
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- Proposed Road Development (Earthworks Indicative Fill)
- Proposed Road Development (Earthworks Indicative Cut)
- Structure (S)
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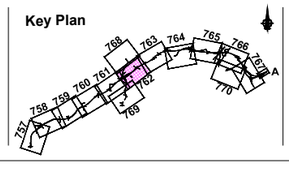

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Job Title: N6 Galway City Ring Road

Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	EMC	EMC

Drawing Title: Proposed Road Development Plan Layout
CH.7+300 to CH.8+900
Sheet 6 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-762	D2

Do not scale

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A1

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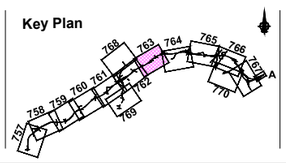

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Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout
CH.8+900 to CH.10+550
Sheet 7 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-763	D2

Do not scale

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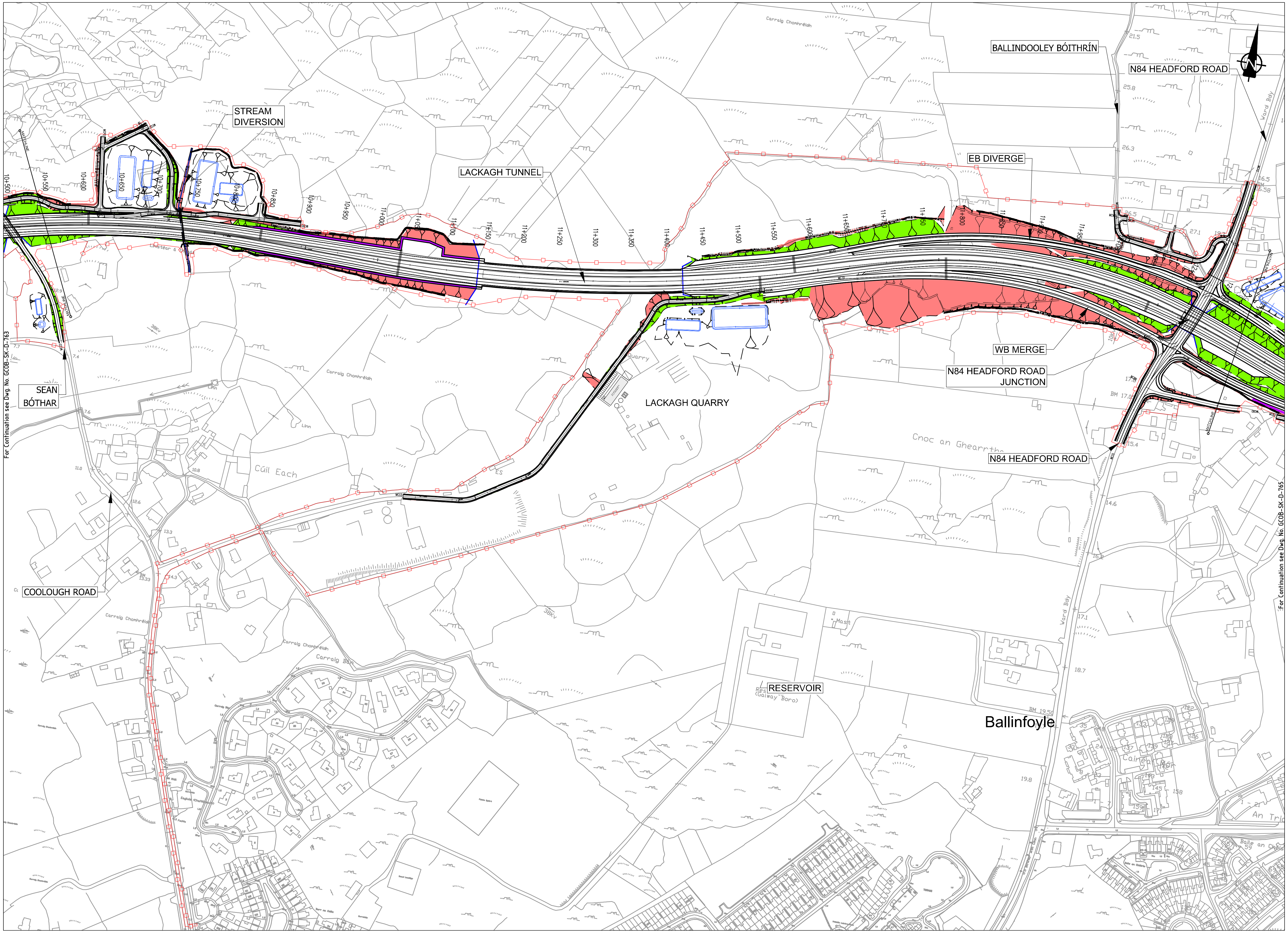
FOR INFORMATION



Legend:

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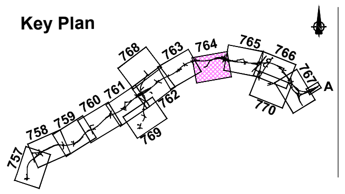
Galway City Transport Project
An Roinn Iompair Turasóireachta agus Spóirt
Department Transport, Tourism and Sport
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Key Plan



Consultant
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www.N6GalwayCity.ie
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Job Title
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Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title
Proposed Road Development Plan Layout
CH.10+550 to CH.12+200
Sheet 8 of 14

Drawing Status
For Information

Job No	Drawing No	Issue
233985	GCOB-SK-D-764	D2

Do not scale
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FOR INFORMATION

Legend:

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Key Plan

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Corporate House, City East Business Park, Ballybrit, Galway, Ireland.
Tel +353 (0)91 460675
www.N6GalwayCity.ie
www.arup.ie

Job Title: N6 Galway City Ring Road

Scale: 1:5000 @ A3

Date: August 2017

D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC
Issue	Date	By	Chkd	Appd

Drawing Title: Proposed Road Development Plan Layout CH.12+200 to CH.13+800
Sheet 9 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-765	D2

Do not scale

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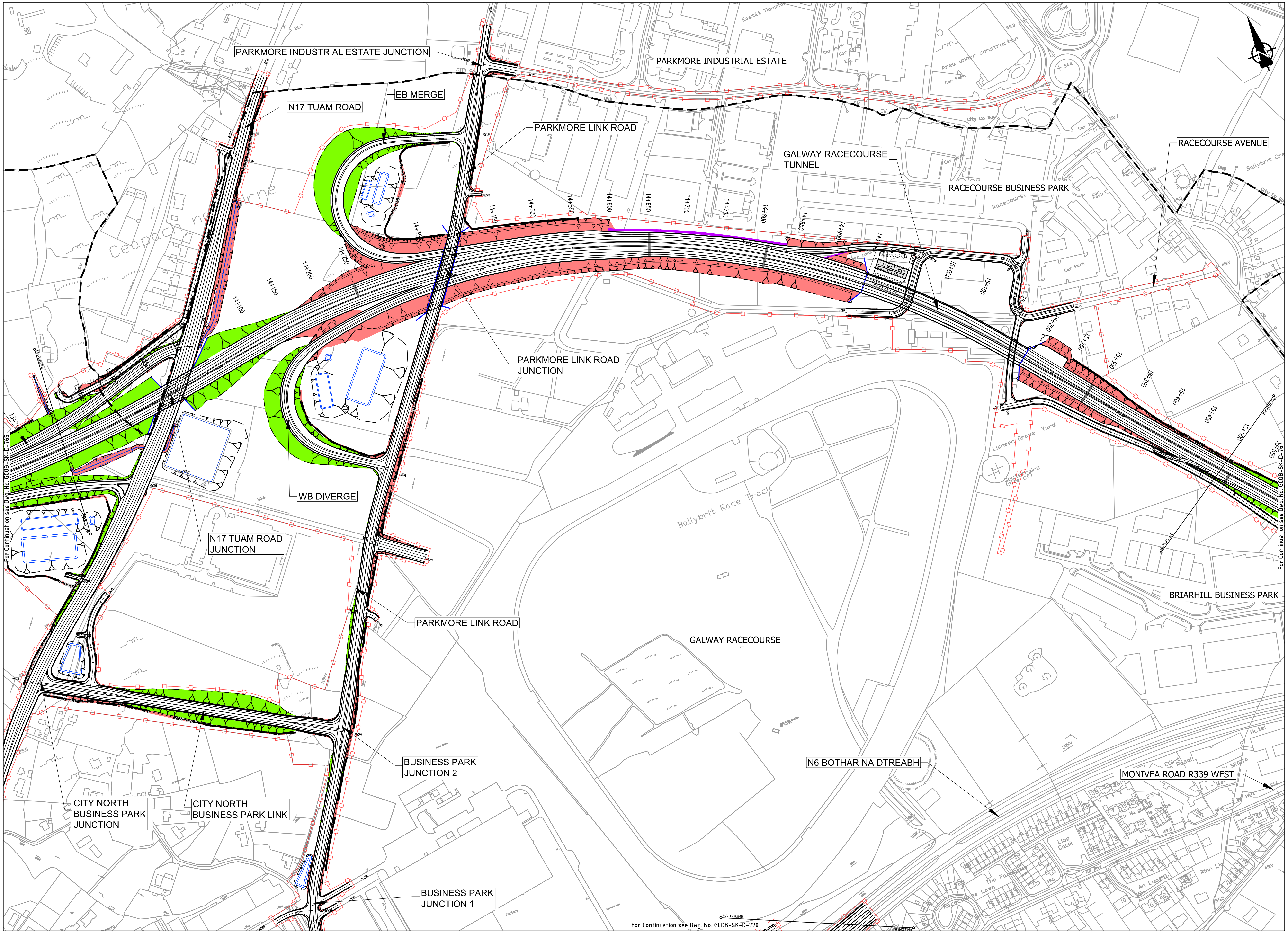

FOR INFORMATION

Legend:

- City Boundary
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Bonneagar Iompair Éireann
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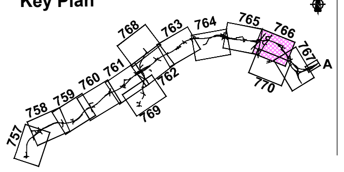
Key Plan



Consultant
ARUP
Corporate House
City East Business Park
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N6 Galway City Ring Road

Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title
Proposed Road Development Plan Layout
CH.13+800 to CH.15+500
Sheet 10 of 14

Drawing Status
For Information

Job No: **233985**
Drawing No: **GCOB-SK-D-766**
Issue: **D2**

Do not scale
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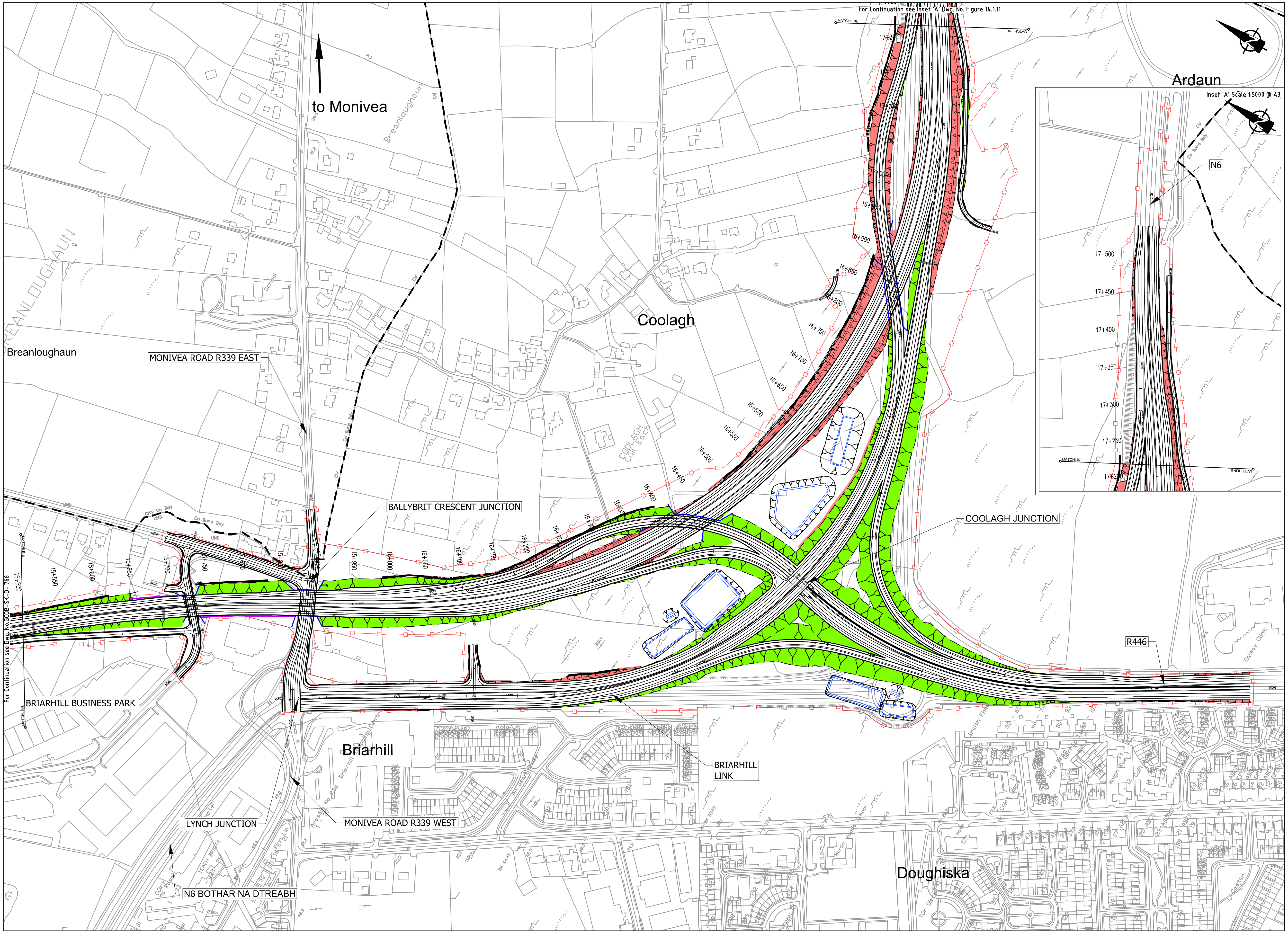
FOR INFORMATION



Legend:

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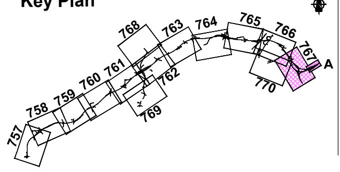

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Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout CH.15+500 to CH.17+540 (End of Scheme) Sheet 11 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-767	D2

Do not scale

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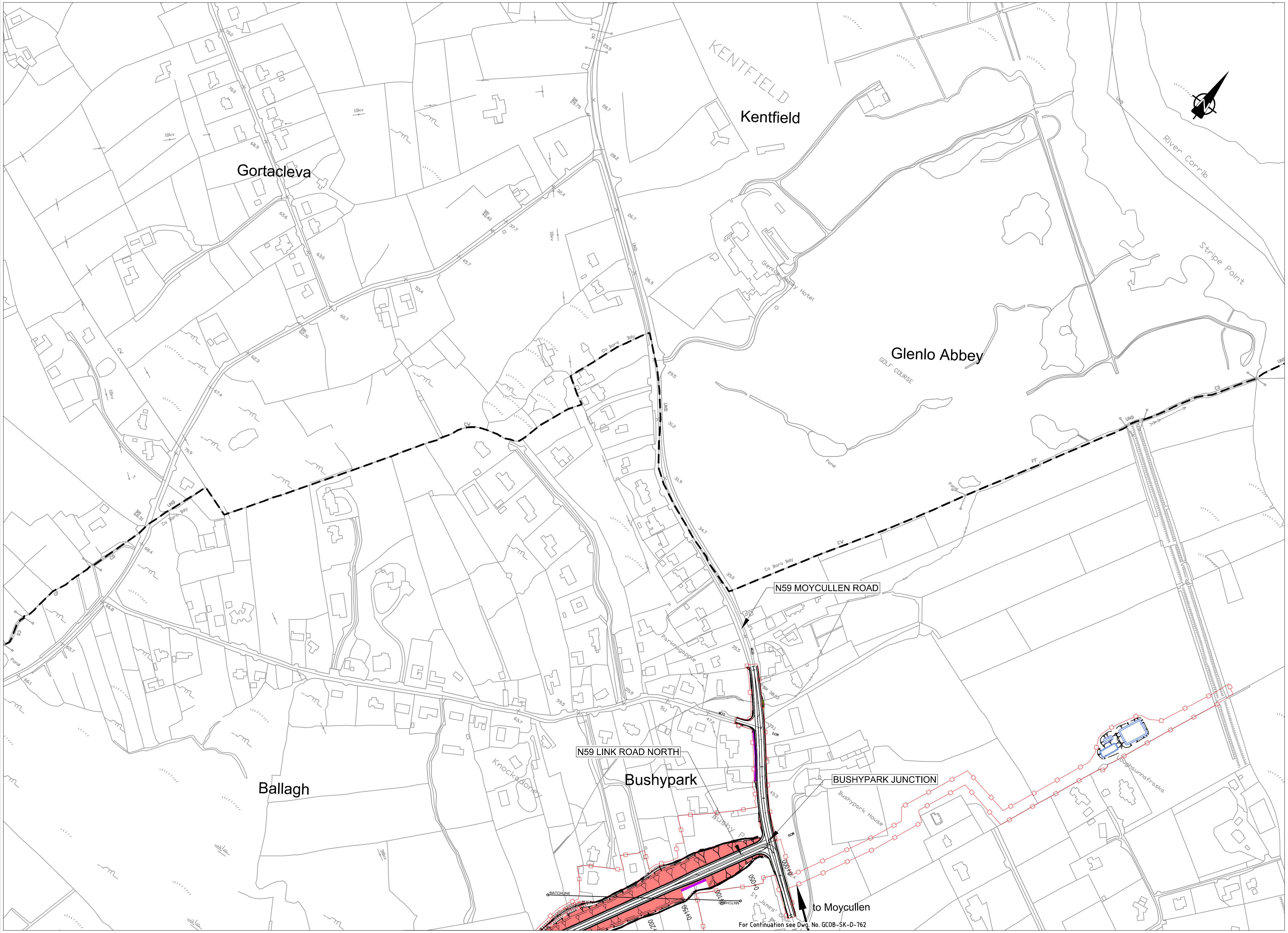

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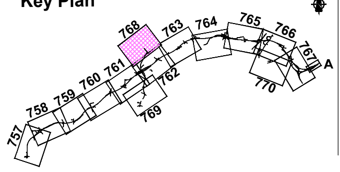

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Scale: 1:5000 @ A3
Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title
Proposed Road Development Plan Layout
N59 Link Road North
Sheet 12 of 14

Drawing Status
For Information

Job No	Drawing No	Issue
233985	GCOB-SK-D-768	D2

Do not scale

J:\233000\233985-00\4. Internal\4-02 Drawings\4-02-13 Sketches\13.3 Design Rep\GCOB-SK-D-757 to 770 _PropoRoadDevelopPlanLayout_D2.dwg

A1

For Continuation see Dwg. No. GCOB-SK-D-761

For Continuation see Dwg. No. GCOB-SK-D-762

LETTERAGH ROAD JUNCTION

N59 LINK ROAD SOUTH

LETTERAGH ROAD L1323

BÓTHAR DIARMUIDA JUNCTION

BÓTHAR STIOFÁIN JUNCTION

BÓTHAR DIARMUIDA

RAHOON ROAD JUNCTION

GORT NA BRÓ LINK ROAD

BÓTHAR STIOFÁIN ROUNDABOUT

GORT NA BRÓ ROUNDABOUT

RAHOON ROAD

GORT NA BRÓ ROAD

GATEWAY RETAIL PARK JUNCTION

GORT SIAR

Letteragh

Rahoon

FOR INFORMATION

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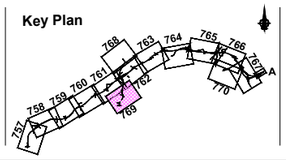

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Job Title: N6 Galway City Ring Road

Scale: 1:5000 @ A3

Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout
N59 Link Road South, Gateway Retail Park Junction
Sheet 13 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	**GCOB-SK-D-769**	**D2**

Do not scale

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A1

For Continuation see Dwg. No. GCOB-SK-D-766

For Continuation see Dwg. No. GCOB-SK-D-765

For Continuation see Dwg. No. GCOB-SK-D-767

BUSINESS PARK JUNCTION 2

CITY NORTH BUSINESS PARK LINK

BUSINESS PARK JUNCTION 1

BALLYBRIT BUSINESS PARK

GALWAY RACECOURSE

N6 BOTHAR NA DTREABH

MONIVEA ROAD R339 WEST

Ballybrit

CITY EAST BUSINESS PARK JUNCTION

CITY EAST BUSINESS PARK

Briarhill

MORRIS JUNCTION

FOR INFORMATION

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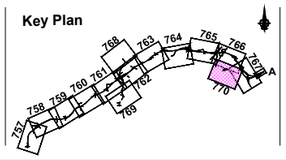

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Job Title: N6 Galway City Ring Road

Scale: 1:5000 @ A3

Date: August 2017

Issue	Date	By	Chkd	Appd
D2	22/08/2017	KJ	MH	EMC
D1	14/11/2016	KJ	MH	EMC

Drawing Title: Proposed Road Development Plan Layout
City East Business Park Junction
Sheet 14 of 14

Drawing Status: **For Information**

Job No	Drawing No	Issue
233985	GCOB-SK-D-770	D2

Do not scale

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