



A5 Western Transport Corridor (A5 WTC)

Appendix TNI – Theme Report: Online Dual Carriageway Assessment

29 July 2016

Appendix TNI – Theme Report:

Online Dual Carriageway Assessment

Background

1. As determined during the Stage 1 and Stage 2 scheme assessments for the A5 WTC scheme (see TransportNI Theme Paper: Dual Carriageway Alternatives), an online dual carriageway upgrade was not considered appropriate, for a number of reasons including the following:-
 - the number of settlements and accesses along the existing route;
 - the sub-standard nature of the existing A5;
 - the number and nature of existing utilities (water, electricity and telecommunication services, etc) along the existing route;
 - safety during construction given the requirement to maintain traffic flow along the existing A5 corridor; and
 - the consequent disruption and delays to traffic that would accrue during construction.
2. Notwithstanding this, TransportNI asked Mouchel to prepare a detailed **On-line Assessment Report** exploring the advantages / disadvantages of the on-line option in more detail.
3. In carrying out this on-line assessment it was recognised from the outset that it is not appropriate to construct a dual carriageway through the urban areas due to the significant impacts associated with loss of property and severance. The bypasses proposed in the Proposed Scheme (off-line) for New Buildings, Magheramason, Ballymagorry, Strabane, Sion Mills, Newtown Stewart, Omagh, Ballygawley and Aghnacloy are therefore also incorporated into the on-line assessment.

Identification of Standard of Dual Category and Associated Implications

4. Consistent with the off-line option, the online dual carriageway would predominantly be a high quality dual carriageway. There would be no direct private accesses or gaps in the central reserve and major road junctions would be kept to a minimum while providing connectivity to towns and communities en route and the existing road network.
5. The existing A5 has:-
 - **200 side road junctions**; and
 - **over 420 domestic/commercial accesses**, excluding those in the various urban settlements, adjacent to the route.
6. **Collector Roads** are, therefore, required to collect the traffic from properties and side roads that could no longer access the A5 if dualled.

Key Results of Online Dual Carriageway Assessment

7. It is concluded that the greater proportion, **60%**, of an **online A5 dual carriageway would actually be offline** due to the need to avoid adverse significant impacts through settlements and at sensitive locations. This is illustrated in the Table 1 below and on the figures in Annex 1:

Table 1: Use of Existing A5 Road

	Length of Existing A5	Length of Existing A5 Utilised for Online Dual	Percentage of Existing A5 Utilised for Online Dual Carriageway
Section 1	22,950m	5,650m	25%
Section 2	29,400m	11,500m	39%
Section 3	29,650m	15,350m	52%
Total	82,000m	32,500m	40%

8. As illustrated in Table 2 below, on-line dualling of the A5 would require the same length of new dual carriageway, but 70% more local road construction of which **35km would be for an A5 Collector Road** to be constructed to facilitate access to and from properties and side roads that currently access the existing A5.

Table 2: Length of Road Construction

	A5 WTC Proposed Scheme	Online Dual Carriageway Option
Dual Carriageway	85.0km	85.0km
A5 Collector Road	0.0km	35.0km
Side Roads	42.5km	37.5km
Total	127.5km	157.5km

9. A comparative land exercise using pro-rata proportions for the proposed scheme applied to the on-line scheme indicates that **the landtake for both would be of the same order**: 1,155 hectares for the Proposed dual carriageway Scheme compared to 1,207 hectares for the online dual carriageway scheme.
10. As illustrated in Table 3 below, the assessment shows that even though the main development areas are bypassed, there are still significantly more properties along the existing A5 that would be lost by an on-line dualling scheme as opposed to the off-line option, i.e. 178 No. as opposed to 8 No.

Table 3: Impact on Properties

	Residential		Agricultural		Commercial		Community		Totals	
	A5WTC Proposed Scheme	Online Dual Carriageway	A5WTC Proposed Scheme	Online Dual Carriageway	A5WTC Proposed Scheme	Online Dual Carriageway	A5WTC Proposed Scheme	Online Dual Carriageway	A5WTC Proposed Scheme	Online Dual Carriageway
Section 1	3	30	1	15	1	9	0	1	5	55
Section 2	2	36	0	15	0	4	0	1	2	56
Section 3	1	41	0	23	0	3	0	0	1	67
Total	6	107	1	53	1	16	0	2	8	178

11.A comparative cost exercise using pro-rata rates applied to the Proposed Scheme and the online dual carriageway indicates that an online dual carriageway would conservatively cost £68m more to construct than the Proposed Scheme. This does not take account of other factors that would make the rates for an online dual carriageway higher than the Proposed Scheme, i.e.:-

- The additional cost of the additional properties that would be lost or adversely affected by an online dual carriageway;
- additional construction costs due to temporary works for working beside live carriageways;
- temporary diversions of traffic including construction of temporary roads;
- protection/diversion of buried utilities under/beside the existing A5, etc.

In taking the above into account an online dual carriageway in total would cost in excess of £100m more compared to the Proposed Scheme.

12. From the environmental perspective, overall the Proposed Scheme dual carriageway has the least impact as identified in Table 4 below.

Table 4: Identification of Option with least Environmental Impact

	Section 1	Section 2	Section 3
Air Quality	A5WTC	A5WTC	A5WTC
Cultural	A5WTC	A5WTC	A5WTC
Landscape	<i>Online</i>	<i>Online</i>	<i>Online</i>
Visual	<i>Online</i>	<i>Online</i>	<i>Online</i>
Ecology & Nature	Neutral	Neutral	<i>Online</i>
Noise	A5WTC	A5WTC	A5WTC
Effects on Travellers	Neutral	Neutral	Neutral
Community and Private Assets	A5WTC	A5WTC	A5WTC
Water Environment	A5WTC	A5WTC	A5WTC
Geology & Soils	A5WTC	A5WTC	A5WTC

A5WTC = Proposed Scheme; *Online* = Online Dual Carriageway; Neutral – same level of effect/impact for both

Conclusion

13. The detailed On-Line Assessment Report has confirmed the decision reached early in the scheme development process that progression of an on-line dual carriageway improvement of the A5 is not a scheme the Department would wish to take forward, primarily for the following reasons:

- Impact on the environment;
- Impact on cost;
- Difficulties with construction, with greater delays and inconvenience to existing road users; and
- The requirement for the demolition of over 170 properties, of which 107 would be residential.

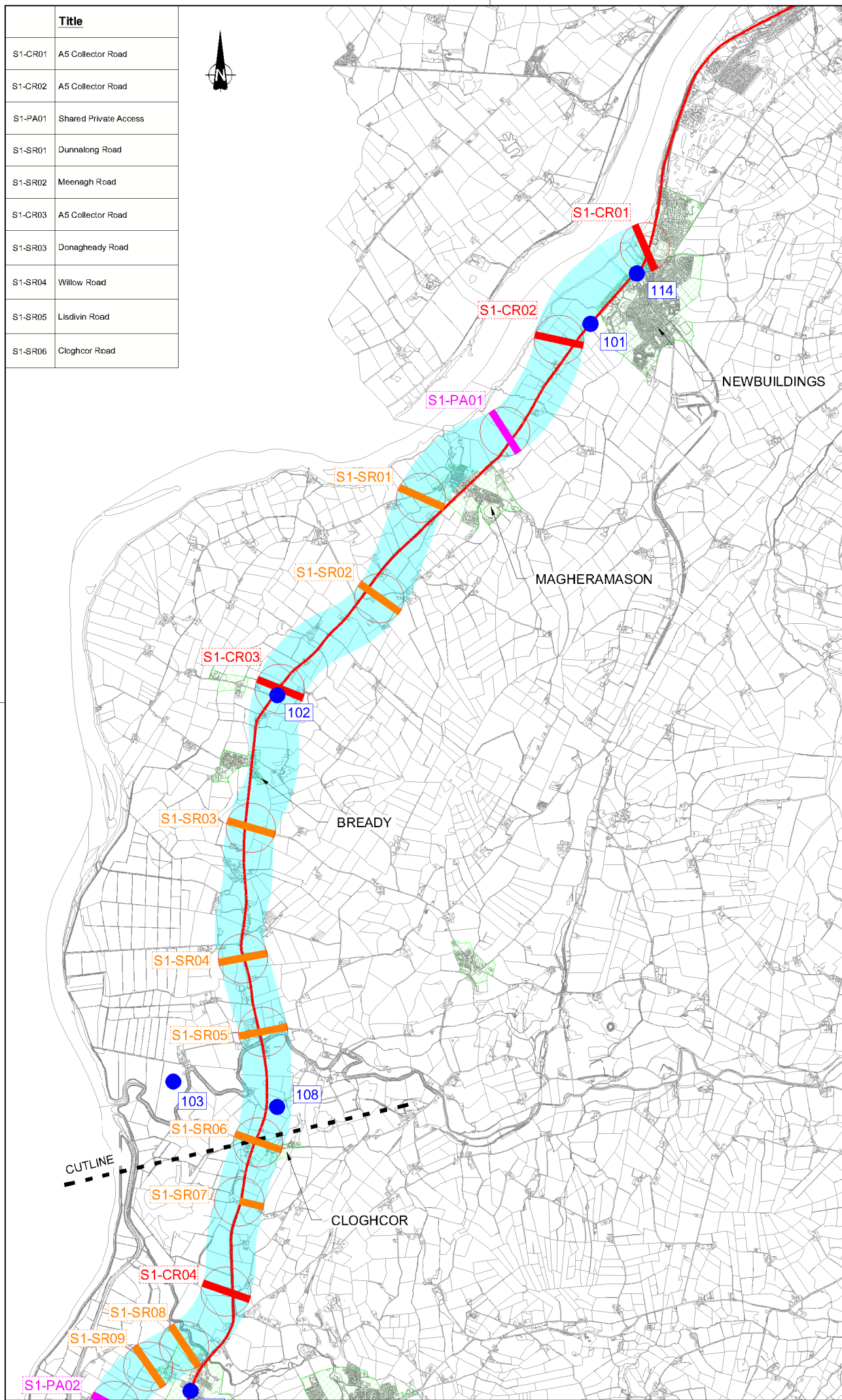
Annex

Figures nos

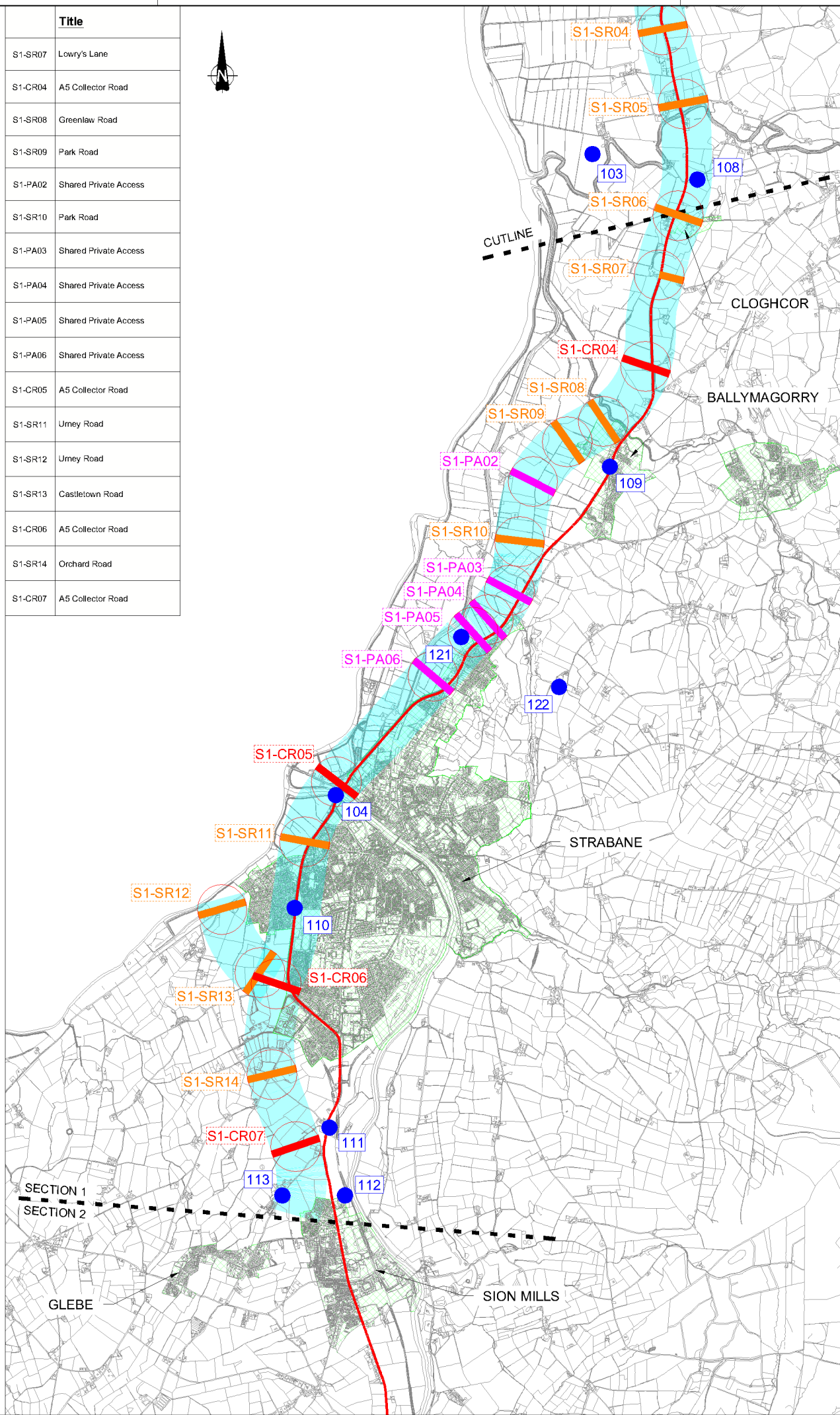
F-1 718736-S1-0800-1440 OA Connectivity & Severance Overview

F-2 718736-S2-0800-1450 OA Connectivity & Severance Overview

F-3 718736-S3-0800-1447 OA Connectivity & Severance Overview



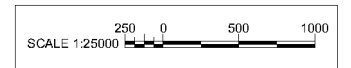
Title	
S1-CR01	A5 Collector Road
S1-CR02	A5 Collector Road
S1-PA01	Shared Private Access
S1-SR01	Dunnalong Road
S1-SR02	Meenagh Road
S1-CR03	A5 Collector Road
S1-SR03	Donaghedy Road
S1-SR04	Willow Road
S1-SR05	Lisdivin Road
S1-SR06	Cloghcor Road



Title	
S1-SR07	Lowry's Lane
S1-CR04	A5 Collector Road
S1-SR08	Greenlaw Road
S1-SR09	Park Road
S1-PA02	Shared Private Access
S1-SR10	Park Road
S1-PA03	Shared Private Access
S1-PA04	Shared Private Access
S1-PA05	Shared Private Access
S1-PA06	Shared Private Access
S1-CR05	A5 Collector Road
S1-SR11	Urney Road
S1-SR12	Urney Road
S1-SR13	Castletown Road
S1-CR06	A5 Collector Road
S1-SR14	Orchard Road
S1-CR07	A5 Collector Road



- NOTES:
- DRAWING SHOWS INDICATIVE CROSSING LOCATIONS ALONG ON-LINE ASSESSMENT CORRIDOR.
 - INDICATIVE CROSSING LOCATIONS MAY BE RELOCATED OR REDUCED IN LENGTH DURING SPECIMEN DESIGN REVIEW.
 - DRAWING DOES NOT INCLUDE FIELD ACCESS LOCATIONS AND JUNCTION STRATEGY LOCATIONS.
- LEGEND
- EXISTING A5
 - ON-LINE ASSESSMENT CORRIDOR
 - DEVELOPMENT LIMITS
 - NODE LOCATION
 - INDICATIVE SIDE ROAD CROSSING POINT
 - INDICATIVE A5 COLLECTOR ROAD CROSSING POINT
 - INDICATIVE PRIVATE ACCESS CROSSING POINT
 - INDICATIVE PUBLIC NMU CROSSING POINT



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Ver	Amendment	By	Checked	Approved	Date						
Drawn	DM	Date	19/01/15	Checked	MH	Date	12/02/16	Approved	JC	Date	16/02/16

transportni

Project: **A5 WTC**
Western Transport Corridor

Drawing Title: SECTION 1 - ONLINE ASSESSMENT CONNECTIVITY & SEVERANCE OVERVIEW SHEET 1 OF 1

mouchel
 building great relationships

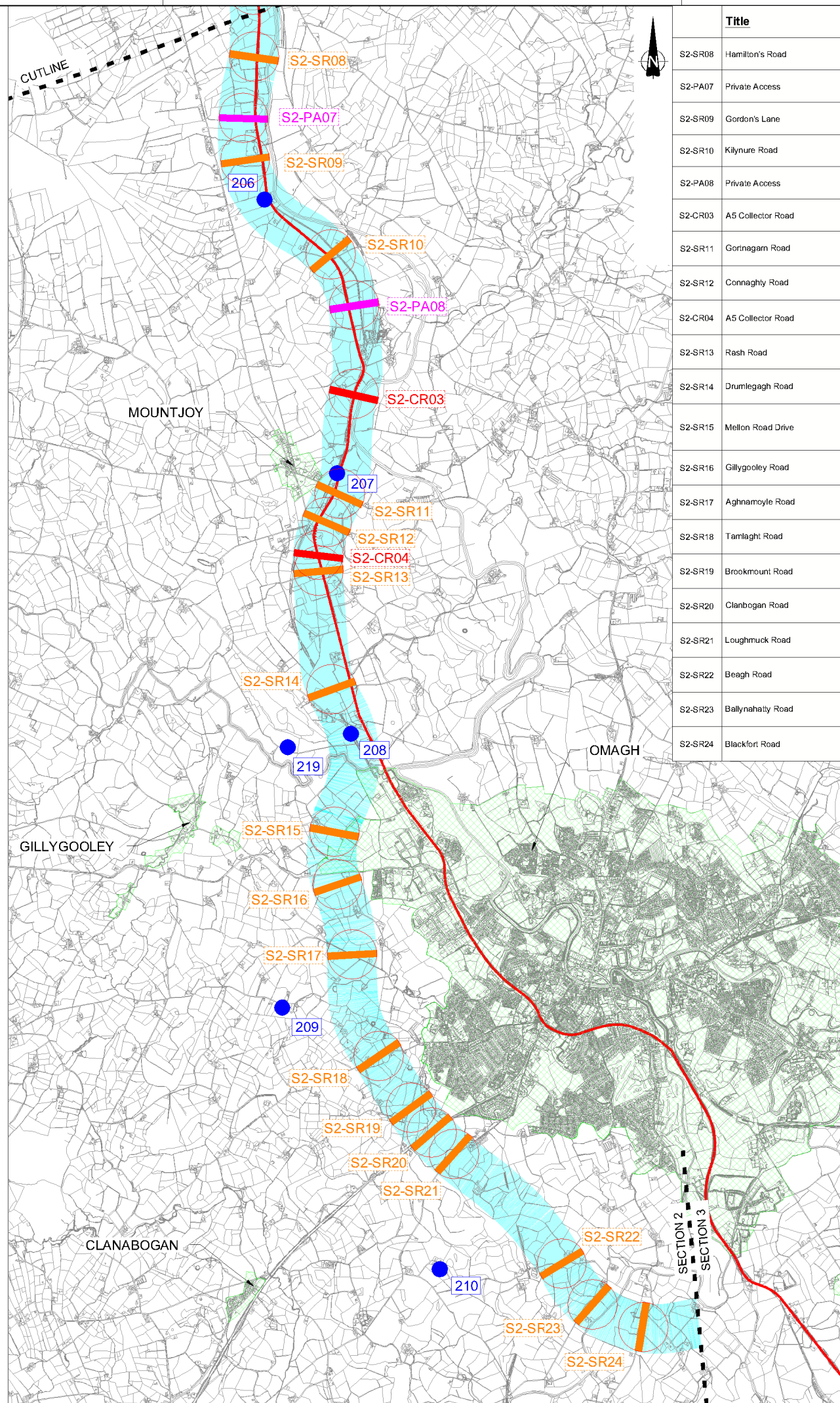
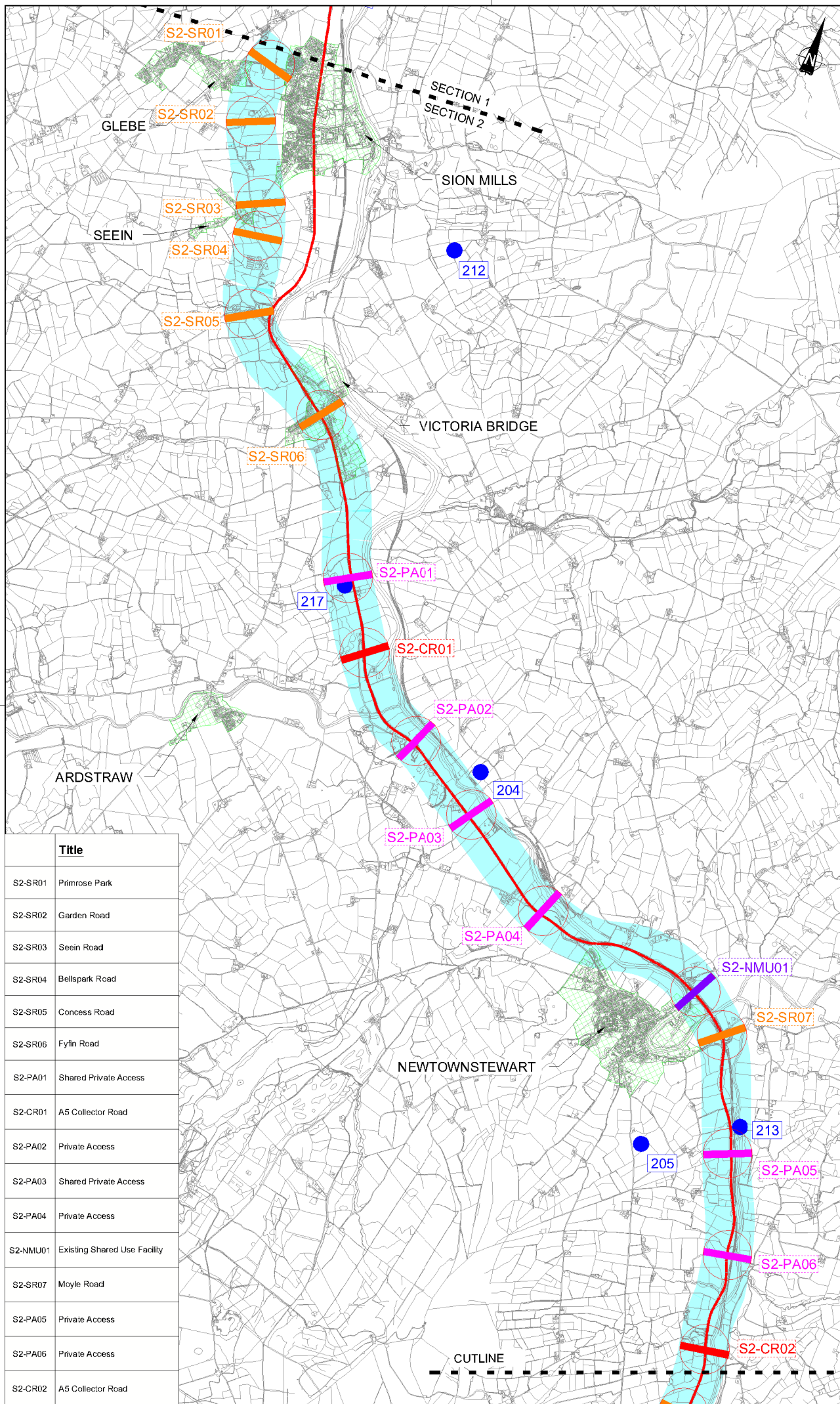
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Purpose of Issue: DRAFT

Drawing No: 718736-S1-0800-1440

Version: A



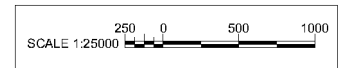
Title	
S2-SR01	Primrose Park
S2-SR02	Garden Road
S2-SR03	Seein Road
S2-SR04	Bellspark Road
S2-SR05	Concess Road
S2-SR06	Fylin Road
S2-PA01	Shared Private Access
S2-CR01	A5 Collector Road
S2-PA02	Private Access
S2-PA03	Shared Private Access
S2-PA04	Private Access
S2-NMU01	Existing Shared Use Facility
S2-SR07	Moyle Road
S2-PA05	Private Access
S2-PA06	Private Access
S2-CR02	A5 Collector Road

Title	Description
S2-SR08	Hamilton's Road
S2-PA07	Private Access
S2-SR09	Gordon's Lane
S2-SR10	Kilynure Road
S2-PA08	Private Access
S2-CR03	A5 Collector Road
S2-SR11	Gortnagarn Road
S2-SR12	Connaghty Road
S2-CR04	A5 Collector Road
S2-SR13	Rash Road
S2-SR14	Drumlegagh Road
S2-SR15	Mellon Road Drive
S2-SR16	Gillygooley Road
S2-SR17	Aghnamoyle Road
S2-SR18	Tamlaght Road
S2-SR19	Brookmount Road
S2-SR20	Clanbogán Road
S2-SR21	Loughmuck Road
S2-SR22	Beagh Road
S2-SR23	Ballynahaty Road
S2-SR24	Blackfort Road

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LEGEND

	EXISTING A5
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	NODE LOCATION
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Project: **A5 WTC**
Western Transport Corridor

Drawing Title: SECTION 2 - ONLINE ASSESSMENT CONNECTIVITY & SEVERANCE OVERVIEW SHEET 1 OF 1

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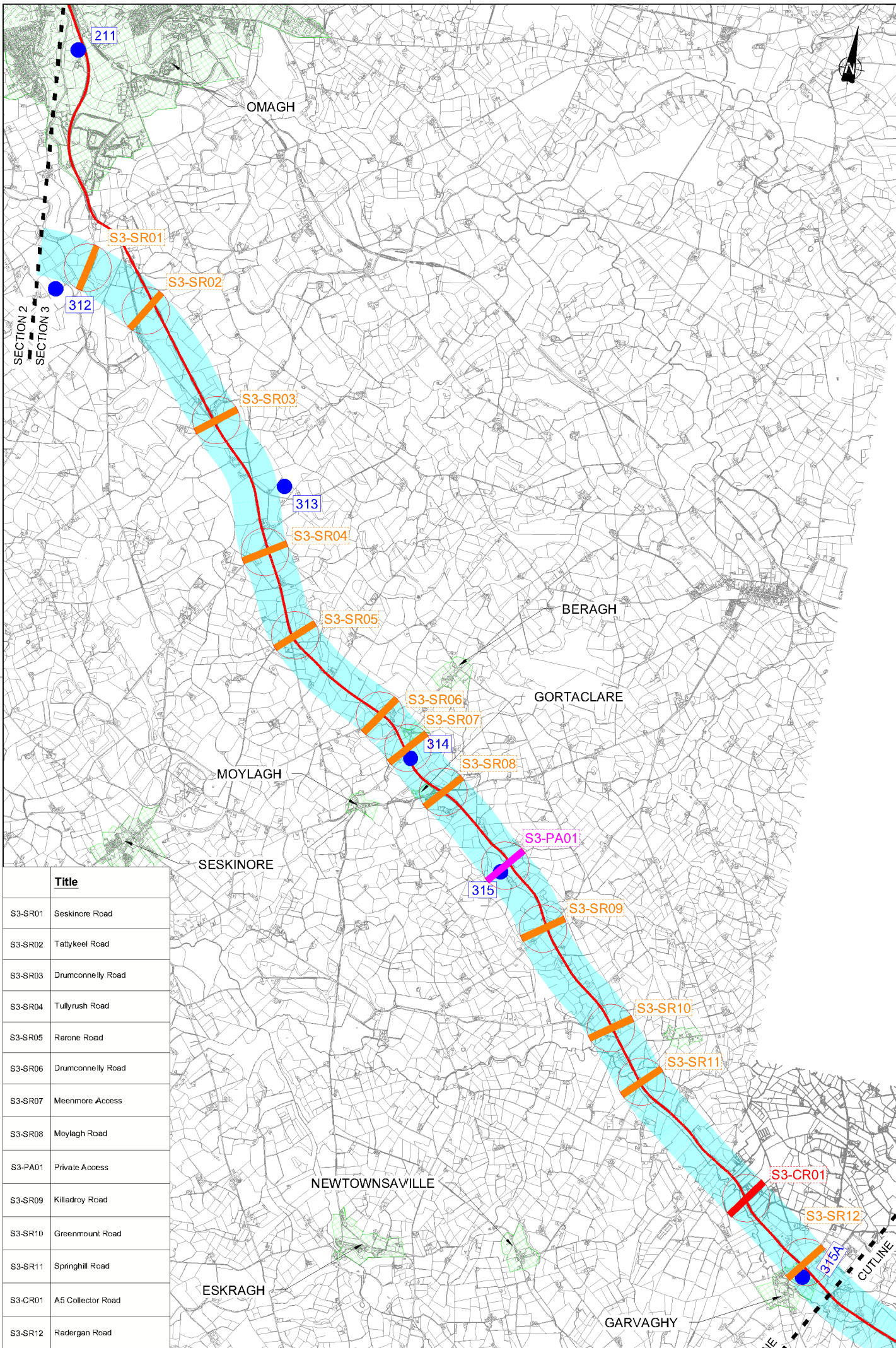
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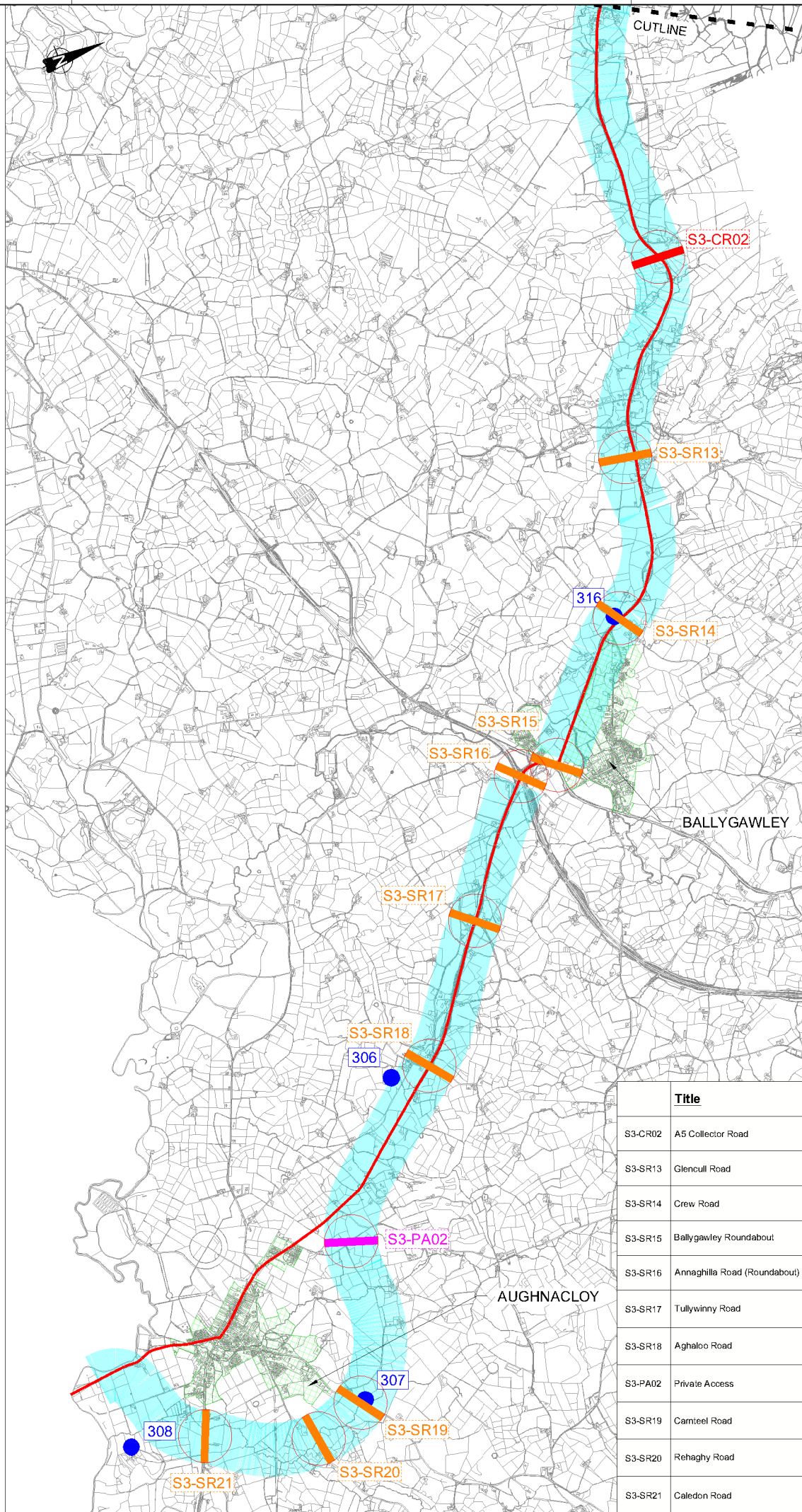
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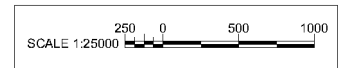
Title	Description
S3-SR01	Seskinore Road
S3-SR02	Tallykeel Road
S3-SR03	Drumconnelly Road
S3-SR04	Tullyrush Road
S3-SR05	Rarone Road
S3-SR06	Drumconnelly Road
S3-SR07	Meenmore Access
S3-SR08	Moylagh Road
S3-PA01	Private Access
S3-SR09	Killadroy Road
S3-SR10	Greenmount Road
S3-SR11	Springhill Road
S3-CR01	A5 Collector Road
S3-SR12	Radergan Road



Title	Description
S3-CR02	A5 Collector Road
S3-SR13	Glencull Road
S3-SR14	Crew Road
S3-SR15	Ballygawley Roundabout
S3-SR16	Annaghilla Road (Roundabout)
S3-SR17	Tullywinny Road
S3-SR18	Aghaloo Road
S3-PA02	Private Access
S3-SR19	Camteel Road
S3-SR20	Rehaghy Road
S3-SR21	Caledon Road

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DM	19/01/16	MH	12/02/16	JC	16/02/16

Client: **transportni**

Project: **A5 WTC**
Western Transport Corridor

Drawing Title: **SECTION 3 - ONLINE ASSESSMENT CONNECTIVITY & SEVERANCE OVERVIEW SHEET 1 OF 1**

Logo: **mouchel**
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