



Cyngor **Abertawe**
Swansea Council

Active Travel 2020-21

Mayals Road, Cycle Provision.

Stage 3. Road Safety Audit

Completion of Construction- Report Ref No. 00255.



View of Mayals Rd, Junction of Westport Ave and Green Close.

Document Control

Document Title	<i>Mayals Road, Active Travel 2021-2022, Cycle Provision Stage 3 Road Safety Audit</i>
Author	<i>L.H.Jones and M.J.Pinske</i>
Reference Number	<i>000255</i>
Owner	<i>Swansea Council</i>
Revision	<i>Revision A.</i>
Document Status	<i>Final</i>
Control Date	<i>11 July 2022</i>

Record of Issue –

Issue	Status	Author	Date	Check	Date	Issued	Date
1	Draft	LHJ / MJP	08.02.22	AFF	11.04.22	MST	19.04.22
2	Final	LHJ / MJP	20.5.22	MST	22.06.22	SD	

Distribution

Organisation	Contact	Copies

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1. Project Details

1.1 Project Details

Report Title:	<i>Mayals Road, Cycle Provision Stage 3 Road Safety Audit</i>
Date:	<i>8th February 2022</i>
Document Reference & Revision:	<i>00255 Rev. A.</i>
Prepared By:	<i>L.H.Jones and M.J.Pinske</i>
On Behalf of:	<i>Swansea Council</i>

2. Introduction

2.1 Background

2.1.1 This report results from a Stage 3. Road Safety Audit carried out on the Mayals Road, Cycle Provision, Active Travel Scheme. The Road Safety Audit has been undertaken at the request of Mr Alan Ferris, Road Safety Manager, Highways and Transportation, Swansea Council. The audit was carried out during February 2022.

2.1.2 The Road Safety Audit Team membership, approved by Stuart Davies, Head of Service, Highways & Transportation, and the Overseeing Organisation Project Manager Alan Ferris was as follows:

*LH Jones MCIHT, MSoRSA, RSA Cert.Comp	<i>Position</i> Road Safety Engineer, <i>Company</i> , Swansea Council, Traffic & Road Safety Team Audit Team Leader
MJ Pinske RoSPA qualified Road Safety Engineer	<i>Position</i> Road Safety Engineer, <i>Company</i> , Swansea Council, Traffic & Road Safety Team Audit Team Member
Mr Paul Daniells	South Wales Roads Policing Unit.
Mr Andrew Carter	South Wales Roads Policing Unit. .
Richard Organ. Resident Engineer	Swansea Council QS/ site supervision Mayals Rd, acting as Contractors Representative.
Ceri Mavin Graduate Engineer	Student Observer.

Audit Team members marked with an asterisk (*),above hold a Highways England Approved Certificate of Competency (CoC) in Road Safety Audit, in accordance with Article (1–3) of EC Directive 2008/96/EC.

2.1.3 The initial audit visit took place on site on *Monday 17th January 2022*. The Road Safety Audit was undertaken in accordance with the Road Safety Audit Brief provided and approved by Mr Alan Ferris the Overseeing Organisation Project Manager. The audit comprised an initial examination of the documents provided in the Brief as detailed in Appendix A.

2.1.4 The Audit Team visited the site together during the morning and afternoon of the 17th January 2022 between the hours of 10:00 and 15:50. During this site visit the weather was mixed cloudy and sunny but dry giving a dry road surface. At the time of the site visit traffic was light and free flowing with some pedestrian and cyclist movement.

Further visits were made, initially through the day time on the 18th of January, in which the completed route was cycled by a member of the Audit Team.

Following that a night-time visit was carried out by the Audit team leader and team member, between the hours of 17:30 and 21:00 hrs. Observations of Non-Motorised Users (NMU) use and illumination provision were made and any issues arising noted.

2.1.5 The terms of reference of the audit are as described in GG 119 Rev.2. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.

2.1.6 The scheme audit objectives, as described in the brief, are to provide a new active travel route, linking Clyne Common with the foreshore via Mayals Road.

The intention of the route is to benefit all NMU's which includes walkers of all ages, wheelchair users, people with other disabilities and cyclists. It intends to aid Active Travel for all non-motorised users to access work, schools, shops, leisure facilities and public transport without using a car. Whilst ensuring that the use of Mayals Road by motorists is not compromised.

2.1.7 The description in the scheme brief, covered the interface with Clyne Common and Swansea Promenade Shared Use Path on Mumbles Road foreshore. The drawings as listed in Annex A identify the limits of this Audit. However, comments and observations are included for completeness at the western end where the route links to Clyne Common. Furthermore, other than several hundred metres of Shared Use Path (SUP) developed from existing footway, at either end of Mayals Rd, the majority (900m), is dedicated cycle provision, with the existing footways not forming part of this scheme. There are however, multiple controlled crossings and bus stops, within this length where NMU provision comes together and are improved as part of the scheme audited.

2.1.8 The Audit Team have been informed of a site specific, disability led Departures from Standard for the scheme, regarding the tactile layout at Bus Stops on Mayals Rd.

- 2.1.9 The scheme has been examined and this report is compiled regarding only the safety implications for highway users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should **NOT** be construed as implying that a technical audit has been undertaken in any respect.
- 2.1.10 Any 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, in accordance with GG 119, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

3. Items Raised At The Stage 2. Audit

3.1 General

3.1.1 All the issues raised in the *Stage 2 Road Safety Audit* report, *October 2020*, appear to have been resolved. Designers Responses produced and issued by the designers and overseeing organisation, addressing issues raised in the RSA 2.

4. Items Raised At This Stage 3. Audit

4.1 General

4.1.1 PROBLEM 1

Location: Throughout the scheme

Summary: Organic Debris and mud.

Organic detritus on the surface of the new infrastructure has the potential to lead to user instability, in this case, especially to disabled users and young inexperienced cyclists using this facility. This could lead to a loss of control, skidding or unseating of the rider with the potential to enter the carriageway. Any collision resulting from this has the potential to result in serious injury.



West Bound Approaching Fairwood Rd



East Bound controlled crossing at Clyne Drive

Scheme wide debris

RECOMMENDATION.

It is recommended that a quality review is carried out throughout the scheme to ensure it meets the needs of all users. That all affected areas of the scheme be cleared of any Fallen Organic Debris (F.O.D) and unwanted materials. An environmental assessment and arboriculture review should be carried out with a view to reducing ongoing issues. Future provision should be made for an annual clearance and sweeping of Non-Motorised Users (NMU) routes along Mayals Rd.

Designers Response – Swansea Council Highways Department operate a programmed and a Reactive Highway Maintenance Regime. Mayals Road is a primary distributor that benefits from the regularly programmed mechanical sweeping of its highways infrastructure. Swansea Council's Highways Maintenance Department has a team of Highway Inspectors who identify issues such as this.

The design team are confident that the constructed design addresses the needs of the majority of anticipated users as far as is reasonably practicable considering the constraints of the available highway. A Stage 4 Road Safety Audit for Mayals Road will be undertaken using a minimum of 12 months of validated post highway scheme-opening road traffic data to identify any latent concerns.

4.1.2 PROBLEM 2

Location: Throughout the scheme

Summary: Poor light levels, unlit areas of darkness, loss of control

Existing lighting remains largely unaltered and therefore provision favours the carriageway and new cycle provision adjacent to the road. NMU's on existing footways using Mayals Rd during dark hours face poorly lit or unlit areas and loss on inter-visibility between vulnerable users. This also results in issues of personal safety whilst walking and using the bus stops. This is particularly noticeable at possible conflict locations where pedestrians and cyclists come together, such as bus stops and uncontrolled crossings. Cyclists unaware of pedestrians because of poor lighting levels, could brake late and lose control if required to take evasive action. This type of situation could possibly lead to pedestrian/cyclist conflict due to reduced perceptibility with the potential of consequential injury. Night-time observations also revealed concerns over the retro-reflectivity of bollards provided throughout the scheme.



RECOMMENDATION.

It is recommended that:

- Light levels on poorly lit areas of the scheme be improved to benefit all users.
- Lighting within the bus stops be provided.
- Lighting levels at NMU convergence also be reviewed to increase conspicuity of layout and improved reflectivity.
- Bollard retro-reflectivity performance is poor and should be reviewed throughout the scheme.

Designers Response – Discussions with Swansea Council's Public Lighting Section during the design phase confirmed the existing public lighting system along Mayals Road conforms to the standards required in BS:EN13201. However, it is noted that the existing tree canopy may reduce the efficacy. The design team will co-ordinate with the Tree Services Team to ensure tree branches are pruned and crown lifted so they do not interfere with the street illumination levels.

Currently, there is no requirement to illuminate bus shelters. Bus shelters are only illuminated when they are owned and maintained by a third party under contract to the Highway Authority, these shelters generally incorporate illuminated advertising panels.

According to the manufacturer of the cycle bollards used on Mayals Road, all retroreflective materials meet the requirements in table NA1 of BS EN 12899-1:2007 Fixed Vertical Road Signs. Retro-reflectivity is defined as a surface that reflects light radiation back to its source with minimum scattering, not under ambient light. Also, under the Road Vehicles Lighting Regulations it is illegal to cycle on a public highway through the hours of darkness without front and rear facing lights. On that basis, the design team are satisfied that the reflectivity of the bollards is consistent with the required specification.

4.2 Local Alignment

4.2.1 PROBLEM 3

Location: Chainage 225, Initial parking bay taper South side Mayals Rd. Existing footpath route from Fernhill Close.

Summary: Unseen pedestrians suddenly emerging into the carriageway.

Vehicles outbound (West) uphill towards Clyne Drive, at times, are unexpectedly confronted with pedestrians emerging from behind the retaining wall and suddenly crossing Mayals Rd well before the controlled crossing. This was observed at night-time too. Some pedestrians using the existing footpath from Fernhill Close are following the existing footway and desire line but not using the controlled crossing at chainage 300. They are instead carrying on, before stepping into the carriageway at the taper at the beginning of the parking bay. Crossing at this point of Mayals Rd to go toward Mumbles Road. This area is both unlit and obscured by the existing retaining wall. This could result in a collision between vehicle and pedestrian with the potential for serious injury to occur.



West Bound



East bound

Between Mumbles Bay Court and Clyne Drive, scheme chainage 230.

RECOMMENDATION

It is recommended that, the kerb line and parking taper be amended and locally re-aligned to provide a more suitable and visible uncontrolled crossing point, following this desire line. Also that the area be illuminated to address issues of approach visibility at this location.

Designers Response – *The footway link and desire line from Fernhill Close whilst not ideal, is a legacy of the original highway layout. There is a signal controlled pedestrian crossing in close proximity to Fernhill Close to accommodate the pedestrian demand, the footway further east is purely to provide a pedestrian route for motorists parked at the layby. Accident records reveal that there is not an issue of pedestrian / motorist conflict at this location and the scheme has done nothing to further exacerbate this issue.*

4.2.2 PROBLEM 4

Location: Chainage 310, Communication Service cabinet adjacent to the Cycle track, West of the Light controlled crossing, North side of Mayals Rd

Summary: Cyclist unexpectedly forced to use carriageway, potential collision with vehicles on Mayals Road.

The existing Communications cabinet and associated access chambers position in relation to the cycle track means that, during maintenance, open doors and lifted chamber lids and barrier would compromise the use by cyclists. Potentially forcing cyclist into the carriageway to negotiate temporary obstacle. This could result in collision with vehicles going ahead inbound East on Mayals Rd, with the potential for serious injury.



Controlled crossing East of Clyne Drive, chainage 320.

RECOMMENDATION

It is recommended that the non-passive existing, but redundant brown on white tourist sign, a hazard in itself, adjacent to the cabinets is removed and a temporary dismount cyclist bypass route is provided to negate the temporary maintenance issue.

Designers Response – *Discussions with the telecommunications company during the design stage confirmed this communications cabinet is maintained on average 3 to 4 times a year. Any maintenance works undertaken requires the telecommunications company to temporarily close the cycle path with barriers and advance “Cyclist Dismount” signing at an appropriate location upstream. This will enable the cyclist to safely negotiate the temporary closure on foot before re-mounting and continuing their onward journey.*

4.3 Junctions

4.3.1 PROBLEM 5

Location: *Mayals Gardens junction with Mayals Road.*

Summary: *Poor surface condition and gradient at tie in with main road.*

The Cycle provision at this junction has an uneven and pitted finish and a slick coloured surface, which could pond in winter. This could lead to loss of control or failure to stop.



Mayals Garden and Southern Down Avenue

RECOMMENDATION

It is recommended that the surfacing at this junction be re-graded and the coloured surface re-applied.

Designers Response – *The section of the cycle track highlighted is on an uphill section where users of the facility are likely to be travelling at low speeds. The gradient is approximately 1 in 11 (9%) at this location, therefore, surface water is unlikely to pond during any inclement weather in winter months.*

4.4 Non-Motorised User Provision

4.4.1 PROBLEM 6

Location: Light Controlled pedestrian crossing, North side of Mayals Rd. convergence of all NMU's scheme chainage 300.

Summary: Layout and tactile provision, potential pedestrian conflict and vision-impaired hazard, exacerbated if speeding cyclists are involved.

The layout provided brings all NMU and vulnerable users together in order to use the crossing; with inbound cyclists, potentially travelling at speed. The use of tactile paving, whilst standard, is potentially disadvantageous to the vision impaired. Priority is unclear, possibly forcing cyclists unexpectedly into the carriageway to avoid contact with others at the crossing. This could result in side or rear collision with vehicles going ahead leaving the potential for consequential serious injury to occur. Vision impaired pedestrians using the tactile paving to guide them to the crossing push button may be unaware of crossing the cycle route and may even stand on it while waiting to cross. This creates potential for pedestrian and cyclist contact, especially at night, with potential for injurious collisions between pedestrians and cyclists.



RECOMMENDATION.

It is recommended that designers revisit latest guidance. Including DFT Guidance on the Use of Tactile Paving Surfaces December 2021. With a view to simplifying and giving clarity to the provision, layout and priority around the crossing, especially for vision impaired users.

Designers Response – *Whilst the tactile crossing arrangement used is in accordance with the standard layout at this type of crossing, the design team accept that cyclist could potentially approach the crossing at speed. The design team will consider the use of additional cycle warning markings and tactile paving to ensure clarity of priority and report any findings in the Road Safety Audit Stage 4.*

4.4.2 PROBLEM 7

Location: scheme wide,

Summary: Cycle track too narrow to pass another cyclist safely.

The existing width of the cycle track will only comfortably accommodate a single cyclist going ahead. Quicker riders, obstructed by a slower cyclist ahead, especially on steeper sections, have no way of readily passing safely. Whilst it is worth commenting that with the ever-increasing use of electric assist cycles this may become less of an issue,

observations during the site visit saw cyclists dropping onto the carriageway to pass a slower rider. This manoeuvre could lead to the situation of the faster cyclist unexpectedly deviating into the path of a faster traveling vehicle on Mayals Road. This has the potential to result in a cyclist/vehicle conflict with consequential serious injury. Passing another cyclist is achieved more readily where multiple accesses exist. This additional space allows slower cyclists to move briefly to the left to facilitate the faster cyclist passing. However, there are sections, where long lengths of the cycle route are do not have this option.

Additionally, a night-time observation, saw a cyclist, without lights, using the route in the opposing direction which, if repeated, would exacerbate this issue.



RECOMMENDATION

It is recommended that passing places are provided on this and all other sections of Mayals Rd, where cyclist cannot utilise space provided by an access in order to pull in and be passed.

Designers Response – *Whilst the hybrid cycle facility has been designed to encourage the uptake of cycling by providing a safer cycle facility segregated from vehicular traffic and pedestrians. It is accepted that faster, more confident, experienced cyclists may opt to not use the facility and continue riding on carriageway where it is easier to pass slower users on the cycle path, especially in the downhill direction.*

The hybrid facility has been designed to be used in the same direction as normal vehicular traffic and this message is conveyed through the use of directional signs, cycle track

directional markings, directional arrows and “No Entry” symbols on the reverse side of bollards. These are considered to be adequate to advise cyclists on the appropriate use of the facility.

4.4.3 PROBLEM 8.

Location: Scheme wide at bus stop locations, (4No.), except bus stop layout at Fairwood Road.

Summary: Cyclists and pedestrian conflict, vision impaired uncertainties during use, potentially stepping into the path of a cyclist or stepping into the carriageway.

The current design layout drawings provided for this Audit do not match actual provision on site. The on-site provision does not give a clear message to users, especially those with sight impairment. Bus stop shelter provision is located between the cycle track and carriageway, facing towards the cycle track, backing to the kerb and carriageway. The bus stop's open face and seating are within touching distance of a passing cyclist.

The existing footway is at the back of the verge. Transitions for pedestrians across to the bus stop shelter and waiting area is achieved by crossing the cycle path. Cycle route bollards provide a gateway feature immediately upstream of an array of various tactile paving and coloured surface. There is a “SLOW” on the cycle track approaching the bus stop.

The current layout does not appear to follow the latest guidance and best practice and as a result is unclear and potentially confusing.

Tactile paving crossing the existing footway opposite the shelter, conveys an unclear message to those with visual impairment.

Two adjacent sets of tactile paving, either side the cycle track convey different messages. With one set appearing to indicate a hazard, crossing the cycle track, directly toward the bus shelter seating. The other set, to the right of the shelter, across the same cycle track, indicating an uncontrolled crossing with “Zebra” markings on the cycle track.

Once beyond this set, an unaware vision impaired user, could assume they were on a footway with the potential to step straight into the carriageway without further tactile warning; as the high kerb immediately beyond the tactile is where stop users get on the bus. No tactile indication of an on-street platform is provided. This has the potential to result in serious injury.

Similarly, vision impaired users, once successfully seated in the shelter are not furnished with any disability friendly information or signing to allow them to readily understand their surroundings and the immediate proximity of a passing cyclist. This has the potential to create conflict between cyclist and pedestrian with may lead to consequential injury occurring to either of both parties. Informatory signing on the footway opposite is all but useless to the vision impaired.

Night-time observation revealed that these issues are exacerbated as the area is not directly lit and presents itself as uninviting to users, possibly leading to concern over personal safety.



Scheme wide bus stop provision.

RECOMMENDATION

It is recommended that designers producing a simpler, logical and consistent layout, in keeping with latest guidance. User friendly to all, especially vision and mobility impaired highlighting the immediate hazards and providing additional beneficial information signing. It is also recommended that night-time illumination is provided within the shelter and immediate area to improve personal safety and awareness of surroundings to benefit both cyclists and pedestrians. These changes will also improve driver awareness of the bus stop.

Designers Response – *The original design detail of the cycle by-pass at bus stops was based on the suggested detail DE029 in the 2013 Active Travel (Wales) Design Guidance, further refined in accordance with the standard detail DE502 as noted in the 2020 Active Travel (Wales) Design Guidance. This design detail on Mayals Road included the 1 in 10 horizontal deflection on approach to the bus stop area, the mini zebra markings, cycle markings and blister tactile paving. The design team added further safety features such as additional hazard paving in the paved areas warning sight impaired individuals they were approaching a potential hazard (the cycle bypass), “SLOW/ARAF” markings on cycle approach to the bus stop area and blue coloured surface to further inform cyclists they are approaching an area where increased caution is advised. The blue coloured surface also offers a contrasting colour to sight impaired individuals indicating a change of surface/use.*

Under the Active Travel (Wales) Design Guidance it is recommended that Highway Authorities engage with local disability groups when implementing project designs. Following the completion of the first bus stop location on Mayals Road, the local representatives from Guide Dogs Cymru and Sight Life Wales were invited to attend site to review the arrangement and offer comment prior to works to the remaining bus stop locations continuing. Whilst having been installed to current Active Travel Design Guidance, the representatives felt that the message could be clearer and recommended some amendments to the tactile layout. Following that site meeting, all the recommended alterations were made to the layout and replicated at the other bus stop locations.

It is noted that these amendments should be classified as a departure from Active Travel Guidance and subsequently, the developed detail introduced will be shared with Welsh Government at a relevant engagement meeting for their review.

Night time illumination is addressed in section 4.1.2. above. (Problem 2)

4.4.4 PROBLEM 9.

Location: Junction of Southerndown Avenue and Mayals Road

Summary: Severe camber on cycle track, leading to loss of control

Cyclists eastbound downhill, having crossed the junction with Southdown Avenue at grade, rise up to re-join the cycle track, but have to negotiate a section passing a large tree where the camber towards the carriageway is considered excessive. Younger or inexperienced riders slowing or losing momentum on this section, will naturally veer towards the road. This could lead to cyclists braking, becoming unseated and falling, or suddenly dropping unexpectedly onto carriageway in front of a passing vehicle with the potential for consequential serious injury.



Southdown Avenue junction with Mayals Road - Westbound

RECOMMENDATION.

It is recommended that this section of the cycle track be re-graded to eliminate adverse camber and provide a safer and more user friendly surface for users.

Designers Response – *The cycle path crossfall at this location is due to the adjacent mature Norwegian Maple tree root system being so close to the surface. As detailed in the Tree Survey, this tree specimen was not classed as diseased or dying and is otherwise in good health and vigour. The only way to continue the cycle route without removing this desirable tree was to slightly increase the cycle path cross fall over the affected length. On most cycle infrastructure localised changes in cross fall are common. However, the design team will consider the introduction of cautionary signing on the cycle path at this location.*

4.4.5 PROBLEM 10

Location: Opposite the junction of Whitegates and Mayals Road

Summary: Potential for pedestrians using park bench to be struck by cyclists.

Cyclists Eastbound on Mayals Road downhill pass, possibly at speed, directly in front of an existing park bench. Pedestrians approaching or leaving the bench risk being struck with the potential of injury to both parties. There is no direct access to the bench from the existing footway, pedestrians have to cross the verge and occupy the cycle track to use

it. Vision and mobility impaired are disadvantaged and any benefit lost, even though it is located at the top of a hill where it would readily be utilised.



Park Bench- opposite Whitegates junction with Mayals Road.

RECOMMENDATION.

It is recommended that the park bench be uplifted rotated and re-positioned with new hard standing so pedestrians can access it readily whilst avoiding conflict with passing cyclists.

Designers Response – *The design team acknowledge the issue and will arrange for the bench to be re-located to back of verge adjacent to the existing footway to allow pedestrians to use the bench from the footway. A short section of hardstanding will be constructed to facilitate this.*

4.5 Road Signs, Carriageway Markings.

4.5.1 PROBLEM 11.

Location: Mumbles Bay Court Nursing Home, access/egress. Scheme Chainage 80m, 3m wide shared use path (SUP).

Summary: Restricted and limited visibility between passing cyclists and emerging vehicles, leading to side impact and potential injury.

Cyclists proceeding, in both directions on the shared use path, have restricted visibility of the walled access/egress to Mumbles Bay Court. Vehicles emerging across the shared use footway could collide with unaware cyclists as they pass, possibly leading to

secondary collision with vehicles on the main carriageway with the potential for serious injury to the cyclist. Younger and less experienced riders may be particularly vulnerable, not anticipating obstruction to the path. This likelihood is increased on the downhill approach where higher speeds may be expected. Observations during the hours of darkness, further highlighted this concern.

Whilst measures in the form of a length of hatch markings and a “SLOW” have been provided inbound (East), on the downhill approach, these measures are insufficient and are not provided outbound (West), on the uphill approach.



RECOMMENDATION.

It is recommended that, existing hatching provided be widened and a coloured infill applied to improve conspicuity, guiding cyclists further away from the access as they pass. This measure should also be repeated Westbound and TSRGD Diagram 1057, (cycle lane), applied within the access to improve driver awareness.

Designers Response – *The design team acknowledge the issue, the existing hatching will be widened to leave a full 3.0m shared use path and a coloured infill applied. The same detail will be mirrored on the uphill approach. This may necessitate constructing a short section of shared use path and relocating one bollard to facilitate a smooth transition.*

4.5.2 Problem 12.

Location: Chainage 270, North side Mayals Rd, shared use surface diverge/merge

Summary: Unclear route signing, potential cyclist and pedestrian conflict.

Cyclist travelling outbound (West), uphill, on the shared use path (SUP), are expected to diverge at this point and utilise the controlled crossing to access the South side of Mayals Rd; sharing a short 30m section with inbound cyclists and pedestrians using the crossing, but avoiding others using the footway. This area lacks positive, easily read signing for cyclists and pedestrians and also presents an unclear route bisected by a non-surfaced and debris ridden triangle. This represents a maintenance liability as well as being a trip hazard to be avoided or negotiated by all but being especially difficult for vision impaired and people with mobility issues. Uncertainty, avoidance and sudden last minute changes to direction, could result in collision between cyclist and pedestrian, especially at increased speeds with the potential to result in injury.



Westbound transition from SUP to Cycle track at controlled crossing.

RECOMMENDATION.

It is recommended that – this area be simplified, debris removed, sudden changes in surfaces remedied and clear, meaningful signing and markings provided to avoid uncertainty and last minute decision making. The provision should be simple, logical and consistent, in accordance with best practice.

Designers Response – *The design team acknowledge the issue and will introduce additional cycle direction markings indicating where cyclists are expected to ride. Hazard tactile paving will also be introduced where the existing pedestrian footway merges with the shared use facility. The effect of these measures will be reported in the Road Safety Audit Stage 4.*

4.6 Telematics and Lighting.

4.6.1 PROBLEM 13

Location: Chainage 300, Clyne Drive, Light controlled pedestrian crossing, south footway

Summary: Non-illuminated crossing area - Unseen pedestrians emerging into oncoming traffic.

It was observed at night that pedestrians crossing from the south side to the north side of Mayals Road, using the controlled crossing, are not readily observed until they step well onto the crossing because that side of the street is not directly illuminated and the push button control is in darkness. This could result in pedestrians being struck by vehicles going ahead, especially if the push button isn't activated properly prior to crossing. This creates the potential for serious injury occurring.

Similarly, the signal control cabinet is in darkness and poorly orientated to open onto the footway during maintenance with the potential to block it almost completely. This in turn creates a hazard for pedestrians.



Controlled Pedestrian Crossing – Clyne Drive.

RECOMMENDATION

It is recommended that the area around this side of the crossing be properly illuminated. Also, that the orientation of the control cabinet be amended to provide a separate service area, not compromising the footway during Telematics maintenance.

Designers Response – *Within Traffic Signs Manual: Chapter 6: Traffic Signals (2019) reference is made to supplementary lighting to allow pedestrians waiting to cross to be adequately seen by drivers, however this is not a specific design requirement. During the design process, detailed advice on suitable lighting level was sought from the Council’s public lighting section. Under design guidance “TR12 – Lighting of pedestrian Crossings” Pedestrian Crossings with traffic lights are not required to be lit to a higher standard.*

Under normal fault free operation when the pedestrian demand button is pressed the crossing facility will immediately provide pedestrians with a green signal to cross, following the completion of all relevant all red safety times. This operation means pedestrian delay is kept to an absolute minimum and almost completely removes any situation of a pedestrian waiting to cross the carriageway irrespective of the lighting levels at the time. The only times when the facility would differ from this operation are: Namely, if a pedestrian has already operated the crossing and a second pedestrian demand is inputted immediately after the green man signal phase has ended. In this instance, the signal timings have to cycle through their minimum phases until the next pedestrian phase can be called, this has a maximum limit of 30 seconds before the second pedestrian is given a signal to cross. The only other instance where a delay may be encountered, would be under fault conditions.

The design team will monitor the signal operation and report any findings in the Road Safety Audit Stage 4.

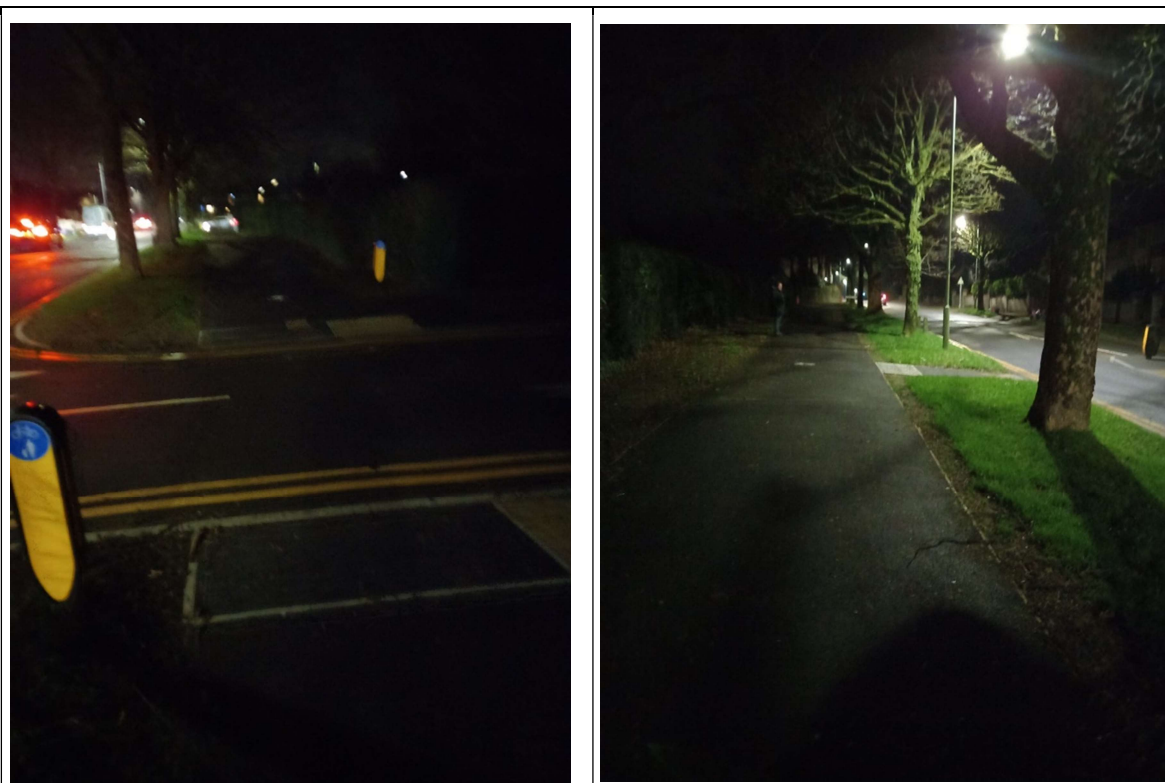
4.6.2 PROBLEM 14.

Location: *Whitestone Close*

Summary: *NMU’s not visible to traffic turning.*

Whitestone Close, a small Cul-De-sac which accesses Mayals Road beyond Fairwood Road, is poorly lit being in shadow between trees and the existing street lighting. Night-time observations revealed that pedestrians and cyclist using the shared use path would only become aware of the access at the last minute, because of poor light levels. This could lead to sudden braking and loss of control with the potential for serious injury to cyclists colliding with emerging vehicles. Similarly, traffic, turning in from Mayals Road at night would only see cyclists or pedestrians at the last minute.

It was also noted that the existing bollards retro-reflectivity is poor.



Whitestone Close (Audit Team Member on SUP)

RECOMMENDATION

It is recommended that additional street lighting be provided at this junction and extra retro-reflective bollards be provided to highlight the change in surface.

Designers response - *As noted in Problem 2, discussions with Swansea Council's Public Lighting Section during the design phase confirmed the existing public lighting system along Mayals Road conforms to the standards required in BS:EN13201. However, it is noted that the existing tree canopy may reduce the efficacy. The design team will co-ordinate with the Tree Services Team to ensure tree branches are pruned and crown lifted so they do not interfere with the street illumination levels.*

As also noted in Problem 2, the design team are satisfied that the reflectivity of the bollards is consistent with the required specification.

4.7 Vegetation and Landscaping

4.7.1 PROBLEM 15.

Location : *Throughout the scheme*

Summary: *Loss of control, slips trips and falls*

Throughout the scheme multiple changes in surface and minor random areas of non-paved ground between, or adjacent to scheme provision and street furniture, have quickly become slippery, muddy or littered with material, tree branches, composting leaves and

organic material. This presents a major problem for all NMU user of Mayals road especially cyclists, mobility impaired and vision impaired. Facilities intended as improvements, could easily become a hazard if not managed.



Scheme wide

RECOMMENDATION

It is recommended that all compromised areas of the scheme be clear and unnecessary changes in surface material and areas with maintenance issues be removed and infilled to present a more uniform, user friendly facility. In addition, that areas that require attention annually be identified, in order to establish a maintenance program.

Designers Response – As noted in problem 1 above, Swansea Council Highways Department operate a programmed and a Reactive Highway Maintenance Regime. Mayals Road is a primary distributor that benefits from the regularly programmed mechanical sweeping of its highway infrastructure. Swansea Council's Highways Maintenance Department has a team of Highway Inspectors who identify issues such as this.

5. Items Raised Outside the scope of this Audit

5.1.1 Whilst outside the scope and brief for this audit, and not shown on drawings provided, (see appendix A), the Audit Team noted that at the western extent of the Phase 2 works detailed on Drawing No. T.19.ACT.03.04A, “Route Ends” sign have been erected. However, cyclists westbound, exiting the Mayals Rd provision and re-joining the carriageway are expected to do so without warning to vehicular traffic. Similarly cyclists leaving the common inbound are provided with no continuity to get over to the shared section of route on Mayals Road. Whilst this may be resolved upon completion of the next phase of works, current users making the transition are vulnerable.

Designers Comment – *As noted above, the completed Mayals Road cycle facility is the first phase of Swansea Council’s plans to create dedicated Active Travel Infrastructure interconnecting the settlements of Bishopston, Murton and Mayals with the existing Active Travel Network along Swansea Promenade, as detailed in Swansea Council’s Integrated Network Map.*

It is hoped that, subject to funding, the next phase of the route will continue on directly from the Mayals Road cycle facility across Clyne Common to Bishopston in the next financial year.

The erected “Route ends” sign informs users that the designated facility terminates at this point and users must continue under normal highway conditions. This sign will remain in place until the completion of the next phase of the route.

5.1.2 The Audit Team were made aware by the Project Design Team that a concern had been raised by residents, that there were issues with regard to safety of pedestrian movement when crossing the carriageway of Mayals Road, particularly near the junction of Owls Lodge Lane. The Audit Team attended site on numerous occasions and at differing times of the day in order to obtain a good appreciation of the site conditions and observe usage. The Police were also informed of the concern when they attended site. During the site visits pedestrians were observed to cross the carriageway without issue, and their waiting times in order to do so were not protracted.

6. Audit Team Statement

We certify that this Road Safety Audit has been carried out in accordance with GG 119 Rev.3.

AUDIT TEAM LEADER

Name LH Jones MCIHT, MSoRSA, RSA Signed: LH Jones
Cert.Comp

Position: Road Safety Engineer

Date: 8 February 2022

Company: Swansea Council

Address: Integrated Transport Unit.

Guildhall Swansea, SA1 4PE

AUDIT TEAM MEMBER

Name: MJ Pinske RoSPA qualified
Road Safety Engineer

Signed: MJ Pinske

Position: Road Safety Engineer

Date: 8 February 2022

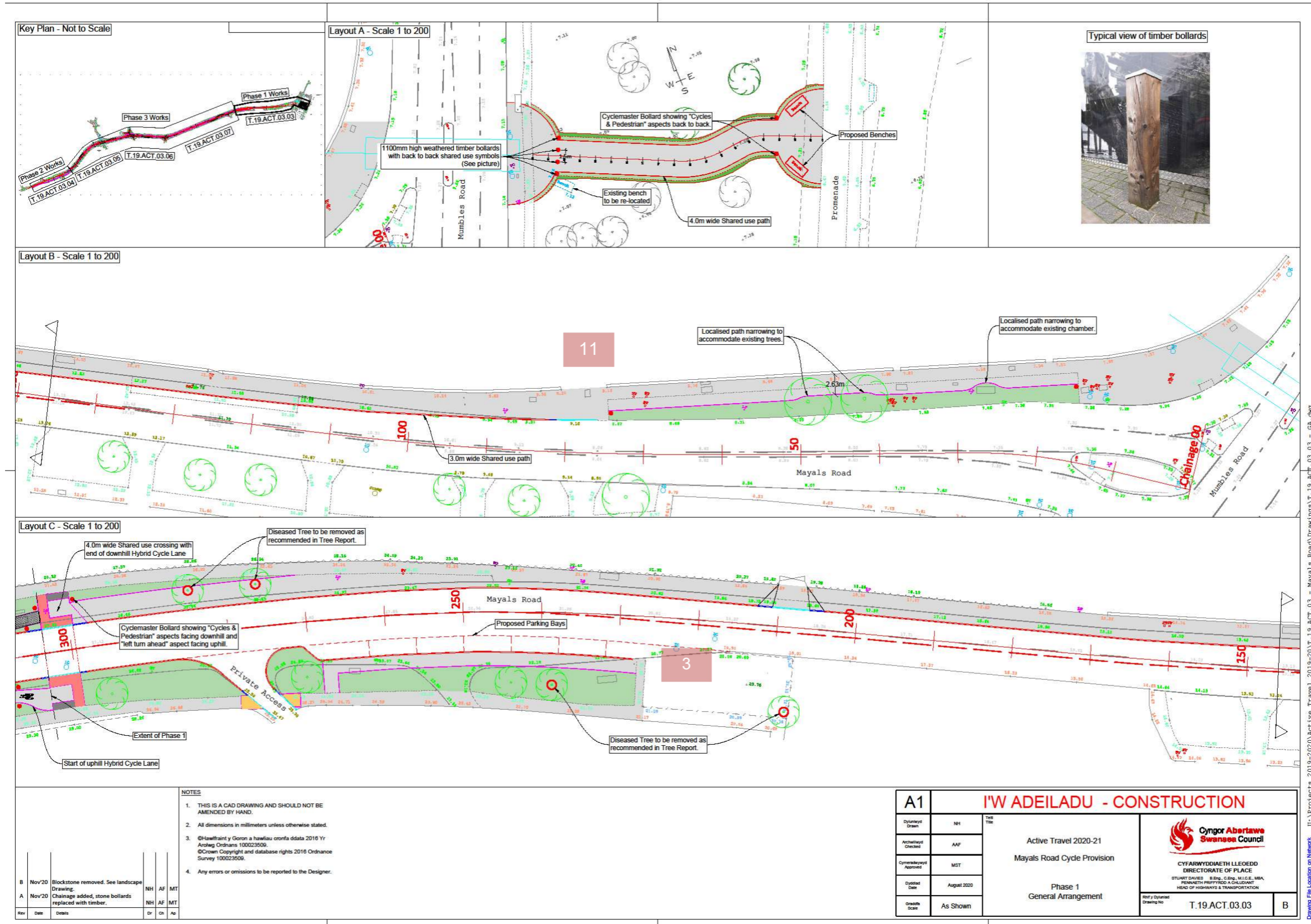
Company: Swansea Council

Address: Integrated Transport Unit.

Guildhall Swansea, SA1 4PE

7. Figures_{7.1} Scheme Location Plan with identified issues. (Scheme wide report issues:- 1,2,8,&15).

Figure 1 Phase1



U:\Projects\2019-2020\Active Travel\2019-2021\T.19.ACT.03 - Mayals Road\Drawings\T.19.ACT.03 - GA.dwg

Figure 2 Phase 3

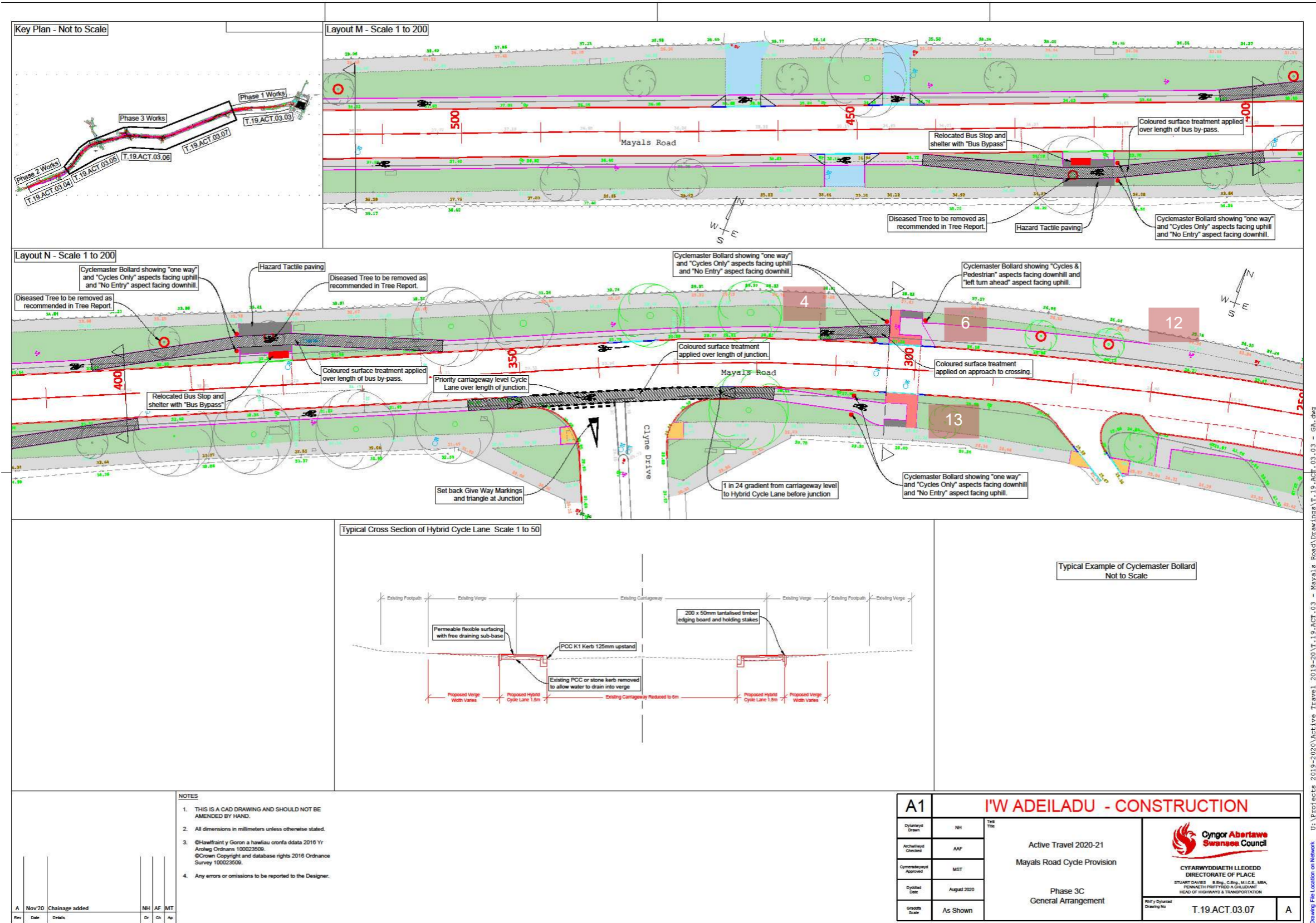


Figure 3 Phase3

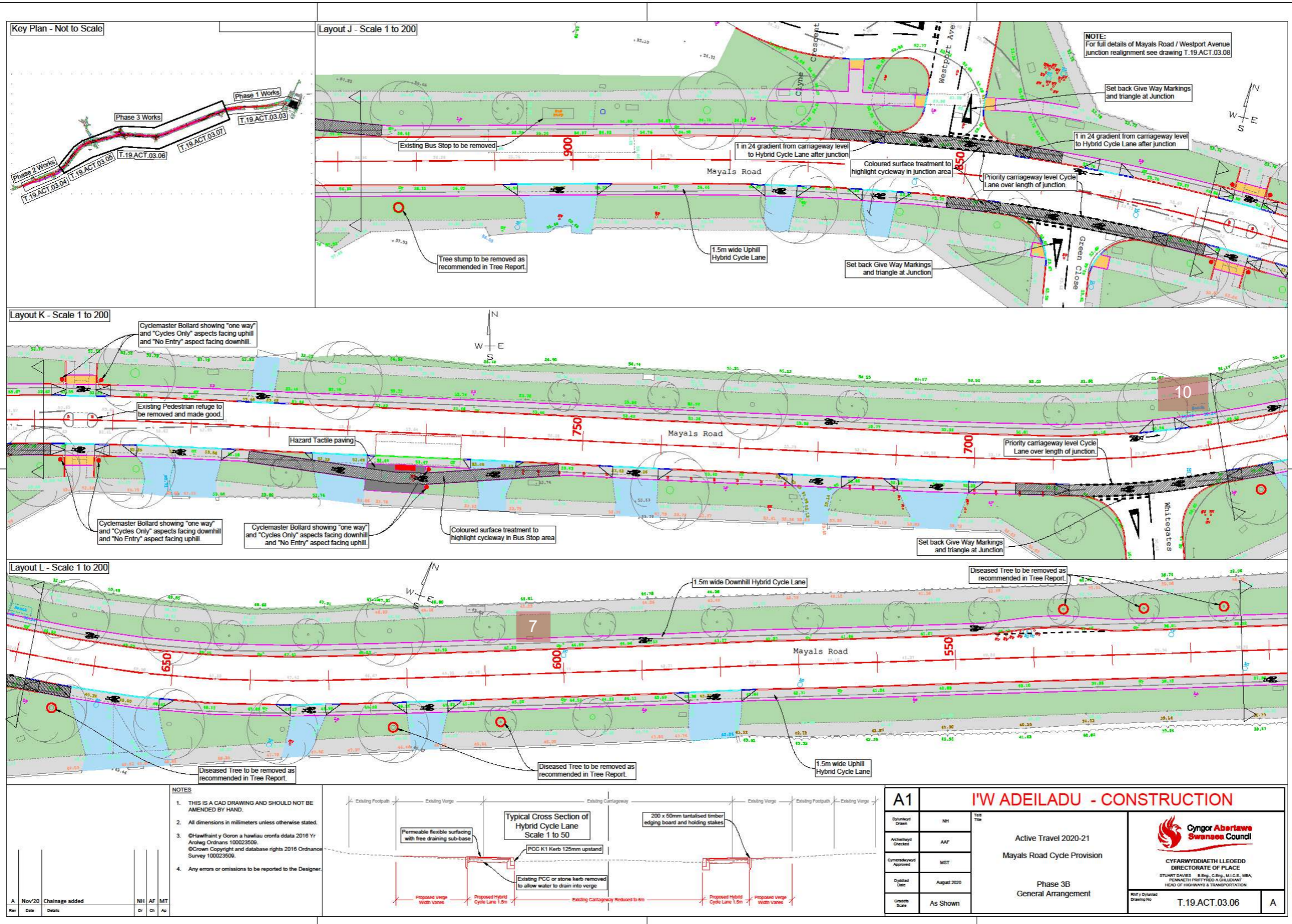


Figure 4 Phase3

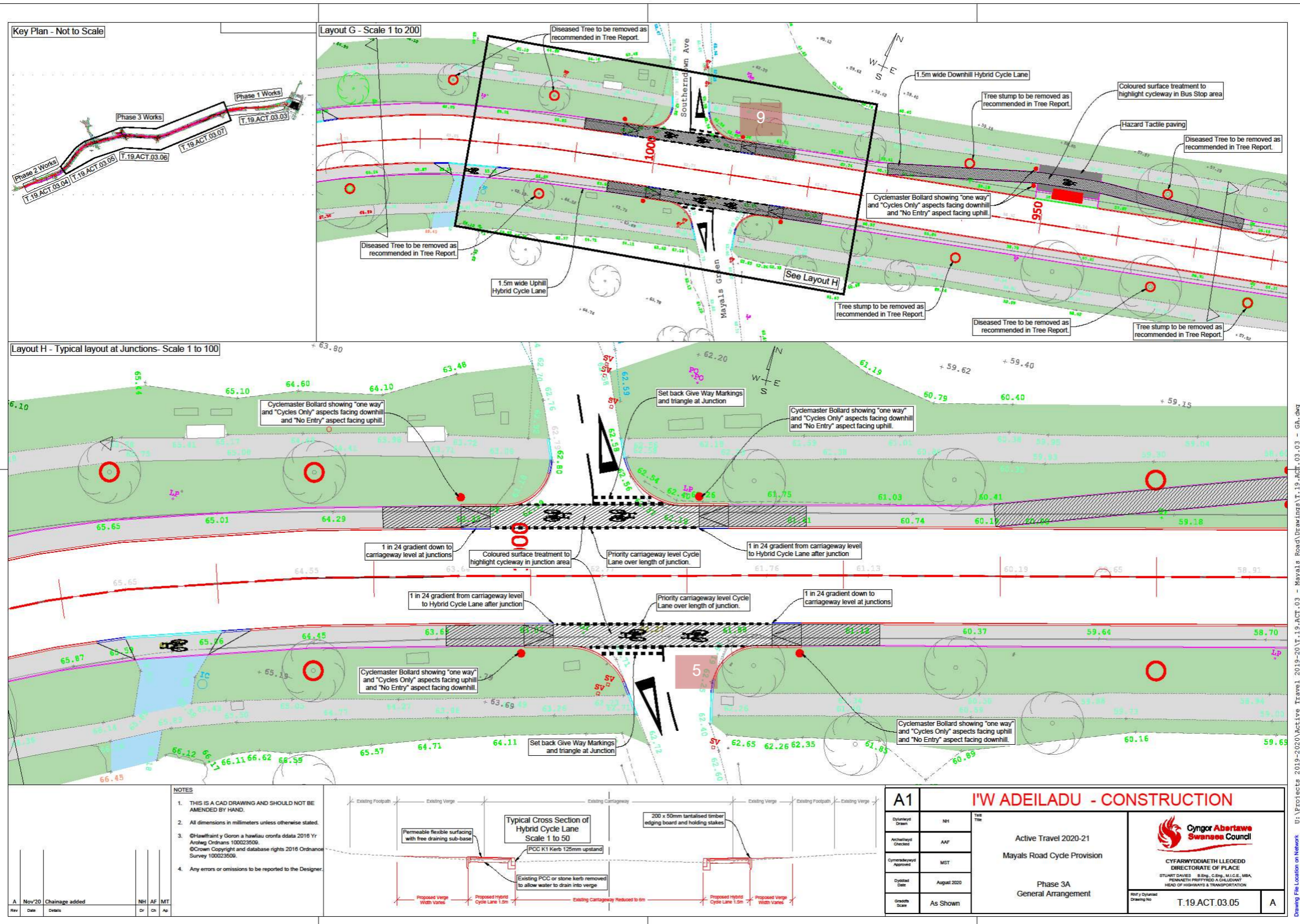
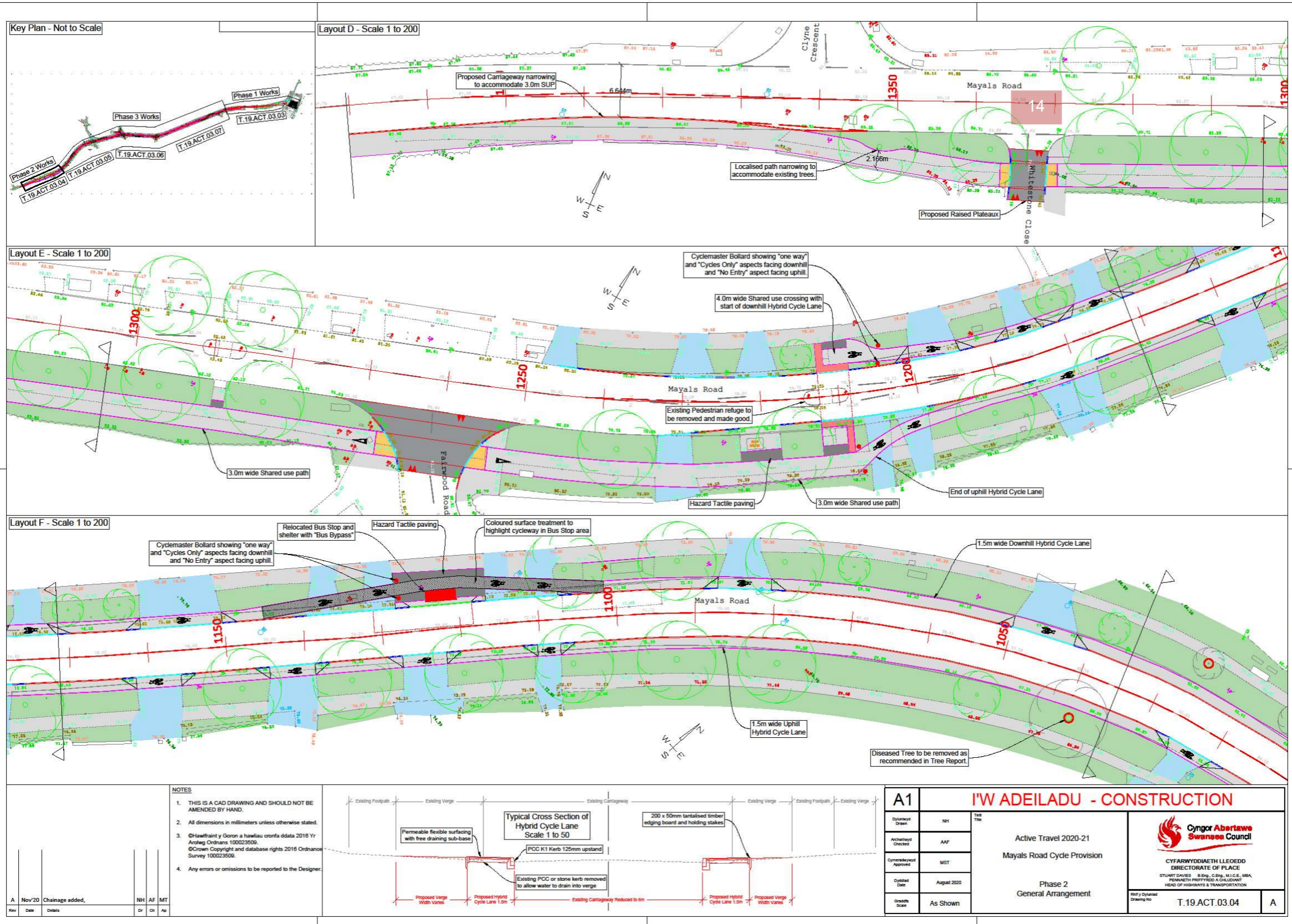


Figure 5. Phase2



8. Appendices

8.1 Appendix A: List of Documents/Plans supplied by Design Organisation

Stage 3 Road Safety Audit Brief – 14th November 2021

Design Organisation - Highway Drawings: For Audit.

*T.19.ACT.03.03B -Rev B. Active Travel 2021. Mayals Rd Cycle Provision.
Phase 1 General Arrangements*

*T.19.ACT.03.04A -Rev A. Active Travel 2021. Mayals Rd Cycle Provision.
Phase 2 General Arrangements*

*T.19.ACT.03.05A -Rev A. Active Travel 2021. Mayals Rd Cycle Provision.
Phase 3A General Arrangements*

*T.19.ACT.03.06A -Rev A. Active Travel 2021. Mayals Rd Cycle Provision.
Phase 3B General Arrangements*

*T.19.ACT.03.07A -Rev A. Active Travel 2021. Mayals Rd Cycle Provision.
Phase 3C General Arrangements*

Also provided for information:-

T/19/ACT/03/08A	Active Travel 2020-21 Mayals Road Cycle Provision Mayals Road/ Westport Avenue Junction Realignment General Arrangement	Nov 2020
T/19/ACT/03/20A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 1 Drainage	Nov 2020
T/19/ACT/03/21A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 2 Drainage	Nov 2020
T/19/ACT/03/22A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3A Drainage	Nov 2020
T/19/ACT/03/23A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3B Drainage	Nov 2020
T/19/ACT/03/24A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3C Drainage	Nov 2020
T/19/ACT/03/25A	Active Travel 2020-21 Mayals Road Cycle Provision Mayals Road/ Westport Avenue Junction Realignment Drainage	Nov 2020
T/19/ACT/03/40A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 1 Roadworks and Earthworks	Nov 2020
T/19/ACT/03/41A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 2 Roadworks and Earthworks	Nov 2020
T/19/ACT/03/42A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3A Roadworks and Earthworks	Nov 2020
T/19/ACT/03/43A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3B Roadworks and Earthworks	Nov 2020
T/19/ACT/03/44A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3C Roadworks and Earthworks	Nov 2020
T/19/ACT/03/45A	Active Travel 2020-21 Mayals Road Cycle Provision Mayals Road/ Westport Avenue Junction Realignment Roadworks and Earthworks	Nov 2020

T/19/ACT/03/50A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 1 Signs and Road Markings	Nov 2020
T/19/ACT/03/51A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 2 Signs and Road Markings	Nov 2020
T/19/ACT/03/52A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3A Signs and Road Markings	Nov 2020
T/19/ACT/03/53A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3B Signs and Road Markings	Nov 2020
T/19/ACT/03/54A	Active Travel 2020-21 Mayals Road Cycle Provision Phase 3C Signs and Road Markings	Nov 2020
T/19/ACT/03/55A	Active Travel 2020-21 Mayals Road Cycle Provision Mayals Road/ Westport Avenue Junction Realignment Signs and Road Markings	Nov 2020
T/19/ACT/03/62	Active Travel 2020-21 Mayals Road Cycle Provision Bus Stop Bypass Detail	Jul 2021
T/19/ACT/03/93	Active Travel 2020-21 Mayals Road Cycle Provision Traffic Regulation Orders	Dec 2020
Sketch -	Amended section chainage 1150 - 1210	
Sketch	Mumbles Bay Court Option 2	

8.2 Appendix B: Other Information considered by RSA Team

Collision Data

Previous Road Safety Audits

Previous Road Safety Audit Response Reports

8.3 Appendix C: Disability lead departure from standard Tactile Layout at Bus Stops.