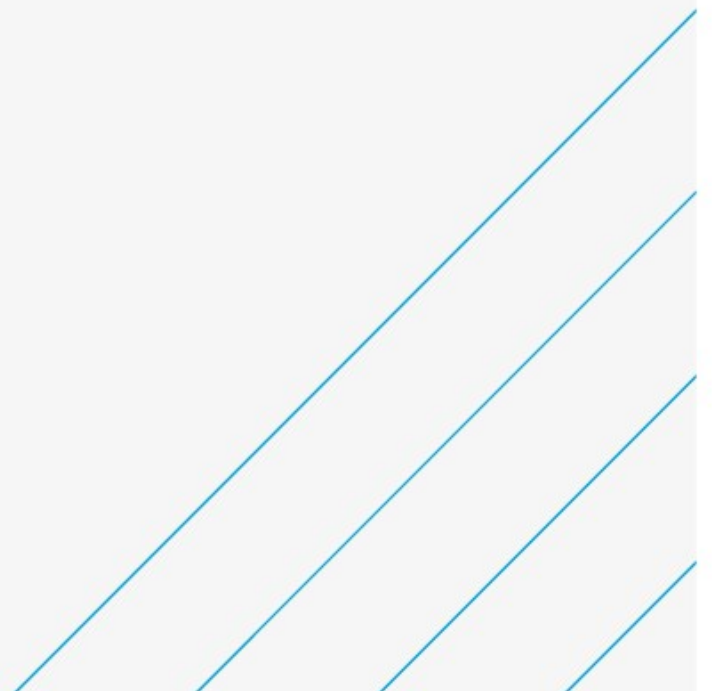


Ballyalbaney & Horseshoe Bridges

Stage 1 Quality Audit

Monaghan County Council

April 2023



Notice

This document and its contents have been prepared and are intended solely for Monaghan County Councils' information and use in relation to the proposed upgrades to the Ballyalbaney & Horseshoe Bridges Stage 1 Quality Audit.

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft	RM	RM	CP	CP	Feb' 2023
Rev 1	Final	RM	RM	CP	CP	Mar' 2023
Rev 2	Design Addendum	RM	RM	CP	CP	April 2023

Client signoff

Client	Monaghan County Council
Project	The proposed upgrades to the Ballyalbaney & Horseshoe Bridges Stage 1 Quality Audit
Job number	5213957DG0041
Client signature / date	

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1. Introduction

1.1. Background

This report describes the findings of a Quality Audit associated with the proposed upgrades including cycle and pedestrian access to the Ballyalbaney & Horseshoe Bridges, Co. Monaghan.

A revised design was developed in Q3 2023. Details of an RSA addendum are detailed Appendix B of this report.

The Audit has been completed by Atkins on behalf of Monaghan County Council.

1.2. Site Inspection

The site inspection was carried out on the 28th of July 2022 by the Audit Team. Weather conditions during the site visit were warm and dry.

The existing sites are both historical masonry stone arch bridges with no existing pedestrian facilities provided for. Both carriageways narrow on approach to the bridges from a single bidirectional carriageway to one lane. One footpath terminates on approach to each existing bridge.



Figure 1-1 – Existing Ballyalbaney Bridge



Figure 1-2 – Existing Horseshoe Bridge

During the inspection, occasional vehicle movement was noted on each bridge. Pedestrian activity was light, and no cyclists were observed during the time of the visit.

1.3. The Team

The Audit Team members associated with the Quality Audit were as follows:

- **Team Leader:** Colin J Prendeville BEng (Hons) PCert (RSA) CEng MIEI, CIHT.
- **Team Member:** Richard Malcolmson BTech BEng MEng MIEI

1.4. The Design

The following drawings were examined as part of the Quality Audit:

Table 1-1 - Design Team Drawing List

Drawing Number	Drawing Title	Revision
5213957-ATK-02-ZZ-SK-C-000101	Horseshoe Bridge Option 1 (Concrete Bridge & Embankments)	1
5213957-ATK-01-ZZ-SK-ST-000102	Ballyalbaney Bridge Option 3 (Steel Bridge & Embankments)	4

1.5. Compliance

This Quality Audit is undertaken in accordance with **Section 5.4.2** of the Design Manual for Urban Roads and Streets. The UK Department for Transport Traffic Advisory Leaflet (TAL) 5/11 has also been referred to for additional guidance.

This Quality Audit consists of the following elements:

- **Access Audit** – focusing on accessibility requirements of vulnerable road users and in particular those of the visual and mobility impaired
- **Walking and Cycling Audit** – focusing on movement and place function requirements of pedestrians and cyclists
- **Road Safety Audit** – focusing on issues relating directly to road safety

2. Access Audit

2.1. Best Practice Guidance

This Access Audit has been carried out in accordance with general best practice guidance set out within the following documents:

- The Disability Act 2005;
- British Standards Institute BS8300:2001;
- Building Regulations 2000, Technical Guidance Document M – Access for People with Disabilities (Department of the Environment, Heritage and Local Government),
- Buildings for Everyone Access and use for all citizens (National Disability Authority)
- Access Auditing of the Built Environment Guidelines (National Disability Authority)
- Traffic Management Guidelines (Irish Government Publications 2003)
- Guidance on the use of Tactile Paving Surfaces: UK Department for Transport

2.2. Objectives

The objectives of this Access Audit are as follows:

- To ensure a high level of accessibility to the scheme for all vulnerable road users and in particular visually and mobility impaired user
- To ensure that the access infrastructure in relation to the external built environment is in accordance with current best practice
- To ensure that the current and future (where appropriate) access needs within the scheme are recognised and developed

2.3. Accessibility Recommendations

In terms of progression, following delivery of the Accessibility Audit, the Design Team should consider all issues raised herein for inclusion into the final design. It is less costly to make the changes now, pre-construction, than later after the scheme has been commissioned.

2.3.1. Problem: Provision of Seating / Rest Areas

Location: Connecting to Greenway

The existing greenway crosses Park Road at the Horseshoe bridge. Horseshoe bridge is also located just after the crest of a hill coming from Monaghan town centre. Lack of seating provision along the greenway and after a hill could prove challenging for less able users.

This may result in progression issues for less abled users.

Figure 2-1 – Horseshoe Bridge Greenway



Recommendation

The Designer should consider the need for provision of seating at the greenway entrance for less able users.

2.4. General Accessibility Recommendations

A summary of the design features, together with recommended actions to be taken during the relevant stage of the design or operation of the scheme have been detailed in the following table and should be given consideration by the design team.

Table 2.1 - Access Audit Finding Summary Table

I.D.	Location	Feature	Action	When
01	Shared Area	Pedestrian & Cyclist Provision	Ensure contrasting colours/materials are used to define the pedestrian, cyclist, and shared area provisions.	Design Stage
02	Footpath	Pedestrian Provision	Ensure footpath edges are clearly defined.	Design Stage
03	Footpath	Pedestrian Provision	Ensure defined pedestrian clear zone is free from street furniture and clutter.	Design & Operational Stages
04	Footpath	Pedestrian Provision	The existing pedestrian footpaths outside the site has been in service for some time; and is showing signs of general wear and tear. Ensure safe pedestrian footway is provided during and after construction.	Design Stage & Operational Stages
06	Footpath	Pedestrian Provision	Ensure crossing points are located on all significant desire lines, where they are safe and convenient for all road users.	Design Stage
07	Public Footpath	Pedestrian Provision	Ensure appropriate drop kerbs and tactile paving is provided at crossing points.	Design Stage
8	Shared Area	Pedestrian & Cyclist Provision	Ensure defined shared area zone is free from street furniture and clutter.	Design Stage
09	Footpaths	Pedestrian Provision	At the site boundaries with the public road, all footpaths should link seamlessly with external/existing footpaths to accommodate pedestrian progression.	Design Stage
10	External Site	Bridge Entrance	Ensure clear sight lines to the main pedestrian crossing points are provided from all approaches to the bridges. Trees and street furniture should not block this.	Design Stage
11	External Site & Footpath	Street Lighting	Ensure street lighting is located where pedestrian movement decisions are required (i.e. at crossing points, entrances and junctions).	Design Stage
12	General	Drainage	Ensure any break in surface or gap such is (as a drainage gully) no greater than 10mm and is perpendicular to line of travel. Locate drainage features away from crossing points.	Design Stage
13	General	Drainage	Ensure access routes are laid to even falls to allow proper drainage and prevent the formation of puddles. The cross-fall gradient to any access route should not exceed 1 in 50, except when associated with a dropped-kerb.	Design Stage

I.D.	Location	Feature	Action	When
14	External Site & Footpath	Provision of Street Furniture	Ensure furniture does not encroach on the clear width of pathways.	Design Stage
15	External Site & Footpath	Provision of Street Furniture	Ensure street furniture contrasts in colour with the background and is identified with a 75-100mm marking.	Design Stage
16	External Site & Footpath	Provision of Street Furniture	Ensure that any pedestal mounted items are fitted with a tapping rail 250mm above the ground, contrasting in colour with the pavement.	Design Stage
17	External Site & Footpath	Provision of Street Furniture	Ensure provision of seating (rest area) is provided where steep gradients exist or long distances between rest areas are identified.	Design Stage
18	General	Public Lighting	Ensure that the location of street lighting is considered so that pedestrian decision points, particularly junction crossing points and pedestrian access points, are appropriately lit.	Design Stage
19	Proposed footbridges	Slip Resistance	Ensure that pedestrian bridge surface has adequate slip resistance	Design Stage & Operational Stages
20	Shared Area	Pedestrian & Cyclist Provision	Ensure defined shared areas are adequately defined with tactile surfaces.	Design Stage

3. Walking and Cycling Audit Findings

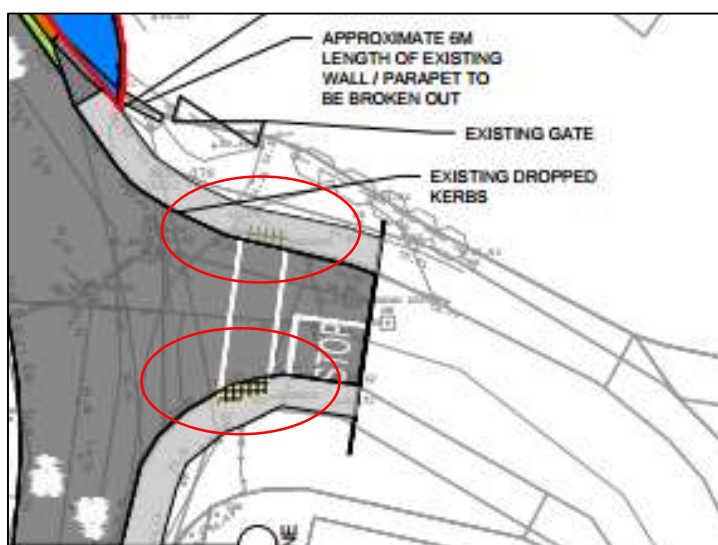
3.1.1. Problem: In-Line Crossing Arrangement

Location: Coolshannagh Walk Junction

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed crossing is considered an 'in-line' crossing at Coolshannagh Walk Junction at Ballyalbaney Bridge. The proposed tactile paving may not provide sufficient warning to visually impaired road users who may inadvertently step over the 800mm tactile zone and walk straight onto the carriageway where they could be struck by vehicles.

Figure 3-1 – In-Line Crossing Arrangement



Recommendation

The Designer should extend the depth of the tactiles in accordance with best practice to 3 tactiles deep at all inline crossings.

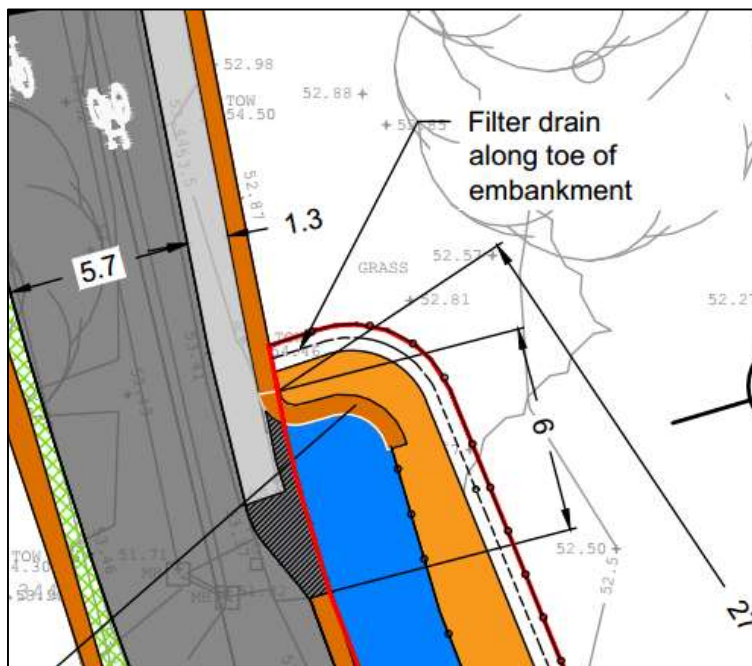
3.1.2. Problem: Concrete Joints

Location: Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The designer has indicated the presence a proposed infill of concrete between the existing footpath and proposed bridge footway. The infill / modest additions of concrete may lead to a number of increase joints and potential trip hazards.

Figure 3-2 – Proposed Concrete Footpath



Recommendation

The Designer should extend the concrete footpath to eliminate number of joints within tie-in areas.

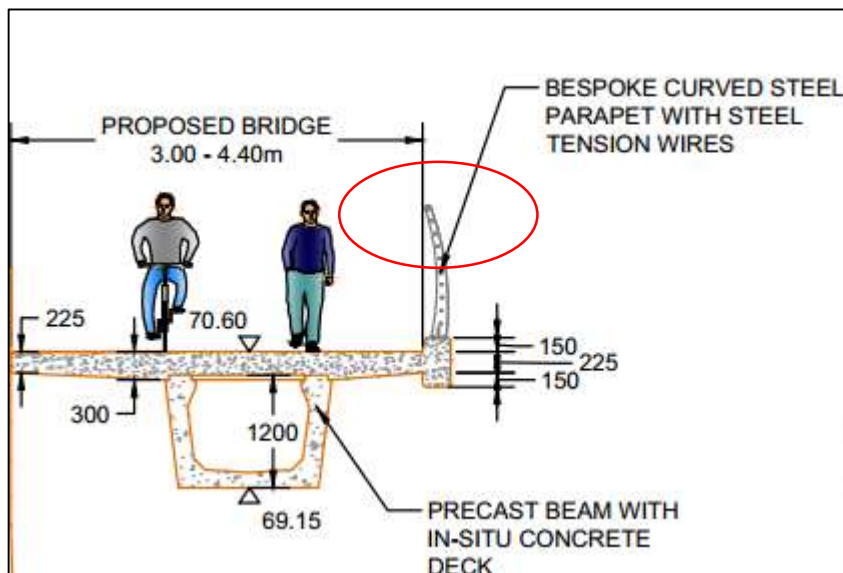
3.1.3. Problem: Snagging from parapet end

Location: Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The design drawings show a parapet as shown below **Figure 3-3**. If the parapet end is not suitably transitioned/ terminated this may leave sections of the parapet where pedestrians may become snagged which could result in pedestrian injury.

Figure 3-3 – Proposed Parapet



Recommendation

The Designer should ensure the end of each parapet are designed to prevent any snagging on the end/ beginning of parapets.

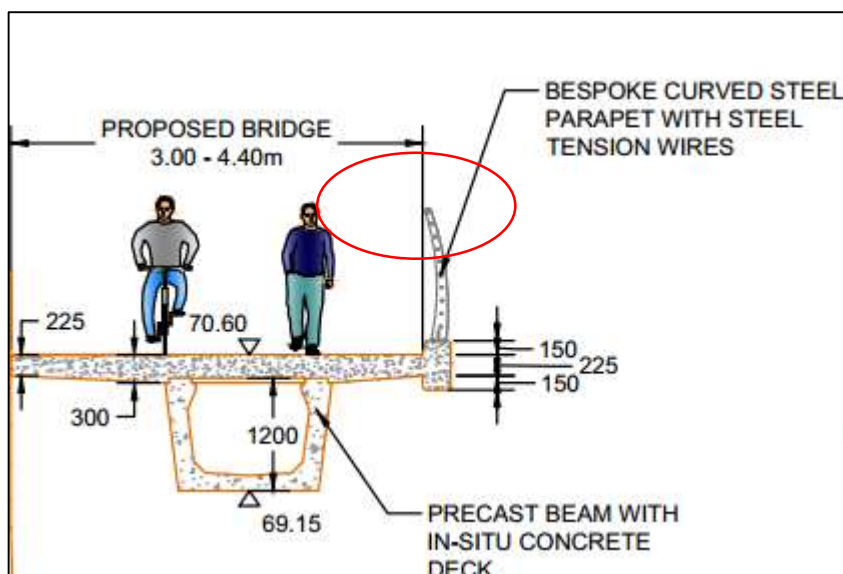
3.1.4. Problem: Snagging from parapet end

Location: Horseshoe Bridge

Drawing: 5213957-ATK-02-ZZ-SK-C-900101

The design drawings show a parapet as shown below Figure 3-6. If the parapet end is not suitably transitioned/terminated into the proposed fence smoothly this may leave sections of the parapet where pedestrians may become snagged which could result in pedestrian injury.

Figure 3-4 – Proposed Parapet



Recommendation

The Designer should ensure the end of each parapet are designed to prevent any snagging on the end/ beginning of parapets.

3.1.5. Problem: Existing chamber in proposed ramp

Location: Horseshoe Bridge

Drawing: 5213957-ATK-02-ZZ-SK-C-900101

The proposed ramp location intersects with an existing (large) utility chamber as shown in Figure 3-5 below. The drawings indicate the chamber and cover will be spread across the ramped and flat area of the table which may lead to trips and falls of pedestrians.

Figure 3-5 – Existing Ramp and Utility Chamber



Recommendation

The Designer should ensure the ramp location adequately caters for this chamber size in the final positioning of the ramp.

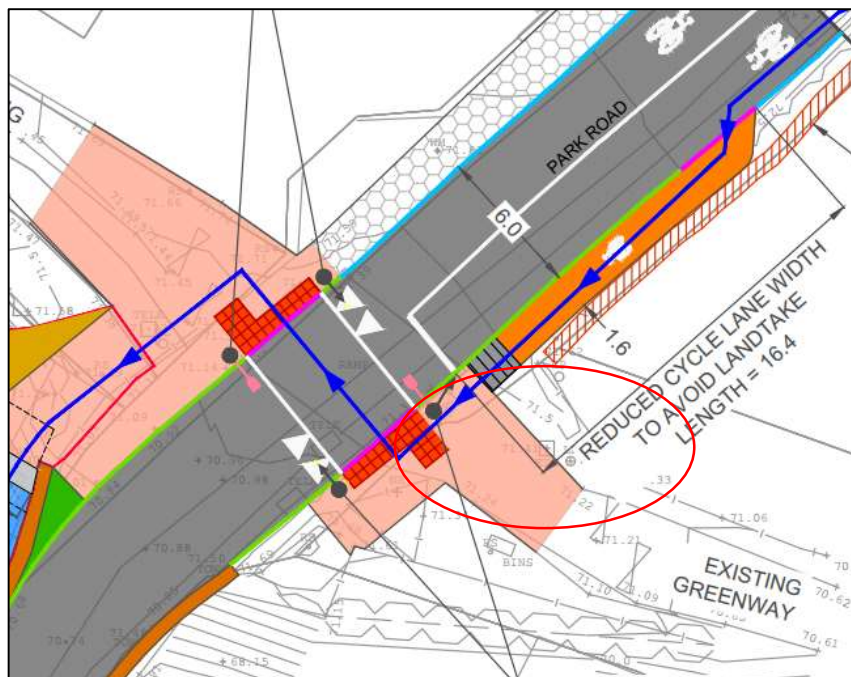
3.1.6. Problem: Space in shared area

Location: Horseshoe Bridge

Drawing: 5213957-ATK-02-ZZ-SK-C-900101

The area for cyclists entering the shared area from the cycle track as shown in **Figure 3-6** appears small. This could result in cyclists coming into conflict pedestrians and cyclists from the greenway where adequate space does not exist.

Figure 3-6 – Visibility at Shared Area



Recommendation

The Designer should consider extending the shared area at this location so as to reduce risk of conflict.

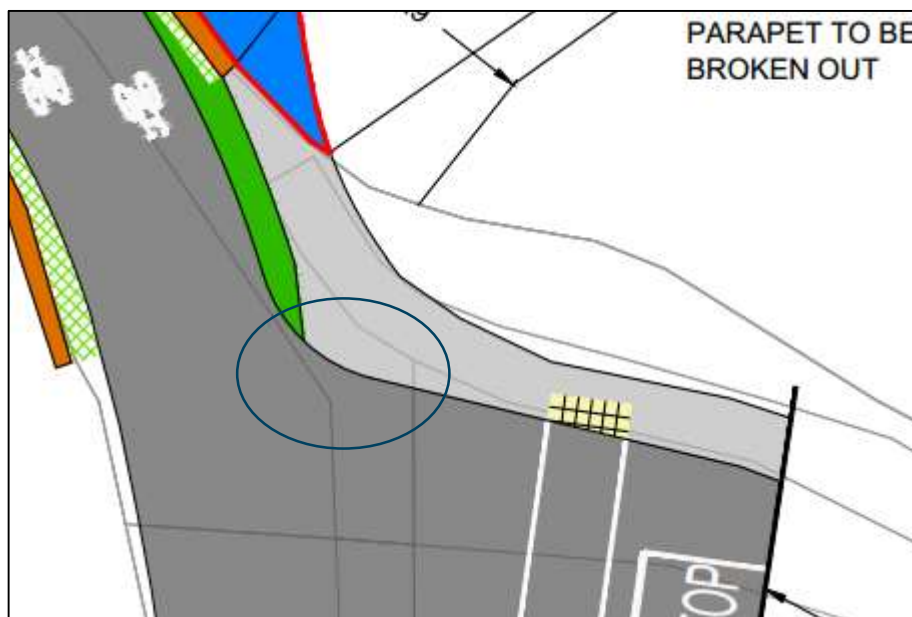
3.1.7. Problem: Existing Chamber in Proposed Footpath

Location: Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed footpath widening intersects with an existing utility chamber as shown in Figure 3-7 below. If the existing utility chamber is not raised and plumbed with the proposed footpath appropriately this may lead to trips and falls of pedestrians over the lid and frame of the chamber.

Figure 3-1 – Indicative area of chamber and footpath



Recommendation

The Designer should ensure the chamber is catered for as part of the proposed works.

4. Audit Team Statement

4.1. Certification

We certify that we have examined the drawings listed in Chapter 1 of this Report.

4.2. Sole Purpose

The Quality Audit 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 user experience aspects of the scheme.

4.3. Implementation of Quality Audit Recommendations

The problems identified herein have been noted in the Report together with their associated recommendations for quality improvements. We (the Audit Team) propose that these recommendations should be studied with a view to implementation.

4.4. Audit Team's Independence to the Design Process

No member of the Audit Team has been otherwise involved with the design of the measures audited.

4.5. Quality Audit Team Sign-Off

Colin Prendeville

Audit Team Leader
Road Safety Engineering Team

ATKINS

Signed:



Date: 23rd February 2023

Richard Malcolmson

Audit Team Member
Road Safety Engineering Team

ATKINS

Signed:



Date: 23rd February 2023

5. Designer's Response

5.1. Preparing a Response to the Quality Audit

The Designer should prepare an Audit Response for each of the recommendations using the Quality Audit Feedback Form attached in Appendix A.

When completed, this form should be signed by the Designer and returned to the Audit Team.

5.2. Returning the Feedback Form

Please return the completed Quality Audit Feedback Form attached in Appendix A of this report to the following email or postal address:

Email address: colin.prendeville@atkinsglobal.com

Postal address: Road Safety Engineering Team
Atkins
150 Airside Business Park
Swords
Co Dublin
K67 K5W4

Telephone: 00 353 (0)1 810 8000

The Audit Team will consider the Designer's response and reply indicating acceptance or otherwise of the Designer's response to each recommendation.

6. Road Safety Audit

6.1. Stage 1 Road Safety Audit Report

The Stage 1 Road Safety Audit has been provided within Appendix B with accompanying Road Safety Audit Feedback Form.

Appendices

Appendix A. Quality Audit Feedback Form

Appendix A. Quality Audit Feedback Form

Scheme: Ballyalbaney & Horseshoe Bridges, Co. Monaghan

Audit Stage: Stage 1 Quality Audit

Date Audit Completed: 23rd February 2023

Paragraph No. in Safety Audit Report	To be completed by the Designer			To be completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures or comments	Alternative Measures accepted by Auditors (yes/no)
3.1	Yes	Yes		
3.2	Yes	Yes		
3.3	Yes	Yes. Pilasters will be introduced to remove this issue.		Yes
3.4	Yes	Yes. Pilasters will be introduced to remove this issue.		Yes
3.5	Yes	Yes		
3.6	Yes	Yes		
3.7	Yes	Yes		

Signed by the Designer:

Robert Morgan

Date: 13.03.2023

Signed by the Audit Team Leader:

Colin Pencheville

Date: 14.03.2023

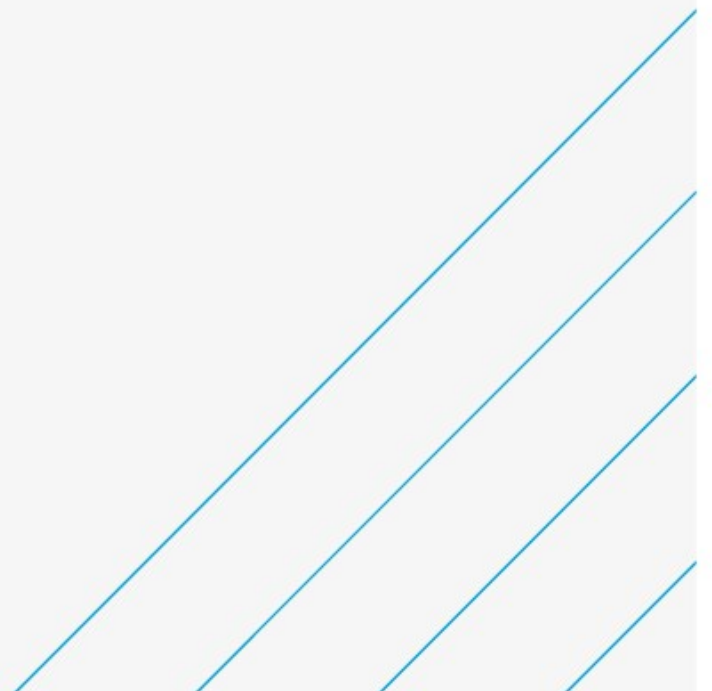
Appendix B. Stage 1 Road Safety Audit

Ballyalbaney & Horseshoe Bridges

Road Safety Audit Stage 1

Monaghan County Council

April 2023



Notice

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Author-ised	Date
Rev 0	Draft	RM	RM	CP	CP	Feb 2023
Rev 1	Final	RM	RM	CP	CP	Mar 2023
Rev 1	Addendum for updated drawings	RM	RM	CP	CP	April 2023

Client signoff

Client	Monaghan County Council
Project	Ballyalbaney & Horseshoe Bridges
Job number	5213957
Client signature / date	

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1. Introduction

1.1. Background

This report describes the findings of a Stage 1 Road Safety Audit associated with the proposed bridge enhancements for pedestrians and cyclists at Ballyalbaney and Horseshoe Bridges County Monaghan. A revised design was developed in Q3 2023. Details of an RSA addendum are contained in section 3 of this report.

Audit has been completed by Atkins on behalf of Monaghan County Council.

1.2. Site Inspection

A site visit was carried out 28th of July 2022 by the Road Safety Audit Team.

Weather conditions during the site visit were warm and dry, road surfaces were dry and traffic conditions were light. Pedestrian activity was light, and no cyclists were observed.

1.3. The Team

The Road Safety Audit Team members were as follows:

- **Team Leader:** Colin J Prendeville *B.Eng(Hons), C.Eng MIEI, CIHT, P.Cert (RSA)*
- **Team Member:** Richard Malcolmson *BTech BEng MEng MIEI*

1.4. The Design

The following drawing was examined as part of the Stage 1 Road Safety Audit process:

Table 1-1 – Design Team Drawings List

Drawing Number	Drawing Title	Revision
5213957-ATK-02-ZZ-SK-C-000101	Horseshoe Bridge Option 1 (Concrete Bridge & Embankments)	1
5213957-ATK-01-ZZ-SK-ST-000102	Ballyalbaney Bridge Option 3 (Steel Bridge & Embankments)	4

1.5. Road Safety Audit Compliance

Procedure and Scope

This Road Safety Audit has been carried out in accordance with the procedures and scope set out in TII publication number **GE-STY-01024 - Road Safety Audit**.

As part of the road safety audit process, the Audit Team have examined only those issues within the design which relate directly to road safety.

Compliance with Design Standards

The road safety audit process is not a design check, therefore verification or compliance with design standards has not formed part of the audit process.

Minimizing Risk of Collision Occurrence

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 the risk of collision occurrence.

2. Road Safety Issues Identified

2.1. Problem: Existing dishing

Location: Coolshannagh Walk Junction

The proposed pedestrian crossing at Coolshannagh Walk junction south of the bridge does not take into account the existing drop kerb along Coolshannagh Walk. The existing crossing may lead to visually impaired road users inadvertently walking onto the carriageway at this location where they could be struck by vehicles.



Figure 2-1 – Existing drop kerb

Recommendation: The existing dished kerb and adjacent footpath should be removed as part of the proposed works.

2.2. Problem: Sudden narrowing of footpath

Location: Northern tie-in of Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed footway is over 3m along the bridge and then narrows suddenly to 1.3m at the existing footpath as shown in Figure 2-3. If pedestrians meet along this section of existing footpath or people walk side-by-side across the bridge, it is likely the person on the LHS / outside would have to step onto the carriageway and may come into conflict with traffic coming from the north.



Figure 2-2 – Existing Footpath

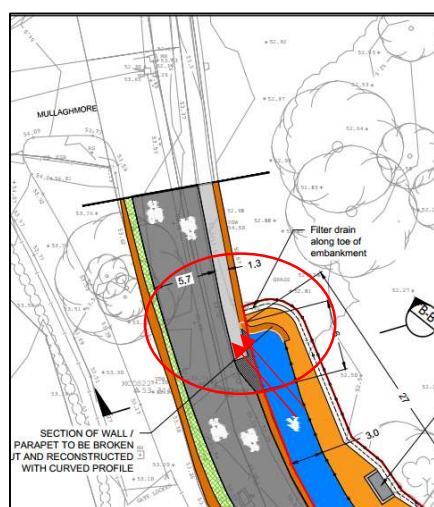


Figure 2-3 – Existing Footpath

Recommendation: The Designer should investigate measures to gradually reduce the footpath over a longer distance and reduce the chance of people stepping onto the road due to the sudden narrowing.

2.3. Problem: Poor visibility due to existing tree growth

Location: North of Ballyalbaney Bridge

The northern approach to the Ballyalbaney bridge has an overgrown tree that restricts sight lines for approaching vehicles to the bridge. This may lead conflict due to the restricted sight lines.



Figure 2-3 – Overgrown tree

Recommendation: The existing tree should be curtailed as part of the proposed works.

2.4. Problem: Existing wall / parapet end

Location: South of Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900101

The proposed design shows an exposed end to the existing wall/parapet. The open-end wall/ parapet at this location poses a risk increased injury severity from errant vehicles travelling from the south. The risk is exacerbated by the downgrade and curved alignment that exists from the south.



Figure 2-4 – Proposed end of wall/ Parapet



Figure 2-5 – Existing Curved Wall.

Recommendation: The Design Team should investigate measures to negate the risk such as curving the wall similar to the existing arrangement.

2.5. Problem: Desire line

Location: Coolshannagh Walk Junction

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed pedestrian crossing at Coolshannagh Walk Junction does not appear to be along the natural desire line for pedestrians. There is a risk of slips, trips and falls where adequate provision is not made for the natural desire line. Additionally, where provision is not adequate, some may choose to walk on the trafficked lanes where they may be at risk of coming into conflict with traffic.

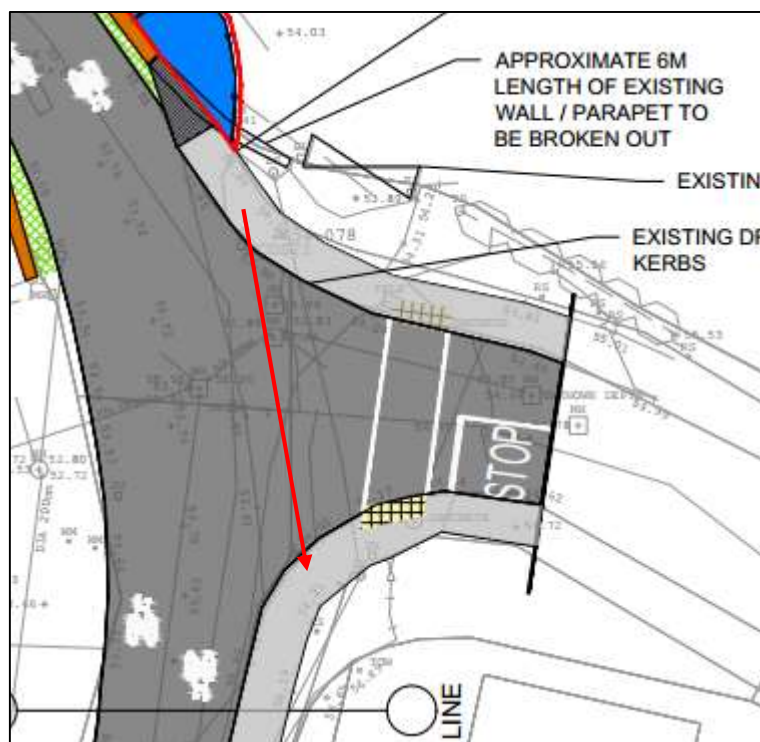


Figure 2-6 – Desire Line

Recommendation: The proposals should ensure there is adequate provision along the natural desire line in terms of tactile paving and dropped kerbs, to ensure vulnerable road users can safely travel across the site.

2.6. Problem: Radius size

Location: Coolshannagh Walk Junction

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The existing/proposed radius appears large which allows vehicles to enter and exit Coolshannagh Walk Junction at higher speeds. The junction will be more challenging to pedestrians to cross if they follow the desire line identified in problem 2.5 above. This could lead to conflict between vulnerable road users and vehicles.



Figure 2-7 – Coolshannagh Walk Junction Radii Size

Recommendation: The Designer should review the radius size and reduce where possible in conjunction with providing for the natural desire line noted in 2.5 above.

2.7. Problem: Stop line position

Location: Mullaghmatt Road

The proposed stop line position extends into the opening of the junction. If vehicles travelling north/south from Park Road enter the junction to travel east on Mullaghmatt Road, they may be restricted by waiting vehicles at the stop line on Mullaghmatt Road. This may lead to shunt collisions between vehicles as a result of blockages of the Park Road and the junction.

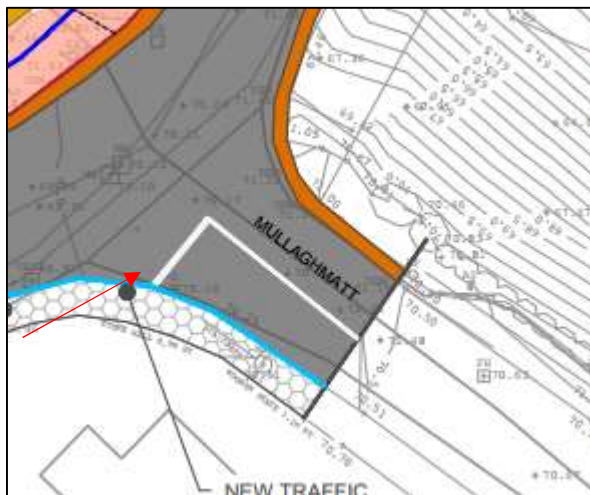


Figure 2-8 – Mullaghmatt Road

Recommendation: The Designer should ensure the stop line is set back to allow for access for vehicles onto Mullaghmatt Road from Park Road.

3. Addendum

A number of design changes were introduced in the proposals in Q3 2023 after the completion of the original Road Safety Audit detailed in sections 1 and 2 of this report. The Road Safety Audit Team conducted an audit on the revised drawings listed in Table 3-1 on 3rd April 2023. A summary of the changes are detailed below;

Ballyalbany Bridge

1. Southbound cyclists use the new bridge (these were previously on-road)
2. The junction at Coolshannagh Walk has been narrowed by incorporating over-ride areas.

Horseshoe Bridge

1. A clear-zone to facilitate a resident manoeuvring in and out of their drive way has been provided

3.1. The Design

The following drawings were examined as part of the Stage 1 Road Safety Audit Addendum process:

Table 3-1 - Updated Design Team Drawings List

Drawing Number	Drawing Title	Revision
-		-
5213957-ATK-02-ZZ-SK-C-900101	HORSESHOE BRIDGE PRELIMINARY DESIGN	03
5213957-ATK-01-ZZ-SK-C-900102	BALLYALBANEY BRIDGE PRELIMINARY DESIGN	06

4. Addendum Road Safety Issues Identified

4.1. Problem: Proposed drop kerb

Location: Northern tie-in of Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed drop kerb as shown in figure 4-1 as a light blue polyline runs parallel to the carriageway lane. Cyclists travelling south are required to enter the proposed ramp at an angle to the proposed drop kerb. If the kerb is not flush or suitably profiles to the proposed pavement level this could create a lip which cyclists are required to navigate over. Cyclists if entering at high speeds could slip along the raised kerb which could lead to slips or falls of cyclists trying to enter the shared area.



Figure 4-1 – Proposed Drop Kerb for Cyclists

Recommendation

The kerb should be laid and profiled such that it does not create a risk of cyclists slipping as they enter the shared area.

4.2. Problem: Proposed drop kerb

Location: Southern tie-in of Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed dropped kerb at the location in figure 4-2 encourages cyclists to enter onto the footpath. The layout may create confusion for cyclists and lead to conflict between pedestrians and cyclists.

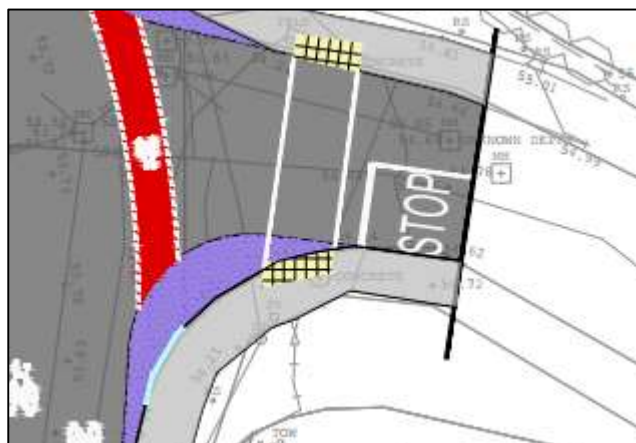


Figure 4-2 – Proposed Drop Kerb for Cyclists

Recommendation

The dropped kerb should be removed at this location.

4.3. Problem: Proposed online cycle lane

Location: Southern tie-in of Ballyalbaney Bridge

Drawing: 5213957-ATK-01-ZZ-SK-C-900102

The proposed online cycle track appears to start and end abruptly shortly at the junction. It appears that cyclists may abruptly enter the carriageway which is not expected by drivers who may be turning into Coolshannagh Walk. At the south of the cycle track, there is an abrupt end which abuts the footpath that may lead to cyclist abruptly merging to the road where conflict may arise.

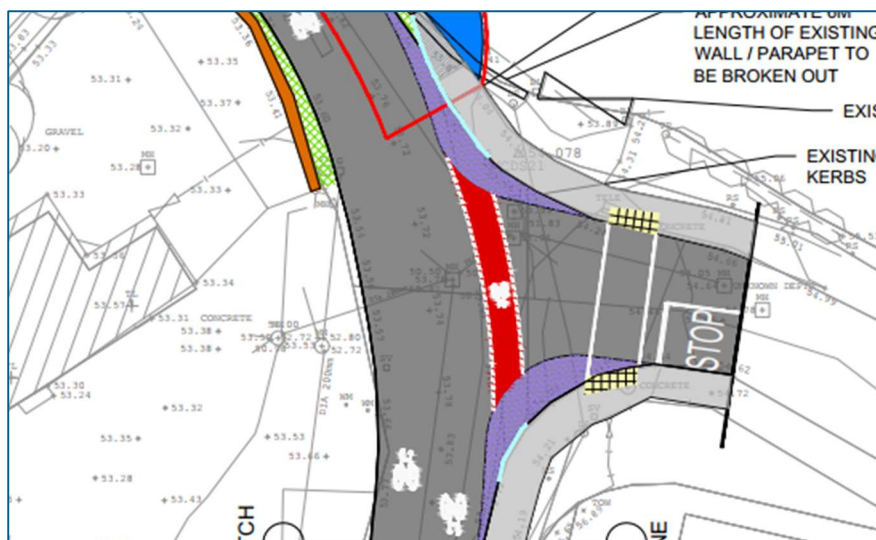


Figure 4-3 – Proposed online cycle lane

Recommendation

The Designer should review the proposed layout and propose a detail that allows adequate provision for cyclists to cross the junction while also interacting with traffic and also requiring them to merge safely to the south of the scheme.

5. Audit Team Statement

5.1. Certification

We certify that we have examined the drawings listed in Chapter 1 and 3 of this Report.

5.2. Sole Purpose

The Road Safety Audit 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 road safety aspects of the scheme.

5.3. Implementation of RSA Recommendations

The problems identified herein have been noted in the Report together with their associated recommendations for road safety improvements. We (the Audit Team) propose that these recommendations should be studied with a view to implementation.

5.4. Audit Team's Independence to the Design Process

No member of the Audit Team has been otherwise involved with the design of the measures audited.

5.5. Road Safety Audit Team

Colin J Prendeville

Audit Team Leader
Road Safety Engineering Team

ATKINS

Signed: 

Date: 23rd February 2023

Richard Malcolmson

Audit Team Member
Road Safety Engineering Team

ATKINS

Signed: 

Date: 23rd February 2023

6. Designer's Response

6.1. Preparing a Response to the Road Safety Audit

The Designer should prepare an Audit Response for each of the recommendations using the Road Safety Audit Feedback Form attached in Appendix A.

When completed, this form should be signed by the Designer and returned to the Audit Team.

6.2. Returning the Feedback Form

Please return the completed Road Safety Audit Feedback Form attached in Appendix A of this report to the following email or postal address:

Email address: Colin.Prendeville@atkinsglobal.com

Postal address: Road Safety Engineering Team
Atkins
150 Airside Business Park
Swords
Co Dublin
K67 K5W4

Telephone: +353 1 810 8110

The Audit Team will consider the Designers response and reply indicating acceptance or otherwise of the Designers response to each recommendation.

6.3. Triggering the Need for an Exception Report

Where the Designer and the Audit Team cannot agree on an appropriate means of addressing an underlying safety issue identified as part of the audit process, an Exception Report must be prepared by the Designer on each disputed item listed in the audit report.

Appendices



Appendix A. Road Safety Audit Feedback Form

Scheme: Ballyalbany and Horseshoe Bridge

Audit Stage: Stage 1 Road Safety Audit

Date Audit Completed: 28/07/2022

Paragraph No. in Safety Audit Report	To be completed by the Designer			To be completed by the Audit Team
	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
2.1	Yes	Yes		
2.2	Yes	No	<p>A GPR survey of the graveyard has indicated the potential presence of an unmarked grave at the north end of the embankment.</p> <p>The proposed footpath to embankment connection at this point incorporates a footpath taper and the removal of 6m (approx.) of boundary wall. This arrangement seeks to provide sufficient space for pedestrians to pass without stepping onto the road.</p> <p>The existing footpath and proposed embankment will be at the same level (approx.).</p> <p>Footpath users will generally have advanced visibility of approaching pedestrians in both directions.</p>	Yes. The layout maximises the available space considering constraints present.
2.3	Yes	<p>Yes.</p> <p>Monaghan CC will be notified of the recommendation as it may be obstructing sightlines in the existing situation.</p> <p>This tree may need to be removed for construction of the embankment.</p>		Yes
2.4	Yes	Yes.		Yes. Measure to mitigate the

		To be completed by the Designer		To be completed by the Audit Team
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
		The design team will consider options to mitigate this risk. Curving the parapet may not be an option due to geometric constraints from the proposed adjacent embankment link. An option which mitres the end of the wall to remove the outer corner will be explored at detailed design stage (if possible). It is noted that the speed limit at this location is 50km/hr.		risk will be developed further as the design progresses.
2.5	Yes	No	Junction narrowing was explored as part of the Option development process. This was not possible due to the operational requirements of Leonards Steel Ltd. Leonards Steel receive and deliver long-loads on trombone trailers. An auto tracking exercise was undertaken to check the compatibility of a junction narrowing with their delivery vehicles. The result showed that this would lead to areas of footpath over-ride. Please refer to Section 6.6 of the Options Selection Report for the results of the analysis (5213957DG0007 Rev 4). The tactile paving flags at the proposed crossing point will be specified to be a minimum of 3 units deep.	Yes. The layout maximises the available space considering constraints present
2.6	Yes	No	Please see 2.5. The tactile paving flags at the proposed crossing point will be specified to be a minimum of 3 units deep.	Yes. The layout maximises the available space considering constraints present.
2.7	Yes	Yes.		

		To be completed by the Designer		To be completed by the Audit Team
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative Measures accepted by Auditors (yes/no)
		The side road is quite narrow. The stop line location will be optimised at the Detailed Design stage.		
Problems Identified in Road Safety Audit Addendum				
4.1	Yes	Yes.		
4.2	Yes	Yes. It is intended to incorporate a jug handle junction for the cyclists so that they enter onto the carriageway perpendicularly. Due to space constraints, it may require some shared use of the existing footpath. This is not shown on the Preliminary Design drawing and will be detailed further at DD stage.		Yes.
4.3	Yes	Yes. The treatment of cyclists crossing the junction will be re-examined for potential improvement at DD Stage.		Yes.

Signed by the Designer: *Robert Morgan*

Date: 13/04/2023

Signed by the Audit Team Leader: *Colin Penclerville*

Date: 13/04/2023

Signed by the Client:

Date:

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