

Northern Access Road, Havant Thicket Reservoir, Havant

RSA Combined Stage 1 and 2

Portsmouth Water

November 2022



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This document has 19 pages including the cover.

Document history

Rev	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	FINAL	RT	RN	MR	RT	16/11/2022

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1. Introduction

Atkins has been commissioned by Portsmouth Water to undertake a combined Stage 1 and 2 Road Safety Audit (RSA) of the proposals to provide an access road into the reservoir site from the B2149. This report documents the outcome of the RSA in the form of identified road safety problems and associated recommendations.

Section 2 documents the findings at the current RSA stage and section 3 comprises the RSA Team statement. Details of the information provided about the highway scheme are included in Appendix A. Problems and recommendation locations for the current RSA stage are shown on the plan included in Appendix B.

1.1. Terms of reference

The RSA has been conducted in accordance with GG 119 Road Safety Audit, in the Design Manual for Roads and Bridges (DMRB), Manual for Streets and Hampshire County Council's TG18 Road Safety Audits (May 2020). The RSA team has examined and reported only on the road safety implications of the highway scheme proposals and has not examined or verified the compliance of the designs to any other criteria. Where there are issues that may be of interest to the Design Organisation, but not necessarily within the scope of the RSA, these have been provided to the Overseeing Organisation, Portsmouth Water separately.

This RSA has been instructed by the Road Safety Audit Brief for Havant Thicket Reservoir Northern Access Road Proposals provided by Andrew Hills of Atkins. The RSA brief was issued to Jonathon Clark of Portsmouth Water who approved the brief document on 27th October 2022.

1.2. RSA team

The RSA Team, approved by Jonathon Clark of Portsmouth Water, was as follows:

Rebecca Thomas –	BSc (Hons), MCIHT, MSoRSA, Atkins
Team Leader	(Certificate of Competency in Road Safety Audit gained in 2017)
Roxanne Neufville –	PhD, MCIHT, MSoRSA, Atkins
Team Member	

1.3. Site visit

The site visit to undertake the RSA inspection was carried out by both members of the RSA Team together during daylight hours on the 03 November 2022 between 11:30 and 12:30. During this visit, weather conditions were overcast with heavy downpours, and the road surface along the access track was wet with some large areas of ponding.

Vehicle access to the track is not currently permitted and the B2149 was closed to traffic to allow construction of the junction. No pedestrians or cyclists were observed on the site possibly as a result of the adverse weather conditions.

The site visit was undertaken on foot. The RSA Team were accompanied on the site inspection by Simon Faulkner of Portsmouth Water.

1.4. Scope

The scheme involves the construction of a storage reservoir for Portsmouth Water, in the 'Upper Lake' area of Havant Thicket, between A3(M) to the west and B2149 to the east. To provide access for construction and visitors traffic to/from the Havant Thicket Reservoir site, two options have been chosen to be developed at detailed design. The scope of this RSA covers just the northern access road option (NAR). The southern option will be designed later and will be covered by a separate Stage 2 Road Safety Audit. This RSA considers the operation of the access route during construction of the site and its operation following opening for public use.

1.5. Notes and clarifications

The recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem; alternative methods should be considered by the Design Organisation. GG 119 provides requirements and advice on the process for responding to this RSA report including the production and agreement of a separate RSA Response Report. The RSA Response Report provides the full audit trail of decision making at each stage of the process and captures the changes made as a result of the recommendations made here.

The NAR is designed as a new 3.65m wide single lane single carriageway, with passing bays to allow for two-way traffic. At locations where there are sharp bends, the carriageway has been widened to prevent verge over-run. The speed limit on the NAR will be the 20mph corresponding to a 25m stopping sight distance.

This design was adopted to reduce the loss of Ancient Woodland land. The NAR will be connected to the B2149 via a ghost island junction. The NAR will be 6m wide at the junction and will then taper down to 3.65m at the gate location.

The construction of the reservoir is programmed from 2023 to 2029. The construction of the access road will have to be completed before this to provide access to reservoir construction traffic and will require temporary traffic management to be in place on the B2149.

There are no Departures from Standard associated with the proposals.

The RSA Team requested information regarding visitor car park charges and received the following response:

1. It is intended to have matching parking prices for the visitor centre car park, the Forestry England car park and Staughton Country Park car park.
2. There will be another vehicular access to the visitor centre car park via the southern access via Swanmore Road. This is outside our scope. The Northern Access Road will be the only signposted access to the visitor centre car park.

The RSA team requested additional information regarding visibility along the access road particularly where there are vertical alignment changes. The RSA team was provided with a visibility chart for northbound and southbound vehicles which showed that there is sufficient visibility from one passing bay to the next for a driver at an eye height of 1.05m based on a 20mph speed limit.

2. Items raised at this combined stage 1 and 2 RSA

Problem A

Location: Northern access road

Summary: Risk of parking in passing places

The proposals include the provision of passing places at regular intervals along the single carriageway access track to accommodate two-way traffic. A car park will be available for use by visitors to the site. The RSA Team had concerns that during busy periods when the car park is full or to avoid payment of car park charges, the public may park in the passing places which would hinder the flow of two-way traffic and could lead to unsafe reversing manoeuvres along the track risking a collision with another vehicle.

Recommendation:

It is recommended that measures are put in place to discourage parking in the passing places.

Problem B

Location: Northern access road

Summary: Risk of pedestrians and cyclists using track

The proposals include the erection of 'no pedestrians/cyclists/horse rider' signs at either end of the track and where footpaths cross the track as shown in figure 2-1. The RSA team had concerns that these signs are not always understood by members of the public which could lead to prohibited users entering the track and being involved in a collision with a vehicle. This problem could become more pertinent during construction where pedestrians and cyclists may not be seen by drivers of large construction vehicles and may be less aware of vehicular traffic due to the irregularity of traffic using the route. Existing cycle route signs mounted on timber posts along the track indicate that it is currently used by cyclists.

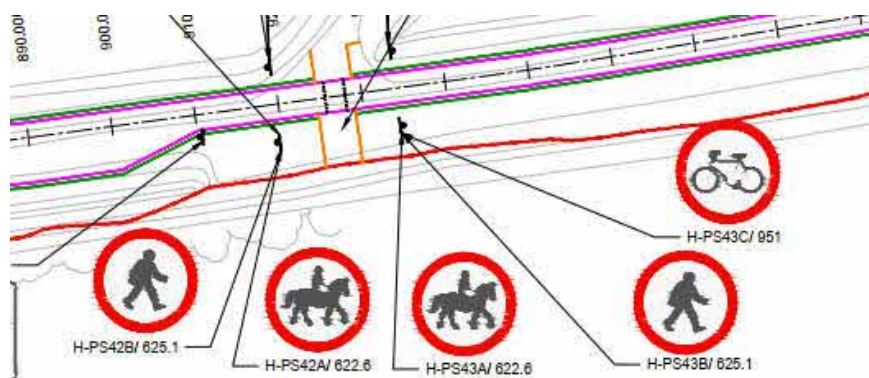


Figure 2-1 – User restriction signs

Recommendation:

Although supplementary plates are not prescribed by the TSRGD it is recommended that sub plates such as 'no pedestrians' etc are installed alongside the prescribed signs to inform the public of the prohibitions. It is also recommended that existing cycle route signs on timber posts are removed.

Problem C

Location: Northern access road

Summary: Pedestrian intervisibility obstructed

A pedestrian crossing point is provided along the track where the footpath emerges from the wooded area. Tree planting is proposed on both sides of the track on either side of the crossing as illustrated in Figure 2-2. Trees with low hanging branches could obstruct intervisibility between pedestrians using the crossing and approaching drivers leading to a pedestrian stepping out into the path of a vehicle and collision occurring.



Figure 2-2 – Trees adjacent to crossing point

Recommendation:

It is recommended that pedestrian visibility splays at the crossing points are shown on drawings and that these are kept clear of vegetation and tree branches.

Problem D

Location: Northern access road

Summary: Risk of inappropriate vehicle speeds

The proposals include a single track with passing places to accommodate two-way traffic which will be subject to a 20mph speed limit. The vertical alignment of the track is such that there are relatively steep gradients at two locations. One of the steep gradients lies on the southbound approach to the proposed uncontrolled crossing as shown in Figure 2-3. The RSA team had concerns that downhill gradients may reduce speed limit compliance with vehicles travelling at higher speeds than 20mph and increase the risk of head-on collisions with oncoming traffic and collisions with pedestrians at the crossing points.

It should be noted that TAL 02/04 which case studies a similar single track layout indicates that, although the track was subject to a 20mph speed limit, average vehicle speeds were at least 5mph above the posted speed limit.

The RSA Team had further concerns that inappropriate speed on the bend in the track at Ch 820 could lead to loss of control collisions.



Figure 2-3 – Vertical alignment on crossing approach

Recommendation:

It is recommended that traffic calming measures are introduced to encourage speed limit compliance.

Problem E

Location: Northern access road

Summary: Risk of unsafe reversing manoeuvres between passing bays

Passing bays are proposed at intervals along the access road to facilitate two-way traffic movements. A 150m stretch of single track has been identified with no passing places between Ch 660 and 810 as illustrated in Figure 2-4. TAL 02/04 recommends a distance of no more than 60m between passing places. This section also lies on a downhill gradient for southbound traffic.

The RSA team had concerns that southbound drivers may be reluctant to wait in the passing bay at Ch 660 to allow for a northbound vehicle to travel 150m, particularly as they will be gathering momentum on the downhill gradient. This could result in northbound vehicles being forced to reverse back along the track to allow a southbound vehicle to enter the passing place at Ch 810. Reversing manoeuvres along the track would increase the risk of collisions with following vehicles.

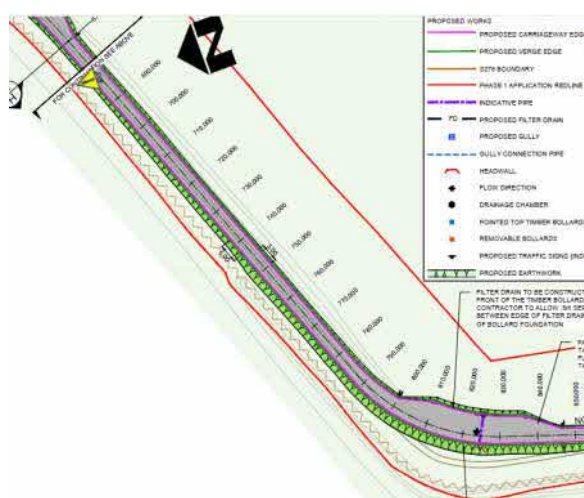


Figure 2-4 – Passing place spacing

Recommendation:

It is recommended that an additional passing place is provided between Ch 660 and Ch 810.

Problem F

Location: Northern access road

Summary: Risk of sign strikes

Passing bay signs are proposed at the change in kerb direction on the entry and exit tapers of the passing places. An example of this is provided in Figure 2-5. The swept path of an HGV is shown to pass very close to the signs at each passing place. Inadequate clearance between the signs and a large vehicle with lateral overhang could lead to sign strikes.

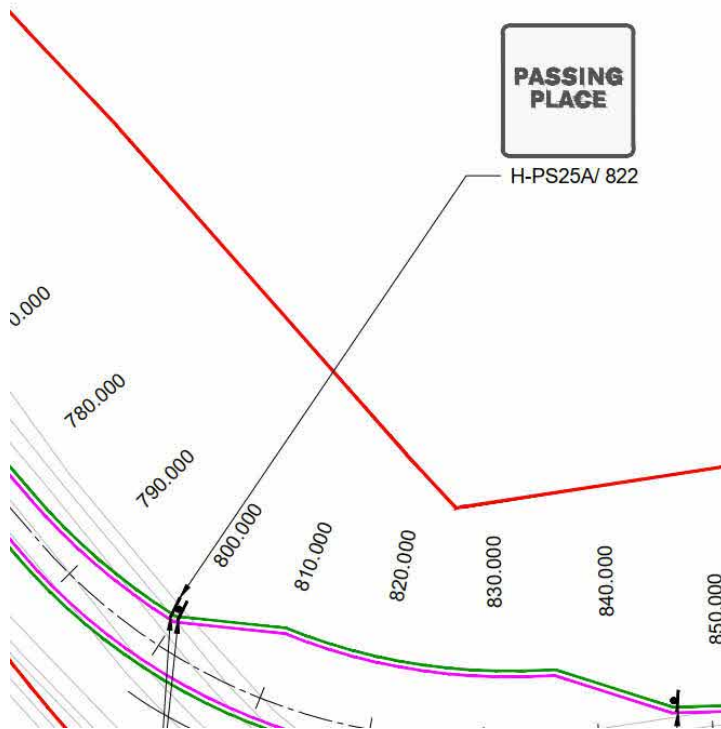


Figure 2-5 – Sign positioning at passing bay

Recommendation:

It is recommended that sufficient clearance is provided between the signs and the edge of carriageway.

3. Audit team statement

We certify that this RSA has been carried out in accordance with GG 119 and HCC's TG 18.

Team Leader

Rebecca Thomas
Senior Operational Safety
Consultant
Atkins

Signed:



Date: 10th November 2022

Team Member (s)

Roxanne Neufville
Safety Risk Consultant
Atkins

Signed:



Date: 15th November 2022

Appendices

Appendix A. Information provided

The following is a list of information provided to the RSA Team.

A.1. Documents

Type	Title	Reference	Revision	Date
Brief	Havant Thicket Reservoir Northern Access Road - Road Safety Audit Brief	HTR-ATK-XX-XX-HS-Z-0003	-	25/10/2022
	Access Routes – Vehicle Access Junction North (B2149).	HTR-ATK-AR-RE-SH-D-0010 P02	P02	
	Access Proposals to the Havant Thicket Reservoir	HTR-ATK-XX-XX-RP-Z-0021	-	
Previous RSA (for access junction)	Access Proposals to Havant Thicket Reservoir Stage 1 Road Safety Audit	-	1.0	March 2022
Designer's Response to previous RSA (for access junction)	Access Proposals to Havant Thicket Reservoir Stage 1 RSA Response Report Rev 2.5	HTR-ATK-AR-RE-DT-D-0004	2.5	

A.2. Drawings

Reference	Title	Revision	Date
HTR-ATK-AR-RE-DR-D-0018	Phase 1 Northern Access General Arrangement	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0019	Phase 1 Northern Access General Arrangement	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0021	Section 278 B2149 Pavement Details	C06	7/10/2022
HTR-ATK-AR-RE-DR-D-0022	Northern Access Road Pavement Layout	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0023	Northern Access Road Pavement Layout	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0024	Section 278 B2149 Typical Cross Sections (To show tie in with Phase 1 – for information only)	C08	7/10/2022
HTR-ATK-AR-RE-DR-D-0025	Section 278 B2149 Typical longitudinal section	C06	7/10/2022
HTR-ATK-AR-RE-DR-D-0026	Section 278 B2149 Proposed Traffic Signs and Road Markings	C04	7/10/2022

HTR-ATK-AR-RE-DR-D-0027	Phase 1 Northern Access Proposed Traffic Signs and Road Markings	C03	7/10/2022
HTR-ATK-AR-RE-DE-D-0029	Phase 1 Northern Access Proposed Traffic Signs and Road Markings	C03	7/10/2022
HTR-ATK-ZZ-ZZ-DR-L-0030	Landscape Plan Northern Access Sheet 4 of 4	C05	13/10/2022
HTR-ATK-AR-RE-DR-D-0035	Northern Access Road Horizontal Alignment Plan	C01	7/10/2022
HTR-ATK-AR-RE-DR-D-0036	Northern Access Road Horizontal Alignment Plan	C01	7/10/2022
HTR-ATK-AR-RE-DR-D-0040	Northern Access Road Kerbing Layout	C01	7/10/2022
HTR-ATK-AR-RE-DR-D-0041	Northern Access Road Kerbing Layout	C01	7/10/2022
HTR-ATK-AR-RE-DR-D-0059	Northern Access Road Existing Statutory Undertaker Plant Location	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0070	Northern Access Road Core and Trial Pit Location	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0071	Northern Access Road Core and Trial Pit Location	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0072	Phase 1 Northern Access Typical Cross Sections	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0073	Pavement Built Up and Tie-in Details	C03	7/10/2022
HTR-ATK-AR-RE-DR-D-0078	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0079	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0080	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0081	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0082	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0083	Northern Access Road Detailed Cross Sections	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0092	North Access Junction Vertical Profile Sheet 1 of 2	C02	7/10/2022
HTR-ATK-AR-RE-DR-D-0093	North Access Junction Vertical Profile Sheet 2 of 2	C02	7/10/2022
HTR-ATK-AR-ZZ-SK-D-0018	B2149 North Access Junction Drainage Layout	C04	21/7/2022
HTR-ATK-AR-ZZ-SK-D-0019	Northern Access Drainage layout	C03	10/10/2022
HTR-ATK-AR-ZZ-SK-D-0020	Northern Access Drainage layout	C03	7/10/2022

HTR-ATK-AR-RE-DR-D-0031	Swept Path at Passing Bays (Northern access)	P01.2	-
HTR-ATK-ZZ-ZZ-DR-L-0027	Landscape Plan – Northern Access Road Sheet 1 of 4	C05	13/10/2022
HTR-ATK-ZZ-ZZ-DR-L-0028	Landscape Plan – Northern Access Road Sheet 2 of 4	C05	13/10/2022
HTR-ATK-ZZ-ZZ-DR-L-0029	Landscape Plan – Northern Access Road Sheet 3 of 4	C05	13/10/2022
HTR-ATK-ZZ-ZZ-DR-L-0030	Landscape Plan – Northern Access Road Sheet 4 of 4	C05	13/10/2022
HTR-ATK-RZ-RE-DR-L-1143	NORTHERN ACCESS ROAD – TREE WORKS PLAN	C05	13/10/2022
HTR-ATK-RZ-RE-DR-L-1144	NORTHERN ACCESS ROAD – TREE WORKS PLAN	C05	13/10/2022
HTR-ATK-RZ-RE-DR-L-1146	NORTHERN ACCESS – TREE PROTECTION PLAN	C05	13/10/2022
HTR-ATK-RZ-RE-DR-L-1147	NORTHERN ACCESS – TREE PROTECTION PLAN	C05	13/10/2022
HTR-ATK-AR-ZZ-SK-D-0033	CHECK DAM DETAILS	C05	10/10/2022

Appendix B. Problem location plan

The plan below indicates the location of the problems raised in Section 2 of this combined stage 1 and 2 RSA. The drawing used is not necessarily the source from which the problems have been identified. The plan is not intended to indicate the precise location of the collision risks nor of any recommended remedial actions.

General problems: **D** **F**

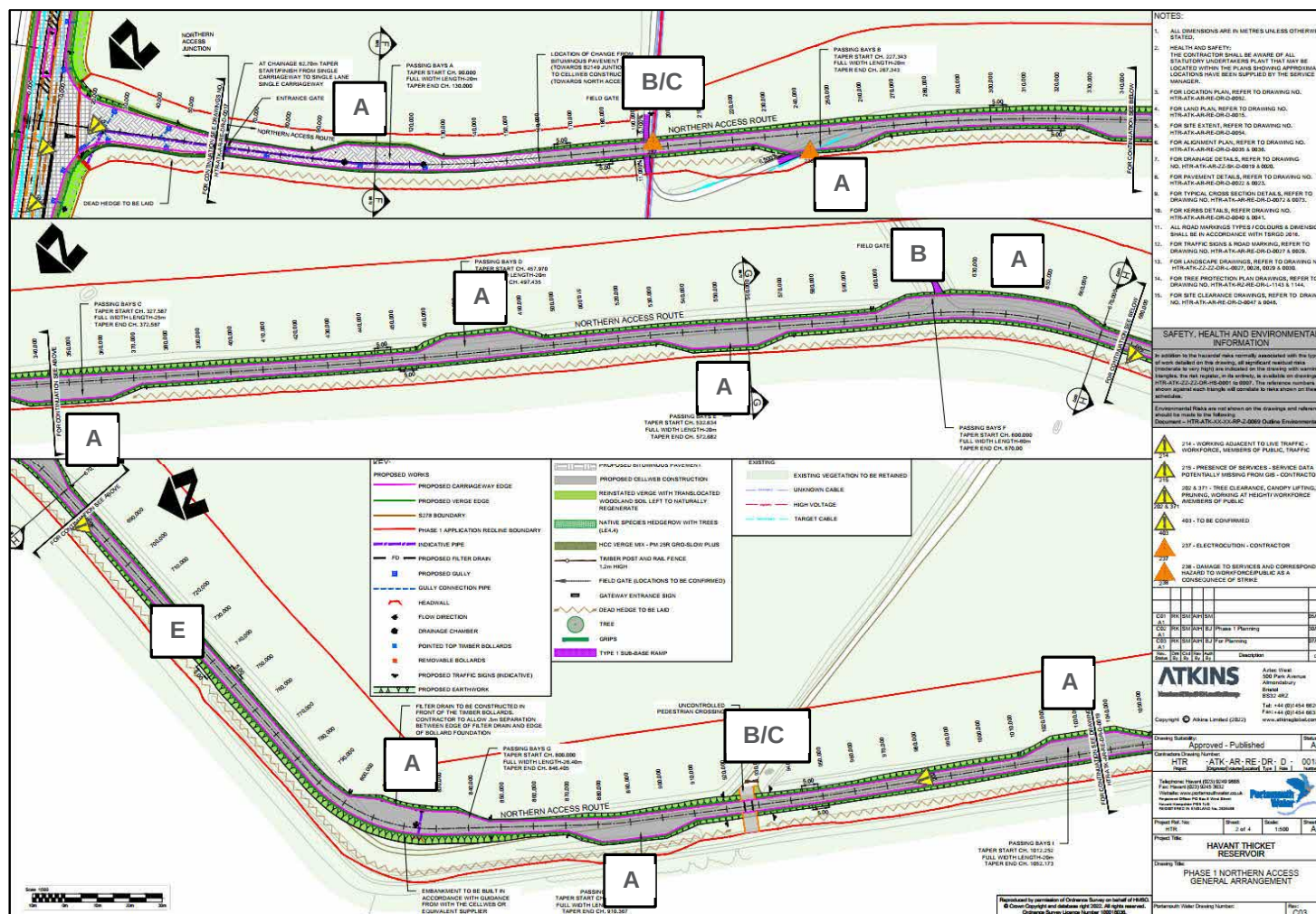


Figure B-1 –Northern Access Road problem location plan Sheet 1

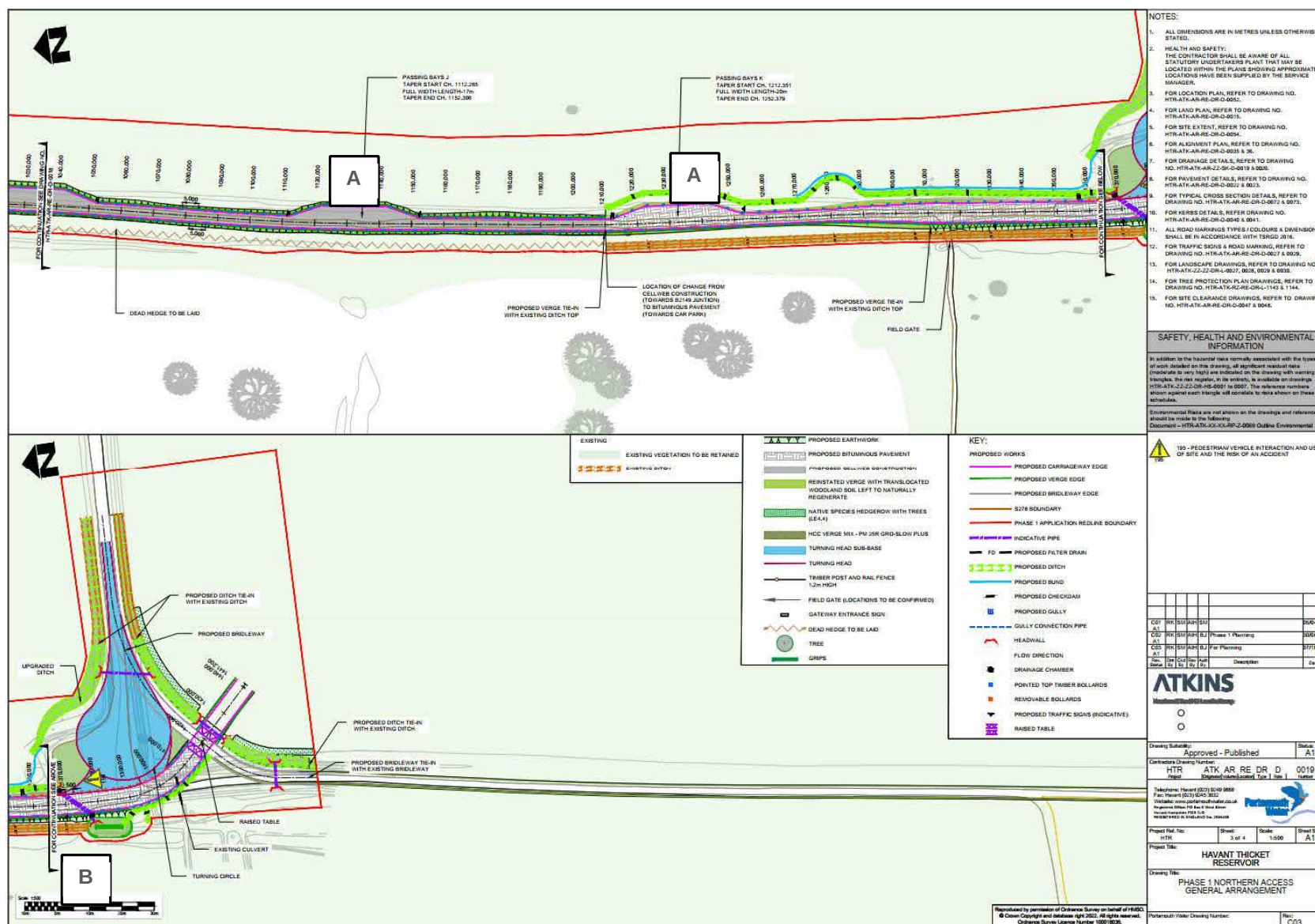


Figure B-2 –Northern Access Road problem location plan Sheet 2

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