TECHNICAL NOTE

Eirspan TO No.341 – N59 Oughterard Footbridge

SUBJECT
Bridge width

PROJECT NO.
0088798

DATE
10/01/2025

AUTHOR(S)
Mark Chambers

DISTRIBUTION
Galway CC and TII

REPRESENTING

ICEPAC NO.

ATKINSRÉALIS NO.
0088798DG0033

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0	Draft For Comment	Apilas Kanages	Mark Chambers	Mark Chambers	Chris Pires	21/06/24
1	Revised draft	Mark Chambers	Martin Jennings	Martin Jennings	Martin Jennings	24/12/24
2	Revised draft	Mark Chambers	Martin Jennings	Martin Jennings	Martin Jennings	10/01/25

Client signoff

Client	Galway County Council		
Project	Eirspan TO No.341 – N59 Oughterard Footbridge	**Project No.**	0088798
Client signature / date			

1. Introduction

This technical note documents the following:

- Design standard requirements regarding width/geometry for a footbridge vs a pedestrian & cycle bridge.
- Site constraints in relation to bridge width/geometry.
- Design implications for the crossing.
- Discussion on the feasibility of providing a footbridge vs a pedestrian & cycle bridge with reference to the site constraints.
- Recommendation on an appropriate bridge type (i.e., footbridge or pedestrian & cycle bridge) and bridge width.

This technical note considers the location option approx. 150m downstream of the N59 road bridge for the proposed footbridge. The 'Location Option Appraisal' report, doc. ref. 0088798DG0014, documents the multi criteria analysis of several footbridge location options and justification for the preferred location 150m downstream of the N59 Oughterard (road) Bridge. The chosen location was selected chiefly for the following reasons:

- It is aligned with the main pedestrian desire line (between the schools and town centre).
- It allows abutments to be adequately setback from the riverbank crest.
- It ties-in with adjacent existing footways via proposed zebra crossings over the roads at both ends.
- Construction can progress without significant disruption to normal traffic flow on N59 and Carrowmanagh Road.

See Appendix A, for an existing general arrangement drawing (Drg No. 0088798-ATK-XX-XX-DR-BE-900026) at the site.

This technical note considers the proposed general arrangement drawings shown in Appendix B and C, for a footbridge and pedestrian & cycle bridge, respectively. The various general arrangement options are described and evaluated in Section 3 of the Structure Options Report (doc. ref. 0088798DG0031).

2. Review of Relevant Design Guidance

This section outlines the site-specific required width of a footbridge vs a pedestrian & cycle bridge, based on the relevant design standards. This is to inform a decision whether to provide a footbridge vs a pedestrian & cycle bridge, and to decide an appropriate width.

2.1 Pedestrian & Cycle Flow

The bridge width is dependent on the peak flow rate of pedestrians and/or cyclists per hour.

Table 1 shows the peak and daily pedestrian / cycle flow expected to use the proposed bridge based on the 2022 survey of pedestrian movement, duration a school term weekday. The estimates assume the following:

- All pedestrians using the existing road bridge will use the proposed bridge, except those walking between north-west of the N59 Oughterard (road) bridge, and the Church of Immaculate Conception or Station Road.
- Only cyclists travelling between Carrowmanagh and the town centre will use the proposed bridge

Table 1 – Peak and daily pedestrian / cycle flow expected to use the proposed bridge based on the 2022 survey

Time	Pedestrians	Cyclists	Pedestrians + cyclists
Peak flow	159/hr (13:00 to 14:00)	4/hr (08:00 to 09:00)	163
Daily flow	571	14	585

Pedestrians represent 98% of active travel users that are expected to use the proposed bridge. The peak pedestrian flow is 159/hr whereas the peak cycle flow is only 4/hr. The pedestrian / cycle flows counted in 2022 would be classed as a ‘low flow’ in the design standards.

Assuming pedestrian & cycle flow increases with the current annual 3.8% population growth rate of Oughterard (https://westerndevelopment.ie/publications/wdc-census-2022-summary-report-for-western-region-july-2023/), it would take approx. 17 years for high flow (>300/hr) to be reached. Given that the design life of the bridge is 120 years, it should be designed for ‘high flow’ to cater for population growth and a modal shift to walking and cycling.

The 2022 survey counted a peak flow of cars between Carrowmanagh and N59 Oughterard Bridge of 297/hr from 08:00 to 09:00. Some of these car journeys would change to walking or cycling by providing a new footbridge or pedestrian & cycle bridge and with any further active travel infrastructure improvements in the area. This further justifies the decision to design for ‘high flow’.

2.2 Required Width of a Footbridge

The sections below summarise the required width of a footbridge, based on applicable design standards and the site-specific flow.

2.2.1 TII – Design Criteria for Footbridges – DN-STR-03005

DN-STR-03005 is included in the tender brief as an applicable design standard for the bridge.

DN-STR-03005, Para 6.3, requires a clear width of at least 2.0m, and 300mm of width per 20 persons per minute. The peak flow of 160 pedestrians/hr equates to just 2.7 pedestrians/minute, so the required clear width of the footbridge is effectively 2.0m.

2.2.2 DMURS

DMURS is listed as an applicable design standard in the tender brief. See Figure 1 for a summary of the footpath widths required by Figure 4.34 of DMURS.

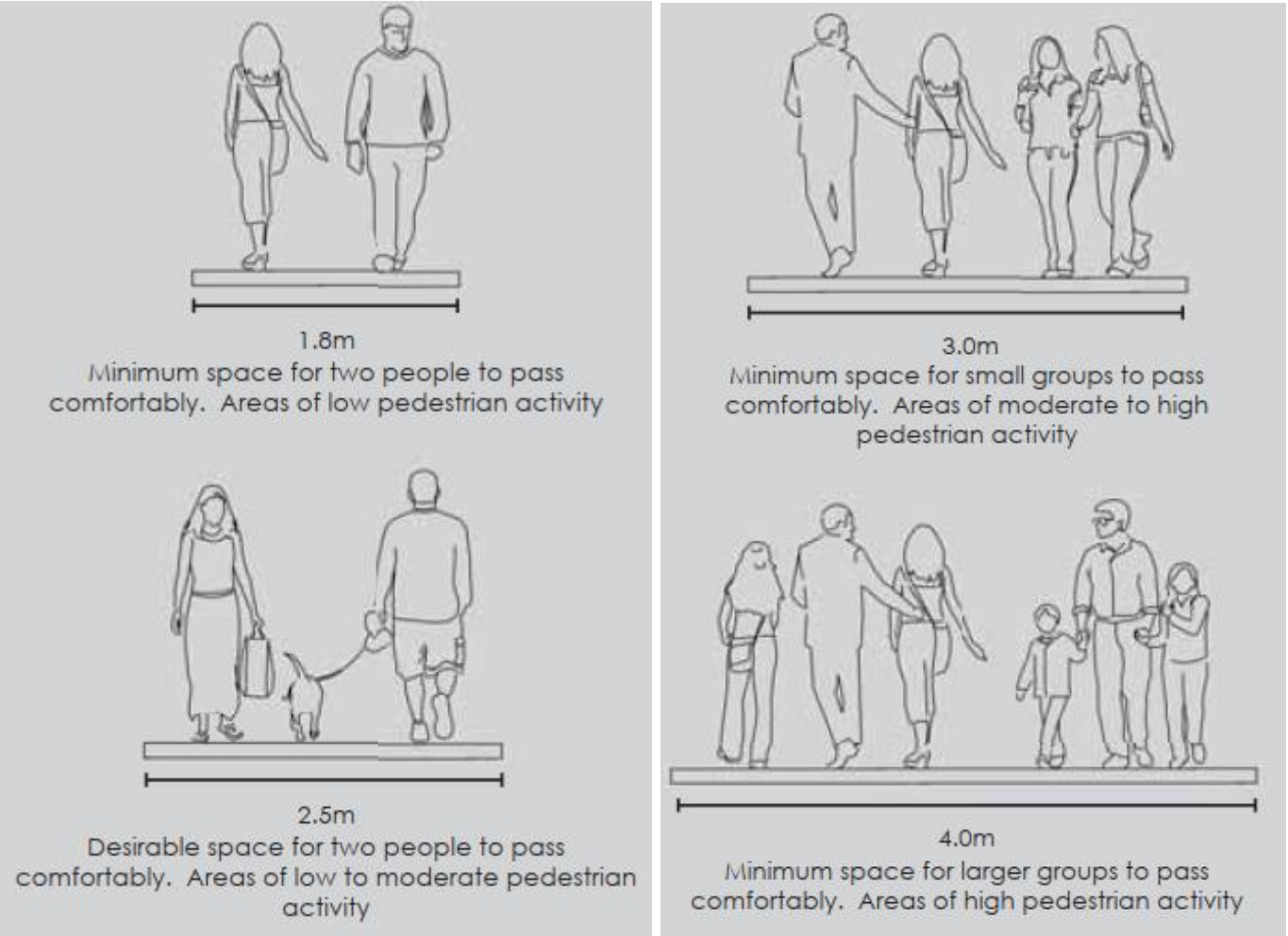


Figure 1 - Required footpath widths (ref: DMURS, Figure 4.34)

A 3.0m wide footpath is considered appropriate given that it caters for 'moderate to high pedestrian activity' and allows small groups to pass comfortably. The pedestrian flow would be 'tidal' therefore large groups of school children would

generally not be walking in opposite directions. Providing a 4.0m wide footbridge seems excessive when the footpaths on adjacent roads have a min width of 1.6m and road widths are inadequate to widen them.

2.2.3 Pedestrian Comfort Guidance for London, 2010

This design standard is referenced in DMURS, 4.3.1.

The recommended minimum footway total width for a situation with under 600 pedestrians per hour and no street furniture in the path is 2.6m.

The required width in the DMURS takes precedence because the recommended width falls below the requirements of DMURS.

2.2.4 Summary

A summary of Design Standard guidance applicable to footbridge width is shown in Table 2. To comply with all the applicable design standards for a footbridge, the proposed clear width between parapets is 3.0m.

Table 2 - Summary of Design Standard guidance for required width of footbridge

Design Guide	Required min clear width of bridge	Comment
Pedestrian Comfort Guidance for London	2.6m (<600 pedestrians/hr)	DMURS refers to this guidance but states that DMURS recommendations take precedence where they are greater.
DMURS	3.0m (moderate to high flow)	Instructed as one of the primary design standards by the client and is considered relevant.
Design Criteria for Footbridges – DN-STR-03005	2.0m	Instructed as one of the primary design standards by the client and is considered relevant.

2.3 Required Width of a Pedestrian & Cycle Bridge

The sections below summarise the required width of a pedestrian & cycle bridge based on applicable design standards and the site-specific flow. Design Standard requirements for pedestrian & cycle bridges were not referenced in the Tender Brief but were instructed by the Client as applicable after project commencement.

2.3.1 NTA – Cycle Design Manual v1.0, Sep’ 2023

The NTA Cycle Design Manual should be used for design of all new cycle facilities. It was not included in the Tender Brief but it was instructed as applicable by the Client after project commencement.

The required width over the bridge consists of the elements shown in Figure 2.

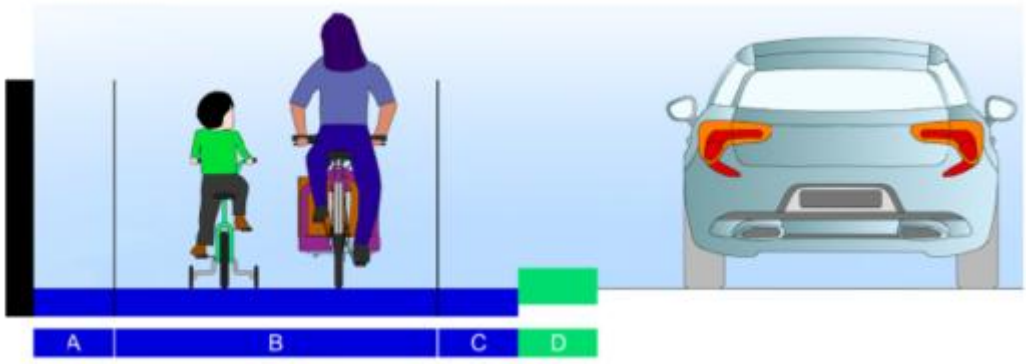


Figure 2 – Cycle facility width elements (A=inside clearance, B=central width, and C=outside clearance)

See Table 3 for an extract from the NTA Cycle Design Manual, which provides details on the recommended width for the cycle lanes and horizontal clearances.

Table 3 – Extract from NTA Cycle Design Manual (Table 2.2)

A. Inside Clearance	
Feature	**Additional width required (m)**
Flush or near-flush surface including low and splayed kerbs up to 60mm high	0.00
Kerbs 61mm to 150mm high	0.20
Vertical feature from 151mm to 600mm high	0.25
Vertical feature above 600mm high	0.50

B. Central Width			
Type of Facility	**Flow (cycles per peak hour)**	**Desirable minimum width (m)**	**Absolute minimum width (m)**
One-way cycle track	<300	2.00	1.50*
	>300	2.50	2.00
Two-way cycle track	<300	3.00	2.00
	>300	4.00	3.00
Cycle lane	All	2.00	1.50
Shared Active Travel Facility	<300	4.00	3.00
	>300	5.00	4.00

C. Outside Clearance	
Feature	**Additional width required (m)**
Flush or near-flush surface including low and splayed kerbs up to 60mm high	0.00
Kerbs 61mm to 150mm high	0.20
Vertical feature from 151mm to 600mm high	0.25
Vertical feature above 600mm high	0.50

iii. On gradients greater than 3%, cycle track width should be increased by 0.25 m to allow for greater lateral movement.

Based on the NTA Cycle Design Manual Table 2.2, for a high flow shared active travel facility, the required clear width is as follows:

- Overall desirable min width = 5.25m (central width) + 1.0m (0.5m clearance each side to the parapet) = **6.25m**
- Overall absolute min width = 4.25m (central width) + 1.0m (0.5m clearance each side to the parapet) = **5.25m**

See Table 4 – Pedestrian densities and recommended arrangement which is based on Cycle Design Manual, Table 4.14. A shared use facility is considered suitable because of the following: the low-speed differential between users due to the proximity of adjacent road crossings; relatively large number of years until the pedestrian density is high enough to justify a segregated path; and onerous constraints on bridge width due to restricted site geometry and sensitive ecology receptors which mean that the wider bridge needed for a segregated cycle lane would not be appropriate.

Table 4 – Pedestrian densities and recommended arrangement

Path width (m)	Current density of pedestrians (users/hr/m)	Recommended arrangement based on current pedestrian flow	No. of years at 3.8% growth p.a. until a segregated arrangement should be provided (>200 pedestrians/hr/m)
5.25	30.5 (160/5.25)	Shared use usually appropriate	50
6.25	25.6 (160/6.25)	Shared use usually appropriate	55

2.3.2 TII – Rural Cycle Design (Offline & Greenway) – DN-GEO-03047

DN-GEO-03047 is referenced in the NTA Cycle Design Manual, 4.2.7. The NTA Cycle Design Manual was not referenced in the Tender Brief but was instructed as applicable by the Client after project commencement.

See Table 5 – Required width based on DN-GEO-03047, Table 4.8.

Table 5 – Required width based on DN-GEO-03047, Table 4.8

Cycleway Types	Volume	Minimum Width (m)
Shared Use Cycleway	Low Volume	3.0
	High Volume	5.0

'High Volume' is defined as over 300 users per hour which is considered appropriate.

The horizontal clearance to the adjacent parapet is as follows:

- Absolute minimum clearance: 0.5m (DN-GEO-03047, 4.5.5)
- Desirable minimum clearance: 1.0m (DN-GEO-03047, Table 4.7)

0.5m clearance is considered appropriate for this design situation due to the following: restricted site geometry; sensitive ecology receptors; and cost of land purchase and bridge construction per square metre.

In summary, the required clear width over the bridge is 6m (i.e., 5m path + 2*0.5m parapet clearance).

2.3.3 TII – Design Criteria for Footbridges – DN-STR-03005

DN-STR-03005 was included in the Tender Brief as an applicable design standard. Where the bridge is part of a pedestrian and cycle route, DN-STR-03005, Clause 12.4 states that the required width should also comply with Local Transport Note 2/86. There are no existing or proposed cycle routes adjacent to the proposed bridge, however the guidance was instructed as applicable by the Client after project commencement. The requirements from the latest version of this standard (LTN 1/20, DfT Cycle Infrastructure Design) for a shared use path are summarised below:

- Minimum path width for pedestrian/cycle flow up to 300/hr: 3.0m (where pedestrian flows are higher, greater width should be used to avoid conflict)
- 0.5m clearance on each side to parapets

In summary, the required min clear width of the bridge would be 5m (i.e., 3.0m path + 1m extra width for high pedestrian flow + 0.5m parapet clearance each side).

Shared use paths are described as appropriate where cyclists are moving at slow speeds e.g., around junctions or toucan crossings. This is considered applicable given that the length of the path between road junctions is only 80m, and the high flow rate of pedestrians during busy periods would require cyclists to slow down.

2.3.4 Safe Routes to School (SRTS) Design Guide

The SRTS provides design guidance for walking and cycle routes to school. It was not referenced in the Tender Brief but instructed as applicable by the Client after project commencement. Most of the pedestrian flow over the proposed bridge would be to/from the schools on Carrowmanagh Road. The two schools are 250m to 300m north of the proposed bridge.

SRTS, Para 1.6, recommends a 4m width path where shared use facilities are provided as greenways or through parks (i.e., away from traffic). This equates to a 5m clear width bridge with the 0.5m parapet clearance each side.

2.3.5 Summary

See Table 6 – Summary of Design Standard requirements for a shared use pedestrian & cycle bridge with ‘high flow’. For a shared use cycle bridge, the required absolute minimum clear width is 5.25m to comply all the applicable / relevant design standards.

Table 6 – Summary of Design Standard requirements for a shared use pedestrian & cycle bridge with ‘high flow’

Design Guide	Required min clear width of bridge	Comment
Safe Routes to School (SRTS) Design Guide	5.0m	Considered relevant.
Design Criteria for Footbridges – DN-STR-03005, and LTN 1/20, DfT Cycle Infrastructure Design	5.0m	Instructed as one of the primary design standards by the client and is considered relevant. NB. The 5.0m clear width requirement in LTN 1/20 takes precedence over the 2.0m requirement in DN-STR-03005.
NTA - Cycle Design Manual v1.0	5.25m (absolute min) and 6.25m (desirable min)	Instructed as one of the primary design standards by the client and is considered relevant. The absolute minimum width would be considered applicable due to the onerous space constraints.
Rural Cycle Design (Offline & Greenway) – DN-GEO-03047	6.0m	Although this Standard is referenced in the NTA Cycle Design Manual, 4.2.7 'Greenways and shared active travel facilities' – the recommendations are intended for rural situations where space is less constrained.

2.4 Corner and Bend Requirements

2.4.1 Footbridges

For a footbridge, ramps with angular turns (e.g., 90 degrees) are feasible.

Where curved ramps are provided, the minimum inside horizontal radius of walkway surfaces (measured 900mm from the edge of the walkway surface) shall be 5.5m (DN-STR-03005, 6.13).

2.4.2 Pedestrian & Cycle Bridges

For a pedestrian & cycle bridge, the NTA Cycle Design Manual recommends that for speed reducing curves at the approach to a junction (e.g., the Carrowmanagh Road crossing), the recommended radius is 6-8m, and the absolute minimum radius is 4m (which corresponds with a 10 km/h design speed).

2.5 Vertical Gradient Requirements

2.5.1 Footbridges

The max gradient requirements in the Design Standards for footbridges are listed below:

- DN-STR-03005, Section 6:
  - Deck: The deck slope should normally be no steeper than 1 in 20.
  - Ramps: Ramps shall not be steeper than 5% unless agreed otherwise with the Overseeing Organisation. For reasons of keeping the access on the desire line, or to avoid long diversions, or to avoid damage to the environment, or for reasons of limitations of space, a steeper ramp may be used, preferably no steeper than 6.7%. However, no ramp shall be steeper than 8.3%.
  - For ramps of gradient 5%, landings shall be provided at intervals of maximum rise 2.5m.
  - Where the ramp is steeper than 5%, for safety reasons there should normally be a significant change either of direction (30 deg or more) or in horizontal alignment (e.g. offset by at least one ramp width), at least at every 3.5m rise of the ramp at an intermediate landing.
- DMURS, 4.4.6:
  - In urban areas, it is likely that the comfort of vulnerable road users will be the determining factor for desirable maximum longitudinal gradients on streets. Part M of the building regulations advises that access routes with a gradient of 1:20 or less are preferred. Therefore, a maximum gradient of 5% is desirable on streets where pedestrians are active.
  - In hilly terrain, steeper gradients may be required but regard must be had to the maximum gradient that most wheelchair users can negotiate of 8.3%, although this should be limited to shorter distances. A designer may need to consider mitigation measures, such as intermediate landings, to ensure that pedestrian routes are accessible.

2.5.2 Pedestrian & Cycle Bridges

The max gradient requirements in the Design Standards for pedestrian & cycle bridges are listed below:

- NTA Cycle Design Manual, Table 4.10:
  - Desirable maximum gradient 3%
  - Absolute maximum gradient 5%
- Rural Cycle Design (Offline & Greenway) – DN-GEO-03047:
  - Desirable maximum gradient 3%
  - Absolute maximum gradient 5% (max 150m length)

2.6 Summary

The requirements for footbridges vs pedestrian & cycle bridges are summarised in Table 7.

In summary, the required clear width for a footbridge is 3m, and the required clear width for a cycle bridge is 5.25m. The total bridge width would be the clear width plus approx. 0.8m to accommodate the width of parapets and structural elements.

Table 7 - Requirements for footbridges vs pedestrian & cycle bridges

	Footbridge	Pedestrian & Cycle Bridge
Internal width between parapets (m)	3	5.25
Total structure width (m)	3.8	6.1
Corners / bends	90-deg corners or bends (minimum inside horizontal radius is 5.5m, measured 900mm from the edge of the footway)	Absolute minimum radius is 4m
Gradient	No steeper than 5% unless agreed otherwise with the Overseeing Organisation. In certain situations, a steeper ramp may be used, preferably no steeper than 6.7%. However, no ramp shall be steeper than 8.3%. For ramps of gradient 5%, landings shall be provided at intervals of maximum rise 2.5m. Where the ramp is steeper than 5%, there should be a significant change either of direction or horizontal alignment at an intermediate landing.	Absolute max gradient 5%

3. Constraints

3.1 General

The following constraints are generally applicable to the design:

- Provide an adequate structure setback from the riverbank crest to install measures such as fencing to demarcate the working zone and surface water control, to mitigate potential ecology impacts.
- Where possible, no works are to take place at a distance less than 2m from the edge of the riverbank crest**.**
- Due to the presence of Freshwater Pearl Mussel (FPM), minimise vibration effects on the riverbed during construction.
- Due to the presence of FPM, minimise bridge shading of the riverbed**.**

3.2 Additional Constraints North Abutment

The following bridge width constraints are applicable at the north abutment:

- The structure must be offset from the existing boundary wall around the adjacent residential property. This retains access to the existing riverside path without the need for a Part M compliant ramp on the east side of the abutment, which reduces privacy and visual amenity impacts on the adjacent residential property. Also, it enables inspection and maintenance access to the structure and the adjacent existing buried water main and combined sewer utilities, which avoids the need for major utility diversions. The width of this path should be 2.5m minimum to comply with DMURS guidance for medium pedestrian and to provide maintenance vehicle access for Uisce Éireann.
- To minimise privacy impacts, the west edge of the bridge should be aligned with the south-west corner of the adjacent house.
- For road safety the end of the ramp should be set-back sufficiently from the proposed zebra crossing on Carrowmanagh Rd to enable provision of an approach landing with bollards and change of direction. Furthermore, the gradient of the ramp should be limited to 5% to avoid wheeled users gaining momentum and accidentally rolling into Carrowmanagh Road, or people slipping in icy or wet conditions.

3.3 Additional Constraints at the South Abutment

The proposed south abutment shall be located on the plateau of land at the east end of the Old Barracks residential property mainly for the following reasons:

- Avoids steep slopes which reduces the scale of required earthworks excavations and associated potential ecology impacts.
- Reduces land-take requirements.
- Minimises privacy impacts on adjacent houses.

4. Design Implications

The design implications of the design standards and constraints are illustrated in the proposed general arrangement drawings for a footbridge in Appendix B, and the proposed general arrangement drawing for a pedestrian & cycle bridge in Appendix C.

To comply with the requirement for abutment setback from the riverbank crest, the pedestrian & cycle bridge would need to be directly adjacent to the residential property boundary wall on the north side. There are significant issues associated with this such as: greater privacy and visual amenity impact on the adjacent residential property; requirement to provide ramp access on the east side of the north abutment to the riverside path; requirement for more significant diversions to existing buried utilities; and lack of maintenance access to the wall and proposed structure at the interface – as described in Section 3.2.

Also, A Departure from Standard would be required for a Pedestrian and Cycle Bridge with a 90-degree corner between the ramp and bridge, which would be needed to fit the constraints at the north riverbank.

5. Discussion

The advantages and disadvantages of providing a footbridge vs a pedestrian & cycle bridge are discussed below.

Potential ecology impacts

The proposed north ramp and abutment substructure and foundation would utilise precast concrete elements to minimise potential ecology impacts during construction. The excavation width would be minimised to accommodate the size of the structural elements only - rather than excavating a working space around the structural elements as is common with in-situ reinforced concrete construction.

A 3m internal width footbridge would provide a north abutment setback of at least 2.5m from the riverbank crest, whilst maintaining the 2.5m minimum offset to the adjacent residential property boundary wall. To mitigate potential ecology impacts, the north ramp is proposed with a ‘T’ shaped cross section with the ‘spine’ beam excavation setback approx. 1.3m from the riverbank. The proposed north abutment and ramp cannot be moved eastwards to the wider part of the riverbank because this would result in more significant privacy impacts on the adjacent house. The north ramp cannot be shortened and steepened beyond 5% to mitigate the risk of wheeled users gaining momentum and accidentally rolling across the road or people slipping in wet/icy conditions.

If a 5.25m pedestrian & cycle bridge was adjacent to the residential property boundary wall on the north side, a ramp would also be needed on the east side of the north abutment to maintain access to the river walk, which is greater privacy and visual amenity impacts. Also, the north abutment setback would be reduced to 2.0m from the riverbank crest, and the edge of the north ramp toe would be located at the crest of the riverbank without setback. This is not considered viable as the structure offset from the boundary wall on the north side is required for the reasons stated in Section 3.2. Providing a 2.5m structure offset to the boundary wall would reduce the north abutment setback from the riverbank crest to 0.2m, and the toe of the north ramp would overhang the riverbank by 1.8m.

Providing a setback between the foundation works and the riverbank crest is required to allow mitigation of potential ecology impacts associated with construction. It provides space for installation of temporary fencing to establish a no working zone adjacent to the riverbank, and to collect and dispose of any surface water run-off during construction of

the works. It provides separation between the construction works and the riverbed to minimise construction induced vibration impacts on FPM.

In addition, the smaller footprint of a footbridge compared to a pedestrian & cycle bridge, offers several advantages:

- Reduces the shade impact on the riverbed, which reduces potential ecology impacts on FPM.
- Increases light penetration to riverbank vegetation under the bridge deck, which protects the integrity of the streamside riparian zone.
- Reduces the number of trees which need to be removed.

Departure from Standard

A footbridge can be provided without the need for any Departures from Standard (DFS), whereas a DFS would be needed to provide a pedestrian & cycle bridge with a 90-degree corner between the bridge and north ramp.

Privacy and Visual Amenity

A footbridge can be provided with 2.5m offset to the residential property wall on the north side of the river whilst complying with riverbank setback requirements. This reduces privacy impacts on the adjacent residential property. Furthermore, it retains access to the riverside walkway without the need for a long obtrusive ramp on the east side of the proposed north abutment which would have significant privacy and amenity impacts on the adjacent property.

Conversely, a pedestrian & cycle bridge would need to be built adjacent to the residential property garden wall to achieve abutment setback from the riverbank crest. This would require a ramp down to the walkway on the east side of the north abutment. This has privacy impacts on the adjacent residential property and impacts the amenity value of the riverside walk.

Planning Approval

A footbridge is more likely to obtain Planning Approval as the proposed works address the pedestrian safety issue on the existing road bridge, which is the ‘rationale for the intervention’. Whilst a pedestrian & cycle bridge would better achieve the secondary objective of encouraging cycling, there would be significant potential impacts on ecology, privacy, visual amenity etc..

There is robust justification for a footbridge, but less so for a pedestrian & cycle bridge, as 98% of bridge users are expected to be pedestrians rather than cyclists (see Section 2.1). Robust justification for the project is needed to obtain planning approval given the constraints at the site.

Active Travel Encouragement

A footbridge provides a safe and convenient crossing for pedestrians, which make-up approx. 98% of active travel users between Carrowmanagh and the existing road bridge. During a mid-week survey in the school term, the daily pedestrian flow from the existing road bridge to Carrowmanagh was 581 whereas the daily cyclist flow was only 14 – and the peak pedestrian flow was 160/hr, whereas the peak cyclist flow was only 4/hr.

A footbridge with an appropriate anti-slip deck finish and 1.4m high parapets could accommodate a low volume cyclists (dismounted) and provide a safe and more direct crossing over the river between Carrowmanagh and the town centre, than the existing N59 Oughterard Bridge.

Although a pedestrian & cycle bridge would provide better infrastructure for cycling, there are no current proposals to provide cycle lanes adjacent to the proposed bridge – and the width of the carriageway and footpaths are insufficient to

accommodate future cycle lanes. In such circumstances, school children are unlikely to cycle to the schools in Carrowmanagh along the N59 regardless of whether a cycle bridge is provided over the river.

Tying the North Ramp into Adjacent Road Levels

A footbridge enables a slight reduction in the structural depth under the deck compared to a pedestrian & cycle bridge, which maximises the clearance under the bridge deck which can be provided for inspection and maintenance access.

6. Recommendations

To meet the project objectives whilst best satisfying constraints, it is recommended that a footbridge is provided, rather than a pedestrian & cycle bridge.

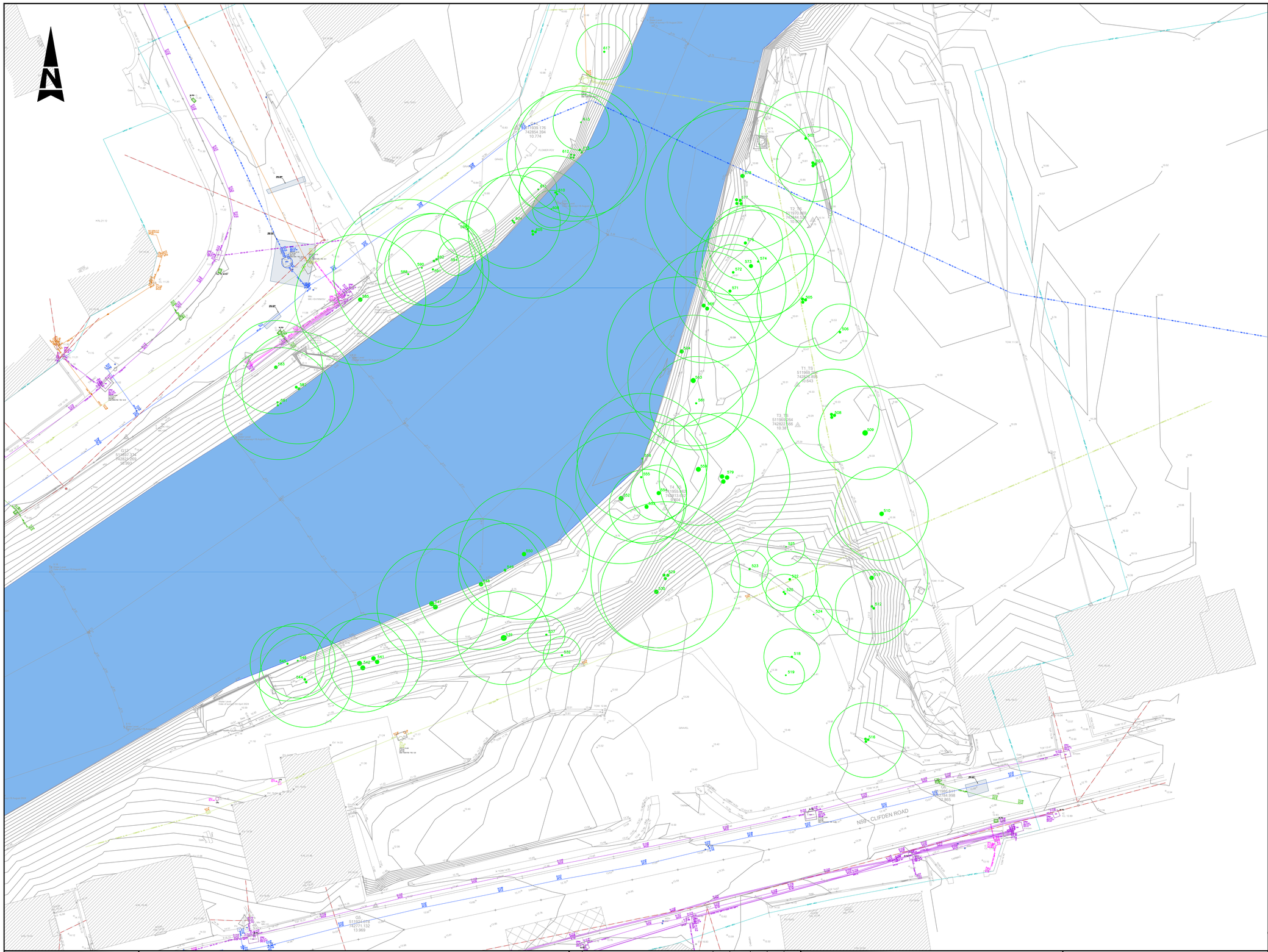
To comply with the relevant design standards for the site-specific pedestrian flow, it is recommended that the footbridge has an internal width of 3m between parapets with anti-slip deck surface and 1.4m high parapets.

There is robust justification for a footbridge given that it addresses the pedestrian safety issue on the existing road bridge, which is the rationale for the intervention, and is more likely to obtain Planning Approval than a wider pedestrian & cycle bridge. The smaller width and angular bends of a footbridge better fit the restricted site geometry.

A footbridge would adequately serve pedestrians and provide a safe crossing for (dismounted) cyclists with a more direct river crossing between the town centre and Carrowmanagh. Whilst a pedestrian & cycle bridge would better satisfy the active travel project objectives, the extra width causes significant potential ecology impacts, which is not justified given that 98% of active travel users between the road bridge and Carrowmanagh are pedestrians. There are no plans for cycle lanes along the N59 into town and these cannot be accommodated due to the narrow road widths.

Appendix A. Existing General Arrangement Drawing

Drg No. 0088798-ATK-XX-XX-DR-BE-900026.



GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

SERVICES LEGEND

- UNDERGROUND ELECTRICITY LINE
- ELECTRICAL MANHOLE
- OVERHEAD LINE WITH POLE
- OVERHEAD ELECTRIC
- UNDERGROUND HV ELECTRICITY LINE
- PUBLIC LIGHTING ELECTRICITY LINE
- 6M HIGH STREET LIGHT
- MINI PILLAR
- U/G ELECTRIC TRAFFIC CONTROL
- TRAFFIC CONTROL MANHOLE
- EIR
- EIR CHAMBER
- OVERHEAD LINE WITH POLE
- ENET
- ENET CHAMBER
- COMMS
- COMMS CHAMBER
- VIRGIN
- VIRGIN CHAMBER
- FIBRE
- FIBRE CHAMBER
- AURORA TELECOM
- AURORA TELECOM CHAMBER
- CATV
- CATV CHAMBER
- BT/ESAT
- BT/ESAT CHAMBER
- SIRO FIBRE
- SIRO CHAMBER
- UNIDENTIFIED SERVICE
- UNIDENTIFIED CHAMBER
- EARTH LINE AND RODS
- TRAFFIC SENSORS
- CCTV POLE
- UTILITIES CABINET
- FOUL DRAINAGE
- FOUL MANHOLE
- STORM DRAINAGE
- STORM DRAINAGE MANHOLE
- COMBINED DRAINAGE
- COMBINED DRAINAGE MANHOLE
- PRODUCT DRAINAGE
- PRODUCT DRAINAGE MANHOLE
- CHEMICAL LINE
- CHEMICAL MANHOLE
- ROAD GULLY
- GULLY TRAP
- WATER MAIN
- SLUICE VALVE
- FIRE HYDRANT
- WATER METER
- SCOUR VALVE
- PRESSURE RELEASE VALVE
- AIR VALVE
- NON-RETURN VALVE
- FUEL LINE/TANK
- GAS SV
- GAS LINE
- GAS HIGH PRESSURE LINE
- GL 00.00 GROUND LEVEL (METRES - OS DATUM)
- CL 10.00 COVER LEVEL (METRES - OS DATUM)
- IL 10.00 INVERT LEVEL (METRES - OS DATUM)
- DPL50 DEPTH TO TOP OF SERVICE DUCT OR CABLE
- DP ON MANHOLES = INVERT LEVEL OF CHAMBER
- DP ON DRAINAGE = INVERT LEVEL OF PIPE
- UTO UNABLE TO OPEN
- OSA OUTSIDE SURVEY AREA
- UTT UNABLE TO TRACE
- (E) EMPTY DUCT
- (CD) CLOSED DUCT
- SURVEYED AREA

Purpose: PRELIMINARY ISSUE

Title: EXISTING GENERAL ARRANGEMENT LAYOUT PLAN

A1

DO NOT SCALE

File: 0088798-ATK-XX-XX-DR-BE-900026.dwg
Date: Jan 06, 2025 - 4:44pm Plotted by: kstepanova

Risk Level	
	AtkinsRéalis Base Line - Low Risk
	AtkinsRéalis Sensitive - Medium Risk
	AtkinsRéalis Private - High Risk
X	Client Critical - Already Marked

Bonneagar Iompair Éireann Transport Infrastructure Ireland

Comhairle Chontae na Gaillimhe Galway County Council

GALWAY NATIONAL ROADS PROJECT OFFICE

Rev	Description	By	Date	Chk'd	Rev'd	Auth
P03	ISSUED FOR REVIEW	KS	01.25	AK	MC	MJ
P02	ISSUED FOR REVIEW	AGL	11.24	AK	MC	MJ
P01	ISSUED FOR REVIEW	AGL	09.24	AK	MC	MJ
P0	ISSUED FOR REVIEW	KS	08.24	AK	MC	MJ

AtkinsRéalis

AtkinsRéalis House, 150-155 Airside Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: Galway County Council, Áras an Chontae, Prospect Hill Galway. H91 H6KX

Project: EIRSPAN TASK ORDER 341 N59 OUGHTERARD FOOTBRIDGE

Original Scale	Drawn	Checked	Reviewed	Authorised
1:200	AGL Date 28.11.24	AK Date 28.11.24	MC Date 28.11.24	MJ Date 28.11.24

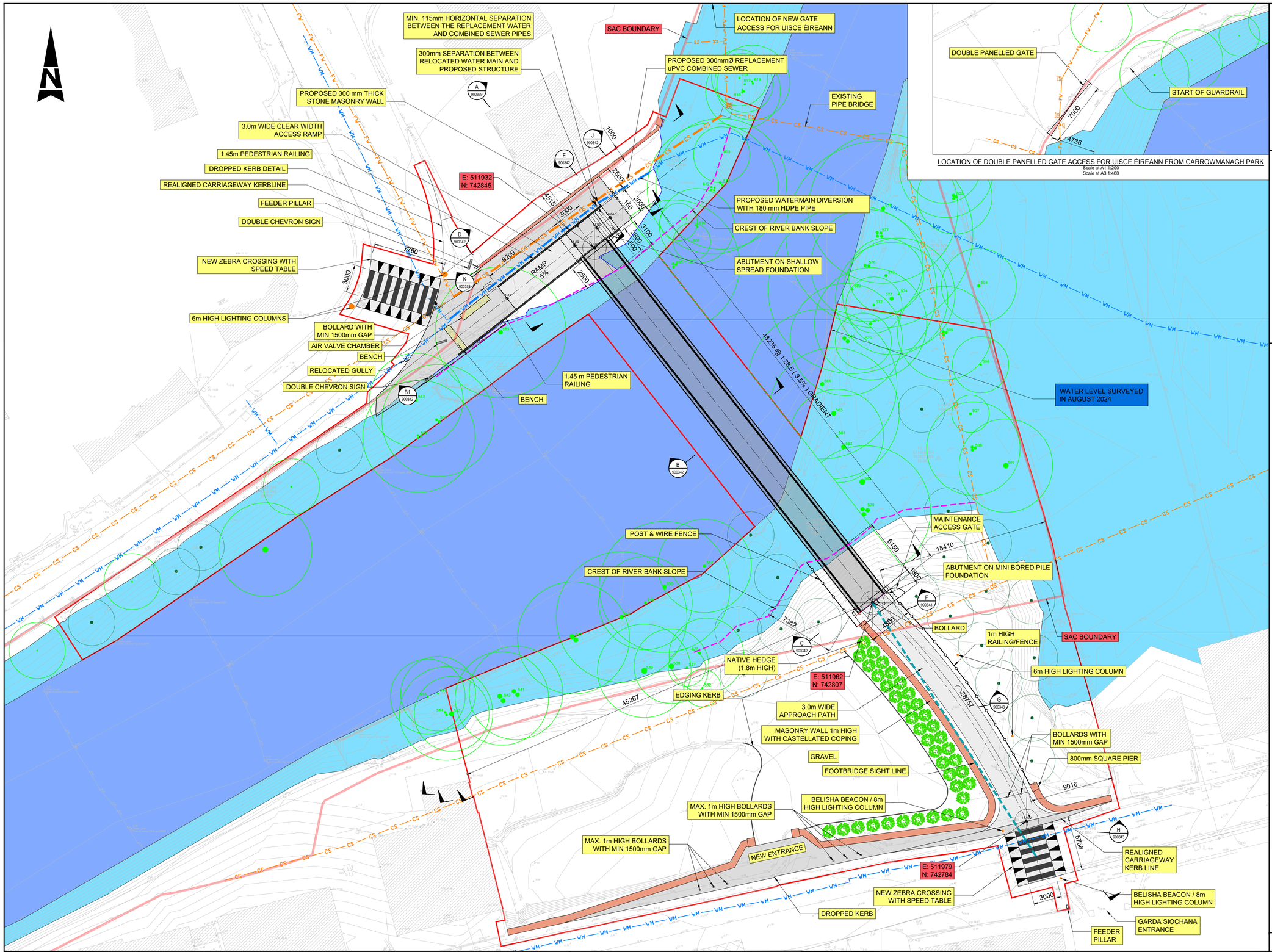
Status	Drawing Number	Rev
S0	0088798-ATK-XX-XX-DR-CE-900026	P03

U:\0088798\6 Dwgs-Graphics\61 AutoCad\0088798-ATK-XX-XX-DR-BE-900026.dwg

Appendix B. Proposed General Arrangement drawings for a Footbridge

The following general arrangement drawings for a footbridge are provided:

- Drg. No. 0088798-ATK-XX-XX-DR-BE-900331
- Drg. No. 0088798-ATK-XX-XX-DR-BE-900339
- Drg. No. 0088798-ATK-XX-XX-DR-BE-900342



GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

LEGEND:

- EXISTING WATER MAIN
- PROPOSED WATERMAIN DIVERSION
- EXISTING COMBINED SEWER
- PROPOSED REPLACEMENT COMBINED SEWER
- EXISTING FOUL DRAINAGE
- 1% ANNUAL EXCEEDENCE PROBABILITY FLOOD ZONE (MID RANGE FUTURE SCENARIO)
- SITE LAYOUT BOUNDARY
- EXISTING TREE TO BE RETAINED
- PROPOSED TREE

NOTES:

1. THE DESIGN USES THE EXISTING STORM DRAINAGE SYSTEM.
2. ELECTRICAL WIRING, DUCTING & PILLAR DETAILS WILL BE CONFIRMED AT DETAILED DESIGN.

DO NOT SCALE

A1

File: 0088798-ATK-XX-XX-DR-CE-900331, 39, 42, 46-47, 53.dwg
Date: Jun 16, 2025 - 4:59pm Plotted by: STEP1160

Risk Level
- AtkinsRéalis Base Line - Low Risk
- AtkinsRéalis Sensitive - Medium Risk
- AtkinsRéalis Private - High Risk
- Client Critical - Already Marked

Rev	Description	By	Date	Chk'd	Rev'd	Auth
C00	ISSUED FOR PLANNING	KS	06.25	MC	MC	MJ

AtkinsRéalis House, 150-155 Airside Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: Galway County Council, Áras an Chontae, Prospect Hill Galway. H91 H6KX

Project: N59 OUGHTERARD FOOTBRIDGE

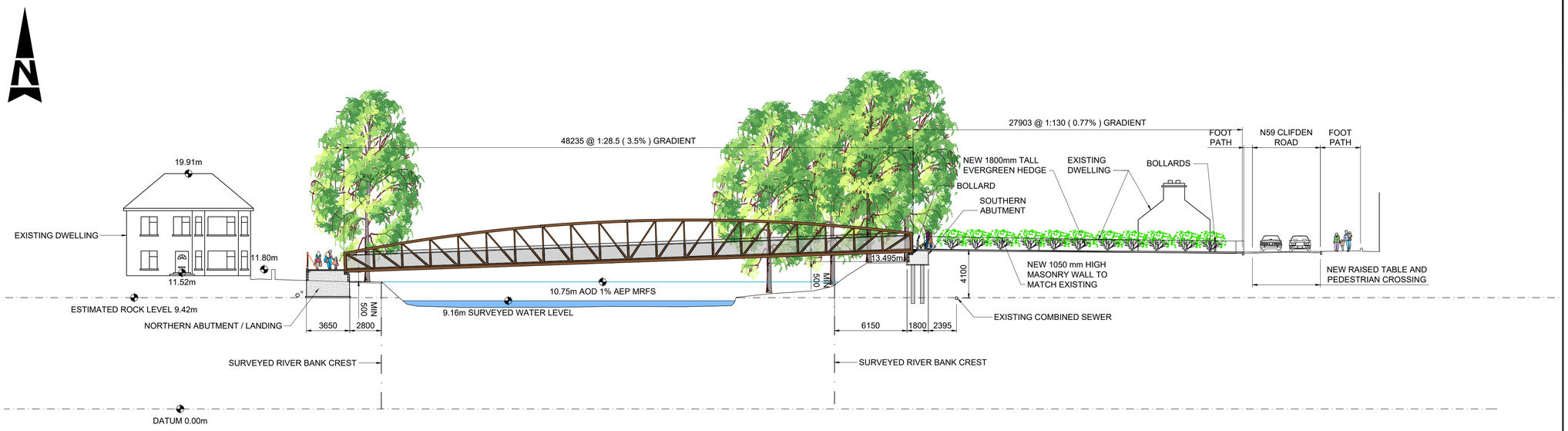
Purpose: PLANNING ISSUE

Title: PROPOSED GENERAL ARRANGEMENT - LAYOUT PLAN - SHEET 3 of 4

Original Scale	Drawn	Checked	Reviewed	Authorised
1:200	AOS	AK	MC	MJ
	Date 26.06.24	Date 26.06.24	Date 26.06.24	Date 26.06.24

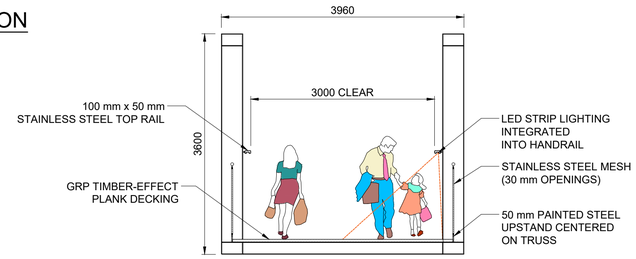
Status	Drawing Number	Rev
CO	0088798-ATK-XX-XX-DR-CE-900331	C00

\\wsatkins\project\IEDBA\Project-Data\0088798\6 Dwgs-Graphics\61 AutoCad\0088798-ATK-XX-XX-DR-CE-900331, 39, 42, 46-47, 53.dwg



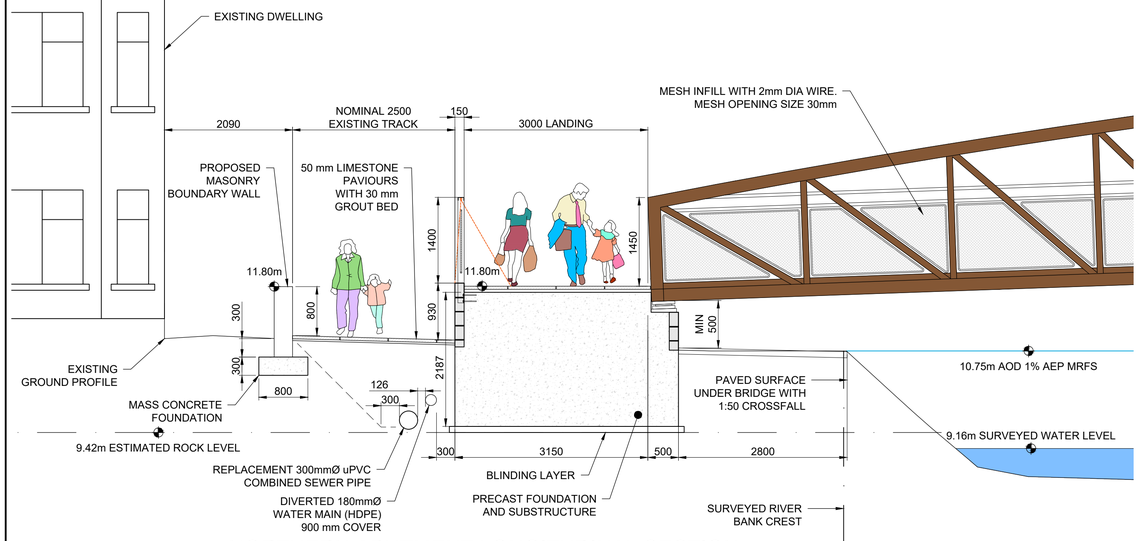
SECTION A: PROPOSED PEDESTRIAN BRIDGE LONGITUDINAL SECTION

Scale at A1 1:200
Scale at A3 1:400



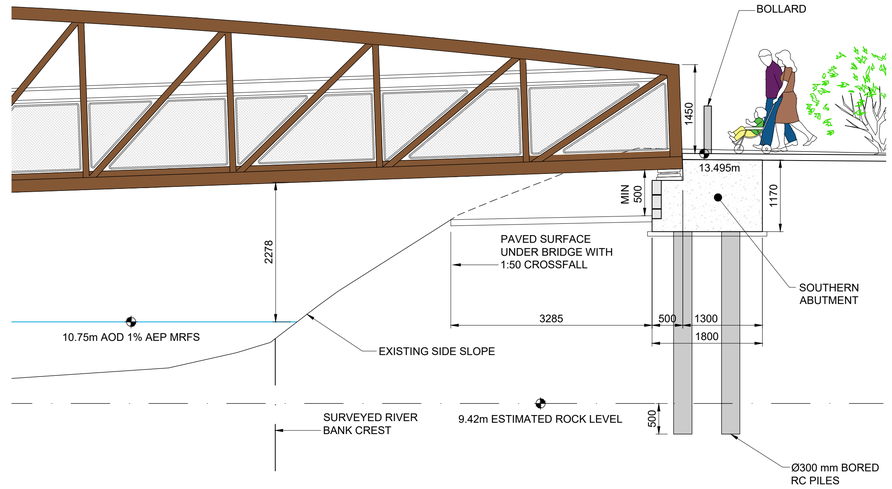
SECTION B: MIDSPAN BRIDGE CROSS SECTION

Scale at A1 1:50
Scale at A3 1:100



NORTHERN ABUTMENT LONGITUDINAL SECTION

Scale at A1 1:50
Scale at A3 1:100



SOUTHERN ABUTMENT LONGITUDINAL SECTION

Scale at A1 1:50
Scale at A3 1:100

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION
6. THE ABBREVIATION "AEP MRFS" MEANS ANNUAL EXCEEDANCE PROBABILITY MID-RANGE FUTURE SCENARIO

Risk Level	
	X AtkinsRéalis Base Line - Low Risk
	X AtkinsRéalis Sensitive - Medium Risk
	X AtkinsRéalis Private - High Risk
	X Client Critical - Already Marked

Rev	Description	By	Date	Chk'd	Rev'd	Auth
C00	ISSUED FOR PLANNING	KS	06.25	MC	MC	MJ

AtkinsRéalis House, 150-155 Airside Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: Galway County Council, Áras an Chontae, Prospect Hill Galway. H91 H6KX

Project: N59 OUGHTERARD FOOTBRIDGE

Purpose: PLANNING ISSUE

Title: PROPOSED GENERAL ARRANGEMENT - SECTIONS - SHEET 1

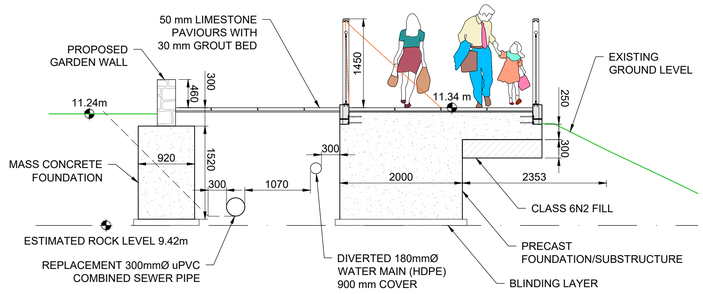
Original Scale	Drawn	Checked	Reviewed	Authorised
1:50, 200	KS Date 01.08.24	AK Date 01.08.24	MC Date 01.08.24	MJ Date 01.08.24

Status	Drawing Number	Rev
CO	0088798-ATK-XX-XX-DR-CE-900339	C00

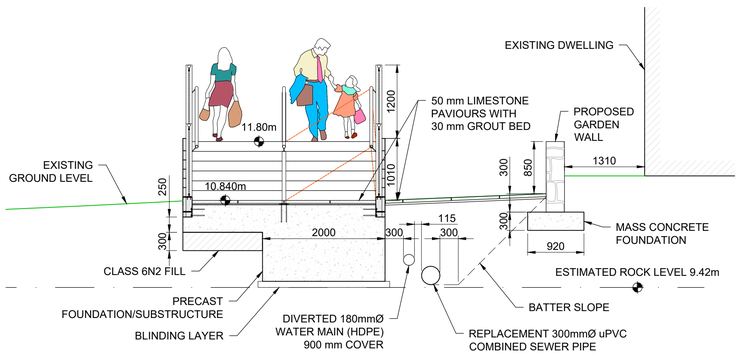
A1 DO NOT SCALE

File: 0088798-ATK-XX-XX-DR-CE-900331, 39, 42, 46-47, 53.dwg Plotted by: STEP1160
Date: Jun 16, 2025 - 5:06pm

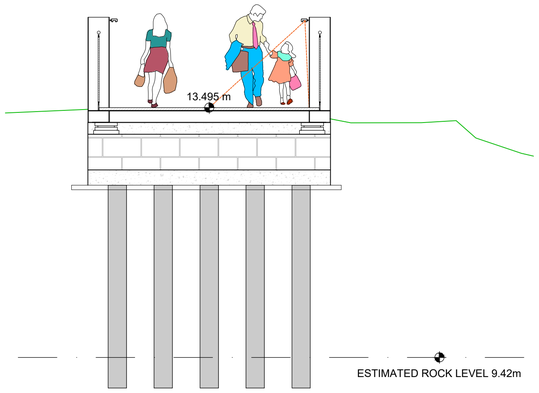
\\wsatkins\project\EDBA\Project-Data\0088798\6 Dwgs-Graphics\61 AutoCad\0088798-ATK-XX-XX-DR-CE-900331, 39, 42, 46-47, 53.dwg



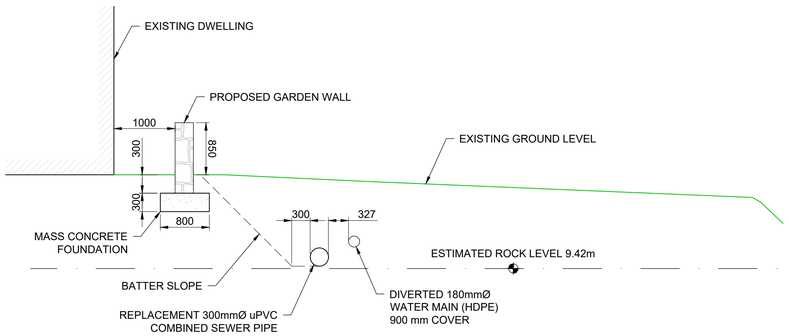
SECTION D
Scale at A1 1:50
Scale at A3 1:100



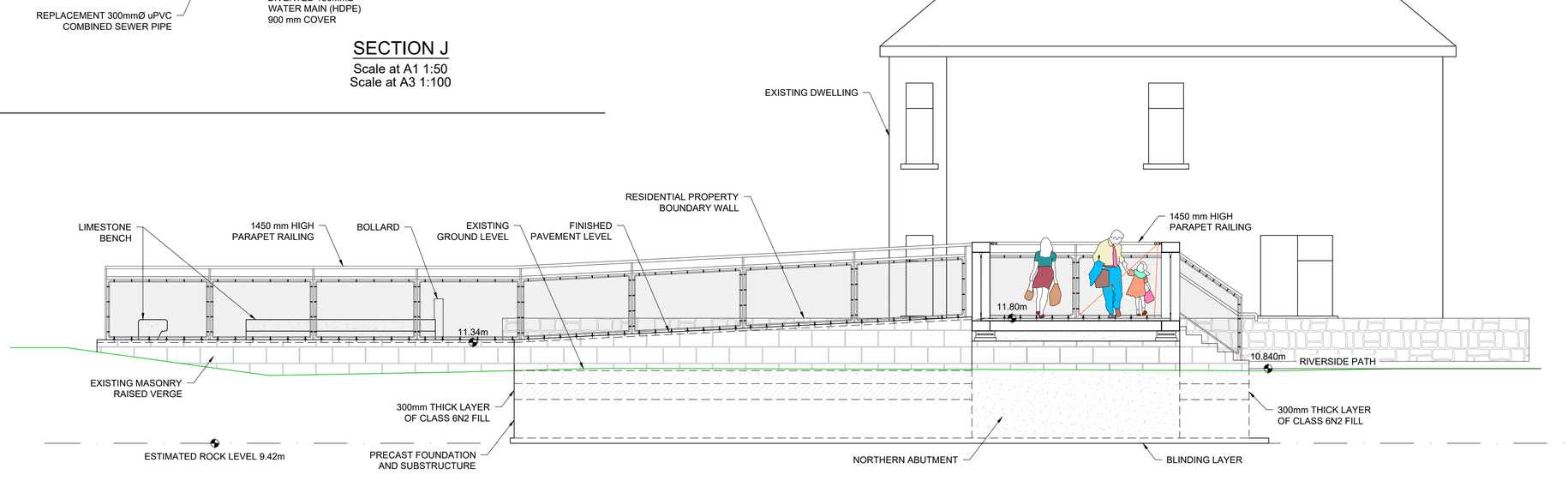
SECTION E
Scale at A1 1:50
Scale at A3 1:100



SECTION C
Scale at A1 1:50
Scale at A3 1:100



SECTION J
Scale at A1 1:50
Scale at A3 1:100



SECTION B1
Scale at A1 1:50
Scale at A3 1:100

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

Risk Level
- X AtkinsRéailis Base Line - Low Risk
- X AtkinsRéalis Sensitive - Medium Risk
- X AtkinsRéalis Private - High Risk
- X Client Critical - Already Marked

Rev	Description	By	Date	Chk'd	Rev'd	Auth
C00	ISSUED FOR PLANNING	KS	06.25	MC	MC	MJ

AtkinsRéalis
AtkinsRéalis House, 150-155 Airside Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001
Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360
1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: Galway County Council, Áras an Chontae, Prospect Hill Galway. H91 H6KX

Project: N59 OUGHTERARD FOOTBRIDGE

Purpose: PLANNING ISSUE

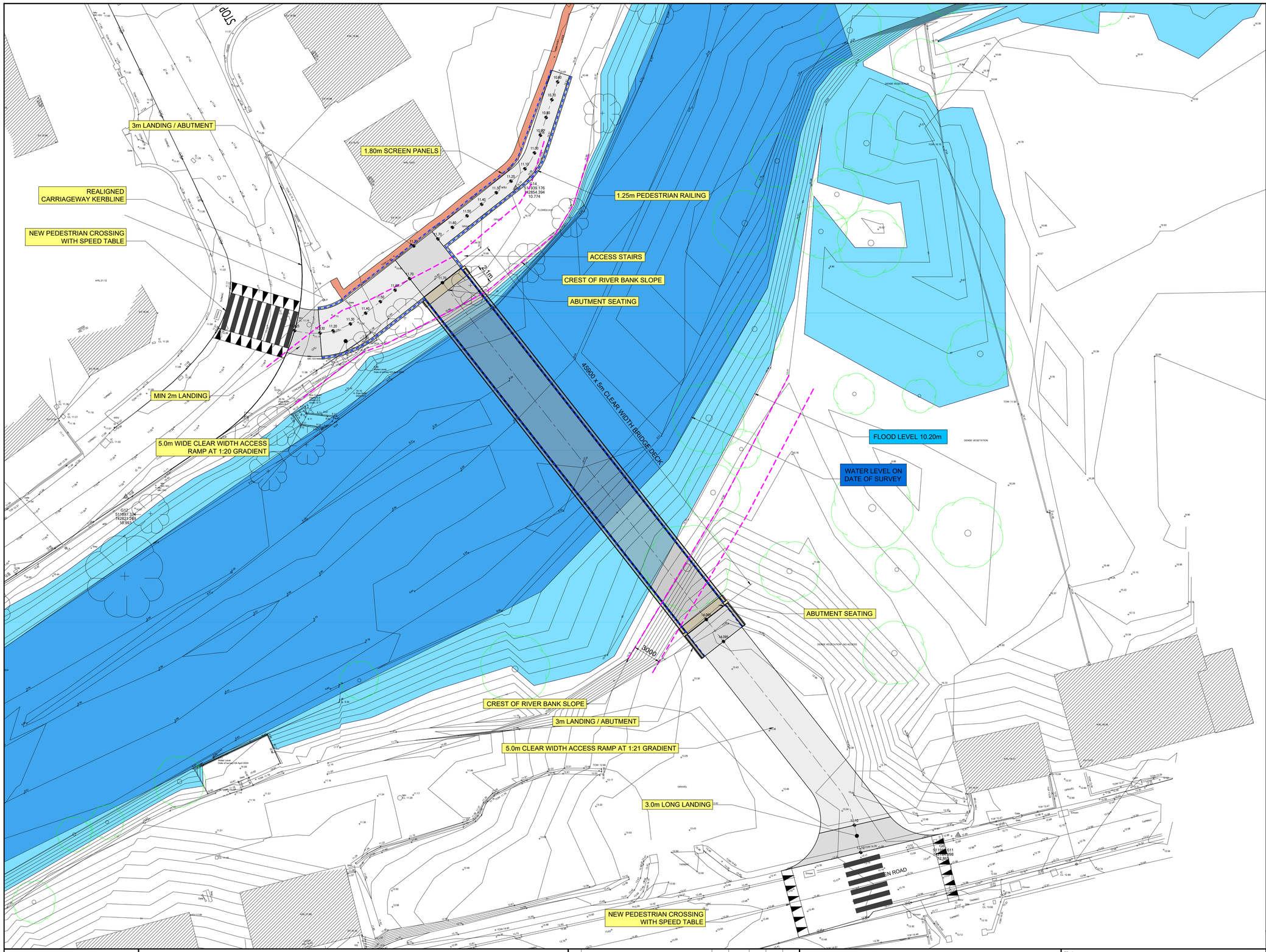
Title: PROPOSED GENERAL ARRANGEMENT - SECTIONS - SHEET 2

Original Scale	Drawn	Checked	Reviewed	Authorised
1:50	AGL Date 17.10.24	AK Date 17.10.24	MC Date 17.10.24	MJ Date 17.10.24

Status: CO
Drawing Number: 0088798-ATK-XX-XX-DR-CE-900342
Rev: C00

Appendix C. Proposed General Arrangement Drawing for a Pedestrian & Cycle Bridge

Drg. No. 0088798-ATK-XX-XX-DR-BE-900322_S0_P0



A1

DO NOT SCALE

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

Risk Level	
X	AtkinsRéalis Base Line - Low Risk
	AtkinsRéalis Sensitive - Medium Risk
	AtkinsRéalis Private - High Risk
	Client Critical - Already Marked

Bonneagar Iompair Éireann Transport Infrastructure Ireland

Comhairle Chontae na Gaillimhe Galway County Council

GALWAY NATIONAL ROADS PROJECT OFFICE

Rev	Description	By	Date	Chk'd	Rev'd	Auth
P0	ISSUED FOR REVIEW	AOS	06.24	AK	MC	MJ

AtkinsRéalis

Atkins House, 150-155 Airside Business Park, Swords, Co. Dublin
Tel (+353) 01 810 8000
Fax (+353) 01 810 8001

Unit 2B, 2200 Cork Airport Business Park, Cork
Tel (+353) 021 429 0300
Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: Galway County Council, Áras an Chontae, Prospect Hill Galway. H91 H6KX

Project: EIRSPAN TASK ORDER 341 N59 OUGHTERARD FOOTBRIDGE

Purpose: PRELIMINARY ISSUE

Title: FOOTBRIDGE DS150 LAYOUT PLAN - OPTION 1b

Original Scale	Drawn	Checked	Reviewed	Authorised
1:200	AOS Date 13.06.24	AK Date 13.06.24	MC Date 13.06.24	MJ Date 13.06.24

Status	Drawing Number	Rev
S0	0088798-ATK-XX-XX-DR-CE-900322	P0

File: 0088798-ATK-XX-XX-DR-CE-900320 to 900328.dwg
Date: Jun 19, 2024 - 4:04pm Plotted by: ossullivon

U:\00887981\6 Dwgs-Graphics\61 AutoCad\0088798-ATK-XX-XX-DR-CE-900320 to 900328.dwg