



Wokingham Borough Council

CALIFORNIA CROSSROADS

Stage 2 Road Safety Audit





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Accepted By: Daniela Figueroa, Wokingham Borough Council

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1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. WSP have been commissioned by Wokingham Borough Council to undertake a Stage 2 Road Safety Audit of the proposed highway improvement works at the B3016 / B3430 California Crossroads junction in Finchampstead near Wokingham.
- 1.1.2. The terms of reference of the Road Safety Audit are as described in the Design Manual for Roads and Bridges (DMRB) Requirements and Advice document GG 119.
- 1.1.3. The Road Safety Audit Team membership was the following:
- Neil Nicholson MSoRSA MCIHT
WSP (Senior Engineer)
Road Safety Audit Team Leader
 - James Perkins MSoRSA MCIHT
WSP (Senior Technician)
Road Safety Audit Team Member
- 1.1.4. All members of the Road Safety Audit Team have the relevant training, skills and experience recommended for Road Safety Audit Team Leader and Road Safety Audit Team Member in accordance with the guidance stated in GG 119. The Road Safety Auditors have examined and reported only on the road safety implications of the proposed highway works, and they have not examined or verified the compliance of the design to any other criteria.
- 1.1.5. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Road Safety Audits, Highway Design, Collision Investigation and Road Safety Engineering. No member of the Road Safety Audit Team has had any previous input into the design of the scheme.
- 1.1.6. The Road Safety Audit Team undertook a site visit together on Wednesday 3rd August 2022 during daylight conditions (between 11:00am and midday) when the weather was fine and the road surface was dry. During the site visit the traffic volumes on all approaches to the junction were high (with traffic queues of 5 or more vehicles regularly on each approach), with notable pedestrian movements at the junction, particularly travelling to/from Red Oak Stores, the Post Office and the Co-Operative shop.
- 1.1.7. This Road Safety Audit comprised of a review of the design drawings and documents supplied to the Road Safety Audit Team, referenced in Appendix A of this report.
- 1.1.8. This Stage 2 Road Safety Audit has been undertaken in accordance with the Road Safety Audit Brief approved by Daniela Figueroa of Wokingham Borough Council on 26th July 2022.

1.2. SCHEME DESCRIPTION

- 1.2.1. The proposed highway improvement works include the following:
- Removal of the existing double mini-roundabout junction between B3430 Nine Mile Ride and B3018 Finchampstead Road;
 - Provision of 'leaf pattern' surfacing on the carriageway at the California Crossroads junction and its immediate approaches;

- Provision of 'courtesy crossing' facilities throughout the extents of the scheme, with some provided as 'raised table' facilities;
- Resurfacing of the existing footways throughout the extents of the scheme;
- Revised layout of vehicle access to the existing parking bays adjacent to the shops on the Finchampstead Road (South) approach to the California Crossroads junction;
- Kerbing amendments at the access into Avery Comer car park;
- Provision of bollards on the north side of the access road to Avery Comer car park in order to discourage parking or deliveries.

1.3. PREVIOUS ROAD SAFETY AUDITS

- 1.3.1. A Stage 1 Road Safety Audit was completed by WSP in October 2018 (document reference 70040088/RSA1/1/1). A Road Safety Audit Response Report to this previous Road Safety Audit was produced by the design team in March 2019.
- 1.3.2. An addendum to the Stage 1 Road Safety Audit was also completed by WSP in July / August 2020 (document reference 70068199/RSA1/1/1). A Road Safety Audit Response Report to this previous Stage 1 Road Safety Audit (Addendum) was produced by the design team in January 2021.

2. PROBLEMS IDENTIFIED AT THE PREVIOUS ROAD SAFETY AUDITS

2.1. GENERAL

2.1.1. This section of the Road Safety Audit report reviews the road safety problems that were raised at the previous Stage 1 Road Safety Audits undertaken for this scheme, as described in Section 1.3 of this report. This section of the report includes the problems that were considered to remain relevant at the time of the site visit for this Stage 2 Road Safety Audit.

2.1.2. It should be noted that any problems / recommendations made at the previous Stage 1 Road Safety Audits, which have been rejected by both the design team and overseeing organisation, have not been raised again in this section of the report. The Road Safety Audit Team may believe that these previously raised problems are still relevant, but it has been assumed that the Overseeing Organisation Project Sponsor has made an informed decision not to accept the previous problems / recommendations made.

2.2. STAGE 1 ROAD SAFETY AUDIT (OCTOBER 2018)

2.2.1. PROBLEM 2

Location: Throughout the extents of the scheme.

Summary: Insufficient skid resistance of patterned surfacing could lead to a road user failing to stop sufficiently and colliding with another road user.

As part of the scheme works it is proposed to apply a 'hollow leaf' pattern on the approaches to the junction, a 'filled leaf' pattern in place of the mini roundabouts, and a 'footprint' pattern on the courtesy crossings. No information has been provided to the Road Safety Audit Team as to the skid resistance of the proposed patterned road surfacing.

The proposed 'leaf' pattern will make up most of the carriageway surface finish and, if the patterned road surface does not have sufficient skid resistance properties, this could lead to a vehicle (in particular a motorcycle or pedal cycle) failing to stop sufficiently when approaching the junction or the pedestrian crossings. This could increase the potential for rear shunt collisions on the junction approaches, as well as vehicles overshooting onto the crossing facilities or into the centre of the junction where they could collide with a pedestrian crossing the carriageway or collide with another vehicle travelling through the junction.

In addition, the proposed surface finish could increase the possibility of a motorcycle or pedal cycle skidding or losing control when carry out turning manoeuvres at the California Crossroads junction.

RECOMMENDATION 2

It is recommended that the patterned surfacing contains appropriate skid resistance properties or replaced with a carriageway surface that does provide the appropriate skid resistance. It is also recommended that the proposed surfacing maintains its skid resistance, as it could wear out faster than a traditional surface finish.

DESIGN TEAM RESPONSE

Accepted - It is proposed that PREMARK© is used for the leaf pattern. This is a preformed thermoplastic road marking and it is often used instead of traditional road marking paint as it lasts 10 times longer. This material meets the public highway skid resistance requirements. Skid resistance values range from 55 to 80(SRT/PTV).

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

Drawing number 70068199-01-LA-02-100 (revision P02) indicates that the proposed leaf patterned surfacing will be “DecoMark” thermoplastic, rather than PREMARK as stated in the design team’s comments. The skid resistance properties of “DecoMark” thermoplastic are unclear, therefore this problem and recommendation remains relevant.

In addition, if the skid resistance properties are notably different to the carriageway surfacing provided on the side roads, accesses and pedestrian crossing facilities (where the leaf patterned surfacing will not be provided) this may result in differential braking, which could increase the potential for vehicles losing control (particularly when they are undertaking a turning movement).

FURTHER DESIGN TEAM RESPONSE

Accepted- The PSV value of the product selected shall align with the required PSV of the surface course material.

OVERSEEING ORGANISATION COMMENTS

Agreed. Once the product is selected we will make sure it has the same PSV as the road surface.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

The design team’s comments are noted, although none of the design drawings or supporting information provided to the Stage 2 Road Safety Audit Team indicate the skid resistance properties of the “DecoMark” leaf patterned markings, or whether they will be in line with the skid resistance properties of the adjacent carriageway surfacing. Therefore, this problem may remain relevant.

2.2.2. PROBLEM 7

Location: *All approaches to California Crossroads.*

Summary: *Removal of existing high friction surfacing (HFS) on all approaches to the junction.*

HFS is currently provided on all approaches to the California Crossroads junction. It has been assumed that the HFS will be removed in order to provide the proposed patterned carriageway surfacing. This could increase the potential for collisions involving vehicles skidding and overshooting onto the pedestrian crossing facilities (where they could collide with a pedestrian crossing the carriageway) or they could overshoot into the centre of the junction and collide with a vehicle travelling through the junction.

RECOMMENDATION 7

It is recommended that the proposed carriageway surfacing is provided with appropriate skid resistance properties for the approaches to a junction and pedestrian crossing facilities.

DESIGN TEAM RESPONSE

Accepted - If it is found that PREMARK© (or similar approved) does not provide as good or better skid resistance compared to HFS then HFS will be provided underneath the PREMARK©

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

Drawing number 70068199-01-LA-02-100 (revision P02) indicates that the proposed leaf patterned surfacing will be “DecoMark” thermoplastic, rather than PREMARK as stated in the design team’s comments. The skid resistance properties of “DecoMark” thermoplastic are unclear, therefore this problem and recommendation remains relevant.

FURTHER DESIGN TEAM RESPONSE

Agreed - The surface course material will have the appropriate skidding resistance and this will be ensured during the detailed design stage of the project.

OVERSEEING ORGANISATION COMMENTS

Accept designer response.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Although requested, a drawing showing the proposed carriageway surfacing has not been provided to the Stage 2 Road Safety Audit Team. Therefore, it has not been possible to determine whether the new carriageway surfacing on the junction approaches will have appropriate skid resistance properties, or whether the skid resistance properties of the proposed leaf pattern markings will match the skid resistance properties of the proposed carriageway surface, so this problem could remain relevant.

2.2.3. PROBLEM 9

Location: *All approaches to California Crossroads*

Summary: *Unclear priority of vehicles at the junction could lead to vehicles entering the junction into the path of an approaching vehicle.*

The proposed scheme will not provide give-way road markings at the entries onto the junction from Nine Mile Ride and Finchampstead Road, so it will be unclear who has priority when travelling through the junction. It is assumed that the junction will have a ‘free-for-all’ layout.

This could be confusing to road users, due to the lack of clarity regarding who has priority. This could increase the possibility of a vehicle entering the junction and failing to give-way to another vehicle negotiating the junction. This could be exacerbated by the significant traffic volumes that use this junction, as observed during the site visit. Various cyclists were observed using this junction during the site visit, so the proposed layout could increase the potential for vehicles colliding with cyclists travelling through the junction.

It is considered likely that Nine Mile Ride and Finchampstead Road could be used by ‘through traffic’ with road users unfamiliar with the area, which could exacerbate this issue.

RECOMMENDATION 9

It is recommended that appropriate map-type advance direction traffic signs are provided on all approaches to the junction.

DESIGN TEAM RESPONSE

Rejected – The concept and success of the project is reliant on an informal layout. This approach has been used on many other schemes successfully, including Poynton, Coventry City Centre and Ponders End. In these examples, vehicles move slowly through the junction, more so than they would in a traditional layout. Any additional signage could detract from this, but the scheme will be monitored following completion, if it is then felt required, at this stage signage could be easily retrofitted.

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

The Traffic Sign Schedule provided to the Road Safety Audit Team indicates that the existing map-type advance direction traffic signs on the B3016 Finchampstead Road northbound and southbound approaches to California Crossroads, as well as on the B3430 Nine Mile Ride westbound approach to the junction, will be updated to show the new junction type (although no details have been provided to the Road Safety Audit Team showing the proposed traffic sign faces, which will need to be reviewed at the Stage 2 Road Safety Audit).

However, it is noted that a map-type advance direction sign (ADS) is not currently provided on the B3430 Nine Mile Ride eastbound approach to the junction, and a new map-type ADS is not shown on the traffic sign drawing (drawing number 8199-TS-001) to be provided on this junction approach. It is understood that a map-type ADS used to be provided on this approach to California Crossroads, although it appears to have been removed. Therefore, it is recommended that a new map-type ADS is installed on the B3430 Nine Mile Ride eastbound approach to the junction, and that all of the proposed map-type ADS signs on the junction approaches show an appropriate crossroads layout for the junction.

FURTHER DESIGN TEAM RESPONSE

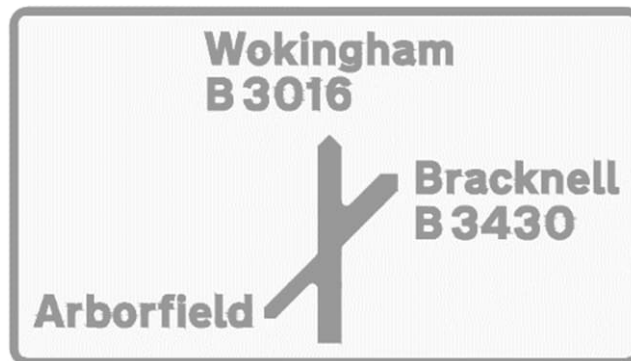
Accepted - A new ADS sign will be added to the proposals for this scheme.

OVERSEEING ORGANISATION COMMENTS

Accepted, a new ADS sign but also review in RSA2.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Map-type advance direction traffic signs in the format shown below will be provided on all approaches to the California Crossroads junction. It is considered by the Stage 2 Road Safety Audit Team that these signs could be misleading in relation to the junction layout downstream (i.e. on the sign plate shown below, the thicker lines could imply that straight ahead and right turn movements will have priority at the junction, although the junction layout will not have any movements that have priority over others).



Therefore, this could increase the potential for a road user entering the junction, assuming that they do not need to give-way to other road users, and colliding with another vehicle travelling through the junction. Consequently, it is recommended the proposed map-type advance traffic sign layouts are amended to show an appropriate junction layout design, consistent with the proposed junction layout.

2.2.4. PROBLEM 11

Location: Avery Corner car park junction

Summary: Proposed corner radii at the Avery Corner car park junction could be inappropriate for vehicles turning left into or out of the side road.

Drawing number 70040088-CX-001-P01 shows that the corner radii of the Avery Corner car park junction will be modified.

Drawing Number 0088-ATR-010-A shows that a refuse vehicle entering and exiting the junction would be required to encroach into the opposing traffic lane on Finchampstead Road to turn into/from the side road. This could increase the possibility of a head-on collision.

In addition, the tight corner radius could result in vehicles overrunning the kerbs, which in time could break-up and present a tripping hazard to pedestrians, or a vehicle overrunning the kerblines could collide with a pedestrian on the footway.

RECOMMENDATION 11

It is recommended that the existing corner radii of the junction are retained.

DESIGN TEAM RESPONSE

Accepted – Junction access will be widened to improve Heavy Goods Vehicle movements in and out of the access.

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

None of the swept vehicle path assessment drawings provided to the Road Safety Audit Team show turning movements into / from the Avery Corner access road junction on Finchampstead Road. In addition, the proposals include amending the corner radii at this junction with smaller radii than the existing provision. Therefore, this problem remains relevant.

FURTHER DESIGN TEAM RESPONSE

Partly Accepted – The additional tracking will be undertaken as part of detailed design, to ensure the appropriate vehicles can access Avery Corner, but we will propose to keep the junction radii as tight as possible to encourage slow movements through the junction.

OVERSEEING ORGANISATION COMMENTS

Review in RSA2 once swept path assessment has been completed.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Drawing numbers 8199-ATR-005 and 8199-ATR-006 show the swept vehicle paths of refuse vehicles and 16.5m long articulated vehicles turning left and right into / from the Avery Corner access road at the junction with Finchampstead Road.

This indicates that some of these turning movements, involving both vehicle types, will encroach notably into opposing traffic lanes, and refuse vehicles turning left into the side road could slightly overrun the existing footway on the south side of the junction.

Therefore, this problem remains relevant and it recommended that the corner radii at the junction are amended in order to allow these vehicles to be able to turn into and out of the side road without encroaching into opposing traffic lanes or overrunning any footways.

2.2.5. PROBLEM 22

Location: *Nine Mile Ride, east of the California Crossroads junction.*

Summary: *Lack of raised access kerbs at the existing bus stop.*

No raised access kerbs are proposed at the existing eastbound bus stop on Nine Mile Ride to the east of California Crossroads. 60mm high kerbs are proposed in this location, which could make it difficult for mobility impaired pedestrians to access/alight buses in this location.

RECOMMENDATION 22

It is recommended that raised access kerbs are provided at this bus stop.

DESIGN TEAM RESPONSE

Subject to Detailed Design – Raising the kerb line at the bus stop could result in a back fall in the footway. At the detailed design phase, it will be investigated as to whether the kerb upstand can be any higher.

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

No raised access kerbs are proposed at the existing eastbound bus stop in this location. Therefore, this problem and recommendation remains relevant.

FURTHER DESIGN TEAM RESPONSE

Subject to Detailed Design - As previously noted, this will be investigated at detailed design stage where 3d design will be undertaken. However, the frequency of buses is low and the buses operating this route are predominately low floor negating this issue.

OVERSEEING ORGANISATION COMMENTS

To be reviewed after detailed design in RSA2.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Drawing number 8199-RP-003 (revision P02) shows that no raised access kerbs are proposed at the existing eastbound bus stop on Nine Mile Ride, adjacent to the junction with Avery Close. Therefore, the problem / recommendation made at the Stage 1 Road Safety Audit remains relevant.

2.2.6. PROBLEM 24

Location: California Crossroads

Summary: Potential for equestrian horses to become unnerved by the proposed patterned carriageway surfacing.

The document "California Crossroads - Walking, Cycling and Horse-Riding Assessment" states that "coloured tarmac can 'spook' some horses as can white writing on the road. If so riders will return at quieter times to practice riding over it or ride with another bolder horse." This is also alluded to in the DMRB Advice Note TA 90/05 which states that "brightly coloured surfacing may unnerve horses".

Consequently, the provision of the proposed 'leaf' pattern carriageway surfacing could unnerve horses, which could increase the potential for a horse rider to become unseated and fall off their horse.

RECOMMENDATION 24

It is recommended that the proposed patterned carriageway surfacing is not provided if equestrians are expected to be travelling through the extents of the scheme.

DESIGN TEAM RESPONSE

Rejected - In the document "California Crossroads - Walking, Cycling and Horse-Riding Assessment" it states by the British Horse Society Access and Bridleways Officer – Wokingham, "If you need writing and multicoloured tarmac in this design I would not allow the potential 'spook' factor to stop you using it!".

Further to the proposal being implemented an event can be organised to allow the horses to get use to the proposed surfacing. If required the pattern could be provided elsewhere on a temporary basis, for the horses to get used to the pattern. It is envisaged this could be undertaken without having a significant effect on the construction cost of the scheme.

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

It is noted that the designer has rejected this recommendation made in the previous Road Safety Audit. Therefore, the Road Safety Audit Team has no further comments (although if the Overseeing Organisation has not accepted the design team's response, then this problem / recommendation remains relevant).

FURTHER DESIGN TEAM RESPONSE

Rejected - A sample panel is proposed at a local equestrian centre, to test horses' reaction to the proposed surface and to allow for familiarisation.

OVERSEEING ORGANISATION COMMENTS

To be reviewed once the test panel is in operation and at RSA2.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

It is unclear whether the proposed equestrian test panel was undertaken, or what the findings were. Therefore, the problem / recommendation made at the Stage 1 Road Safety Audit remains relevant.

2.2.7. PROBLEM 25

Location: Throughout the extents of the proposed scheme.

Summary: Inconsistent provision of low kerb upstands on the carriageway edges.

Drawing number 0088-GA-002 (revision A) shows that the kerb upstands on the carriageway edges vary between 0-6mm high in some areas and 60mm high in other areas. This variation in kerb heights could increase the possibility of a pedestrian crossing the carriageway (away from the formal crossing facilities) and tripping over the 60mm high kerbs if lower kerbs are provided on the opposite side of the road.

In addition, typical kerb upstands for footways are 125mm high. Therefore, the provision of lower kerbs could reduce the protection of pedestrians walking on the footways, and could increase the potential for an errant vehicle overrunning the footway and colliding with a pedestrian.

RECOMMENDATION 25

It is recommended that the designer considers the provision of standard kerb heights throughout the extents of the scheme

DESIGN TEAM RESPONSE

Subject to Detail Design – In the majority of circumstances, it is not intended to reduce the existing kerb up stand, however the average existing kerb upstand, where there is one, is approximately 60mm. To raise the kerb upstand further could create a back fall in the footway. However, as part of the detail design process it will be investigated as to whether the kerb upstand could be increased.

FURTHER COMMENTS AND RECOMMENDATIONS BY THE STAGE 1 ROAD SAFETY AUDIT TEAM

Drawing number 8199-GA-003 shows that the proposed kerbing throughout the extents of the scheme will primarily be provided with 60mm upstands or they will be flush with the adjacent carriageway. Therefore, this problem and recommendation remains relevant.

FURTHER DESIGN TEAM RESPONSE

Not provided.

OVERSEEING ORGANISATION COMMENTS

To be reviewed in detailed design and picked up in RSA2.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Drawing number 8199-RP-003 (revision P02) shows that the proposed kerbing throughout the extents of the scheme will primarily be provided with 25mm or 60mm upstands adjacent to the carriageway. Therefore, the problem / recommendation made at the Stage 1 Road Safety Audit remains relevant.

2.3. STAGE 1 ROAD SAFETY AUDIT (ADDENDUM) – JULY 2020

2.3.1. PROBLEM 3

Location: Red Oak Stores car park access.

Summary: A large articulated vehicle turning left into the car park from Nine Mile Ride (West) could overrun the proposed transition kerbs or 60mm high kerb upstands and damage them.

Drawing number 8199-ATR-002 (revision P02) shows the swept path of a large articulated vehicle turning left into the car park access from Nine Mile Ride (West). The swept path of the left turn movement is shown to be wider than the proposed dropped kerbs to be provided for vehicles to turn into / from the car park. Therefore, a large articulated vehicle will overrun the proposed transition kerbing or the adjacent 60mm upstand kerbs, which could damage the kerbing and make them a tripping hazard to pedestrians.

RECOMMENDATION 3

It is recommended that the proposed length of dropped kerbs is extended to cover the width required for the swept path of a large articulated vehicle turning left into the car park access from Nine Mile Ride (West).

DESIGN TEAM RESPONSE

Accepted - Dropped kerbs to be extended.

OVERSEEING ORGANISATION COMMENTS

Accepted.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

Drawing number 8199-RP-003 (revision P02) shows that dropped kerbs with a 25mm upstand will be provided at the western entrance into the Red Oak Stores access. However, the length of these dropped kerbs does not cover where the swept path of a large articulated vehicle will turn left into the car park access from Nine Mile Ride (as shown on drawing number 8199-ATR-002). Therefore, this problem and recommendation remains relevant.

2.3.2. PROBLEM 5

Location: North-east corner of California Crossroads.

Summary: Existing cabinet will obstruct the visibility of vehicles approaching on the Finchampstead Road southbound approach to the junction from the proposed 'courtesy' crossing facility on the eastern Nine Mile Ride arm of the junction.

There is an existing cabinet on the north-east side of the junction that could obstruct the visibility from the proposed 'courtesy' crossing facility on the eastern Nine Mile Ride arm of the junction (of vehicles approaching on the Finchampstead Road southbound approach to the junction).

It is estimated that the visibility northwards (along Finchampstead Road) from the proposed crossing point on the north side of Nine Mile Ride (East) could be restricted by the cabinet to approximately 16m. Also, the visibility northwards (along Finchampstead Road) from the proposed refuge island on the Nine Mile Ride (East) arm of the junction could be restricted to approximately 23m.

Table 15-1 in Chapter 6 of the Traffic Signs Manual indicates that the recommended visibility for a crossing point on a road with 85th percentile vehicle speeds of 20 kph is 22m. Therefore, the proposed visibility northwards from the northern crossing point on Nine Mile Ride (East) could be inadequate (and the visibility northwards from the refuge island could also be insufficient depending on the speed of vehicles turning left onto Nine Mile Ride from the north).

This could increase the potential for a pedestrian crossing the Nine Mile Ride eastbound exit from the junction into the path of a vehicle turning left from the Finchampstead Road (North) arm, possibly leading to a collision.

RECOMMENDATION 5

It is recommended that the cabinet is set back appropriately so that it does not restrict the visibility from the proposed crossing points on the Nine Mile Ride (East) arm of the junction.

DESIGN TEAM RESPONSE

Partly Accepted - Relocation of the cabinet is being investigated. However, the radius at the bend (12m) will reduce speed to 26kph. Based on Manual for Street guidance, recommended SSD is 18m. Chapter 6 is applicable to controlled crossings only.

OVERSEEING ORGANISATION COMMENTS

To be reviewed in RSA2.

COMMENTS AND RECOMMENDATIONS BY THE STAGE 2 ROAD SAFETY AUDIT TEAM

The following photograph shows the visibility from the location of the proposed pedestrian crossing point on the north side of the eastern Nine Mile Ride arm of the junction (of vehicles approaching on the B3016 Finchampstead Road southbound approach). It can be seen that a large cabinet obstructs the visibility sightline. Therefore, this problem remains relevant.



3. PROBLEMS IDENTIFIED AT THIS STAGE 2 ROAD SAFETY AUDIT

3.1. GENERAL

3.1.1. PROBLEM 1

Locations: Various – see Appendix B for locations.

Summary: Provision of kerbing with 25mm upstands at various private driveways and accesses, and at car park accesses.

At several locations throughout the extents of the scheme, there are various private driveways / accesses and car park accesses, which will be provided with dropped kerbs with 25mm upstands adjacent to the Nine Mile Ride / Finchampstead Road carriageways. Vehicles turning into these driveways or accesses could lose control when travelling over the kerb upstands, particularly motorcycles or pedal cycles.

RECOMMENDATION 1

It is recommended that dropped kerbs with an appropriate kerb upstand (i.e. maximum 6mm high) are provided at these private driveways / accesses and car park accesses.

3.1.2. PROBLEM 2

Location: Proposed exit from the Co-Operative car park – see Appendix B for location.

Summary: Vehicles parking in the proposed southern echelon parking bay could come into conflict with vehicles travelling along the Avery Corner car park access road.

Drawing number 8199-ATR-003 (revision P05) shows that a car parking in the southern echelon parking bay (in the revised layout of the Co-Operative car park) will need to turn onto the Avery Corner car park access and then reverse back into the parking bay. This could increase the potential for a conflict between the car that is turning into the parking bay and vehicles travelling along the adjacent access road, particularly a vehicle turning left onto the access road from Finchampstead Road.

In addition, a car turning out of this parking bay onto the Avery Corner car park access road to rejoin Finchampstead Road may have difficulties undertaking this turning movement in a single movement. This could lead to the turning vehicle having conflicts with other vehicles turning onto the access road.

RECOMMENDATION 2

It is recommended that the layout of the proposed echelon parking bays is amended to ensure that vehicles do not have to manoeuvre on the Avery Corner car park access road in order to turn into or out of a parking bay. This may involve the removal of the southernmost echelon parking bay.

3.2. WALKING, CYCLING AND HORSE RIDING

3.2.1. PROBLEM 3

Location: Proposed pedestrian crossing point on the north-west side of the centre of the junction – see Appendix B for location.

Summary: Existing tree canopy and adjacent parked vehicles could restrict the visibility from the proposed crossing point.

As shown on the following photograph, the visibility westwards along Nine Mile Ride from the proposed pedestrian crossing point on the north-west side of the centre of the junction is restricted by the adjacent tree canopy. This could increase the possibility of a pedestrian crossing the carriageway when a vehicle is approaching from the west on Nine Mile Ride, potentially leading to a collision.

In addition, if a large vehicle (such as a van) is parked in the adjacent parking bay in the Red Oak Stores car park (shown on the bottom-right side of the photograph below), this could further restrict the visibility westwards along Nine Mile Ride from the proposed pedestrian crossing point.



RECOMMENDATION 3

It is recommended that the adjacent tree canopy is raised appropriately in order to maximise the visibility westwards along Nine Mile Ride from the proposed crossing point on the north-west side of the centre of the junction.

In addition, it is recommended that the either the parking bay shown on the photograph above is removed from the adjacent car park, or that the proposed pedestrian crossing is amended so that the crossing point on the north-west side of the centre of the junction is provided in a location where there is appropriate visibility of traffic approaching the crossing in all directions.

3.2.2. PROBLEM 4

Location: Pedestrian crossing facility across Nine Mile Ride, adjacent to the Pace petrol station – see Appendix B for location.

Summary: Existing petrol station sign will restrict the visibility from the adjacent crossing point.

On the corner of the junction adjacent to the petrol station, all of the existing traffic signs shown on the photograph below will be removed from this location, although the Pace petrol station sign will be retained. The existing street lighting column will be replaced with a new lighting column that will be installed on the right-hand side of the petrol station sign.

A new pedestrian crossing point will be provided on this corner of the junction (to be provided where the existing “Nine Mile Ride” street sign is located, as shown on the photograph below). The visibility from the crossing point of vehicles approaching from the south-west on Finchampstead Road will be restricted to approximately 10-12m by the petrol station sign and the new street lighting column.

This could increase the possibility of a pedestrian crossing Nine Mile Ride in this location when a vehicle is turning left from Finchampstead Road onto Nine Mile Ride, leading to a collision.



RECOMMENDATION 4

It is recommended that the designer consults with the petrol station owner to determine whether the petrol station sign can be relocated to a position where it will not restrict the visibility from the proposed crossing points in this location.

If this is not feasible, it is recommended that the pedestrian crossing facility on Nine Mile Ride is not provided in this location, or moved to an appropriate location where adequate visibility of vehicles approaching in all directions can be provided from the crossing points.

3.2.3. PROBLEM 5

Location: Pedestrian crossing facility across Finchampstead Road, adjacent to the petrol station – see Appendix B for location.

Summary: Petrol tanker deliveries at the adjacent petrol station will restrict the visibility from the new pedestrian crossing facility.

It was observed during the site visit that a petrol tanker making a delivery at the Pace petrol station stops at the location shown on the photograph below. A stationary petrol tanker in this location will significantly restrict the visibility of vehicles approaching from the south-west on Finchampstead Road from the proposed pedestrian crossing point on the north-west side of Finchampstead Road (on the south-western corner of the California Crossroads junction).

This could increase the possibility of a pedestrian crossing Finchampstead Road in this location when a vehicle is approaching from the south-west, leading to a collision.



RECOMMENDATION 5

It is recommended that the designer consults with the petrol station owner to determine whether petrol tankers can stop at the garage in an alternative location where the tanker will not obstruct the visibility sightline from the proposed pedestrian crossing point.

If this is not feasible, it is recommended that the pedestrian crossing facility on Finchampstead Road is not provided in this location, or moved to an appropriate location where adequate visibility of vehicles approaching in all directions can be provided from the crossing points.

3.2.4. PROBLEM 6

Location: Pedestrian crossing facility across Finchampstead Road, adjacent to the petrol station – see Appendix B for location.

Summary: Visibility from the eastern crossing point could be restricted by the adjacent raised planters and vegetation.

A pedestrian crossing facility will be provided across Finchampstead Road, at the south-western entry of the California Crossroads junction. At the proposed crossing point on the east side of the road, the visibility to the east along Nine Mile Ride could be restricted to approximately 15m by the proposed raised planters and vegetation to be installed adjacent to the crossing point.

This is less than the recommended visibility distance of 22m at pedestrian crossings where there are 85th percentile vehicle speeds of 20mph, as stated in Table 15-1 in Chapter 6 of the Traffic Signs Manual.

Therefore, this could increase the possibility of a pedestrian crossing Finchampstead Road in this location when a vehicle is turning left onto Finchampstead Road from Nine Mile Ride (East), leading to a collision.

RECOMMENDATION 6

It is recommended that the layout / location of the proposed raised planters is amended so that clear adequate visibility of vehicles approaching from the east on Nine Mile Ride is provided from the pedestrian crossing point (located on the east side of the Finchampstead Road south-western arm of the junction).

3.2.5. PROBLEM 7

Locations: Various – see Appendix B for locations.

Summary: Proposed bollards could be inconspicuous to pedestrians and other road users, particularly during the hours of darkness.

Various stainless steel 'Wolverhampton' and 'Bespoke Design' bollards will be provided at the following locations throughout the extents of the scheme:

- 'Wolverhampton' bollards to be provided on the east side of Finchampstead Road, adjacent to Xenuk Tandoori restaurant and Finchampstead Day Nursery & Pre-School;
- 'Bespoke Design' bollards to be provided on the north-east side of the Avery Corner car park access road;
- 'Wolverhampton' bollards to be provided on the north-west side of the centre of the California Crossroads junction, at the back of the footway adjacent to the Red Oak Stores car park.

These stainless steel bollards could be inconspicuous to pedestrians, particularly visually impaired pedestrians, when walking along the footways. This could be a particular problem during the hours of darkness. This could lead to a pedestrian tripping over one of these bollards.

In addition, the 'Bespoke Design' bollards will be provided on the Avery Corner car park access road, directly adjacent to where vehicles will be travelling along the road. If they are not clearly visible to road users, this could lead to a vehicle colliding with the bollards.

RECOMMENDATION 7

It is recommended that all of the proposed stainless steel 'Wolverhampton' and 'Bespoke Design' bollards are provided with appropriate reflective bands to make them clearly visible to road users during the hours of darkness.

3.2.6. PROBLEM 8

Locations: Various – see Appendix B for locations.

Summary: Proposed 'totems' could be an obstruction on the footways.

'Totems' will be provided on the nearside footways on all four approaches to the junction. No details have been provided to the Road Safety Audit Team with regards to what these 'totems' will look like, although it is understood that they will be 2m in height and a maximum of 0.5m in width. If they are provided on the footways, they could present an obstruction to pedestrians and wheelchair users, which could lead to a pedestrian / wheelchair user travelling too close to the carriageway to pass around them and be struck by a passing vehicle.

In addition, if the 'totems' are not clearly visible to visually impaired pedestrians during the hours of darkness, this could lead to a visually impaired pedestrian tripping over them if they walk too close to a 'totem'.

RECOMMENDATION 8

It is recommended that the proposed 'totems' are provided at the back of the footways, and are provided with appropriate reflective bands to make them clearly visible to pedestrians during the hours of darkness.

3.3. JUNCTIONS

3.3.1. PROBLEM 9

Location: Nine Mile Ride exits from California Crossroads– see Appendix B for location.

Summary: Swept paths of heavy goods vehicles exiting the junction will encroach into opposing traffic lanes.

Drawing number 8199-ATR-001 (revision P05) shows the swept paths of 16.5m long articulated vehicles travelling through the proposed junction layout. Several vehicles of this type were observed travelling through the junction during the site visit. These heavy goods vehicles (HGVs) turning onto Nine Mile Ride, travelling westbound and eastbound, are shown to encroach into the opposing traffic lanes used by vehicles approaching the junction. This could increase the potential for a head-on collision between an HGV and a vehicle approaching the junction on Nine Mile Ride.

RECOMMENDATION 9

It is recommended that amendments are made to the proposed junction layout, particularly the layout and locations of the proposed pedestrian refuge islands, to ensure that HGVs can exit the junction onto the Nine Mile Ride western and eastern arms without encroaching into any opposing traffic lanes.

3.3.2. PROBLEM 10

Location: California Crossroads – see Appendix B for location.

Summary: HGVs turning between Nine Mile Ride (West) and Finchampstead Road (South) will encroach notably into the path of opposing traffic.

Drawing number 8199-ATR-001 (revision P05) shows the swept paths of 16.5m long articulated vehicles travelling through the proposed junction layout. These HGVs turning between Nine Mile Ride (West) and Finchampstead Road (South) in both directions will encroach notably into the path of opposing traffic on the approaches / exits at the junction on these arms.

This could increase the potential for a head-on collision between an HGV and another vehicle travelling on the Nine Mile Ride (West) or Finchampstead Road (South) arms of the junction.

RECOMMENDATION 10

It is recommended that the designer reviews the demand for HGVs turning between Nine Mile Ride (West) and Finchampstead Road (South) at the California Crossroads junction, to determine how often HGVs could be undertaking these turning movements.

If HGVs are expected to be turning between these two arms of the junction on a frequent basis, it is recommended that the designer reviews whether there is a possibility of directing HGV traffic along an appropriate alternative route to reduce the potential for these vehicles turning between Nine Mile Ride (West) and Finchampstead Road (South) at the California Crossroads junction.

3.4. ROAD MARKINGS, TRAFFIC SIGNS AND STREET LIGHTING

3.4.1. PROBLEM 11

Location: Nine Mile Ride westbound and eastbound approaches to the junction – see Appendix B for location.

Summary: Proposed “New Road Layout Ahead” traffic signs could be installed at locations where they obstruct footways or restrict the visibility of existing traffic signs.

The exact locations of the proposed “New Road Layout Ahead” traffic signs, on the Nine Mile Ride westbound and eastbound approaches to the junction, are unclear from the design drawings (drawing number 8199-TS-002 states that these signs will be installed a minimum of 45m upstream of the scheme extents). These signs could be installed on new sign posts in the centre of the footways, where they will present an obstruction to pedestrians, or they could restrict the visibility of existing traffic signs located adjacent to the proposed signs.

RECOMMENDATION 11

It is recommended that the proposed “New Road Layout Ahead” traffic signs on Nine Mile Ride are installed at the back of the existing footways, and are positioned when will not restrict the visibility of other traffic signs.

3.4.2. PROBLEM 12

Locations: Various – see Appendix B for locations.

Summary: Existing flag-type direction traffic signs at the California Crossroads junction are proposed to be removed and not reinstalled.

Numerous existing flag-type direction traffic signs are provided at each exit at the junction, which are proposed to be removed. These signs are shown on the following 3 photographs. The proposed map-type advance direction signs on each junction approach will not include as much information as these existing flag-type direction signs (i.e. all of the proposed map-type advance direction signs will only show one destination for each exit from the junction).

Therefore, road users travelling to the destinations on the existing signs shown on the following photographs may not have sufficient information regarding which direction they need to take at the California Crossroads junction. This could lead to road users taking the wrong exit at the junction, and then having to turn around to return to the junction in order to go the correct way, which could lead to conflicts with other road users.





RECOMMENDATION 12

It is recommended that the flag-type direction traffic signs are retained at appropriate locations at the California Crossroads junction, or that the proposed map-type advance direction signs include further details regarding the various destinations on the exits from the junction.

3.4.3. PROBLEM 13

Locations: Avery Corner car park access road and Avery Close – see Appendix B for locations.

Summary: Existing give-way road markings on the minor roads to be removed and not reinstalled.

At the junction between Finchampstead Road and the Avery Corner car park access road, and at the junction between Nine Mile Ride and Avery Close, there are existing give-way road markings provided on the minor roads. These road markings are proposed to be removed and not reinstalled. This could increase the potential for a vehicle approaching Finchampstead Road or Nine Mile Ride on these side roads failing to stop in time, and overshooting onto the major road carriageway where they could collide with a vehicle travelling along one of these major roads.

RECOMMENDATION 13

It is recommended that appropriate give-way road markings are provided on the Avery Corner car park access road and Avery Close side roads at these junction.

3.4.4. PROBLEM 14

Locations: Various

Summary: Proposed street lighting columns could be installed too close to the carriageway or present an obstruction on the footways.

It is unclear how far the proposed street lighting columns will be set back from the adjacent carriageways. If they are located too close to the carriageway, this could increase the possibility of a passing vehicle striking a lighting column. In addition, the new lighting columns could present an obstruction on the footways, which could lead to a pedestrian / wheelchair user travelling too close to the carriageway to pass around them and be struck by a passing vehicle.

RECOMMENDATION 14

It is recommended that all of the proposed street lighting columns are installed at the back of the footways.

3.4.5. PROBLEM 15

Location: Nine Mile Ride eastbound approach to the junction – see Appendix B for location.

Summary: Proposed map-type advance direction sign could present an obstruction on the footway.

A new map-type advance traffic sign will be provided on the footway on the Nine Mile Ride eastbound approach to the junction. The sign posts could present an obstruction on the footway, which could lead to a pedestrian / wheelchair user travelling too close to the carriageway to pass around the posts and be struck by a passing vehicle.

RECOMMENDATION 15

It is recommended that the sign posts are installed so that pedestrians and wheelchair users can pass around them without travelling too close to the carriageway.

3.4.6. PROBLEM 16

Location: Finchampstead Road southbound approach to the junction – see Appendix B for location.

Summary: Proposed traffic sign to be installed at the location of the existing signalised crossing.

The “New Road Layout Ahead” traffic sign on the Finchampstead Road southbound approach to the junction will be installed at the location of the eastern crossing point of the existing signalised crossing facility. This could obstruct the visibility of the primary traffic signal head on the east side of the carriageway, which could increase the potential for a vehicle braking late, overshooting the stopline and colliding with a pedestrian crossing the carriageway.

RECOMMENDATION 16

It is recommended that the proposed “New Road Layout Ahead” traffic sign on this junction approach is relocated to an alternative appropriate location.

3.4.7. PROBLEM 17

Locations: Various

Summary: Inadequate set back distances of the proposed traffic signs from the adjacent carriageways could increase the possibility of a passing vehicle colliding into a traffic sign.

No details have been provided to the Road Safety Audit Team regarding the distances that the proposed traffic signs will be set back from the adjacent carriageways. If any of the proposed traffic signs are positioned too close to the carriageway, this could increase the possibility of a passing vehicle colliding with a traffic sign.

RECOMMENDATION 17

It is recommended that all of the proposed traffic signs have appropriate set back distances from the adjacent carriageways, to mitigate the potential for a passing vehicle colliding with a sign face.

3.4.8. PROBLEM 18

Location: Co-Operative car park entrance on Finchampstead Road – see Appendix B for location.

Summary: Visibility of the No Entry traffic sign could be obstructed by a vehicle parking in the adjacent parking bay.

A 'No Entry' traffic sign will be provided at the revised location of the Co-Operative car park entrance to prohibit road users from using this access to exit the car park. However, if a vehicle is parked in the adjacent northern-most echelon parking bay, the visibility of the sign could be obstructed. This could lead to a vehicle exiting the car park in this location, and colliding head-on with a vehicle turning into the car park entrance.

RECOMMENDATION 18

It is recommended that 'No Entry' traffic signs are provided on both sides of the car park entrance.

3.4.9. PROBLEM 19

Location: Co-Operative car park exit – see Appendix B for location.

Summary: Visibility of the "Out" traffic sign could be obstructed by a vehicle parking in the adjacent parking bay.

An "Out" traffic sign will be provided at the southern end of the Co-Operative car park to highlight to road users that they should exit the car park in this location. However, if a vehicle is parked in the adjacent southern-most echelon parking bay, the visibility of the sign could be obstructed. This could increase the possibility of a vehicle exiting the car park using the entrance at the northern end of the car park, and colliding head-on with a vehicle turning into the car park entrance.

RECOMMENDATION 19

It is recommended that "Out" traffic signs are provided on both sides of the car park exit.

3.4.10. PROBLEM 20

Location: Finchampstead Road northbound approach to the junction – see Appendix B for location.

Summary: Proposed “New Road Layout Ahead” traffic sign could obstruct the visibility of the adjacent map-type advance direction sign or the existing ‘School’ advance warning traffic sign.

The proposed “New Road Layout Ahead” traffic sign on the Finchampstead Road northbound approach to the junction will be installed in close proximity to the proposed map-type advance direction sign as well as the existing ‘School 20 when lights show’ advance warning traffic sign.

This could lead to road users approaching the California Crossroads junction not being fully aware of the junction layout downstream (which could result in conflicts with other road users at the junction) or not being aware of the hazard of school children crossing Finchampstead Road ahead (which could increase the possibility of vehicle colliding with a child running into the carriageway without caution).

RECOMMENDATION 20

It is recommended that the proposed “New Road Layout Ahead” traffic sign is installed at a location where it will not restrict the visibility of other traffic signs.

3.5. WALKING, CYCLING AND HORSE RIDING (CONTINUED)

3.5.1. PROBLEM 21

Location: Avery Comer car park access – see Appendix B for location.

Summary: Visually impaired pedestrians walking from the car park could be confused by the proposed road layout and walk into the path of vehicles travelling towards the car park access.

As shown on the following photograph, an existing uncontrolled pedestrian crossing facility with dropped kerbs and tactile paving is currently provided across the private access on the east side of the car park access.



The existing tactile paving directs visually impaired pedestrians from the car park footway onto the existing footway on the north-east side of the access road from Finchampstead Road (this footway is being removed as part of the scheme works). It is unclear whether the tactile paving on both sides of the private access is being removed from the Site Clearance drawing.

In the proposed layout, visually impaired pedestrians walking from the car park footway could mistakenly walk straight ahead onto the access road carriageway (as the northern end of this footway will be flush with the carriageway surface) and potentially into the path of a vehicle travelling towards the car park – see example below. This could lead to a visually impaired pedestrian being struck by a vehicle on the carriageway.



RECOMMENDATION 21

It is recommended that an appropriate feature is provided in this location, such as tactile paving, in order to direct visually impaired pedestrians from the car park footway towards the north-east side of the access road, so that they will walk behind the proposed bollards rather than into the path of an oncoming vehicle.

3.6. ALIGNMENT

3.6.1. No specific road safety problems identified.

4. ROAD SAFETY AUDIT TEAM STATEMENT

4.1.1. We certify that this Stage 2 Road Safety Audit has been carried out in accordance with GG 119.

ROAD SAFETY AUDIT TEAM LEADER:

Neil Nicholson MCIHT MSoRSA
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WSP
Keble House
Southernhay Gardens
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EX1 1NT

Signed:



Date: 22nd March 2023

Tel: (01392) 267582

ROAD SAFETY AUDIT TEAM MEMBER:

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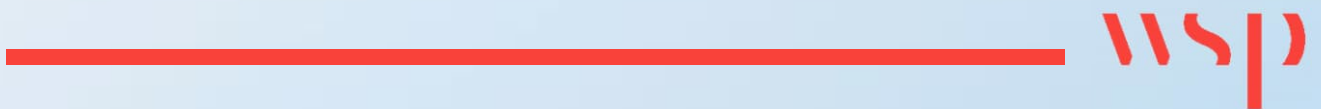
Signed:



Date: 22nd March 2023

Appendix A

LIST OF DOCUMENTS AND DRAWINGS CONSIDERED
DURING THIS ROAD SAFETY AUDIT





LIST OF DOCUMENTS AND DRAWINGS CONSIDERED DURING THIS ROAD SAFETY AUDIT

REPORTS / DOCUMENTS

Title	Report Number	Date
GG 119 Compliant Road Safety Audit Brief	N/A	22/07/2022
Personal Injury Collision Data: 2015-2017	N/A	13/04/2018
California Crossroads - Stage 1 Road Safety Audit	70040088/RSA1/1/1	28/01/2019
California Crossroads - Stage 1 Road Safety Audit with Designer's Response	70040088/RSA1/1/2	03/03/2019
California Crossroads - Stage 1 Road Safety Audit (Repeat)	70068199/RSA1/1/1	13/10/2020
California Crossroads - Stage 1 Road Safety Audit (Repeat) with Designer's Response	N/A	04/01/2021
California Crossroads Traffic Flows Information	N/A	01/08/2022
California Crossroads - Walking, Cycling and Horse-Riding Assessment	088-WCHAR001	05/06/2018
California Crossroads - Walking, Cycling and Horse-Riding Review	088-WCHARR	04/01/2019
Pedestrian Footfall Survey Screenshots	TSP13785	April 2018
Queue Length Survey Screenshots	TSP13785	April 2018

DRAWINGS

Drawing Title	Drawing Number	Revision
General Arrangement – Visibility Splay	8199-GA-002	C03
Vehicle Tracking: Articulated Vehicle, Sheet 1 of 4	8199-ATR-001	P05
Vehicle Tracking: Articulated Vehicle Movements Into Car Park, Sheet 2 of 4	8199-ATR-002	P04
Vehicle Tracking: Tracking Car Movements Into Parking Spaces, Sheet 3 of 4	8199-ATR-003	P05
Vehicle Tracking: Tracking Car Into Disabled Parking Space, Sheet 4 of 4	8199-ATR-004	P05
Vehicle Tracking: Refuse Vehicle Into Avery Corner, Sheet 1 of 2	8199-ATR-005	P03
Vehicle Tracking: Refuse Vehicle Into Avery Corner, Sheet 2 of 2	8199-ATR-006	P01
Vehicle Tracking - Rigid Vehicle	8199-ATR-007	P01
Existing Catchment Plan	8199-DR-100	P01
Proposed Drainage Layout	8199-DR-102	C03
Proposed Drainage Plan and Long Section	8199-DR-103	P03



Drawing Title	Drawing Number	Revision
Proposed Catchment Plan	8199-DR-104	C03
Existing Contours	8199-RP-001	P01
Proposed Contours	8199-RP-002	C03
Kerbing Plan	8199-RP-003	C03
Long Sections	8199-RP-004	C03
Proposed Cross Sections, Sheet 1 of 5	8199-RP-005	P03
Proposed Cross Sections, Sheet 2 of 5	8199-RP-006	P03
Proposed Cross Sections, Sheet 3 of 5	8199-RP-007	P03
Proposed Cross Sections, Sheet 4 of 5	8199-RP-008	P03
Proposed Cross Sections, Sheet 5 of 5	8199-RP-009	C03
Site Clearance	8199-SC-001	C03
Road Lighting Site Clearance	8199-SC-002	C01
Bollard Detail	8199-SD-001	-
Planting Detail – 01	8199-SD-002	P01
Planting Detail - 02	8199-SD-003	P02
Leaf Quantities	8199-SD-004	-
Courtesy Crossing - Gateway Crossings	8199-SD-005	P02
Courtesy Crossing - North West Crossing	8199-SD-006	P02
Courtesy Crossing - South West Crossing	8199-SD-007	P02
Courtesy Crossing - Centre Crossing	8199-SD-008	P02
Courtesy Crossing - North East Crossing	8199-SD-009	P02
Courtesy Crossing - South East Crossing	8199-SD-010	P02
Courtesy Crossing - Western Crossings	8199-SD-011	-
Courtesy Crossing - Eastern Crossings	8199-SD-012	-
Street Furniture Construction Detail, Sheet 1	8199-SD-014	P02
Street Furniture Construction Detail, Sheet 2	8199-SD-015	P02
Street Furniture Construction Detail, Sheet 3	8199-SD-016	P02
Traffic Sign Layout	8199-TS-002	C03
Traffic Sign Design – Signage Schedule	8199-TS-003	P02
Proposed Advance Direction Sign	8199-TS-101	P04
Proposed Advance Direction Sign	8199-TS-102	P05
Proposed Advance Direction Sign	8199-TS-103	P04
Proposed Advance Direction Sign	8199-TS-104	P04
Landscape General Arrangement	8199-LA-001	C03
Planting Location Plan	8199-LA-002	P02

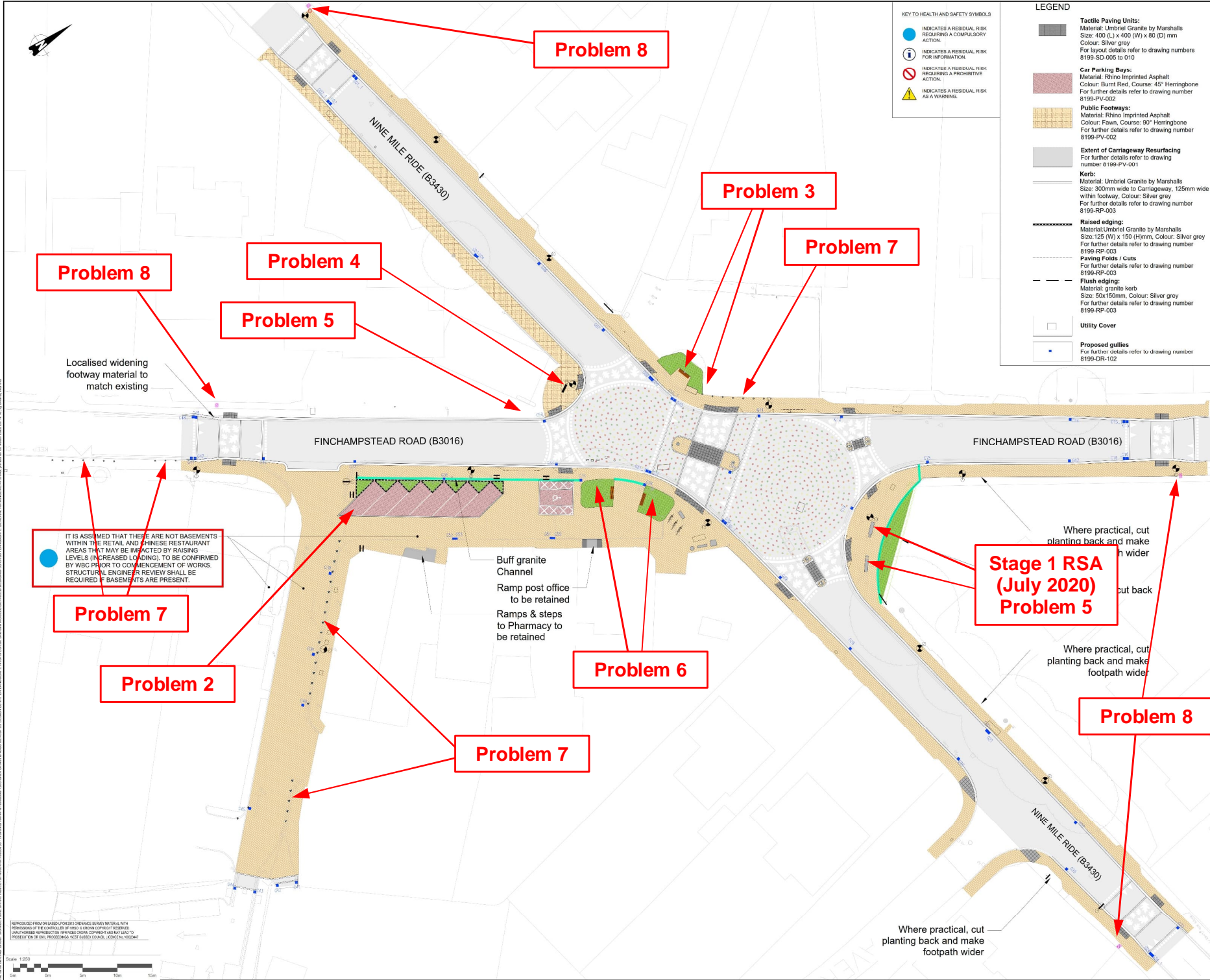


Drawing Title	Drawing Number	Revision
Proposed Road Lighting Layout	8199-LI-001	C02
Existing Sign Schedule	8199-WSP-RP-C-001	B

Appendix B

LOCATION PLANS OF ROAD SAFETY PROBLEMS





- KEY TO HEALTH AND SAFETY SYMBOLS**
- INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION.
 - ⓘ INDICATES A RESIDUAL RISK FOR INFORMATION.
 - ⊘ INDICATES A RESIDUAL RISK REQUIRING A PROHIBITIVE ACTION.
 - ⚠ INDICATES A RESIDUAL RISK AS A WARNING.

- LEGEND**
- Tactile Paving Units:**
Material: Umbriel Granite by Marshalls
Size: 400 (L) x 400 (W) x 80 (D) mm
Colour: Silver grey
For layout details refer to drawing numbers 8199-SD-005 to 010
 - Car Parking Bays:**
Material: Rhino Imprinted Asphalt
Colour: Burnt Red, Course: 45° Herringbone
For further details refer to drawing number 8199-PV-002
 - Public Footways:**
Material: Rhino Imprinted Asphalt
Colour: Fawn, Course: 90° Herringbone
For further details refer to drawing number 8199-PV-002
 - Extent of Carriageway Resurfacing**
For further details refer to drawing number 8199-PV-001
 - Kerb:**
Material: Umbriel Granite by Marshalls
Size: 300mm wide to Carriageway, 125mm wide within footway, Colour: Silver grey
For further details refer to drawing number 8199-RP-003
 - Raised edging:**
Material: Umbriel Granite by Marshalls
Size: 125 (W) x 150 (H)mm, Colour: Silver grey
For further details refer to drawing number 8199-RP-003
 - Paving Folds / Cuts**
For further details refer to drawing number 8199-RP-003
 - Flush edging:**
Material: granite kerb
Size: 50x150mm, Colour: Silver grey
For further details refer to drawing number 8199-RP-003
 - Utility Cover**
 - Proposed gullies**
For further details refer to drawing number 8199-DR-102

- Leaf Pattern:**
Material: Premark thermoplastic
For further details refer to drawing number 8199-SD-011 & 012
- Crossing Leaf Pattern:**
Material: DecoMark thermoplastic
For further details refer to drawing numbers 8199-SD-005 to 010
- Planted Areas:**
Material: Shrub/herbaceous/ground-cover plants
For further details refer to drawing number 8199-SD-002 to 003
- Bollards with Bespoke Design**
At side-street towards primary school.
Material: Stainless Steel
For further details refer to drawing number 8199-SD-001
- Flat Top Bollards**
Material: Stainless Steel
- Seating Top to Planters:**
Product: Rough & Ready by Streetlife
Size: 500 (W)
Colour: Black (Recycled Plastics)
For further details refer to drawing number 8199-SD-014 to 016
- Tolens at Gateways:**
Shown indicatively, width 500mm max
Details to be confirmed.
- Traffic Bollards**
Stainless Steel Hoop bollards by Mallatite
Size: 440W x 900H mm with Ø300 Keep Left sign.
For further details refer to drawing number 8199-SD-021
- Fin Cycle Stand**
Material: Stainless Steel
- Light Columns**
For further details refer to drawing number 8199-LI-C001

Note:
1. For further street furniture details refer to California crossroad Highway Infrastructure specification Appendix 26/17

C03	02/03/2023	MK	Updated Kerb Line at Car Park	PT	PT
C02	14/02/2023	MK	Access to Arvey Car Park Revised	PT	PT
C01	30/08/2022	MK	Issue for Construction	PT	PT
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: FOR CONSTRUCTION

wsp

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CLIENT: WOKINGHAM BOROUGH COUNCIL

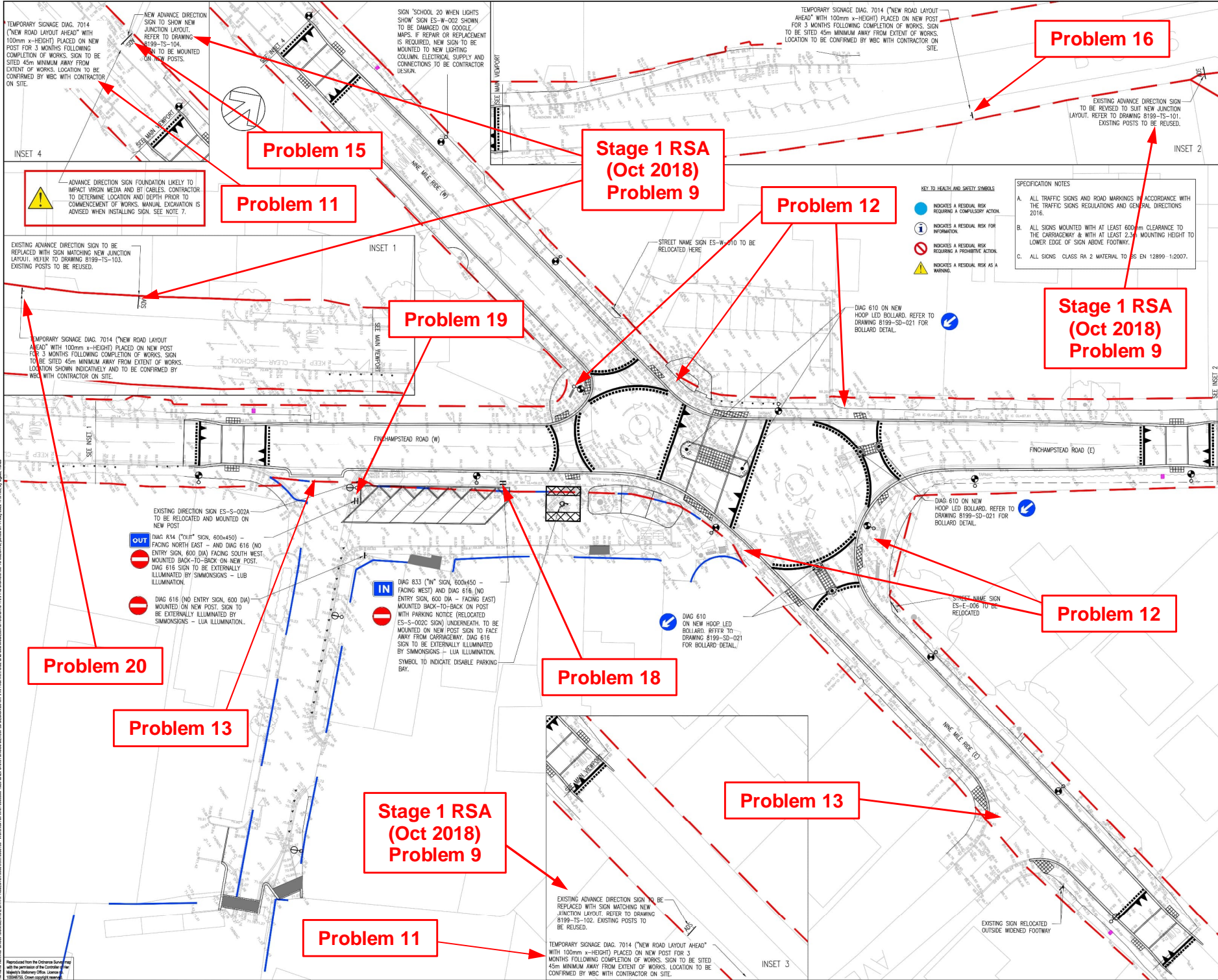
ARCHITECT:

PROJECT: CALIFORNIA CROSS ROADS

TITLE: LANDSCAPE GENERAL ARRANGEMENT

SCALE @ A1:	1:250	DRAWN:	PT	APPROVED:	PT
PROJECT NO:	70088199	DESIGNED:	LS	DATE:	February 23

DRAWING NO: 8199-LA-001
REV: C03
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DO NOT SCALE

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- ALL DIMENSIONS SHOWN ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 - CONFLICTING INFORMATION SHOWN ON THE ENGINEER'S DRAWINGS OR DISCREPANCIES BETWEEN THE INFORMATION GIVEN BY THE ENGINEER AND THAT PROVIDED BY OTHERS MUST BE REFERRED TO THE ENGINEER BEFORE THE WORKS COMMENCE.
 - THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION.
 - FOR EXISTING SIGNAGE SCHEDULE, REFER TO WSP REPORT 8199-WSP-RP-C-001 REV B EXISTING SIGN SCHEDULE. FOR EXISTING TRAFFIC SIGN STRATEGY REFER TO DRAWING 8199-TS-001.
 - FOR ROAD LIGHTING DRAWING, REFER TO DRAWING 8199-LI-001.
 - FOR SITE CLEARANCE DRAWING, REFER TO 8199-SC-001 TO 002.
 - FOR PROPOSED SIGN DETAILS AND POST AND FOUNDATION DETAILS, REFER TO 8199-TS-003. FOR PROPOSED ADVANCED SIGN FACES, REFER TO 8199-TS-101 TO 104.
 - FOR DETAILS ON ROAD MARKINGS, REFER TO LANDSCAPE GENERAL ARRANGEMENT DRAWING.
 - WBC TO DECIDE ASSET NUMBERS FOR ALL ILLUMINATED SIGNS AND AFFIX ASSET NUMBERS TO SIGNS.
- KEY:
- HIGHWAY BOUNDARY
 - WBC LAND OWNERSHIP BOUNDARY
 - ADS ADVANCED DIRECTIONAL SIGN
 - ROAD NAME SIGN TO WBC DETAIL WSD/1200/1
 - PROPOSED ROAD MARKINGS TO BE DETAILED BY LANDSCAPE GENERAL ARRANGEMENT DRAWING
 - 1 SIGN TO WBC DETAIL WSD/1200/1 WITH A POST AND FOUNDATIONS (UNLESS OTHERWISE SPECIFIED)
 - H BACK TO BACK SIGNS TO WBC DETAIL WSD/1200/1 WITH A POST AND FOUNDATIONS (UNLESS OTHERWISE SPECIFIED)
 - PROPOSED HOOP LED BOLLARD - REFER TO WSP DRAWING 8199-SD-021
 - PROPOSED TOTEEM, REFER TO LANDSCAPE DRAWING PACK
 - EXISTING LIGHTING COLUMN TO REMAIN, LANTERN TO BE REPLACED. REFER TO STREET LIGHTING DRAWING PACK
 - EXISTING LIGHTING COLUMN TO BE REPLACED. REFER TO STREET LIGHTING DRAWING PACK
 - NEW LIGHTING COLUMN. REFER TO STREET LIGHTING DRAWING PACK

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

NO	DATE	BY	DESCRIPTION	CHK	APP
P02	12/07/2022	SP	AMENDMENTS TO DISABLED PARKING BAY SIGNS		
F01	25/05/2021	YO	FRESH ISSUE		
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: **S2 - FOR INFORMATION**

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wsp.com

CLIENT: **WOKINGHAM BOROUGH COUNCIL**

ARCHITECT:

SITE/PROJECT: **CALIFORNIA CROSSROADS**

TITLE: **TRAFFIC SIGN LAYOUT**

SCALE @ A1:	1:250	DRAWN:	MFB	APPROVED:	SD
PROJECT NO:	70068199	DESIGNED:	YO	DATE:	July 22

DRAWING NO: **8199-TS-002**

REV: **P02**

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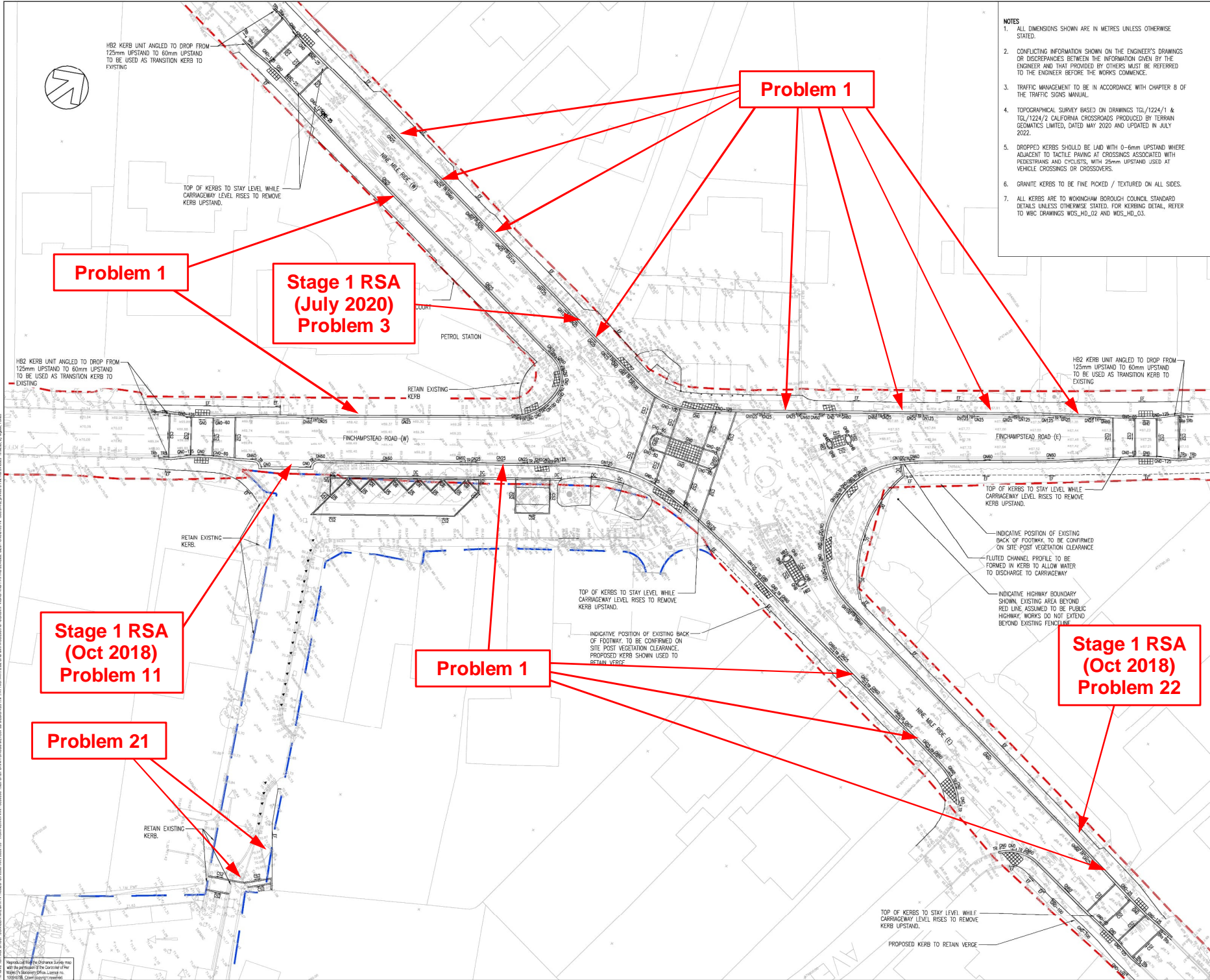
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DO NOT SCALE

KEY

- HIGHWAY BOUNDARY
- EXTENTS OF WBC LAND OWNERSHIP
- PROPOSED ALIGNMENT
- INDICATIVE BACK OF FOOTWAY
- ▤ PROPOSED TACTILE PAVING
- GN125 125mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN125 0-125mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN100 100mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN100 0-100mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN60 60mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN60 0-60mm UPSTAND, 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- GN0 300mm WIDE x 200mm THICK GRANITE KERB LAID FLUSH, COLOUR SILVER GREY
- TR 300mm WIDE GRANITE TRANSITION KERB, COLOUR SILVER GREY
- TR0 125-300mm WIDE GRANITE TRANSITION KERB. CONTRACTOR TO CHECK HANDING.
- TR0 HB2 TO 80 CONCRETE TRANSITION KERB. CONTRACTOR TO CHECK HANDING.
- TR0 25mm UPSTAND 300mm WIDE GRANITE KERB, COLOUR SILVER GREY
- CS2 125mm WIDE TYPE CS2 GRANITE UNIT LAID FLUSH, COLOUR SILVER GREY
- GN 125mm UPSTAND 125mm WIDE GRANITE KERB, COLOUR SILVER GREY
- HB2 75-125mm UPSTAND GRANITE HB2 KERB KERING TO BE LAID LEVEL. UPSTAND TO BE DETERMINED BY ROAD PROFILE.
- QHB GRANITE HALF-BATTERED QUADRANT KERB
- DC 255mm WIDE x 125mm HIGH, 25mm DEEP DISHED GRANITE CHANNEL, COLOUR BUFF
- EF 50mm WIDE x 150mm HIGH SQUARE EF GRANITE KERB, COLOUR SILVER GREY

- NOTES
1. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS OTHERWISE STATED.
 2. CONFLICTING INFORMATION SHOWN ON THE ENGINEER'S DRAWINGS OR DISCREPANCIES BETWEEN THE INFORMATION GIVEN BY THE ENGINEER AND THAT PROVIDED BY OTHERS MUST BE REFERRED TO THE ENGINEER BEFORE THE WORKS COMMENCE.
 3. TRAFFIC MANAGEMENT TO BE IN ACCORDANCE WITH CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL.
 4. TOPOGRAPHICAL SURVEY BASED ON DRAWINGS TOL/1224/1 & TOL/1224/2 CALIFORNIA CROSSROADS PRODUCED BY TERRAIN GEOMATICS LIMITED, DATED MAY 2020 AND UPDATED IN JULY 2022.
 5. DROPPED KERBS SHOULD BE LAID WITH 0-6mm UPSTAND WHERE ADJACENT TO TACTILE PAVING AT CROSSINGS ASSOCIATED WITH PEDESTRIANS AND CYCLISTS, WITH 25mm UPSTAND USED AT VEHICLE CROSSINGS OR CROSSOVERS.
 6. GRANITE KERBS TO BE FINE PICKED / TEXTURED ON ALL SIDES.
 7. ALL KERBS ARE TO WOKINGHAM BOROUGH COUNCIL STANDARD DETAILS UNLESS OTHERWISE STATED. FOR KERBING DETAIL, REFER TO WBC DRAWINGS WDS_HD_02 AND WDS_HD_03.



Problem 1

Stage 1 RSA (July 2020) Problem 3

Problem 1

Stage 1 RSA (Oct 2018) Problem 11

Problem 1

Stage 1 RSA (Oct 2018) Problem 22

Problem 21

REV	DATE	BY	DESCRIPTION	CHK	APP
C03	02/03/2023	JHR	ALIGNMENT UPDATED AT ABBEY CORNER CAR PARK ACCESS, CONSTRUCTION ISSUE	JHR	SD
C02	28/09/2022	JHR	CONSTRUCTION ISSUE	JHR	SD
C01	15/08/2022	JHR	TRANSITION KERBS ANNOTED, KERBS ANNOTED BASED ON UPDATED LANDSCAPE DESIGN, ISSUED FOR TENDER	JHR	SD
P02	13/07/2022	JHR	UPDATED AS PER COMMENTS	JHR	SD
P01	20/09/2021	JHR	FIRST ISSUE	JHR	SD

DRAWING STATUS: FOR CONSTRUCTION

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CLIENT: WOKINGHAM BOROUGH COUNCIL

ARCHITECT:

STEINPROJECT: CALIFORNIA CROSSROADS

TITLE: KERBING PLAN

SCALE @ A1:	1:250	CHECKED:	JHR	APPROVED:	SD
PROJECT NO:	70068189	DESIGNED:	YO	DATE:	September 2021

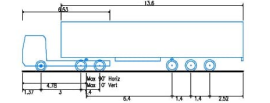
DRAWING NO:	8199-RP-003	REV:	C03
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- NOTES
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 3. VEHICLES TRACKED AT 10mph UNLESS OTHERWISE STATED.



Max Legal Length (UK) Articulated Vehicle (16.5m)
 Overall Length 16.500m
 Overall Width 2.550m
 Overall Body Height 3.681m
 Min Body Ground Clearance 0.411m
 Max Track Width 2.500m
 Lock to Lock Turn 6.000m
 Kerb to Kerb Turning Radius 6.530m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P05	02/06/2020	YO	TRACKING AMENDED FOLLOWING UPDATED ALIGNMENT	SD	SD
P04	22/02/2021	YO	TRACKING AMENDED FOLLOWING UPDATED ALIGNMENT	SD	SD
P03	31/07/2020	YO	UPDATED FOLLOWING INTERNAL REVIEW	HL	SD
P02	24/07/2020	YO	UPDATED FOLLOWING INTERNAL REVIEW	HL	SD
P01	20/05/2020	YO	FIRST ISSUE	HL	SD

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: WOKINGHAM BOROUGH COUNCIL

ARCHITECT:

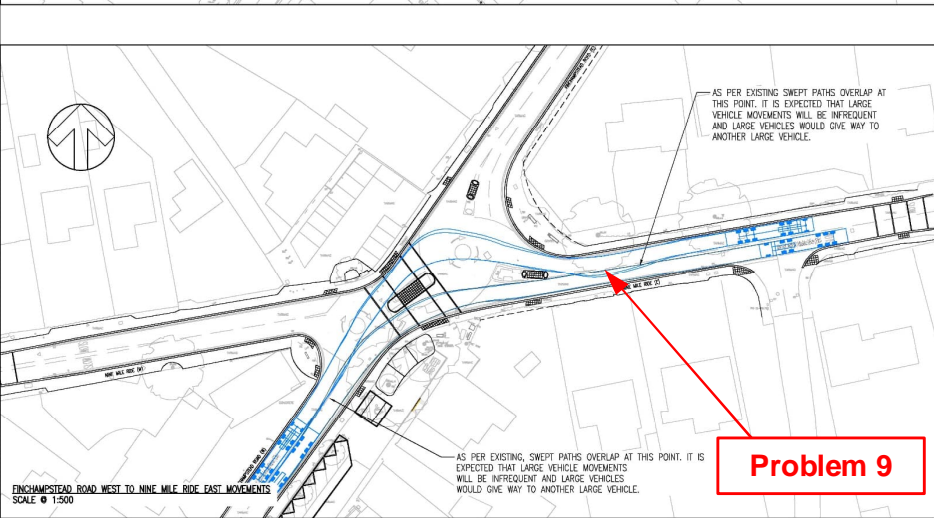
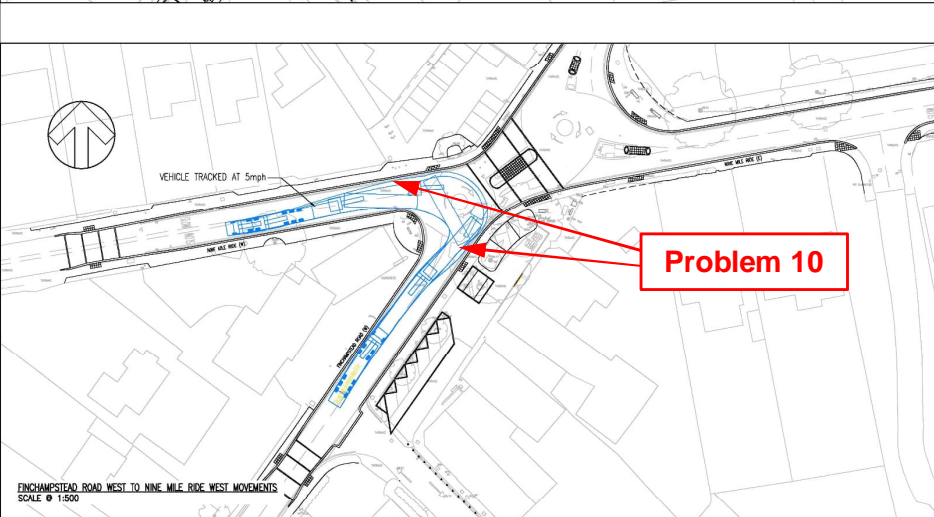
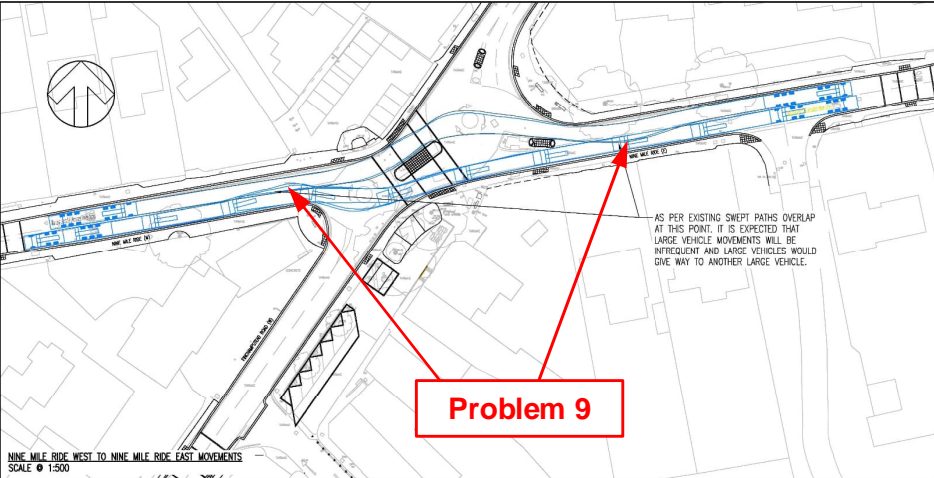
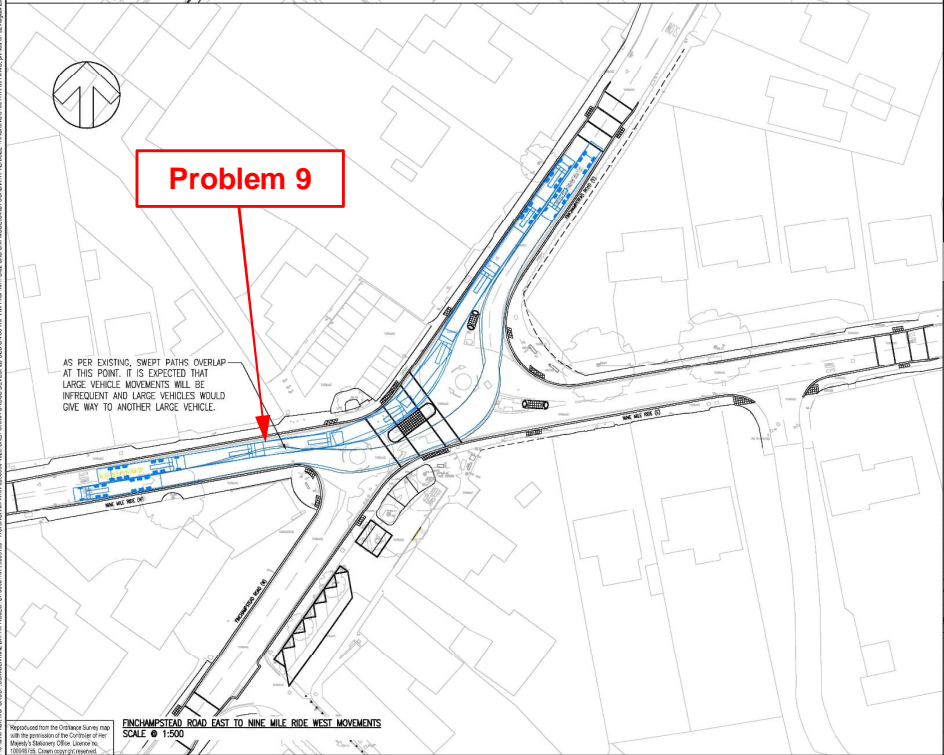
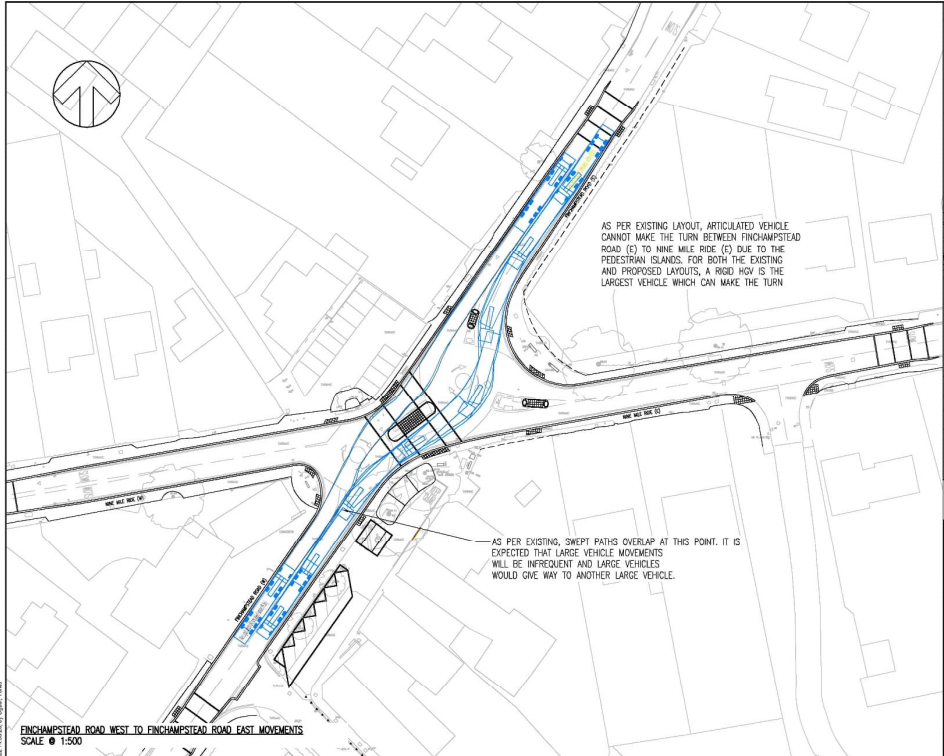
STEP/PROJECT: CALIFORNIA CROSS

TITLE: VEHICLE TRACKING ARTICULATED VEHICLE SHEET 1 OF 4

SCALE @ A1:	CHECKED:	HL	APPROVED:	SD
1:500	DESIGNED:	YO	DATE:	May 2020

DRAWING NO: 8199-ATR-001 REV: P05

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FINCHAMPSTEAD ROAD WEST TO FINCHAMPSTEAD ROAD EAST MOVEMENTS SCALE @ 1:500
 FINCHAMPSTEAD ROAD EAST TO NINE MILE RIDE WEST MOVEMENTS SCALE @ 1:500
 NINE MILE RIDE WEST TO NINE MILE RIDE EAST MOVEMENTS SCALE @ 1:500
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