Appendix 4.2 J
Road Safety Audit

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Title: **Stage 1 ROAD SAFETY AUDIT**

For;

Proposed Data Centre R409, Naas, Co. Kildare

Client: **Donnachadh O'Brien & Associates Consulting Engineers**

Date: **July 2023**

Report reference: **1918R01**

VERSION: **FINAL (12-7-2023)**

Prepared By:

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1.0 Introduction

This report was prepared in response to a request from Mr. Richard Kiernan, of Donnachadh O'Brien & Associates Consulting Engineers, for a Stage 1 Road Safety Audit for the public road aspects of the proposed Data Centre off the R409 in Naas Co. Kildare.

The Road Safety Audit Team comprised of;

Team Leader:	**Norman Bruton**, BE CEng FIEI, Cert Comp RSA.
	TII Auditor Approval no. NB 168446
Team Member:	**Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI
	TII Auditor Approval no. OO1291756

The Road Safety Audit involved the examination of drawings and other material provided by Donnachadh O'Brien & Associates Consulting Engineers and a site visit by the Audit Team, together, on the 5th of July 2023.

The weather at the time of the site visit was dry and the road surface was also dry.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication Number GE-STY-01024, dated December 2017.

The scheme has been examined and this report compiled in respect of the consideration of those matters that have an adverse effect on road safety. It has not been examined or verified for compliance with any other standards or criteria.

The problems identified in this report are considered to require action in order to improve the safety of the scheme for road users.

If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

The information supplied to the Audit Team is listed in **Appendix A.**

The feedback form is contained in **Appendix B.**

A plan drawing showing the problem locations is contained in **Appendix C**.

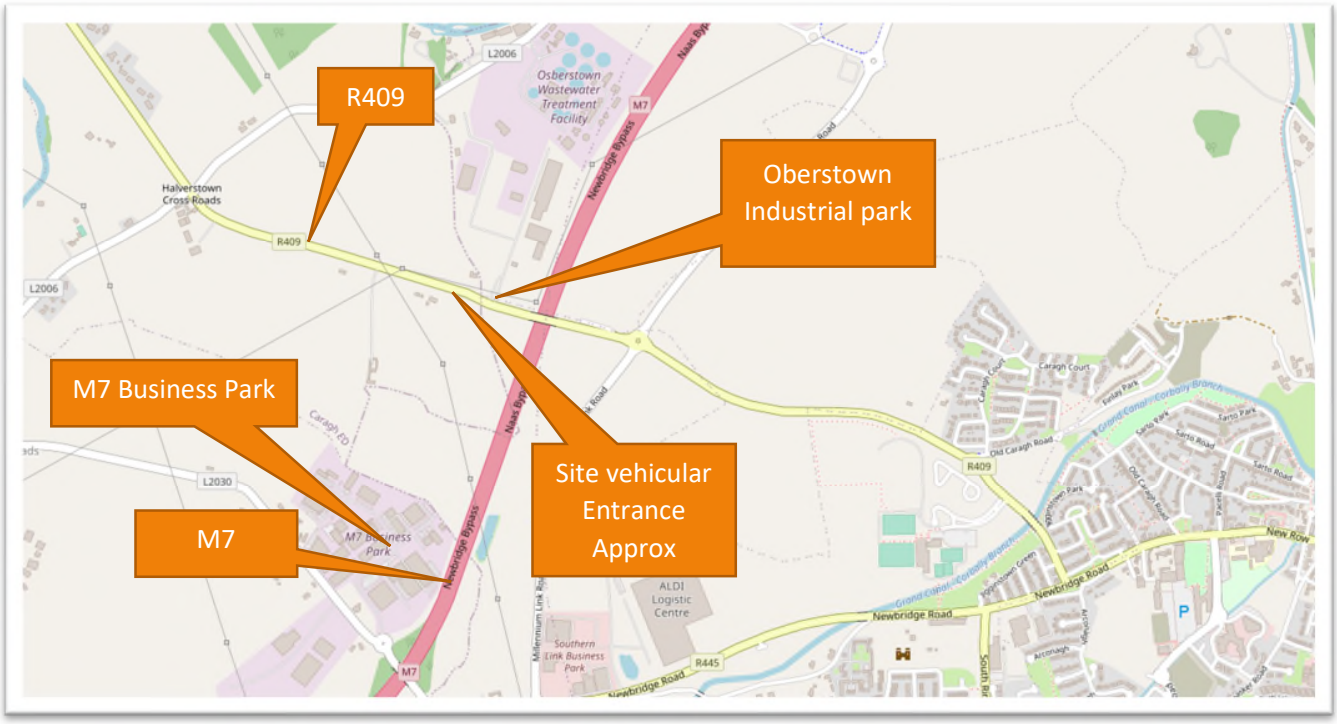
2.0 Background

It is proposed to construct a new data center off the R409 in Naas. The site is located north of the M7 overbridge and the M7 Business Park (L2030) and on the opposite side of the R409 to the Oberstown Industrial Park.

The R409 is a single carriageway road. On the eastern side of the M7 overbridge there is a footpath and cycle track on the northbound side. These terminate before the structure. There is a footpath only on the southbound side which also terminates before ethe structure.

It is proposed to provide a new priority junction off the R409 for vehicular traffic. It is also proposed to improve the facilities for vulnerable road users by providing a shared use pedestrian/cycle surface across the M7 overbridge and segregated use surfaces west of the structure to the site boundary. A shared use facility will be brought into the proposed development. A bus stop (layby) will be provided just west of the Oberstown Industrial Park access.

The site location map is shown below.



Site location map courtesy of openstreetmap.org

No data was available from the Road Safety Authority's website on collisions due to an ongoing review of the policy on making such information available.

3.0 Items Raised in This Road Safety Audit.

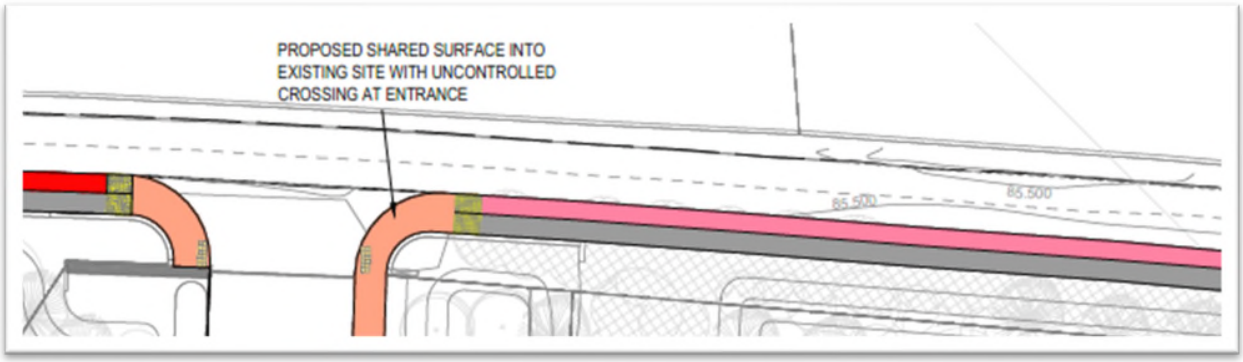
3.1 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409

PROBLEM

It is proposed to provide a cycle track to the proposed development and beyond in the northbound direction. It is not however proposed to provide cycling facilities for those returning from the development to Naas in the southbound direction. A lack of segregated facilities in the southbound direction will lead to less protection for cyclists from general traffic.



RECOMMENDATION

It is recommended that southbound facilities be provided.

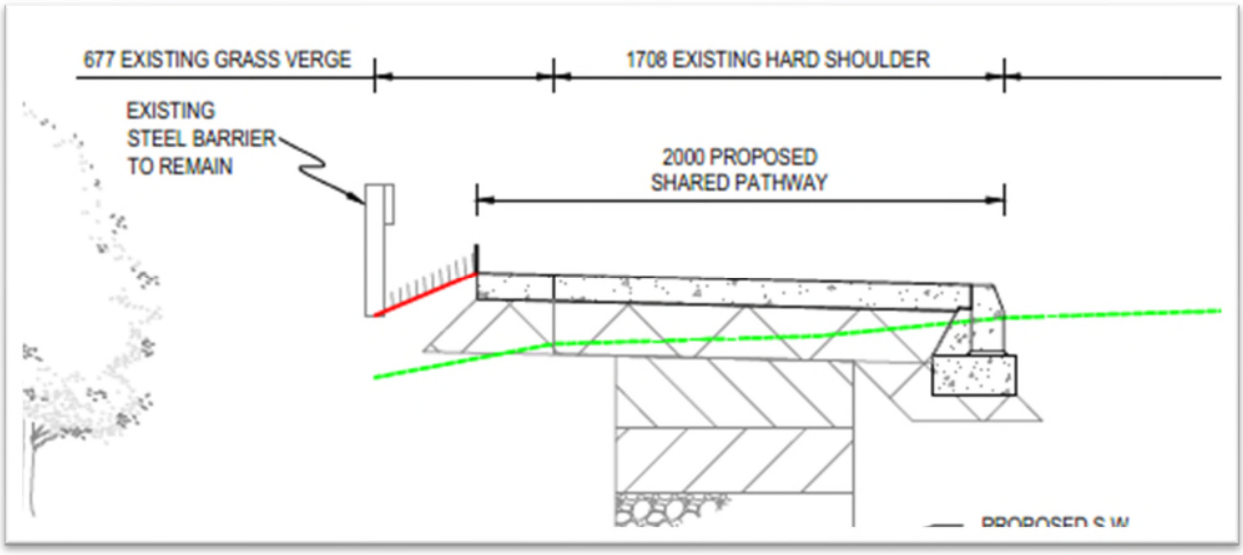
3.2 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, Existing Safety Barriers.

PROBLEM

There are approach and departure safety barriers at the structure protecting errant vehicles from the high embankments and motorway below. With the provision of a kerbed edge and paved surface above the existing level the barriers may no longer contain errant vehicles if they are too low. It is also observed during the site visit that the safety barriers may not be EN1317 compliant.



RECOMMENDATION

It is recommended that the safety barrier be upgraded as necessary to ensure that errant vehicles will be contained.

3.3 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, Existing Parapet railings.

PROBLEM

The existing parapet railing were observed to be relatively high. It is unclear if they will be high enough to contain cyclists should they wobble against them during high winds or if passed by a HGV, leading to loss of control.

RECOMMENDATION

It is recommended that suitable height parapet railing adjacent to cyclists be provided on the M7 overbridge.

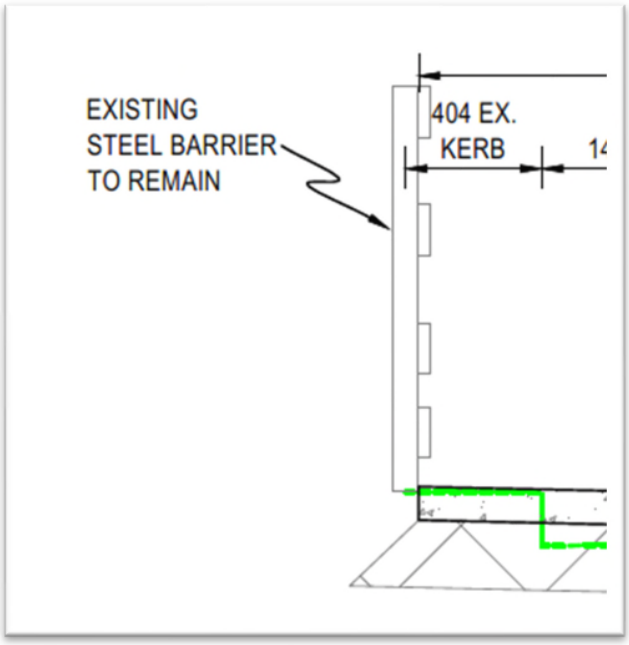
3.4 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, Existing Parapet upstand.

PROBLEM

It is unclear if the existing parapet on the M7 overbridge will function as intended if struck by a HGV if there is no concrete upstand. A lack of containment could lead to vehicles descending onto the motorway below.



RECOMMENDATION

It is recommended that the adequacy of the parapet without a upstand be checked to ensure that it will contain errant vehicles as intended.

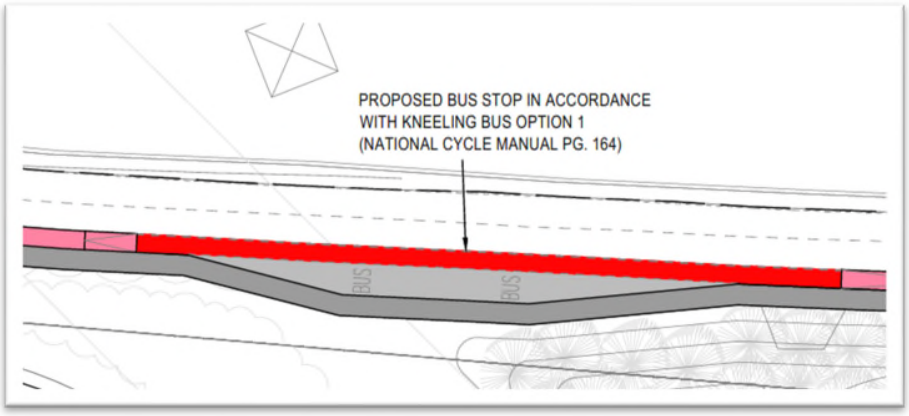
3.5 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, Bus Layby.

PROBLEM

It is proposed to provide a bus layby that will presumably serve both the proposed development and the Oberstown Industrial Park. No provision has been made for crossing bus users or those getting the return bus to Naas. A lack of crossing facilities could lead to pedestrians stepping out from in front of or behind parked buses leading to collisions with through traffic.



RECOMMENDATION

It is recommended that a bus stop be provided on the opposite side of the R409 and that a crossing facility also be provided.

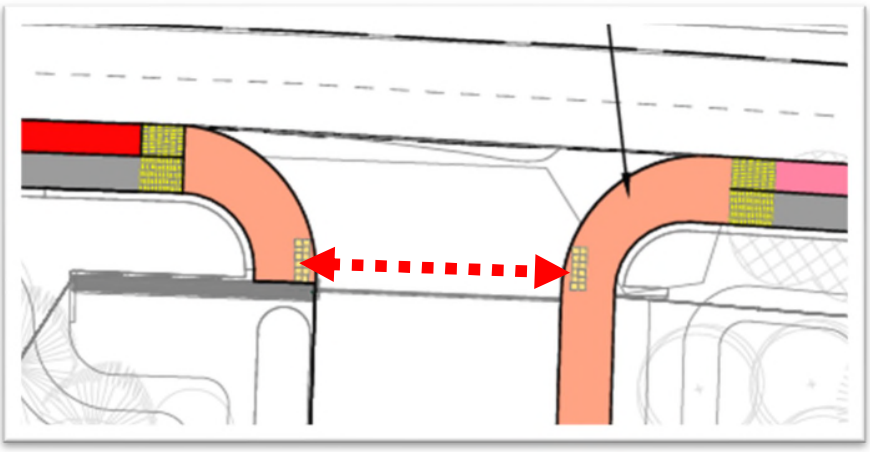
3.6 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, New access junction.

PROBLEM

The crossing point at the proposed access junction for cyclists and pedestrians is set back from the through route, is narrow for both users and may be close to the gate which could obscure an exiting driver's visibility to those crossing vulnerable road users. This could lead to collisions between cyclists and pedestrians as they share space, collisions with exiting vehicles or lack of use of the cycle track as cyclists see the crossing as being too far off the desire line and opt to remain on the carriageway instead.



RECOMMENDATION

It is recommended that a wider crossing be provided closer to the desire line.

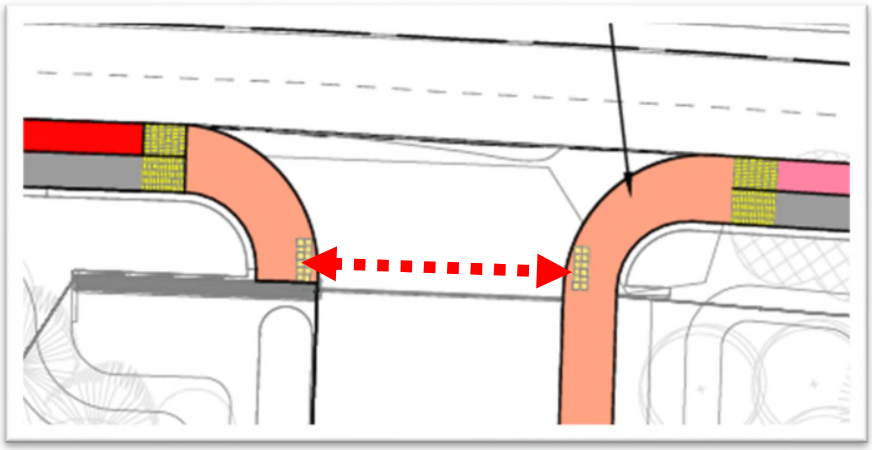
3.7 Problem

LOCATION

Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600, R409, New access junction.

PROBLEM

The main access junction has a wide cross sectional width due to the splitter island and need to cater for HGVs. This will lead to high turning speeds for smaller vehicles and thereby increase the risk of collisions with crossing pedestrians and cyclists.



RECOMMENDATION

It is recommended that a raised table be provided to cater for crossing pedestrians and cyclists.

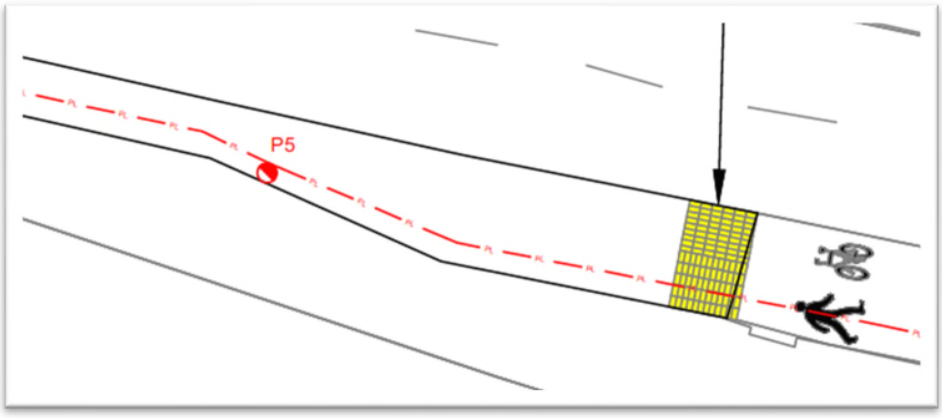
3.8 Problem

LOCATION

Drawing SES 04723 Issue 1, Public Lighting.

PROBLEM

It is proposed to provide the public lighting columns within the new and existing footpaths. The columns could be hazards for pedestrians if they are looking down and are distracted and the columns also reduce the effective width of the footpath.



RECOMMENDATION

It is recommended that the columns be set back off the footpaths into the verge behind.

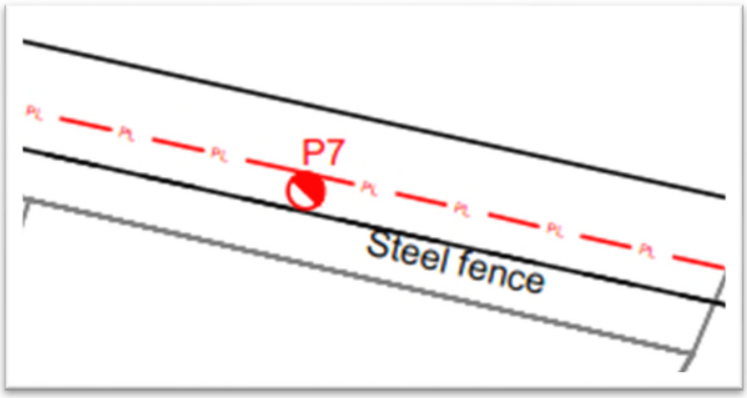
3.9 Problem

LOCATION

Drawing SES 04723 Issue 1, Public Lighting.

PROBLEM

It is proposed to provide the public lighting columns in front of the safety barrier on the R409. Vehicles that collide with the barrier may be directed into the columns rather than be redirected into the carriageway resulting in more severe collisions.



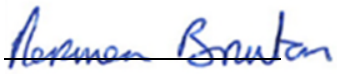
RECOMMENDATION

It is recommended that the columns be provided to the rear of the safety barriers and at least the Working Width behind the barrier.

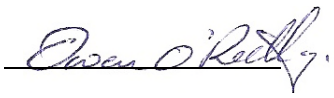
4.0 Audit Statement

We certify that we have examined the information provided and the site. The examination has been carried out with the sole purpose of identifying any features of the design which could be removed or modified in order to improve the safety of the scheme.

The problems identified have been noted in this report together with associated safety improvement suggestions which we would recommend should be studied for implementation. The audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton **Signed:** 

(Audit Team Leader) **Dated: 12-7-2023**_____

Owen O'Reilly **Signed:** 

(Audit Team Member) **Dated: __12-7-2023**_____

Appendix A

List of Material Supplied for this Road Safety Audit;

Drawing references

- Drawing 2232-DOB-ZZ-ZZ-Dr-C-1600
- Drawing 22217-RKD-ZZ-ZZ-DR-A-1010 P05
- Drawing SES 04723 Issue 1, Public Lighting, Layout
- Drawing SES 04723 Issue 1, Public Lighting, ISOLUX

Appendix B

Feedback Form

AUDIT FORM – FEEDBACK ON ROAD SAFETY AUDIT REPORT

AUDIT FORM – FEEDBACK ON ROAD SAFETY AUDIT REPORT

Scheme: Naas Data Centre, R409
Stage Audit: Stage 1
Date Audit (site visit) Completed: 05/07/2023

Paragraph No. in Road Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	YES	No	DOBA have discussed and agreed the extent of the required works to the R409 with K.C.C. Roads Dept. The works will be limited to the development side of the R409. These works will not prevent K.C.C. from carrying out additional upgrade works to the pedestrian and cycle infrastructure along the R409 in the future.	Yes
3.2	YES	YES	The road barrier will be raised up to be in accordance with the requirements of TII	
3.3	YES	YES	The parapet railing will be raised, if necessary, in consultation with TII	
3.4	YES	YES	The parapet railing will be assessed to ensure its function is not degraded by the proposed works in consultation with TII.	
3.5	YES	NO	DOBA have discussed and agreed the provision and location of the bus stop with Kildare Co. Council. This work would also impact on 3rd party land owners and is outside of the scope of the proposed project.	Yes
3.6	YES	YES	The crossing will be relocated closer to the R409 along the desire line for pedestrians and cyclists.	
3.7	NO	NO	A raised table will adversely impact on HGVs and other vehicles entering and exiting the site. It will require vehicles to slow to very low speeds in order to mount the table.	Yes

			This will cause potential queuing issues and static vehicles making left-in turns on the R409. It will also result in slow start-off speeds for HGVs and other vehicles existing the site onto the R409. There will be very low use of the footpath and cycle track to the west of the site access as the pathway is discontinued at the western extent of the site and therefore road crossings by vulnerable road users will be limited.	
3.8	YES	YES		
3.9	YES	YES		

Signed..... Date 12/07/2023

Design Team Leader

Signed..... **Date:** 12-7-2023

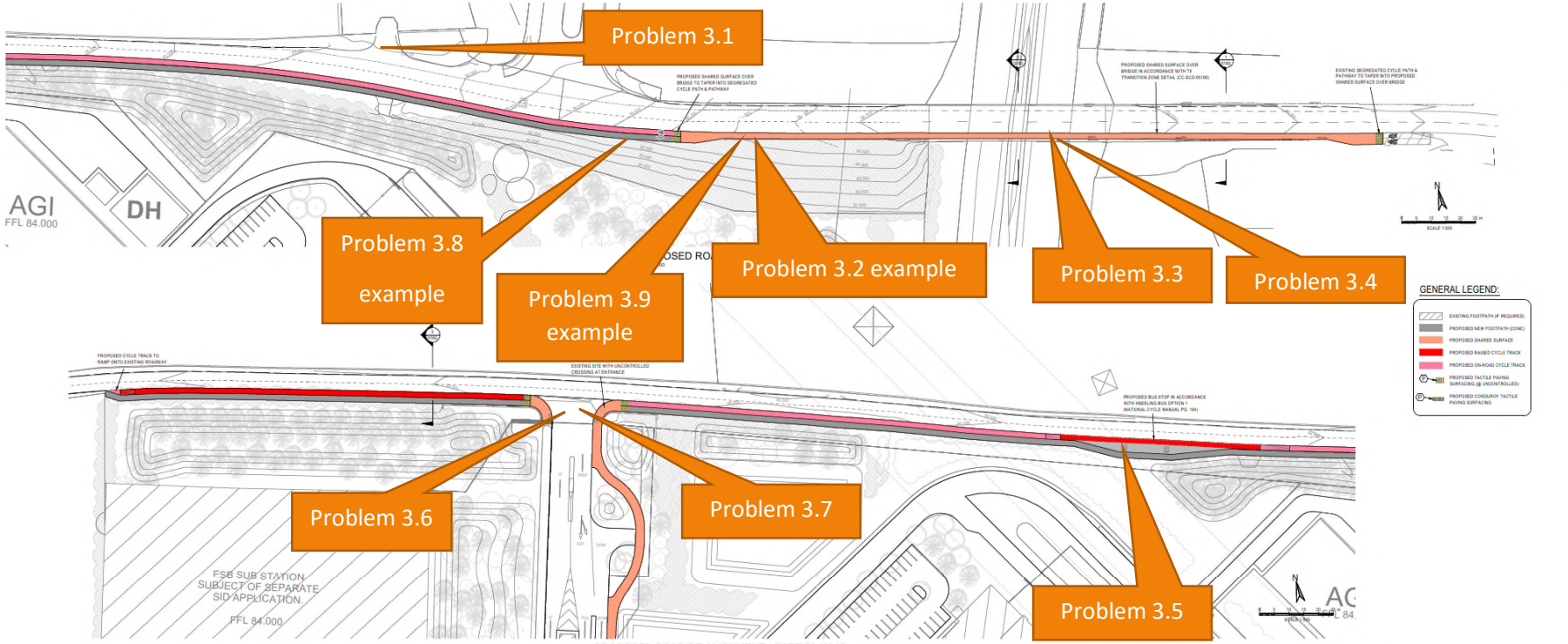
Audit Team Leader

Signed..... **Date:** 12/07/2023

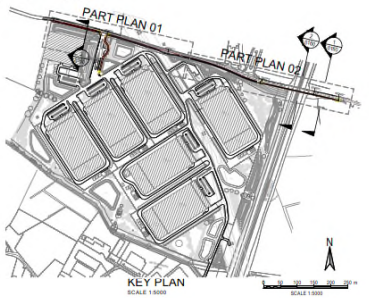
Employer

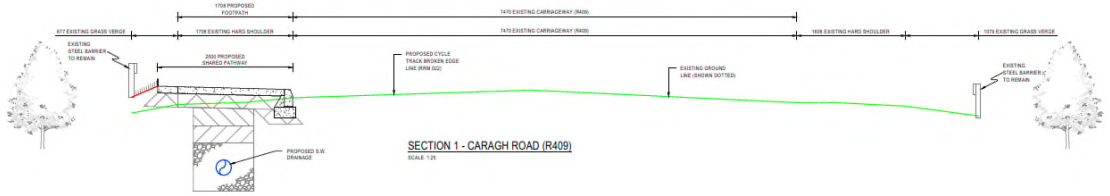
Appendix C

Problem Location Plan.

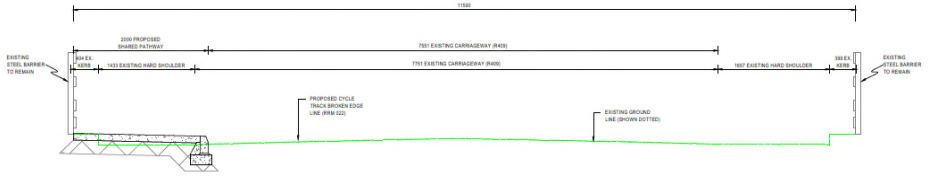


PROPOSED ROAD RE-ALIGNMENT - PART PLAN 02
SCALE 1:500

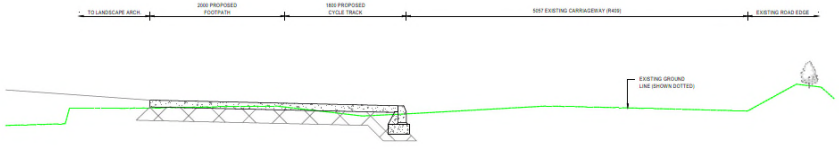




SECTION 1 - CARAGH ROAD (R409)
SCALE 1:25



SECTION 2 - CARAGH ROAD (R409) - BRIDGE
SCALE 1:25



SECTION 3 - CARAGH ROAD (R409)
SCALE 1:25

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Herbata

FOR REVIEW

HERBATA DATA CENTRE CAMPUS

JIGGINSTOWN, NAAS, CO. KILDARE

PROPOSED R409 ROAD RE-ALIGNMENT

2232-DOB-ZZ-ZZ-DR-C-1600

P01 | S3 | DOBA2232 | AS SHOWN | 28/04/2023 | MF | PR

RKD

BSM Est. 1968

DONNACHADH O'BRIEN & ASSOCIATES CONSULTING ENGINEERS