

2023-21006-02

**South East Greenway Linkage
Design - Glenmore**

ROAD SAFETY AUDIT STAGE 1

July 2023

**Ray Butler
Consultant
087 261 6252
raybut51@gmail.com**

1. INTRODUCTION

- 1.1 This report describes a Stage 1 Road Safety Audit carried out at Slieverue and Glenmore on the South East Greenway Linkage. The audit was carried out on 27 January 2023.
- 1.2 The audit team members were as follows:
- Ray Butler, BE CEng MIEI
Auditor Number RB210538
 - Richard Frisby, BSc AEng MIEI.
Auditor Number RF13337391
- 1.3 Both audit team members visited the site on the 24th of January 2023. The audit comprised an examination of the drawings relating to the scheme supplied by Roadplan Consulting and an examination of the site.
- 1.4 This Stage 1 Audit has been carried out in accordance with the relevant sections of TII GE-STY-01024. The team has examined only those issues within the design relating to the road safety implications of the scheme and has therefore not examined or verified the compliance of the design to any other criteria.
- 1.5 The problems described in this report are considered by the audit team to require action to improve the safety of the scheme and minimise collision occurrence.
- 1.6 Appendix A describes the audited drawings.

2. STAGE 1 AUDIT

2.1 Problem

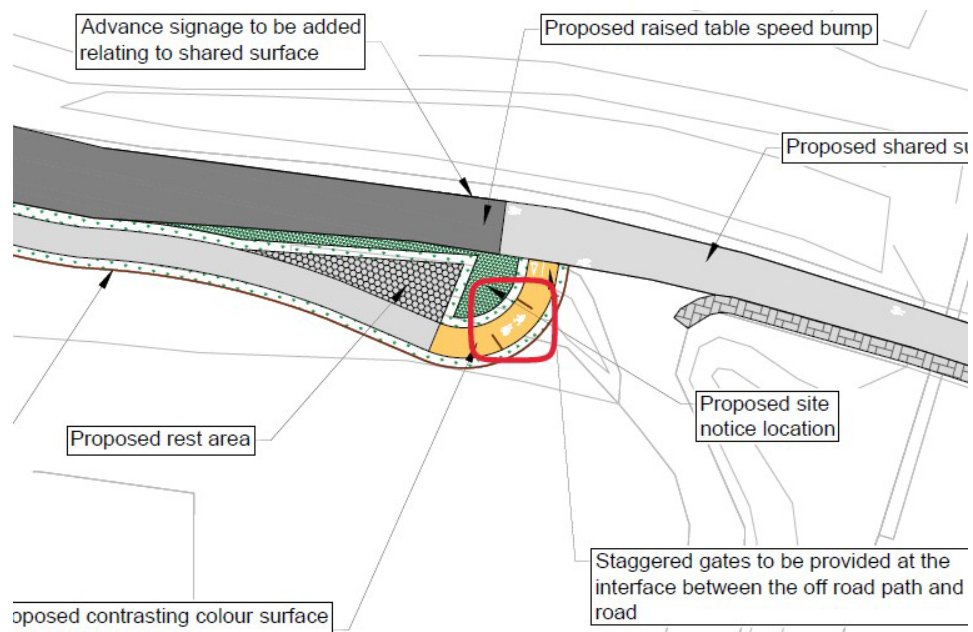
Glenmore village currently has a posted speed limit of 50km/h. This is too high for a shared surface and increases the risk of more serious collisions between motor vehicles and vulnerable road users.

Recommendation

Provide a speed limit of 30km/h on the shared surface and introduce measures to inform drivers that this is an appropriate speed for this section of road.

2.2 Problem

The staggered gates layout shown on the drawings is incorrect. The gate on the left side of the greenway should precede the gate on the right side. The layout shown will have little impact on the reduction of cyclist speed on the approach to the junction and may result in cyclists overshooting the yield/stop line into the path of oncoming traffic.



Recommendation

Provide correct gate stagger where it is deemed that this layout is necessary to reduce cyclist speed.

2.3 Problem

The shared surface section on the L7501 currently has a posted speed limit of 80km/h. This is too high for a shared surface and increases the risk of more serious collisions between motor vehicles and vulnerable road users.

Recommendation

Provide a speed limit of 30km/h on the shared surface and introduce measures to inform drivers that this is an appropriate speed for this section of road.

2.4 Observation


Longitudinal sections were not provided. The vertical alignment in the Glenmore area may be challenging. The overall gradient along a cycle route is an important design consideration. Comfort and attractiveness of a cycleway will be greatly increased if the route follows a shallow gradient. The gradient of a cycle facility impacts on two issues; the physical limitations of a cyclist to climb steep inclines and maintain speed, and their ability to stop when descending steep inclines. Steep gradients are not welcomed by cyclists and have the potential to put off users. Steep inclines generate high downhill speeds increasing the potential to conflict with other users who may be struggling to climb the steep gradient in the opposite direction.

3. AUDIT TEAM STATEMENT

3.1 We certify that we have examined the drawings listed in Appendix A and have inspected the site. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme.

Signed..... Ray Butler

Date27/01/2023.....

Signed..... Richard Frisby

Date27/01/2023.....

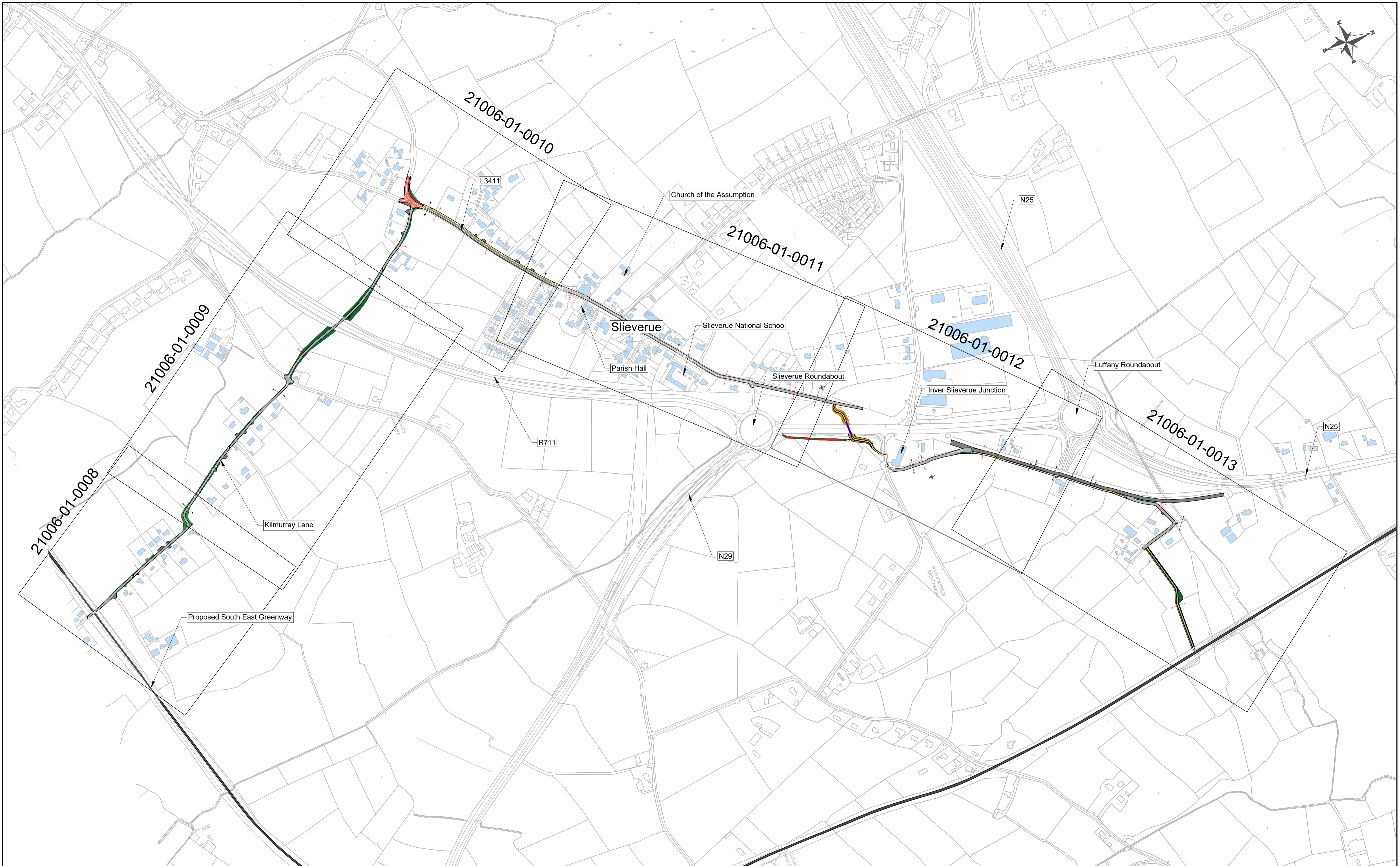
APPENDIX A

List of Drawings Examined

The following drawings have been provided electronically in PDF format by Roadplan:

21006-01-0006 to 0016 Proposed Layouts - Draft 2

21006-01-0018 Cross Sections - Draft 2



21006-01-0008

21006-01-0009

21006-01-0010

21006-01-0011

21006-01-0012

21006-01-0013

Proposed South East Greenway

Kilmurray Lane

Slieverue

Slieverue National School

Parish Hall

Slieverue Roundabout

Inver Slieverue Junction

Luffany Roundabout

R711

N29

N25

N25



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Project Ireland
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NOTES

DRAFT 2

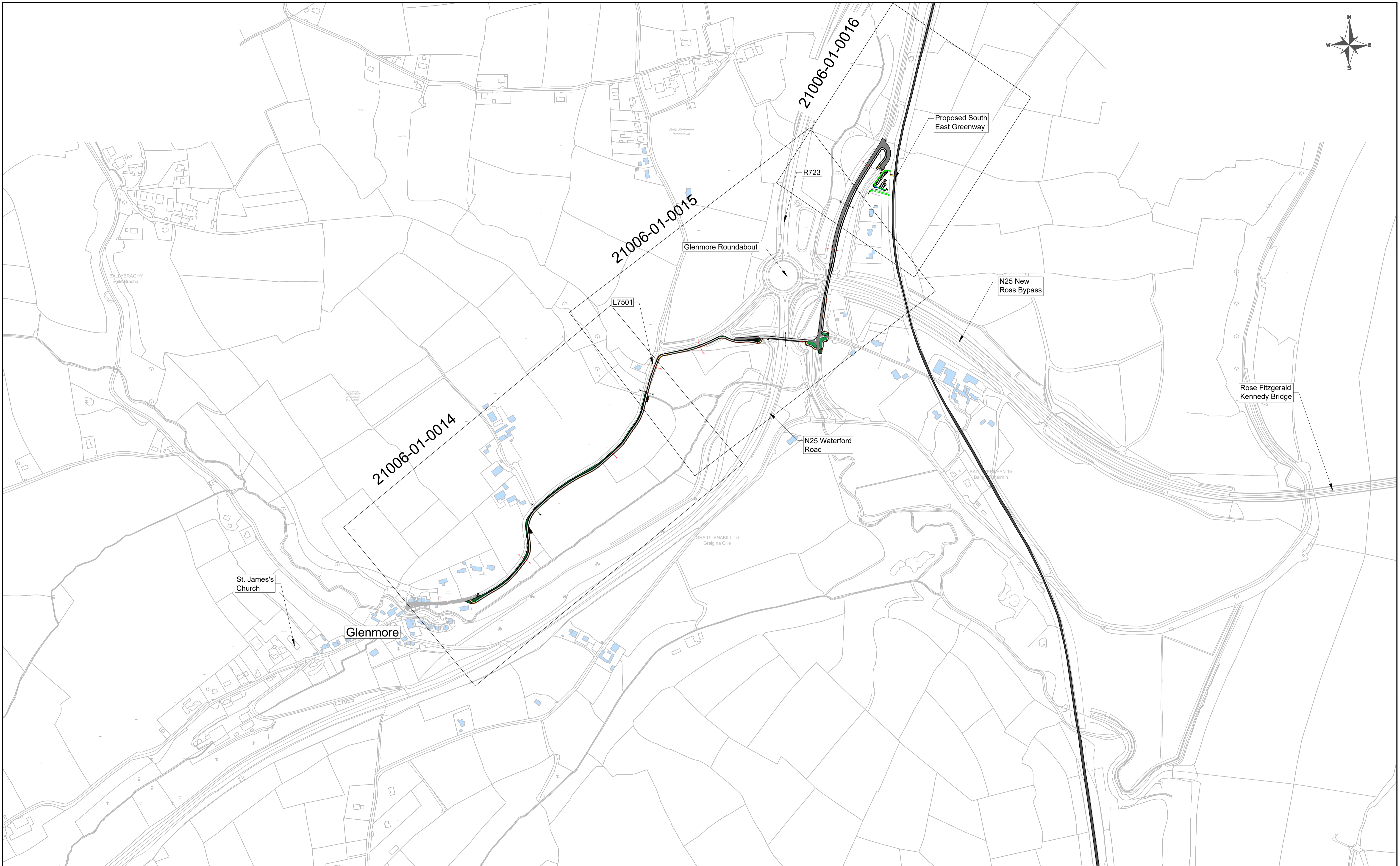
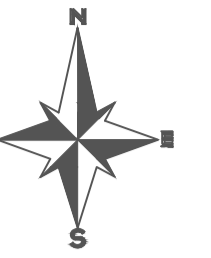
Project Title: **SOUTH EAST GREENWAY LINKAGE DESIGN**



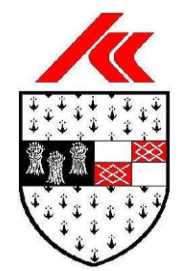
Drawing Title: **OVERALL LAYOUT - SLIEVERUE**

Drawn by: TON Sheet Size: A1 Scale: 1:4000 Date: Jan '23

Drawing Number: 21006-01-0006 Revision: -

No.	Revision	Date	By	Chk'd	App'd
Designed:	FH				
Checked:	AC				
Approved:	DD				



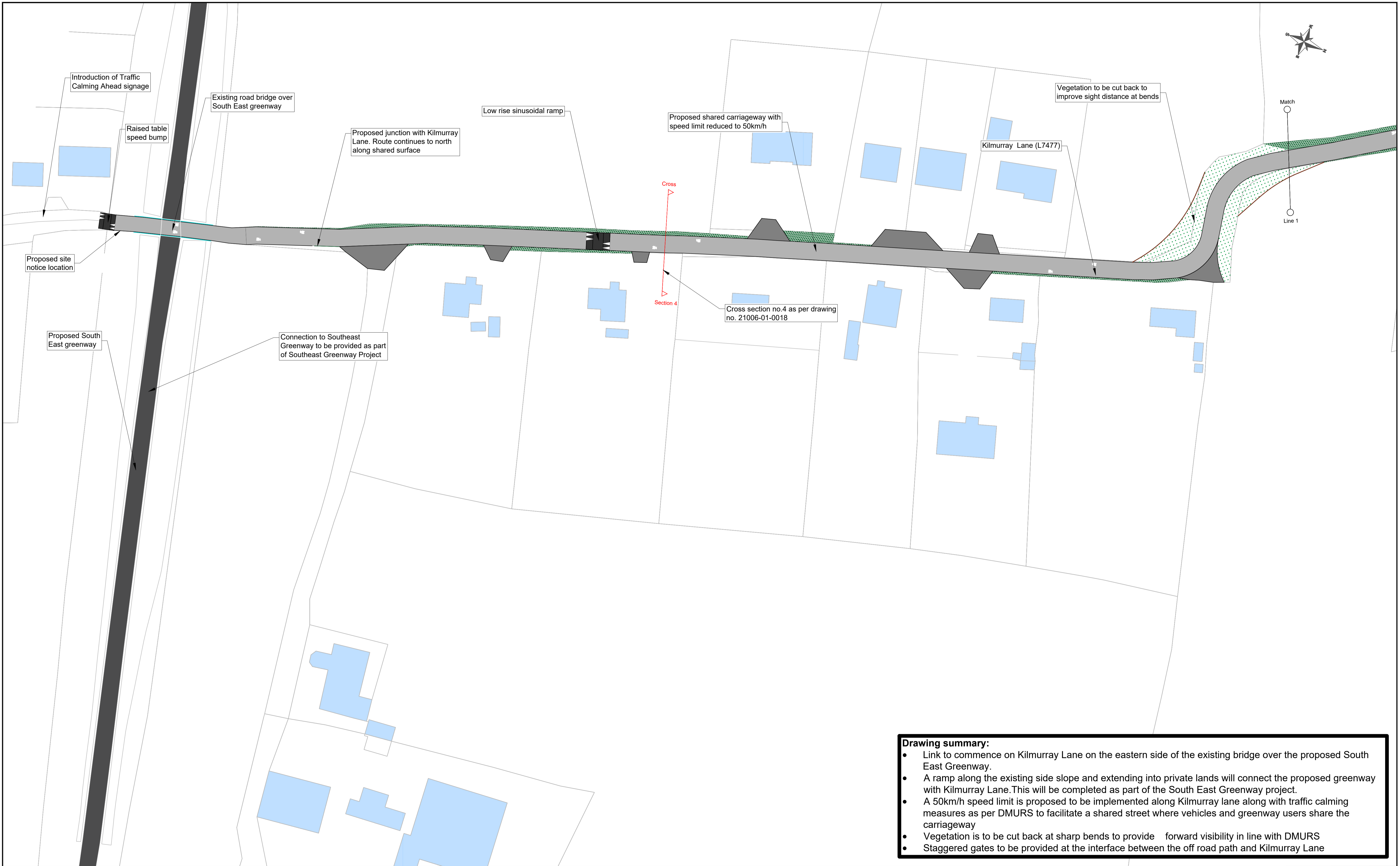




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DRAFT 2					
No.	Revision	Date	By	Chk'd	App'd
Designed: FH	Checked: AC	Approved: DD			

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: OVERALL LAYOUT - GLENMORE			
Drawn by: TON	Sheet Size: A1	Scale: 1:4000	Date: Jan '23
Drawing Number: 21006-01-0007		Revision: -	



Drawing summary:

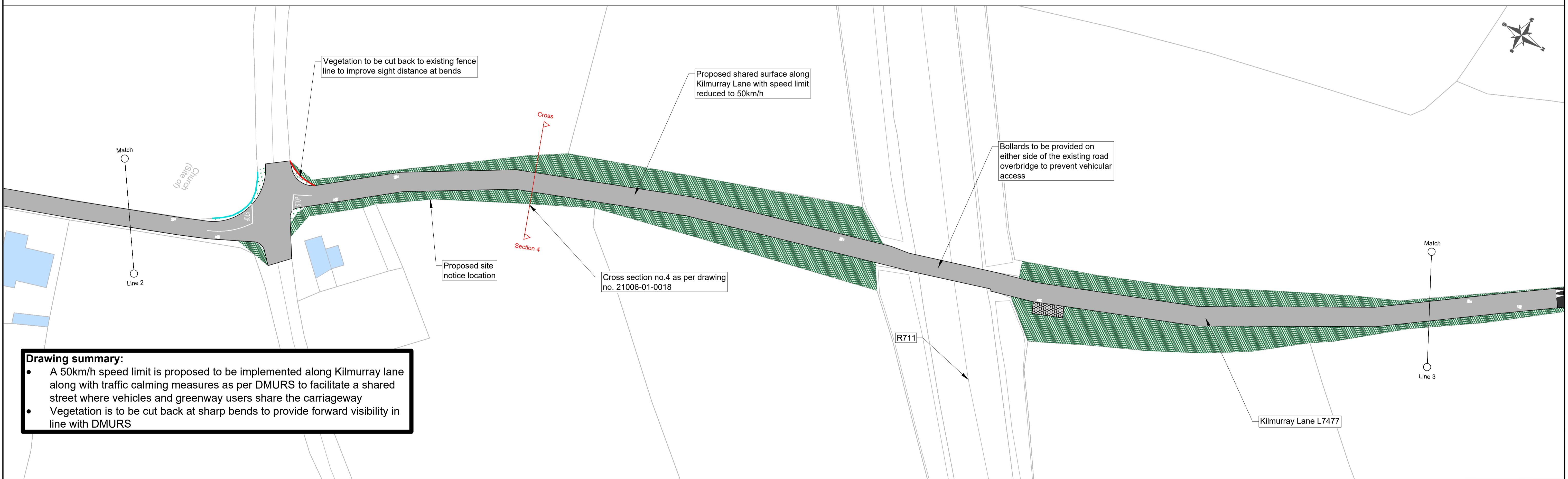
- Link to commence on Kilmurray Lane on the eastern side of the existing bridge over the proposed South East Greenway.
- A ramp along the existing side slope and extending into private lands will connect the proposed greenway with Kilmurray Lane. This will be completed as part of the South East Greenway project.
- A 50km/h speed limit is proposed to be implemented along Kilmurray lane along with traffic calming measures as per DMURS to facilitate a shared street where vehicles and greenway users share the carriageway
- Vegetation is to be cut back at sharp bends to provide forward visibility in line with DMURS
- Staggered gates to be provided at the interface between the off road path and Kilmurray Lane

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LEGEND	
	Proposed Shared Pedestrian / Cyclist Surface
	Proposed Cyclist / Vehicle Shared Surface
	Existing Carriageway / Private Access
	Proposed South East Greenway
	Contrasting Colour Shared Pedestrian / Cyclist Surface on approach to junction / access
	Existing Verge / Hedgerow
	Proposed Grass Verge
	Landscaping
	Rest Area
	Build Out
	Raised Table
	Existing Footpath
	Modified Existing Footpath
	Earthworks
	Existing Buildings
	Existing Wall
	Existing Fence Line
	Proposed Fence Line / Gate
	Double Kerb

DRAFT 2

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 1 of 6			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0008		Revision: -	
No.:	Revision	Date	By
Designed: FH	Checked: AC	Approved: DD	Chk'd App'd



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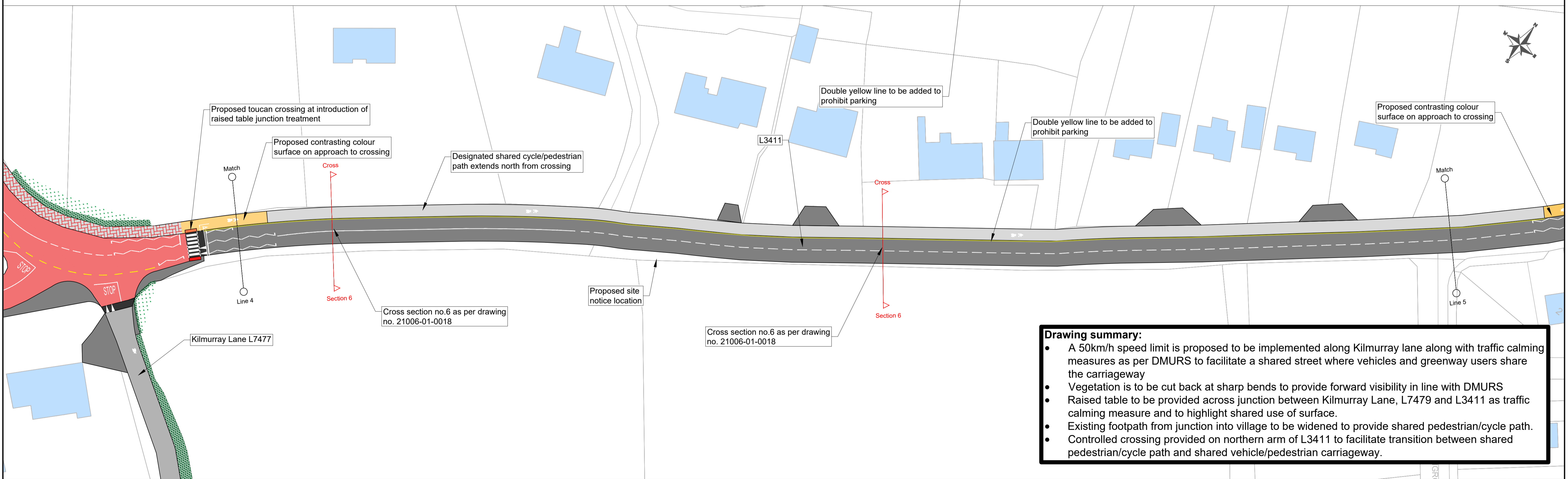
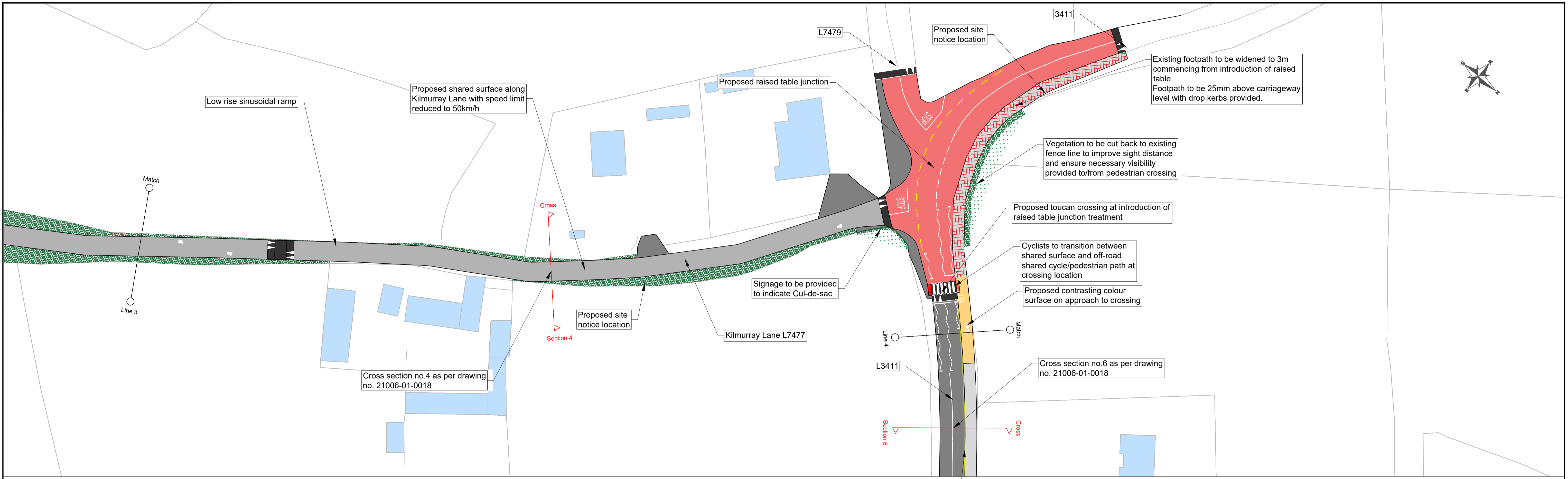
- A 50km/h speed limit is proposed to be implemented along Kilmurray lane along with traffic calming measures as per DMURS to facilitate a shared street where vehicles and greenway users share the carriageway
- Vegetation is to be cut back at sharp bends to provide forward visibility in line with DMURS

LEGEND	
	Proposed Shared Pedestrian / Cyclist Surface
	Proposed Cyclist / Vehicle Shared Surface
	Existing Carriageway / Private Access
	Proposed South East Greenway
	Contrasting Colour Shared Pedestrian / Cyclist Surface on approach to junction / access
	Existing Verge / Hedgerow
	Proposed Grass Verge
	Landscaping
	Rest Area
	Build Out
	Raised Table
	Existing Footpath
	Modified Existing Footpath
	Earthworks
	Existing Buildings
	Existing Wall
	Existing Fence Line
	Proposed Fence Line / Gate
	Double Kerb

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
1	Design		FH		
2	Check		AC		
3	Approve		DD		

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 2 of 6			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0009		Revision: -	



Drawing summary:

- A 50km/h speed limit is proposed to be implemented along Kilmurray lane along with traffic calming measures as per DMURS to facilitate a shared street where vehicles and greenway users share the carriageway
- Vegetation is to be cut back at sharp bends to provide forward visibility in line with DMURS
- Raised table to be provided across junction between Kilmurray Lane, L7479 and L3411 as traffic calming measure and to highlight shared use of surface.
- Existing footpath from junction into village to be widened to provide shared pedestrian/cycle path.
- Controlled crossing provided on northern arm of L3411 to facilitate transition between pedestrian/cycle path and shared vehicle/pedestrian carriageway.

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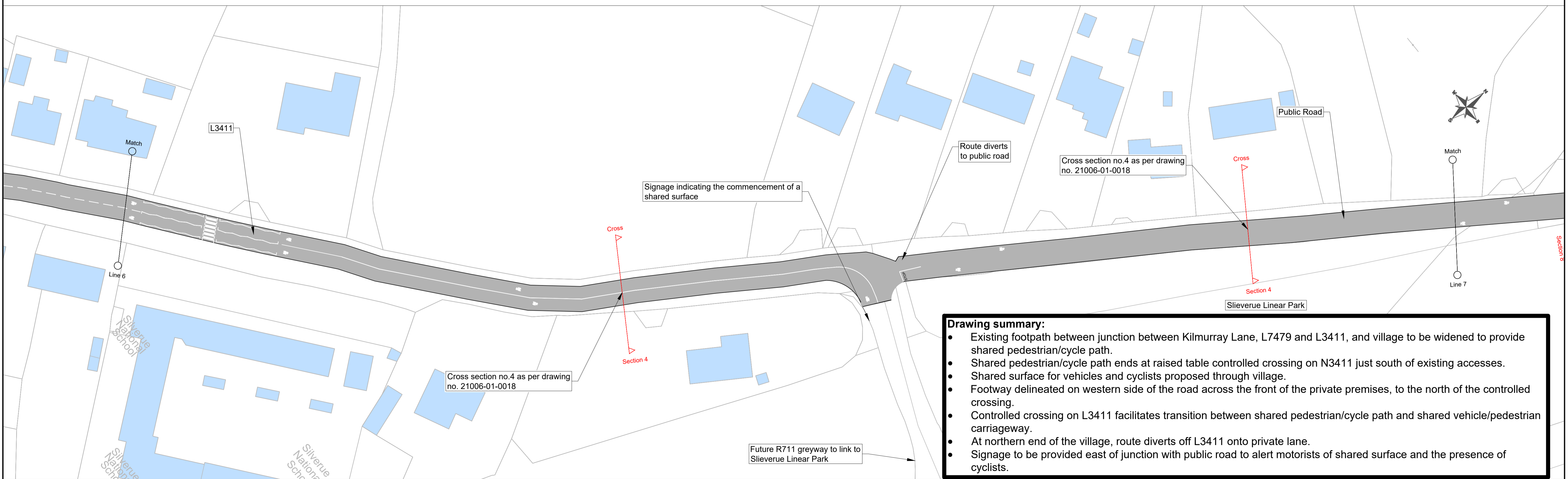
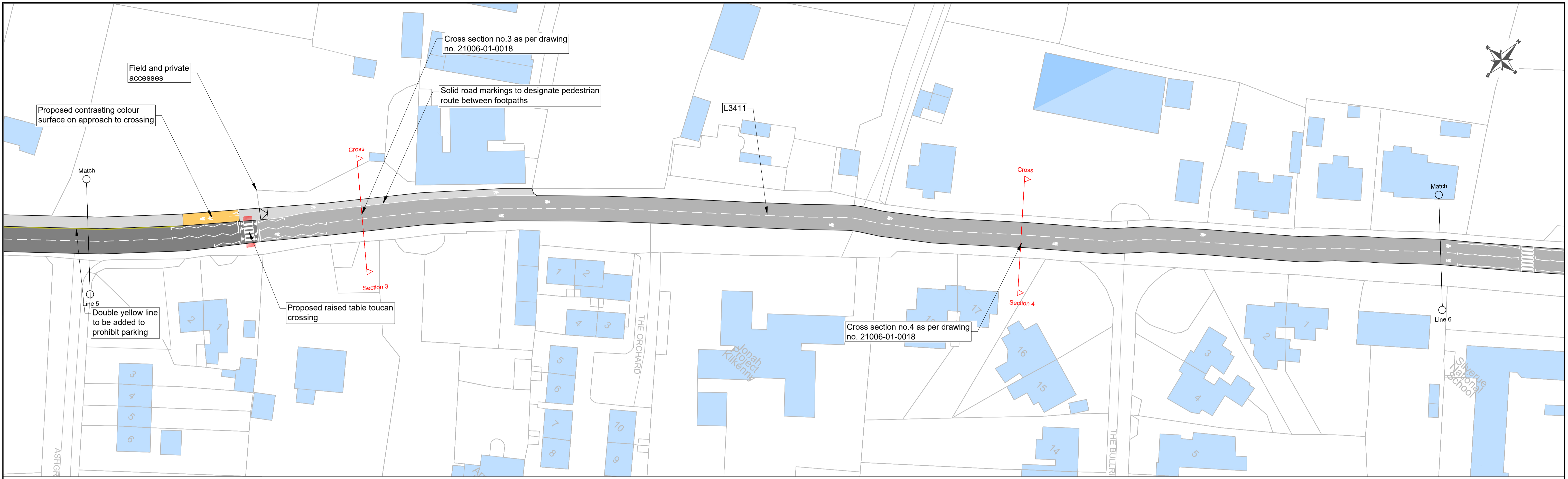
LEGEND

	Proposed Shared Pedestrian / Cyclist Surface		Existing Footpath
	Proposed Cyclist / Vehicle Shared Surface		Modified Existing Footpath
	Existing Carriageway / Private Access		Earthworks
	Proposed South East Greenway		Existing Buildings
	Contrasting Colour Shared Pedestrian / Cyclist Surface on approach to junction / access		Existing Wall
	Existing Verge / Hedgerow		Existing Fence Line
	Proposed Grass Verge		Proposed Fence Line / Gate
	Landscaping		Double Kerb
	Rest Area		
	Build Out		
	Raised Table		

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 3 of 6			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0010		Revision: -	



Drawing summary:

- Existing footpath between junction between Kilmurray Lane, L7479 and L3411, and village to be widened to provide shared pedestrian/cycle path.
- Shared pedestrian/cycle path ends at raised table controlled crossing on N3411 just south of existing accesses.
- Shared surface for vehicles and cyclists proposed through village.
- Footway delineated on western side of the road across the front of the private premises, to the north of the controlled crossing.
- Controlled crossing on L3411 facilitates transition between shared pedestrian/cycle path and shared vehicle/pedestrian carriageway.
- At northern end of the village, route diverts off L3411 onto private lane.
- Signage to be provided east of junction with public road to alert motorists of shared surface and the presence of cyclists.

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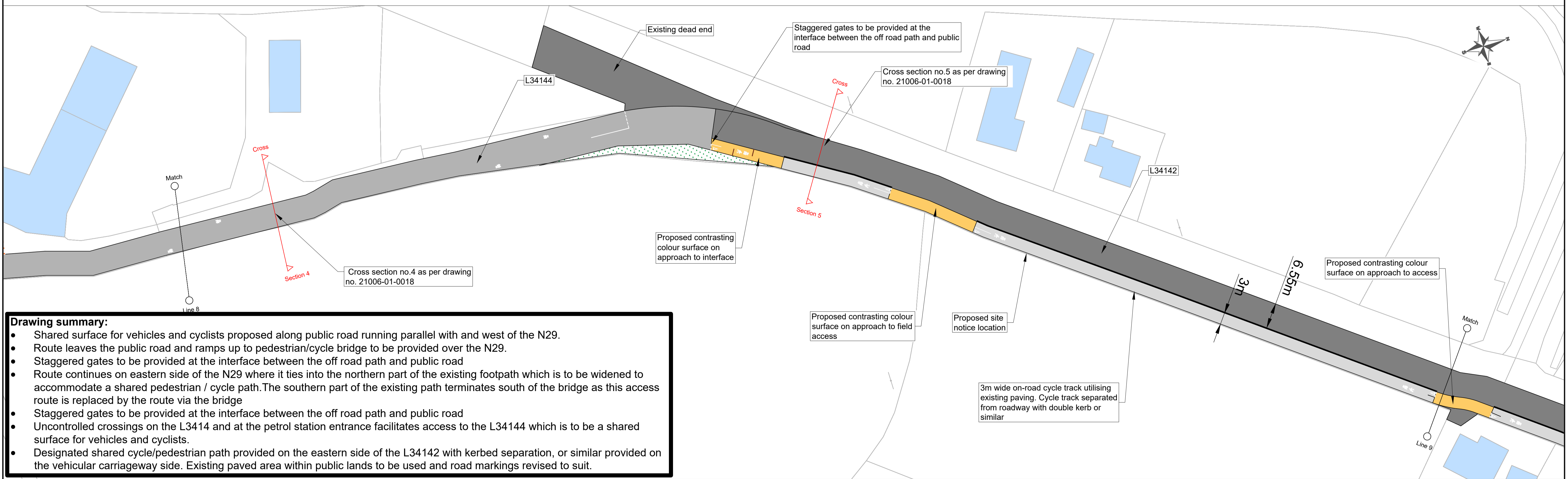
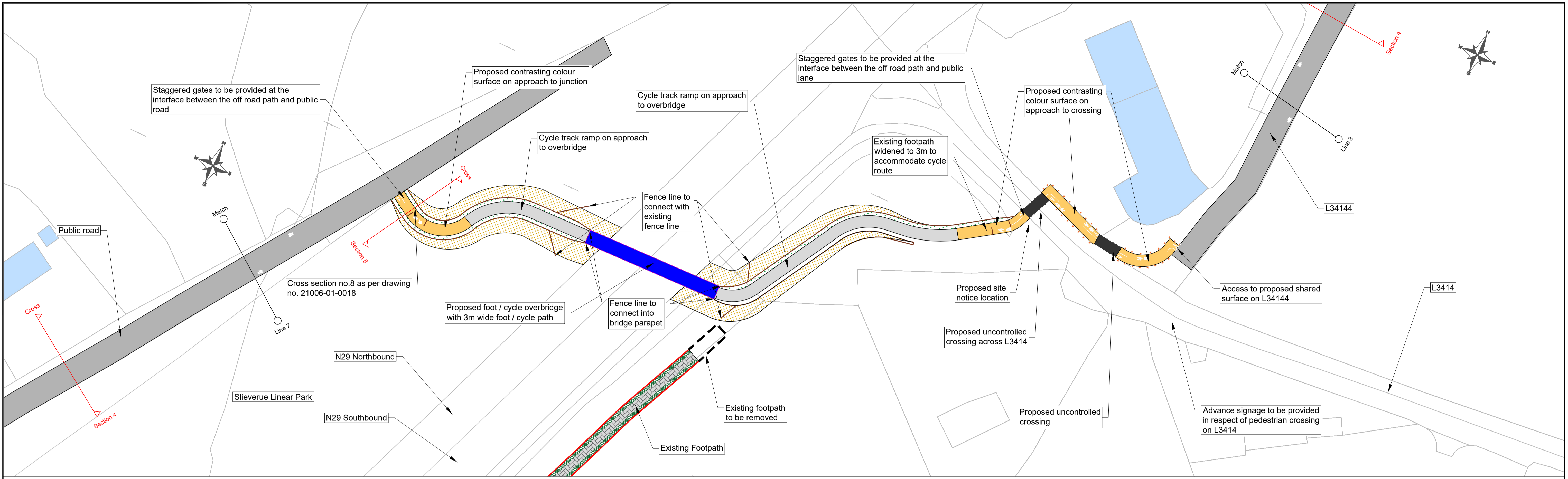
LEGEND

	Proposed Shared Pedestrian / Cyclist Surface		Existing Footpath
	Proposed Cyclist / Vehicle Shared Surface		Modified Existing Footpath
	Existing Carriageway / Private Access		Earthworks
	Proposed South East Greenway		Existing Buildings
	Contrasting Colour Shared Pedestrian / Cyclist Surface on approach to junction / access		Existing Wall
	Existing Verge / Hedgerow		Existing Fence Line
	Proposed Grass Verge		Proposed Fence Line / Gate
	Landscaping		Double Kerb
	Rest Area		
	Build Out		
	Raised Table		

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 4 of 6			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0011		Revision: -	



Drawing summary:

- Shared surface for vehicles and cyclists proposed along public road running parallel with and west of the N29.
- Route leaves the public road and ramps up to pedestrian/cycle bridge to be provided over the N29.
- Staggered gates to be provided at the interface between the off road path and public road
- Route continues on eastern side of the N29 where it ties into the northern part of the existing footpath which is to be widened to accommodate a shared pedestrian / cycle path. The southern part of the existing path terminates south of the bridge as this access route is replaced by the route via the bridge
- Staggered gates to be provided at the interface between the off road path and public road
- Uncontrolled crossings on the L3414 and at the petrol station entrance facilitates access to the L34144 which is to be a shared surface for vehicles and cyclists.
- Designated shared cycle/pedestrian path provided on the eastern side of the L34142 with kerbed separation, or similar provided on the vehicular carriageway side. Existing paved area within public lands to be used and road markings revised to suit.

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LEGEND

Proposed Shared Pedestrian / Cyclist Surface	Existing Footpath
Proposed Cyclist / Vehicle Shared Surface	Modified Existing Footpath
Existing Carriageway / Private Access	Earthworks
Proposed South East Greenway	Existing Buildings
Existing Verge / Hedgerow	Existing Wall
Proposed Grass Verge	Existing Fence Line
Landscaping	Proposed Fence Line / Gate
Rest Area	Double Kerb
Build Out	
Raised Table	

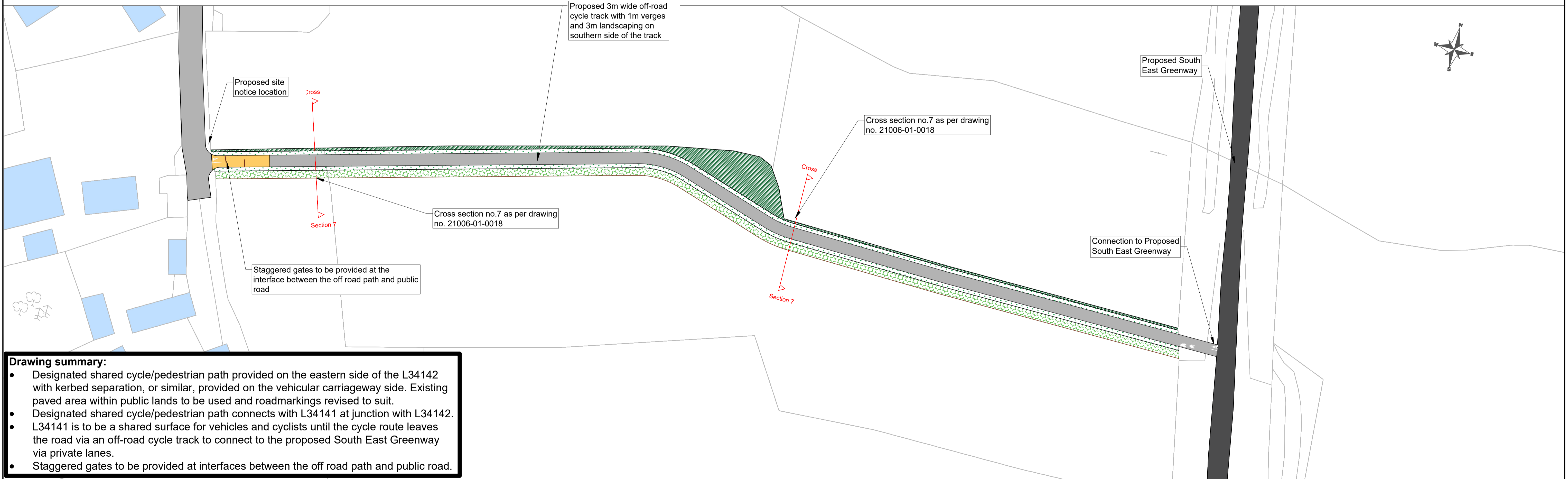
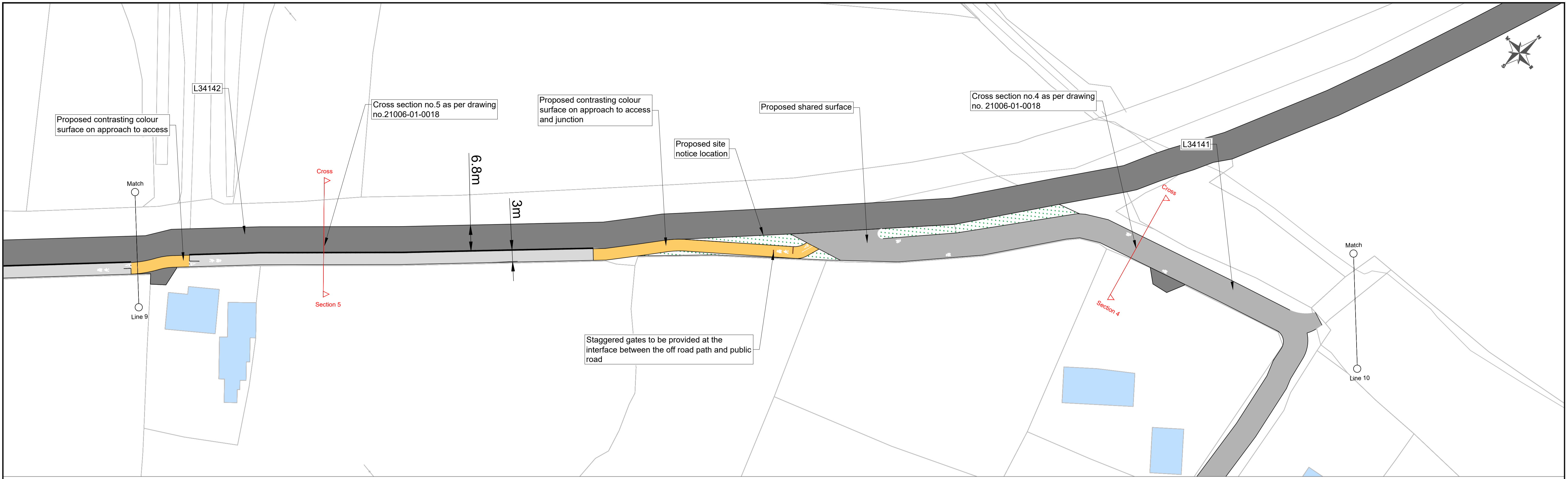
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No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN

Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 5 of 6

Drawn by:	TON	Sheet Size:	A1	Scale:	1:500	Date:	Jan '23
Drawing Number:	21006-01-0012			Revision:	-		



Drawing summary:

- Designated shared cycle/pedestrian path provided on the eastern side of the L34142 with kerbed separation, or similar, provided on the vehicular carriageway side. Existing paved area within public lands to be used and roadmarkings revised to suit.
- Designated shared cycle/pedestrian path connects with L34141 at junction with L34142.
- L34141 is to be a shared surface for vehicles and cyclists until the cycle route leaves the road via an off-road cycle track to connect to the proposed South East Greenway via private lanes.
- Staggered gates to be provided at interfaces between the off road path and public road.

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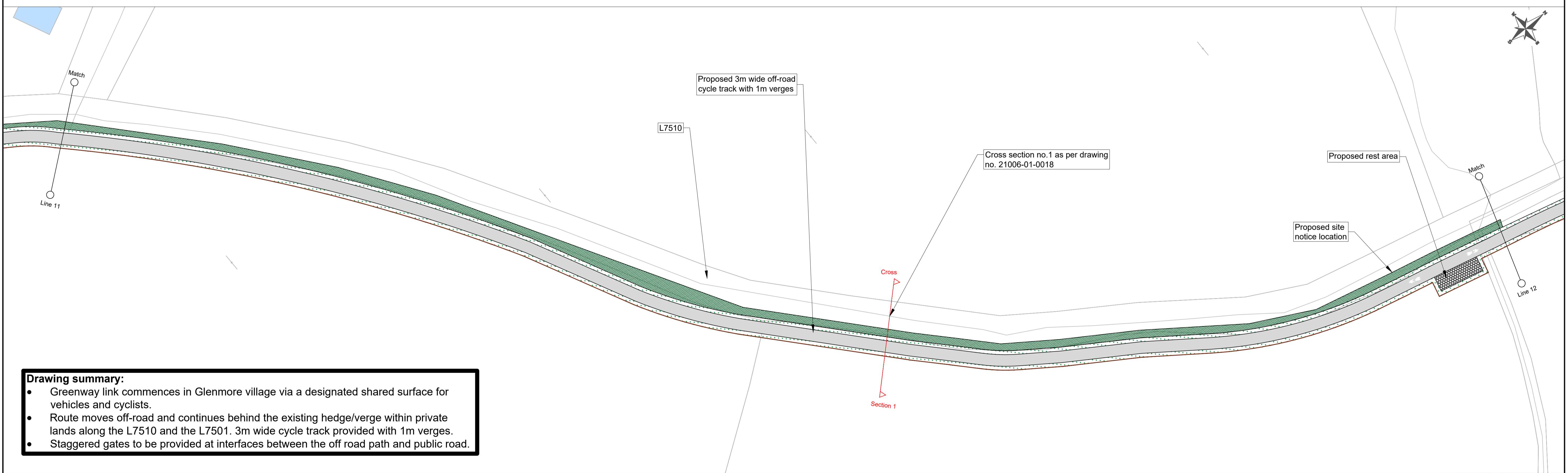
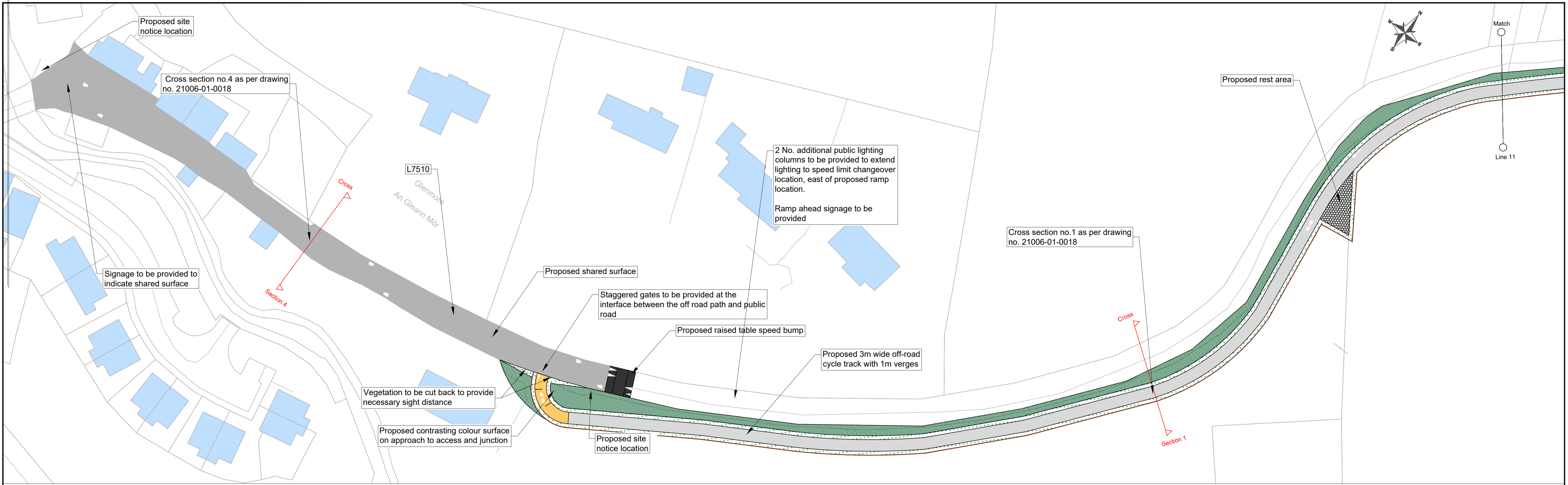
LEGEND

	Proposed Shared Pedestrian / Cyclist Surface		Existing Footpath
	Proposed Cyclist / Vehicle Shared Surface		Modified Existing Footpath
	Existing Carriageway / Private Access		Earthworks
	Proposed South East Greenway		Existing Buildings
	Existing Verges / Hedgerow		Existing Wall
	Proposed Grass Verges		Existing Fence Line / Gate
	Landscaping		Double Kerb
	Rest Area		
	Build Out		
	Raised Table		

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - SLIEVERUE - Sheet 6 of 6			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0013		Revision: -	



Drawing summary:

- Greenway link commences in Glenmore village via a designated shared surface for vehicles and cyclists.
- Route moves off-road and continues behind the existing hedge/verge within private lands along the L7510 and the L7501. 3m wide cycle track provided with 1m verges.
- Staggered gates to be provided at interfaces between the off road path and public road.

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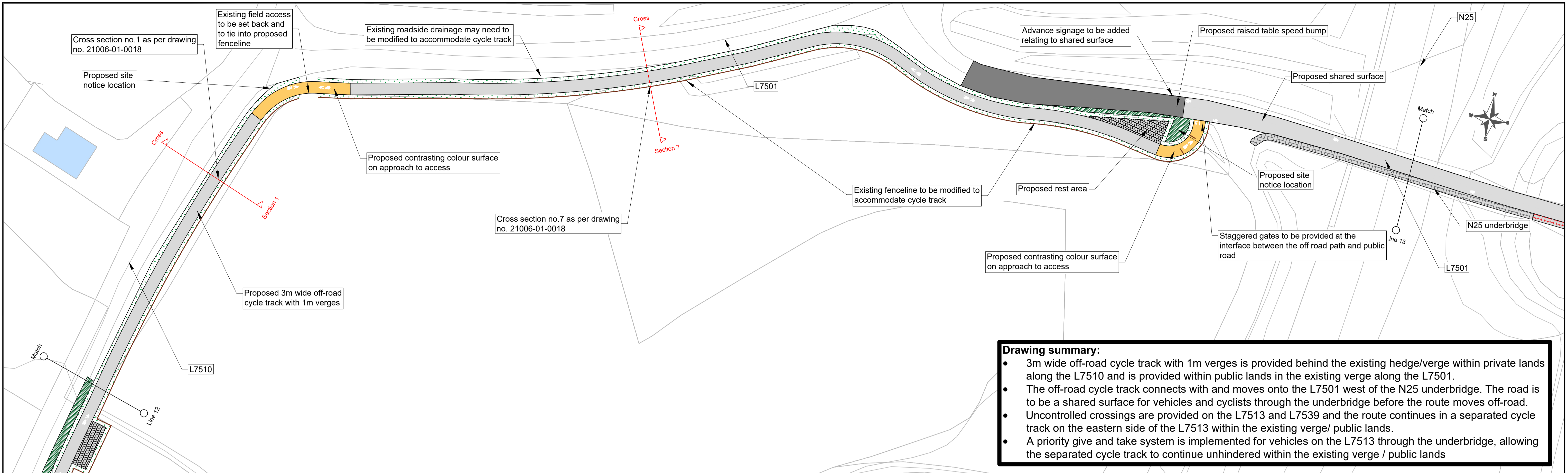
LEGEND

	Proposed Shared Pedestrian / Cyclist Surface		Existing Footpath
	Proposed Cyclist / Vehicle Shared Surface		Modified Existing Footpath
	Existing Carriageway / Private Access		Earthworks
	Proposed South East Greenway		Existing Buildings
	Existing Verge / Hedgerow		Existing Wall
	Proposed Grass Verge		Existing Fence Line
	Landscaping		Proposed Fence Line / Gate
	Rest Area		Double Kerb
	Build Out		
	Raised Table		

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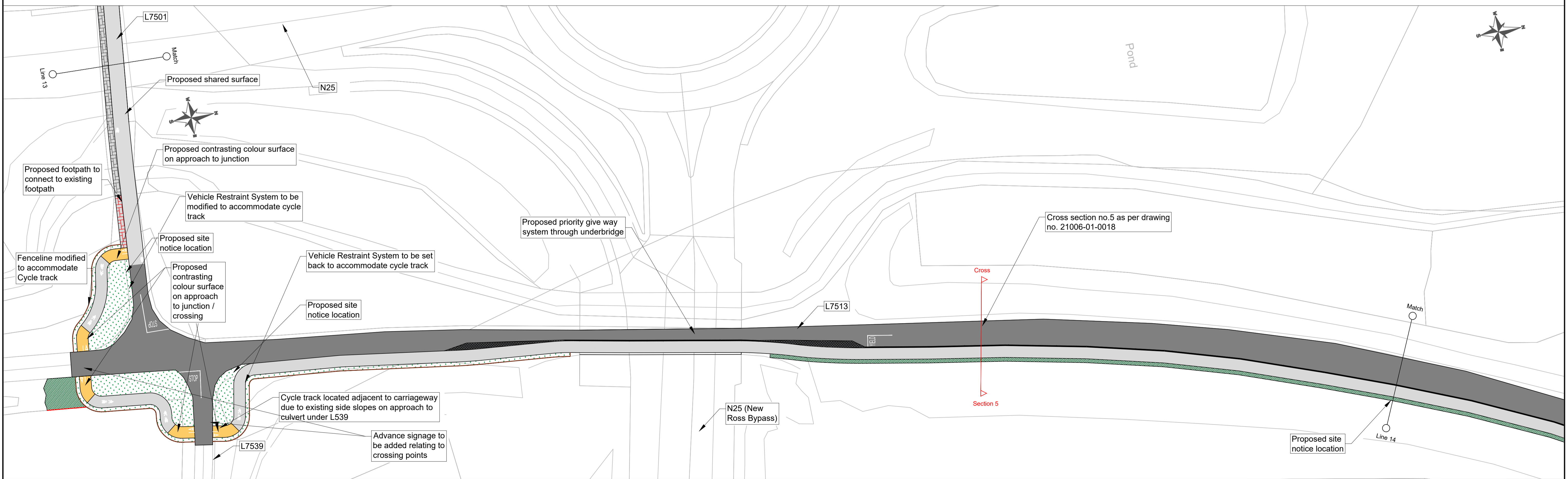
No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: BRIDGE GENERAL ARRANGEMENT - Sheet 1 of 3			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0017		Revision: -	



Drawing summary:

- 3m wide off-road cycle track with 1m verges is provided behind the existing hedge/verge within private lands along the L7510 and is provided within public lands in the existing verge along the L7501.
- The off-road cycle track connects with and moves onto the L7501 west of the N25 underbridge. The road is to be a shared surface for vehicles and cyclists through the underbridge before the route moves off-road.
- Uncontrolled crossings are provided on the L7513 and L7539 and the route continues in a separated cycle track on the eastern side of the L7513 within the existing verge/ public lands.
- A priority give and take system is implemented for vehicles on the L7513 through the underbridge, allowing the separated cycle track to continue unhindered within the existing verge / public lands

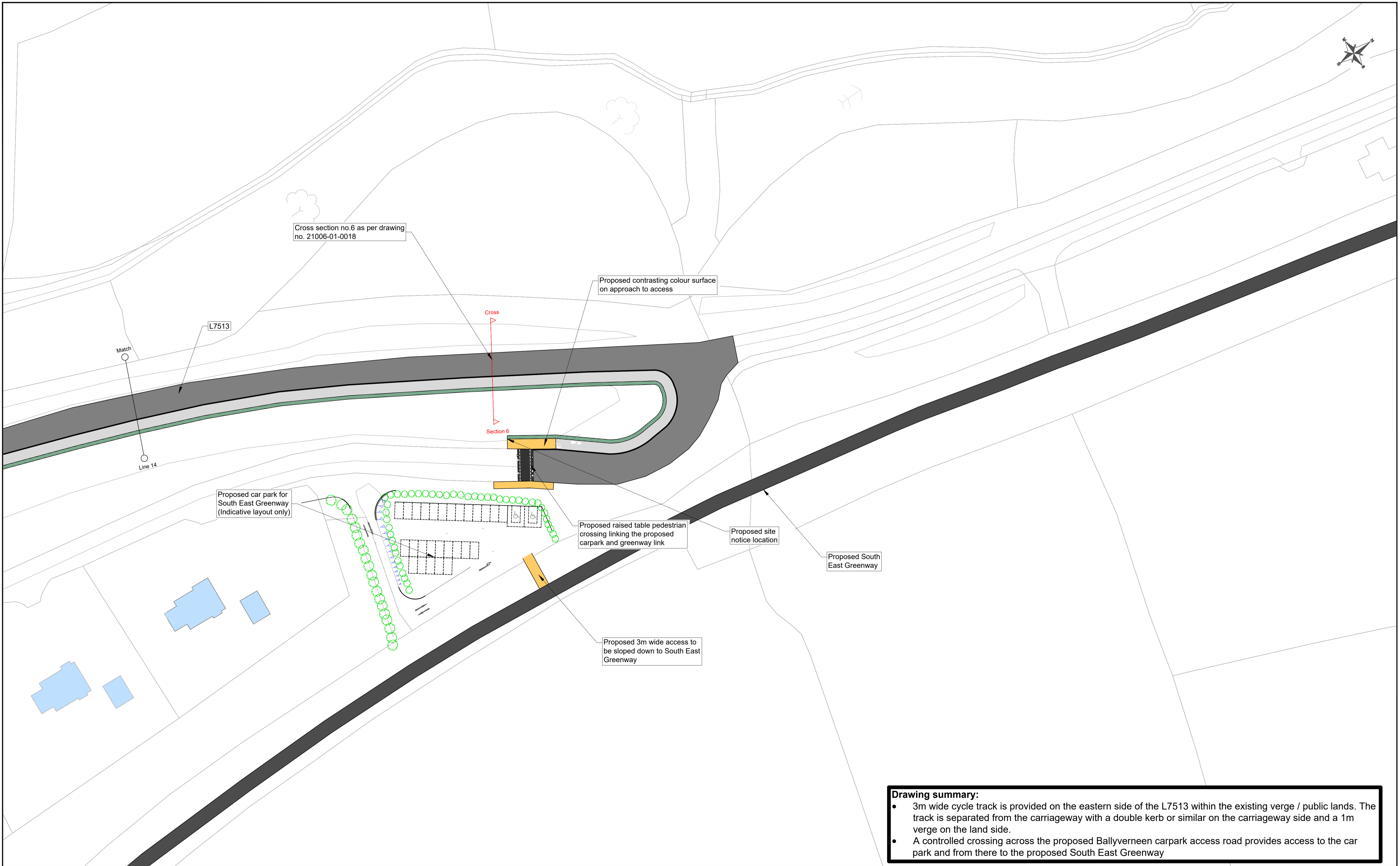


LEGEND	
	Proposed Shared Pedestrian / Cyclist Surface
	Proposed Cyclist / Vehicle Shared Surface
	Existing Carriageway / Private Access
	Proposed South East Greenway
	Existing Verge / Hedgerow
	Proposed Grass Verge
	Landscaping
	Rest Area
	Build Out
	Raised Table
	Existing Footpath
	Modified Existing Footpath
	Earthworks
	Existing Buildings
	Existing Wall
	Existing Fence Line
	Proposed Fence Line / Gate
	Double Kerb

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
Designed:	FH	Checked:	AC	Approved:	DD

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - GLENMORE - Sheet 2 of 3			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0015		Revision: -	



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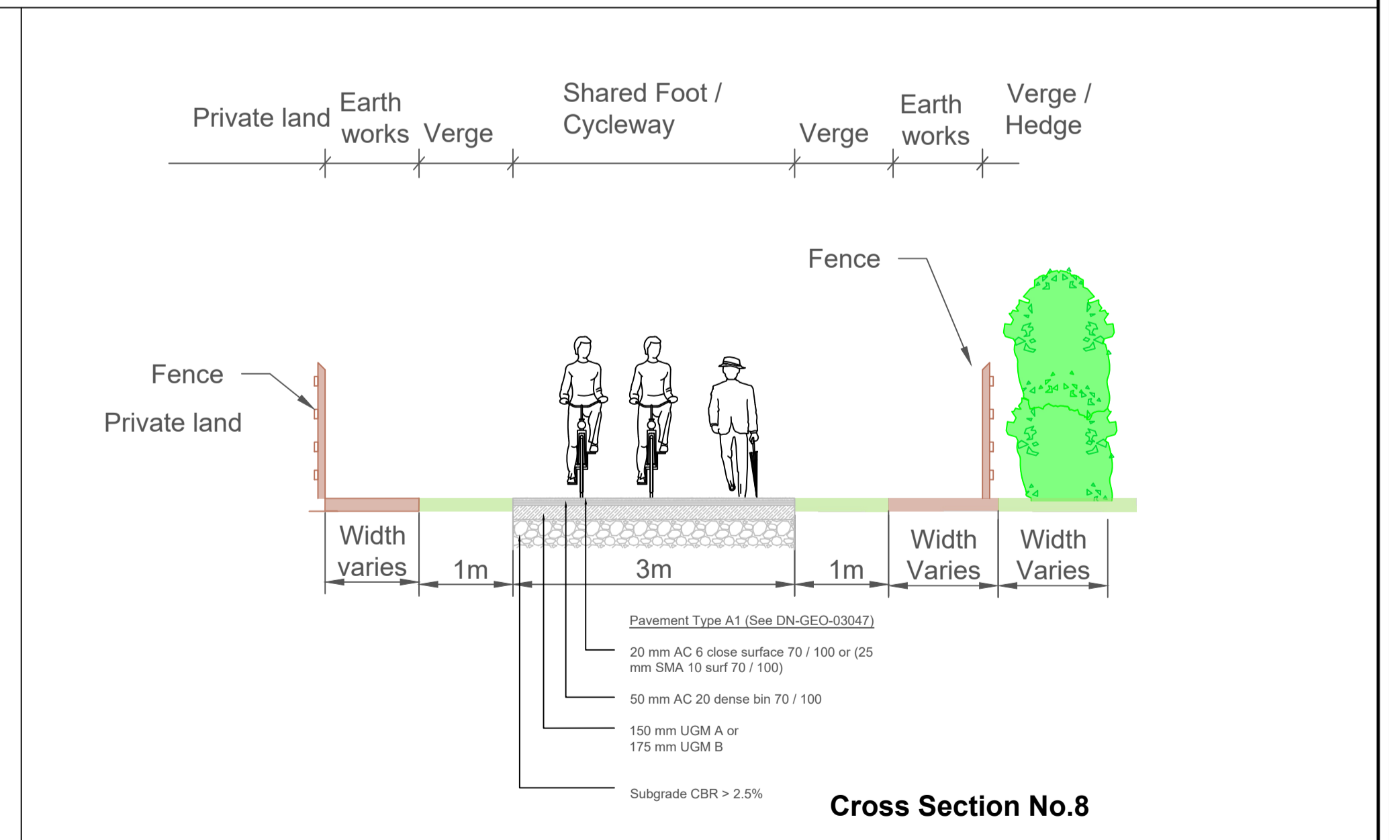
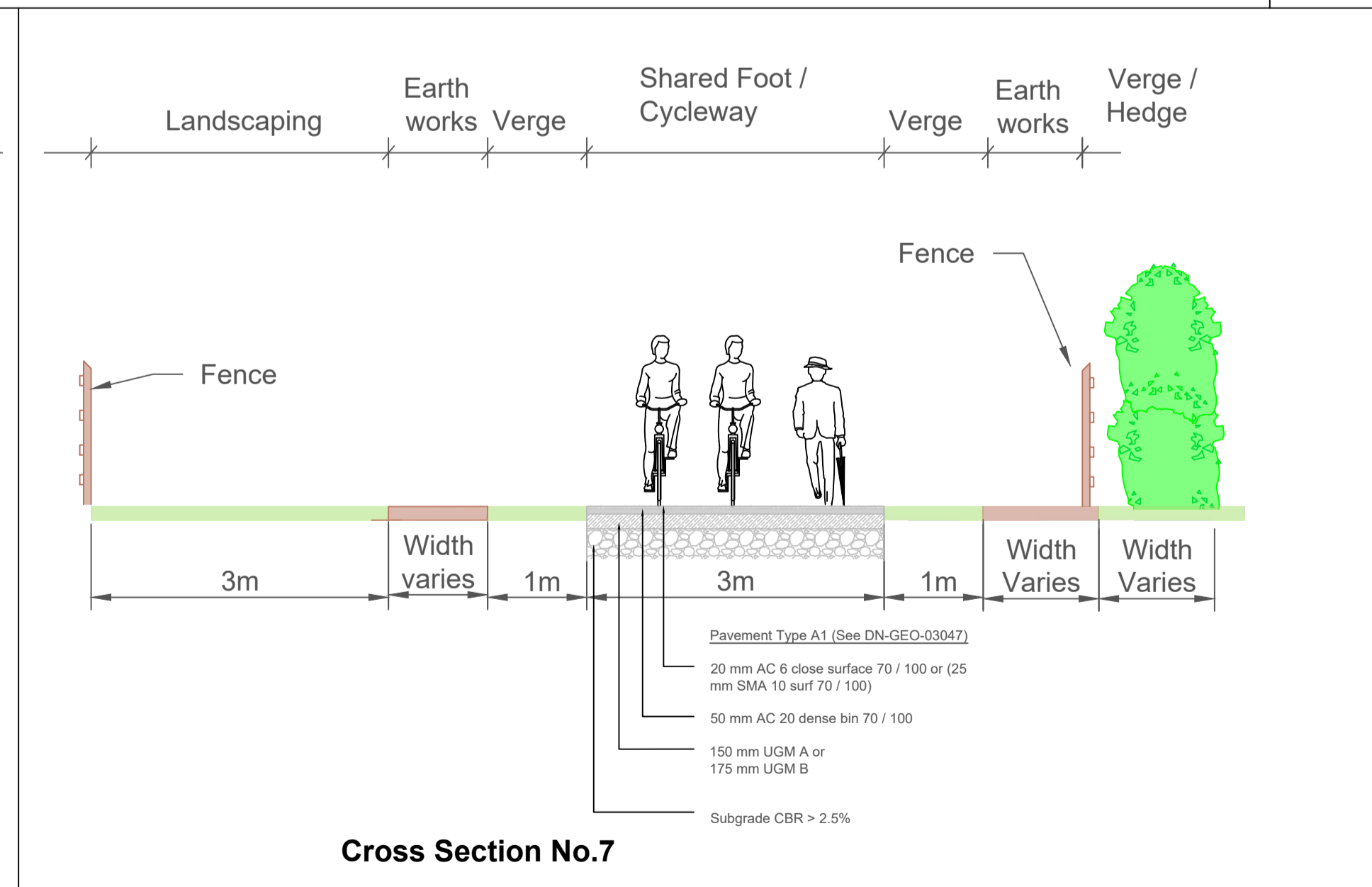
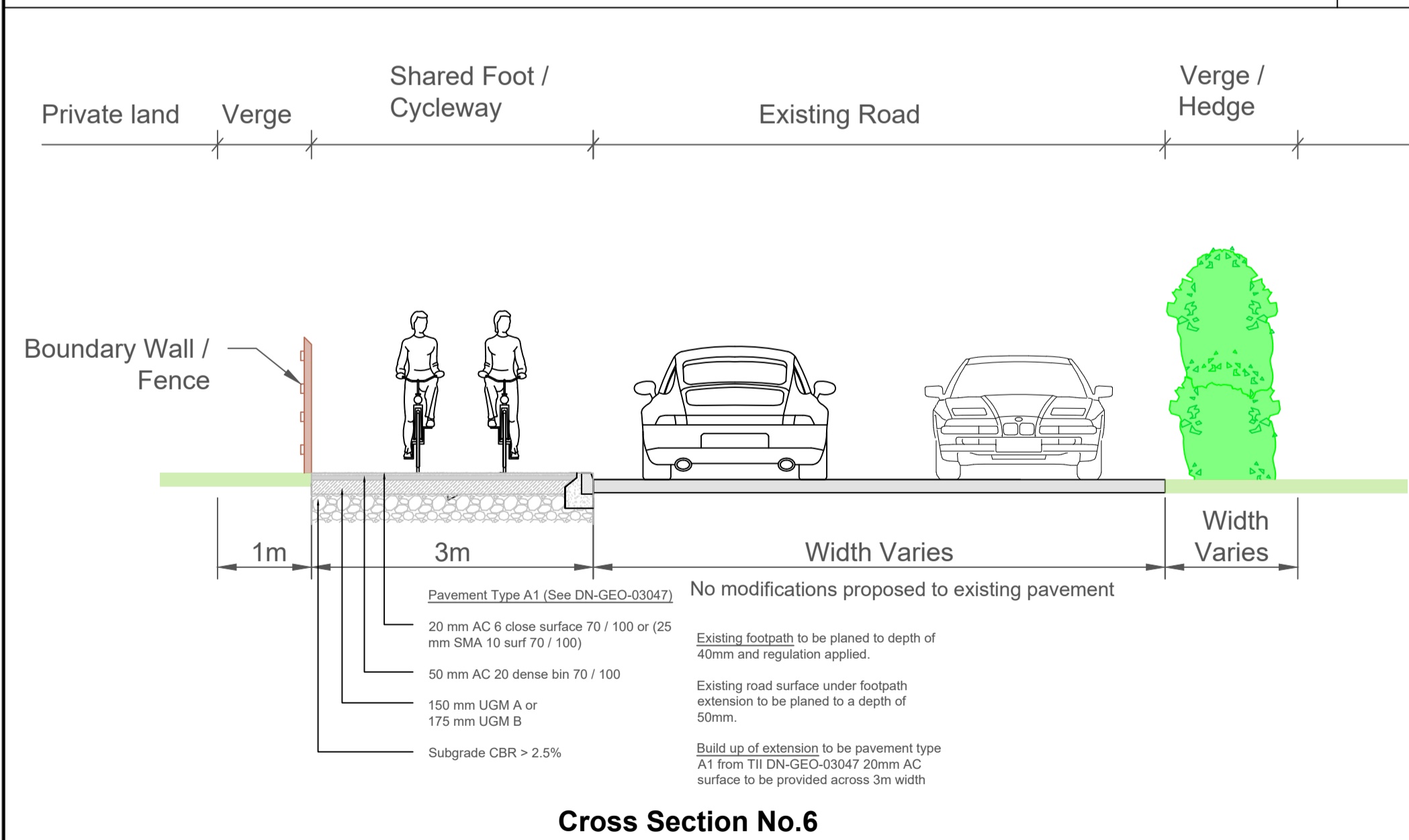
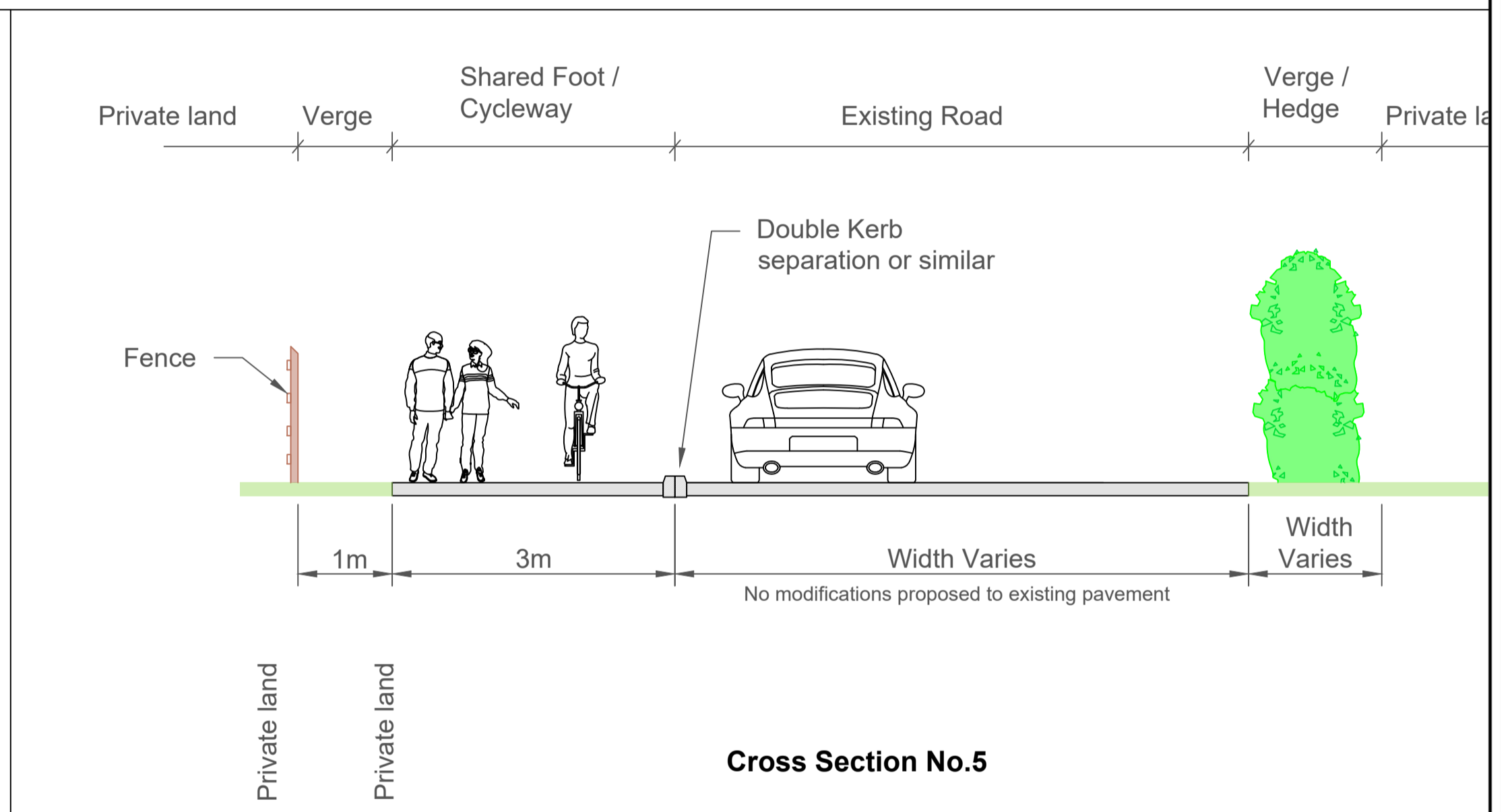
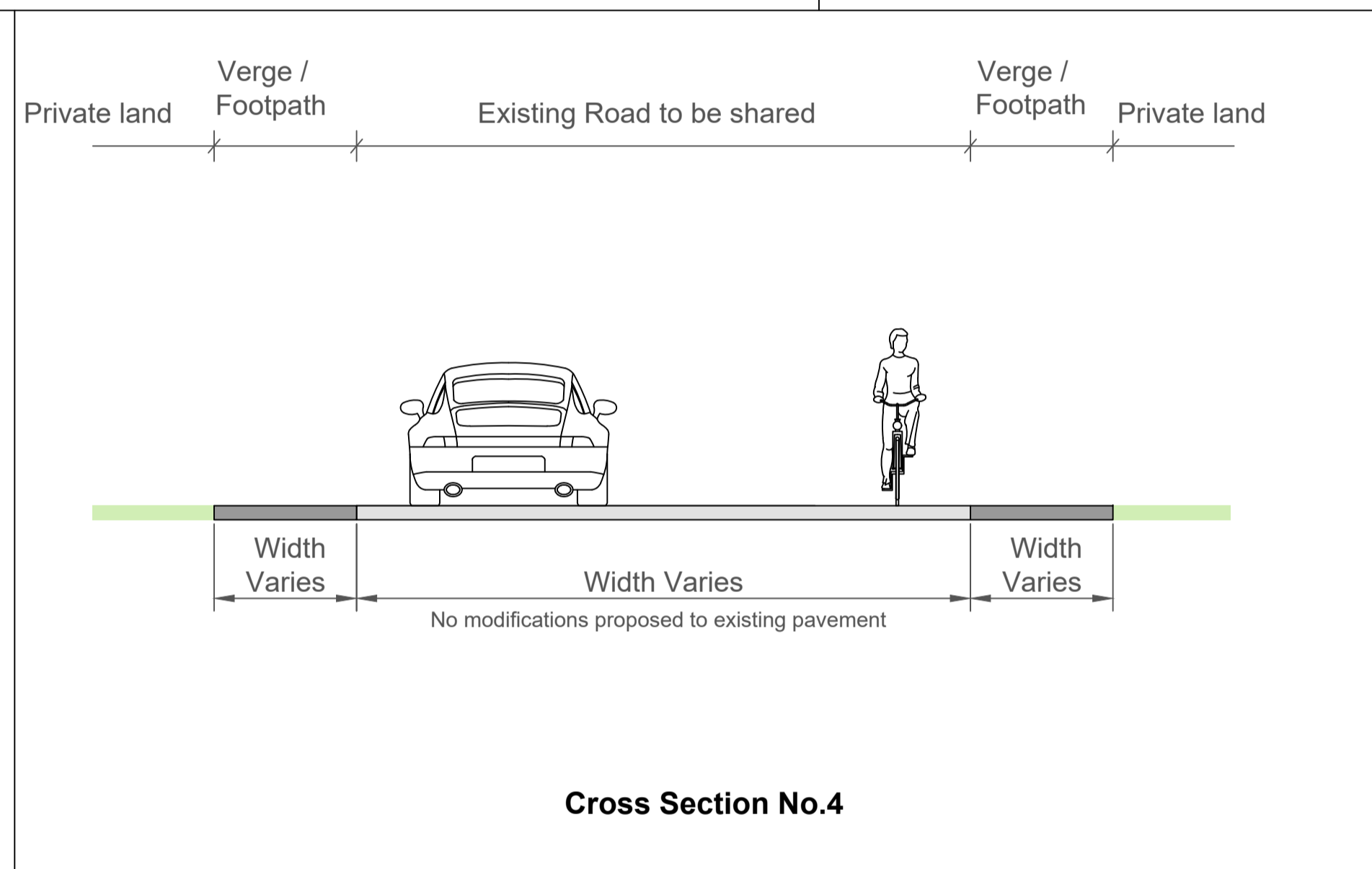
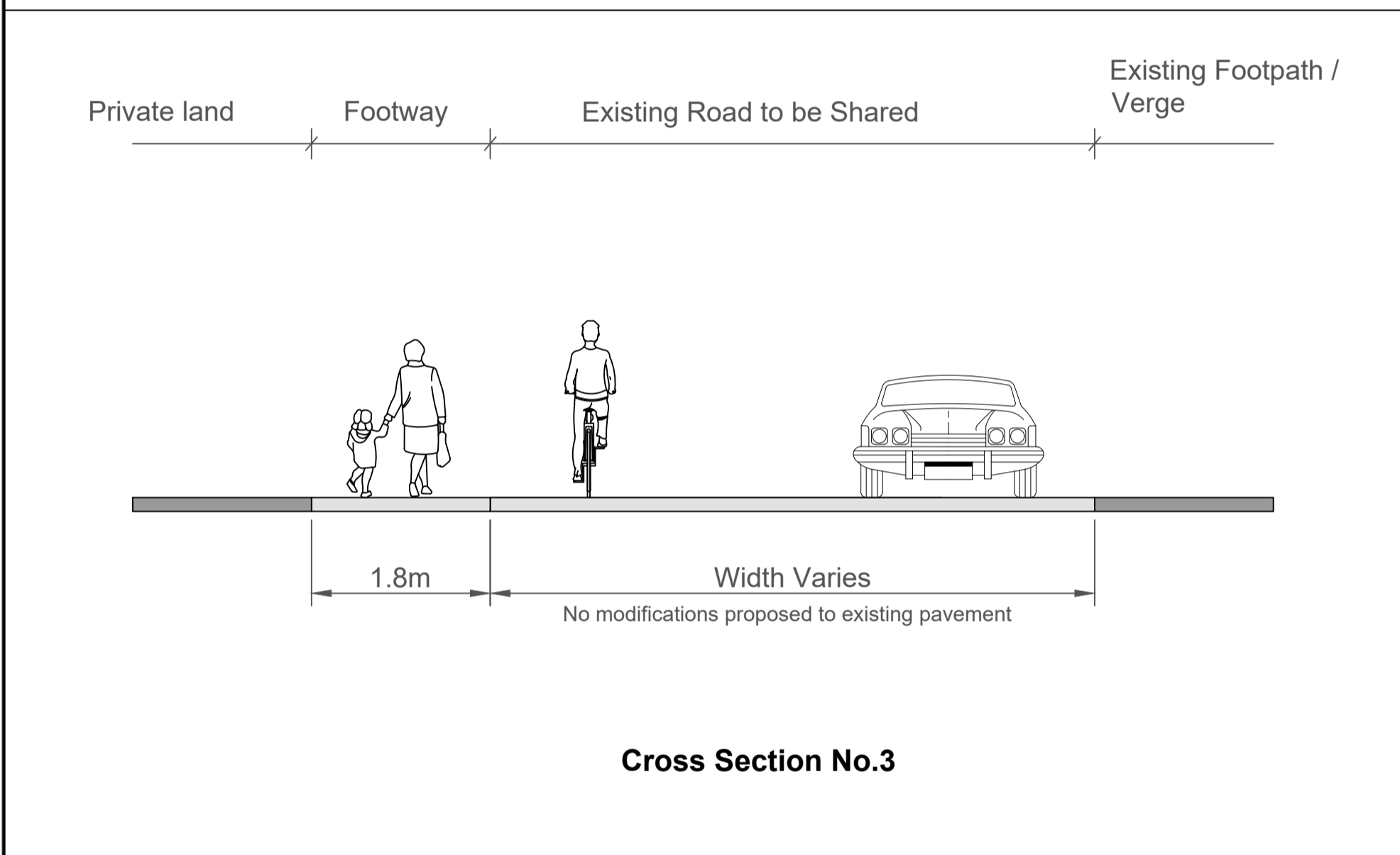
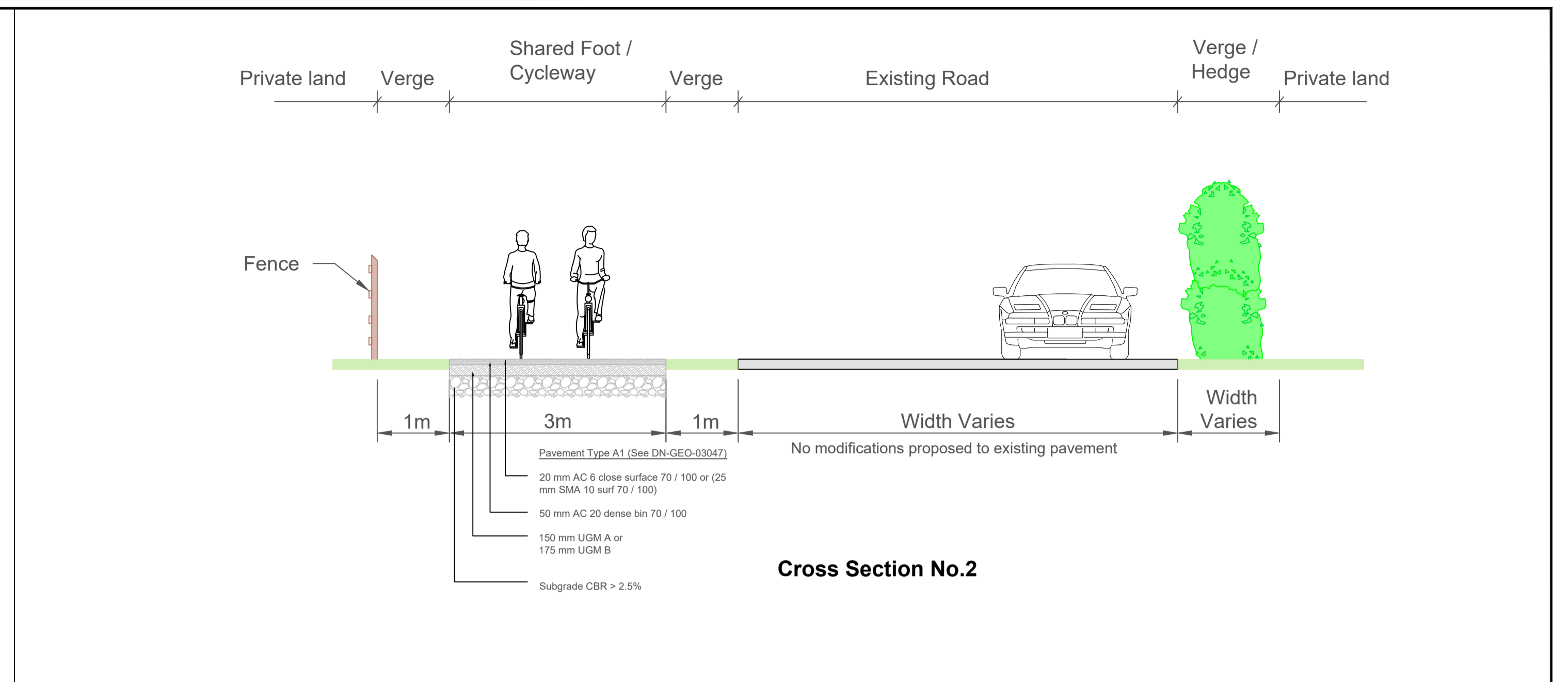
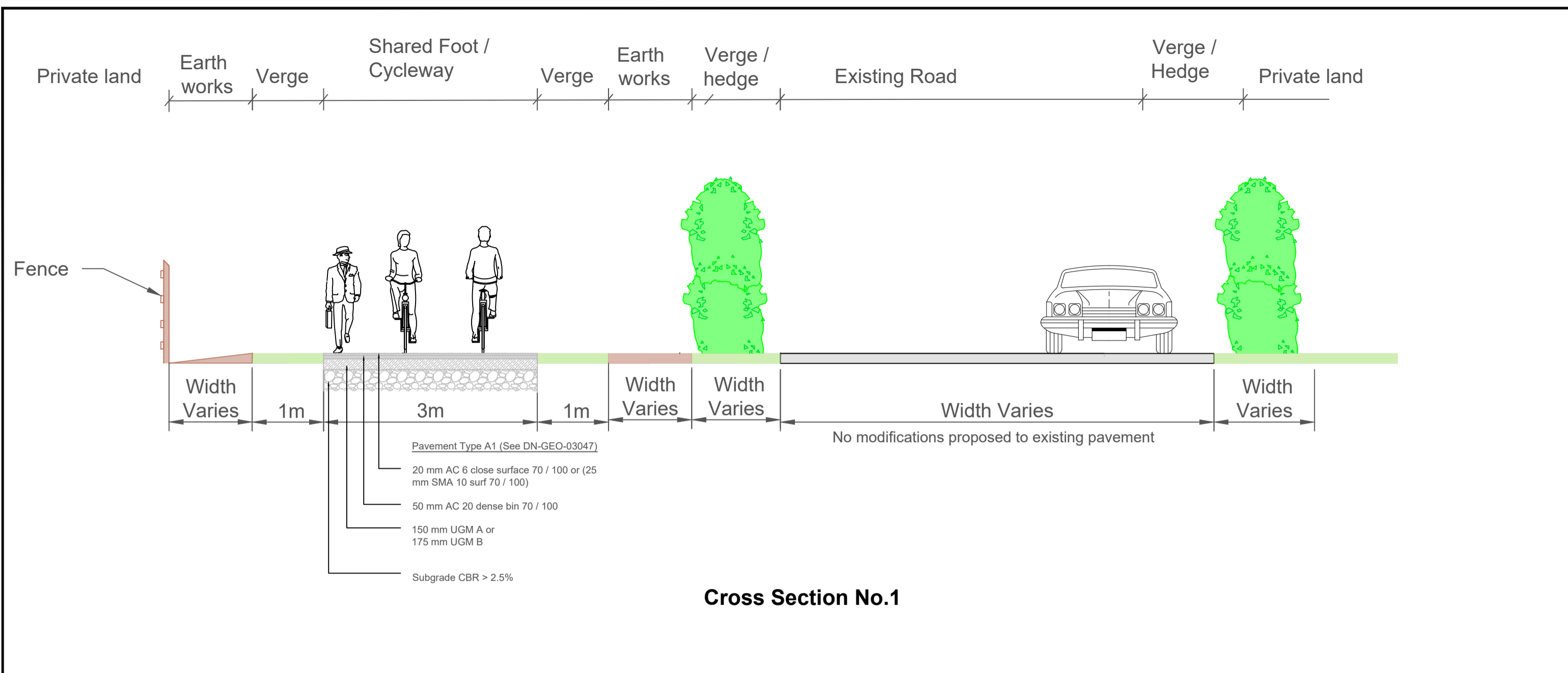
- 3m wide cycle track is provided on the eastern side of the L7513 within the existing verge / public lands. The track is separated from the carriageway with a double kerb or similar on the carriageway side and a 1m verge on the land side.
- A controlled crossing across the proposed Ballyverneen carpark access road provides access to the car park and from there to the proposed South East Greenway

LEGEND	
	Proposed Shared Pedestrian / Cyclist Surface
	Proposed Cyclist / Vehicle Shared Surface
	Existing Carriageway / Private Access
	Proposed South East Greenway
	Existing Verge / Hedgerow
	Proposed Grass Verge
	Landscaping
	Rest Area
	Build Out
	Raised Table
	Existing Footpath
	Modified Existing Footpath
	Earthworks
	Existing Buildings
	Existing Wall
	Existing Fence Line
	Proposed Fence Line / Gate
	Double Kerb

DRAFT 2

No.	Revision	Date	By	Chk'd	App'd
1	Design: FH				
2	Checked: AC				
3	Approved: DD				

Project Title: SOUTH EAST GREENWAY LINKAGE DESIGN			
Drawing Title: PROPOSED LAYOUT - GLENMORE - Sheet 3 of 3			
Drawn by: TON	Sheet Size: A1	Scale: 1:500	Date: Jan '23
Drawing Number: 21006-01-0016		Revision: -	



Notes:

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No.	Revision	Date	By	Chk'd	App'd

DRAFT 2

Project Title: SE GREENWAY LINKAGE DESIGN			
Drawing Title: Cross Sections - Sheet			
Drawn by: TON	Sheet Size: A1	Scale: NTS	Date: Jan '23
Drawing Number: 21006-01-0018		Revision: -	

SAFETY AUDIT FEEDBACK FORM

Scheme: Southeast Greenway Linkage – Glenmore

Document Number: 2023-21006-02

Audit Stage: RSA Stage 1

Date Audit Completed: 30th January 2023

Paragraph No. in Safety Audit Report	To Be Completed By Designer			To Be Completed by Audit Team Leader
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only complete if recommended measure is not accepted.	Alternative measures or reasons accepted by auditors (yes/no)
2.1	Yes	Yes	-----	-----
2.2	Yes	Yes	-----	-----
2.3	Yes	Yes	-----	-----

Safety Audit

Signed off *Aoidin Curran* Design Team Leader

Print NameAoidin Curran.....

Date 26-April-2023

Safety Audit

Signed off *[Signature]* Employer

Print Name *FLANK STAFFORD*
ON BEHALF OF KCC

Date *26/4/23*

Safety Audit

Signed off *[Signature]* Audit Team Leader

Print Name Ray Butler

Date 4/7/23

Please complete and return to:

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Tramore,
Co. Waterford.
E-mail: raybut51@gmail.com