

**Title: QUALITY AUDIT  
INCLUDING ROAD SAFETY AUDIT (Stage 1)  
For;  
Proposed Residential Development and Road Upgrade,  
Boherboy, Saggart, Co. Dublin.**

**Client: Pinnacle Consulting Engineers.**

**Date: September 2021**

**Report reference: 1151R01**

**VERSION: FINAL (February 2022)**

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## 1.0 Introduction

This report was prepared in response to a request from Mr. Ronan Kearns, Pinnacle Consulting Engineers, for a Quality Audit including a Stage 1 Road Safety Audit of a proposed residential development and road upgrade at Boherboy, Saggart, Co. Dublin.

The Quality Audit has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019.

This portion of the Quality Audit is a Stage 1 audit and includes a road safety audit (in accordance with TII Publication GE-DTY-01024, dated December 2017), an access audit, a walking audit and a cycling audit. (i.e. aspects of a quality Audit carried out independent of the Design Team and generally included as appendices to the overall Audit)

The Road Safety and Quality Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

Team Member: **Owen O'Reilly**, B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil. Eng CEng MIEI.

This portion of the Quality Audit involved the examination of drawings and other material and a site visit by the Audit Team, on the 10th September 2021. The weather at the time of the site visit was dry and the road surface was also dry.

The problems raised in this Quality Audit may belong to more than one of the categories of Audit named above. A table has been provided at the start of Section 3 of this report detailing which category of audit each problem is associated with.

Recommendations have been provided to help improve the quality of the design with regard to the areas described above. A feedback form has also been provided for the designer to complete indicating whether or not he/she will accept those recommendations or provide alternative recommendations for implementation.

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

A feedback form for the Designer to complete 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 residential development and to upgrade the existing Boherboy Road in Saggart, Co. Dublin.

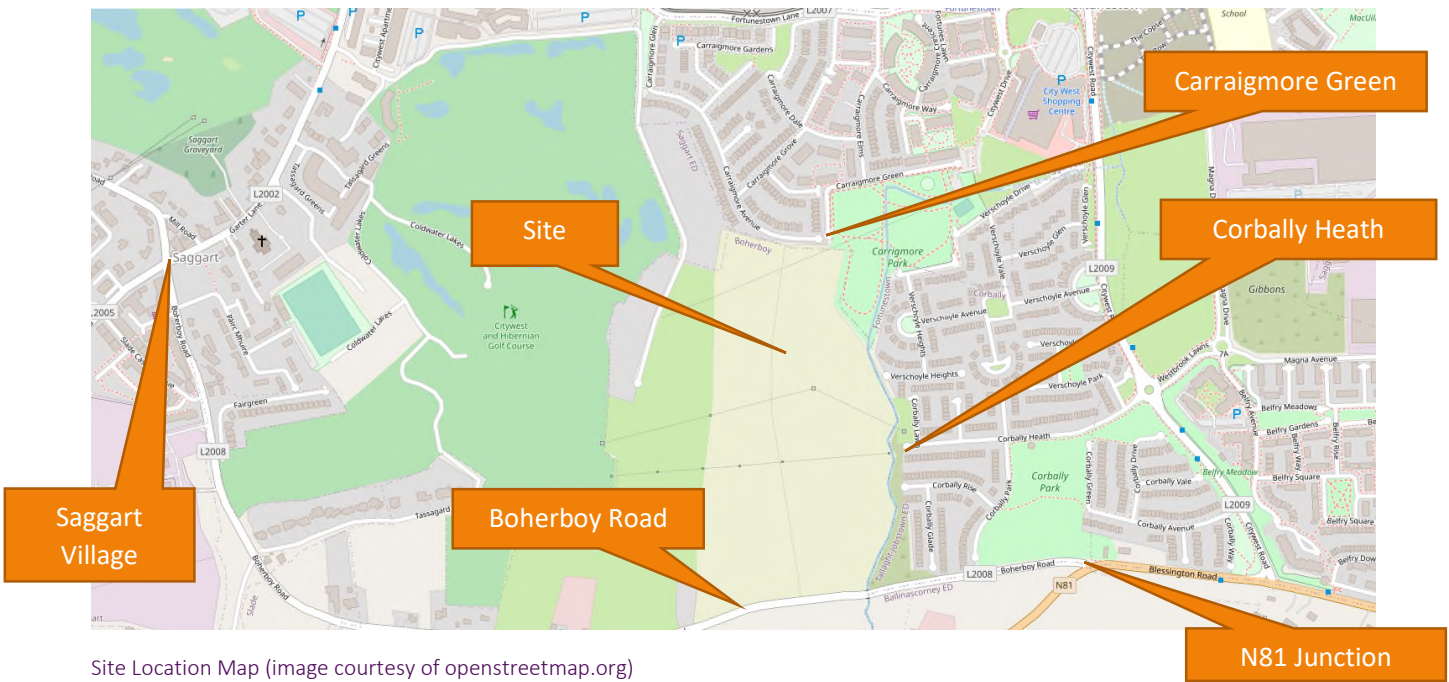
The proposed Boherboy Road (L2008) upgrade would include providing a footpath on the northern side along the development boundary and up to the N81 junction. The proposals include a junction upgrade at the N81 Blessington Road with road markings only.

A vehicular access will be provided off Boherboy Road, Carraigmore Green and Corbally Heath. A pedestrian only access will be provided to the district park and Boherboy Road.

The speed limit on Boherboy Road is 60km/hr.

The site is close to the Fortunestown Luas stop and Citywest Shopping centre. The N82 (Link between N81 and N7) is a bus route.

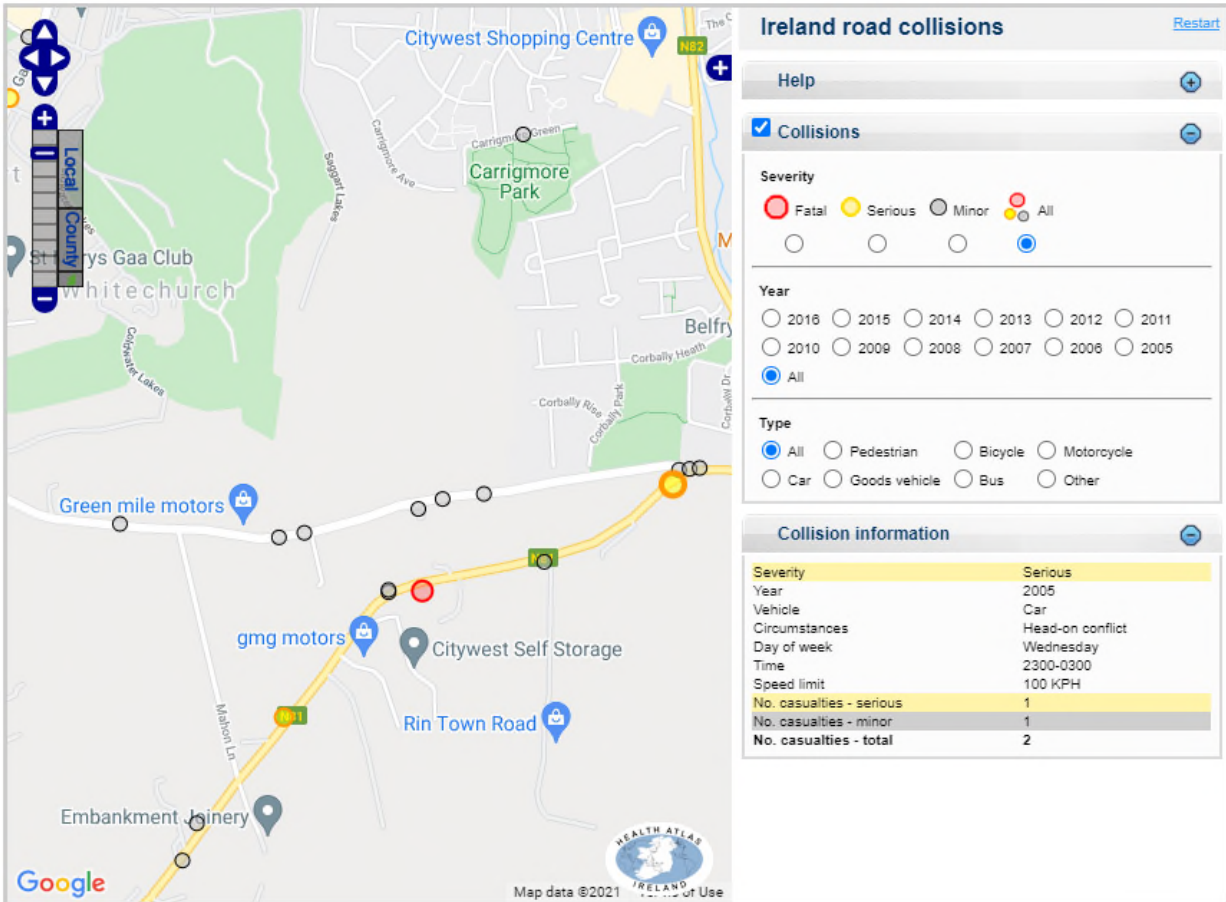
The site location map is shown below.



Site Location Map (image courtesy of openstreetmap.org)



The Road Safety Authority’s website shows that in the 12-year period 2005 to 2016 that there were a number of minor injury collisions recorded along Boherboy Road. There was one serious injury recorded at, or close to, the N81 junction which had a primary collision type of, head-on.



### 3.0 Issues Identified

Summary Table of Problem Categories

Problem Reference	Access Audit	Walking Audit	Cycling Audit	Road Safety Audit	Quality Audit
3.1				✓	✓
3.2				✓	✓
3.3				✓	✓
3.4				✓	✓
3.5		✓		✓	✓
3.6	✓			✓	✓
3.7			✓	✓	✓
3.8	✓	✓		✓	✓
3.9	✓	✓			✓
3.10				✓	✓

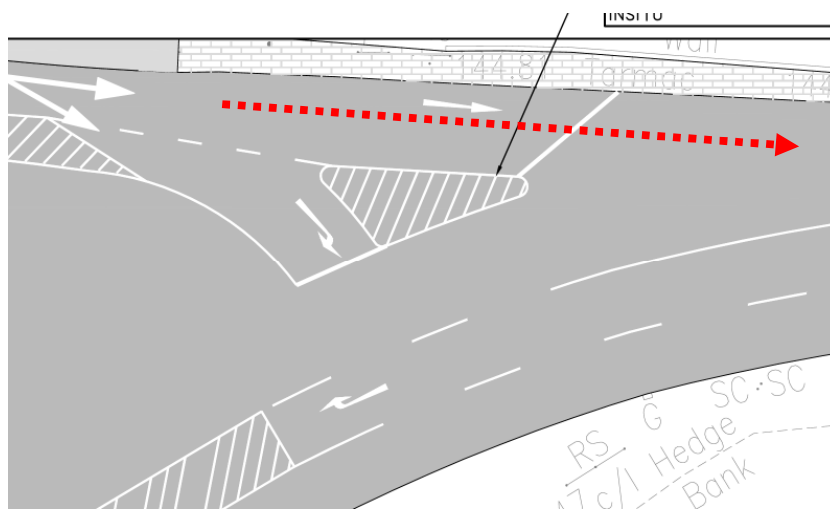
#### 3.1 Problem

*LOCATION*

Drawing p200107X-PIN-XX-Dr-D-0011-SI Rev P01

*PROBLEM*

There is a risk of overshoot of the stop line at the N81 junction for eastbound drivers on Boherboy Road. This could lead to rear end or side-impact collisions with eastbound traffic on the N81. In addition the proposed straight ahead arrow may suggest drivers have priority to proceed.



*RECOMMENDATION*

It is recommended that a buildout be provided at the existing footpath into which some signage or other feature be provided to alert drivers that it is not a through route and which will force drivers to approach the N81 at a less acute angle. The straight ahead arrow should be removed.

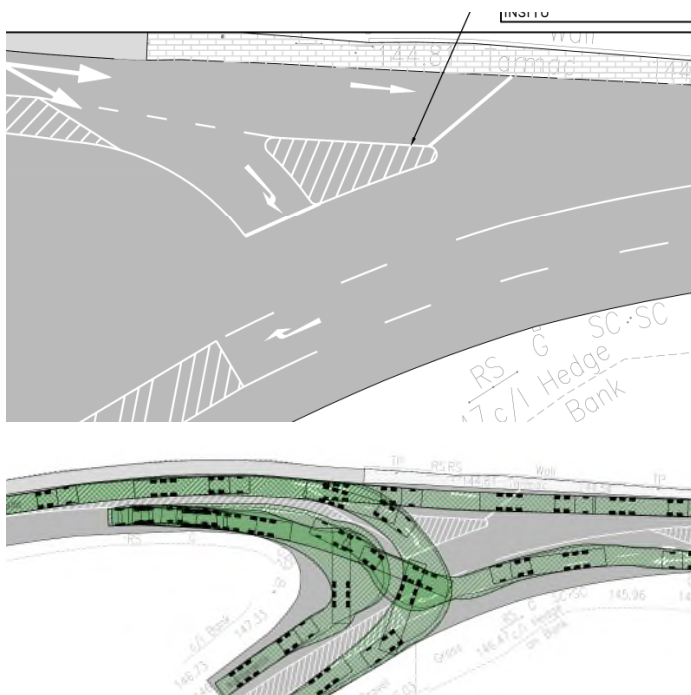
3.2 Problem

*LOCATION*

Drawing p200107X-PIN-XX-Dr-D-0011 & 0014-SI Rev P01

*PROBLEM*

It is proposed to provide a hatched area between the right turning and ahead lanes at the N81 junction. There is a risk that the road markings will become faded over time due to the tyre forces from the turning movements of vehicles. This will lead to a junction without adequate definition which would result in drivers taking the incorrect position and causing side-swipe collisions.



*RECOMMENDATION*

It is recommended that a solid island be provided in lieu of the hatched area.



### 3.3 Problem

*LOCATION*

Drawing p200107X-PIN-XX-Dr-D-0011-SI Rev P01

*PROBLEM*

Due to the tight radius horizontal bend on the N81 at the junction with Boherboy Road a driver in the right turning lane has limited forward visibility to oncoming eastbound traffic on the N81 if there are other vehicles travelling westbound. This lack of visibility could lead to side-impact collisions.



*RECOMMENDATION*

It is recommended that a gateway/transition type feature be provided at the 60/80km/hr transition on the N81 to ensure vehicle speeds at the junction are at or below the speed limit of 60km/hr.

### 3.4 Problem

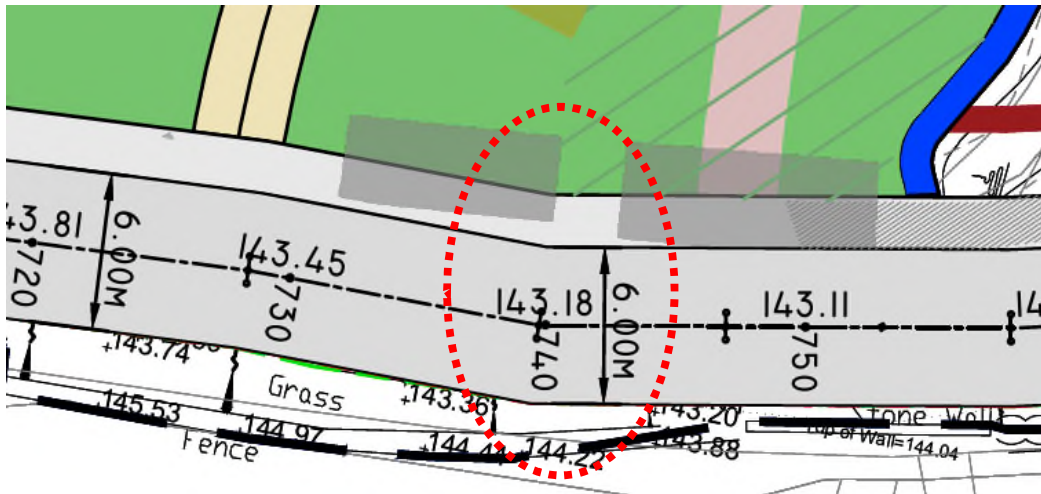
*LOCATION*

Drawing p200107X-PIN-XX-Dr-D-0011-SI Rev P01, Boherboy Road, Chainage 740

*PROBLEM*

There is a 'kink' in the horizontal alignment of Boherboy Road at chainage 740. This could lead to overrun of the centre line and side-swipe collisions.





**RECOMMENDATION**

Ensure there is a smooth horizontal alignment with a series of curves of suitable radii be provided without straight sections joining.

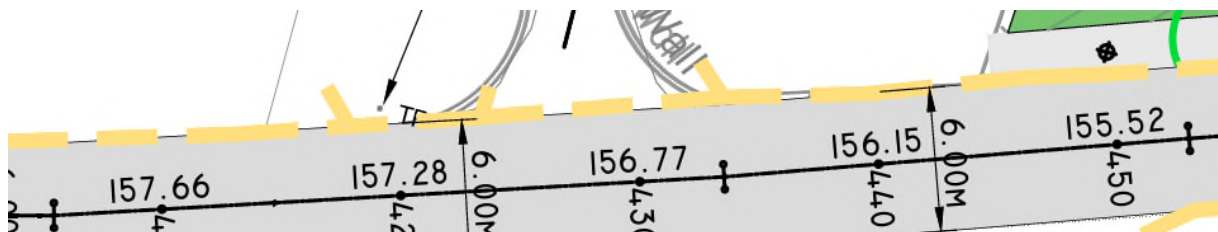
**3.5 Problem**

**LOCATION**

Drawing p200107X-PIN-XX-Dr-D-0011-SI Rev P01, Boherboy Road, Chainage 70 to chainage 440.

**PROBLEM**

There is a discontinuity in the footway provision on Boherboy Road between chainage 70 and Chainage 440 due to land ownership constraints. The road is being realigned and widened to have a constant cross sectional width of 6m. There is a risk that the proposed development will lead to an increased usage of Boherboy Road by pedestrians wishing to travel to Saggart village, leading to a higher likelihood of a collision with vehicular traffic. It is proposed to provide a raised rib line along the section without a footway. There is a risk that the raised rib line will not be provided due to the noise effects on local residents.



**RECOMMENDATION**

It is recommended that the carriageway be marked narrower than 6m and that the verge be provided flat and level with the carriageway so that pedestrians will have refuge. In areas of wider road bed, vegetation should be cleared to provide additional refuge.

### 3.6 Problem

#### LOCATION

Drawing p200107X-PIN-XX-Dr-D-0013-SI Rev P01, Corbally Heath & Carriagmore Green.

#### PROBLEM

It was observed during the site visit that there is extensive on-street parking on Corbally Heath & Carriagmore Green to which the proposed development will be linked for vehicular traffic. Whilst the on-street parking provides traffic calming effects in the current scenario this may result in driver frustration and side-impact collisions as these routes become more intensely used when the development is fully occupied.



#### RECOMMENDATION

It is recommended that an assessment of the amount of on-street parking be undertaken along with the current under usage of on-curtilage parking to establish if the problem as described above will manifest itself.

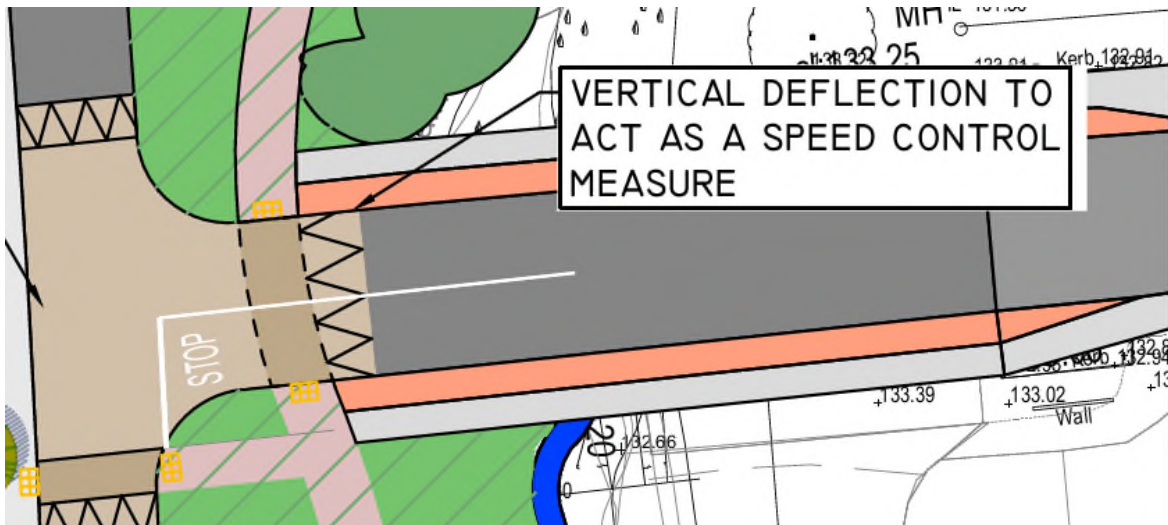
### 3.7 Problem

#### LOCATION

Drawing p200107X-PIN-XX-Dr-D-0032-SI Rev P01, Corbally Heath

#### PROBLEM

It is proposed to provide a shorth length of cycle track at the connection to Corbally Heath. There are no dedicated cycle facilities either side of this short section. This could lead to cyclists weaving into and out of traffic and sharing space with pedestrians that are not wide enough for both users.



*RECOMMENDATION*

It is recommended that the short section of cycle track be omitted.

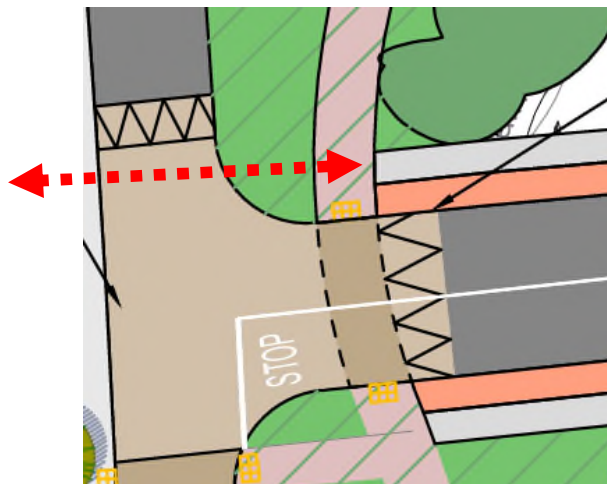
### 3.8 Problem

*LOCATION*

Drawing p200107X-PIN-XX-Dr-D-0032-SI Rev P01, Corbally Heath

*PROBLEM*

There will be a pedestrian desire line from the footpath on the northern side of Corbally Heath to the footpath on the opposite side of the internal development road.



*RECOMMENDATION*

It is recommended that a pedestrian crossing similar to the south side of the junction be provided.



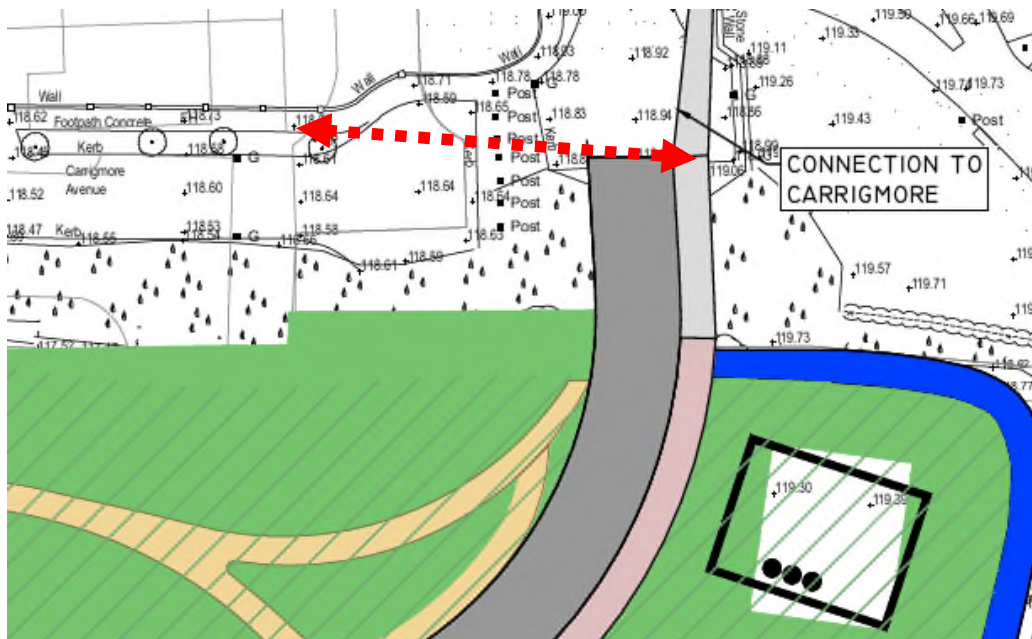
### 3.9 Problem

#### LOCATION

Drawing p200107X-PIN-XX-Dr-D-0033-SI Rev P01, Carraigmore.

#### PROBLEM

There is an existing pedestrian desire line from Carraigmore Green to Carraigmore Avenue. The demand will increase when the proposed development is fully occupied and this pedestrian desire line should be facilitated as an alternative pedestrian route to Saggart village rather than Boherboy Road.



#### RECOMMENDATION

It is recommended a pedestrian link to Carraigmore Avenue be provided.

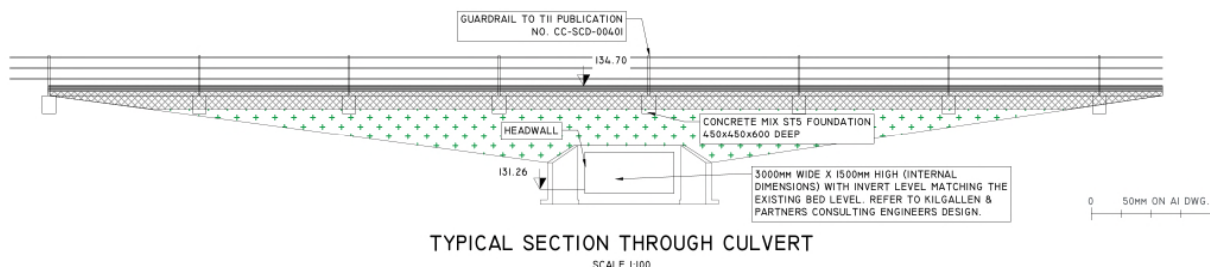
### 3.10 Problem

#### LOCATION

Drawing p200107X-PIN-XX-Dr-D-0034-SI Rev P01, Culvert protection.

#### PROBLEM

A railing in accordance with TII Standard Detail CC-SCD-00400 has been referred to on the drawing as containment at the bridge structures. It is unclear if this will provide adequate containment to errant vehicles.




#### RECOMMENDATION

It is recommended a risk assessment be carried out to ensure sufficient containment is being provided at the bridges/culverts.

## 4.0 Quality Audit Statement

This portion of the Quality Audit has been carried out in accordance with the guidance given in DMURS and takes into consideration the principles approaches and standards of that Manual.

The quality 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:   
(Quality Audit Team Leader)    Dated: 8/2/2022

**Owen O'Reilly**                      Signed:   
(Quality Audit Team Member) Dated: 8/2/2022



## Appendix A

### List of Material Supplied for this Quality Audit;

- DrawingP200107-PIN-XX-DR-D-0034-S1-P01 - Internal Road Network - External Connection
- DrawingP200107-PIN-XX-DR-D-0040-S1-P01 - Sight Lines Sheet 1 of 3
- DrawingP200107-PIN-XX-DR-D-0041-S1-P01 - Sight Lines Sheet 2 of 3
- DrawingP200107-PIN-XX-DR-D-0042-S1-P01 - Sight Lines Sheet 3 of 3
- DrawingP200107-PIN-XX-DR-D-0043-S1-P01 - SSD Sheet 1 of 3
- DrawingP200107-PIN-XX-DR-D-0044-S1-P01 - SSD Sheet 2 of 3
- DrawingP200107-PIN-XX-DR-D-0045-S1-P01 - SSD Sheet 3 of 3
- DrawingP200107-PIN-XX-DR-D-0050 -S1-P01 - AutoTrack Layout - Refuse Vehicle Sheet 1 of 3
- DrawingP200107-PIN-XX-DR-D-0051-S1-P01 - AutoTrack Layout - Refuse Vehicle Sheet 2 of 3
- DrawingP200107-PIN-XX-DR-D-0052 -S1-P01 - AutoTrack Layout - Refuse Vehicle Sheet 3 of 3
- DrawingP200107-PIN-XX-DR-D-0060-S1-P01 - AutoTrack Layout - Fire Tender Sheet 1 of 3
- DrawingP200107-PIN-XX-DR-D-0062-S1-P01 - AutoTrack Layout - Fire Tender Sheet 2 of 3
- DrawingP200107-PIN-XX-DR-D-0062-S1-P01 - AutoTrack Layout - Fire Tender Sheet 3 of 3
- DrawingP200107-PIN-XX-DR-D-0070-S1-P01- RCD South Dublin
- DrawingP200107-PIN-XX-DR-D-0071-S1-P01- RCD Signage
- DrawingP200107-PIN-XX-DR-D-0072-S1-P01- RCD Kerb Details
- DrawingP200107-PIN-XX-DR-D-0073-S1-P01- RCD Joints
- DrawingP200107-PIN-XX-DR-D-0074-S1-P01- RCD Ramp Details
- DrawingP200107-PIN-XX-DR-D-0080-S1-P01-Road Markings
- DrawingRMA 1324B-304 Draft 4 Surface Water Drainage Sheet 1 PreApp
- DrawingRMA 1324B-305 Draft 4 Surface Water Drainage Sheet 2 PreApp
- DrawingRMA 1324B-306 Draft 4 Surface Water Drainage Sheet 3 PreApp
- DrawingP200107-PIN-XX-DR-D-0010-S1-P01- External Works
- DrawingP200107-PIN-XX-DR-D-0011-S1-P01- External Works
- DrawingP200107-PIN-XX-DR-D-0012-S1-P01- External Works
- DrawingP200107-PIN-XX-DR-D-0013-S1-P01- Off Site Works
- DrawingP200107-PIN-XX-DR-D-0014-S1-P01- N81 Junction Upgrade
- DrawingP200107-PIN-XX-DR-D-0020-S1-P01 - Site Permeability
- DrawingP200107-PIN-XX-DR-D-0021-S1-P01 - Site Accessibility
- DrawingP200107-PIN-XX-DR-D-0030-S1-P01 - Internal Road Network Key Plan
- DrawingP200107-PIN-XX-DR-D-0031-S1-P01 - Internal Road Network Sheet 1 of 3
- DrawingP200107-PIN-XX-DR-D-0032 -S1-P01 - Internal Road Network Sheet 2 of 3
- DrawingP200107-PIN-XX-DR-D-0033 -S1-P01 - Internal Road Network Sheet 3 of 3

## Appendix B

### Feedback Form

**QUALITY AUDIT FORM – FEEDBACK ON QUALITY AUDIT REPORT**

Scheme: Boherboy, Dublin

Quality Audit- Stage 1

Date Audit (site visit) Completed 10-9-2021

Paragraph No. in Quality Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes	Subject to agreement with SDCC as the roads authority.	
3.4	Yes	Yes		
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		
3.8	Yes	Yes		
3.9	Yes	Yes		
3.10	Yes	Yes		

Signed.....  
Design Team Leader

Signed.....  
Audit Team Leader

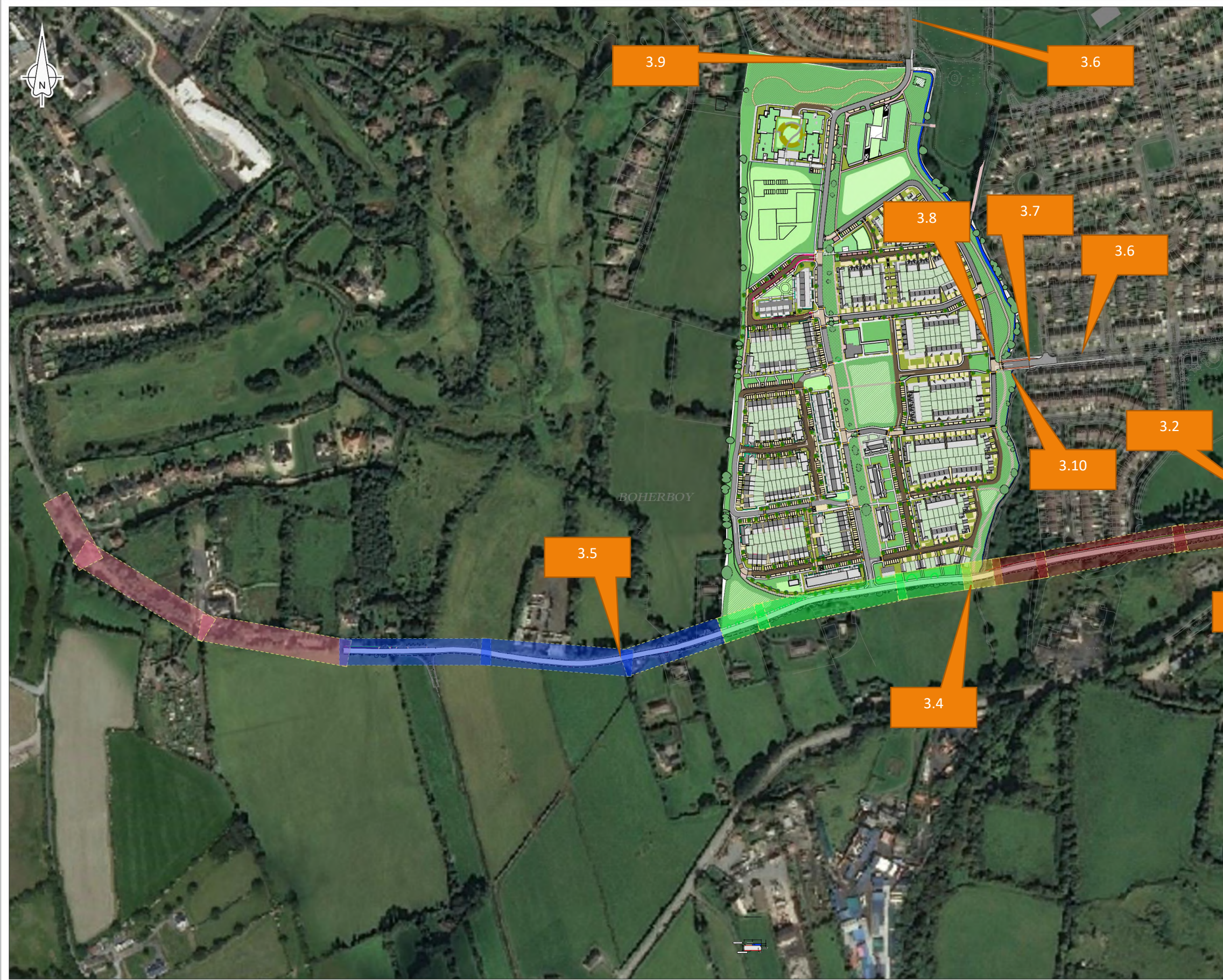
H&S	<input type="checkbox"/>
Checked	<input checked="" type="checkbox"/>
Approved	<input checked="" type="checkbox"/>
Date	19 JAN 2022
Ronan Kearns BA BAI MSc MBA CEng MIEI Chartered Engineer - Membership No. 050252	
Signature:	

Date: 8-2-2022

## Appendix C

### Problem Location Plan.





- GENERAL NOTES**
- DO NOT SCALE THIS DRAWING. WORK ONLY TO FIGURED DIMENSIONS.
  - FOR ALL RELEVANT NOTES, REFER TO STRUCTURAL AND CIVIL ENGINEERING PERFORMANCE SPECIFICATION.
  - ANY DISCREPANCIES ARE TO BE REPORTED TO PINNACLE CONSULTING ENGINEERS IMMEDIATELY.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS, ARCHITECTS AND SUB-CONTRACTORS DRAWINGS AND DETAILS.

**LEGEND:**

- SECTION 1: NBI TO BRIDGE
- SECTION 2: BRIDGE
- SECTION 3: SITE FRONTAGE
- SECTION 4: SITE BOUNDARY TO EXISTING FOOTPATH
- SECTION 5: EXISTING FOOTPATH TO COLDWATER LAKE

12 July 2021  
**-- DRAFT --**  
 Roman Kearns



REV	DESCRIPTION	BY	CHK	DATE

CLIENT  
**KELLAND HOMES LTD**  
**DURKAN ESTATES LTD**

PROJECT  
**LANDS AT BOHERBOY ROAD**  
**SAGGART**

DRAWING TITLE  
**SITE LOCATION PLAN**  
**OFFSITE WORKS**

**PINNACLE**  
 CONSULTING ENGINEERS

GROSVENOR COURT,  
 67A PATRICK STREET,  
 DUN LAOGHAIRE,  
 COUNTY DUBLIN  
 IRELAND. TELEPHONE: +353 1231 1041  
 WELWYN GARDEN CITY | NORWICH | LONDON | THE HAGUE

DRAWING STATUS  
**PLANNING**

SCALE # AI	DATE	DRAWN BY	CHECKED
NTS	JULY 21	RK	RK

DRG NO.	REVISION
P200107-PIN-XX-DR-D-0013-SI	P01

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