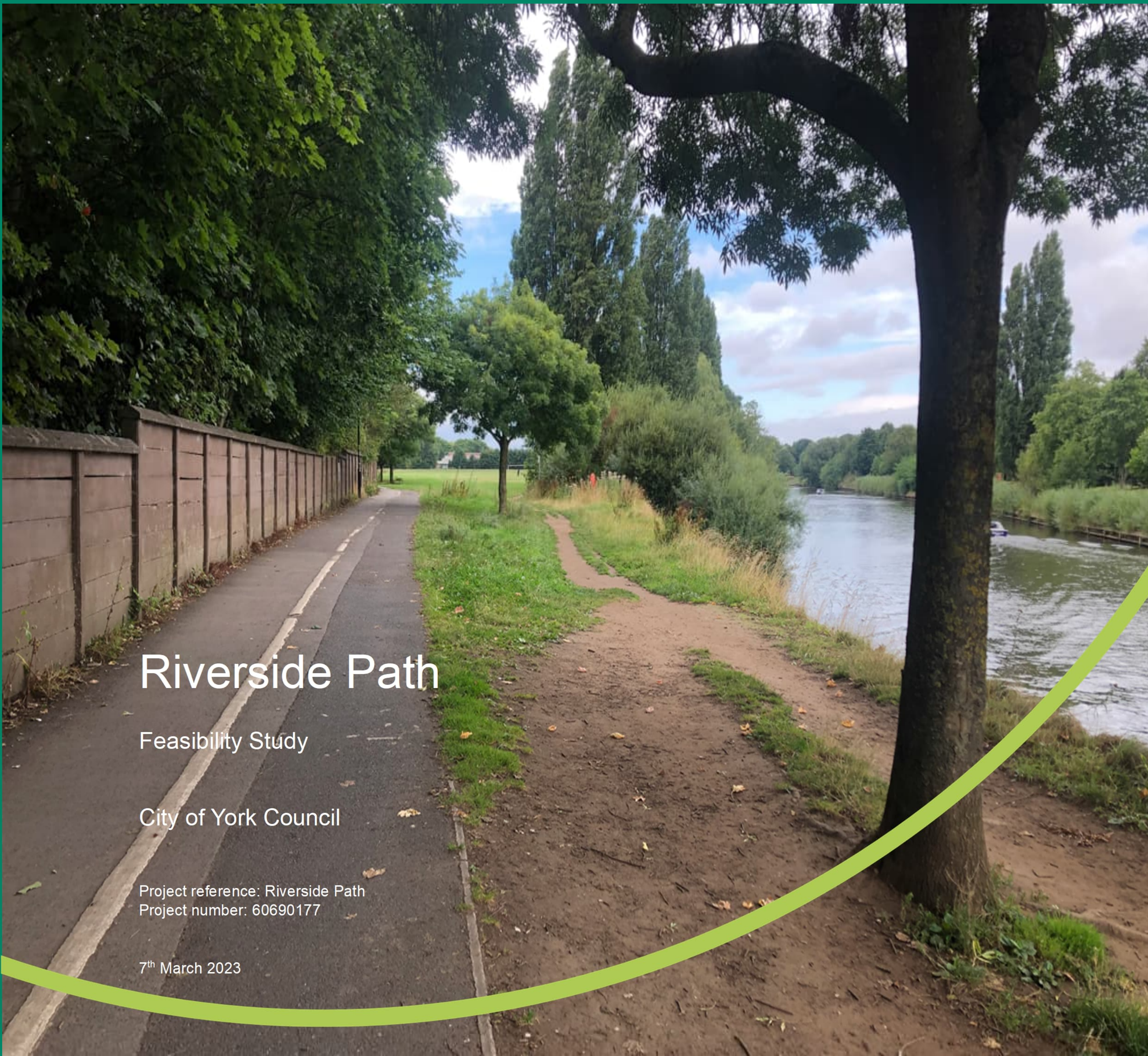

Riverside Path

Feasibility Study

City of York Council

Project reference: Riverside Path
Project number: 60690177

7th March 2023

Delivering a better world

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	02/03/2023	Draft	NB	Neil Brownbridge	Regional Director
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Table of Contents

Figures

1. Executive Summary

1.1 Overview

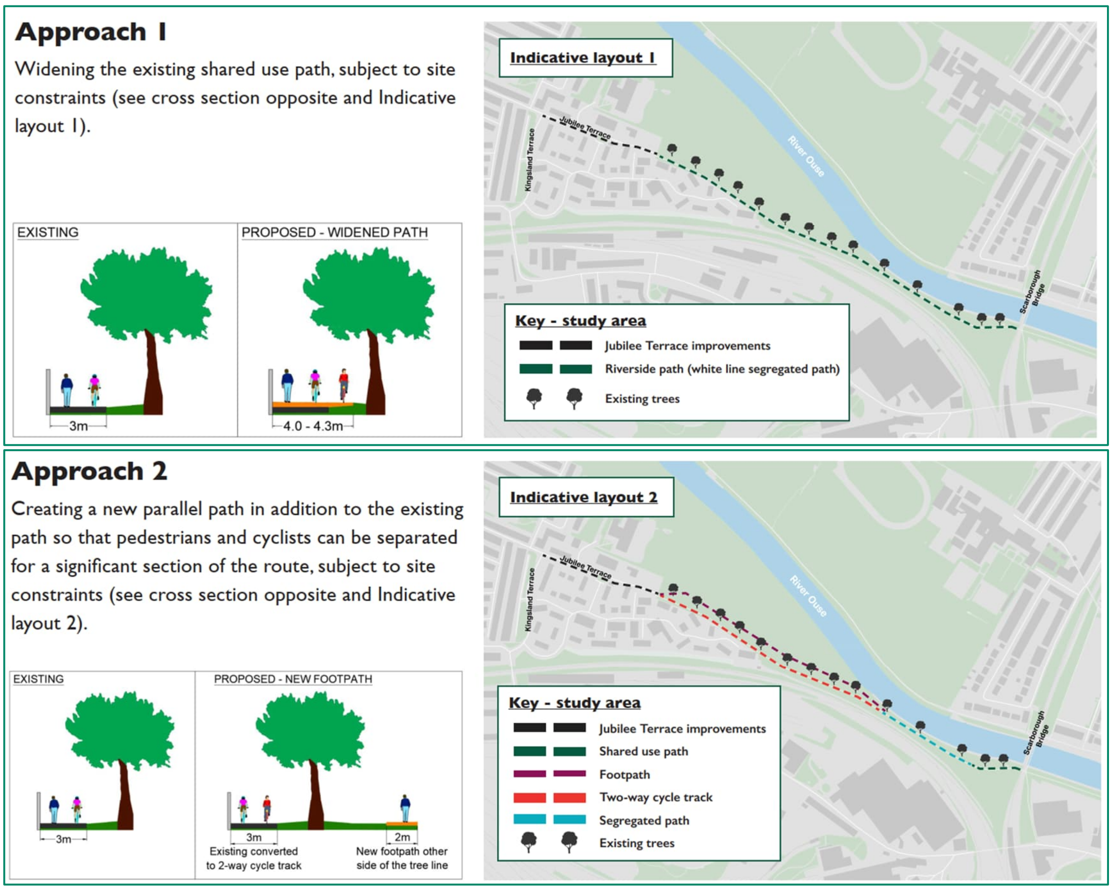
The Riverside Path is a key route on the pedestrian and cycle network connecting the west of the city, via Jubilee Terrace, Cinder Lane foot / cycle path (Riverside Path) and the Scarborough Bridge river crossing to the city centre. Updates to the local area will be made as part of the York Central development, including the introduction of alternative high-quality routes unaffected by river flooding. However, the importance of the existing riverside route to residents and cyclists is still recognised, which is why City of York Council (CYC) has set aside £600K to make improvements to this path.

Following acquisition of the land, CYC is now in control of the full length of the route enabling the progression of a review of options to upgrade and improve the layout for cyclists and pedestrians. Key areas for consideration include improved lighting, seating and security; widening or segregating the path; improved surfacing; and reducing the impact of flooding by raising the path at the low point. A full list of scheme objectives is provided in **Chapter 2**.

A public consultation exercise was undertaken in December 2022 and January 2023 to seek feedback from local residents and users of the Riverside Path to understand their priorities and concerns about the existing path and gather feedback on potential options for path improvements. The feedback received will help shape the emerging scheme design and inform a potential Planning Application for the scheme.

1.2 Feasibility Study

To respond to the identified study objectives, a range of scheme options including specific component elements were considered. Emerging from the feasibility study were two different approaches to improve the Cinder Lane (Riverside) path as depicted below:



Other specific intervention measures identified during the feasibility design process included:

- Upgrade existing lighting or install new lighting where required (including under Scarborough Bridge)
- Install additional low level bollard lighting on a new cycle path, if this approach is chosen
- Install CCTV in key locations along the path
- Raise path level at localised low points (on both sides of Scarborough Bridge)
- Provide better advance warning systems to let people know when sections of the route are likely to be flooded
- Introduce Traffic Regulation Orders to reduce parking space availability on Jubilee Terrace
- Improved pedestrian crossings to / from St Barnabas Primary School
- More seating along the path
- Reallocation of road space and link to / from Riverside Path at Jubilee Terrace.

1.3 Scheme cost estimates

Indicative high-level cost estimates for the scheme as a whole (end-to-end) are **£2.2M-£2.4M** for Approach 1 (widened shared use path on Cinder Lane) and **£1.95M-£2.2M** for Approach 2 (new parallel path on Cinder Lane). These cost estimates include an allowance for improvement works on Jubilee Terrace of £150K-£200K and compensatory flood storage costs in the range of £400K-£600K across the two approaches/scheme options.

Reflecting the feasibility stage of design, these indicative cost estimates include risk/contingency allowances and are subject to further refinement at the next stage of design.

It is noted that CYC currently have £600K allocated for Riverside Path within the Capital Programme. As such, additional funding is required to enable the full scheme to be delivered. Additional funding streams are currently being explored, including a bid submission to the Active Travel England's Active Travel Fund 4 (ATF4) programme. The current intervention measures. This initial costing exercise indicates that the £600K budget would be insufficient for 'end to end' route treatment. This funding constraint was communicated in the public consultation exercise as below:

"While all the potential improvements may not be possible in the final design within the current funding package, this consultation is a key element of understanding how to deliver the best design possible."

1.4 Phased delivery approach

Reflecting the budgetary limitations and the consultation feedback scheme priorities (see associated **AECOM Consultation Report**), a phased approach is proposed as follows:

Phase 1 – Highest priority scheme elements

Progress to preliminary design and more detailed cost estimation with the highest priority scheme elements, namely:

- upgraded lighting along the length of the Riverside Path
- raising of the path at low points
- widening of the existing path to provide more space for pedestrians and cyclists (Approach 1), retaining high quality existing trees, and including resurfacing.

Given the high level of public support/prioritisation (116 responses, 30%) and relatively low cost, it is also proposed to include CCTV / improved security within the Phase 1 package of works.

Note: Cost estimation work undertaken at the concept design stage indicated that it is unlikely that the entirety of Phase 1 priority works as listed above can be completed within the existing funding package.

Phase 2 – Lower priority scheme elements

Progress to preliminary design and more detailed cost estimation of lower priority scheme elements, namely:

- better signage when there are flood events
- seating / resting places
- traffic engineering measures to restrict parking and traffic movements on Jubliee Terrace, thereby improving conditions for pedestrians and cyclists.

1.5 Recommended next steps

1. Following Executive Member approval of the above phased approach, progress to preliminary scheme design stage for Phase 1 priority improvements.

2. Update the scheme cost estimate for Phase 1 and seek Executive Member approval to progress to full detailed design for those prioritised scheme elements that can be delivered within the current budget. As noted above, it is recognised that some Phase 1 elements may need to be reassigned to Phase 2 pending the updated scheme costs estimates following preliminary design. This may include, for example, lower priority sections for widening and resurfacing.

3. Subject to Executive Member approval, progress to preliminary scheme design and updated scheme cost estimate for Phase 2 works to identify the required additional funding requirements and to inform a phased implementation strategy.

2. Introduction

2.1 Overview

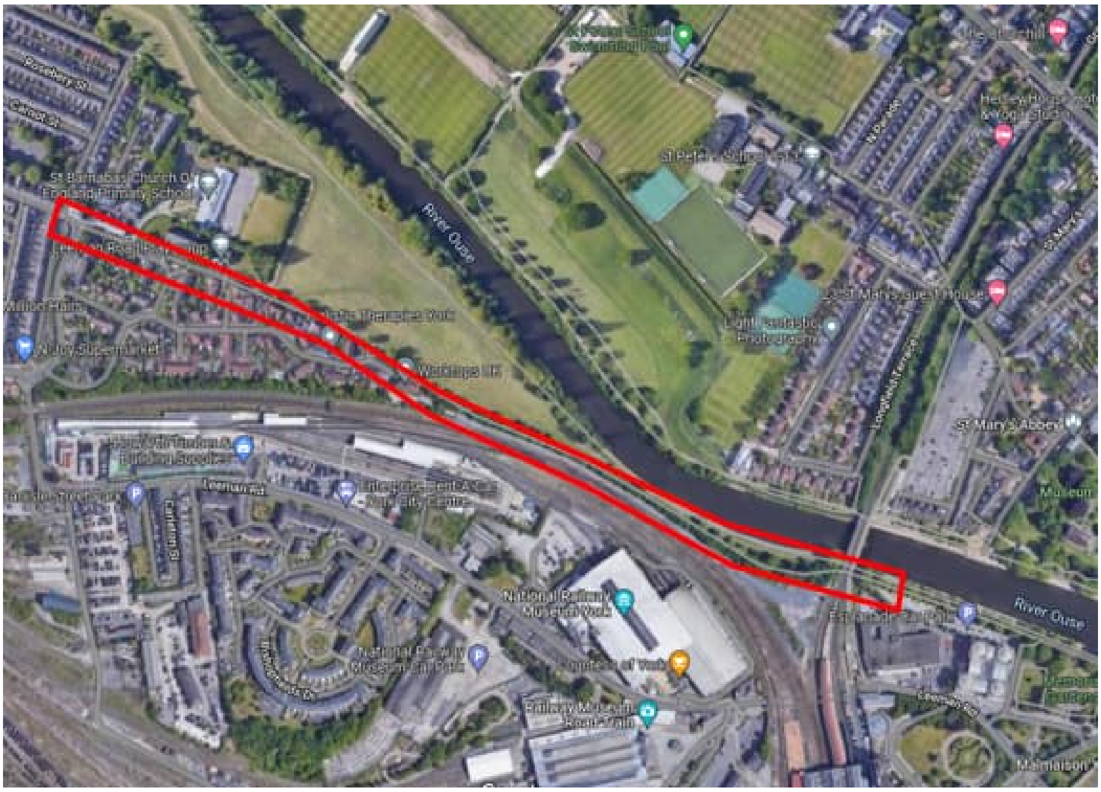
The Jubilee Terrace to Scarborough Bridge Riverside Path is a key route on the cycle network connecting the west of the city with the city centre and the Scarborough Bridge River crossing. As part of the York Central development an alternative high-quality off-road route unaffected by river flooding will be provided but it will not replace the importance of the riverside route to local residents and cyclists. The aspiration is to enhance provision for pedestrians and cyclists along the existing Riverside Path, catering for all users including those with mobility impairments.

This technical report summarises the findings of a review of the existing provision and development of feasibility proposals including options to segregate or widen the existing route, improve delineation; provide environmental improvements and placemaking enhancements.

2.2 Study Area

The extents of the study area are highlighted by the red line boundary shown in **Figure 1**. The Riverside Path route follows the Cinder Lane foot/cycle path between the junction of Jubilee Terrace / Kingsland Terrace and the Scarborough Bridge at the northern and southern extents respectively. Towards the southern extent, the foot/cycle path is located within a constrained parcel of land between the East Coast Mainline and the River Ouse. At this location the route has a particular low point and is prone to flooding.

Figure 1 – Riverside Path, Red Line Boundary



Following acquisition of the land, CYC is now in control of the full length of the route enabling the progression of a review of options to upgrade and improve the layout for cyclists and pedestrians. Key areas for consideration include improved lighting, seating and security; widening or segregating the path; improved surfacing; and reducing the impact of flooding by raising the path at the low point.

2.3 Scope

The scope of this commission has two stages:

- *Stage 1* – Feasibility design and option consultation to select and refine and preferred option.
- *Stage 2* – develop the chosen option to an outline and detailed design for contractor procurement, and any planning requirements.

The following report focuses on **Stage 1, Feasibility Design**.

2.4 Objectives

Objectives were to provide an enhanced active travel corridor with:

- Improved lighting
- Improved security – CCTV/Lighting
- Improved environment
- Improved accessibility – reviewing existing barriers
- Improved drainage – surface water drainage
- Improved removal of flood water/silt - reducing drainage/warping implications
- Increased availability of route during high river levels.
- Improved notification of closure of route during higher river levels
- Increased capacity - consideration of widening existing path or separating pedestrians/cyclists entirely by changing existing route to be for cyclists only and providing dedicated pedestrian route closer to the riverbank
- Scheme delivery without closing the route
- Improved management of pedestrian/cycle conflicts at Scarborough Bridge underpass including consideration of realignment, signage, barrier arrangements etc.
- Clearer delineation of route on Jubilee Terrace to improve management of conflict between vehicles and pedestrians/cycles
- Regularising the status of the route through possible creation of a Public Right of Way (PROW).

2.5 Document Structure

This report is structured as follows:

- **Chapter 3** provides an overview of characteristics and existing provision
- **Chapter 4** summarises a review of the existing provision
- **Chapter 5** summarises the initial feasibility options
- **Chapter 6** summarises the feasibility option refinement and active travel review
- **Chapter 7** provides information on high-level assumptions associated with flood impact and mitigation
- **Chapter 8** provides information on the initial high-level cost estimates
- **Chapter 9** concludes with a summary of key findings and next steps

Supporting technical appendices are referenced as appropriate.

3. Riverside Path Overview

3.1 Extents and Characteristics

3.1.1 Jubilee Terrace

- Jubilee Terrace is predominantly single carriageway cul-de-sac approximately 150m in length, providing access to several residential properties, St Barnabus Church and St Barnabus Church of England Primary School. Footways are inconsistent and terminate approximately 50m east of the junction with Kingsland Terrace.
- The carriageway provides the onward connection for pedestrians and cyclists between Kingsland Terrace and Cinder Lane, with uncontrolled parking along the length of Jubilee Terrace. Whilst a low trafficked quiet route, parked vehicles can cause obstruction for cyclists and pedestrians due to the narrow single lane characteristics of the carriageway. In addition, existing signage to indicate instances of flooding along Cinder Lane are inadequate.

3.1.2 Cinder Lane Foot/Cycle Path (Riverside Path)

The Riverside Path covers the majority of the study area, approximately 660m in length between the connection with Jubilee Terrace and south of Scarborough Bridge and runs along the south of the field boundary. The path is approximately 3m width in width with white line segregation which splits the path into 1.5m footway and 1.5m two-way cycle track. The path is currently cracked and overgrown in some locations, which narrows the provision further and creates an uncomfortable surface for users along some route sections. The existing cross section is shown in **Figure 2** overleaf.

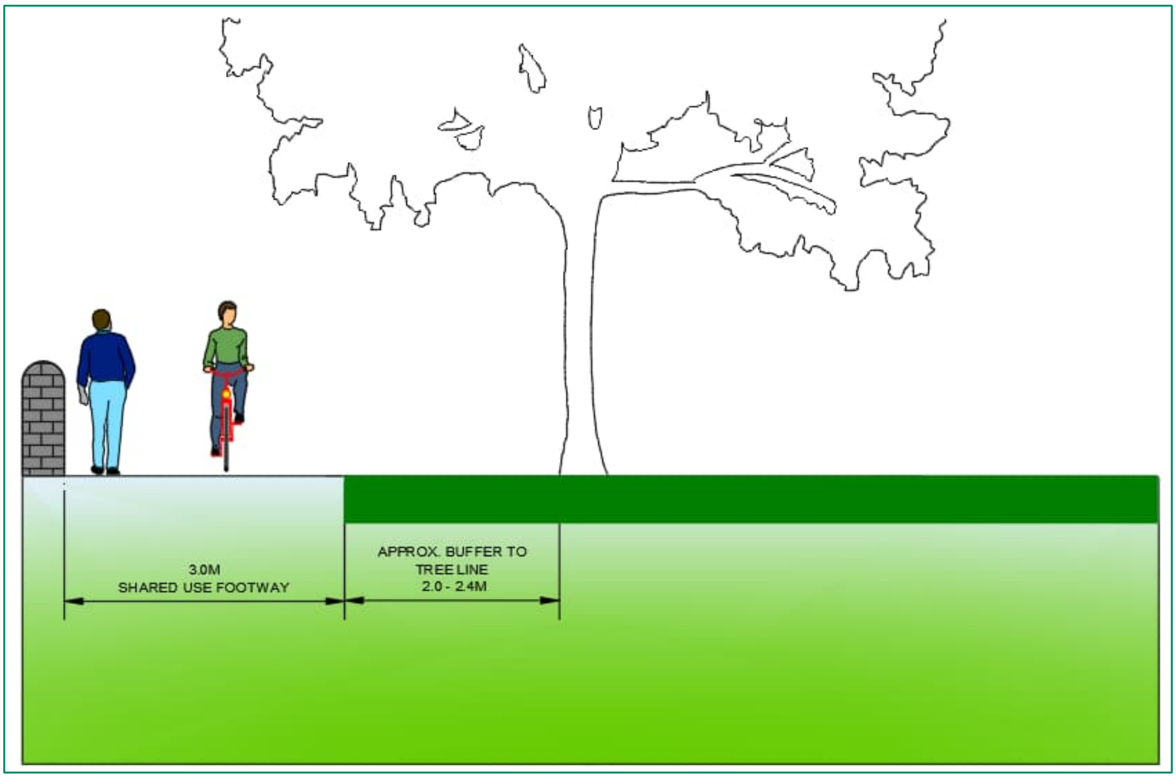
Towards the northern extent the path is located alongside brick walled residential property boundaries for approximately 180m. Southeast of the property boundaries, the path runs alongside a concrete fence line under the ownership of Network Rail, behind which is a tree / shrubbed embankment leading to the East Coast Mainline. Trees within the embankment block/partially block lighting columns located at the back of the existing footway, impacting on light provision and creating personal security issues for some users during periods of darkness.

Towards the southern extent in the vicinity of Scarborough Bridge the path is located within a constrained parcel of land between the Network Rail fence line and the River Ouse. At this location the route has a particular low point of between 250-270m (to be determined by further hydrological study at detailed design stage) and is prone to flooding at high river levels. Flooding of the path at this low point results in the Riverside Path becoming inaccessible to users. In addition, poor signage relating to periods of flooding results in some users having to ‘double back’ and find alternative longer route, currently via Leeman Road.

At the underpass of Scarborough Bridge, the path becomes shared-use and narrows to approximately 1.5m, with poor inter-visibility and lighting leading to observed conflict between pedestrians and cyclists.

In addition to the above, the Cinder Lane Path is lined by established trees running parallel to the route, with stems located between 1.5–2m distance from the existing path edge. The tree line is a feature of the route CYC and stakeholders wish to maintain, although does present a constraint for both widening the existing path and potentially impacting on street lighting solutions.

Figure 2 – Existing Cross-section



3.2 Issues and Constraints

Below are whole route issues and site constraints:

- Inconsistent lighting
- Lack of CCTV
- Lack of seating / rest areas
- Tree line close to the existing path, which could restrict opportunities to widen the path in some locations
- Path runs parallel to property boundaries, which could restrict opportunities to change the level of the Riverside Path, for example, at the ramped access to / from Aldborough Way.

In addition to the whole route issues, **Figure 3** shows specific issues and constraints along the route.

Figure 3 – Specific Issue and Constraints

Parked and manoeuvring vehicles on Jubilee Terrace conflict with pedestrians and cyclists entering and exiting the riverside path.

Low points on either side of Scarborough Bridge result in localised flooding during river flood events.

The narrowness of Scarborough Bridge underpass restricts space for pedestrians and cyclists. Lighting in the underpass could also be improved.

Manhole covers and underground services (e.g. electricity, gas and water) west of Scarborough Bridge add complexity to potential path widening.

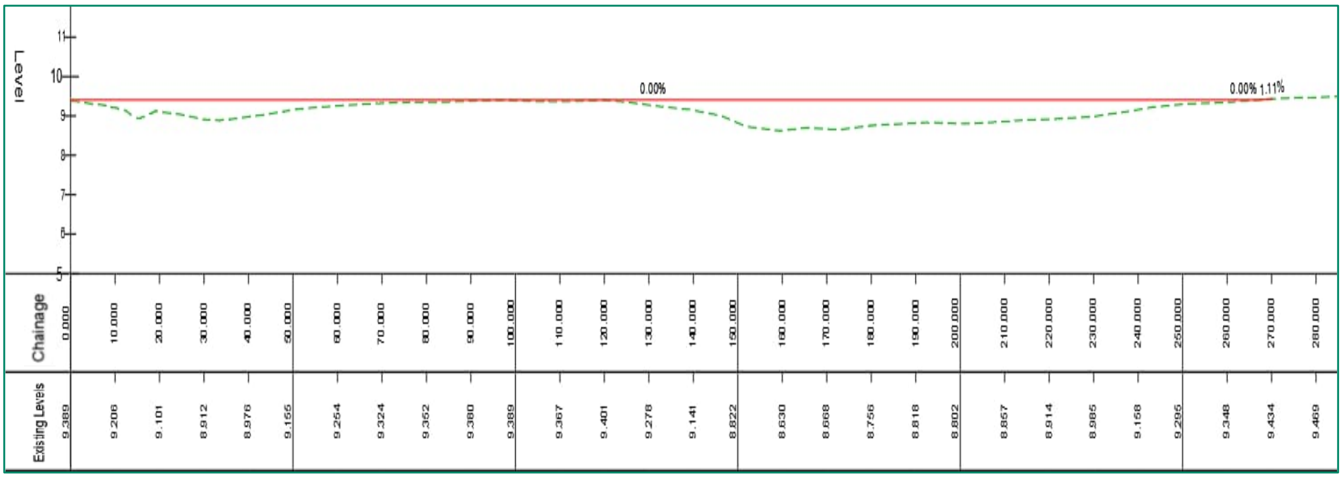
Existing barriers at either end of the route can make it difficult for cyclists to access the path and result in conflicts with pedestrians, in particular at the barrier located east of Scarborough Bridge.

Path runs parallel to Network Rail's concrete fence line, currently in poor condition, adding to construction complexity.

3.3 Existing Low Point

A significant issue along the existing path is that flooding affects the specific low point near to Scarborough Bridge, resulting in pedestrians and cyclists travelling from the Jubilee Terrace having to turn back after travelling approximately 500m along the route.

Topographical measurements of the existing path (Network Rail fence line) determine the low point to be approximately 270m in length, of which 230m is significantly lower than the level at the Scarborough Bridge underpass (9.389m). Beyond this level, the path is considered inaccessible beyond any potential raising. The maximum level difference is ~0.759m between highest (9.389m) and lowest (8.630m) marker point.



Further analysis of impacts of raising the specific low point and resulting floor impact is provided within **Section 8** of this report.

3.4 Existing Pedestrian and Cycle Usage

Two-way cycle and pedestrian surveys were undertaken for a 7-day period between 13/10/2017 and 19/10/2017 between 7am-7pm at Scarborough Bridge. Results indicate that there were a maximum of 1,498 cyclists and 1,054 pedestrians travelling along the path within the busiest 12-hour period and a weekly average number of two-way pedestrians and cyclist of 1424 and 887 respectively.

The peak hour for cycling along Riverside Path throughout the 7-day period was on Monday 16/10/17 between 08:00-09:00, during which there were 194 two-way cycle movements (and 168 two-way pedestrian movements). The peak hour for walking along Riverside Path throughout the study period was on Wednesday 18/10/17 between 08:00-09:00 during which there were 236 two-way pedestrian movements. A summary of the recorded cycle and pedestrian flow data from the 2017 survey at Scarborough Bridge is provided below in **Table 1**.

Table 1. Cycle & Pedestrian Flows (2017)

		Southbound		Northbound		Two-way		
7am - 7pm		Peds	Cyclists	Peds	Cyclists	Peds	Cyclists	Total
13/10/17	**Friday**	793	507	702	475	1,495	982	**2,477**
14/10/17	**Saturday**	899	342	721	272	1,620	614	**2,234**
15/10/17	**Sunday**	872	289	756	267	1,628	556	**2,184**
16/10/17	**Monday**	695	568	619	486	1,314	1,054	**2,368**
17/10/17	**Tuesday**	715	519	606	475	1,321	994	**2,315**
18/10/17	**Wednesday**	853	561	645	502	1,498	1,063	**2,561**
19/10/17	**Thursday**	602	505	492	440	1,094	945	**2,039**
Average		**776**	**470**	**649**	**417**	**1424**	**887**	**2311**

In addition, a larger data set has also been reviewed, cycling flows were collected near to the entrance at Jubilee Terrace, representative of two-way average cycle flows along Riverside Path on school days in neutral months from 1999-2022 has been, as school days tend to have higher flows than non-school days. The larger data set is considered to give a more representative reflection of average cycle flows along the path in comparison to the single weekly count in 2017.

The Annual Average Daily Flow (AADF) over the most recent 10-year period suggests there are approximately 685 two-way cycle movements along Riverside Path, with an average AM and PM peak of 118 and 117 two-way movements respectively. A summary of the AADF data is provided below in **Table 2**. This suggests the two-way cycle flow on average throughout the year is approximately 200 fewer than the data recorded for the one-week period in 2017.

Table 2. Cinder Lane – Cycle Flows AADF

Years (School Days neutral months)	24hr	12Hr	AM Peak	Inter-Peak	IP Hourly Average	PM Peak	AADF
1999*	1059	886	152	443	55	136	878
2000	1062	895	156	446	56	135	842
2001	1076	907	159	454	57	139	840
2002	1041	875	166	430	54	129	800
2003	1019	859	165	414	52	133	781
2004	922	778	150	376	47	117	703
2005	956	810	163	379	47	126	730
2006	972	819	164	390	49	126	736
2007	1018	860	168	408	51	136	800
2008	1027	876	171	424	53	134	784
2009	1099	935	180	456	57	144	842
2010	1087	918	177	442	55	140	756
2011	1129	946	171	474	59	141	846
2012	1008	828	150	411	51	121	743
2013	945	773	137	386	48	114	666
2014	1038	856	141	421	53	140	789
2015	966	793	125	385	48	135	698
2016	946	777	126	376	47	121	719
2017	922	751	123	366	46	117	739
2018	916	746	115	372	47	116	710
2019	846	697	109	346	43	105	705
2020	566	461	46	287	36	57	509
2021	568	454	57	258	32	57	413
2022**	611	469	55	285	36	56	508

* Data from 10/04/99 onwards
** Data up to 11/08/22

3.4.1 Local Transport Note (LTN) 1/20 guidance regarding route width to cycle/pedestrian flow

LTN 1/20 guidance launched in summer 2020 indicates a desirable minimum two-way cycle track width of 3m, with an absolute minimum width for the cycle track of 2m based on existing cycle flows. Given the existing cycle track (segregated by white line) is 1.5m, this falls below the absolute minimum width.

Conversely, the recommendation for shared-use provision (unsegregated) is a minimum width of 3m, assuming up to 300 cyclists and up to 300 pedestrians per hour which is currently the case on the Riverside Path.

Relevant extracts form LTN 1/20 are provided below.

LTN 1/20 – Segregated Cycle Lane Widths

Table 5-2: Cycle lane and track widths

Cycle Route Type	Direction	Peak hour cycle flow (either one way or two-way depending on cycle route type)	Desirable minimum width* (m)	Absolute minimum at constraints (m)
Protected space for cycling (including light segregation, stepped cycle track, kerbed cycle track)	1 way	<200	2.0	1.5
		200-800	2.2	2.0
		>800	2.5	2.0
	2 way	<300	3.0	2.0
		>300-1000	3.0	2.5
		>1000	4.0	3.0
Cycle lane	1 way	All - cyclists able to use carriageway to overtake	2.0	1.5

*based on a saturation flow of 1 cyclist per second per metre of space. For user comfort a lower density is generally desirable.

LTN 1/20 –Shared-use Width

Cycle flows	Minimum width
Up to 300 cyclists per hour	3.0m
Over 300 cyclists per hour	4.5m

4. LTN 1/20 Assessment of Existing Route

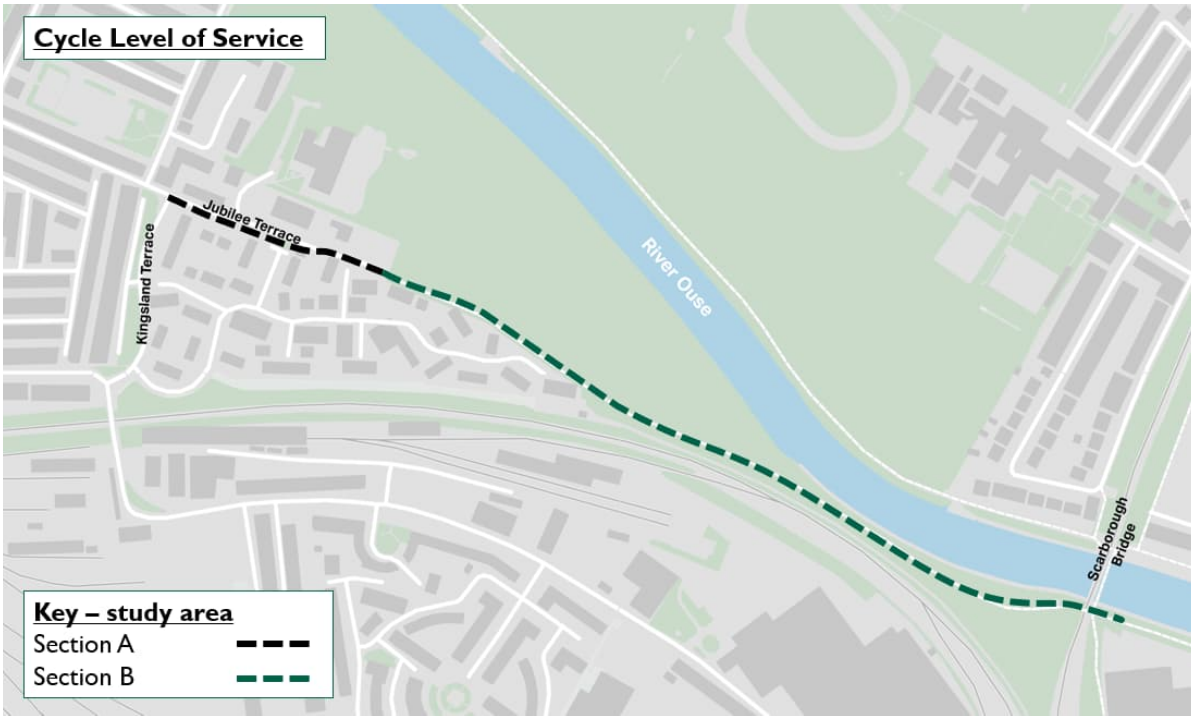
4.1 Overview

LTN 1/20 sets a measurable quality threshold to achieve when designing cycle schemes in Northern Ireland and England. The Cycling Level of Service (CLoS) tool is a prescribed mechanism specified within LTN 1/20 to set minimum quality criteria. This comprises five key requirements (cohesion, directness, safety, comfort and attractiveness) and a total of 25 sub-criteria, several of which also consider provision for and interaction with pedestrians. Each sub-criteria is scored 0 (red), 1 (amber) or 2 (green) reflecting the level of provision, resulting in a maximum potential score of 50. Five of the 25 sub-criteria are classed as 'critical fails', with all five falling in the safety theme. Only schemes with a **minimum score of 70%** under the CLoS with no critical fails will generally be considered for funding.

Where schemes are proposed for funding that do not meet these minimum criteria, local authorities will be required to justify their design choices. A first step in the process of developing an active travel strategy for the Riverside Path study area was to undertake a baseline CLoS of the existing provision along the two distinct sections of the route, namely:

- Section 1A – Jubilee Terrace
- Section 1B – Cinder Lane (Riverside Path).

Figure 4 – Riverside Path : CLoS Sections



4.2 Cycle Level of Service | Baseline Results

4.2.1 Section 1A

Section 1A covers Jubilee Terrace between the junction with Kingsland Terrace at the northern extent and connection to the Cinder Lane path at the southern extent. This section is characterised with a wide single lane that requires give and take between pedestrians, cyclists and motorists and operates with uncontrolled parking along its length. Jubilee Terrace provides access to approximately 15 residential properties, St Barnabas Church and St Barnabas Church of England Primary School.

The existing provision in Section 1A has failed to meet the 70% threshold to pass the CLoS audit, scoring **54%**, albeit with no critical fails. Section 1A score is particularly affected by a lack of continuity in provision and associated markings / signage, together with high levels of kerbside activity. A summary of the baseline CLoS assessment for Section 1A is provided below with further detail provided in **Appendix A**.

Figure 5 – CLoS Existing Section 1A

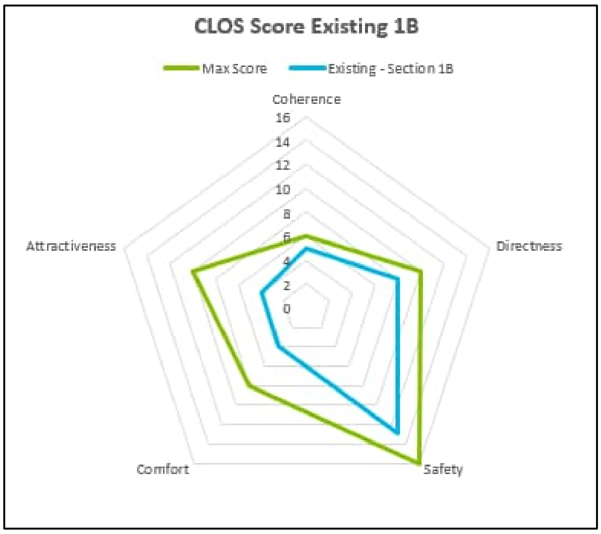
Max possible score		50	
Audit % score		54%	
Pass/Fail (70% threshold)		Fail	
Any Critical Fails? (Y/N)		No	
Number of Critical Fails		0	
Criteria	**Max Score**	**Sub-criteria Existing**	**% score Existing**
Coherence	6	3	50%
Directness	10	7	70%
Safety	16	**6**	38%
Comfort	8	6	75%
Attractiveness	10	5	50%
	50		

4.2.2 Section 1B

Section 1B covers the 650m section of the Cinder Lane shared-use foot/cycle path between Jubilee Terrance and Scarborough Bridge at its northern and southern extents. The route is characterised by a typically 3m wide path with white line segregation providing a 1.5m lane for both pedestrians and cyclists. The path follows boundary line of the park alongside residential property boundaries / Network Rail fence line. An existing tree line runs parallel to the path on the side of the river side / parkland.

The existing provision in Section 1B has also failed to meet the 70% threshold to pass the CLoS audit, scoring **68%**, again with no critical fails. Section 1B score is particularly affected by are lack of sufficient width for two-way cyclists (and pedestrians), along with poor lighting and surface quality. A summary of the baseline CLoS assessment for Section 1B is provided below with further detail provided in **Appendix A**.

Figure 6 – CLoS Existing Section 1B



Max possible score		50	
Audit % score		68%	
Pass/Fail (70% threshold)		Fail	
Any Critical Fails? (Y/N)		No	
Number of Critical Fails		0	
Criteria	**Max Score**	**Sub-criteria Existing**	**% score Existing**
Coherence	6	5	83%
Directness	10	8	80%
Safety	16	**13**	81%
Comfort	8	4	50%
Attractiveness	10	4	40%
	50		

5. Scheme Optioneering for Cinder Lane

5.1 Overview

Four potential scheme options were identified for Cinder Lane for consideration as summarised below:

- **Option 1** - Wide shared use footway (4.5m) on existing alignment
- **Option 2** – Two-way cycle track (2.5m) segregated by height difference from an adjacent to 2.0m footway on existing alignment
- **Option 3** – Two-way cycle track (2.5-3.0m) segregated from a new 2.0m footpath with central separation strip, most likely along the existing tree alignment. Footpath likely to be riverside to facilitate dog walking.
- **Option 4** – Raised segregated foot/cycle path (segregated) to improve flood resilience using embankment or retaining wall.

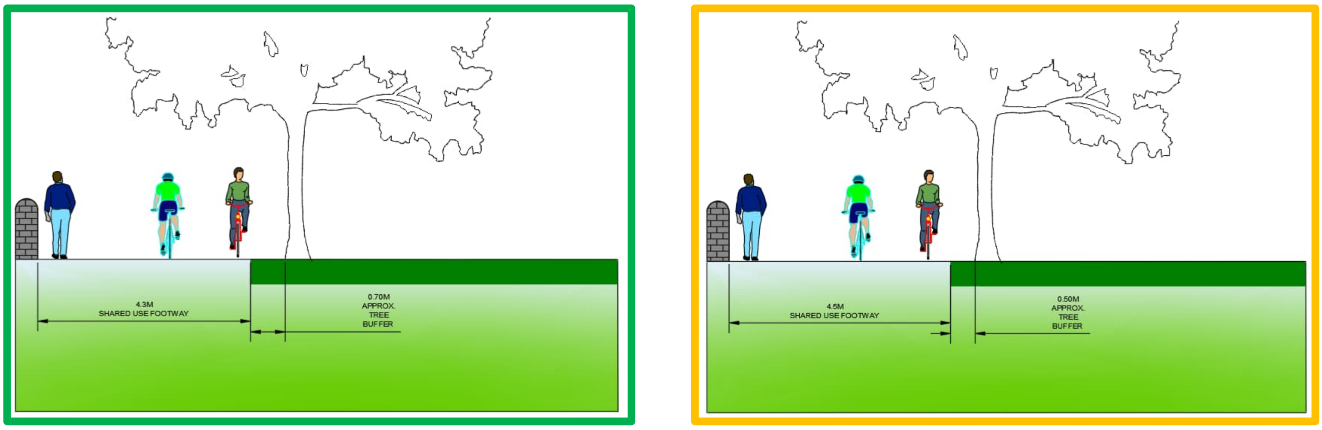
An overview of each option including typical cross-sections is provided below.

5.2 Option 1 – Widen Existing, Shared Use

Option 1 considers a widened shared-use path along the existing alignment, within the bounds of the existing treeline. Due to the presence of tree roots, two options were considered, namely a 4.3m width path with ~0.7m buffer to the tree stem; and a 4.5m width path with ~0.5m buffer to the tree stem. Further arboricultural surveys are required to determine the appropriate buffer required from each tree stem. It is also likely that construction will require cellular tree root protection surfacing along a significant proportion of the widened section.

Typical cross-sections for Option 1 with a 4.3m and a 4.5m width path are shown in **Figure 7** below.

Figure 7 – Option 1 cross-sections



5.3 Option 2 – Widen Existing, Segregated

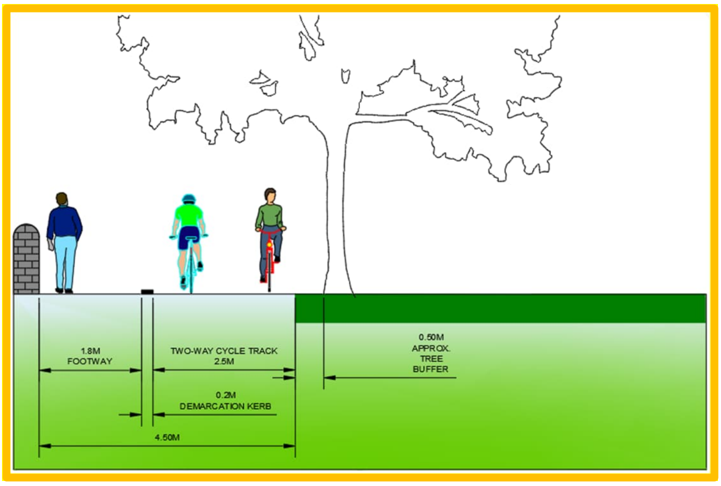
Option 2 considers a widened segregated path along the existing alignment, within the bounds of the existing treeline. Positioning of the footway on the inside of the path was considered the most appropriate solution in this instance due to width constraints that would result in a reduced effective width if cyclists were located adjacent to the boundary wall.

Variables of Option 2 cross-section were also considered such as providing a stepped cycle track / or footway. Additional drainage requirements will be required if the path is positioned at a lower gradient or if proposals were to impact boundary walls. Additional flood compensation will also be required if the path were raised along its entirety.

Again, due to the presence of tree roots, a minimum of 0.5m buffer to the tree stem would be required, with further surveys required to determine the appropriate distance required from each tree stem.

A typical cross-section for Option 2 assuming segregation using a raised demarcation kerb is shown in **Figure 8** below.

Figure 8 – Option 2 cross-section



5.4 Option 3 – New Pedestrian Footpath

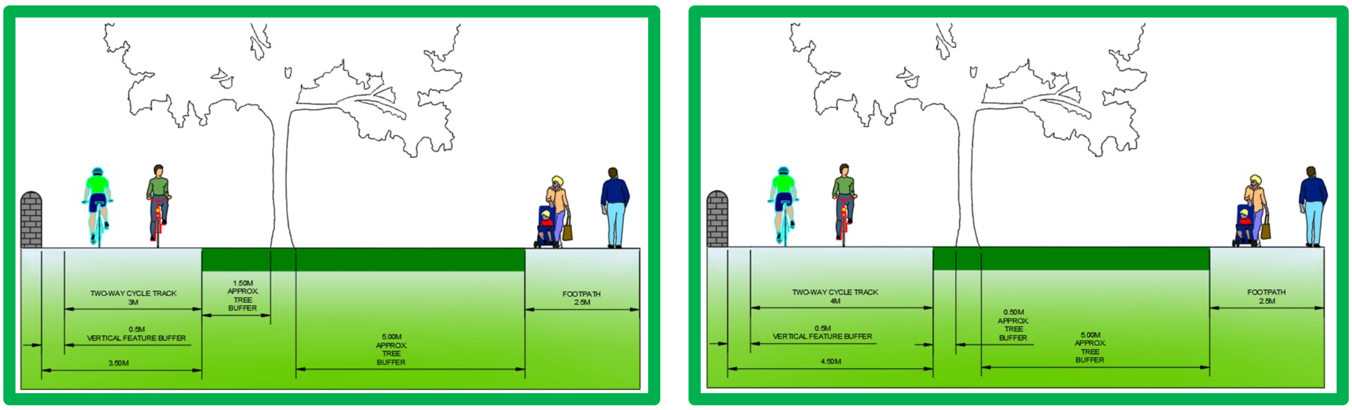
Option 3 considers a separate pedestrian footpath, located on the opposing side of the tree line. The existing path would then become a two-way cycle track. A variable option would be to also widen the existing path to provide an enhanced width two-way cycle track.

Positioning of the footway on opposing side of the tree line would provide fully segregated provision with the lowest risk of conflict between pedestrians and cyclists in comparison to other options. A dedicated footpath on the outside of the tree line also followed the existing desire line for pedestrians wishing the access the playing fields / dog walking.

If Option 3 were to be considered, to reduce the risk of route feeling isolated, an appropriate lighting and CCTV strategy would also be required. Proposals would include additional low-level lighting along the footpath to ensure the correct level of illumination.

Typical cross-sections for Option 3 assuming different width two-way cycle tracks are shown in **Figure 9** below.

Figure 9 – Option 3 cross-sections



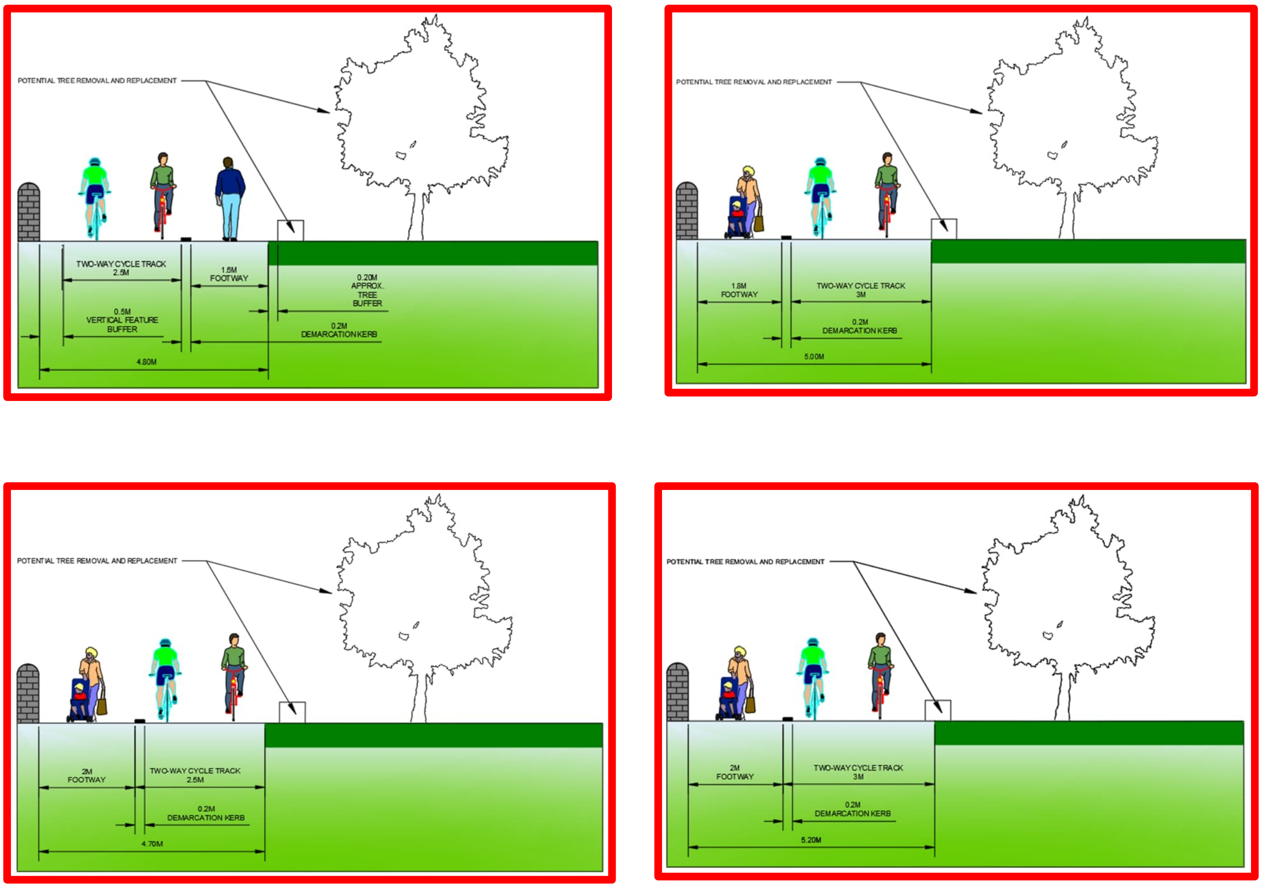
5.5 Option 4 – Tree Removal and Replacement

Option 4 considers a widened segregated path along the existing alignment achieved by the removal of the existing treeline. As the path could be widening sufficiently to meet LTN 1/20 and Inclusive Mobility footway width requirements, sub-options were considered that positioned the footway both on the inside or outside of the path. Again, Variables of the Option 4 cross-sections were also considered such as providing a stepped cycle track / or footway.

The loss of the tree line in this option is unlikely to be favourable from either CYC or the general public's perspective. However, this option does offer the opportunity to widen the facilities along the existing alignment to sufficient widths if replacement planting of trees is considered a viable solution.

Typical cross-sections for Option 4 assuming different widths for the segregated path are shown in **Figure 10** below.

Figure 10 – Option 4 cross-sections



5.6 Discounted option – elevated path

As part of this feasibility review, an elevated embankment solution was also considered as a variant to Option 4. However, associated costs of construction, drainage impacts, impact on adjacent property boundaries and impact on flood resilience / compensatory storage and associated cost deemed this option to be unsuitable and has therefore been discounted at this stage.

As an alternative to an elevated path, a boardwalk structure was also considered to improve flood resilience. However, whilst boardwalks and similar elevated structures can be viable solutions within or through areas of ecological and environmental sensitivity or within flood plains to provide access through terrain that would otherwise be impassable. Boardwalk structures are also:

- Notoriously slippery for cyclists when wet, even with high friction surfacing is applied. Leaf litter, algae, moss, and other debris that gathers on the structures (particularly during Autumn / Winter) can create a further risk of slippage for both cyclists and pedestrians, potentially creating a liability issue if not maintained. Use of Glass Reinforced Plastic (GRP) in comparison to timber decking may provide some further frictional benefit; however, can still be slippery when wet and typically comes at a greater cost.
- Boardwalks have increased maintenance requirements associated with both the structural and surface elements. Timber can rot, warp, change colour and splinter, whereas composite deck boards can sag and warp with more unpredictability than timber.
- Boardwalks decrease the effective width for cyclists due to the raised edge protection either side.
- Boardwalks require cyclists to reduce their speed, which over longer distances can impact negatively on user experience.
- Boardwalks are not considered the most appropriate solution for routes with medium to high cycle flows unless there are no other viable solutions.

Due to the reasons above, a boardwalk solution was also discounted at this feasibility review stage.

6. Feasibility Option Refinement

6.1 Overview

To respond to the study objectives, as well as the range additional constraints identified at the scoping stage, through discussion with CYC two main approaches were identified for the Cinder Lane (Riverside) path progression. To progress these options, the route was split into two defined sections as per below:

- **Section A** – Jubilee Terrace
- **Section B** – Cinder Lane (Riverside Path).

6.2 Section A – Jubilee Terrace

Section A covers Jubilee Terrace, between the junction with Kingsland Terrace at the northern extent and connection to Cinder Lane (Riverside Path) at the southern extent. The aim of the interventions on Jubilee Terrace is to reduce vehicle dominance through:

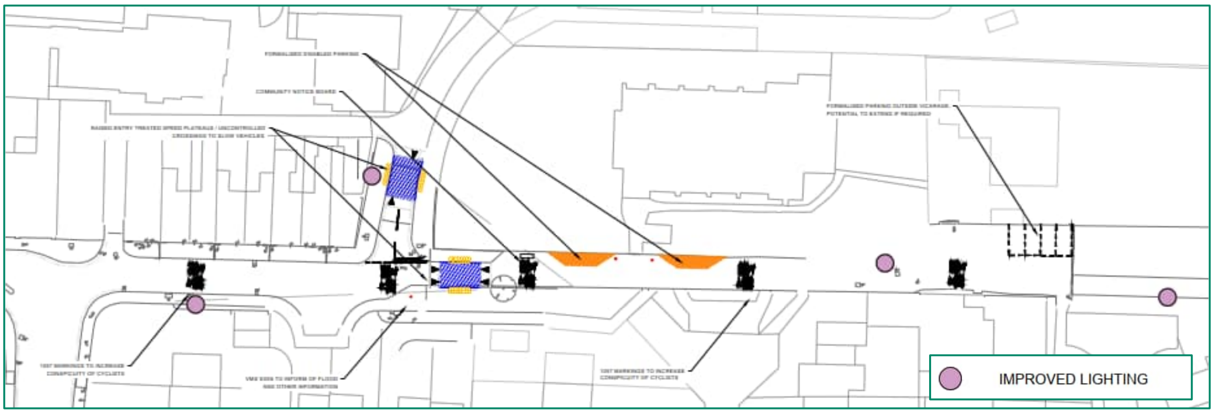
- reduction and formalisation of parking through new/amended Traffic Regulation Orders
- speed reduction measures
- increased conspicuity of the cycle route through signage and road markings strategy
- additional wayfinding and flood level signage
- improved pedestrian crossing facilities near to St Barnabas Primary School.

Proposals are broadly similar to CYC's 'Safe Routes to School Scheme' at Jubilee Terrace to maintain consistency in the approach.

6.2.1 Feasibility design general arrangement

An extract of the feasibility design for Section A is provided below as **Figure 11** and included on the full scheme roll plan provided in **Appendix C**.

Figure 11 – Jubilee Terrace General Arrangement

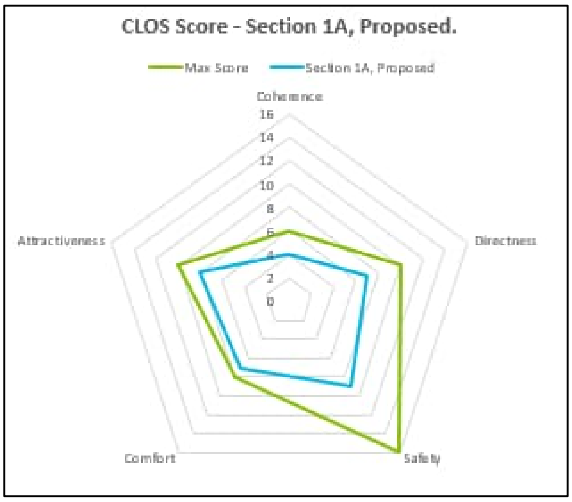


6.2.2 LTN 1/20 assessment of Jubilee Terrace proposed scheme

The Cycle Level of Service assessment result for the proposed scheme on Jubilee Terrace are summarised overleaf in **Figure 12,** with an overall score of **70%** with no critical fails. This is considered a pass, albeit on the threshold of a pass/fail. Full audit outputs are provided at **Appendix B**.

Further improvement could be achieved through the removal of all parking along the route, continuous footways at side road junctions and improved onward connections to/from Kingsland Terrace at the junction, which is not included within the initial study area.

Figure 12 – Section A CLoS results



Max possible score	50
Audit % score	70%
Pass/Fail (70% threshold)	Pass
Any Critical Fails? (Y/N)	No
Number of Critical Fails	0

Criteria	Max Score	Sub-criteria Existing	% score Existing
Coherence	6	4	67%
Directness	10	7	70%
Safety	16	**9**	56%
Comfort	8	7	88%
Attractiveness	10	8	80%
	50		

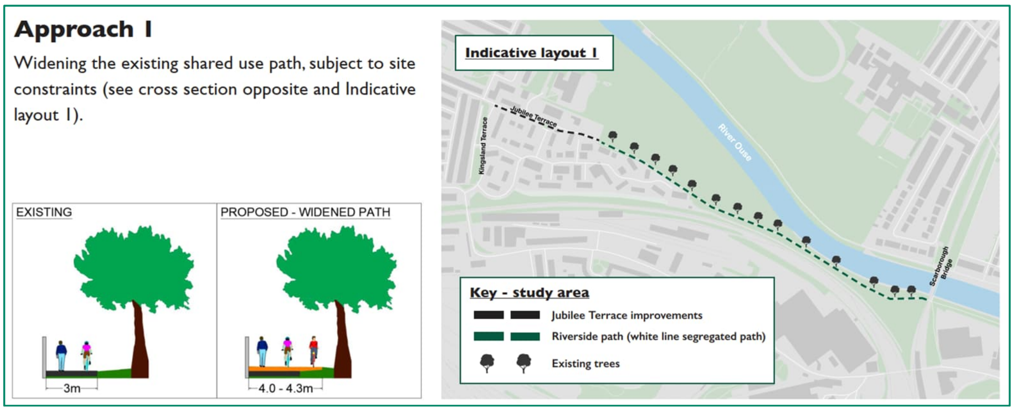
6.3 Section B – Cinder Lane Path

Section B covers the 650m section of the Cinder Lane between Jubilee Terrance and Scarborough Bridge at its northern and southern extent. Through consultation with CYC and review of multiple concept design options, two approaches were instructed to be progressed to feasibility design stage and were subsequently taken forward to public consultation.

Full feasibility drawings are provided at **Appendix C (Feasibility Options Roll Plan).**

The two approaches are as follows:

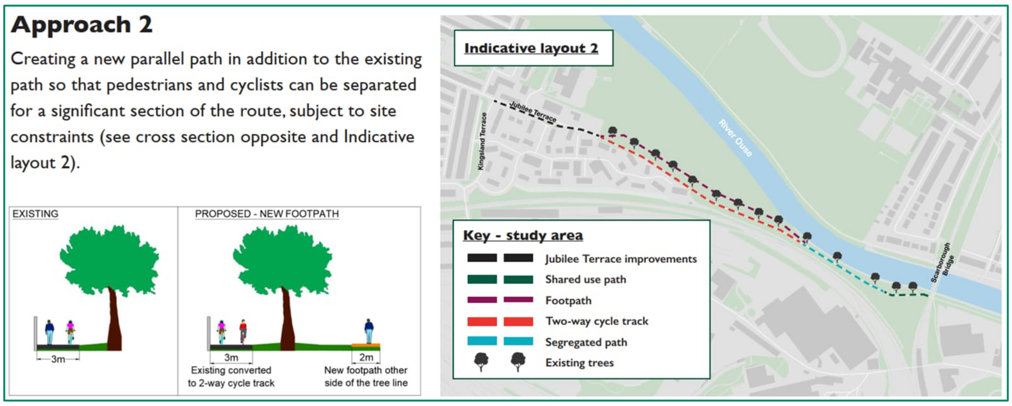
6.3.1 Approach 1 (widened shared use route)



Approach 1 proposals are characterised by widening the existing path to between 4 – 4.3m to provide an enhanced shared-use path for both cyclists and pedestrians. The route would follow the existing alignment and aim to retain the existing treeline through incorporating a tree root protection surface. In addition, improvements to the visibility at the Scarborough Bridge underpass would aim to reduce conflicts and additional signage / markings along the route would aim to increase conspicuity of both pedestrians and cyclists.

In addition, this option is also considered to provide an improved lighting and CCTV strategy and raising of the path at particular low points.

6.3.2 Approach 2 (parallel path)



Approach 2 aims to maximise segregation of pedestrians and cyclists, through providing a separate cycle track and footpath (where possible), with a segregation kerb used to define the two where this is not possible.

The cycle track would follow the existing alignment, with a new alternative footpath provided on the opposing side of the tree line. Due to constraints, at the connection with Jubilee Terrace and at the Scarborough Bridge underpass, the route would become a shared-use path. However, improvements to the alignment to provide better visibility at Scarborough Bridge would aim to reduce conflicts and additional signage / markings would increase conspicuity for both pedestrians and cyclists.

This option is also considered to provide an improved lighting and CCTV strategy and raising of the path at particular low points.

6.3.3 Approach 1 / 2 – Additional Measures

Other specific measures identified during the concept / feasibility design process included:

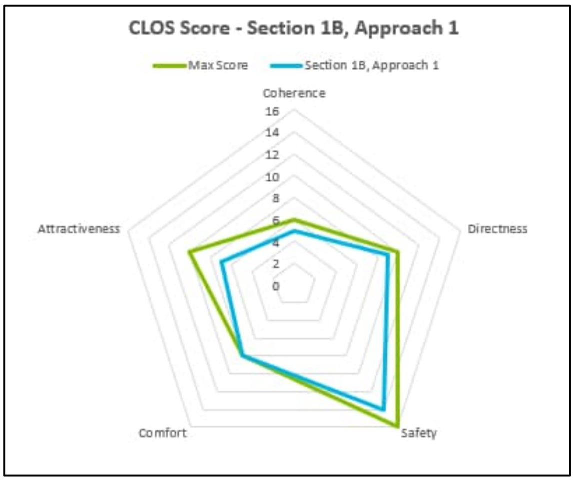
- Upgrade existing lighting or install new lighting where required (including under Scarborough Bridge).
- Reduce conflict between pedestrians and cyclists at Scarborough Bridge underpass.
- Install CCTV in key locations along the path.
- Raise path level at localised low points (on both sides of Scarborough Bridge). Feasibility drawings associated with proposals at the specific low point are provided at **D (Low Point Structural Proposals)**. These include structural proposals to raise the ~230M low point through introduction of a retaining feature along the existing Network Rail fenceline.
- Provide better advance warning systems to let people know when sections of the route are likely to be flooded.
- Additional seating / benches along the path.
- Install additional low level bollard lighting along the footpath (If this Approach 2 is taken forward).

6.3.4 LTN 1/20 assessment of Cinder Lane proposed approaches

Approach 1 – Shared use route

The proposed Section B – Approach 1 passes the 70% threshold, scoring **86%** and has no critical fails. A summary of the CLoS results for Option 1 is provided below in **Figure 11**.

Figure 11 – CLoS Section B, Approach 1



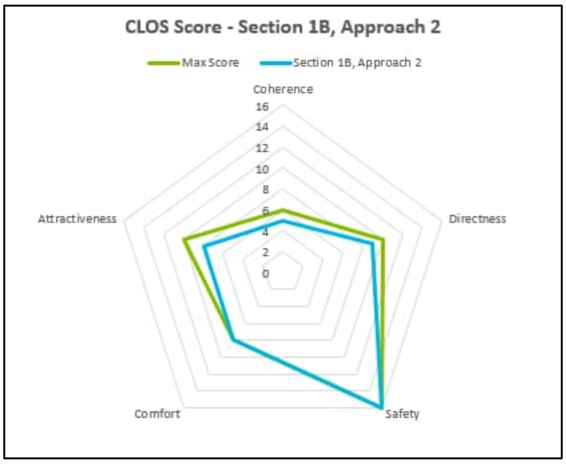
Max possible score	50
Audit % score	86%
Pass/Fail (70% threshold)	**Pass**
Any Critical Fails? (Y/N)	No
Number of Critical Fails	0

Criteria	Max Score	Sub-criteria Proposed	% score Proposed
Coherence	6	5	83%
Directness	10	9	90%
Safety	16	**14**	88%
Comfort	8	8	100%
Attractiveness	10	7	70%
	50		

Approach 2 – parallel path

The proposed Section B – Approach 2 provision passes the 70% threshold, scoring **92%** and has no critical fails. A summary of the CLoS results for Option 1 is provided below in **Figure 12**.

Figure 12 – CLoS Section B, Approach 2



Max possible score	50
Audit % score	92%
Pass/Fail (70% threshold)	**Pass**
Any Critical Fails? (Y/N)	No
Number of Critical Fails	0

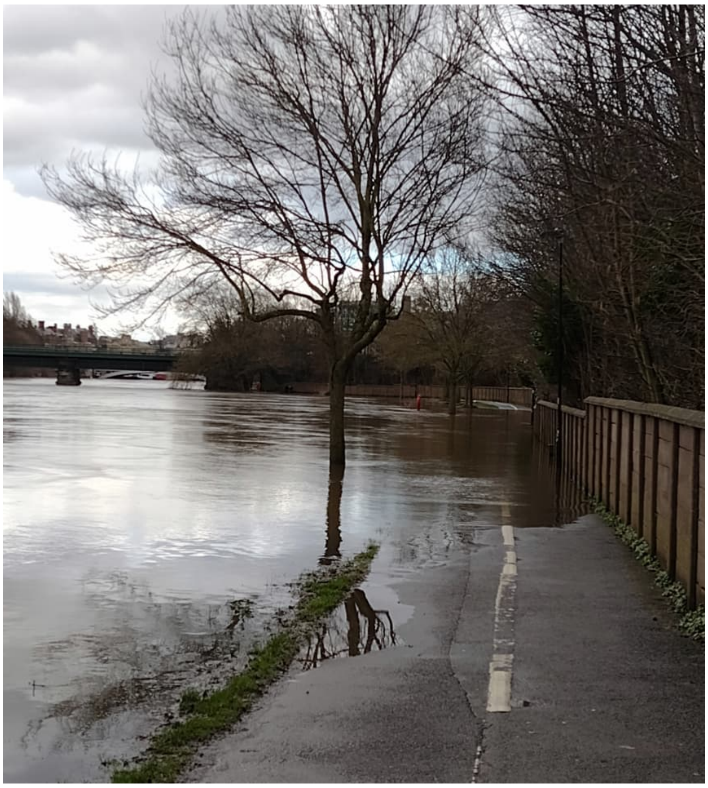
Criteria	Max Score	Sub-criteria Proposed	% score Proposed
Coherence	6	5	83%
Directness	10	9	90%
Safety	16	**16**	100%
Comfort	8	8	100%
Attractiveness	10	8	80%
	50		

7. Flood Impact Assessment

7.1 Existing path closures due to flooding

The Riverside Path is prone to flooding during periods of high river water levels resulting in the path becoming inaccessible to users for several days a year. **Figure 14** below shows an instance of flooding in February 2022 with the water level being higher than the low point of the path in the vicinity of Scarborough Bridge.

Figure 13 – River Flooding at Low Point



To mitigate against instance of flooding, the scheme proposals include raising of the specific low point in the vicinity of Scarborough Bridge to reduce the number of days per year when the path is inaccessible during periods of flood.

7.1.1 Quantifying instances of path closure

An initial high-level assessment of existing flood levels has been undertaken to quantify the number of days per year when the path is currently inaccessible due to flooding, and to quantify the number of days per year when the path is anticipated to be inaccessible should the low point of the path be raised as per the scheme proposals.

Based on topographical measurements and 3D alignment modelling of the proposed (raised) path, the outer edge (river side) of the raised foot/cycle path would be **9.301m**. This would tie in the height of the existing path section adjoining the low point. This is an increase of 0.67m compared to the current low point of **8.630m**.

A 10-year data set of recorded river levels has been reviewed as set out in **Table 3** overleaf which, based on the nearest available recorder, summarises the number of days per year when the river level is <8.630m; when the river level is in the range 8.630m-9.301m; and when the river level is >9.301m.

Table 3. Viking Recorder – Estimated level of flooding per year

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021	2022	DAYS AVG
River level below 8.630M	21	350	362	340	355	363	362	360	348	357	357	299	355
River level equal to or above 8.630M (Path currently flooded)	12	8	3	21	11	1	3	5	18	8	8	4	9
River level between 8.630 - 9.301M (Potential additional none flooding days)	9	6	2	17	9	0	2	4	11	5	5	1	6
River level above 9.301M (Path flooded)	3	2	1	4	2	1	1	1	7	3	3	3	3

Key findings from Table 3 are:

1. On average the number of days the river level sits below 8.630M and is assumed not to flood the low point is approximately 355 days per year.
2. Assuming the low point sits within the 8.630-9.301M range, raising the path may reduce the number of days the path is inaccessible from, typically, 9 days per annum to 3 days per annum. River levels above 9.301M are assumed to flood the path beyond proposed raising.

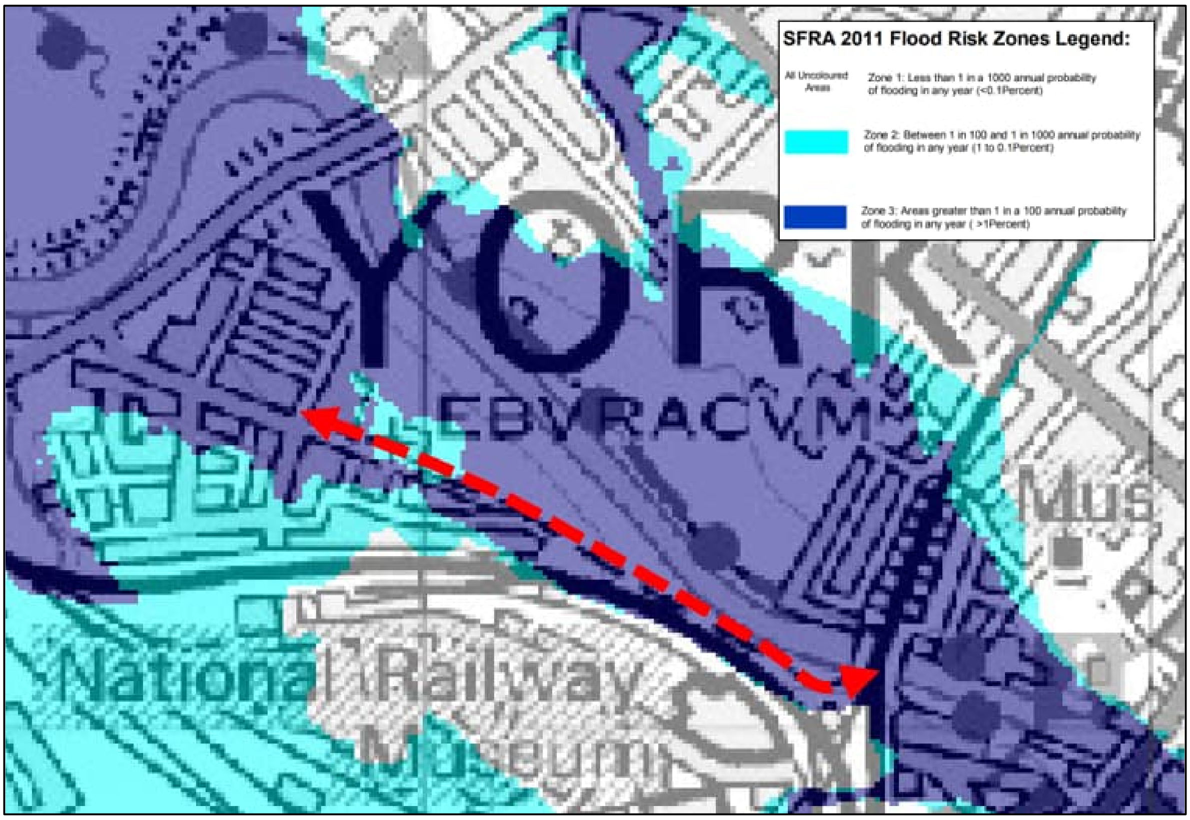
Notes:

- Topographical survey data for the site states ‘Coordinates relative to OS National Grid via GNSS centred on ST17 Levels relative to OS Datum’, with the Viking Recorder stated to be located 5m above ordnance datum. As such, an assumption has been made and adjustment to the recorded flood levels, so that they represent OS national grid levels shown within the topographical survey.
- Noting that the Viking Recorder is located beyond Scarborough Bridge / Riverside Path, further adjustment will be required to account difference in water level / gradient on the water surface between Viking Recorder and the path location. As such, whilst the tables provide an estimate, until an accurate adjustment factor is determined through hydrological modelling, the exact number of days the path is likely to be flooded cannot be accurately quantified. In addition, it should be noted that full data sets for the years 2012 and 2022 were not available, therefore these figures were not used within either calculation.

7.2 Hydrological Modelling Requirements

Based on an initial assessment of the Flood Map for Planning within the study area as shown in **Figure 15**, both Flood Zone 2 and Flood Zone 3 are located against the boundary of the existing path. It’s not clear from existing records whether the path is currently within the flood zone or raised above it. As the river floods by overtopping, then this suggests it is in Flood Zone 3.

Figure 14 – Flood Risk Zone



The proposed raising of the Riverside Path at the low point and associated potential volumetric loss of floodplain is considered minimal, particularly given the volume of flow in the River Ouse during flood events. However, to demonstrate that the raising works do not increase flood levels either at-site or elsewhere, hydraulic modelling is required at the next stage of design.

Recommendations from the Environment Agency (EA) within initial scoping discussions are to undertake a hydrological model review with the proposed raising works and assess the impact on flood levels. From here the EA will assess the proposed impact and determine whether compensatory flood storage is a requirement, with approvals forming part of the planning approval process.

As such and considering the early stage of design and further planning decisions to be undertaken, high-level compensatory flood storage cost estimates are included for each option, as summarised in **Chapter 8**.

8. High Level Cost Estimates

8.1 Whole scheme cost estimate

Indicative high-level cost estimates for the scheme as a whole (end-to-end) are summarised below in **Table 4** for Option 1 (shared use path on Cinder Lane) and Option 2 (segregated path on Cinder Lane). The estimated cost range for Option 1 is £2.2M-£2.4M and £1.95M-£2.2M for Option 2. Further detail on the cost breakdown for Section 1B by option is provided in 8.2 below.

Table 4. Full Route High-Level Cost Estimates

	Estimate Cost Range (£) **Option 1** *Shared Use Path*	Estimate Cost Range (£) **Option 2** *Segregated Path*
Section 1A (Jubilee Terrace)	150,000 – 200,000	150,000 – 200,000
Section 1B (Cinder Lane)	1,550,000 – 1,650,000	1,400,000 – 1,500,000
Compensatory Flood Storage Estimate	500,000 – 600,000	400,000 – 500,000
Total Scheme Cost Estimate (Range)	**£2,200,000 - £2,400,000**	**£1,950,000 – £2,200,000**

It is noted that CYC currently have £600K allocated for Riverside Path within the Capital Programme. As such, additional funding is required to enable the full scheme to be delivered. Additional funding streams are currently being explored, including a bid submission to the Active Travel England's Active Travel Fund 4 (ATF4) programme.

8.2 Cinder Lane cost breakdown (Section 1B)

Section 1B includes the remaining sections of Cider Lane within the study area, Approach 1 and 2 have separate costs associated within Section B, that are provided below. Within both cost estimates, raising of the specific low section ~270M accounts for approximately £700,000 – 800,000 of the total cost, which includes foot / cycle path construction, removal / replacement of the concrete fence, lighting but not associated drainage costs. Costs included within Table 5 are considered robust estimates.

Table 5. Additional Cost Breakdown – Section 1B

Cost Breakdown (Section 1B)		Estimated Cost (£) **Approach 1** *Shared Use Path*	Estimated Cost (£) **Approach 2** *Segregated Path*
200	SITE CLEARANCE	190,000	118,000
300	FENCING / BARRIERS / WALLS	80,000	80,000
400	ROAD RESTRAIN SYSTEMS	N/A	N/A
500	DRAINAGE AND SERVICE DUCTS	135,000	70,000
600	EARTHWORKS	300,000	305,000
700	PAVEMENTS	N/A	N/A
1100	KERBS, FOOTWAYS AND PAVED AREAS	550,000	465,000
1200	TRAFFIC SIGNS AND ROAD MARKINGS	30,000	27,000
1300	ROAD LIGHTING COLUMNS / CCTV	200,000	310,000
3000	LANDSCAPE AND ECOLOGY	150,000	105,000
	OTHER	300	300
	Total Cost Estimate	**£1,635,300**	**£1,480,300**

8.2.1 Cost Estimate Notes:

- The length and depth of raising has been calculated, based on topographical measurements of low spots to the east and west of Scarborough Bridge. These equate to a length of approximately 250m of raised section, subject to final design and layout. At the next stage of design, a review hydrological data will determine the potential flood mitigation benefit in average number of days per year.
- The total cost of flood compensation works is estimated to be between £500-600k and £400-500k respectively for Approaches 1 and 2. In Approach 1, it is assumed that the path in its entirety must be raised ~250mm in addition to the specific low point, which is considered a robust estimate. At the next stage of design, informed by Arboriculture Surveys and confirmation from Network Rail in relation to their requirements, the requirement to raise the foot / cycle path is expected to be clarified and costs able to be to refined appropriately.
- Costing accounts for Network Rail fence removal and replacement. Further discussion with Network Rail and review of aesthetical impact of partial fence removal may reduce costs at the next stage of design.
- Costing within Approach 2 accounts for resurfacing 33% of the existing path beyond the point of raising and providing an alternative 2m full construction footpath.
- Potential to omit additional drainage requirements following confirmation of construction method (this does not include omittance of compensatory food storage).

Cost estimates indicate that the £600K budget would be insufficient for ‘end to end’ route treatment. This funding constraint was communicated in the public consultation exercise as below:

“While all the potential improvements may not be possible in the final design within the current funding package, this consultation is a key element of understanding how to deliver the best design possible.”

8.3 Phased delivery approach

Reflecting the budgetary limitations and following the consultation feedback highlighting scheme priorities ***(see AECOM - Consultation Report)***, a phased approach is proposed as follows:

Phase 1 – Highest priority scheme elements

- Progress to preliminary design and more detailed cost estimation with the highest priority scheme elements, namely:
- upgraded lighting along the length of the Riverside Path
- raising of the path at low points
- widening of the existing path to provide more space for pedestrians and cyclists (Approach 1, as indicated in consultation feedback), retaining high quality existing trees, and including resurfacing.

Given the high level of public support/prioritisation (116 responses, 30%) and relatively low cost, it is also proposed to include CCTV / improved security within the Phase 1 package of works.

It is note that cost estimation work undertaken at the concept design stage indicates that it is unlikely that the entirety of Phase 1 priority works as listed above can be completed within the existing funding package.

Phase 2 – Lower priority scheme elements

Progress to preliminary design and more detailed cost estimation of lower priority scheme elements, namely:

- better signage when there are flood events
- seating / resting places
- traffic engineering measures to restrict parking and traffic movements on Jubilee Terrace, thereby improving conditions for pedestrians and cyclists.

Based on the above, a high-level cost estimate has been determined based on this phased approach for the preferred **Option 1** provided in **Table 6**.

Table 6. Option 1 (Widened Shared Use Path) - Priority Cost Breakdown

			Cost Estimate (inc uplifts & 25% risk)
Priority 1	Whole route Street lighting		£121,000
	Supplementary CCTV		£81,000
		Sub Total 1	**£202,000**
Priority 2	Raising of low point (either side of Scarborough Bridge)*		£683,000
	- approx 250m length		
	- includes reconstruction of NR fence (~275m)**		
	Estimated cost of compensatory flood storage (tbc) ***		£277,000
		Sub Total 2	**£960,000**
Priority 3	Widening of the existing shared use path (west of Priority 2)*		£752,000
	- approx 400m length		
	- includes reconstruction of remaining NR fence (~125m)		
	Estimated cost of compensatory flood storage (tbc) ***		£270,000
		Sub Total 3	**£1,022,000**
Priority 3		**Jubilee Terrace Area**	**£154,000**
		GRAND TOTAL (Existing path alignment)	**£2,338,000**

Notes:

* Considered a robust estimate reflecting design stage, potential to use standard construction methods without raising of the path following Arboricultural input. Potential to also omit additional drainage requirements following confirmation of construction method. Cost does not account for street lighting / CCTV already included within Priority 1.

** Includes retaining feature and replacement of Network Rail like for like.

*** Requirement and detailed cost estimate to be reviewed following EA / Hydrological impact review.

- **Cost uplifts** – Reflecting the concept stage of design, the above high-level cost estimate includes 25% risk allowance; 20% utilities allowance; and 'other' standard uplifts that equate to an additional 34%.
- **Cost refinement** – the recommended next step is to progress to preliminary design and more detailed cost estimation for the three priority areas identified above to enable informed decision making.
- **Jubilee Terrace** – although not regarded as a priority from the public consultation exercise, the Cycle Level of Service assessment identified the need to improve provision

for pedestrians and cyclists on Jubilee Terrace from a road safety perspective. The estimated cost of such works is £150K-£200K.

Further refinement of proposals at the next stage of design will allow for a more precise cost estimation exercise to be undertaken and a reduction in associated risk contingency.

9. Summary & Next Steps

9.1 Summary

Following a review of a range of scheme options and a public consultation exercise, this feasibility study has identified potential infrastructure enhancements for the Riverside Path to improve conditions for pedestrians and cyclists. In summary, these enhancements comprise:

- **Section A (Jubilee Terrace)** – interventions to reduce existing conflict between pedestrian / cyclists and motor vehicles
- **Section 2 (Cinder Lane)** – enhancements to the Riverside Path to reduce pedestrian / cycle conflict and improve user safety / perception of safety, achieved through one of the following approaches/options:
  - **Approach 1 (Option 1)**: Widen the existing path to create a wider shared use path, supplemented by improved street lighting and personal security measures.
  - **Approach 2 (Option 2)**: Provide a separate (parallel) walking path for much of the length of the route to clearly segregate pedestrians and cyclists.

Indicative high-level cost estimates for the scheme as a whole (end-to-end) are **£2.2M-£2.4M** for Approach 1 (widened shared use path on Cinder Lane) and **£1.95M-£2.2M** for Approach 2 (new parallel path on Cinder Lane). These cost estimates include an allowance for improvement works on Jubilee Terrace of £150K-£200K and raising of the and compensatory flood storage costs in the range of £400K-£600K across the two approaches/scheme options. It is noted that CYC currently have £600K allocated for Riverside Path within the Capital Programme. As such, additional funding is required to enable the full scheme to be delivered.

Reflecting the budgetary limitations and following the consultation feedback highlighting specific scheme priorities (see AECOM - Consultation Report), a phased approach has been identified, with the initial focus on the following key priorities:

- improved street lighting (whole route)
- supplement CCTV to enhance personal safety (whole route)
- raising the path at the low point in the vicinity of Scarborough Bridge to reduce the likelihood of the path being closed/inaccessible during periods of flooding.

Given the feasibility stage of design, it is recognised there are a number of unknowns. Further refinement of scheme proposals will be required following additional arboricultural and hydrological reviews, as well as clarification of design requirements from key stakeholders such as Network Rail and the Environment Agency at the next stage of design to inform proposed construction methods and associated cost refinement.

9.2 Next Steps

- Following Executive Member approval of the above phased approach, progress to preliminary scheme design stage for Phase 1 priority improvements.
- Update the scheme cost estimate for Phase 1 and seek Executive Member approval to progress to full detailed design for those prioritised scheme elements that can be delivered within the current budget. As noted above, it is recognised that some Phase 1 elements may need to be reassigned to Phase 2 pending the updated scheme costs estimates following preliminary design. This may include, for example, lower priority sections for widening and resurfacing.
- Subject to Executive Member approval, progress to preliminary scheme design and updated scheme cost estimate for Phase 2 works to identify the required additional funding requirements and to inform a phased implementation strategy.

Appendix A – Existing CLoS

A.1 Cycle Level of Service baseline results

Cycling Level of Service Assessment (CLoS) based on LTN 1/20	
Project Number	60690177
Scheme	CYC - Riverside Path / Cinder Lane
Location	York
Date	10/02/2023
Version Number	v0
Assessment By	Oliver Gibbs
Checked By	Luke Oddy

AECOM

Cycling Level of Service (CLOS)

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Existing - Section 1A: Jubilee Terrace — Score	Existing - Section 1A: Jubilee Terrace — Comments	Existing - Section 1B: Existing 1.5m white line segregation — Score	Existing - Section 1B: Existing 1.5m white line segregation — Comments
Coherence	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	**1. Ability to join/leave route safely and easily** considering left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey	1	Connection to existing facilities at Kingsland Terrace / Cinder Lane	2	Connection to existing facilities at either end of Cinder Lane
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed - cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	**2.Provision for cyclists throughout the whole length of the route**		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions	0	Cycle route at Jubilee Terrace is poorly signed, with lack of markings indicating on-ward connections.	1	Descreet sections towards Jubilee Terrace. However, links to on-going facilties.
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	**3.Density of routes based on mesh width** i.e. distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 - 1000m	Route contributes to a network density mesh width <250m	2	Connection to existing facilities at either end Jubilee Terrace	2	Connection to existing facilities at either end of Cinder Lane
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as the-crow-flies' distance as possible.	**4.Deviation of route** Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2	2	Route is direct with no shorter alternative	2	Route is direct with no shorter alternative
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	**5.Stopping and give way frequency**		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km	2	Cyclists only have to give-way at Jubilee Terrace junction	2	Cyclists do not have to stop or give-way apart from at the Scarborough Bridge underpass and Jubilee Terrace connection
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	**6.Delay at junctions**		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (e.g. bypass at signals)	1	Cyclists give-way at the Jubilee Terrace junction.	2	Not relevant for section.
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	**7.Ability to maintain own speed on links**		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.	0	Cyclists are unable to overtake a vehicle	0	Cyclists in either direction are within a 1.5m two-way cycle track.
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	**8.Gradient**		Route includes sections steeper than the gradients recommended in Figure 4.4	There are no sections of route steeper than the gradients recommended in Figure 4.4	There are no sections of route which steeper than 2%	2	No significant gradients	2	No significant gradients
Safety	Reduce/remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	**9.Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction**	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Low vehicle speeds	2	Route off carriageway
			10.Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Low vehicle speeds	2	Route off carriageway
	Avoid high motor traffic volumes where cyclists are sharing the carriageway.	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	**11.Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour**	>10000 AADT, or >5% HGV	5000-10000 AADT and 2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT	2	Low traffic flows	2	Route off carriageway
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Table 6.2. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	**12.Segregation to reduce risk of collision alongside or from behind**	Cyclists sharing carriageway - nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.	0	Route in narrow lane	2	Route off carriageway
		A high proportion of collisions involving cyclists occur at junctions. Junctions there-fore need particular attention to reduce the risk of collision. Junction treatments include: - Minor/side roads : cyclist priority and/or speed reduction across side roads - Major roads : separation of cyclists from motor traffic through junctions.	**13.Conflicting movements at junctions**		Side road junctions frequent and/or untreated. Major junctions, conflicting cycle/motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.	0	Side road junction only provides access to Primary School; however, could be improved. Major junction with Kingsland Terrace not separated.	2	Route off carriageway
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	**14.Legible road markings and road layout**		Faded, old, unclear, complex road markings/unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout	0	Markings on the existing surface are in poor condition and not clearly defined	0	Markings on the existing surface are in poor condition and not clearly defined
	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	**15.Conflict with kerbside activity**	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (e.g. nearside cycle lane <2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity - e.g. less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.	0	Significant give and take required around parked vehicles / manouvering vehicles.	1	Route off carriageway. However. cyclists in either direction are within a 1.5m two-way cycle track, which can cause conflict with other cyclists or pedestrians.
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	**16.Evasion room and unnecessary hazards**		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.	0	Number of hazards could be reduced through removal of parking.	2	Cyclists have sufficient evasion room.
Comfort	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (e.g. from previous cycle lane)	**17.Major and minor defects**		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface	2	Surface quality considered good.	1	Poor surface quality / subsidence and cracking in places.
		Pavement or carriageway construction providing smooth and level surface	**18.Surface type**		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface - e.g. Thin Surfacing, or firm and closely jointed blocks undisturbed by turning heavy vehicles.	2	Laid surface along the route	2	Laid surface along the route
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	**19.Desirable minimum widths according to volume of cyclists and route type** (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route	1	N/A as cyclists with traffic	0	Cyclists in either direction are within a 1.5m two-way cycle track.
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	**20.Signing**		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions	1	Signage could be improved along the route.	1	Signage could be improved along the route.
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	**21.Lighting**		Most or all of route is unlit	Short and infrequent unlit/poorly lit sections	Route is lit to highway standards throughout	1	Lighting provided at regular intervals however illumination strategy could be improved due to old specification of columns.	1	Lighting provided at regular intervals however illumination strategy could be improved due to old specification of columns.
			22.Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length	1	This section of route is mostly overlooked by residential properties.	0	Cinder Lane routes through an isolated park (particularly isolated at night).
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well-used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	**23.Impact on pedestrians** Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 4.7)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A	0	Shared vehicular / cycle / pedestrian route.	0	White line segregation reduces available footway space to 1.5m.
	Minimise street clutter	Signing required to support scheme layout	**24.Street Clutter** Signs are informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.	1	Moderate number of signs required in deliniate the route	2	Street clutter does not cause an issue.
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on street	**25. Cycle parking** Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure none overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand	2	Not relevant for proposed scheme	1	No cycle parking provision
							Audit Score	**27**	**0**	**34**	**0**

	Existing - Section 1A	Existing - Section 1B
Max possible score	50	50
Audit % score	54%	68%
Pass/Fail (70% threshold)	**Fail**	**Fail**
Any Critical Fails? (Y/N)	No	No
Number of Critical Fails	0	0

Appendix B – Proposed CLoS

B.1 Cycle Level of Service proposed scheme results

Cycling Level of Service Assessment (CLoS) based on LTN 1/20	
Project Number	60690177
Scheme	CYC - Riverside Path / Cinder Lane
Location	York
Date	10/02/2023
Version Number	v0
Assessment By	Oliver Gibbs
Checked By	Luke Oddy

AECOM

Section 1A, Proposed	Section 1B, Approach 1	Section 1B, Approach 2
Jubilee Terrace	4.3M Shared Use Facility	2m Footway / 2.5m segregated two-way cycle track.

Cycling Level of Service (CLOS)

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score (Section 1A)	Comments (Section 1A)	Score (Section 1B, Approach 1)	Comments (Section 1B, Approach 1)	Score (Section 1B, Approach 2)	Comments (Section 1B, Approach 2)
Coherence	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	**1. Ability to join/leave route safely and easily** considering left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey	1	Connection to existing facilities at Kingsland Terrace / Cinder Lane - No significant Improvements	2	Connection to existing facilities at either end of Cinder Lane	2	Connection to existing facilities at either end of Cinder Lane
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed - cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	**2.Provision for cyclists throughout the whole length of the route**		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions	1	Improvements to signage along this section and continuity along Jubilee Terrace through removal of parking.	1	Descreet sections towards Jubilee Terrace. However, links to on-going facilties.	1	Descreet sections towards Jubilee Terrace. However, links to on-going facilties.
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	**3.Density of routes based on mesh width** i.e. distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 - 1000m	Route contributes to a network density mesh width <250m	2	Connection to existing facilities at either end Jubilee Terrace	2	Connection to existing facilities at either end of Cinder Lane	2	Connection to existing facilities at either end of Cinder Lane
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as the-crow-flies' distance as possible.	**4.Deviation of route** Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2	2	Route is direct with no shorter alternative	2	Route is direct with no shorter alternative	2	Route is direct with no shorter alternative
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	**5.Stopping and give way frequency**		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km	2	Cyclists only have to give-way at Jubilee Terrace junction	2	Cyclists do not have to stop or give-way apart from at the Scarborough Bridge underpass and Jubilee Terrace junction	2	Cyclists do not have to stop or give-way apart from at the Scarborough Bridge underpass and Jubilee Terrace junction
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	**6.Delay at junctions**		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (e.g. bypass at signals)	1	Cyclists give-way at the Jubilee Terrace junction.	2	Not relevant for section.	2	Not relevant for section.
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	**7.Ability to maintain own speed on links**		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.	0	Cyclists should be able to overtaken a slow moving cyclists through removal of parking.	1	Cyclists will be in 4.3M approriate width shared use facility. Therefore, should be able to pass other slow moving cyclists / pedestrians.	1	Cyclists within facilities between desriable and asolute minimum facilities. As such, should usually be able to pass flow moving cyclists.
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	**8.Gradient**		Route includes sections steeper than the gradients recommended in Figure 4.4	There are no sections of route steeper than the gradients recommended in Figure 4.4	There are no sections of route which steeper than 2%	2	No significant gradients	2	No significant gradients	2	No significant gradients
Safety	Reduce/remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	**9.Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction**	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Low vehicle speeds	2	Route off carriageway	2	Route off carriageway
			10.Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph	2	Low vehicle speeds	2	Route off carriageway	2	Route off carriageway
	Avoid high motor traffic volumes where cyclists are sharing the carriageway.	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	**11.Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour**	>10000 AADT, or >5% HGV	5000-10000 AADT and 2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT	2	Low traffic flows	2	Route off carriageway	2	Route off carriageway
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Table 6.2. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	**12.Segregation to reduce risk of collision alongside or from behind**	Cyclists sharing carriageway - nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.	0	Route in narrow lane	2	Route off carriageway	2	Route off carriageway
		A high proportion of collisions involving cyclists occur at junctions. Junctions there-fore need particular attention to reduce the risk of collision. Junction treatments include: - Minor/side roads : cyclist priority and/or speed reduction across side roads - Major roads : separation of cyclists from motor traffic through junctions.	**13.Conflicting movements at junctions**		Side road junctions frequent and/or untreated. Major junctions, conflicting cycle/motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.	0	Side road junction only provides access to Primary Schoo - Continuos footway optional. Major junction with Kingsland Terrace not separated.	2	Route off carriageway	2	Route off carriageway
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	**14.Legible road markings and road layout**		Faded, old, unclear, complex road markings/unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout	1	Improvements to signage / markings along this section	1	Assumed shared-use path signage and markings to clearly inform of each other presence.	2	Segregated facility will calirty of seperation with signage and markings.
	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	**15.Conflict with kerbside activity**	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (e.g. nearside cycle lane <2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity - e.g. less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.	1	Improvements to kerbside conflict with reallocation of parking	1	Route off carriageway. However. cyclists in either direction are within a 1.5m two-way cycle track, which can cause conflict with other cyclists or pedestrians.	2	Provision prodominatly fully segregated along the route.
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	**16.Evasion room and unnecessary hazards**		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.	1	Number of hazards could be reduced through removal of parking - Could be improved further through complete removal of parking	2	Cyclists have sufficient evasion room.	2	Cyclists have sufficient evasion room.
Comfort	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (e.g. from previous cycle lane)	**17.Major and minor defects**		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface	2	Surface quality considered good.	2	New surface course proposed.	2	New surface course proposed.
		Pavement or carriageway construction providing smooth and level surface	**18.Surface type**		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface - e.g. Thin Surfacing, or firm and closely jointed blocks undisturbed by turning heavy vehicles.	2	Laid surface along the route	2	Laid surface along the route	2	Laid surface along the route
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	**19.Desirable minimum widths according to volume of cyclists and route type** (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route	1	N/A as cyclists with traffic	2	4.3M shared use facility provided - LTN 1/20 3M recommended	2	2.5 two-way segregated facility - LTN 1/20 3M recommended
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	**20.Signing**		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions	2	Signage and lighting review assumed.	2	Assumed improved signage strategy.	2	Assumed improved signage strategy.
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	**21.Lighting**		Most or all of route is unlit	Short and infrequent unlit/poorly lit sections	Route is lit to highway standards throughout	2	Assumed improved lighting strategy.	2	Assumed improved lighting strategy.	2	Assumed improved lighting strategy.
			22.Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length	1	This section of route is mostly overlooked by residential properties.	0	Assumed CCTV strategy; however still isolated.	0	Assumed CCTV strategy; however still isolated.
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well-used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	**23.Impact on pedestrians** Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 4.7)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A	1	Enhanced pedestrian crossing facilities included within proposals. Removal of parking will also benefit pedestrian facilities.	1	Improvements to pedestrian and cycle width through widening of facility.	2	Pedestrains provided segregation from cyclist with increased footway width from 1.5m to 2M.
	Minimise street clutter	Signing required to support scheme layout	**24.Street Clutter** Signs are informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.	2	Street clutter reviewed to deliniate the route / not cause obstruction.	2	Street clutter does not cause an issue.	2	Street clutter does not cause an issue.
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on street	**25. Cycle parking** Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure none overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand	2	Not relevant for proposed scheme	2	Assumed cycle parking strategy at DD.	2	Not relevant for proposed scheme
							Audit Score	**35**	**0**	**43**		**46**	
							Max possible score	50		50		50	
							Audit % score	70%		86%		92%	
							Pass/Fail (70% threshold)	**Pass**		**Pass**		**Pass**	
							Any Critical Fails? (Y/N)	No		No		No	
							Number of Critical Fails	0		0		0	

Appendix C – Feasibility Options Roll Plan

AECOM

PROJECT
RIVERSIDE_PATH

CLIENT
CITY OF YORK COUNCIL

KEY
- PROPOSED ROAD MARKINGS
- PROPOSED SHARED USE PATH
- PROPOSED TACTILE PAVING
- PROPOSED KERBLINE
- PROFILED GRASS VERGE
- PROPOSED RAISED TABLE
- PROPOSED POSITIVE PARKING
- RAISED LEVELS / SCOUR PROTECTION
- WOODEN FENCING
- IMPROVED LIGHTING
- IMPROVED LIGHTING / CCTV
- ALTERNATIVE SEPARATED FOOTPATH (WITH LOW LEVEL LIGHTING PROVIDED)*

ISSUE/REVISION

I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
PRELIMINARY_DESIGN

KEY PLAN

PROJECT NUMBER
60690177

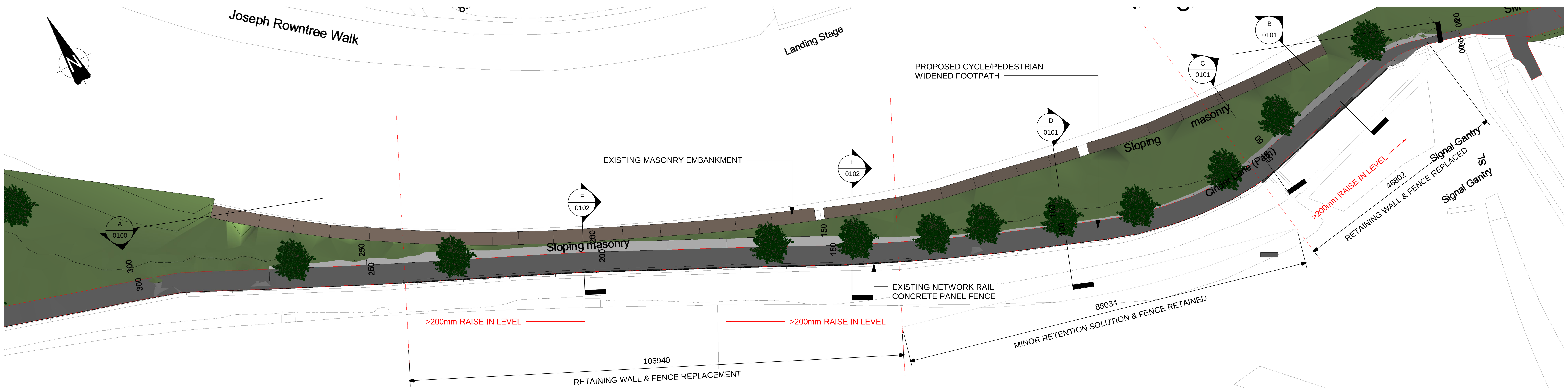
SHEET TITLE
ROLL_SHEET

SHEET NUMBER
60690177-ACM-0100-ZZ-DR-TR-0006

Appendix D – Low Point Structural Proposals

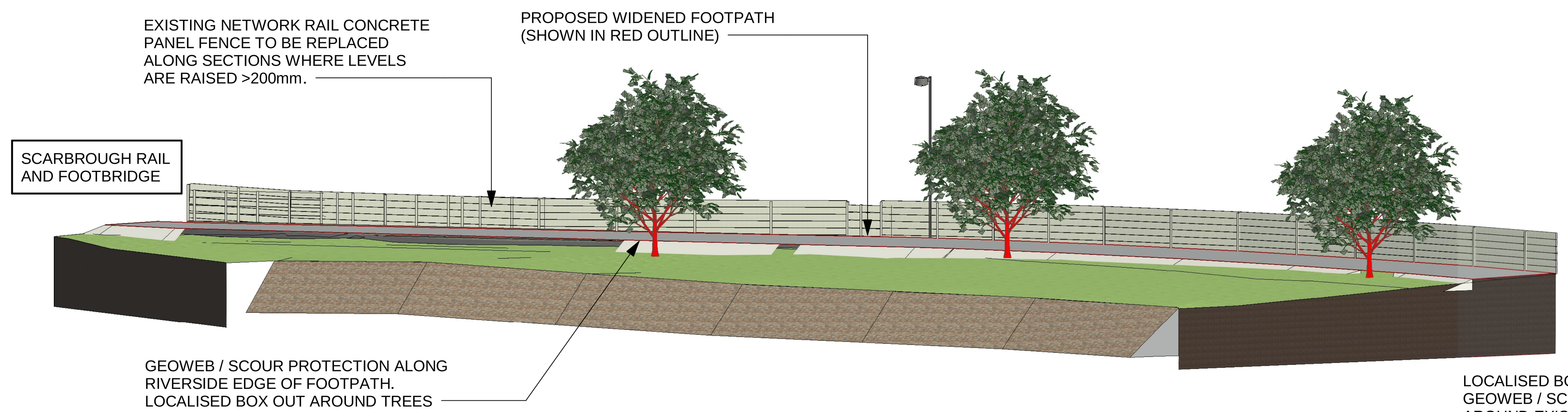
Designer: KP Checked: PMR Approved: PMR ISO A1 594mm x 841mm

OVERALL PLAN
1 : 1500

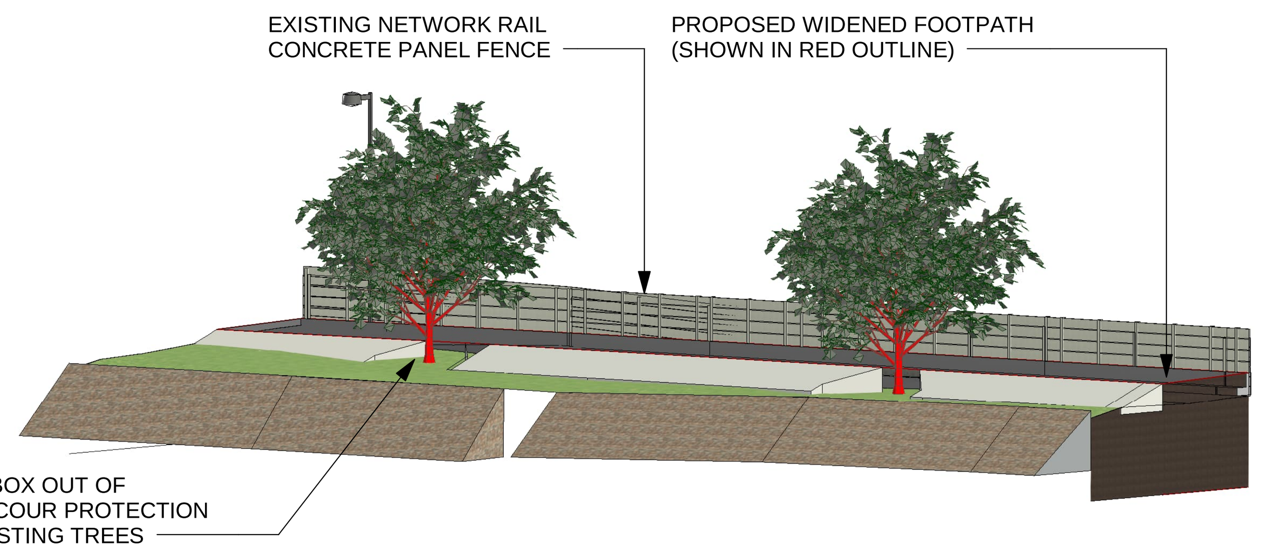


PLAN - DETAIL 1
1 : 500

ELEVATION A-A
1 : 500



3D VIEW - EAST LOW SPOT



3D VIEW - WEST LOW SPOT

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS / RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION
A1. THERE ARE NO KNOWN EXCEPTIONAL RISKS

MAINTENANCE / CLEANING / OPERATION
B1. THERE ARE NO KNOWN EXCEPTIONAL RISKS

DECOMMISSIONING / DEMOLITION
C1. THERE ARE NO KNOWN EXCEPTIONAL RISKS

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

AECOM

NOTES

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ISSUE/REVISION

I/R	DATE	BY	DESCRIPTION	CHK	APP
P01	17/02/23	KP	DRAFT ISSUE	PMR	PMR

SUITABILITY

S0 WORK IN PROGRESS

CLIENT

CITY OF YORK COUNCIL

YORK CITY COUNCIL

PROJECT

YORK RIVERSIDE PATH

SHEET TITLE

YORK RIVERSIDE PATH
LOW SPOTS
GENERAL ARRANGEMENT

CONSULTANT

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One Trinity Gardens
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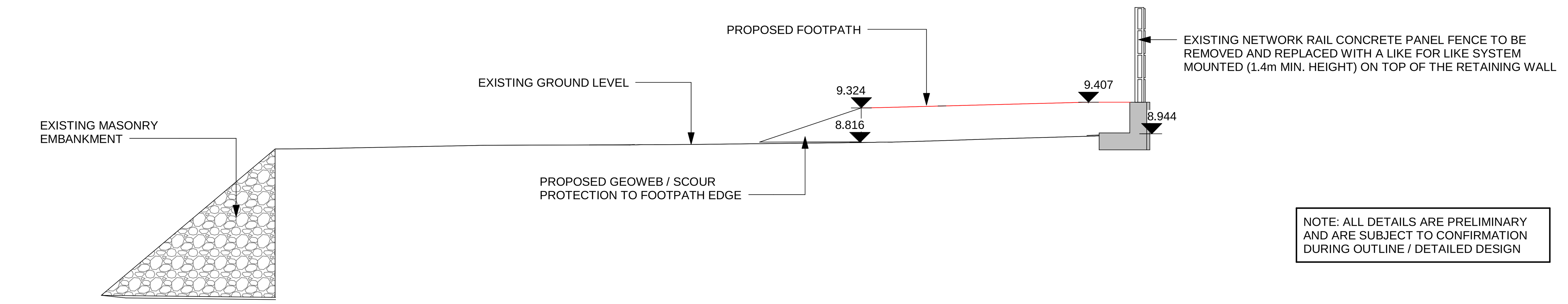
SHEET NUMBER

60690177-ACM-0100-ZZ-DR-CB-0100_P01

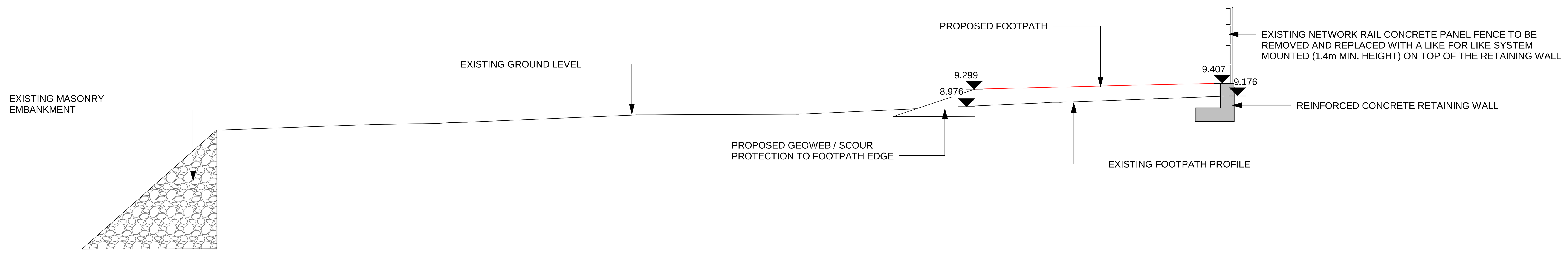
Last Plotted: 17/02/2023 10:18:12
Filename: Autodesk Docs://CI-EMEA (UKI) 60619067-Hammerton Street/York Riverside Path_P01.rvt

Designer: KP
Checked: PMR
Approved: PMR
ISO A1 594mm x 841mm

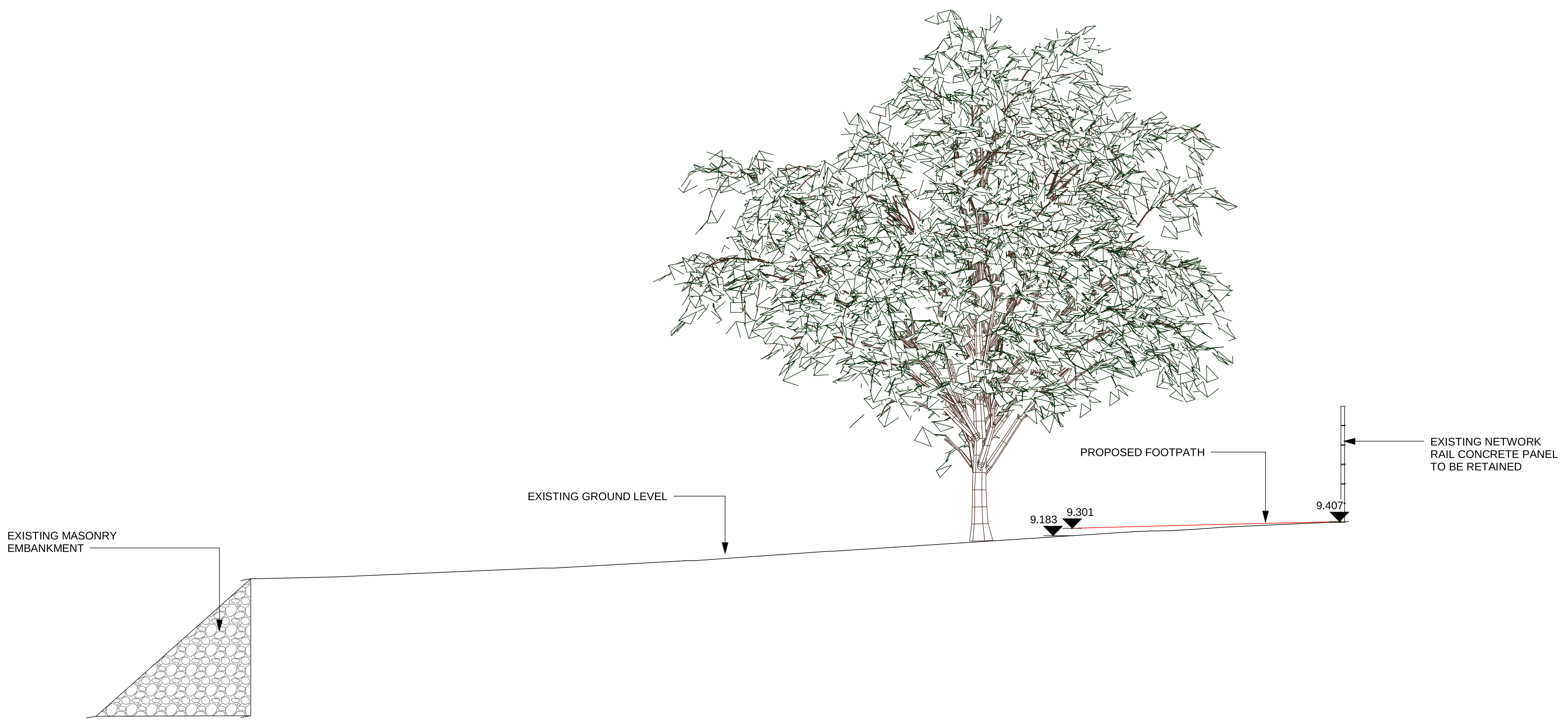


NOTE: ALL DETAILS ARE PRELIMINARY AND ARE SUBJECT TO CONFIRMATION DURING OUTLINE / DETAILED DESIGN

SECTION B-B
1 : 50



SECTION C-C
1 : 50



SECTION D-D
1 : 50

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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Filename: Autodesk Docs://CI-EMEA (UK) 60619067-Hammerton Street/York Riverside Path_P01.rvt

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SUITABILITY

S0 WORK IN PROGRESS

CLIENT

CITY OF YORK COUNCIL

YORK CITY COUNCIL

PROJECT

YORK RIVERSIDE PATH

SHEET TITLE

YORK RIVERSIDE PATH
LOW SPOTS
SECTIONS
SHEET 1 OF 2

CONSULTANT

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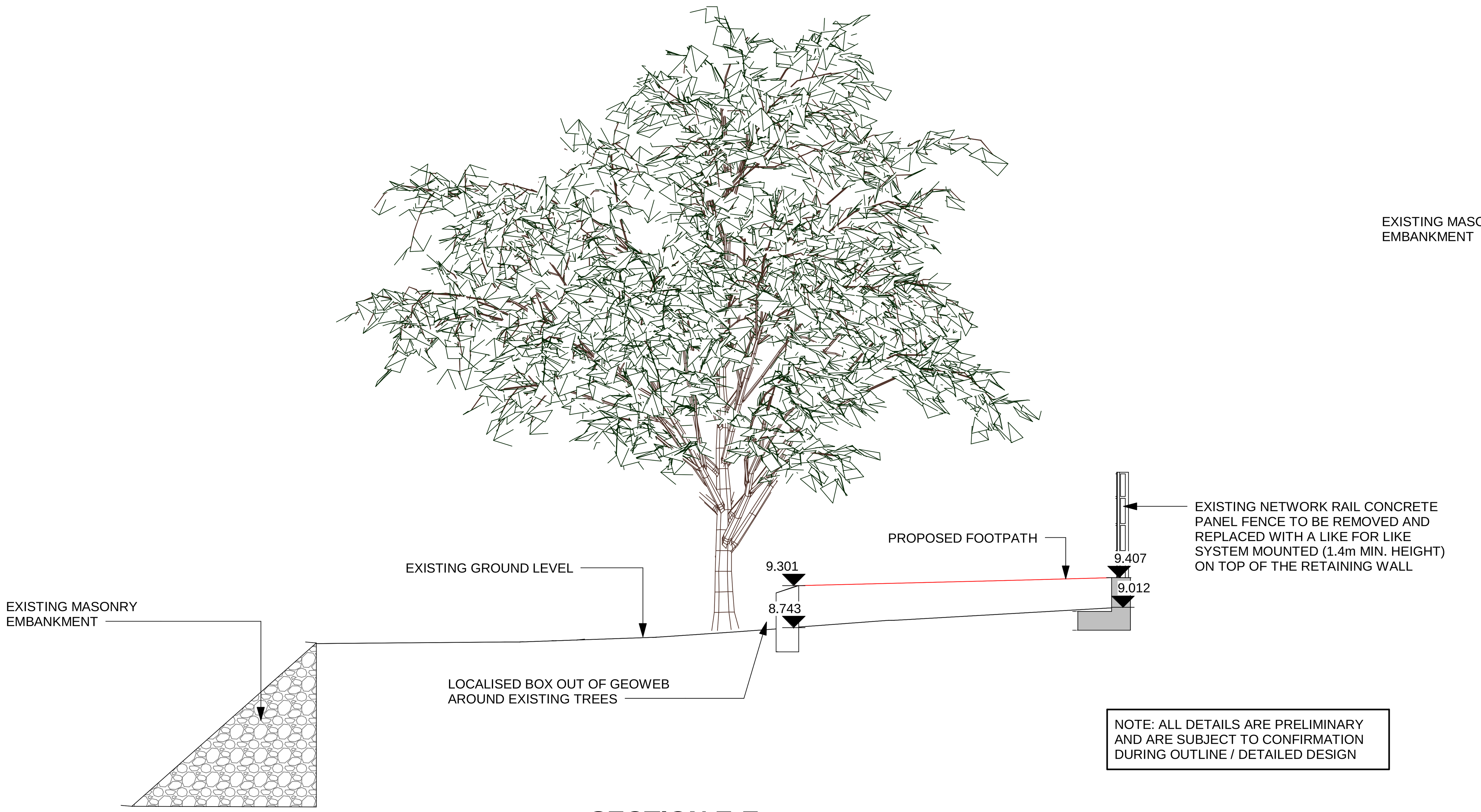
SHEET NUMBER

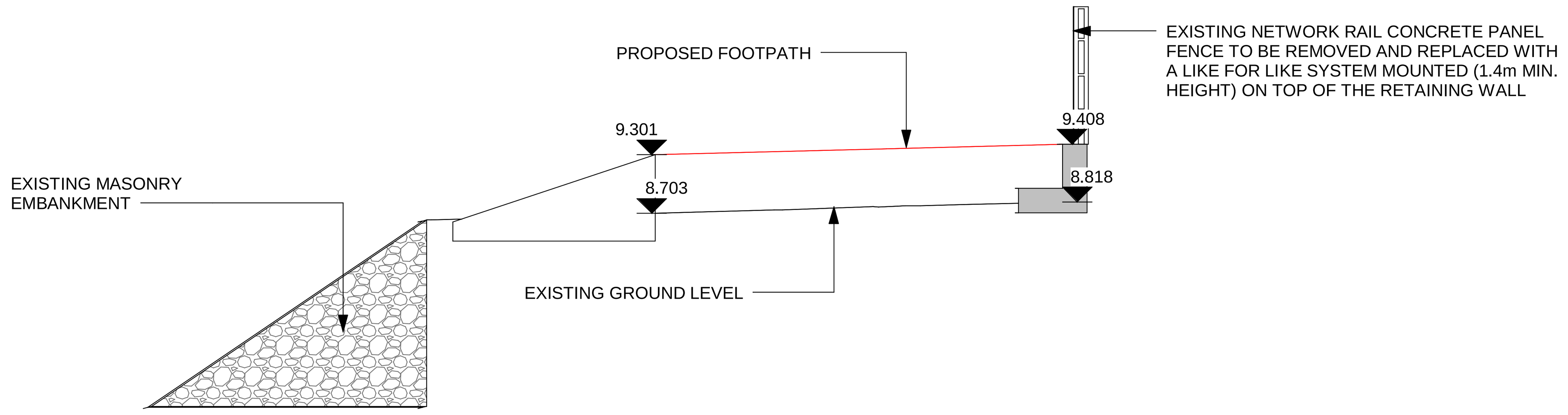
60690177-ACM-0100-ZZ-DR-CB-0101_P01

Designer: KP Checked: PMR Approved: PMR ISO A1 594mm x 841mm

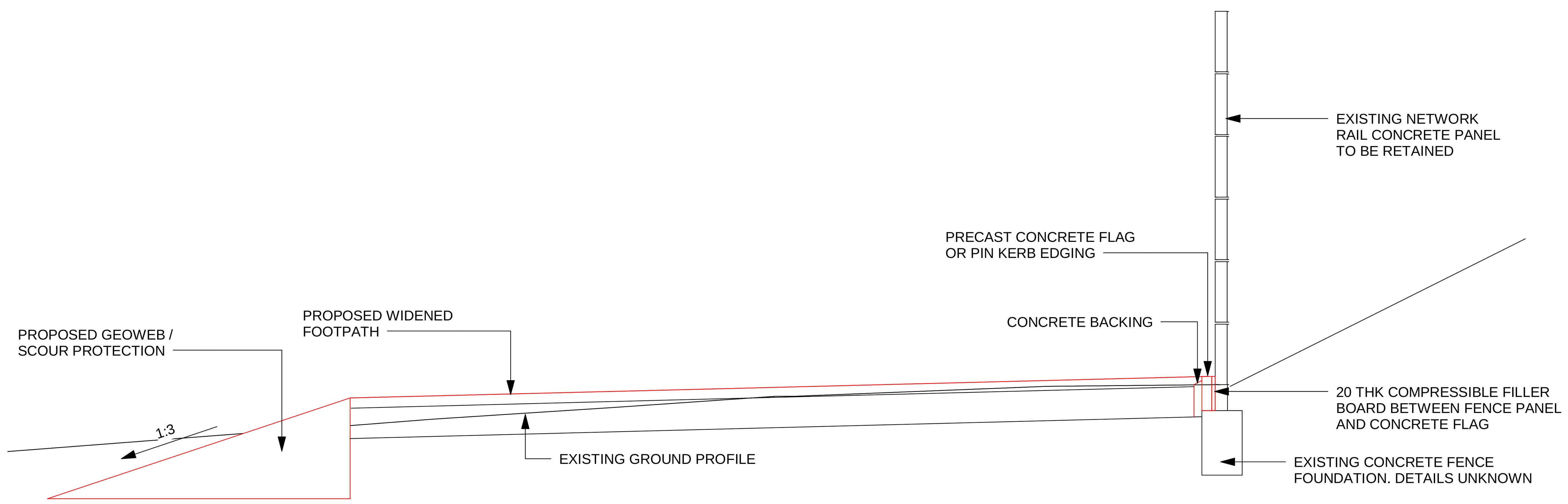


NOTE: ALL DETAILS ARE PRELIMINARY AND ARE SUBJECT TO CONFIRMATION DURING OUTLINE / DETAILED DESIGN

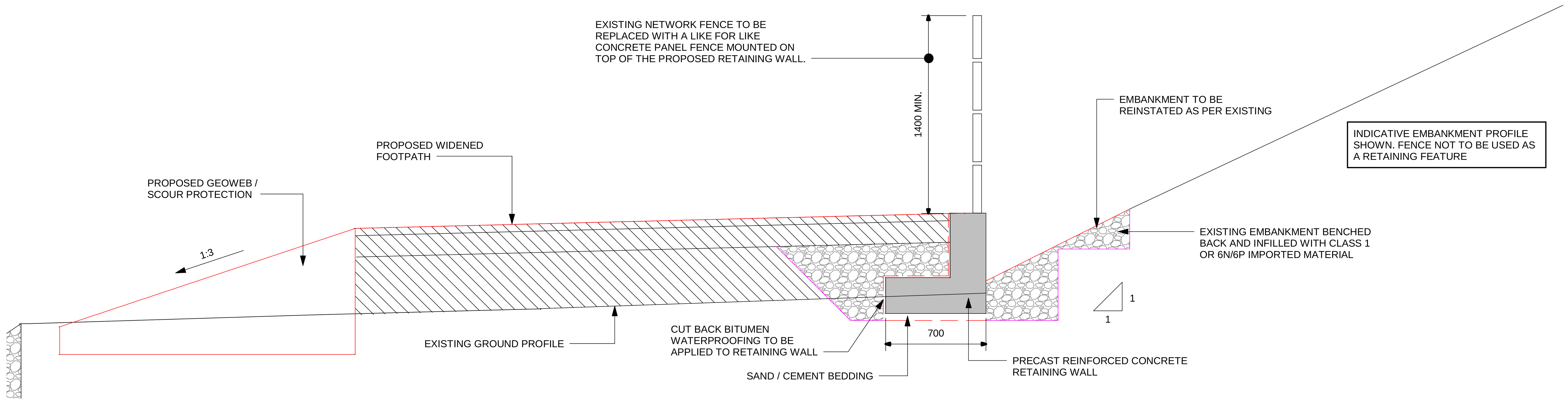
SECTION E-E
1 : 50



SECTION F-F
1 : 50



TYPICAL MINOR RETENTION SOLUTION (<200mm LEVEL RAISE)
1 : 20



INDICATIVE EMBANKMENT PROFILE SHOWN. FENCE NOT TO BE USED AS A RETAINING FEATURE

TYPICAL PROPOSED RETAINING WALL SECTION (>200mm LEVEL RAISE)
1 : 20

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YORK CITY COUNCIL

PROJECT
YORK RIVERSIDE PATH

SHEET TITLE
YORK RIVERSIDE PATH
LOW SPOTS
SECTIONS
SHEET 2 OF 2

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