



Road Safety Audit Stage 1/2

Green Park

Reading

Berkshire

Date: 9th July 2020

Report produced for: Velocity Transport Planning

Report produced by: M & S Traffic Ltd

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Prepared by:	M & S Traffic
On behalf of:	Reading Borough Council

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1 INTRODUCTION

- 1.1 This report describes a combined Stage 1 and 2 Road Safety Audit carried out on proposed highway improvement works associated with Green Park development, Reading, as detailed below:

Area 1, Longwater Avenue:

- Proposed removal of Speed Table and replacement with Speed Cushions.

Area 2, Longwater Avenue:

- Proposed removal of Speed Table and replacement with Speed Cushions.

Area 3A, Longwater Avenue:

- Proposed removal of Speed Table and replacement with Speed Cushions.

Area 4, Longwater Avenue:

- Proposed removal of Speed Table and replacement with Speed Cushions.

Area 7, Longwater Avenue:

- Proposed removal and replacement of Speed Cushions.

Area 9, Longwater Avenue:

- Proposed removal and replacement of Speed Cushions.

Area 11, Longwater Avenue:

- Proposed removal and replacement of Speed Cushions.

Area 15, Brook Drive:

- Proposed removal and replacement of Speed Cushions.

Area 19, Brook Drive:

- Proposed removal of Speed Table and replacement with Speed Cushions.

Area 20, South Oak Way:

- Proposed removal and replacement of Speed Cushions.

Area 21, South Oak Way:

- The provision of two bus laybys with footway links and the relocation of the humped pedestrian crossing.

Area 22, South Oak Way:

- Proposed removal and replacement of Speed Cushions.

Area 24, South Oak Way:

- Proposed removal and replacement of Speed Cushions.
- The provision of a 20mph Zone with carriageway roundels on part on the Green Park estate – entry points at Longwater Avenue and South Oak Way.

1.2 The Audit Team membership were as follows:

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Member
Highways England Approved RSA Certificate of Competency

Bryan Shawyer B.Eng. (Hons), MSc, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG119, The Design Manual for Roads and Bridges. The documents available at the time the report was compiled are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic in July 2020 and comprised an examination of the documents provided. A joint site visit was undertaken on the 7th July between 10:30 and 12:30. Weather conditions at the time were overcast and the road surfaces were dry. Traffic flows were low and free flow speeds were low. There were low-level pedestrian movements and no observed cyclist movements; however, the audit was undertaken in the Covid-19 restriction.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings¹ It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any “Technical Check” function on these proposals. It is assumed that the Project Sponsor is satisfied that such a “Technical Check” has been successfully completed prior to requesting this safety audit.

1.6 No Departures from Standard, traffic flow or personal injury accident data was provided to the Audit Team.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

2 SAFETY ISSUES RAISED AT PREVIOUS AUDITS

2.1 No previous safety audits were submitted for assessment.

3 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 1

3.1 General

3.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

3.2 Local Alignment

3.2.1 No comment.

3.3 Junctions

3.3.1 No comment.

3.4 Non-Motorised User (NMU) Provision

3.4.1 No comment.

3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 No comment.

4 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 2

4.1 General

4.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

4.2 Local Alignment

4.2.1 No comment.

4.3 Junctions

4.3.1 No comment.

4.4 Non-Motorised User (NMU) Provision

4.4.1 No comment.

4.5 Road Signs, Carriageway Markings and Lighting

4.5.1 No comment.

5 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 3A

5.1 General

5.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

5.2 Local Alignment

5.2.1 No comment.

5.3 Junctions

5.3.1 No comment.

5.4 Non-Motorised User (NMU) Provision

5.4.1 No comment.

5.5 Road Signs, Carriageway Markings and Lighting

5.5.1 No comment.

6 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 4

6.1 General

6.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

6.2 Local Alignment

6.2.1 PROBLEM

Location: Proposed speed cushion spacing.

Summary: Ineffective traffic calming measures may not provide vehicle speed reduction and could lead to head on collisions.

The carriageway at this point has a flush blocked paved central median strip, with the central spacing of the cushions the gap between the cushions could be sufficient to allow vehicles to bypass the speed cushions without reducing speeds. This could lead to a lack of speed reduction and vehicles entering the opposing carriageway leading to possible head on collisions.

RECOMMENDATION

It is recommended that measures including but not restricted to; installing a central raised area or extension of the central island should be implemented, or alternatively that the speed table should remain.

DESIGNERS RESPONSE.

The Carriageway and Speed Cushion Layout/Arrangement has been agreed with the Reading BC and Reading Busses. The arrangement will be reviewed during the 12 month maintenance period and any issues arising will be addressed.

6.3 Junctions

6.3.1 No comment.

6.4 Non-Motorised User (NMU) Provision

6.4.1 No comment.

6.5 Road Signs, Carriageway Markings and Lighting

6.5.1 No comments.

7 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 7

7.1 General

7.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

7.2 Local Alignment

7.2.1 No comment.

7.3 Junctions

7.3.1 No comment.

7.4 Non-Motorised User (NMU) Provision

7.4.1 No comment.

7.5 Road Signs, Carriageway Markings and Lighting

7.5.1 No comment.

8 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 9

8.1 General

8.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

8.2 Local Alignment

8.2.1 No comment.

8.3 Junctions

8.3.1 No comment.

8.4 Non-Motorised User (NMU) Provision

8.4.1 No comment.

8.5 Road Signs, Carriageway Markings and Lighting

8.5.1 No comment.

9 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 11

9.1 General

9.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

9.2 Local Alignment

9.2.1 No comment.

9.3 Junctions

9.3.1 No comment.

9.4 Non-Motorised User (NMU) Provision

9.4.1 No comment.

9.5 Road Signs, Carriageway Markings and Lighting

9.5.1 No comment.

10 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 15

10.1 General

10.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

10.2 Local Alignment

10.2.1 PROBLEM

Location: Carriageway narrowing at the speed cushions.

Summary: Lack of conspicuity of the kerb buildouts could lead to kerb strikes and loss of control collisions.

There is currently a white edge of carriageway marking to indicate the kerb buildout and carriageway narrowing, however no details of replacement of this marking were shown. Insufficient warning of the narrowing could lead to kerb strikes and loss of control collisions in particular in conditions of poor visibility or in darkness.

RECOMMENDATION

It is recommended that the edge of carriageway markings should be reintroduced, further that verge marker posts should highlight the carriageway narrowing.

DESIGNERS RESPONSE.

The detailed design drawings now include for the repainting of the existing carriageway markings in the vicinity of the Speed Cushions. The need for verge marker posts will be reviewed during the 12 month maintenance period.

10.3 Junctions

10.3.1 No comment.

10.4 Non-Motorised User (NMU) Provision

10.4.1 No comment.

10.5 Road Signs, Carriageway Markings and Lighting

10.5.1 No comment.

11 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 19

11.1 General

11.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

11.2 Local Alignment

11.2.1 PROBLEM

Location: Proposed speed cushion spacing.

Summary: Ineffective traffic calming measures may not provide vehicle speed reduction and could lead to head on collisions.

The carriageway at this point widens on the approach to traffic signals with a lane gain, however the central spacing of the cushions the gap between the cushions is in excess of 3m as is sufficient to allow vehicles to by-pass the speed cushions without reducing speeds. This could lead to a lack of speed reduction and vehicles entering the opposing carriageway leading to possible head on collisions.

RECOMMENDATION

It is recommended that measures including but not restricted to; installing an additional speed cushion should be implemented, or alternatively that the speed table should remain.

DESIGNERS RESPONSE.

An additional Speed Cushion has now been included with the detailed design drawings.

11.3 Junctions

11.3.1 No comment.

11.4 Non-Motorised User (NMU) Provision

11.4.1 No comment.

11.5 Road Signs, Carriageway Markings and Lighting

11.5.1 No comment.

12 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 20

12.1 General

12.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

12.2 Local Alignment

12.2.1 PROBLEM

Location: Carriageway narrowing at the speed cushions

Summary: Lack of conspicuity of the kerb buildouts could lead to kerb strikes and loss of control collisions.

There is currently a white edge of carriageway marking to indicate the kerb buildout and carriageway narrowing, however no details of replacement of this marking were shown. Insufficient warning of the narrowing could lead to kerb strikes and loss of control collisions in particular in conditions of poor visibility or in darkness.

RECOMMENDATION

It is recommended that the edge of carriageway markings should be reintroduced, further that verge marker posts should highlight the carriageway narrowing.

DESIGNERS RESPONSE.

The detailed design drawings now include for the repainting of the existing carriageway markings in the vicinity of the Speed Cushions. The need for verge marker posts will be reviewed during the 12 month maintenance period.

12.3 Junctions

12.3.1 No comment.

12.4 Non-Motorised User (NMU) Provision

12.4.1 No comment.

12.5 Road Signs, Carriageway Markings and Lighting

12.5.1 No comment.

13 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 21

13.1 General

13.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV.

13.1.2 PROBLEM

Location: Proposed carriageway surface at the zebra crossing table.

Summary: Insufficient construction details. could lead to overshoot, rear end shunt or vehicle to pedestrian collisions.

No construction details were provided for assessment in particular details of the Polished Pavement Value (PPV) of the block paving surfacing have been provided for assessment. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended that construction details should be provided for assessment, further carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV, and Construction Details included within the Detailed Design.

13.2 Local Alignment

13.2.1 No comment.

13.3 Junctions

13.3.1 PROBLEM

Location: Proposed eastern bus layby and adjacent junction.

Summary: Lack of visibility could lead to vehicle to side impact or rear end shunts.

On the northern side of the carriageway there is potential for the visibility splay to the east to be reduced due to a stationary bus stopped within the bus layby. This potential lack of visibility could lead to vehicle to side impact or rear end shunt collisions.

RECOMMENDATION

It is recommended that the visibility splay should be sufficient, unobstructed, and provided for assessment.

DESIGNERS RESPONSE.

Visibility Splays are now included within the detailed design drawings and are clear of any obstructions.

13.4 Non-Motorised User (NMU) Provision

13.4.1 PROBLEM

Location: Proposed raised zebra crossing.

Summary: Lack of intervisibility could lead to vehicle to pedestrian collisions or rear end shunts.

On the southern side of the carriageway there is potential for the pedestrian / traffic intervisibility splay to the north to be reduced due to a stationary bus stopped within the western bus layby.

This potential lack of intervisibility between vehicles and pedestrians could lead to vehicle to pedestrian collisions or rear end shunts in the event of sudden braking.

RECOMMENDATION

It is recommended that the intervisibility splay should be sufficient and provided for assessment.

DESIGNERS RESPONSE.

Visibility Splays are now included within the detailed design drawings and are clear of any obstructions.

13.5 Road Signs, Carriageway Markings and Lighting

13.5.1 PROBLEM

Location: Proposed raised zebra crossing.

Summary: Positioning of give way lines could lead to vehicle to pedestrian collisions.

On the road markings detail drawing the give way line varies between 1100mm and 3000mm. There is concern that if the give way lines are installed at 1100mm these will be too close to the stud lines at the zebra crossings. This may reduce the intervisibility with pedestrians who are crossing, particularly child pedestrians, which could lead to vehicle to pedestrian collisions when vehicles restart.

RECOMMENDATION

It is recommended that the give way markings should be set back a minimum of 2.5m from the stud lines.

DESIGNERS RESPONSE.

The Give Way Markings are between 2.3 and 2.5m back from the Zebra crossing Studs.

14 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 22

14.1 General

14.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV, and Construction Details included within the Detailed Design.

14.2 Local Alignment

14.2.1 PROBLEM

Location: Carriageway narrowing at the speed cushions

Summary: Lack of conspicuity of the kerb buildouts could lead to kerb strikes and loss of control collisions.

There is currently a white edge of carriageway marking to indicate the kerb buildout and carriageway narrowing, however no details of replacement of this marking were shown. Insufficient warning of the narrowing could lead to kerb strikes and loss of control collisions in particular in conditions of poor visibility or in darkness.

RECOMMENDATION

It is recommended that the edge of carriageway markings should be reintroduced, further that verge marker posts should highlight the carriageway narrowing.

DESIGNERS RESPONSE.

The detailed design drawings now include for the repainting of the existing carriageway markings in the vicinity of the Speed Cushions. The need for verge marker posts will be reviewed during the 12 month maintenance period.

14.3 Junctions

14.3.1 No comments.

14.4 Non-Motorised User (NMU) Provision

14.4.1 No comment.

14.5 Road Signs, Carriageway Markings and Lighting

14.5.1 No comment.

15 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA 24

15.1 General

15.1.1 PROBLEM

Location: Proposed carriageway surface around the speed cushions

Summary: Insufficient construction details could lead to rear end shunt or powered two-wheel collisions.

Construction details were provided for assessment; however, these did not include the Polished Pavement Value (PPV) of the block paving surfacing. Inappropriate carriageway construction with low PPV values could lead to rear end shunt collisions and could provide a hazard for powered two-wheel users.

RECOMMENDATION

It is recommended carriageway surfacing should be a minimum of 55 PSV.

DESIGNERS RESPONSE.

A note has been added to the drawings that the PPV of the Block Paving to be checked to ensure that it has a minimum of 55 PPV, and Construction Details included within the Detailed Design.

15.2 Local Alignment

15.2.1 PROBLEM

Location: Carriageway narrowing at the speed cushions

Summary: Lack of conspicuity of the kerb buildouts could lead to kerb strikes and loss of control collisions.

There is currently a white edge of carriageway marking to indicate the kerb buildout and carriageway narrowing, however no details of replacement of this marking were shown. Insufficient warning of the narrowing could lead to kerb strikes and loss of control collisions in particular in conditions of poor visibility or in darkness.

RECOMMENDATION

It is recommended that the edge of carriageway markings should be reintroduced, further that verge marker posts should highlight the carriageway narrowing.

DESIGNERS RESPONSE.

The detailed design drawings now include for the repainting of the existing carriageway markings in the vicinity of the Speed Cushions. The need for verge marker posts will be reviewed during the 12 month maintenance period.

15.3 Junctions

15.3.1 No comment.

15.4 Non-Motorised User (NMU) Provision

15.4.1 No comment.

15.5 Road Signs, Carriageway Markings and Lighting

15.5.1 No comment.

16 ITEMS RAISED AT THE COMBINED STAGE 1&2 AUDIT – AREA SIGNAGE

16.1 General

16.1.1 No comment.

16.2 Local Alignment

16.2.1 No comment.

16.3 Junctions

16.3.1 No comment.

16.4 Non-Motorised User (NMU) Provision

16.4.1 No comment.

16.5 Road Signs, Carriageway Markings and Lighting

16.5.1 PROBLEM

Location: The scheme.

Summary: Insufficient signage details. could lead to increased vehicle speeds and compromise road safety.

The majority of the Green Park Estate is proposed to be subject to a 20mph speed limit zone, however,

- There are already 25mph signs in place where no details of removal have been provided.
- The 20mph road signs do not have a plate shown on the reverse of the sign for traffic leaving the area.
- No details of mounting height, carriageway clearance have been provided for assessment.

Incorrect or inconsistent speed limit signage could result in increased vehicle speeds and compromise road safety.

RECOMMENDATIONS

It is recommended that:

- The current 25mph signs are removed.
- The applicable speed limit signs should be mounted on the reverse of the signage.
- Signage should be a minimum of 2.1m (2.4m if on a cycleway) with a minimum of 450mm to 600mm edge of carriageway clearance to the sign plate.

DESIGNERS RESPONSE.

The inconsistencies with the speed limit signs do not currently form part of the current scope of the works. The issue will be drawn to the Client attention.

17 ISSUES IDENTIFIED DURING THE COMBINED STAGE 1&2 AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

17.1 Safety issues identified during the audit and site inspection that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

17.2 No issues were identified by the audit team.

11 AUDITOR TEAM STATEMENT

11.1 We certify that this audit has been carried out following the principles of GG 119.

Audit Team Leader

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency
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Signed:



Date: 9/07/2020

Audit Team Member

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Signed:



Date: 9/07/2020

APPENDIX A

List of drawings

Drawing Number	Drawing Title
2910-1100-01.100 -	Proposed Highway Improvements (Area 1) General Arrangements
2910-1100-01.101	Proposed Highway Improvements (Area 1) Site Clearance
2910-1100-01.102	Proposed Highway Improvements (Area 1) Setting Out
2910-1100-01.105	Proposed Highway Improvements (Area 1) Existing Underground Services
2910-1100-02.100 -	Proposed Highway Improvements (Area 2) General Arrangements
2910-1100-02.101	Proposed Highway Improvements (Area 2) Site Clearance
2910-1100-02.102	Proposed Highway Improvements (Area 2) Setting Out
2910-1100-02.105	Proposed Highway Improvements (Area 2) Existing Underground Services
2910-1100-03.100 -	Proposed Highway Improvements (Area 3A) General Arrangements
2910-1100-03.101	Proposed Highway Improvements (Area 3A) Site Clearance
2910-1100-03.102	Proposed Highway Improvements (Area 3A) Setting Out
2910-1100-03.105	Proposed Highway Improvements (Area 3A) Existing Underground Services
2910-1100-04.100 -	Proposed Highway Improvements (Area 4) General Arrangements
2910-1100-04.101	Proposed Highway Improvements (Area 4) Site Clearance
2910-1100-04.102	Proposed Highway Improvements (Area 4) Setting Out
2910-1100-04.105	Proposed Highway Improvements (Area 4) Existing Underground Services
2910-1100-07.100 -	Proposed Highway Improvements (Area 7) General Arrangements
2910-1100-07.101	Proposed Highway Improvements (Area 7) Site Clearance
2910-1100-07.102	Proposed Highway Improvements (Area 7) Setting Out
2910-1100-07.105	Proposed Highway Improvements (Area 7) Existing Underground Services

2910-1100-09.100 -	Proposed Highway Improvements (Area 9) General Arrangements
2910-1100-09.101	Proposed Highway Improvements (Area 9) Site Clearance
2910-1100-09.102	Proposed Highway Improvements (Area 9) Setting Out
2910-1100-09.105	Proposed Highway Improvements (Area 9) Existing Underground Services
2910-1100-11.100 -	Proposed Highway Improvements (Area 11) General Arrangements
2910-1100-11.101	Proposed Highway Improvements (Area 11) Site Clearance
2910-1100-11.102	Proposed Highway Improvements (Area 11) Setting Out
2910-1100-11.105	Proposed Highway Improvements (Area 11) Existing Underground Services
2910-1100-15.100 -	Proposed Highway Improvements (Area 15) General Arrangements
2910-1100-15.101	Proposed Highway Improvements (Area 15) Site Clearance
2910-1100-15.102	Proposed Highway Improvements (Area 15) Setting Out
2910-1100-15.105	Proposed Highway Improvements (Area 15) Existing Underground Services
2910-1100-19.100 -	Proposed Highway Improvements (Area 19) General Arrangements
2910-1100-19.101	Proposed Highway Improvements (Area 19) Site Clearance
2910-1100-19.102	Proposed Highway Improvements (Area 19) Setting Out
2910-1100-19.105	Proposed Highway Improvements (Area 19) Existing Underground Services
2910-1100-20.100 -	Proposed Highway Improvements (Area 20) General Arrangements
2910-1100-20.101	Proposed Highway Improvements (Area 20)
2910-1100-20.102	Proposed Highway Improvements (Area 20) Setting Out
2910-1100-20.105	Proposed Highway Improvements (Area 20) Existing Underground Services
2910-1100-21.100A -	Proposed Highway Improvements (Area 21) General Arrangements
2910-1100-21.101A	Proposed Highway Improvements (Area 21) Site Clearance

2910-1100-21.102A	Proposed Highway Improvements (Area 21) Setting Out
2910-1100-20.103A	Proposed Highway Improvements (Area 21) Road Markings Details
2910-1100-20.104A	Proposed Highway Improvements (Area 21) Construction Areas, Depths & Materials / Kerbing
2910-1100-20.105A	Proposed Highway Improvements (Area 21) Existing Underground Services
2910-1100-20.106A	Proposed Highway Improvements (Area 21) Proposed Spot Levels
2910-1100-20.110A	Proposed Highway Improvements (Area 21) Proposed Overview Plan
2910-1100-21.120	Road Markings Schedule
2910-1100-21.TR01_A -	Proposed Highway Improvements Area 21 Vehicular Swept Path Analysis. using 12m Rigid Bus
2910-1100-22.100 -	Proposed Highway Improvements (Area 22) General Arrangements
2910-1100-22.101	Proposed Highway Improvements (Area 22)
2910-1100-22.102	Proposed Highway Improvements (Area 22) Setting Out
2910-1100-22.105	Proposed Highway Improvements (Area 22) Existing Underground Services
2910-1100-24.100 -	Proposed Highway Improvements (Area 24) General Arrangements
2910-1100-24.101	Proposed Highway Improvements (Area 24)
2910-1100-24.102	Proposed Highway Improvements (Area 24) Setting Out
2910-1100-24.105	Proposed Highway Improvements (Area 24) Existing Underground Services

Supporting documentation:

- N/A

APPENDIX B

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report)



REVISION DETAILS

REV	DATE	COMMENT	APP
1	17.04.2020	FIRST ISSUE	BS

PRELIMINARY

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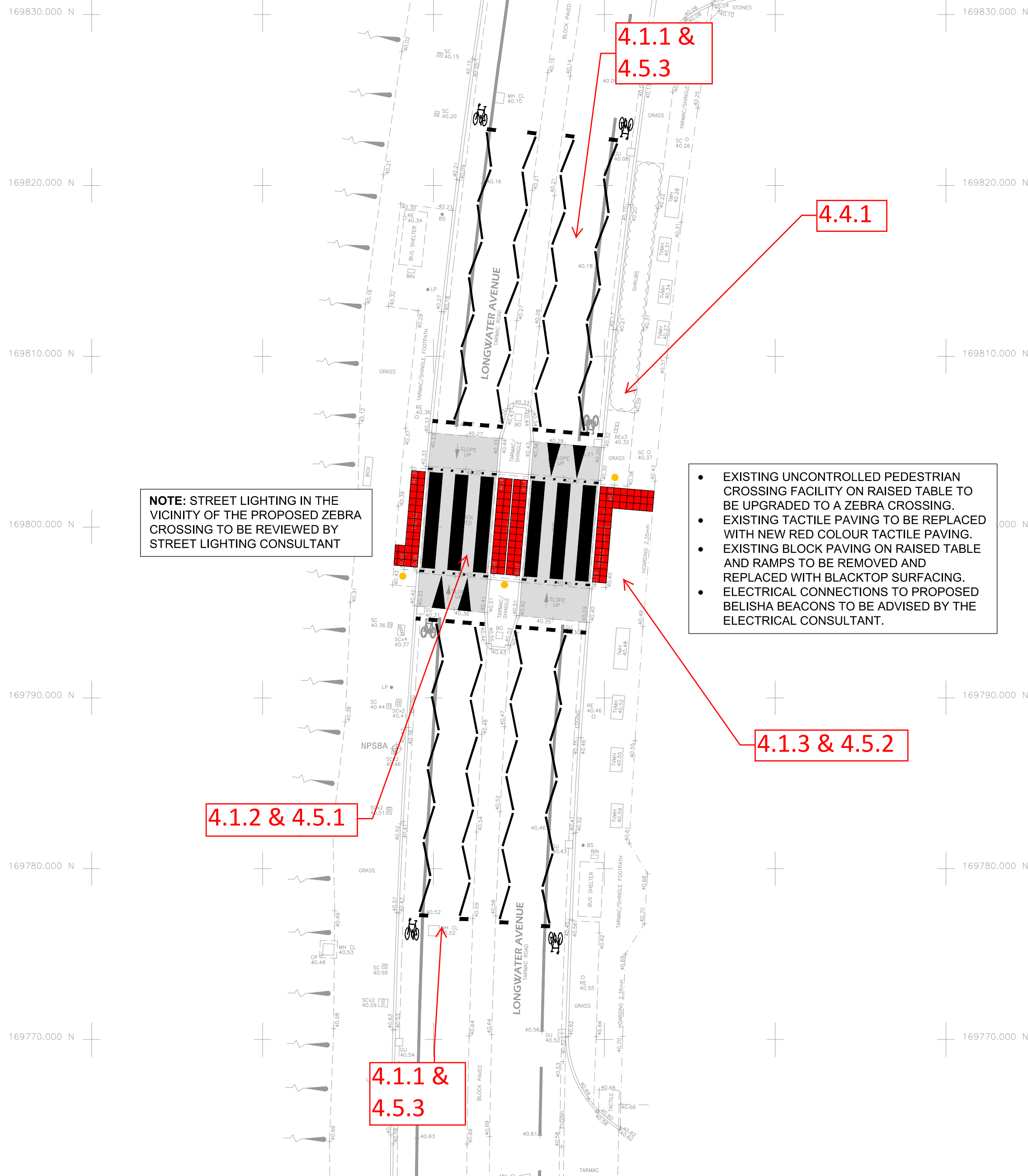
DISCLAIMERS

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KEY:

	PROPOSED KERBS
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	PROPOSED FOOTWAY EDGINGS
	AREAS OF CARRIAGEWAY WORKS
	AREAS OF FOOTWAY WORKS
	AREAS OF SOFT LANDSCAPING WORKS
	PROPOSED LOZENGE TACTILE PAVING (BUFF)
	RELOCATED BUS STOP FLAG SIGN
	RELOCATED BIN
	RELOCATED "GREEN PARK" SIGN
	RELOCATED STREET LIGHTING COLUMN





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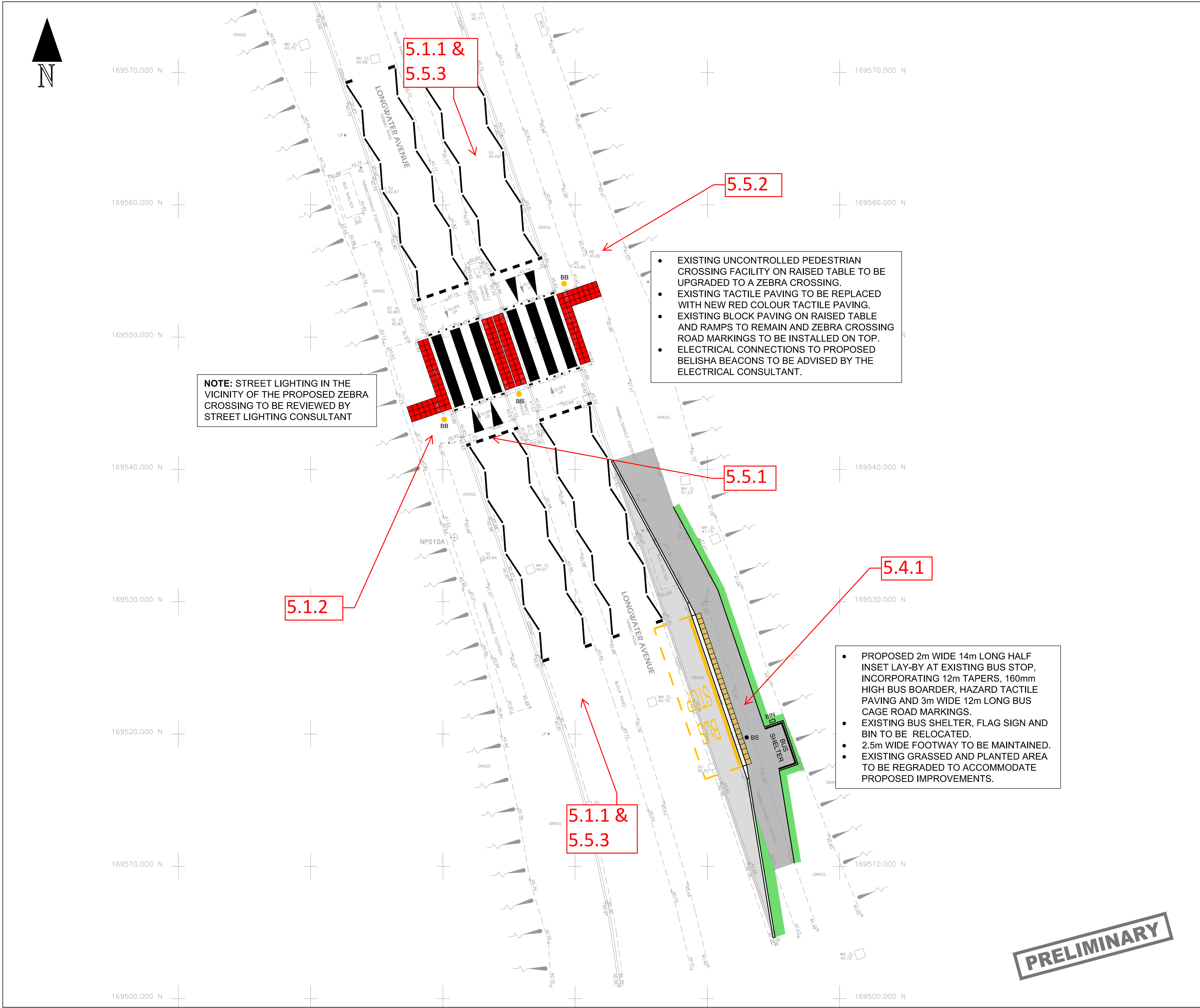
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	AREAS OF CARRIAGEWAY WORKS
	PROPOSED BLISTER TACTILE PAVING (RED)
● BB	PROPOSED BELISHA BEACON





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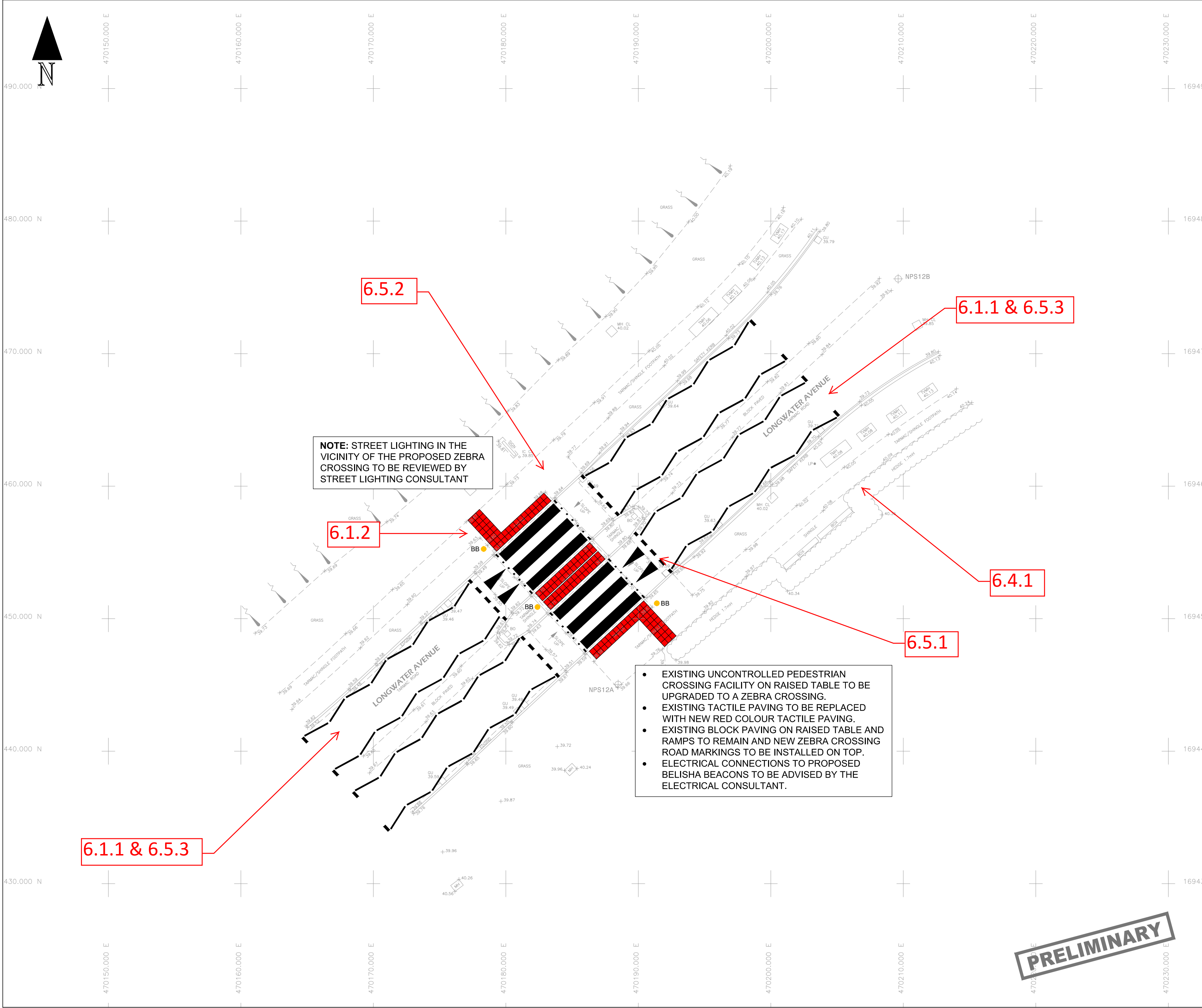
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PRELIMINARY





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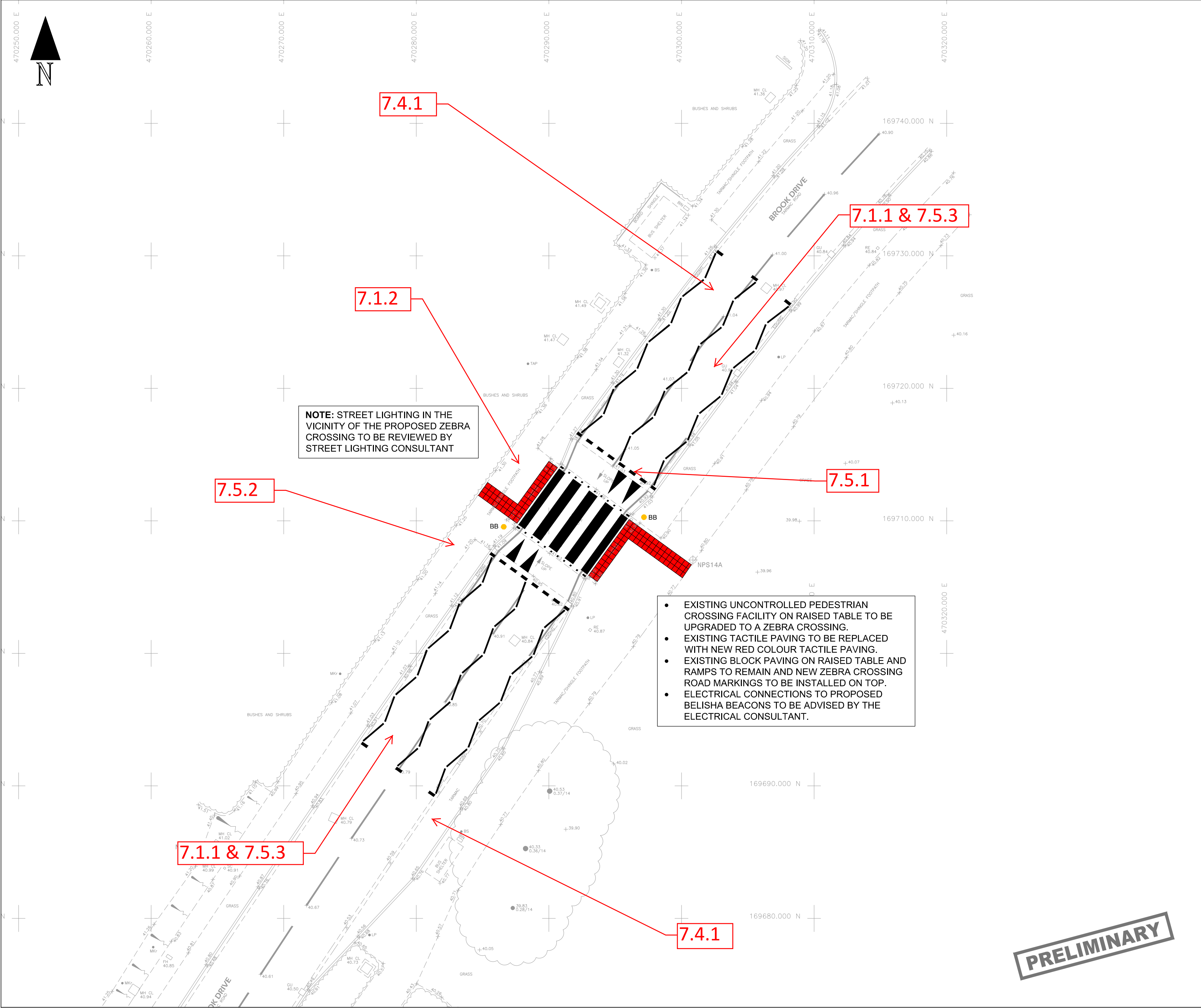
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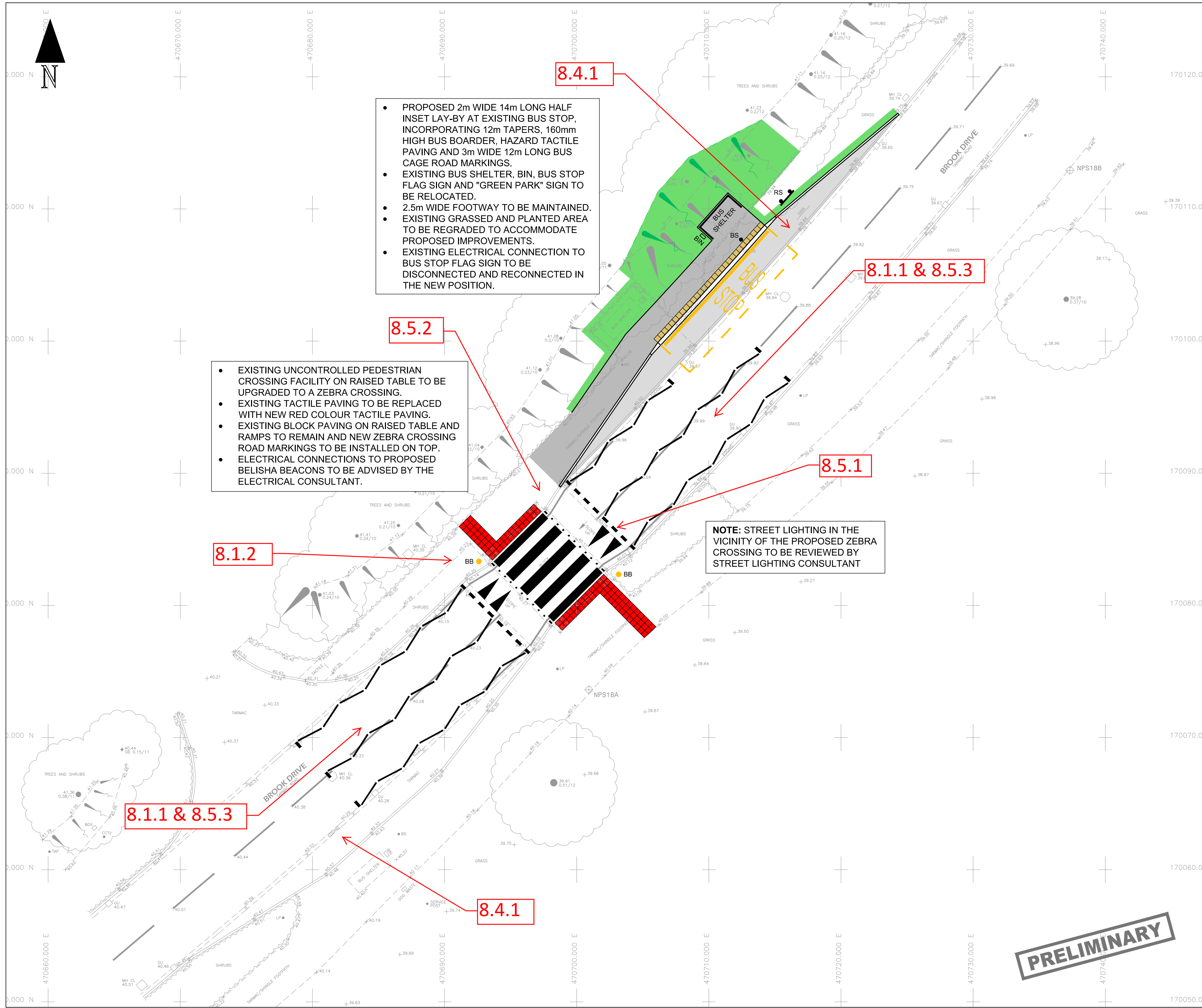
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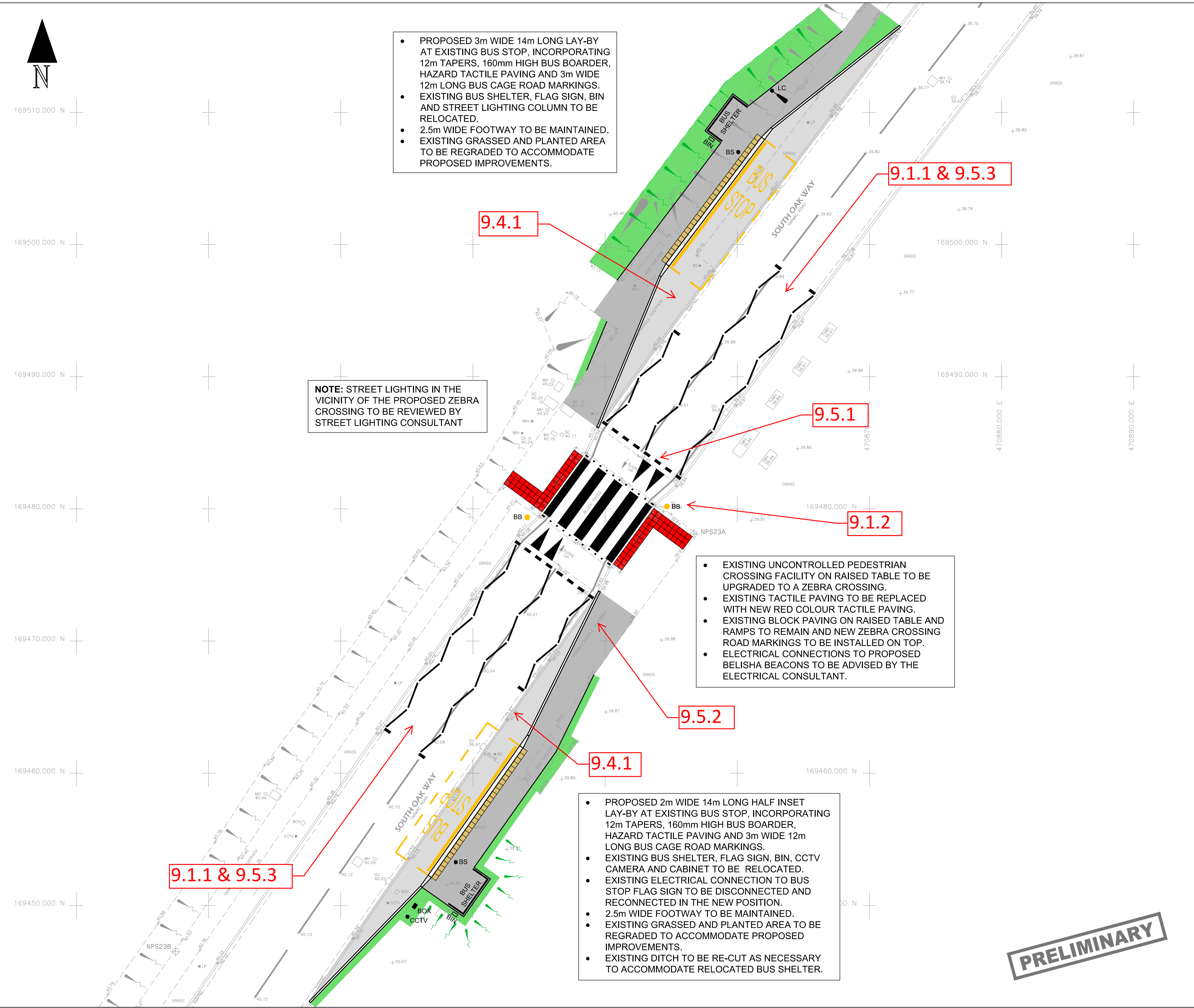
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	PROPOSED BELISHA BEACON





- PROPOSED 3m WIDE 14m LONG LAY-BY AT EXISTING BUS STOP, INCORPORATING 12m TAPERS, 160mm HIGH BUS BOARDER, HAZARD TACTILE PAVING AND 3m WIDE 12m LONG BUS CAGE ROAD MARKINGS.
- EXISTING BUS SHELTER, FLAG SIGN, BIN AND STREET LIGHTING COLUMN TO BE RELOCATED.
- 2.5m WIDE FOOTWAY TO BE MAINTAINED.
- EXISTING GRASSED AND PLANTED AREA TO BE REGRADED TO ACCOMMODATE PROPOSED IMPROVEMENTS.

NOTE: STREET LIGHTING IN THE VICINITY OF THE PROPOSED ZEBRA CROSSING TO BE REVIEWED BY STREET LIGHTING CONSULTANT

- EXISTING UNCONTROLLED PEDESTRIAN CROSSING FACILITY ON RAISED TABLE TO BE UPGRADED TO A ZEBRA CROSSING.
- EXISTING TACTILE PAVING TO BE REPLACED WITH NEW RED COLOUR TACTILE PAVING.
- EXISTING BLOCK PAVING ON RAISED TABLE AND RAMPS TO REMAIN AND NEW ZEBRA CROSSING ROAD MARKINGS TO BE INSTALLED ON TOP.
- ELECTRICAL CONNECTIONS TO PROPOSED BELISHA BEACONS TO BE ADVISED BY THE ELECTRICAL CONSULTANT.

- PROPOSED 2m WIDE 14m LONG HALF INSET LAY-BY AT EXISTING BUS STOP, INCORPORATING 12m TAPERS, 160mm HIGH BUS BOARDER, HAZARD TACTILE PAVING AND 3m WIDE 12m LONG BUS CAGE ROAD MARKINGS.
- EXISTING BUS SHELTER, FLAG SIGN, BIN, CCTV CAMERA AND CABINET TO BE RELOCATED.
- EXISTING ELECTRICAL CONNECTION TO BUS STOP FLAG SIGN TO BE DISCONNECTED AND RECONNECTED IN THE NEW POSITION.
- 2.5m WIDE FOOTWAY TO BE MAINTAINED.
- EXISTING GRASSED AND PLANTED AREA TO BE REGRADED TO ACCOMMODATE PROPOSED IMPROVEMENTS.
- EXISTING DITCH TO BE RE-CUT AS NECESSARY TO ACCOMMODATE RELOCATED BUS SHELTER.

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