



**WOKINGHAM
BOROUGH COUNCIL**

**ACORNS
PROJECTS
LIMITED**



**Market Place, Wokingham, Berkshire
Environmental Improvements
Interim Stage 3 Road Safety Audit**

**For Wokingham Borough Council
Prepared by Acorns Projects Limited
Safety Traffic Project Management & Highway Engineering Consultants**

SEPTEMBER 2018

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Approvals

This document requires the following approvals:

| Name | Title |
|---------------------|-------------------|
| Adriano B. Cappella | Audit Team Leader |
| Lisa Allen | Audit Team Member |

Distribution

This document has also been distributed to:

| Name | Title & Organisation |
|------------------|---|
| Ian Haller | Service Manager - Highway Delivery - Wokingham Borough Council |
| Paul Miller | Market Place NEC Contract Project Manager - Wokingham Borough Council |
| Chris Easton | Wokingham Borough Council |
| Stephen Reed | Technical Director - WSP |
| Richard Brommell | Principal Engineer - WSP |
| Graham Lee | Associate (Traffic Signals) - WSP |
| Tony Jackman | CDM Advisor - WSP |
| David Edmond | Hampshire & Thames Valley Joint Operations Road Policing |

1.0 INTRODUCTION

1.1 This report results from an Interim Stage 3 Road Safety Audit carried out on the Market Place, Wokingham, Berkshire, Environmental Improvements Project, at the request of Wokingham Borough Council, Highways and Transport, PO Box 153, Shute End, Wokingham, Berkshire, RG40 1WL. The Design Organisation is the WSP Wokingham Highway Alliance, who are based within the Highways and Transport offices in Wokingham.

1.2 The scheme currently under construction comprises of Environmental Improvements to Broad Street, Denmark Street and the area surrounding the historic Town Hall building. A new junction arrangement at Broad Street and Rose Street has been constructed. The existing vehicular carriageways have been narrowed and two new traffic signal controlled pedestrian crossing facilities have been provided on raised platforms in Broad Street and Market Place respectively. In addition, three new uncontrolled pedestrian crossing facilities have been constructed, one of which is in Broad Street and two of which are in Market Place, again on raised platforms.

New loading and disabled parking bays have been provided and the whole area has been repaved and resurfaced. New traffic signs and street lighting complete the currently under construction Environmental Improvements project.

1.3 The Audit Team membership was as follows:

Adriano B. Cappella IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency
(Audit Team Leader) Director, Acorns Projects Limited

Lisa Allen MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency
(Audit Team Member) Associate Consultant, Acorns Projects Limited

1.4 Also in attendance during the daytime Audit were:

Graham Lee WSP

Tony Jackman WSP

David Edmond Hampshire & Thames Valley Joint Operations Road Policing

1.5 Also invited to attend but had to decline due to other commitments were:

Ian Haller Wokingham Borough Council

Paul Miller Wokingham Borough Council

- 1.6** The Audit took place at the Eaton Bray office of Acorns Projects Limited during August and September 2018. The Audit was undertaken in accordance with the Audit Brief contained in the WSP Wokingham Highway Alliance E-Mail to Acorns Projects Limited dated the 27th July 2018. The Audit comprised an examination of the drawings and documents provided by the Design Organisation for review at this Interim Stage 3 Road Safety Audit and, are listed in Annex A.
- 1.7** The drawings and document consisted of a copy of the general arrangements, longitudinal sections, contours, isopachyte contour layouts, site clearance, surface water drainage, slot drain arrangements, surface water drainage longitudinal sections, external works, carriageway construction, typical cross sections, signs and road markings, utility arrangements, horizontal setting out, string labels, proposed electrical layout, dual puffin crossing refurbishment details, utilities & topographical details, landscaping details and, a feasibility lighting study document. Copies of the scheme drawings at both A3 and A4 size were provided for the Audit Team's use. Road traffic collision data, vehicular traffic flow data, pedestrian and pedal cycle accessibility information and, public transport information has not been provided for the purposes of this Interim Stage 3 Road Safety Audit.
- 1.8** A visit to the site was undertaken during the afternoon of the 23rd August 2018 by both Audit Team Members together. Also in attendance were the parties identified in Paragraph 1.4. During the afternoon site visit, the weather was hot and sunny and, the existing carriageway surface was dry. Vehicular traffic conditions at the time of the afternoon site visit were observed to be moderate to heavy on occasions, in part due to the on-going construction works in Broad Street, Peach Street and Market Place. This restricted and limited the Audit Team's ability to fully assess any potential road safety issues of these currently under construction areas of the project. A significant number of pedestrians and a reasonable number of pedal cyclists were observed during the afternoon site visit.
- 1.9** The terms of reference of the Audit are as described in HD 19/15. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and, has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation made to resolve the identified problem, the Audit Team may, on occasion, have referred to a Design Standard without touching on technical audit.
- 1.10** No Departures from Design Standards have been reported by the Design Organisation.

- 1.11** All Problems and Recommendations are referenced to the design drawings and the locations have been indicated on the A4 plan supplied for use by the Audit Team in Annex B.
- 1.12** Issues identified and observations made during this Interim Stage 3 Road Safety Audit and site inspection which the Terms of Reference exclude from this report, but which the Audit Team wishes to draw to the attention of the Audit Project Sponsor, i.e. the Local Highway Authority, Wokingham Borough Council, will be set out in a separate letter. These issues could include maintenance items and operational issues. In this regard, the Audit Team have made reference to six issues identified and observations made as referred to in a Covering Letter to the Client Organisation, Wokingham Borough Council, dated the 21st September 2018. This Covering Letter should be supplied to the Design Organisation, WSP Wokingham Highway Alliance, and be considered in conjunction with this Interim Stage 3 Road Safety Audit Report.

2.0 ITEMS RAISED AT THE COMBINED STAGE 1 AND 2 ROAD SAFETY AUDIT

- 2.1** The safety aspects of the Market Place, Wokingham, Berkshire, Proposed Environmental Improvements Project were the subject of comment in the October 2016 Combined Stage 1 and 2 Road Safety Audit undertaken by Acorns Projects Limited.
- 2.2** The Design Organisation, WSP Wokingham Highway Alliance, responded to the Combined Stage 1 and 2 Road Safety Audit Report in November 2016, whereby the safety aspects raised were discussed and mitigating measures proposed.
- 2.3** All of issues raised in the October 2016 Combined Stage 1 and 2 Road Safety Audit undertaken by Acorns Projects Limited have been resolved.

3.0 ITEMS RAISED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

3.1 GENERAL

3.1.1 No Problems identified in this category at this Interim Stage 3 Road Safety Audit.

3.2 LOCAL ALIGNMENT

3.2.1 No Problems identified in this category at this Interim Stage 3 Road Safety Audit.

3.3 JUNCTIONS

3.3.1 No Problems identified in this category at this Interim Stage 3 Road Safety Audit.

3.4 NON MOTORISED USER PROVISION

3.4.1 PROBLEM

Locations 1, 2, 3, 4 & 5 - The traffic signal controlled and uncontrolled pedestrian crossing facilities (Drawing No. MP/100/100 Rev A).

Summary - Lack of conspicuity of the brass tactile paving studs at the traffic signal controlled and uncontrolled pedestrian crossing facilities could result in a detriment to the operational safety for pedestrians, particularly those pedestrians who are visually impaired (i.e. not blind pedestrians).

The currently under construction scheme includes the use of brass tactile paving studs inserted into the Yorkstone paving instead of traditional tactile paving slabs. Ordinarily, red coloured tactile paving would be installed at Locations 1 and 2 and, buff coloured tactile paving slabs would be installed at Locations 3, 4 and 5.

Whilst the Audit Team acknowledge the design objectives of the Environmental Improvements project, the site visit has established that the brass tactile paving studs are not currently particularly conspicuous against the background of the new Yorkstone paving.

Contrasts in colour and tone are normally used to accentuate the presence of both traffic signal controlled and uncontrolled pedestrian crossing facilities, which, following many years of use on the public highway network, blind, visually impaired and fully sighted pedestrians fully and clearly understand. Because the brass tactile paving studs are not particularly conspicuous due to the lack of colour contrast, the operational road safety benefits for pedestrians resulting from the installation of both the traffic signal controlled and uncontrolled pedestrian crossing facilities may not be fully derived in the future scenario.

Concern arises that instead of a pedestrians' mindset being to focus upon and utilise the easily recognisable traffic signal controlled and uncontrolled pedestrian crossing facilities, pedestrians are likely to cross on an ad-hoc basis within the overall area of the Environmental Improvements project. This could result in a slight increased risk of vehicular/pedestrian conflicts and subsequent vehicular/pedestrians collisions occurring, whereby pedestrians could potentially sustain personal injury.

RECOMMENDATION

It is Recommended that upon completion of the construction stage of the project and once a "settling in" period has elapsed, this matter should be reviewed during the final Stage 3 Road Safety Audit process.

3.4.2 PROBLEM

Locations - General, within the lengths/areas of the Environmental Improvements Project (Drawing No. MP/100/100 Rev A).

Summary - Lack of conspicuity of the kerb upstand could result in potential trip hazards for pedestrians, whereby personal injury could be sustained.

The currently under construction scheme includes a cross section comprising a stone mastic asphalt surface course, a granite sett channel line and adjacent granite kerbs. The kerb upstand adjacent to the channel line is 50 mm.

During the site visit, the Audit Team were approached by pedestrians who raised an issue regarding the similarity of the silver grey granite sett channel line and the adjacent silver grey granite kerb upstand. This anecdotal evidence suggests the granite sett channel line and the adjacent granite kerb upstand are not clearly distinguishable or particularly conspicuous, based on their respective silver grey colours.

Ordinarily, a black asphalt surface extending across the full width of a vehicular carriageway would make a grey kerbline distinguishable and conspicuous to any pedestrians crossing. Similarly, in terms of easy recognition, a regular 125mm kerb upstand will be clearly seen by pedestrians when crossing a vehicular carriageway.

However, the silver grey granite sett channel line and the adjacent silver grey granite kerb upstand, combined with a relatively low 50 mm upstand, appears to result in a potential trip hazard now being present. Concern arises that should pedestrians trip and consequently fall, personal injury could be sustained.

RECOMMENDATION

It is Recommended that upon completion of the construction stage of the project and once a “settling in” period has elapsed, this matter should be reviewed during the final Stage 3 Road Safety Audit process, with a view to potentially highlighting in some suitable and appropriate manner, the presence of the silver grey granite sett channel line directly adjacent to the silver grey granite kerb upstand.

3.5 ROAD SIGNS, CARRIAGEWAY MARKINGS & STREET LIGHTING

3.5.1 No Problems identified in this category at this Interim Stage 3 Road Safety Audit.

END OF PROBLEMS IDENTIFIED AND RECOMMENDATIONS OFFERED IN THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

4.0 AUDIT TEAM STATEMENT

We certify that this Audit has been carried out in accordance with HD 19/15.

AUDIT TEAM LEADER

Adriano B. Cappella IEng, FIHE, MCIHT, MSoRSA, HA RSA Certificate of Competency
Director
Acorns Projects Limited
Safety Traffic Project Management & Highway Engineering Consultants
Redwood House
3 Eaton Park
Eaton Bray
Bedfordshire
LU6 2SP

Signed :



Date : 21st September 2018

AUDIT TEAM MEMBER

Lisa Allen MSc, BEng (Hons), MCIHT, MSoRSA, HA RSA Certificate of Competency
Associate Consultant
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Signed :



Date : 21st September 2018

ANNEX A

ANNEX A

MARKET PLACE, WOKINGHAM, BERKSHIRE

ENVIRONMENTAL IMPROVEMENTS

INTERIM STAGE 3 ROAD SAFETY AUDIT

LIST OF WOKINGHAM BOROUGH COUNCIL DRAWINGS REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

| DRAWING NO. | TITLE |
|-----------------------|--|
| 5049-MP/100/100 Rev A | General Arrangement Overview |
| 5049-MP/100/101 Rev A | North Side General Arrangement |
| 5049-MP/100/102 Rev A | East Side General Arrangement |
| 5049-MP/100/103 Rev A | Town Hall General Arrangement |
| 5049-MP/100/104 Rev A | Market Place General Arrangement |
| 5049-MP/100/110 Rev A | North Side Longitudinal Sections |
| 5049-MP/100/111 Rev A | East Side Longitudinal Sections |
| 5049-MP/100/120 Rev A | North Side Contour Arrangement |
| 5049-MP/100/121 Rev A | North Side Isopachyte Contour Layout |
| 5049-MP/100/122 Rev A | East Side Contour Arrangement Sheet 1 of 2 |
| 5049-MP/100/123 Rev A | East Side Contour Arrangement Sheet 2 of 2 |
| 5049-MP/100/124 Rev A | East Side Isopachyte Contour Layout Sheet 1 of 2 |
| 5049-MP/100/125 Rev A | East Side Isopachyte Contour Layout Sheet 2 of 2 |
| 5049-MP/100/126 Rev A | Town Hall Contour Arrangement |
| 5049-MP/100/127 Rev A | Town Hall Isopachyte Contour Arrangement |
| 5049-MP/100/128 Rev A | Market Place Contour Arrangement |
| 5049-MP/100/129 Rev A | Market Place Isopachyte Contour Arrangement |
| 5049-MP/200/101 Rev A | North Side Clearance |
| 5049-MP/200/102 Rev A | East Side Site Clearance Sheet 1 of 2 |
| 5049-MP/200/103 Rev A | East Side Site Clearance Sheet 2 of 2 |

**LIST OF WOKINGHAM BOROUGH COUNCIL DRAWINGS REVIEWED AT THIS INTERIM STAGE 3
ROAD SAFETY AUDIT (CONTINUED)**

| DRAWING NO. | TITLE |
|------------------------------|--|
| 5049-MP/200/104 Rev A | Town Hall Site Clearance |
| 5049-MP/200/105 Rev A | Market Place Site Clearance |
| 5049-MP/500/101 Rev A | North Side Surface Water Drainage |
| 5049-MP/500/102 Rev A | East Side Surface Water Drainage Sheet 1 of 2 |
| 5049-MP/500/103 Rev A | East Side Surface Water Drainage Sheet 2 of 2 |
| 5049-MP/500/104 Rev A | Market Place Surface Water Drainage |
| 5049-MP/500/110 Rev A | North Side Drainage Slot Drain Arrangement |
| 5049-MP/500/111 Rev A | East Side Drainage Slot Drain Arrangement Sheet 1 of 2 |
| 5049-MP/500/112 Rev A | East Side Drainage Slot Drain Arrangement Sheet 2 of 2 |
| 5049-MP/500/113 Rev A | Town Hall Slot Drain Arrangement |
| 5049-MP/500/115 Rev A | Market Place Slot Drain Arrangement |
| 5049-MP/500/120 Rev A | Proposed Surface Water Drainage Longitudinal Section |
| As Shown MP_500_121 Rev A | Proposed Surface Water Drainage Longitudinal Section East Side |
| 5049-MP/700/101 Rev A | North Side External Works |
| 5049-MP/700/102 Rev A | North Side Carriageway Construction |
| 5049-MP/700/103 Rev A | East Side External Works |
| 5049-MP/700/104 Rev A | East Side Carriageway Construction Sheet 1 of 2 |
| 5049-MP/700/105 Rev A | East Side Carriageway Construction Sheet 2 of 2 |
| 5049-MP/700/106 Rev A | Town Hall External Works |
| 5049-MP/700/107 Rev A | Market Place External Works |
| 5049-MP/700/110 Rev A | Platform Arrangement External Works |
| 5049-MP/700/111 Rev A | Platform Arrangement Typical Cross Section |
| 5049-MP/700/112 Rev A | Loading/Disabled Bay Arrangement External Works |
| 5049-MP/700/113 Rev A | Loading/Disabled Bay Arrangement & Pedestrian Area Typical Cross Section |
| 5049-MP/700/114 Rev A | Town Hall Arrangement External Works |

LIST OF WOKINGHAM BOROUGH COUNCIL DRAWINGS REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT (CONTINUED)

| DRAWING NO. | TITLE |
|-------------------------|---|
| 5049-MP/1200/101 Rev A | North Side Signs And Road Markings |
| 5049-MP/1200/102 Rev A | Sign Design Details |
| 5049-MP/1200/103 Rev A | East Side Signs And Road Markings |
| 5049-MP/1200/104 Rev A | Town Hall Signs And Road Markings |
| 5049-MP/1200/105 Rev A | Market Place Signs And Road Markings |
| 5049-MP/1400/101 Rev A | North Side Utility Arrangement |
| 5049-MP/1400/102 Rev A | East Side Utility Arrangement Sheet 1 of 2 |
| 5049-MP/1400/103 Rev A | East Side Utility Arrangement Sheet 2 of 2 |
| 5049-MP/1400/104 Rev A | Town Hall Utility Arrangement |
| 5049-MP/1400/105 Rev A | Market Place Utility Arrangement |
| 5049-MP/SO/101 Rev A | North Side Horizontal Setting Out |
| 5049-MP/SO/102 Rev A | North Side String Labels |
| 5049-MP/SO/103 Rev A | East Side Horizontal Setting Out |
| 5049-MP/SO/104 Rev A | East Side String Labels |
| 5049-MP/SO/105 Rev A | Town Hall Horizontal Setting Out |
| 5049-MP/SO/110 Rev A | Town Hall Setting Out |
| 5049-MP/SO/111 Rev A | Demarcation Markers Setting Out |
| MPLACE_Electrical Rev A | Proposed Electrical Layout |
| PW131/TS/001 Rev B | Market Place Dual Puffin Crossing Refurbishment |

LIST OF SUMO SERVICES LIMITED DRAWINGS REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

| DRAWING NO. | TITLE |
|--------------------|-----------------------------------|
| 8903_01 Utility | Utilities & Topographical Details |
| 8903_02 Utility | Utilities & Topographical Details |
| 8903_03 Utility | Utilities & Topographical Details |

LIST OF SUMO SERVICES LIMITED DRAWINGS REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT (CONTINUED)

| DRAWING NO. | TITLE |
|--------------------|-----------------------------------|
| 8903_04 Utility | Utilities & Topographical Details |
| 8903_05 Utility | Utilities & Topographical Details |
| 8903_06 Utility | Utilities & Topographical Details |
| 8903_07 Utility | Utilities & Topographical Details |
| 8903_08 Utility | Utilities & Topographical Details |
| 8903_09 Utility | Utilities & Topographical Details |
| 8903_10 Utility | Utilities & Topographical Details |
| 8903_11 Utility | Utilities & Topographical Details |
| 8903_12 Utility | Utilities & Topographical Details |
| 8903_Topo_03 | Utilities & Topographical Details |
| 8903_Topo_04 | Utilities & Topographical Details |
| 8903_Topo_05 | Utilities & Topographical Details |
| 8903_Topo_06 | Utilities & Topographical Details |
| 8903_Topo_07 | Utilities & Topographical Details |
| 8903_Topo_08 | Utilities & Topographical Details |

LIST OF GREEN BLU URBAN DRAWINGS REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

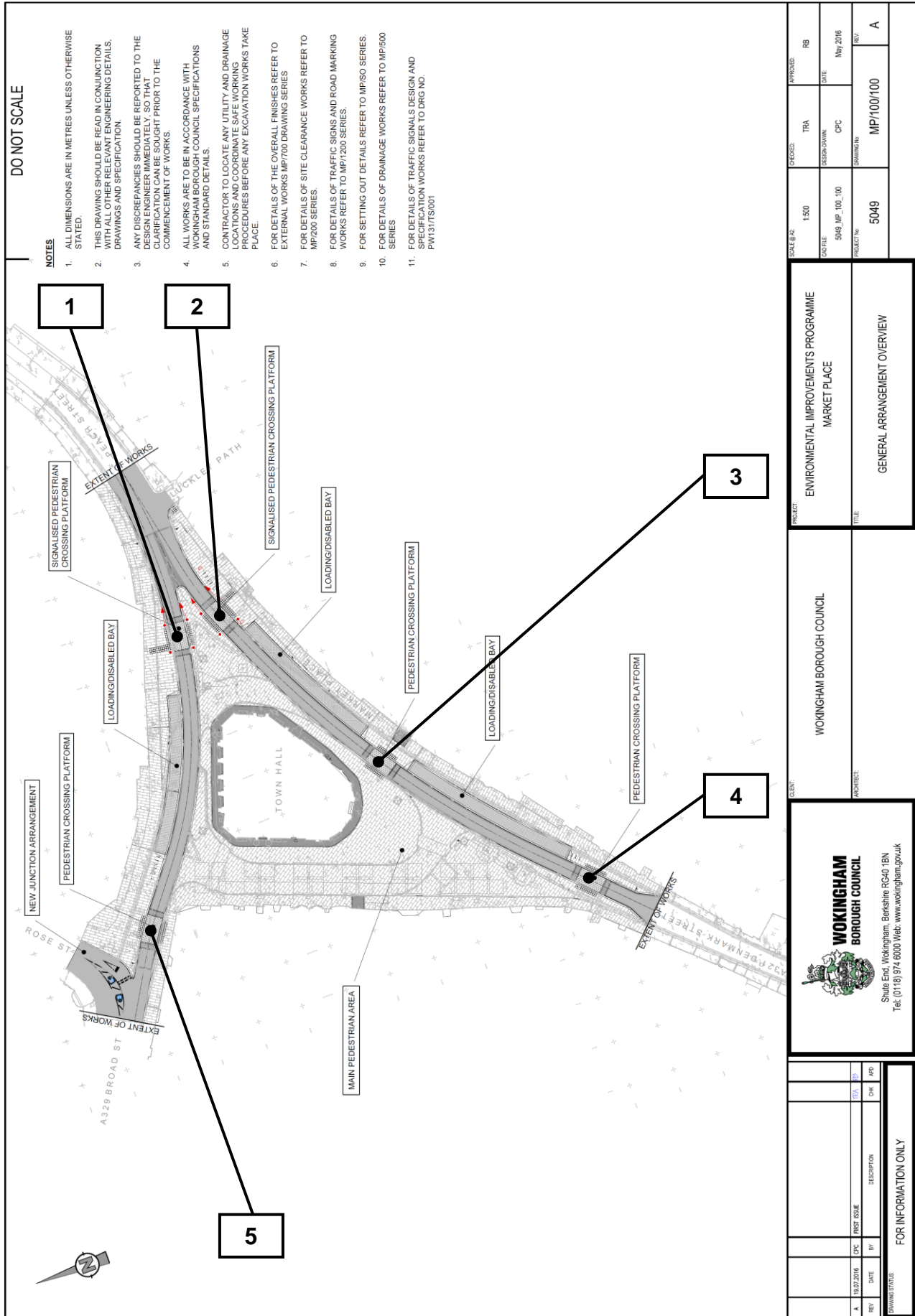
| DRAWING NO. | TITLE |
|--------------------|--|
| 001 - Rev A | Tree Pit Installation System = Tree Pit Plan View - Rootspace Locations |
| 002 - Rev A | Tree Pit Installation System - Typical Tree Pit Design - Rootspace 4.0m x 4.0m |

LIST OF DOCUMENT REVIEWED AT THIS INTERIM STAGE 3 ROAD SAFETY AUDIT

| |
|---|
| WSP Parsons Brinckerhoff - Feasibility Lighting Study - May 2016 |
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ANNEX B

ANNEX B - PROBLEM LOCATION PLAN



DO NOT SCALE

- NOTES**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
 2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING DETAILS, DRAWINGS AND SPECIFICATION.
 3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY, SO THAT APPROPRIATE ACTION CAN BE TAKEN PRIOR TO THE COMMENCEMENT OF WORKS.
 4. ALL WORKS ARE TO BE IN ACCORDANCE WITH WOKINGHAM BOROUGH COUNCIL SPECIFICATIONS AND STANDARD DETAILS.
 5. CONTRACTOR TO LOCATE ANY UTILITY AND DRAINAGE LOCATIONS AND COORDINATE SAFE WORKING PROCEDURES BEFORE ANY EXCAVATION WORKS TAKE PLACE.
 6. FOR DETAILS OF THE OVERALL FINISHES REFER TO EXTERNAL WORKS MP/700 DRAWING SERIES.
 7. FOR DETAILS OF SITE CLEARANCE WORKS REFER TO MP/200 SERIES.
 8. FOR DETAILS OF TRAFFIC SIGNS AND ROAD MARKING WORKS REFER TO MP/1200 SERIES.
 9. FOR SETTING OUT DETAILS REFER TO MP/500 SERIES.
 10. FOR DETAILS OF DRAINAGE WORKS REFER TO MP/500 SERIES.
 11. FOR DETAILS OF TRAFFIC SIGNALS DESIGN AND SPECIFICATION WORKS REFER TO DRS NO. PW1317/S1001

| <p>WOKINGHAM BOROUGH COUNCIL Shute End, Wokingham, Berkshire RG40 1BN Tel: (0118) 974 6000 Web: www.wokingham.gov.uk</p> | | CLIENT: WOKINGHAM BOROUGH COUNCIL PROJECT: ENVIRONMENTAL IMPROVEMENTS PROGRAMME MARKET PLACE TITLE: GENERAL ARRANGEMENT OVERVIEW | SCALE @ A2: 1:500 CHECKED: TPA APPROVED: RB DRAFTER: 5049_MP_100_100 DESIGN/DRAWN: CPC DATE: May 2016 PROJECT NO: 5049 DRAWING NO: MP/100/100 REV: A | | | | | | | | | | | | |
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