

20023-01-001

**Proposed Residential Development at
R510, Raheen, Limerick**

ROAD SAFETY AUDIT STAGE 1 / 2

March 2020

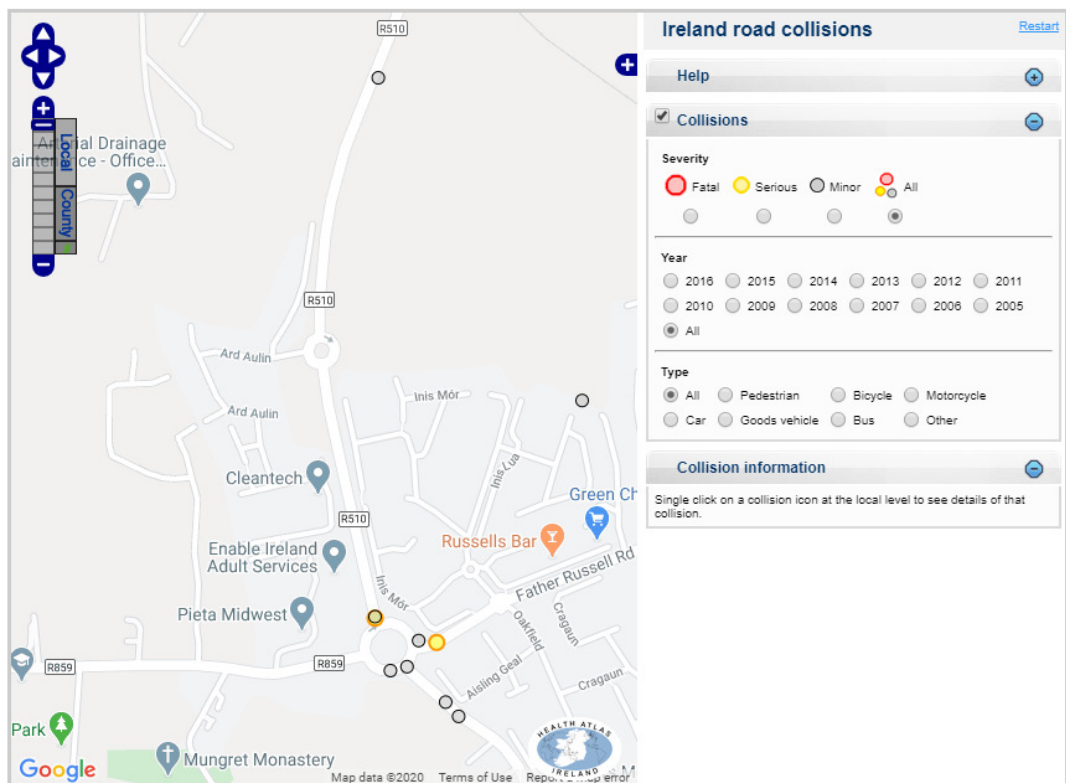
ROADPLAN
CONSULTING

7, Ormonde Road
Kilkenny
R95 N4FE

Tel: 056 7795800
info@roadplan.ie

1. INTRODUCTION

- 1.1 This report describes a Stage 1 / 2 Road Safety Audit carried out at Ballykeeffe, Raheen, Limerick on behalf of Hutch O'Malley Consulting Ltd. The audit was carried out on the 24th March 2020 in the offices of Roadplan Consulting, Kilkenny.
- 1.2 The audit team members were as follows:
- George Frisby, BE CEng MIEI
Auditor Number GF51255
 - Richard Frisby, BSc AEng MIEI.
Auditor Number RF13337391
- 1.3 Both audit team members visited the site on the 23rd March 2020. The audit comprised an examination of the drawings relating to the scheme supplied by Hutch O'Malley Consulting Ltd. and an examination of the site.
- 1.4 An examination of the RSA collision database shows that there have been no collisions at the proposed access to the site from 2005 to 2016.



- 1.5 The speed limit of the internal access road is 60 km/h.

- 1.6 This Stage 1 / 2 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.
- 1.7 All problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise accident occurrence.
- 1.8 Appendix A describes the audited drawings.

2. STAGE 1 / 2 AUDIT

2.1 Problem

Stopping sight distance for drivers of vehicles on the approach to the proposed roundabout from the development may be restricted by the proposed vegetation on the southern side of the proposed access road. A lack of adequate stopping sight distance at the proposed access may contribute to a rear end collision at the roundabout exit.

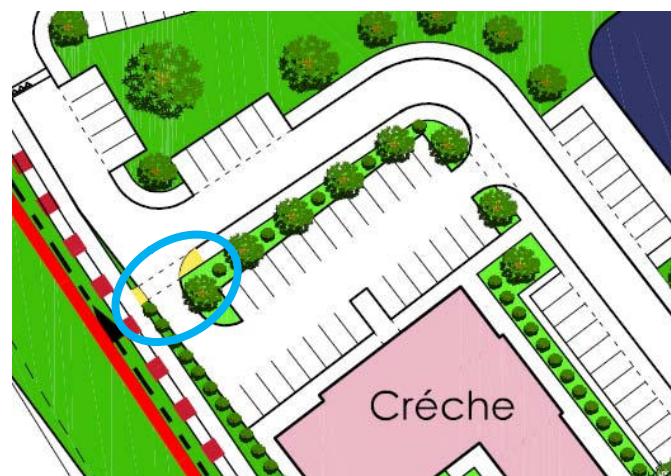


Recommendation

Omit the vegetation so as to provide adequate stopping sight distance on approach to the proposed roundabout.

2.2 Problem

There is an uncontrolled pedestrian crossing located at the exit from the crèche. However, it is unclear whether adequate inter-visibility is provided between drivers of vehicles approaching the pedestrian crossings and pedestrians stopped waiting to cross. Planting shown to be provided could obstruct visibility.



Recommendation

Provide adequate inter-visibility between drivers of vehicles approaching the pedestrian crossings and pedestrians stopped waiting to cross at the pedestrian crossing. Ensure that planting is set back sufficiently behind the visibility splays.

2.3 Problem

A shared surface is proposed along the access road from houses 14-18, 32-36 & 274-280. This access road acts as a through route with a number of houses accessing onto it and as a result will generate a significant amount of vehicular movement along this section of road. A shared surface may not be suitable in this area. In addition, it is unclear whether adequate inter-visibility is provided between drivers of approaching vehicles and drivers of vehicles exiting the car parking spaces provided in the centre of the shared area. Planting shown to be provided could obstruct visibility.

**Recommendation**

Provide a separate footpath along this section of the access road to ensure the safety of pedestrians is catered for. Ensure that planting is set back sufficiently to ensure adequate inter-visibility between drivers of approaching vehicles and drivers of vehicles exiting the car parking spaces.

2.4 Problem

There are a number of low-radius bends within the proposed development. Opposing vehicles may have difficulty in passing one another on these bends. In addition, stopping sight distance on these bends may also be restricted by parked vehicles, vegetation and/or boundaries on the inside

of the bend. These factors may increase the risk of side swipe collision at the bends.

Recommendation

Carry out a swept path analysis and if necessary, revise the layout to ensure two vehicles can safely pass one another on these bends. In addition, provide adequate stopping sight distances at these locations.

2.5 Problem

It is proposed to provide a footpath connection to the existing housing estate located to the northeast of the proposed development. However, no direct footpath connection is provided for a pedestrian travelling along the southern side of the main spine road and from houses 26-31 to access the proposed footpath. This may lead to pedestrians stepping out onto the carriageway where they would be at an increased risk of being struck by a passing vehicle.



Recommendation

Provide a footpath connection to cater for the desired route for pedestrians accessing the proposed footpath connection into the existing housing estate.

2.6 Problem

The most direct route from the proposed development access to houses at the northern end of the development is via an area of shared surface at the apartment blocks. This will result in a significant amount of vehicular

movement along this section of the shared surface. A shared surface may not be suitable along this section of the access road.

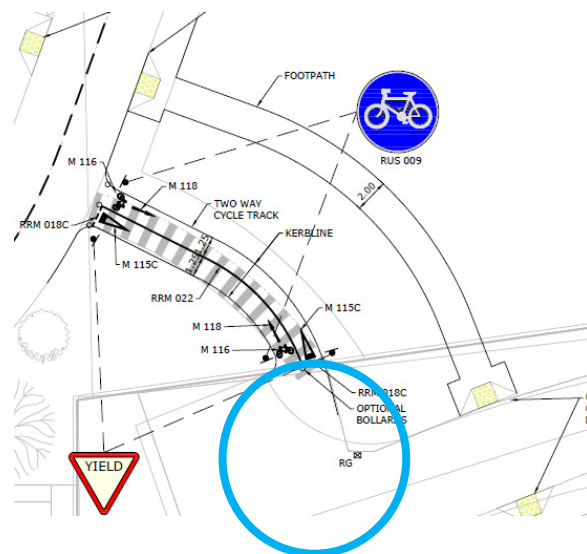


Recommendation

Either provide a separate footpath along this section of the shared road to ensure the safety of pedestrians is catered for or revise the layout to prevent vehicles from travelling through this area.

2.7 Problem

It is proposed to provide a cycle path connection to the existing housing estate located to the northeast of the proposed development. However, a cyclist is required to transverse a grass verge from the existing housing estate access road to gain access to the cycle path.



Recommendation

Extend the cycle path to provide a direct link to the existing housing estate access road.

2.8 Problem

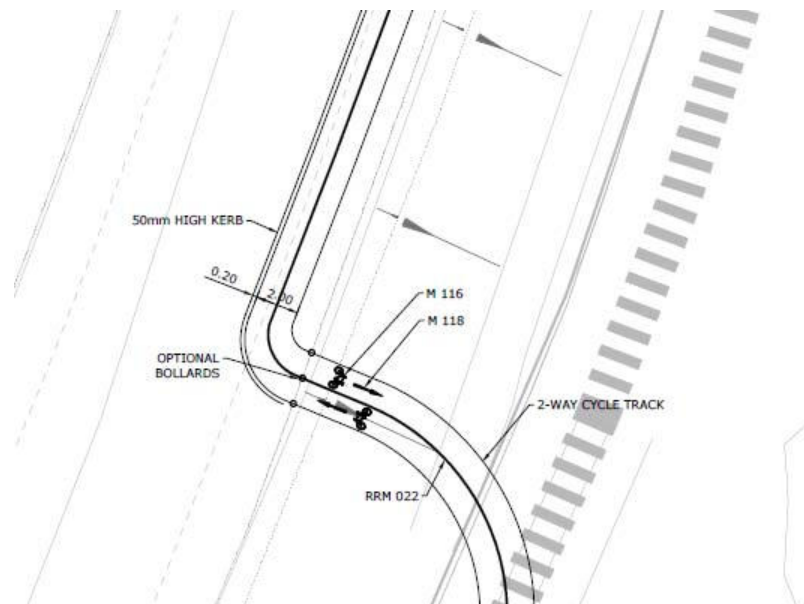
Street lighting exists along the public road. However, street lighting is not shown to be provided within the proposed development. Road safety would be enhanced with the provision of street lighting.

Recommendation

Provide adequate street within the proposed development.

2.9 Problem

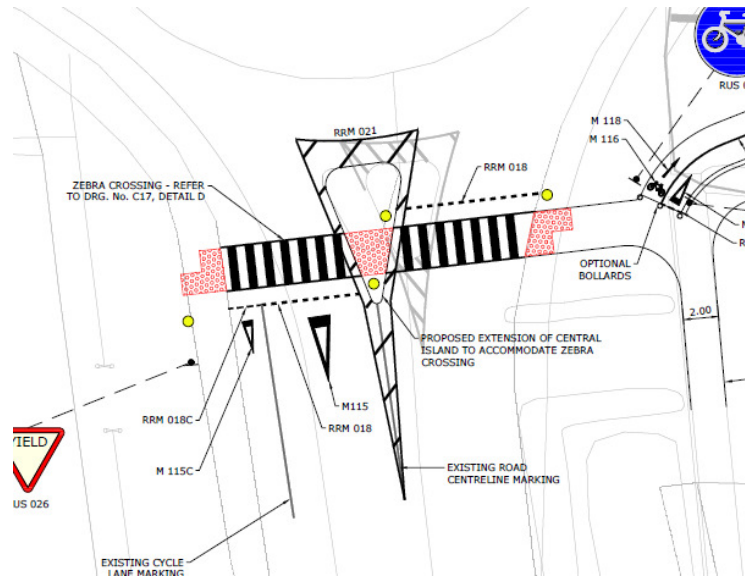
It is unclear from the drawings provided how it is intended to tie-in the proposed two-way cycle facility into the existing cycle network at the northern end of the scheme. A lack of an appropriate connection may contribute to a collision at this location.

**Recommendation**

Temporarily connect the proposed cycle facility into the existing hardshoulder on the R510. In the long term the local authority should consider extending the two-way cycle facility north to connect to the existing cycle network at the junction of the R510 with the N69/N18 interchange.

2.10 Problem

The proposed cycle layout on the southern arm of the roundabout at the development access may not safely cater for cyclists wishing to access or exit the proposed development. A lack of an appropriate cycle access to and from the development may contribute to a collision at this location.

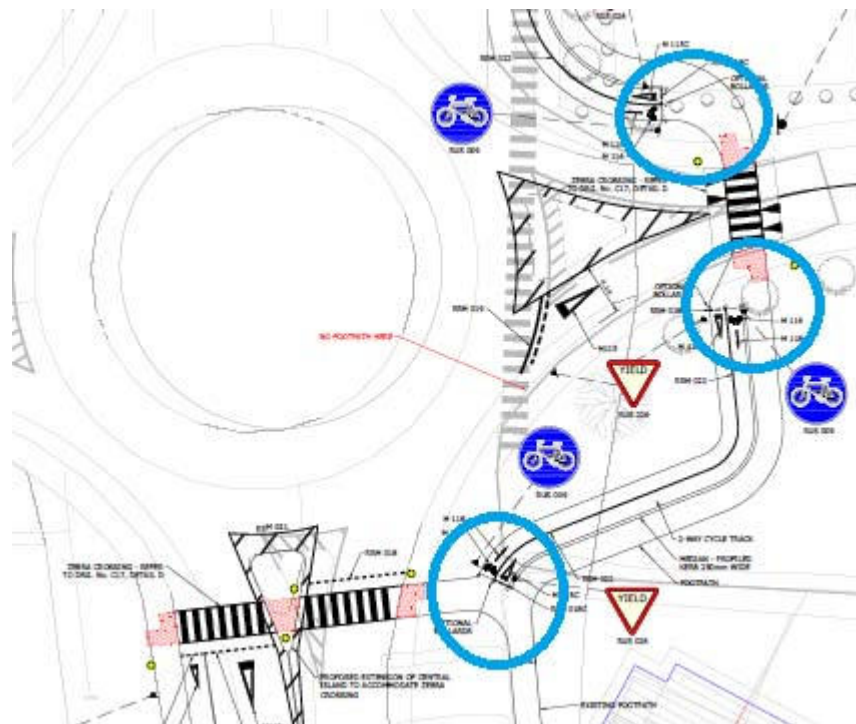


Recommendation

Provide appropriate cycle connections between the cycle facility within the proposed development and the existing northbound cycle lane and south hardshoulder on the R510.

2.11 Problem

There are a number of conflict points between pedestrians and cyclists at the proposed zebra crossings. A lack of adequate guidance may contribute to a pedestrian/cycle collision at these locations.




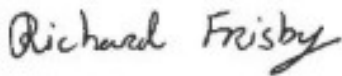
Recommendation

Provide appropriate corduroy paving on the pedestrian and cycle approaches to the conflict points to reduce the risk of a pedestrian/cycle collision.

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.....  George Frisby
Date 24/3/2020.....

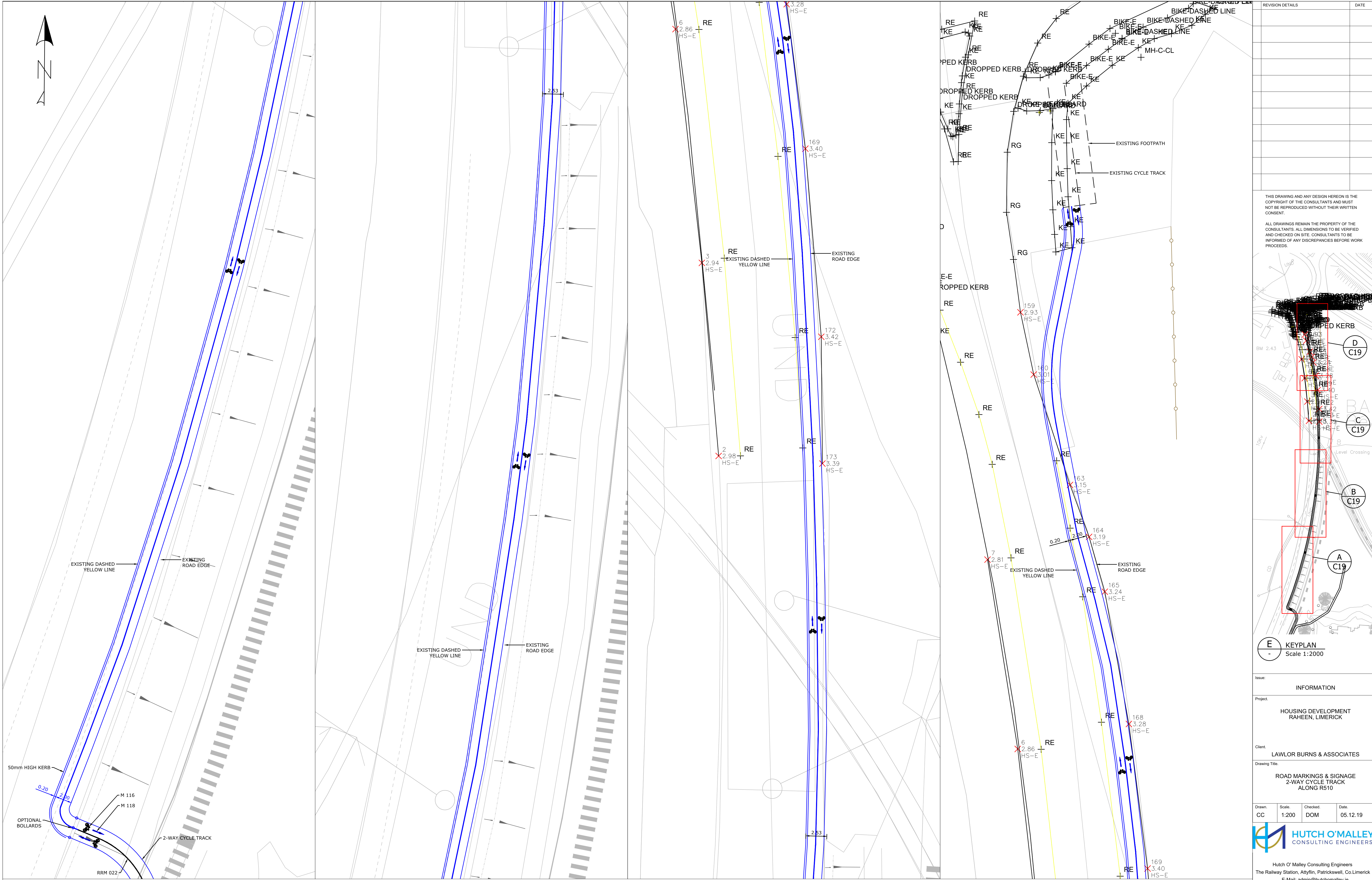
Signed.....  Richard Frisby
Date 24/3/2020.....

APPENDIX A

List of Drawings Examined

The following drawing numbered have been provided electronically in Pdf format by Hutch O'Malley.

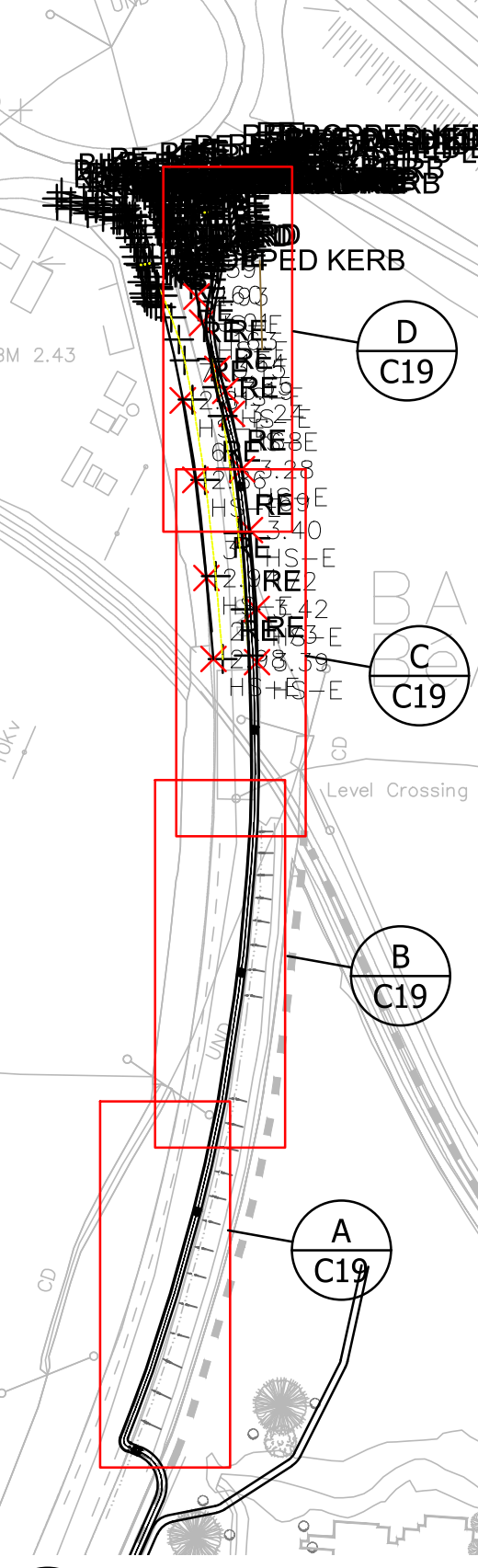
Drawing number	Rev	Drawing title
1704-10-P.V-B	-	Site Layout Plan – Part V Proposal
C13	B	Road Markings & Signage Layout Plan
C15	B	Junction Sightlines Layout
C16	A	Road Markings & Signage Detail Views
C17	X	Road Markings & Signage Typical Details
C19	X	Road Markings & Signage 2-way Cycle Track



REVISION DETAILS	DATE

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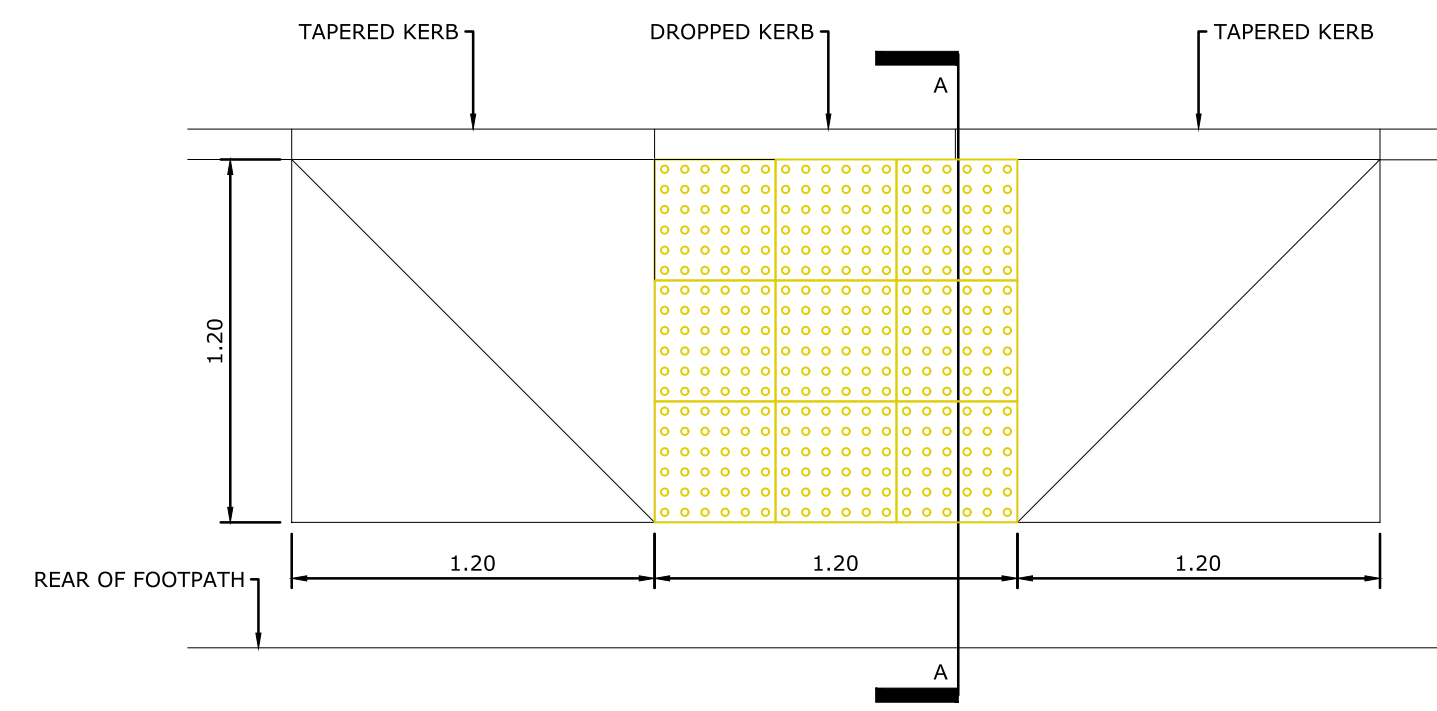
E KEYPLAN Scale 1:2000	
Issue:	INFORMATION
Project:	HOUSING DEVELOPMENT RAHEEN, LIMERICK
Client:	LAWLOR BURNS & ASSOCIATES
Drawing Title:	ROAD MARKINGS & SIGNAGE 2-WAY CYCLE TRACK ALONG R510
Drawn:	Scale:
CC	1:200
Checked:	DOM
Date:	05.12.19
Hutch O'Malley Consulting Engineers The Railway Station, Athylin, Patrickswell, Co. Limerick E-Mail: admin@hutchomalley.ie Phone: 061-320260	
Project No.	Drawing No.
18112	C19
Revision	X

A PLAN: 2-WAY CYCLE TRACK ALONG R510
Scale 1:200

B PLAN: 2-WAY CYCLE TRACK ALONG R510
Scale 1:200

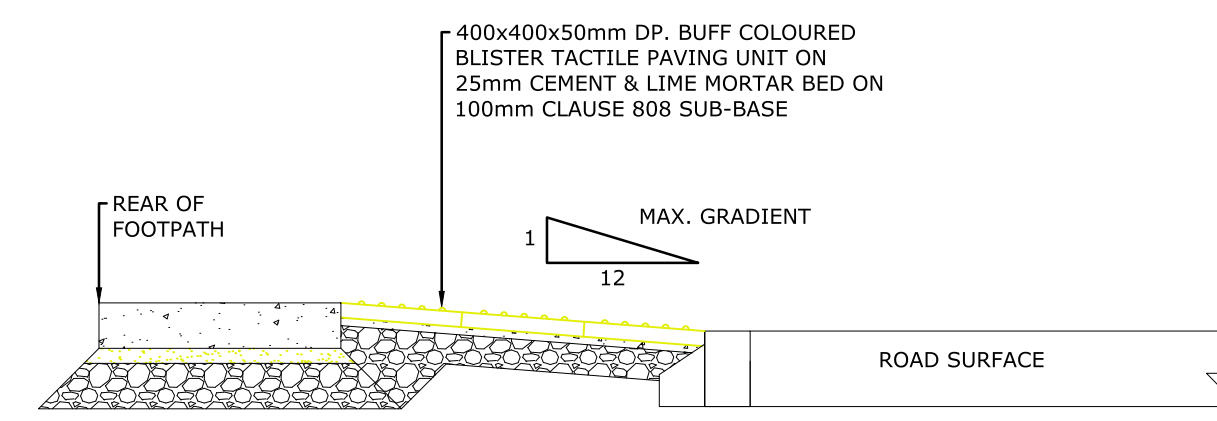
C PLAN: 2-WAY CYCLE TRACK ALONG R510
Scale 1:200

D PLAN: 2-WAY CYCLE TRACK ALONG R510
Scale 1:200

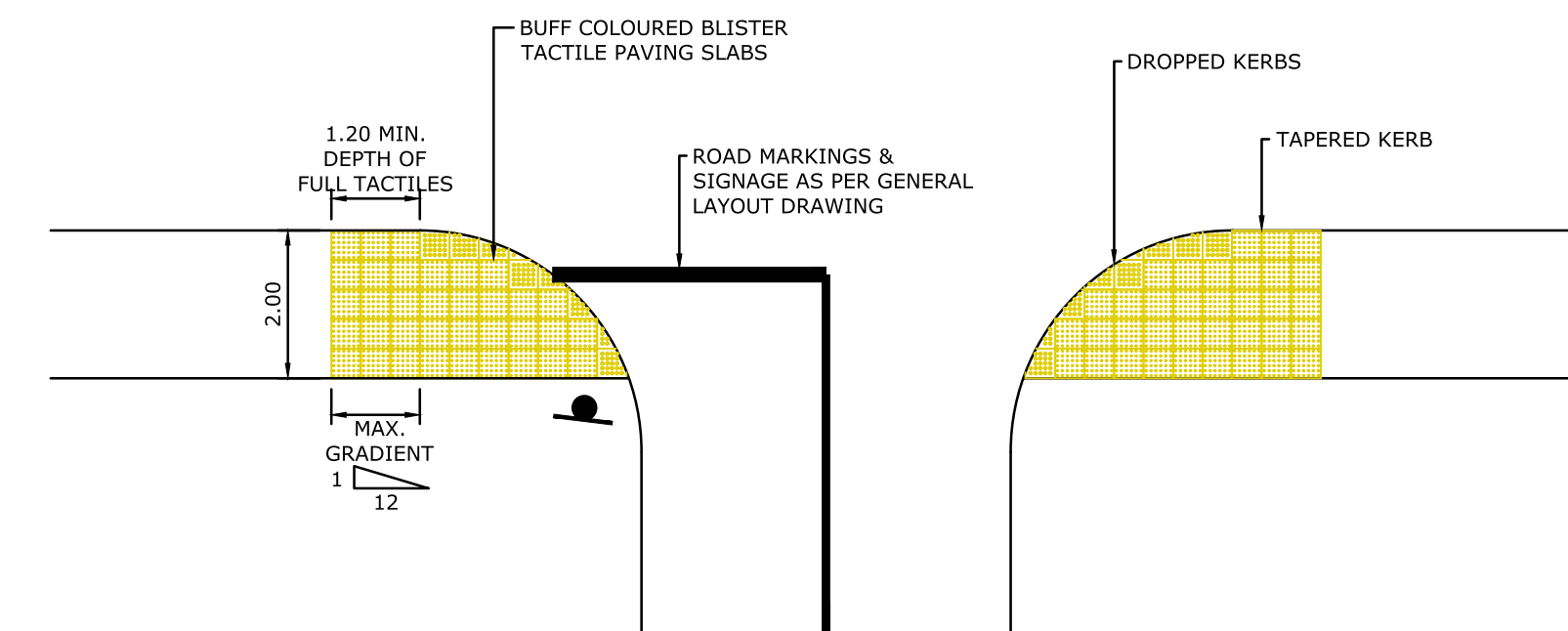


PLAN

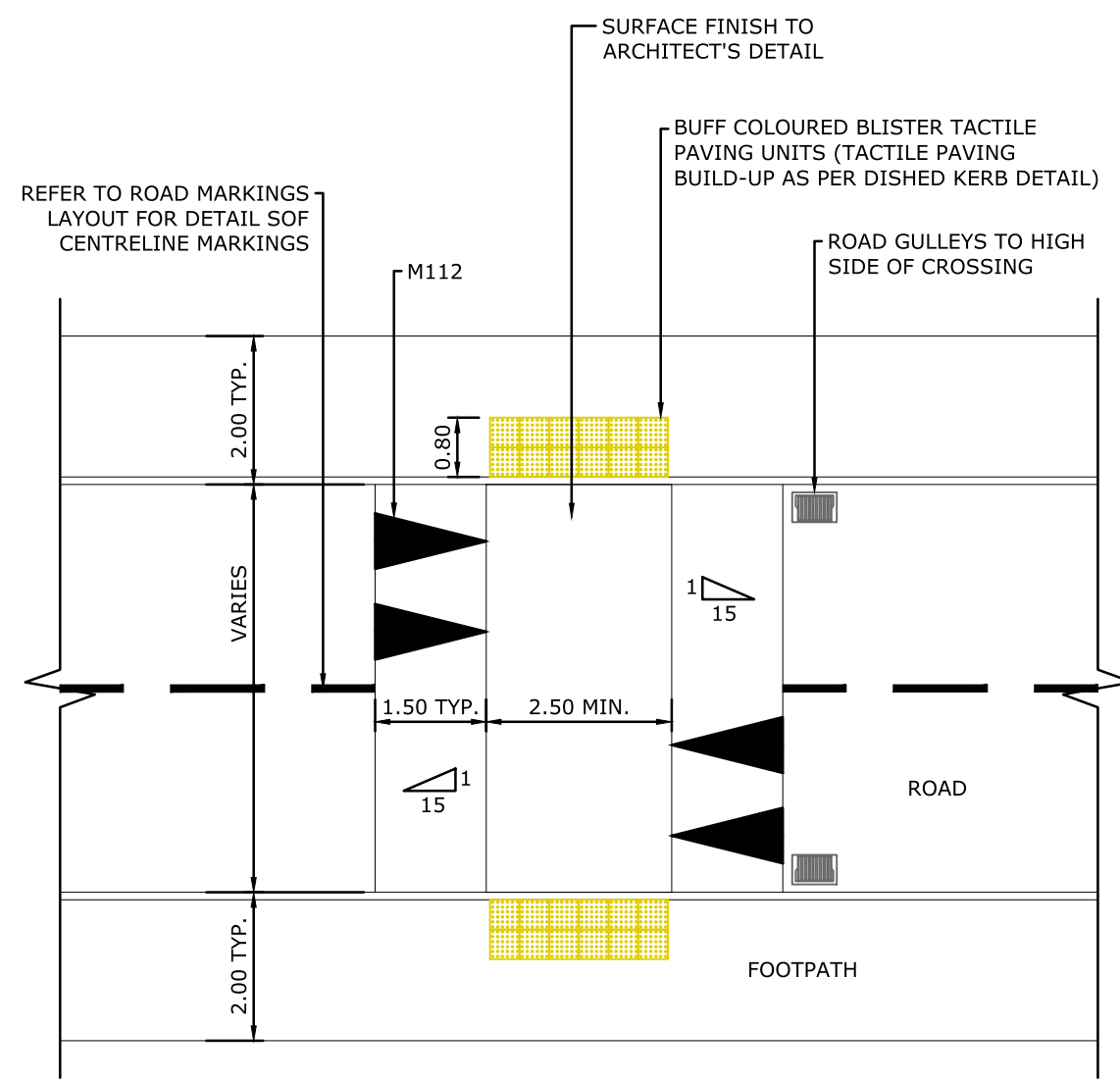
A TYPICAL DISHED KERB - OFFLINE CROSSING
Scale 1:25



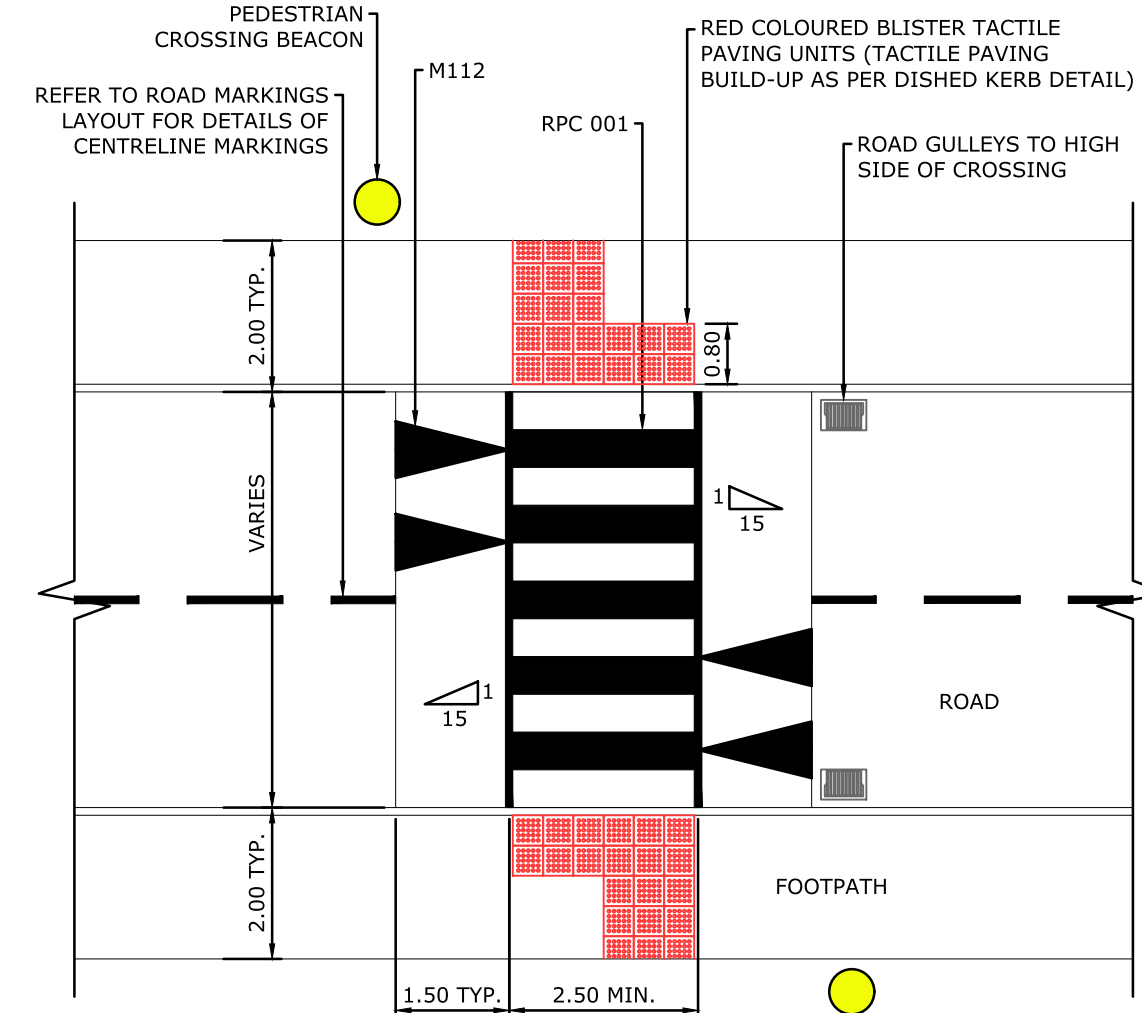
SECTION A-A



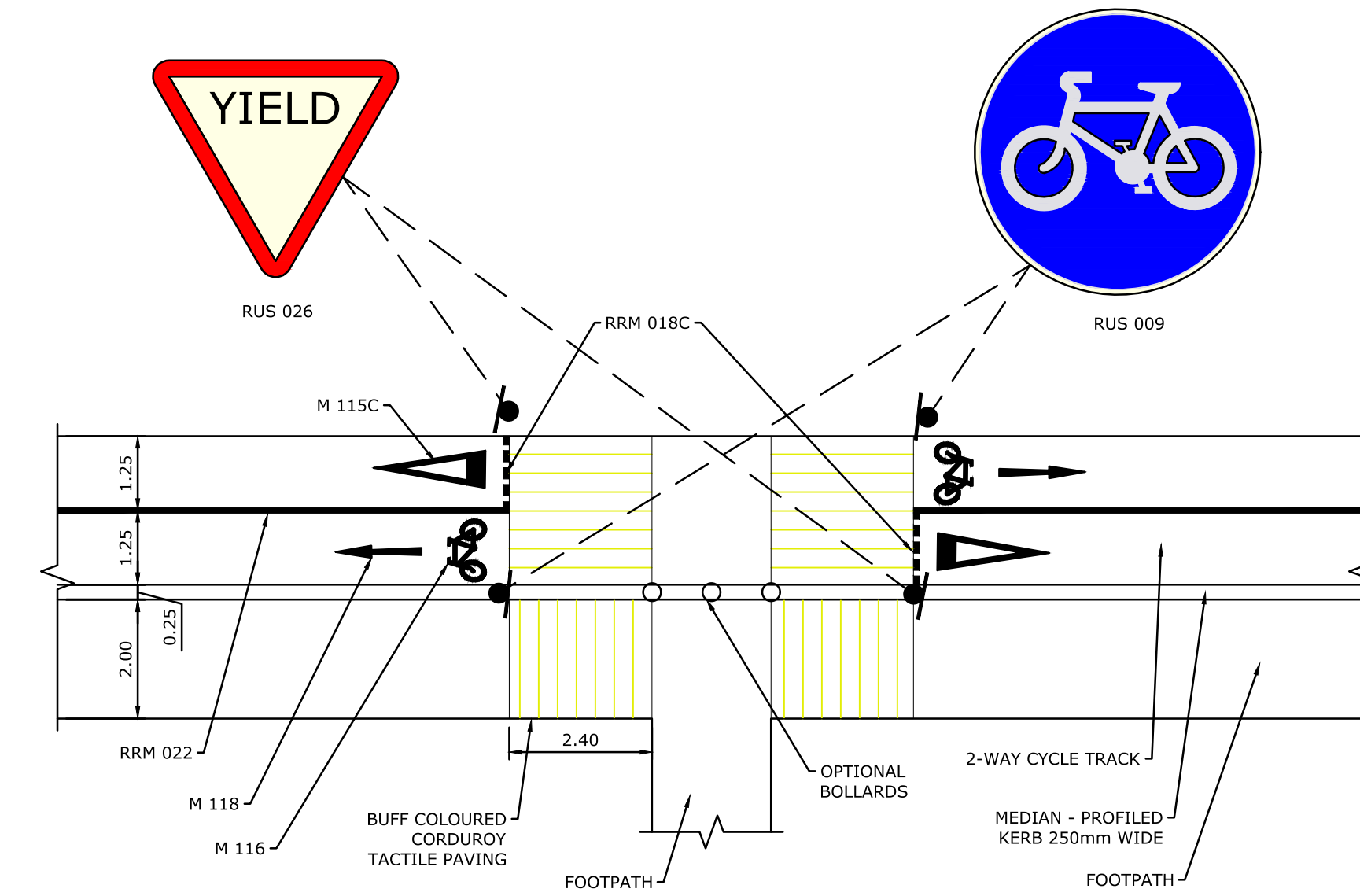
B TYPICAL CROSSING AT JUNCTION
Scale 1:100



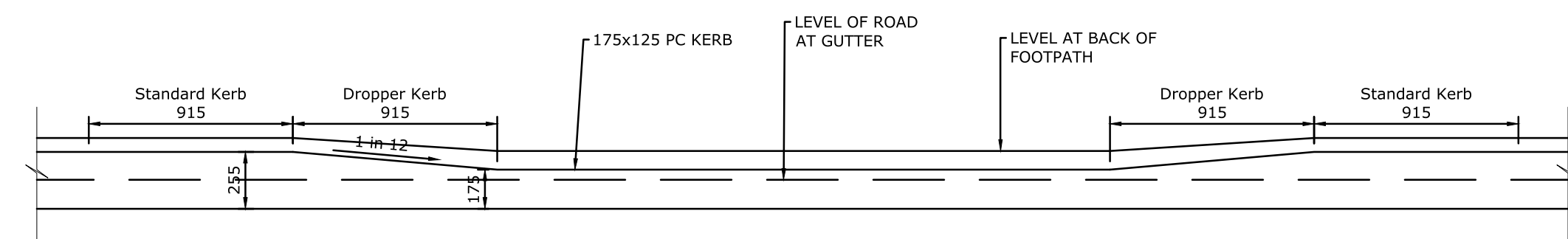
C PLAN: RAISED TABLE UNCONTROLLED CROSSING
Scale 1:100



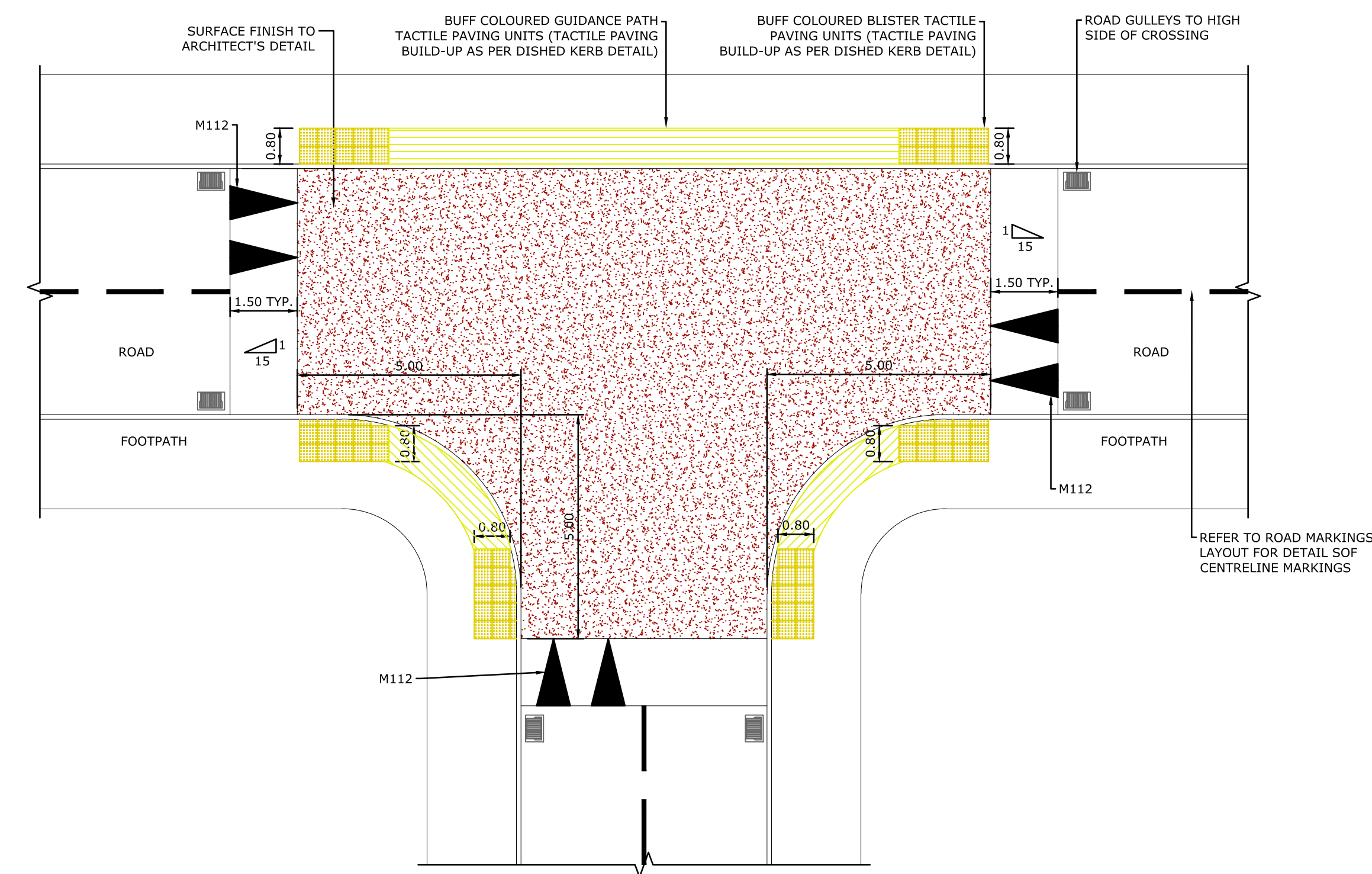
D PLAN: RAISED TABLE ZEBRA CROSSING
Scale 1:100



E PLAN: TYPICAL CYCLE TRACK ACCESS DETAIL
Scale 1:100



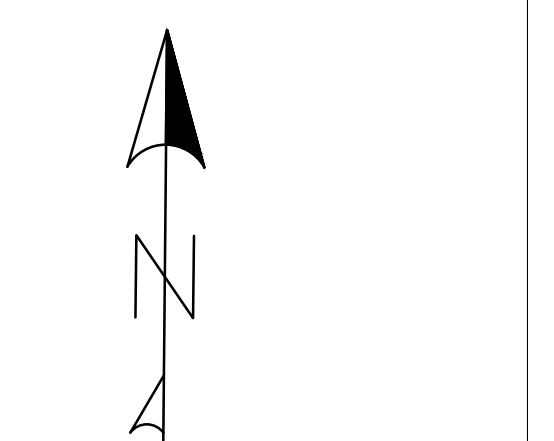
F TYPICAL SECTION AT ROAD EDGE SHOWING ENTRANCE DETAIL FOR PRIVATE HOUSE
Scale 1:25



G TYPICAL SHARED SURFACE JUNCTION
Scale 1:100

REVISION DETAILS	DATE

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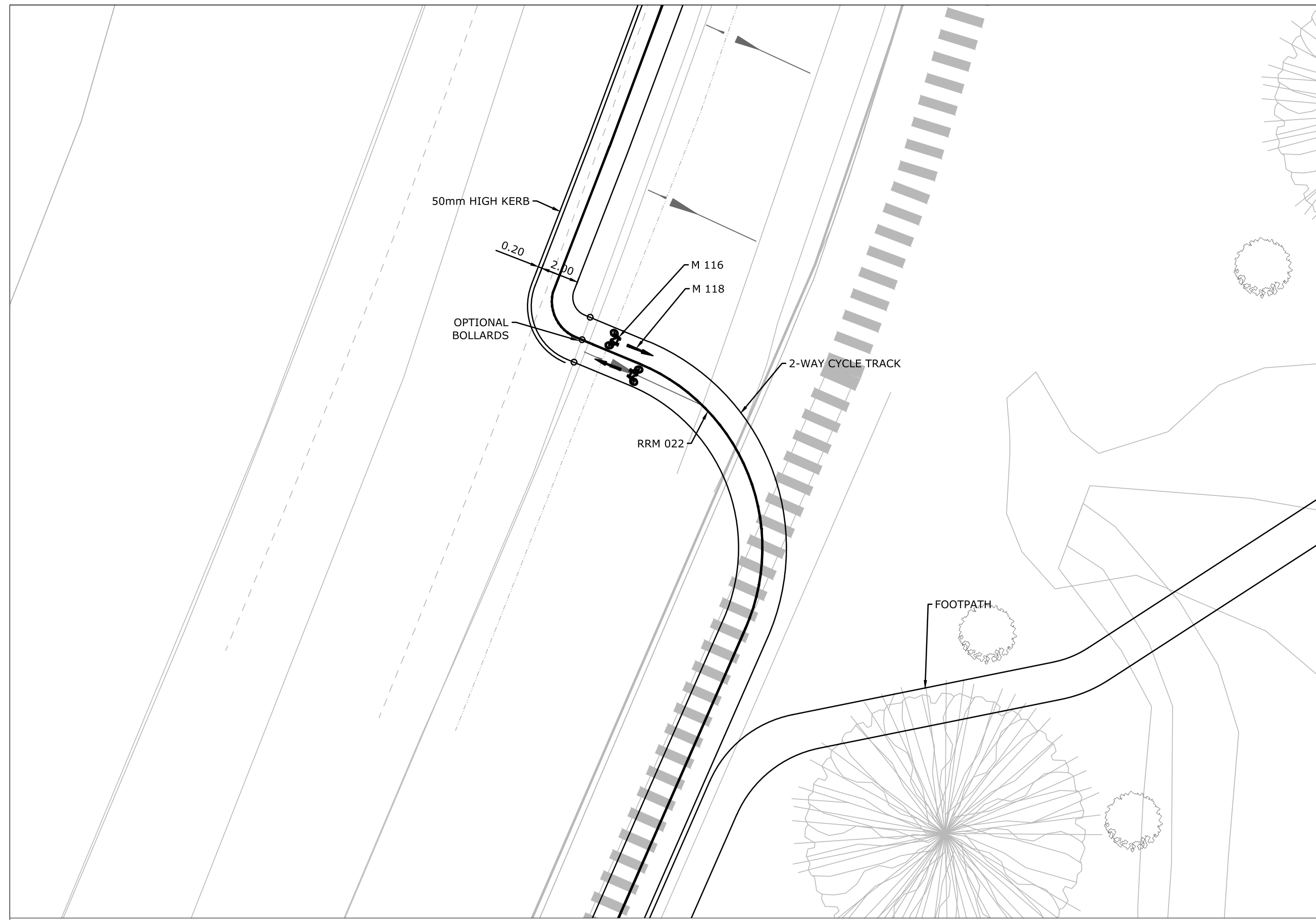
Issue:	INFORMATION
Project:	HOUSING DEVELOPMENT RAHEEN, LIMERICK
Client:	LAWLOR BURNS & ASSOCIATES
Drawing Title:	ROAD MARKINGS & SIGNAGE TYPICAL DETAILS

Drawn:	Scale:	Checked:	Date:
CC	1:100	DOM	13.11.19

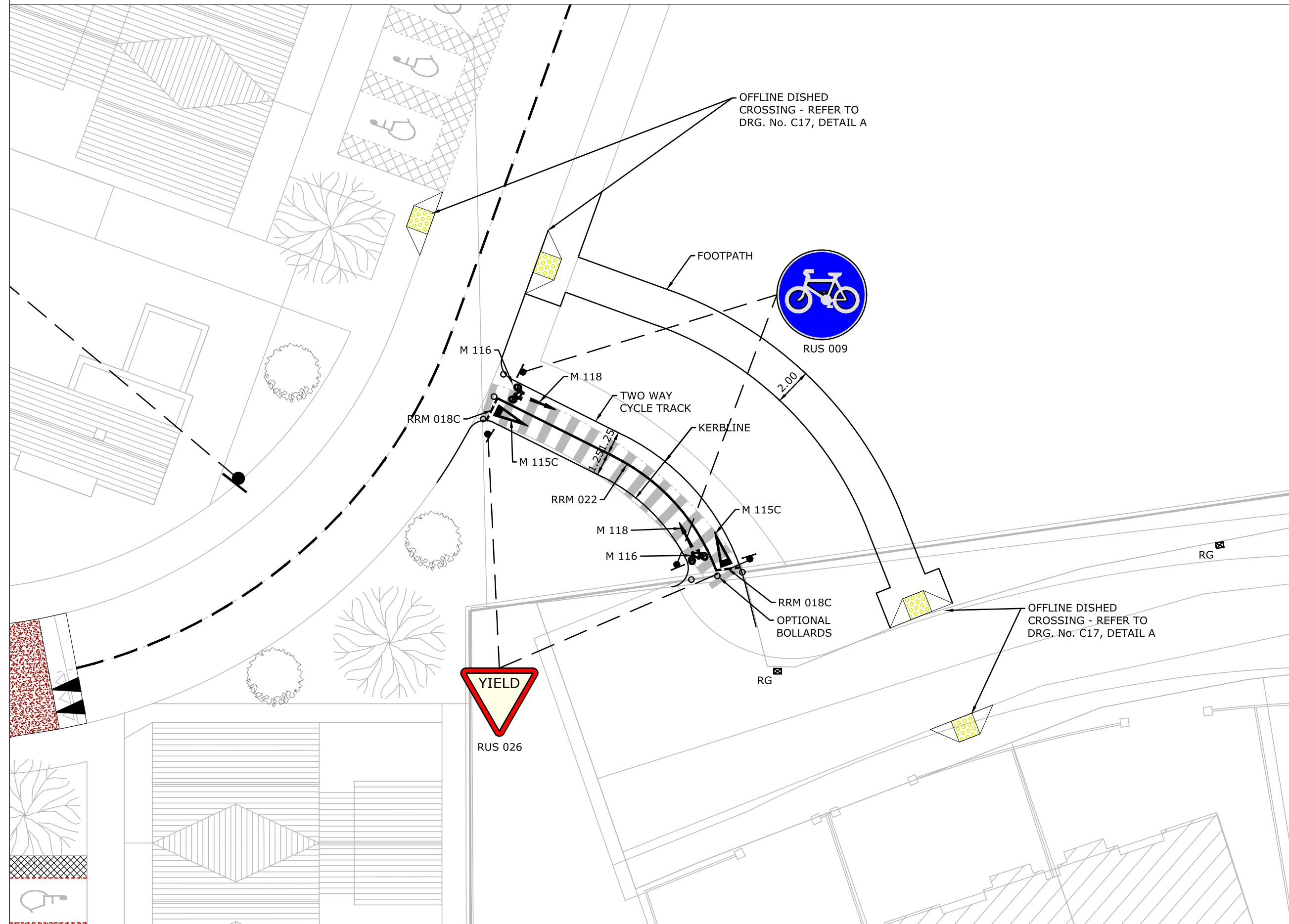


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Phone: 061-320260

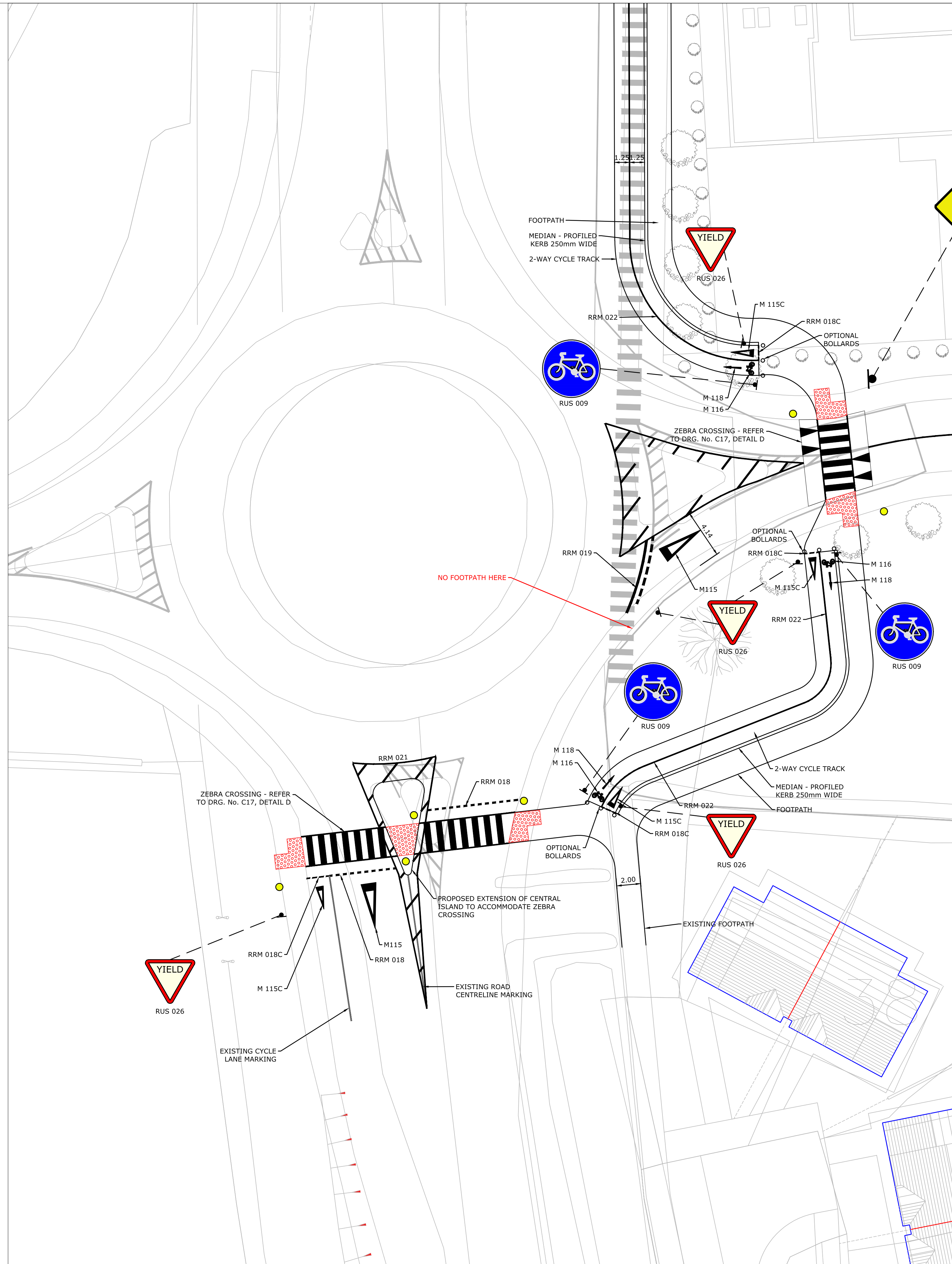
Project No.	Drawing No.	Revision
18112	C17	X



A PLAN: CYCLE TRACK TO R510
C13 Scale 1:200



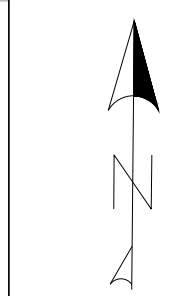
B PLAN: CYCLE TRACK TO NEIGHBOURING ESTATE
C13 Scale 1:200



C PLAN: R510 ROUNDABOUT
C13 Scale 1:200

REVISION DETAILS	DATE
A ZEBRA CROSSING ALTERED	06.12.19

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Issue: INFORMATION
 Project: HOUSING DEVELOPMENT RAHEEN, LIMERICK
 Client: LAWLOR BURNS & ASSOCIATES
 Drawing Title: ROAD MARKINGS & SIGNAGE DETAIL VIEWS

Drawn	Scale	Checked	Date
CC	1:100	DOM	13.11.19



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Project No.	Drawing No.	Revision
18112	C 16	A

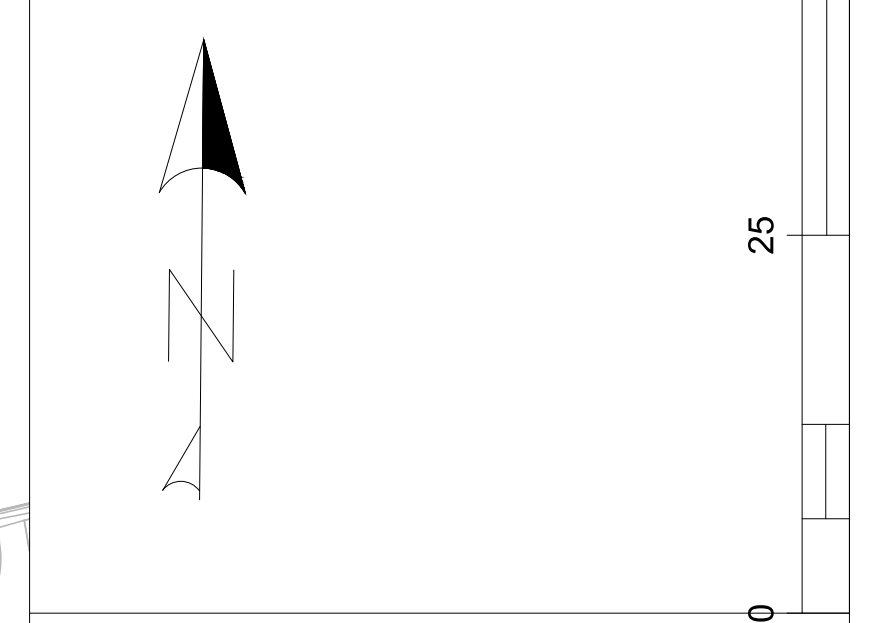


NOTE:
BIN SETDOWN AREAS TO BE PROVIDED ADJACENT TO MAIN SITE CIRCULATION ROAD WHERE NO TURNING AREA PROVIDED OR UNLESS NOTED OTHERWISE.

REVISION DETAILS		DATE
A	REVISED ARCHITECT LAYOUT	06.12.19
B	REV. ARCHITECT LAYOUT	12.03.20

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LEGEND:
 2.4m x 24m VISIBILITY SPLAYS



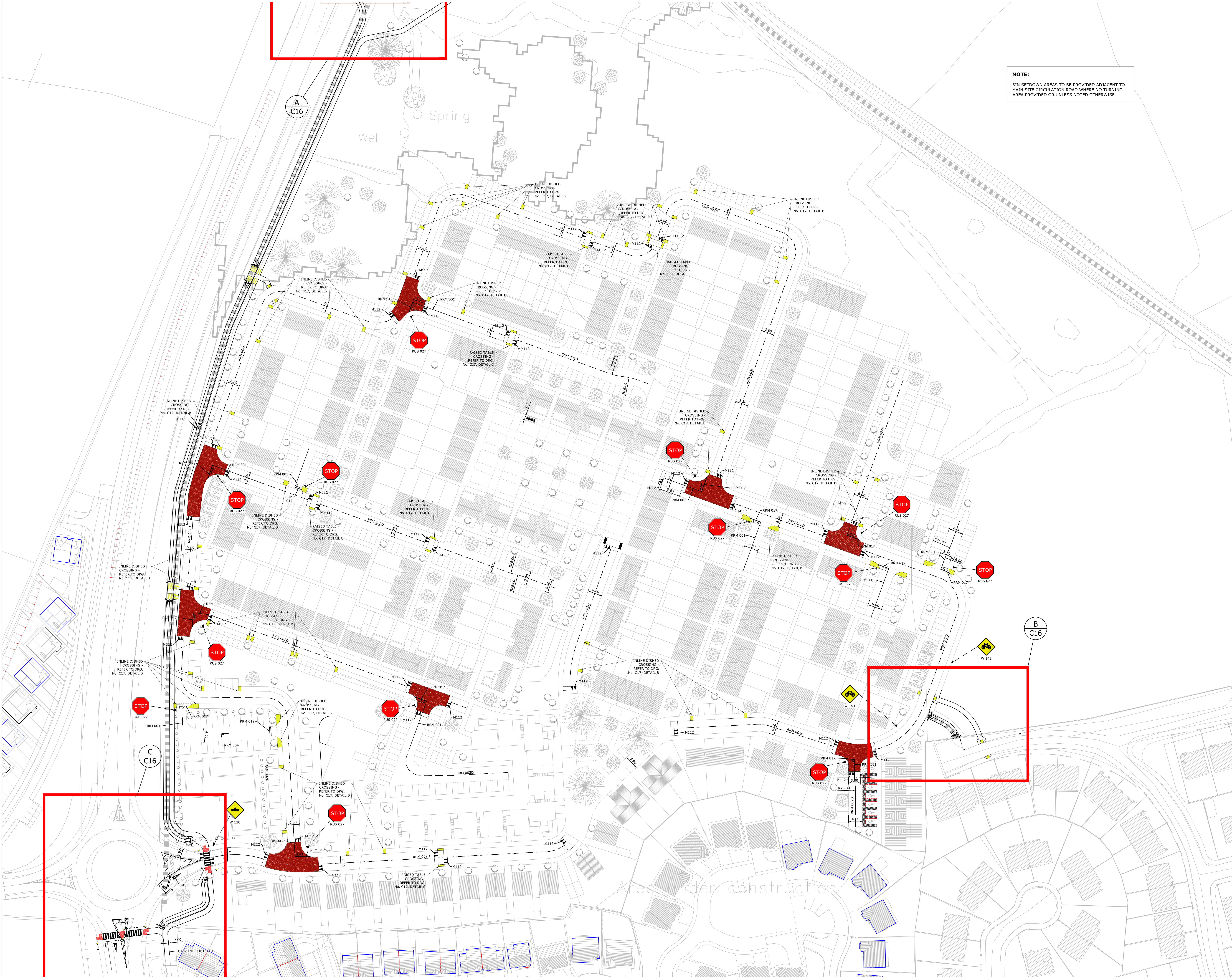
Issue: INFORMATION
 Project: HOUSING DEVELOPMENT RAHEEN, LIMERICK
 Client: LAWLOR BURNS & ASSOCIATES
 Drawing Title: JUNCTION SIGHTLINES LAYOUT

Drawn: CC	Scale: 1:500	Checked: DOM	Date: 08.11.19
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Project No:	Drawing No:	Revision
18112	C 15	B

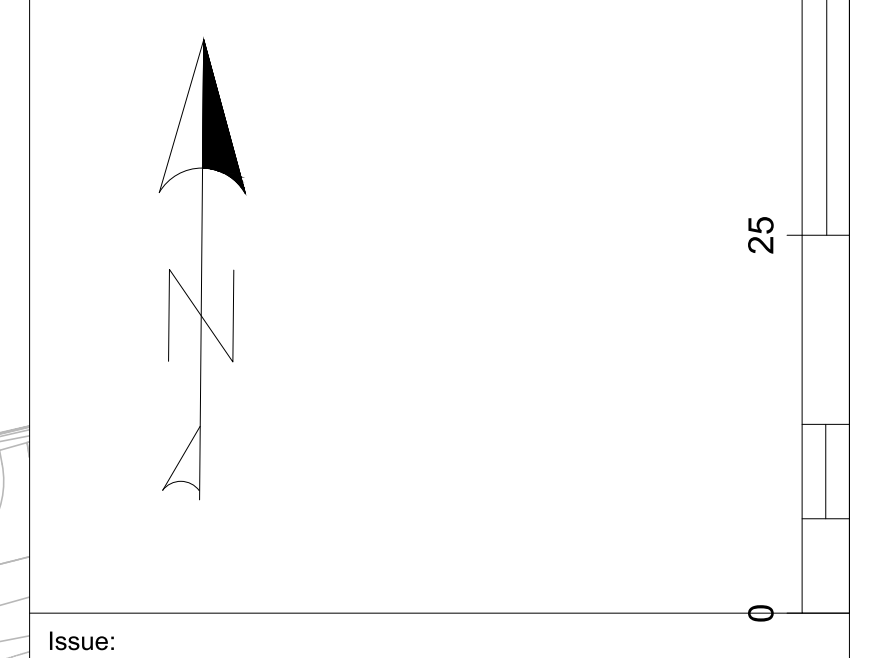


NOTE:
BIN SETDOWN AREAS TO BE PROVIDED ADJACENT TO MAIN SITE CIRCULATION ROAD WHERE NO TURNING AREA PROVIDED OR UNLESS NOTED OTHERWISE.

REVISION DETAILS		DATE
A	CROSSING ADDED. ZEBRA CROSSING ALTERED.	06.12.19
B	REV. ARCHITECT LAYOUT	12.03.20

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Issue:	INFORMATION		
Project:	HOUSING DEVELOPMENT RAHEEN, LIMERICK		
Client:	LAWLOR BURNS & ASSOCIATES		
Drawing Title:	ROAD MARKINGS & SIGNAGE LAYOUT PLAN		
Drawn:	Scale:	Checked:	Date:
CC	1:500	DOM	29.10.19



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E-Mail: admin@hutchomalley.ie
Phone: 061-320260

Project No.	Drawing No.	Revision
18112	C 13	B

Total no.:
331
Density:
36.3 Residential units per hectare
Open Space [%] ~ 16.6 %

LEGEND

- Houses:**
- 7. 5 bed, detached
 - 13. 4 bed, detached, Type 'A'
 - 3. 4 bed, detached, Type 'B'
 - 12. 4 bed, semi-detached, Type 'A'
 - 4. 4 bed, semi-detached, Type 'B'
 - 18. 3 bed, semi-detached, Type 'A'
 - 15. 3 bed, terrace, Type 'A'
 - 16. 3 bed, semi-detached, Type 'B'
 - 6. 3 bed, terrace, Type 'B'
 - 16. 3 bed, semi-detached, Type 'C'
 - 8. 3 bed, terrace, Type 'C'
 - 14. 2 bed, terrace, Type 'A'
 - 12. 2 bed, terrace, Type 'B'

- Apartments:**
- 8. 2 bed apartments
 - 8. 4 bed apartments
 - 3. 2 bed apartments
 - 3. 4 bed apartments
 - 2. 2 bed apartments
 - 12. 2 bed apartments
 - 3. 1 bed apartments
 - 3. 2 bed apartments
 - 25. 2 bed apartments
 - 8. 1 bed apartments
 - 8. Studio

"A"
"C"
"D"
"B"
"E"



Zoning line as per Local Area Plan
 • Residential Development Area to South
 • Open Space & Recreational to North

4 storey, 6 no. apartment block

Raised Crossing

Proposed cycle lane

Wheeler bin collection point

Bin storage area

Zoning line as per Local Area Plan
 • Residential Development Area to North
 • Existing Residential to South

Site Layout Plan
Scale 1:1,000

Revision	Description	Date
1	Pre-planning	
GLEESON MCSWEENEY ARCHITECTS		
Project	Proposed residential development at Ballykeeffe, Raheen, Limerick. For: TBC Development	Stage: Pre-planning
Title	Site Layout Plan - Part V Proposal	[Site Area: 9.12 ha]
Scale	1:1,000 @ A1	Date: March 2020
Drawn	M.M.	Rev: 1704-10-P.V-B
		99 O'Connell St., Limerick
		T 061 412277 E info@gleesonmcsweeney.ie

SAFETY AUDIT FEEDBACK FORM

Scheme: Proposed Residential Development at Raheen, Limerick

Document Number: 20023-01-001

Audit Stage: Stage 1 / 2 RSA

Date Audit Completed: 24/03/2020

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	no	Proposed hedging to be low level (<0.9m height). Tree to be set back clear of approach sight line.	YES
2.2	yes	yes	—	—
2.3	yes	yes	Shared surface is proposed to encourage a low speed zone. Ramps at the entrance and contrasting colour tarmac proposed. Yield lines to be introduced, see attached 18112-C13-C Footpath along main thru road running west-east.	—
2.4	yes	no	The layout is designed to encourage low speeds. Bend radii are as per guidance provided in DMURS. SSD are as per guidance provided in DMURS. Autotrack swept path analysis performed for domestic vehicles without issue. For LCCC fire tender and typical bin truck intermittent lane crossing may occur, hence caution required by vehicles, sight distances as per 18112-C15-C ensure adequate visibility at these locations.	YES
2.5	yes	yes	—	—
2.6	yes	yes	Shared surface is proposed to encourage a low speed zone. Ramps at the entrance and contrasting colour tarmac proposed. The road width on approach to shared area to be reduced to 5.5m to encourage low approach speed. Pedestrian footpath provided through this section.	—
2.7	yes	yes	—	—
2.8	yes	yes	—	—
2.9	no	no	The proposed connection is in accordance with the discussions with LCCC. Proposal is to provide a two-way cycleway along the hard shoulder of the	YES

			R510 that will connect to existing cycle infrastructure at the roundabout to the north. The cycleway is to be separated from vehicular traffic by a 50mm high kerb. Expansion of the lanes to include a footpath is problematic due to the intersection with the CIE rail line and other land ownership issues. However the re-routing into part of the site is a long term proposal to provide more amenity on the cycle lane and fully break from the traffic.	
2.10	yes	yes	Two way cycleway through the site is proposed for north and south bound traffic. Northbound cyclists can either go around the roundabout or dismount and access footpath and zebra crossing via dropped kerb. Southbound cyclists are now provided with a link to the existing hard shoulder to the south of the roundabout.	
2.11	yes	yes		

Safety Audit
Signed off  Design Team Leader

Print Name Liam Gleeson

Date 27/03/20

Safety Audit
Signed off  Employer

Print Name Gary Lawlor

Date 27/03/20

Safety Audit
Signed off  Audit Team Leader

Print Name George Frisby

Date 27/3/20

Please complete and return to: Roadplan Consulting Ltd.
7, Ormonde Road
Kilkenny
E-mail: info@roadplan.ie

David O'Malley
Director
Hutch O'Malley Consulting Ltd,
The Railway Station,
Attyflin, Patrickswell, Co Limerick
V94 A8N2

17th December 2021

**Re: Proposed Residential Development at R510, Raheen, Limerick
Road Safety Audit Stage 1 / 2**

Dear David,

On review of the updated layout drawings provided by HOM in relation to the Road Safety Audit 1/2 Report (Reference Number 20023-01-001) we note the following additional issues and recommendations:

2.12 Problem

Visibility splays at a number of junctions may be restricted by vehicles parked in adjacent car parking spaces. A lack of adequate visibility may contribute to a side swipe collision at these locations.

Recommendation

Provide adequate visibility splays at all junctions.

2.13 Problem

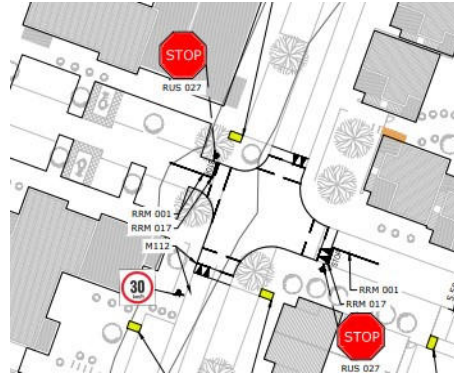
There are a number of locations throughout the development where there appears to be obstructions located within the proposed footpaths restricting the available width for pedestrians. In addition, there also appears to be some locations where adequate footpath linkage is not provided. As a result, pedestrians may be forced to step off the footpath onto the carriageway where they would be at an increased risk of being struck by passing vehicles.

Recommendation

Ensure that adequate footpath width is provided throughout the proposed development and that adequate footpath connections are provided to all locations within the proposed development.

2.14 **Problem**

The road alignment through the junction shown in the image below changes direction abruptly at the junction. The abrupt change in direction of the alignment may contribute to a collision at this location.



Recommendation

Smoothen the alignment through the junction to remove any abrupt changes in direction of the access road.

2.15 **Problem**

In a number of locations adequate width for two-way traffic flow does not appear to be provided. A lack of adequate width for two-way flow of traffic may contribute to a collision.

Recommendation

Ensure that adequate width for two-way flow of traffic is provided in all areas.

2.16 **Problem**

The orientation of the tactile paving at a number of locations appears to be incorrect. As a result, visually impaired pedestrians may be guided out onto the carriageway rather than to the dropped kerb opposite.

Recommendation

Ensure that all tactile paving is correctly orientated on both sides of the proposed crossing locations.

2.17 **Problem**

Cyclists turning to and from the proposed shared facility within the proposed development may find it difficult due to the acute angle at its intersection with the shared facility adjacent to the R510.

Recommendation

Revise the junction layout to remove the tight angle of intersection of the two facilities.

2.18 Problem

The proposed shared facility within the proposed development is shown to terminate at the south eastern corner of the site. However, it is unclear how cyclists access or exit the cycle facility safely from here.

Recommendation

Revise the layout to ensure that cyclists can safely access and exit the cycle facility at this location.

List of Drawings Examined

The following drawing numbered have been provided electronically in Pdf format by Hutch O'Malley Consulting Ltd.

Drawing number	Rev	Drawing title
C13	G	Road Markings & Signage Layout Plan
C15	E	Junction Sightlines Layout
C16	C	Road Markings & Signage Detail Views

Yours sincerely,



George Frisby
For Roadplan Consulting



NOTE:
 BIN SETDOWN AREAS TO BE PROVIDED ADJACENT TO MAIN SITE CIRCULATION ROAD WHERE NO TURNING AREA PROVIDED OR UNLESS NOTED OTHERWISE.

REVISION DETAILS	DATE
A CROSSING ADDED. ZEBRA CROSSING ALTERED.	06.12.19
B REV. ARCHITECT LAYOUT	12.03.20
C ADD RSA MEASURES	25.03.20
D REV. ARCH. LAYOUT	24.04.20

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Issue: INFORMATION

Project: HOUSING DEVELOPMENT RAHEEN, LIMERICK

Client: LAWLOR BURNS & ASSOCIATES

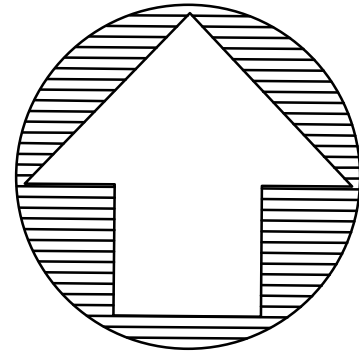
Drawing Title: ROAD MARKINGS & SIGNAGE LAYOUT PLAN

Drawn	Scale	Checked	Date
DC	1:500	DOM	03/12/21



Hutch O'Malley Consulting Engineers
 The Railway Station, Attyflin, Patrickswell, Co Limerick
 E-Mail: admin@hutchomalley.ie
 Phone: 061-320260

Project No.	Drawing No.	Revision
18112	C 13	G



NOTE:
BIN SETDOWN AREAS TO BE PROVIDED ADJACENT TO MAIN SITE CIRCULATION ROAD WHERE NO TURNING AREA PROVIDED OR UNLESS NOTED OTHERWISE.



REVISION DETAILS		DATE
A	REVISED ARCHITECT LAYOUT	06.12.19
B	REV. ARCHITECT LAYOUT	12.03.20
C	ADD RSA MEASURES	25.03.20
D	REV. ARCH. LAYOUT	24.04.20

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LEGEND:
2.4m x 24m VISIBILITY SPLAYS TYPICALLY (AT ROUNDABOUT a=40m)

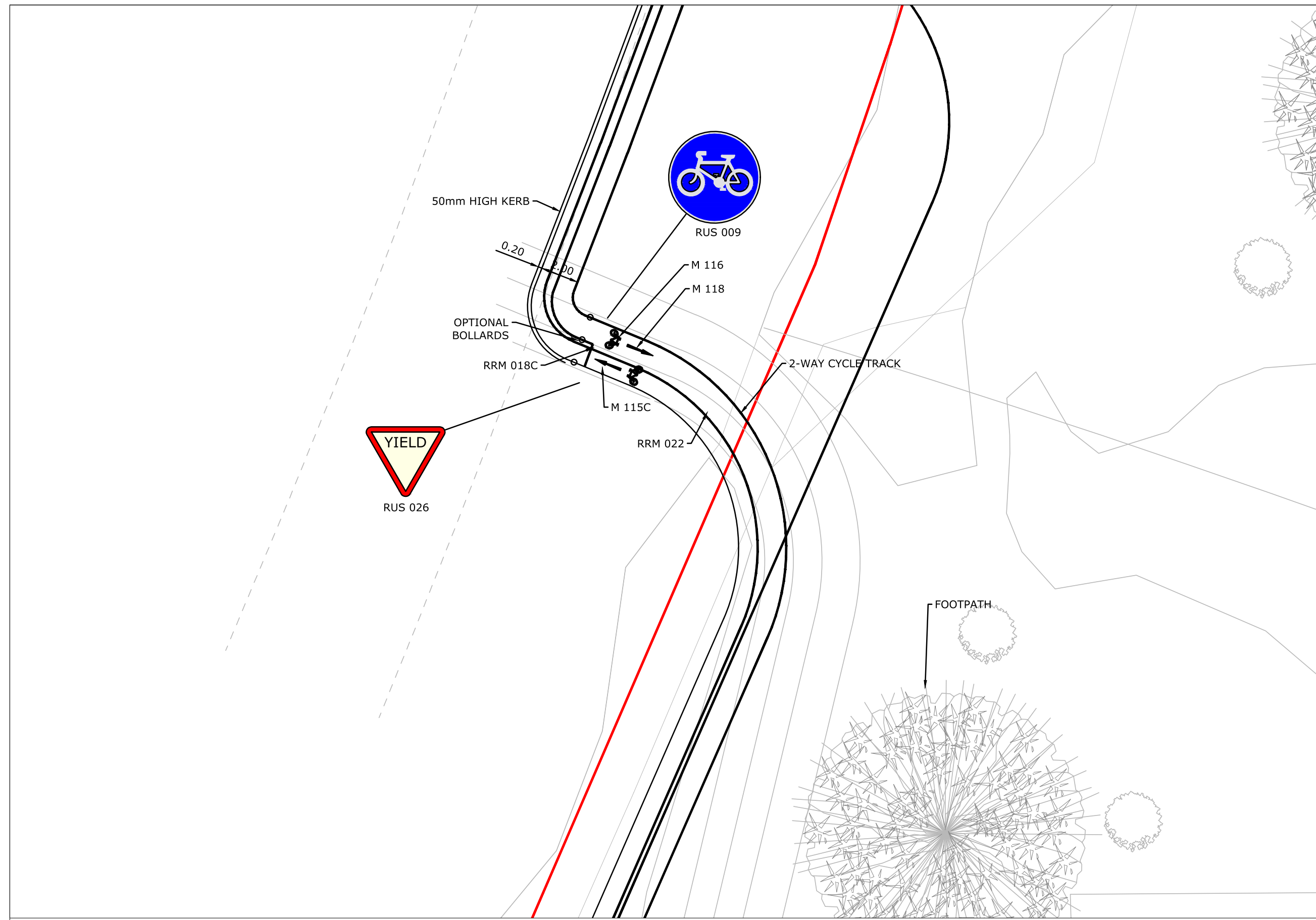
Issue:	INFORMATION		
Project:	HOUSING DEVELOPMENT RAHEEN, LIMERICK		
Client:	LAWLOR BURNS & ASSOCIATES		
Drawing Title:	JUNCTION SIGHTLINES LAYOUT		

Drawn:	Scale:	Checked:	Date:
DC	1:500	DOM	08.11.19

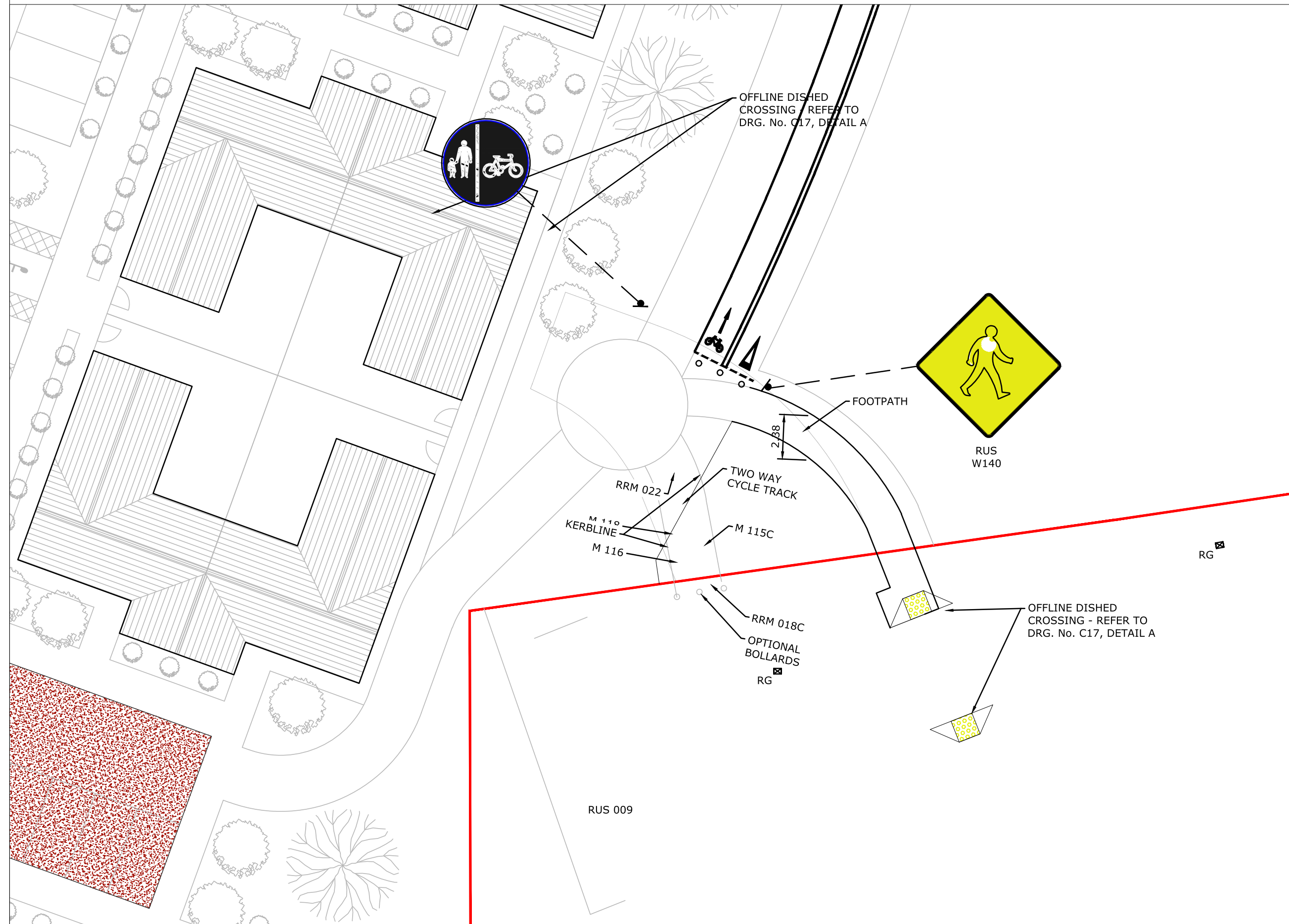


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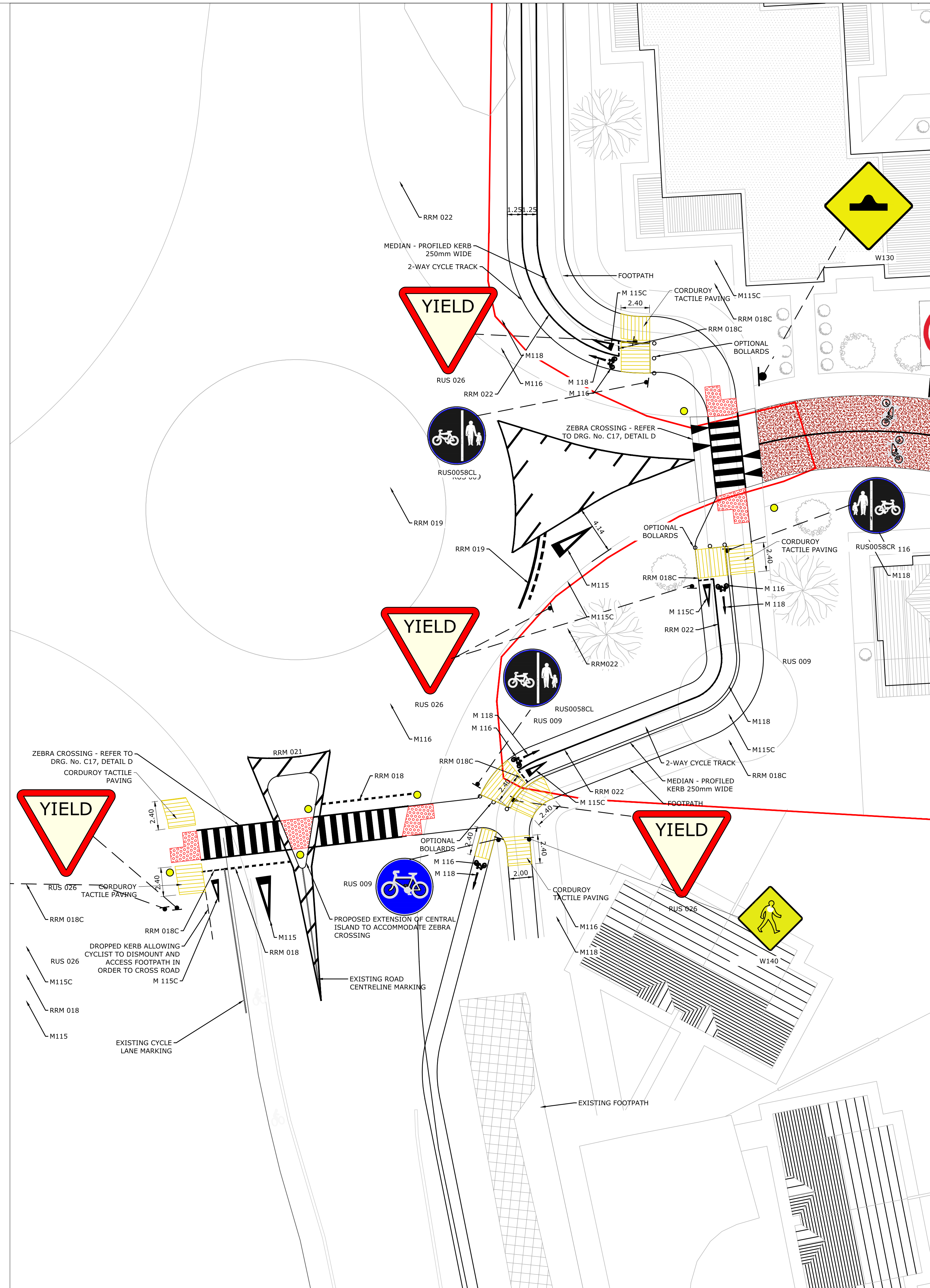
Project No.	Drawing No.	Revision
18112	C 15	E



A PLAN: CYCLE TRACK TO R510
C13 Scale 1:200



B PLAN: CYCLE TRACK TO NEIGHBOURING ESTATE
C13 Scale 1:200



C PLAN: R510 ROUNDABOUT
C13 Scale 1:200

REVISION DETAILS	DATE
A ZEBRA CROSSING ALTERED	06.12.19
B ADD RSA MEASURES	25.03.20

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Issue:	INFORMATION		
Project:	HOUSING DEVELOPMENT RAHEEN, LIMERICK		
Client:	LAWLOR BURNS & ASSOCIATES		
Drawing Title:	ROAD MARKINGS & SIGNAGE DETAIL VIEWS		
Drawn:	Scale:	Checked:	Date:
CC	1:200	DOM	13.11.19

HUTCH O'MALLEY
CONSULTING ENGINEERS

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Project No.	Drawing No.	Revision
18112	C 16	C

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George Frisby
Roadplan Consulting Ltd
7 Ormonde Road, Kilkenny
Our Ref: 18112 DOM/DC
Your Ref: 20023-01-001
16th February 2022

Re: Proposed Residential Development at Raheen, Limerick - Road Safety Audit Stage 1 / 2

Dear Sirs,

With regard to the correspondence dated on 16/11/2021 please see responses below to confirm the audit concerns are addressed.

1. 2.12 Problem

Visibility splays at a number of junctions may be restricted by vehicles parked in adjacent car parking spaces. A lack of adequate visibility may contribute to a side swipe collision at these locations.

Recommendation

Provide adequate visibility splays at all junctions.

HOM Response: Proposed road warning signs and ancillary road markings have been adjusted, to ensure that adequate sightlines are provided throughout the development as required. Please refer to revised Sightline drawing 18112-C15_Rev K enclosed.

2. 2.13 Problem

There are a number of locations throughout the development where there appears to be obstructions located within the proposed footpaths restricting the available width for pedestrians. In addition, there also appears to be some locations where adequate footpath linkage is not provided. As a result, pedestrians may be forced to step off the footpath onto the carriageway where they would be at an increased risk of being struck by passing vehicles.

Recommendation

Ensure that adequate footpath width is provided throughout the proposed development and that adequate footpath connections are provided to all locations within the proposed development.

HOM Response: Please note that landscaping obstructions have been removed, and where present, are separated from the footpath allowing adequate space for passing / turning etc. Please refer to revised Road Markings & Signage drawing 18112_C13_Rev K enclosed. In relation to the footpath connections, it has been the objective of the Designer to provide all footpath crossings necessary. Where this is not present, it shall be rectified until satisfactory crossing is provided where applicable.

3. 2.14 Problem

The road alignment through the junction shown in the image below changes direction abruptly at the junction. The abrupt change in direction of the alignment may contribute to a collision at this location.

Recommendation

Smoothen the alignment through the junction to remove any abrupt changes in direction of the access road.

HOM Response: Noted, please see a slight modification to the proposed junction line marking on revised Road Markings & Signage drawing 18112_C13_Rev K enclosed. Speed control ramps are present at junctions and the alignment is proposed to also contribute to speed control through physical restriction.

4. 2.15 Problem

In a number of locations adequate width for two-way traffic flow does not appear to be provided. A lack of adequate width for two-way flow of traffic may contribute to a collision.

Recommendation

Ensure that adequate width for two-way flow of traffic is provided in all areas.

HOM Response: In relation to the two way flow connections, it has been the objective of the Designer to provide adequate space throughout the development. Pinch points are in place in a number of dead end parking areas to restrict parking and traffic movements, these are narrow (3.8m to 4m) but do allow two cars to pass at slow speeds.

5. 2.16 Problem

The orientation of the tactile paving at a number of locations appears to be incorrect. As a result, visually impaired pedestrians may be guided out onto the carriageway rather than to the dropped kerb opposite.

Recommendation

Ensure that all tactile paving is correctly orientated on both sides of the proposed crossing locations.

HOM Response: Noted, please see revised Road Markings & Signage drawing 18112_C13_RevK enclosed.

6. 2.17 Problem



Cyclists turning to and from the proposed shared facility within the proposed development may find it difficult due to the acute angle at its intersection with the shared facility adjacent to the 510 Road.

Recommendation

Revise the junction layout to remove the tight angle of intersection of the two facilities.

HOM Response: Noted, please see a slight modification to the proposed junction on revised Road Markings & Signage drawing 18112_C13_Rev K enclosed.

7. 2.18 Problem

The proposed shared facility within the proposed development is shown to terminate at the south eastern corner of the site. However, it is unclear how cyclists access or exit the cycle facility safely from here.

Recommendation

Revise the layout to ensure that cyclists can safely access and exit the cycle facility at this location.

HOM Response: Please note that all pedestrian / cyclist routes have been extended as far as possible within the bounds of the site. Where they end as shown, users shall make use of the current provisions until such time that future development is in place to continue such provisions.

I hope this information proves satisfactory, should you require anything further, please do not hesitate to contact me at any time.

Yours sincerely,

Dylan Casey B.Eng BSc MA
Hutch O'Malley Consulting Ltd.