



South West Milton Keynes Consortium

SOUTH WEST MILTON KEYNES

Stage 1 Road Safety Audit and Designer's
Response (Junctions in Milton Keynes)





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QUALITY CONTROL

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1 STAGE 1 ROAD SAFETY AUDIT



Milton Keynes Council

MKC MITIGATION DESIGNS

Stage 1 Road Safety Audit

Milton Keynes Council

MKC MITIGATION DESIGNS

Stage 1 Road Safety Audit

CONFIDENTIAL

PROJECT NO. 70069442

OUR REF. NO. ITS/569/2021/MKC

DATE: JANUARY 2021

WSP

The Mailbox



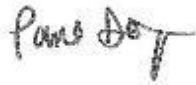
Level 2

100 Wharfside Street

Birmingham

B1 1RT

Quality control

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks				
Date	January 2021			
Prepared by	Lyn Turner			
Signature				
Checked by	Neil Jones			
Signature				
Authorised by	Paul Donegan			
Signature				
Project number	70069442			
Report number	ITS/569/2021/MKC			
File reference	As above			

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1. PROJECT DETAILS

Report title:	<i>MKC Mitigation Designs</i>
Date:	<i>January 2021</i>
Document reference and revision:	<i>ITS/569/2021/MKC</i>
Prepared by:	<i>WSP</i>
On Behalf of:	<i>Milton Keynes Council</i>

2. INTRODUCTION

2.1.1. This report results from a Stage 1 Road Safety Audit carried out on the MKC Mitigation Designs scheme on behalf of Martin Paddle, WSP. The overseeing organisation for this scheme is Milton Keynes Council. The Road Safety Audit was carried out during January 2021.

2.1.2. The Road Safety Audit Team approved by Martin Paddle, WSP was as follows:

Audit Team Leader: Lyn Turner CMILT, FIHE, MCIHT, FSoRSA, RegRSA(IHE)

WSP Principal Consultant (Road Safety Engineering)

Audit Team Member Neil Jones BA(hons), DipTEDM, MSoRSA, MCIHT

WSP Principal Consultant (Road Safety Engineering)

Both team members hold a Road Safety Certificate of Competence meeting the requirements of the European Directive 2008/96/EC and GG119 paragraph 3.9 and appendix G.

2.1.3. The audit took place at the Audit Team's respective homes, and via Microsoft Teams due to the current COVID-19 pandemic during January 2021. The Road Safety Audit was undertaken in accordance with the Road Safety Audit brief provided Justin Sherlock, WSP and accepted by the Audit Team via email.

2.1.4. Due to the ongoing COVID-19 restrictions, the Audit Team were unable to visit the site, therefore, in line with the guidance relaxing the GG 119 requirements released by Highways England on the 6th January 2021 titled 'Road Safety Audits – Site visits during the COVID-19 pandemic', the Audit Team undertook the road safety audit using drawings and available online mapping (Google Maps dated August 2020 and Google Street View dated May 2012).

2.1.5. The Road Safety Audit also comprised of an examination of the documents and drawings supplied to the Road Safety Audit Team, referenced in Appendix A of this report.

2.1.6. All comments and recommendations are referenced to the design drawings and the locations have been indicated on the plan located in Appendix B.

2.1.7. The terms of reference of the Road Safety Audit are as described in the Design Manual for Roads and Bridges (DMRB) Standard GG 119 Road Safety Audit.

2.1.8. The Road Safety 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.

2.1.9. The following note was listed under the title 'Departure from Standards'

"Entry widths, circulatory carriageway widths and deflection at a number of junctions may not be compliant with the desired standard set out in CD 116 however these junctions are not part of the trunk road network. The current network layouts do not comply with CD 116."

2.1.10. Audit administration

This Audit Report has been submitted to the Overseeing Organisation for consideration. A copy of this RSA report should then be passed onto the design organisation to allow a RSA response report to be produced. This should be completed within 1 month of the issue of the RSA report and the Overseeing Organisation should then provide a copy to the RSA team for information.

The Overseeing Organisation is responsible for identifying any misinterpretations of the highway scheme proposals or if any problem or recommendation is not accepted.

Safety issues identified during the 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 Overseeing Organisation, will be set out in a separate letter. Maintenance issues should be reported directly to the maintaining agent.

2.2. Purpose of the Scheme *(Taken directly from the audit brief)*

South West Milton Keynes is a proposed residential led mixed use development site located within Buckinghamshire immediately to the west of Milton Keynes. The Proposed Development is bound by the A421 Standing Way in the north, B4034 Buckingham Road in the north east, the currently dis-used Milton Keynes to Oxford railway line in the south and Whaddon Road in the west.

The Proposed development consists of:

- *1,855 mixed tenure residential dwellings (including 60 extra care units);*
- *2.07 hectare employment area (B1 land use);*
- *0.67 hectare neighbourhood centre accommodating retail (A1/A2/A3/A4/A5) and community land uses (D1/D2);*
- *A Primary School with 630 pupil places; and*
- *A Secondary School with 600 pupil places.*

The scope of this Stage 1 Road Safety Audit is to consider the off-site highway mitigation proposed on A421 Standing Way from Tattenhoe Roundabout to the Bleak Hall Roundabout, and on B4034 Buckingham Road at Sherwood Drive.

- Junction 1 - Sherwood Drive/Water Eaton Road/B4034 Buckingham Rd
- Junction 2 – B4034 Buckingham Road/Newton Road/Shenley Road
- Junction 5 – A421/Tattenhoe Roundabout
- Junction 6 – A421/Bottle Dump Roundabout
- Junction 12 – Kingsmead Roundabout
- Junction 14 – Furzton Roundabout
- Junction 15 – A421/Bleak Hall Roundabout
- Junction 16 – A421/Elfield Park Roundabout
- Junction 17 – A421/Emerson Roundabout
- Junction 18 – A421/Windmill Hill Roundabout

3. PROBLEMS IDENTIFIED IN PREVIOUS ROAD SAFETY AUDITS

The audit brief states there has been no previous Road Safety Audits undertaken on this scheme.

4. PROBLEMS IDENTIFIED AT THIS STAGE 1 ROAD SAFETY AUDIT

GENERAL

PROBLEM 1

Location: Junctions 1, 5, 6, 12, 14, 15, 16, 17 & 18

Summary: Lane widening on the roundabout entries may require repositioning of chevron signing on the roundabout.

At the roundabouts detailed above, there is a to be lane widening on at least one of the approaches to the roundabout. The existing chevron signs are positioned for optimal visibility for drivers on approach to the roundabout. The widening of the lanes on approach to the roundabout is likely to alter drivers view of the chevrons. This could increase the risk of drivers overshooting the roundabout Give Way line and colliding with a vehicle on the circulatory carriageway.

RECOMMENDATION

It is recommended that, where carriageway widening is proposed, the positioning of the chevron signing be amended as required or additional signing be provided.

PROBLEM 2

Location: Junctions 6, 12, 14, 15, 16, 17 & 18

Summary: Encouraging two or more lanes of through traffic could increase the risk of side swipe collisions on the roundabout.

At the roundabouts, one or more of the arms are being widened to allow two or more lanes to enter and proceed through the roundabout or the lane destination marking are changing. The roundabouts in general currently do not include any lane markings and the proposals don't include any such proposals. There is a risk that, due to poor lane discipline, that should two vehicles attempt to negotiate the roundabout side-by-side, it could result in side swipe collisions.

RECOMMENDATION

It is recommended that appropriate lane markings be provided on the approach to and through the roundabout.

PROBLEM 3

Location: Junctions 1, 2, 5, 6, 12, 14, 15, 16, 17 & 18

Summary: Verge widening on the nearside verge may increase the risk of street furniture being struck.

On the approaches to the roundabout, local widening is to be proposed to allow for extra carriageway space on entering the roundabout. The widening will be achieved by reducing the width of the highway verge either offside or nearside. Within the highway verge, there is street furniture currently set-back from the edge of the carriageway, however once the widening is completed, the A421 carriageway or local roads will be very close to the current location of the street furniture which could result in vehicles striking the street furniture resulting in a higher risk severity of injury.

RECOMMENDATION

It is recommended that all the street furniture be adequately set-back from the edge of the carriageway or protected by road restraint systems where required.

PROBLEM 4

Location: Junctions 15, 16, 17 and 18

Summary: Lack of lane destination markings could lead to side-swipe incidents. .

At the above Junctions, these are being widened to 3 lane entries to the roundabout, however, there are no destination markings and arrows proposed. The lack of these markings along with markings from problem 2 could lead to side-swipe collisions as vehicles negotiate their position on the approach to and through the roundabout.

RECOMMENDATION

It is recommended that destination markings and arrows are installed on the 3 lane entries roundabouts.

JUNCTION 2 – BUCKINGHAM ROAD/NEWTON ROAD/SHENLEY ROAD

PROBLEM 5

Location: B4034 Buckingham Road/Newton Road/ Shenley Road Junction.

Summary: Widening of the southbound approach to the mini roundabouts removes a layby which may lead to vehicular/pedestrian collisions

From the drawing (70069442-015 P02), it appears that the road is to be widened on the southbound approach to the mini roundabouts, removing an existing layby. Whilst the layby has double yellow lines within it to prevent parking it also houses a drop kerb for access to property 140 Buckingham Road. Currently the user of this access can stop in the layby to open the gates, but now it would appear they will need to stop in the road or across the footway. No details have been given as to the replacement of the dropped kerbs. This could lead to rear end shunts in Shenley Road due to following the vehicle believing they have stopped for the roundabout or leading to collisions involving pedestrians on the footway.

RECOMMENDATION:

It is recommended that the dropped kerbed access be retained and pedestrians are made aware that vehicles could be on the footway

PROBLEM 6

Location: B4034 Buckingham Road/Newton Road/ Shenley Road Junction.

Summary: Traffic islands being moved, which may lead to vehicular/pedestrian collisions

From the drawing (70069442-015 P02), the traffic islands are being relocated to make room for two lanes of traffic. It is not clear from the drawing that the pedestrian crossing facilities are to be retained. The removal of these facilities could lead to vehicular/pedestrian collisions if pedestrians try to cross the road where vehicles are not expecting them.

RECOMMENDATION:

It is recommended that the pedestrian crossing facilities are retained on all traffic islands.

JUNCTION 5 – A421/ TATTENHOE ROUNDABOUT

PROBLEM 7

Location: New Roundabout on Buckingham Road

Summary: New shared footway/cycleway are of minimal width which could lead to conflict

The new shared footway/cycle way is being proposed as 3m wide (drawing number D017 Rec C). Cycle infrastructure design (Local Transport Note (LTN) 1/20) states a preferred minimum effective width of 3m, which should be the actual width of the route, where the route is not bounded by vertical features. The width of the shared use facility strongly influences the quality of the shared routes and with insufficient widths tending to reduce user comfort and therefore increase the potential for conflict between pedestrians and cyclists or cyclists and vehicles should they be more inclined to cycle on the carriageway.

No details have been given with regards to the locations of the lighting column and signs.

RECOMMENDATION

It is recommended that the shared footway/cycleway facility is widened to ensure that the effective width is maintained through-out the route to reduce the potential for conflict between pedestrians/cyclists and vehicles.

Where signposts or lamp columns are present, they should be located outside the effective width of the proposed facility where possible.

NB. Cycle infrastructure design (LTN 1/20) provides guidance of additional width requirements dependent on the edge constraint (e.g. kerb upstand).

PROBLEM 8

Location: Junction 5 - A421/ Tattenhoe Roundabout

Summary: Southbound right turning HGV encroaching into adjacent lane leading to side-swipe collision

From the drawing 9442-TP-ATR-012 the HGV travelling southbound into the roundabout to turn right clearly encroaches in the adjacent lane, and there is a real risk of the two HGV's coming together in a side swipe collision.

RECOMMENDATION

It is recommended that the available carriageway area is widened to allow both HGV to continue on their path in a safe manner.

JUNCTION 6 – A421/ BOTTLEDUMP ROUNDABOUT

PROBLEM 9

Location: Buckingham Road - Recycling Centre Lane

Summary: Proposed location of Walkers/Cyclists & Horse Riders (WCHR) /Bridleway tie-in could lead to WCHR / vehicular conflicts

The audit team are concerned of the proposed location of the pedestrian/cycle and equestrian route tie-in on Buckingham Road outside the recycling centre. The proposed design makes WCHR's join Buckingham Road at the entrance into the recycling centre depot and within the vicinity of the entrance off Whaddon Road. There is a risk that WCHR users joining Buckingham Road at this location could come into conflict with passing or turning vehicles, potentially leading to serious/fatal injury.



Google image 1 (May 2012)– Access into recycling centre and bottle dump stables

This risk is increased due to regular LGV/HGV movements in the immediate area.

RECOMMENDATION

It is recommended that good visibility splays, removal of vegetation, signing and enhanced visual features are proposed at this tie-in, warning vehicle users to expect WCHR activity.

PROBLEM 10

Location : Whaddon Road - New Pegasus Crossing

Summary: Location of the equestrian push-button location could cause equestrian / vehicular conflicts.

From the drawings provided for the audit, the audit team are concerned with the proposed location of the push-button for equestrian users. The proposed location does not appear to provide sufficient width for equestrians to safely wait for traffic to stop. This may result in horse's heads protruding into the live carriageway. This could potentially lead to horses being struck by passing vehicles at the crossing.

RECOMMENDATION

It is recommended that sufficient facility width be provided and the equestrian push-button is located back from the carriageway to ensure that when the rider is using the facility, the horses head does not cross the kerb-line.

PROBLEM 11

Location: Whaddon Road - New Pegasus crossing

Summary: Reduced visibility of the Pegasus crossing could cause collisions between walking, cycling and horse-riders (WCHR) and also late breaking leading to rear end shunts.

From the drawings and online mapping, the audit team place the proposed Pegasus crossing in the vicinity of the red arrow on google image 3. The location is behind a mass of vegetation on the nearside and in vicinity of the tree on the offside looking to the southeast.

The vegetation will need to be completely removed in order to afford visibility to the Pegasus crossing on both sides of the carriageway to reduce the likelihood of collisions involving WCHR and motor vehicles.



Google image 2 (May 2012) – Approx. location of Pegasus crossing

RECOMMENDATION

It is recommended that all vegetation in the visibility splay of the Pegasus crossing is removed to allow adequate visibility to the crossing at all times of the year.

PROBLEM 12

Location: Whaddon Road - New Pegasus Crossing

Summary: ADS sign in visibility splay will reduce visibility leading to collisions between WCHR's and vehicles and also late breaking leading to rear end shunts.

Google Image 3 above identifies the approximate location of the Pegasus crossing, as well as the vegetation in the visibility splay. There is also an ADS sign for the Bottledump Roundabout which will also infringe on visibility to and from the crossing. The ADS sign in the visibility splay will reduce visibility to the Pegasus crossing potentially leading to collisions between WCHR's and vehicles and also late breaking leading to rear end shunts.





RECOMMENDATION

It is recommended that the ADS is relocated to allow adequate visibility to the Pegasus crossing at all times.

End of list of Problems identified and Recommendations offered in this Stage 1 Audit

5. AUDIT TEAM STATEMENT

We certify that this audit has been carried out in accordance with GG 119.	
ROAD SAFETY AUDIT TEAM LEADER	
Name:	Lyn Turner
Signed:	
Position:	Principal Consultant (Road Safety Engineering)
Organisation:	WSP
Date:	27/01/21
ROAD SAFETY AUDIT TEAM MEMBER(s)	
Name:	Neil Jones
Signed:	
Position:	Principal Consultant (Road Safety Engineering)
Organisation:	WSP
Date:	27/01/21

Appendix A



DOCUMENT LIST

Documents

- 70069442/RSA1/MKC Mitigation Designs – Road Safety Audit Brief dated 21st January 2021
- South West Milton Keynes Transport Assessment – May 2020
- Existing Traffic Flows and Speed Survey

Drawings

For Information:

- CSA/4857/100 – Rev L – Development Framework Parameters Plan

For Audit:

May 2020 TA Schemes:

- 1067760/D015-D – Bottledump Roundabout Proposed Pegasus Crossing
- 1067760/D017-C – B4034 Buckingham Road Proposed Toucan Crossings
- 1067760/D018-A – Junction 6 A421/Bottledump Roundabout
- 1067760/D024 - Junction 17 – A421/Emerson Roundabout
- 1067760/D025 - Junction 16 – A421/Elfield Park Roundabout
- 1067760/D026 - Junction 15 – A421/Bleak Hall Roundabout

TRN3 Schemes:

- 70069442-001B-P04 – Junction 1 – B4034 Buckingham Road/Sherwood Drive
- 70069442-015-P02 – Junction 2 – B5034 Buckingham Road/Newton Road/Shenley Road

- 9442-TP-SK-004-P05 – Junction 5 A421 Standing Way/Snelshall Street (Tattenhoe Roundabout)
- 70069442-004-P05 – Junction 6 – A421 Standing Way/Whaddon Road (Bottledump Roundabout)
- 70069442-010-P02 – Junction 12 H7 Chaffron Way/V1 Snelshall Street (Kingsmead Roundabout)
- 70069442-011-P02 – Junction 14 H7 Chaffron Way/V3 Fulmer Street (Furzton Roundabout)
- 70069442-012-P03 – Junction 15 A421 Standing Way/V6 Grafton Street (Bleak Hall Roundabout)
- 70069442-016-P03 – Junction 16 A421 Standing Way/V4 Watling Street (Elfield Park Roundabout)
- 70069442-013-P02 – Junction 17 A421 Standing Way/V3 Fulmer Street (Emerson Roundabout)
- 70069442-014-P02 – Junction 18 A421 Standing Way/V2 Tattenhoe Street (Windmill Hill Roundabout)

Swept Path Analysis

Junction 5

- 9442-TP-ATR-002
- 9442-TP-ATR-004
- 9442-TP-ATR-005
- 9442-TP-ATR-007
- 9442-TP-ATR-008
- 9442-TP-ATR-012
- 9442-TP-ATR-013
- 9442-TP-ATR-014

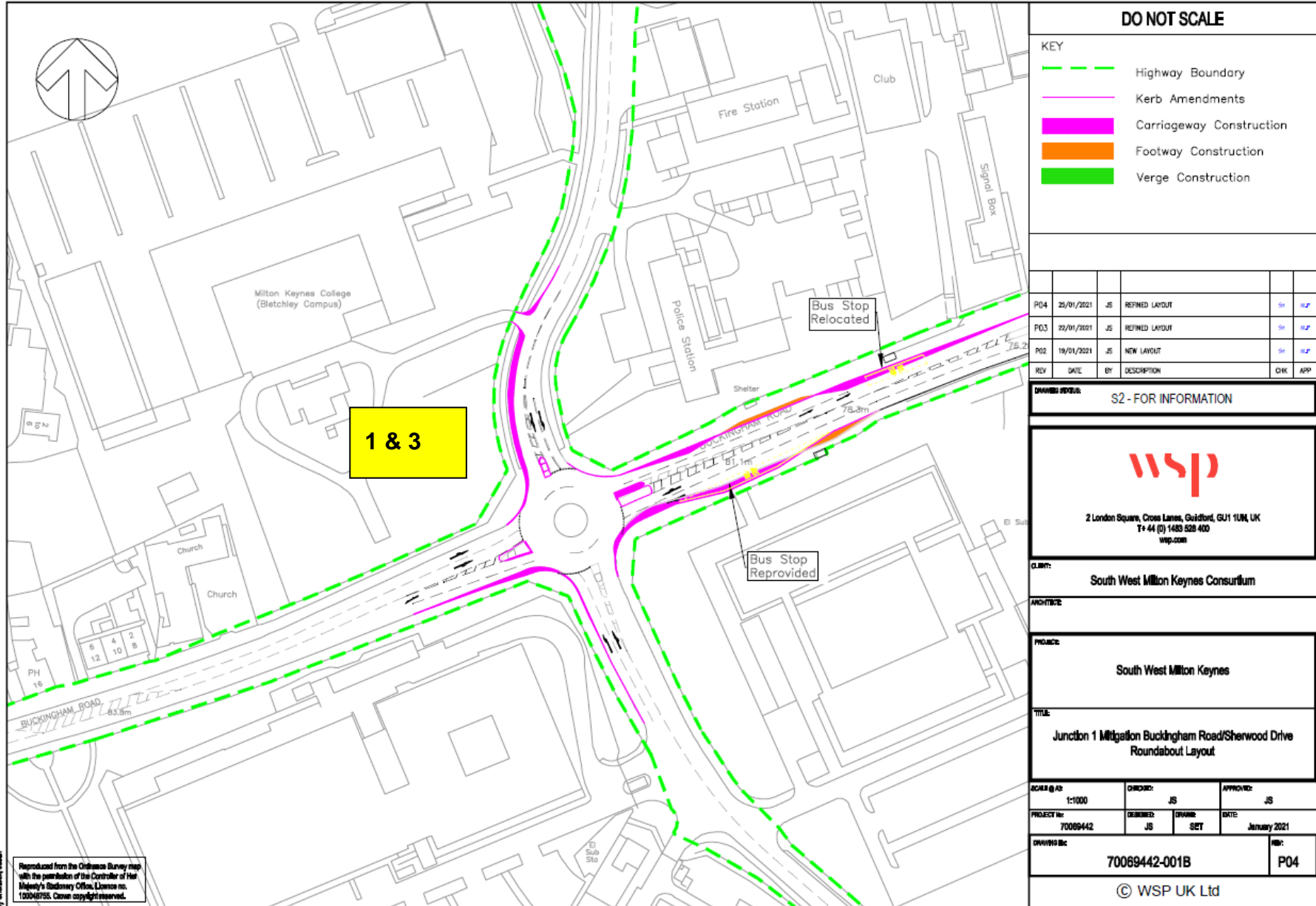
Junction 6

- J6 Bottledump – ATR1
- J6 Bottledump – ATR2
- J6 Bottledump – ATR3
- J6 Bottledump – ATR4

Appendix B



PROBLEM LOCATION PLAN



DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- █ Carriageway Construction
- █ Footway Construction
- █ Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	25/01/2021	JS	REFINED LAYOUT	JS	JS
FD3	22/01/2021	JS	REFINED LAYOUT	JS	JS
P02	19/01/2021	JS	NEW LAYOUT	JS	JS

DRIVING DIRECTIONS: S2 - FOR INFORMATION

2 London Square, Cross Lanes, Guildford, GU1 1UN, UK
T+ 44 (0) 1483 528 400
wsp.com

CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

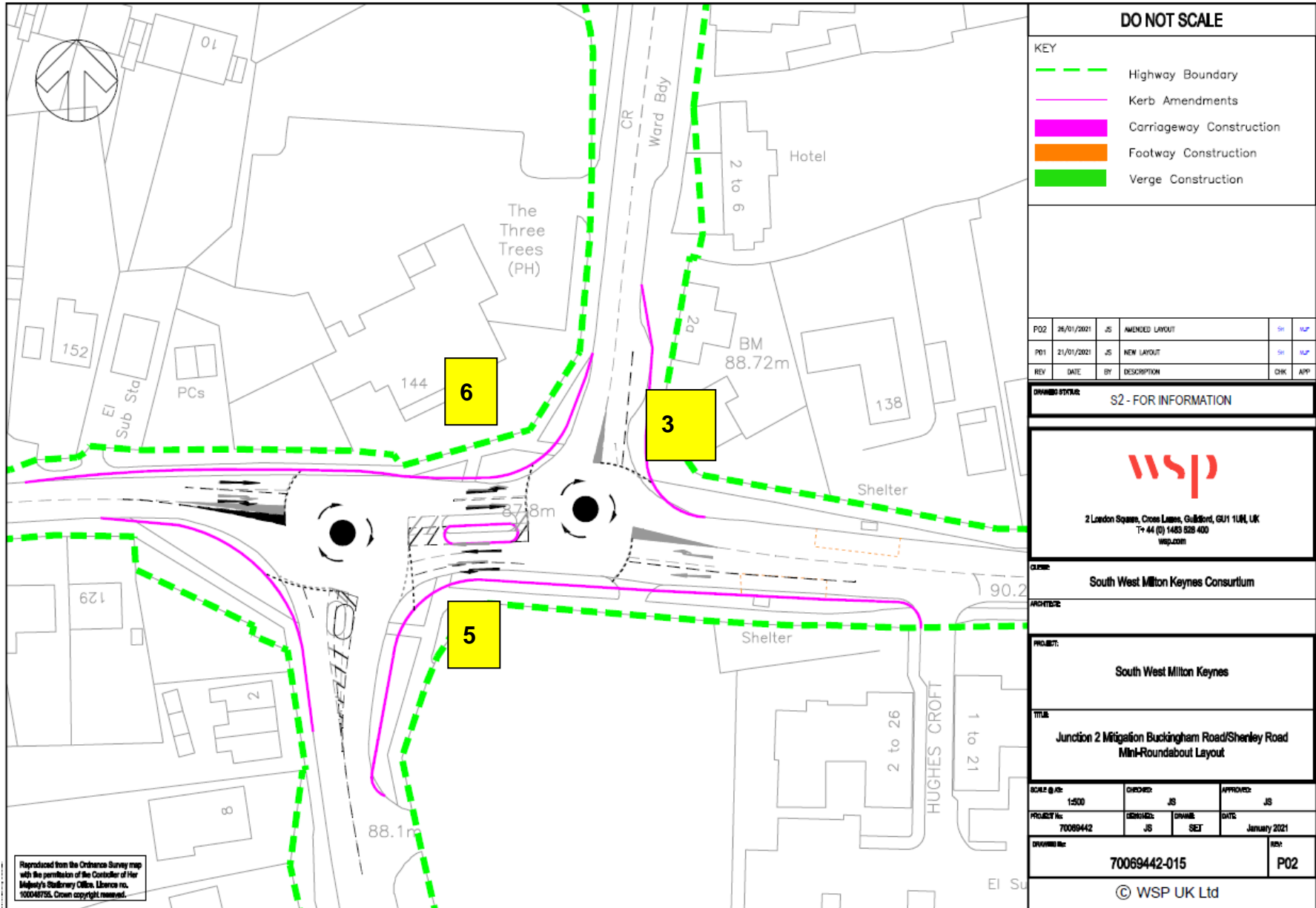
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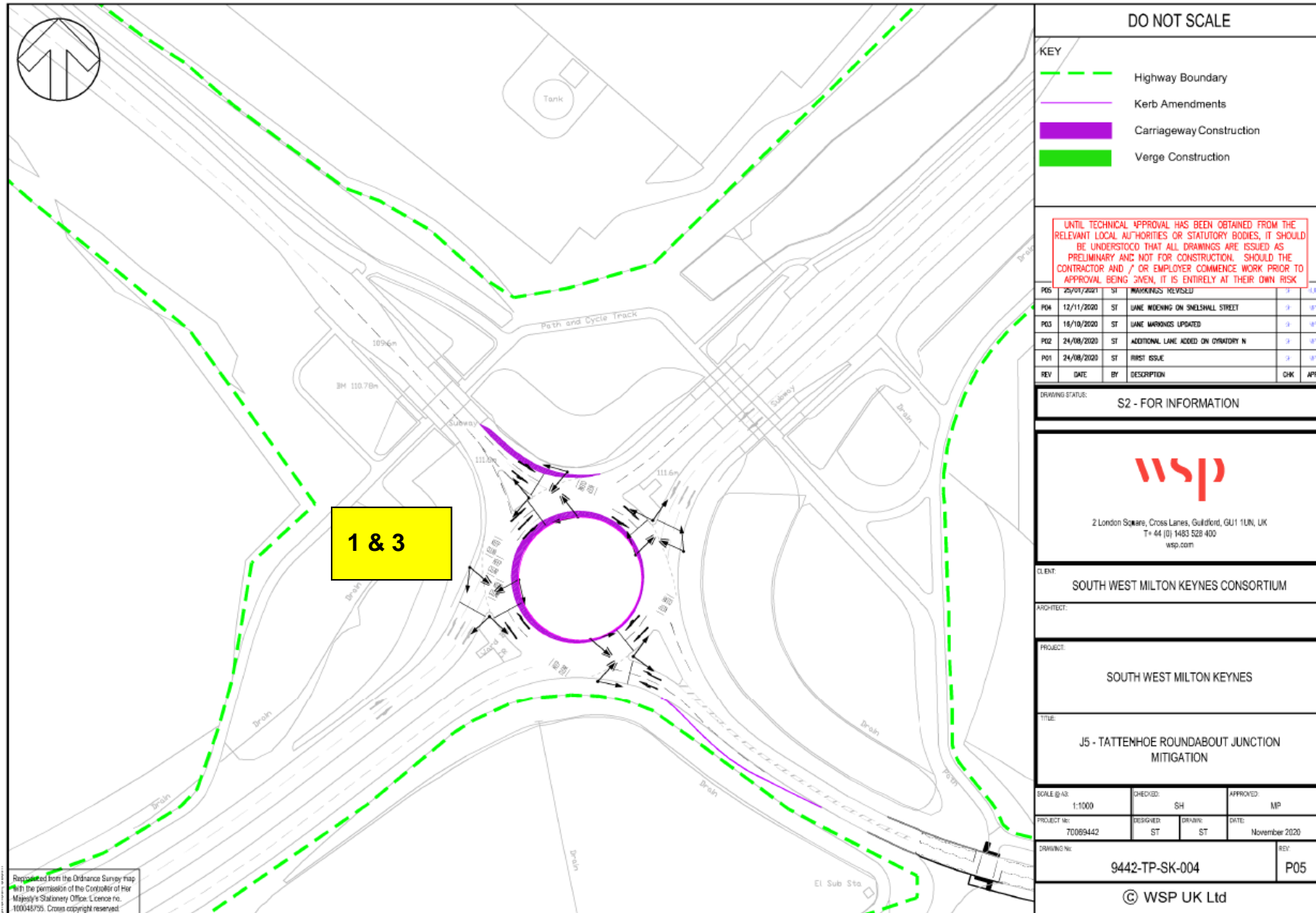
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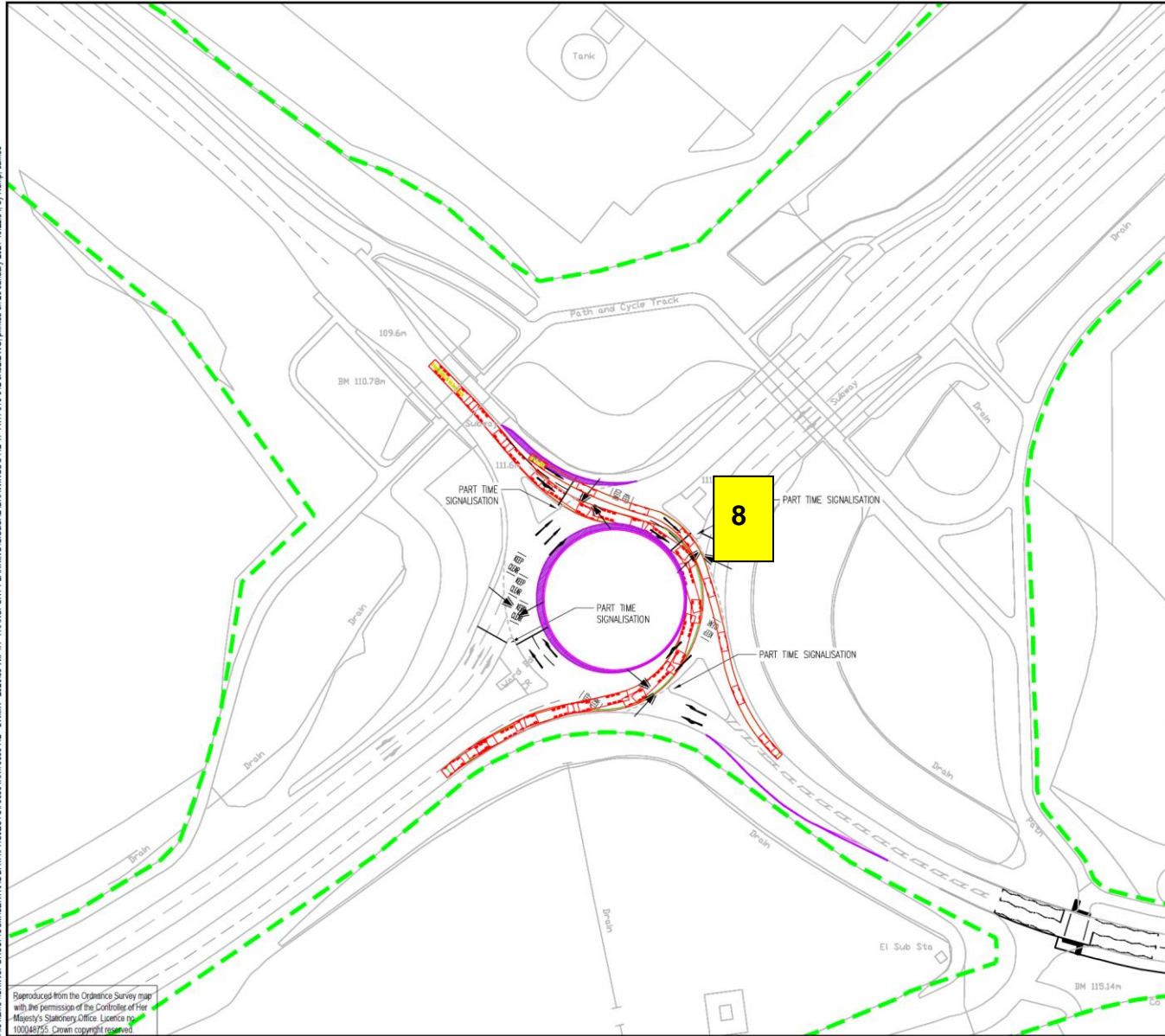
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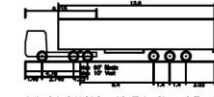
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Articulated Vehicle with Twin Steered Tractor	
Overall Length	17.00m
Wheelbase	5.50m
Min Roadway Clearance	0.50m
Max Trail	0.50m
Lock to Lock Time	0.50m
Lock to Lock Turning Radius	0.50m

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PO3	16/10/2020	ST	LANE MARKINGS UPDATED
PO2	24/08/2020	ST	ADDITIONAL LANE ADDED ON C/DRATORY N
PO1	24/08/2020	ST	FIRST ISSUE
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S0 - WORK IN PROGRESS

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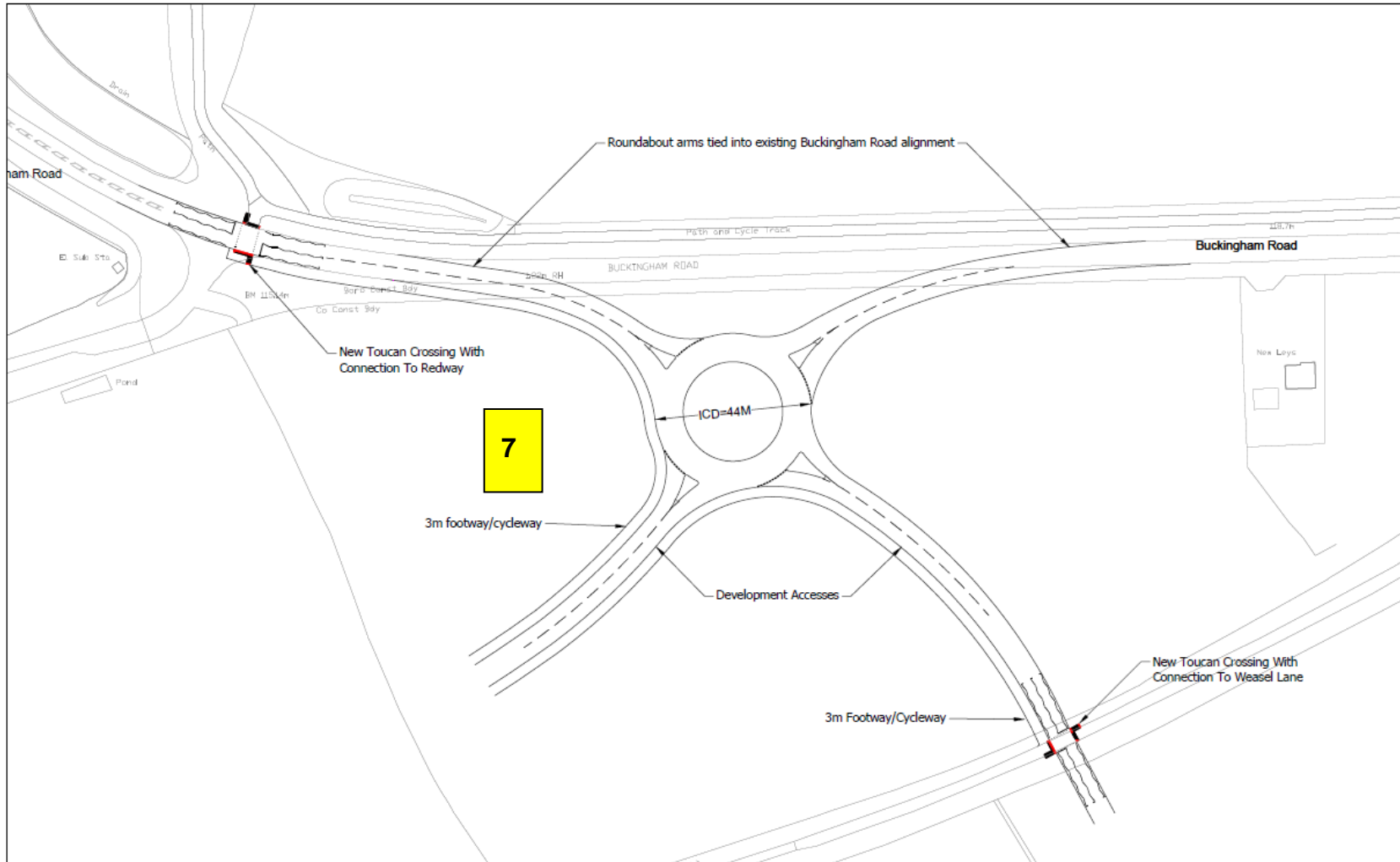
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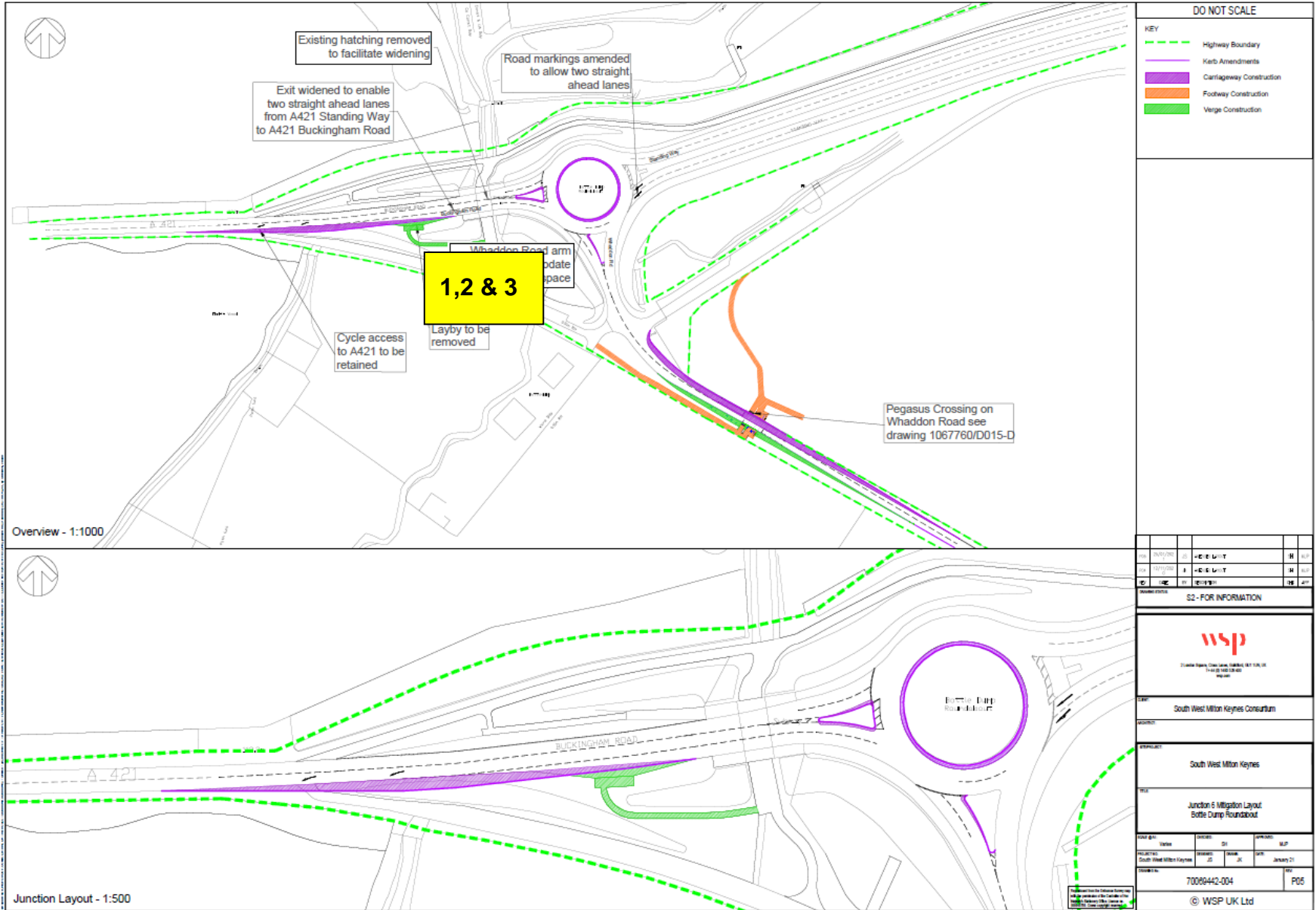
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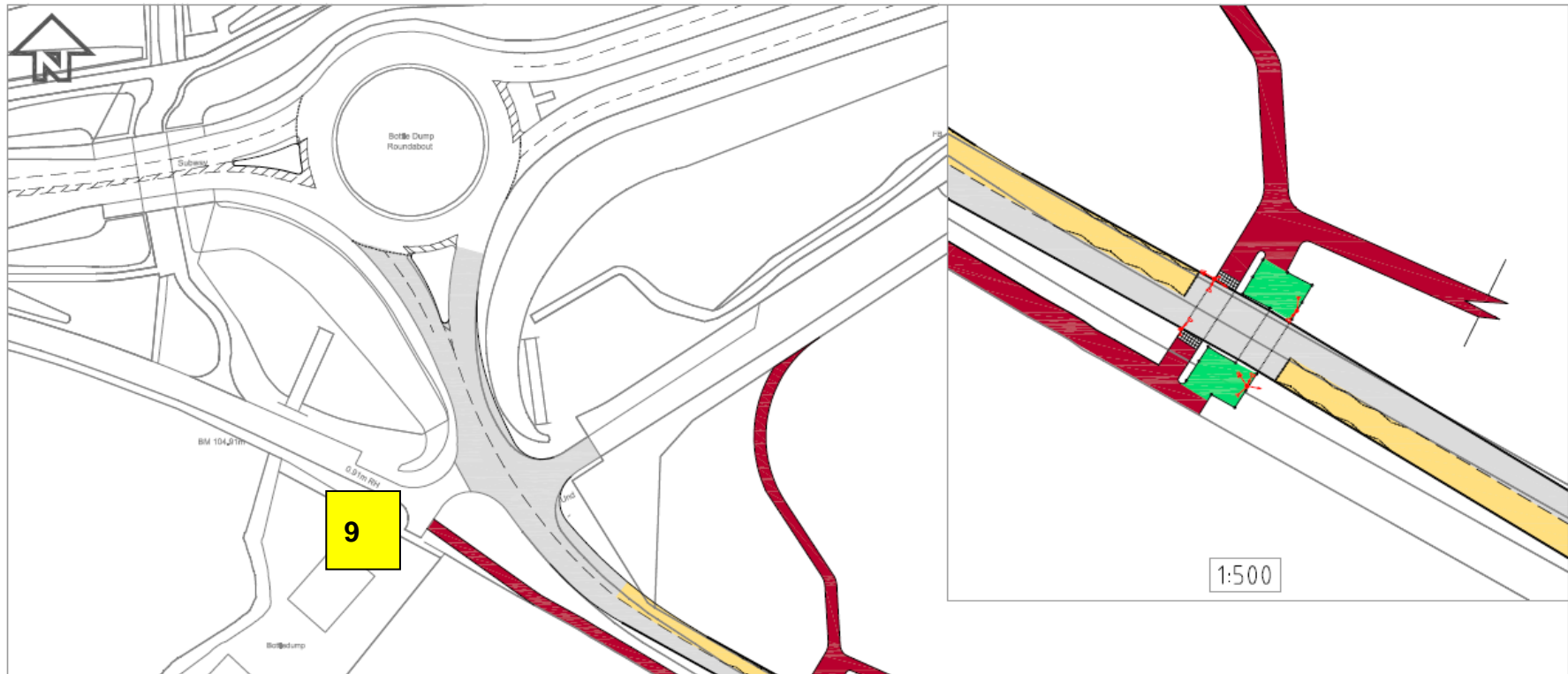
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PROJECT No:	DESIGNED:	DRAWN:	DATE:
70069442	JK	JK	January 2021
DRAWING No:	9442-TP-ATR-012		REV: P04
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PRELIMINARY FOR APPROVAL		Rev. Amendment		By: EC, SH, CEW		Date: 20-03-17, 04-08-16, 03-06-16		Rev. C	





KEY:

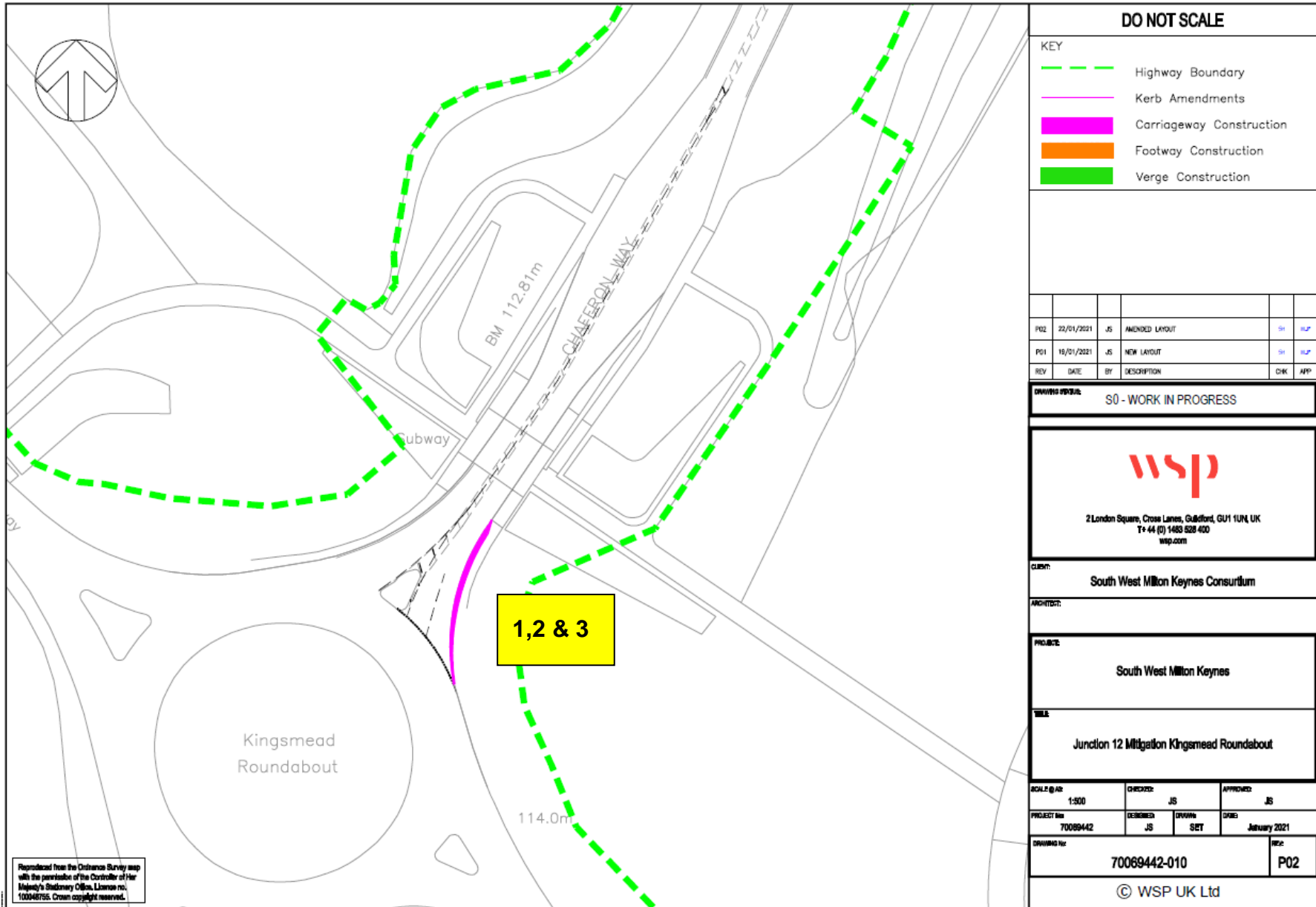
- Primary 3 aspect signal head.
- Secondary 3 aspect signal head.
- Pedestrian kerbside detector.
- Two aspect nearside pedestrian signals with combined push button.
- Pedestrian Push Button.
- High friction surfacing
- Pedestrian/Cyclist/Equestrian Route
- Extent of highway works
- Equestrian Holding Area

At original drawing size (A3) this line measures 50mm

Notes	D	Minor Amendments	SH	MP	29/07/16	MP
	C	Existing Roundabout Markings	CEW	MP	05/04/16	MP
	B	Minor Amendments	CEW	SH	18/12	SH
	A	Relocated Crossing	CEW	MP	15/12	MP
PRELIMINARY FOR APPROVAL	Rev.	Amendment	By	Chkt.	Date	Appd.

Cad Ref. No.	L:106xxx\1067760 South West Milton Keynes\12 Dwgs
Project	SOUTH WEST MILTON KEYNES
Title	BOTTLEDUMP ROUNDABOUT PROPOSED PEGASUS CROSSING

Drawn	CEW	Date	11-12-2015	Checked	SH	Date	18-12-2015	Approved	MP	Date	18-12-2015
mouchel		Scale	1:1000@A3		Job No.		1067760		Client		SWMK Consortium
Export House Woking, Surrey, GU21 6GX Tel: +44 (0)1483 731000 Fax: +44 (0)1483 731010		Drawing No.		D015		Rev.		D			



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DO NOT SCALE

KEY

- - - Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
PO2	22/01/2021	JS	AMENDED LAYOUT	SH	WLP
PO1	19/01/2021	JS	NEW LAYOUT	SH	WLP

DRAWING STATUS: **S0 - WORK IN PROGRESS**

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CLIENT: **South West Milton Keynes Consortium**

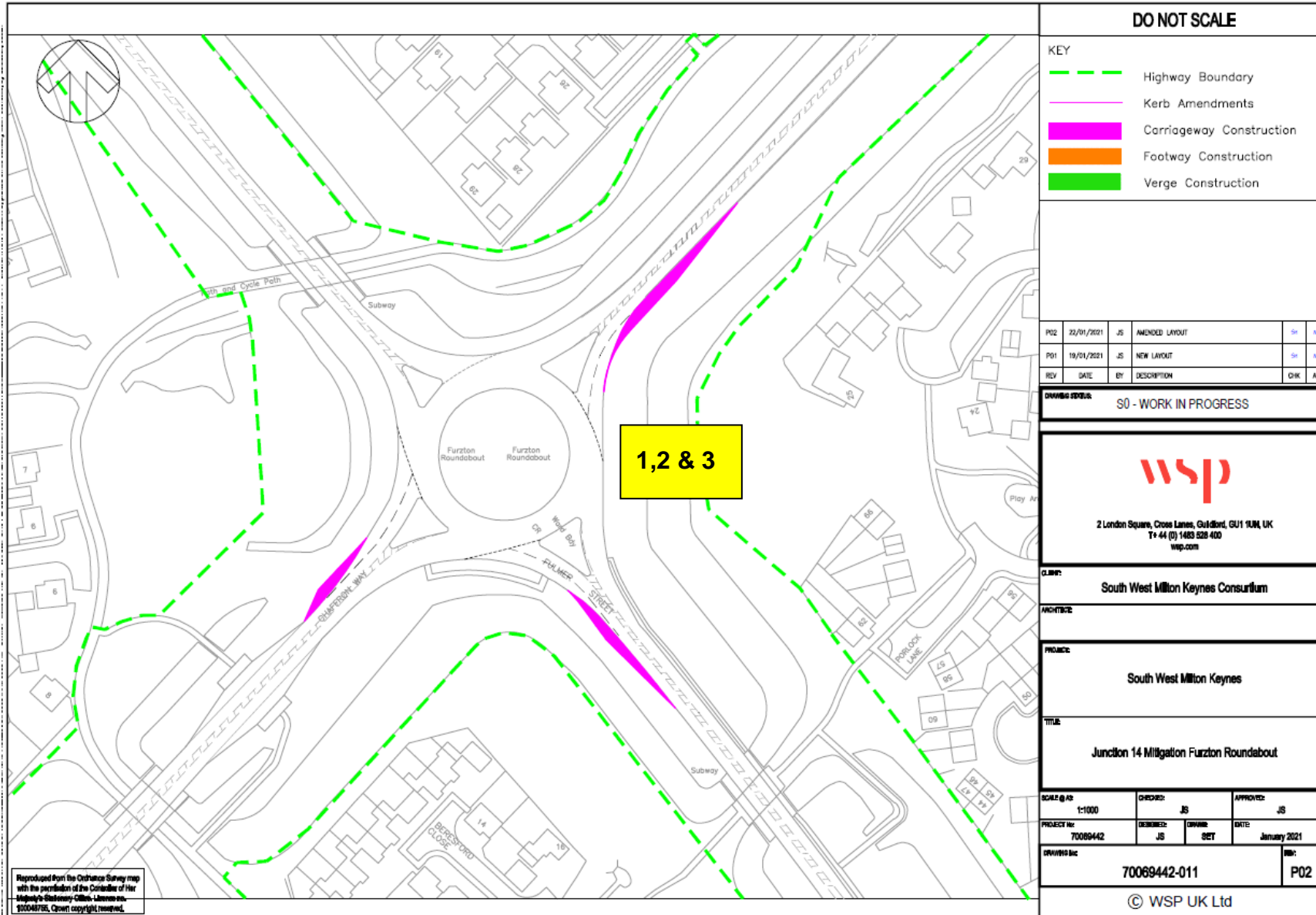
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PROJECT: **South West Milton Keynes**

TITLE: **Junction 12 Mitigation Kingsmead Roundabout**

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PROJECT No: 70089442	DESIGNED: JS	DATE: January 2021
DRAWING No: 70089442-010	DRAWN: SET	REV: P02

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DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

PO2	22/01/2021	JS	AMENDED LAYOUT	Sh	NLP
PO1	19/01/2021	JS	NEW LAYOUT	Sh	NLP
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S0 - WORK IN PROGRESS



2 London Square, Cross Lanes, Guildford, GU1 1UN, UK
T+44 (0) 1483 528 400
wsp.com

CLIENT: South West Milton Keynes Consortium

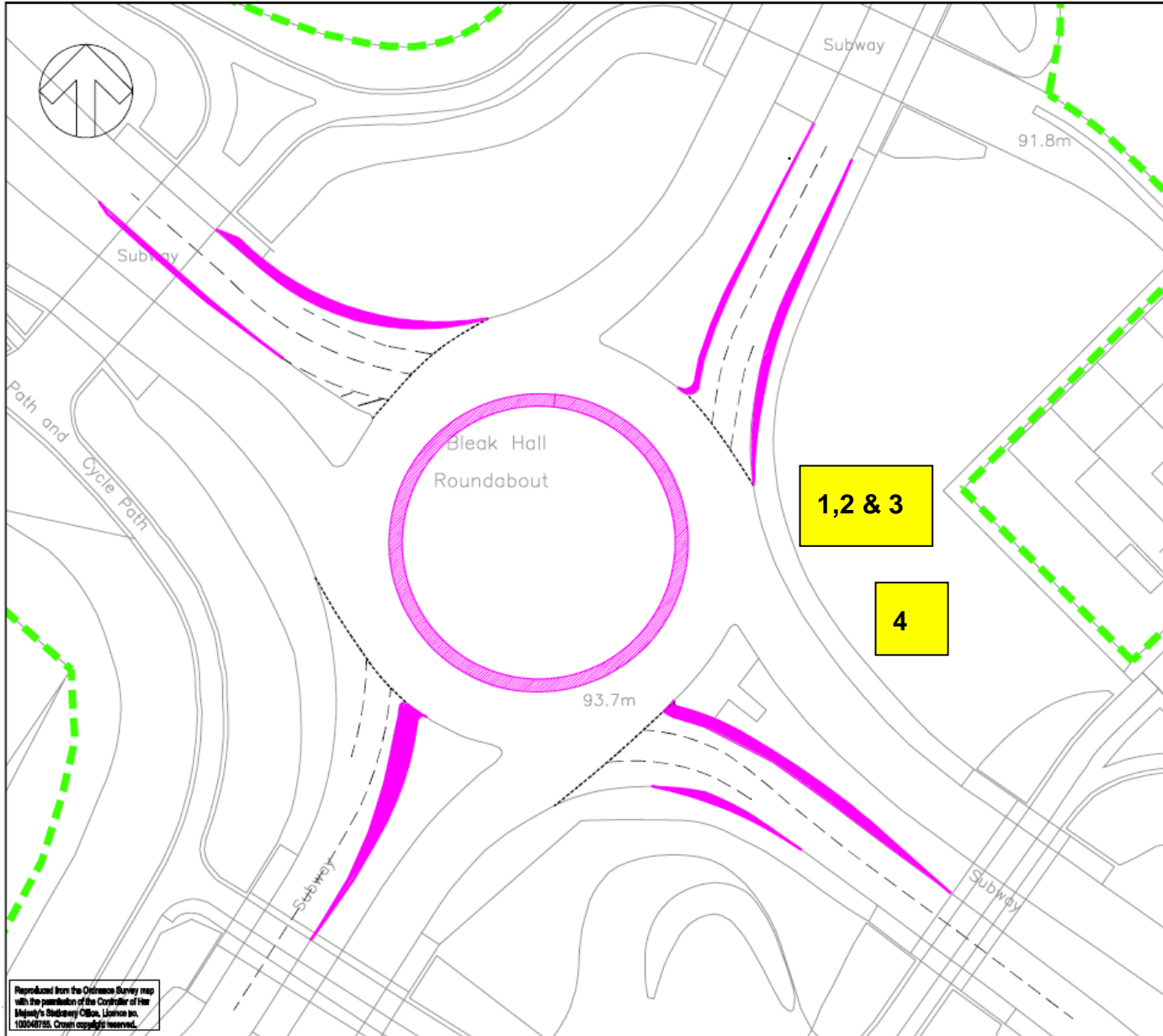
PROJECT: South West Milton Keynes

TITLE: Junction 14 Mitigation Furzon Roundabout

SCALE @ A3:	1:1000	CHECKED:	JS	APPROVED:	JS
PROJECT No:	70069442	DESIGNED:	JS	DATE:	January 2021
DRAWING No:	70069442-011	DATE:	SET	REV:	P02

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DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- - - Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	25/01/2021	JS	UPDATED LAYOUT		
P02	22/01/2021	ST	UPDATED LAYOUT		
P01	16/01/2021	JS	NEW LAYOUT		

DRAWING STATUS: S0 - WORK IN PROGRESS

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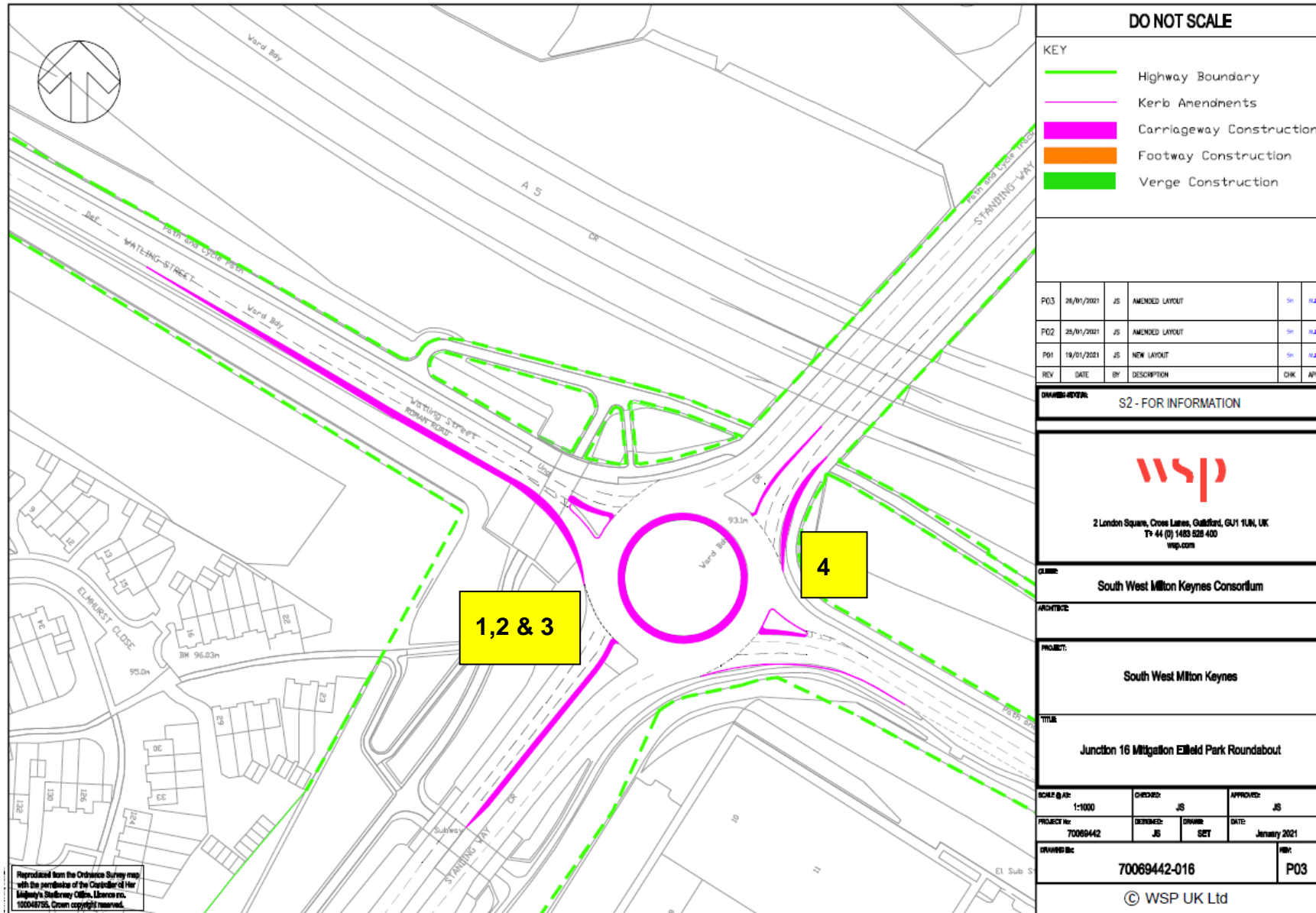
CLIENT: South West Milton Keynes Consortium

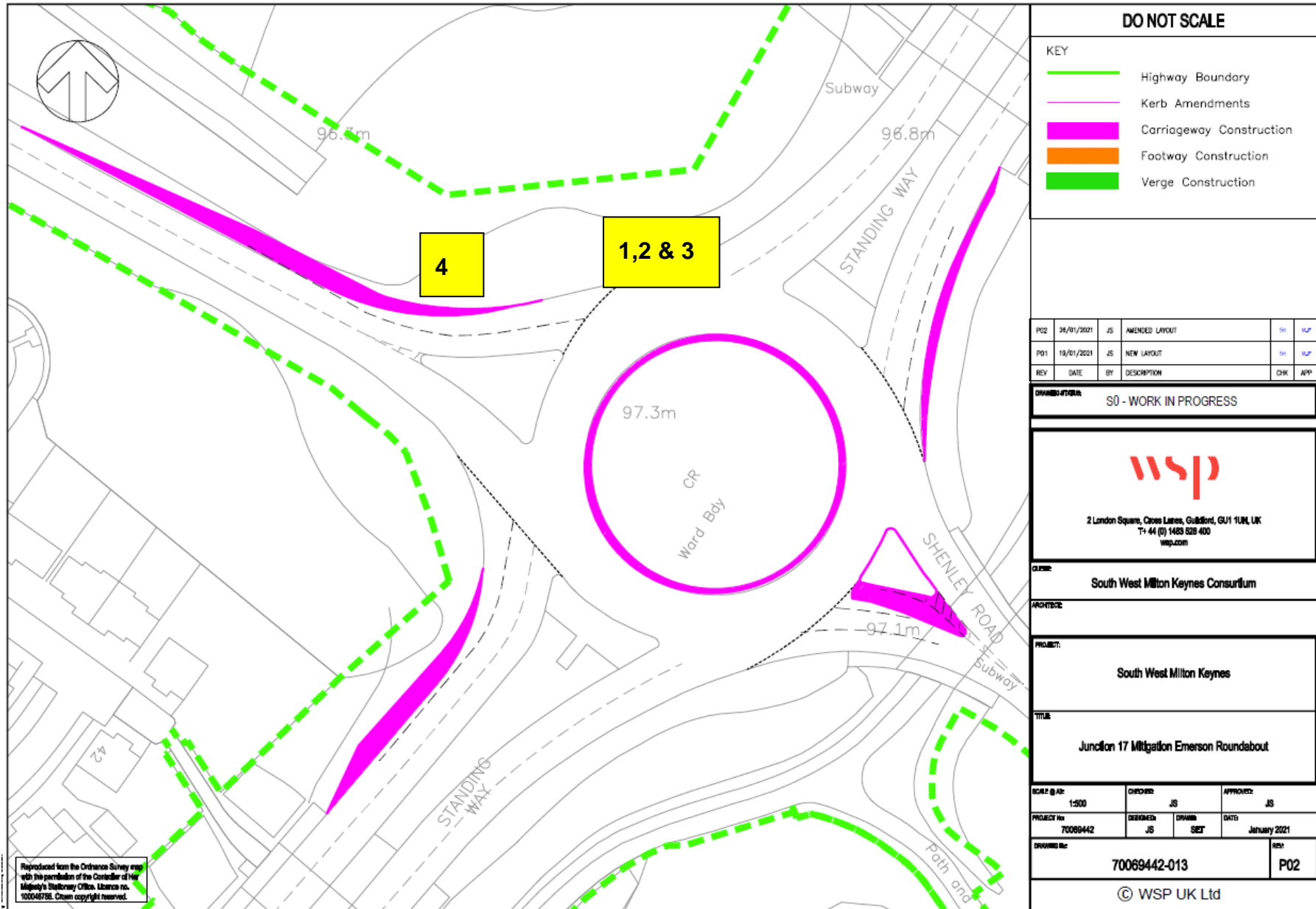
PROJECT: South West Milton Keynes

TITLE: Junction 15 Mitigation Bleak Hall Roundabout

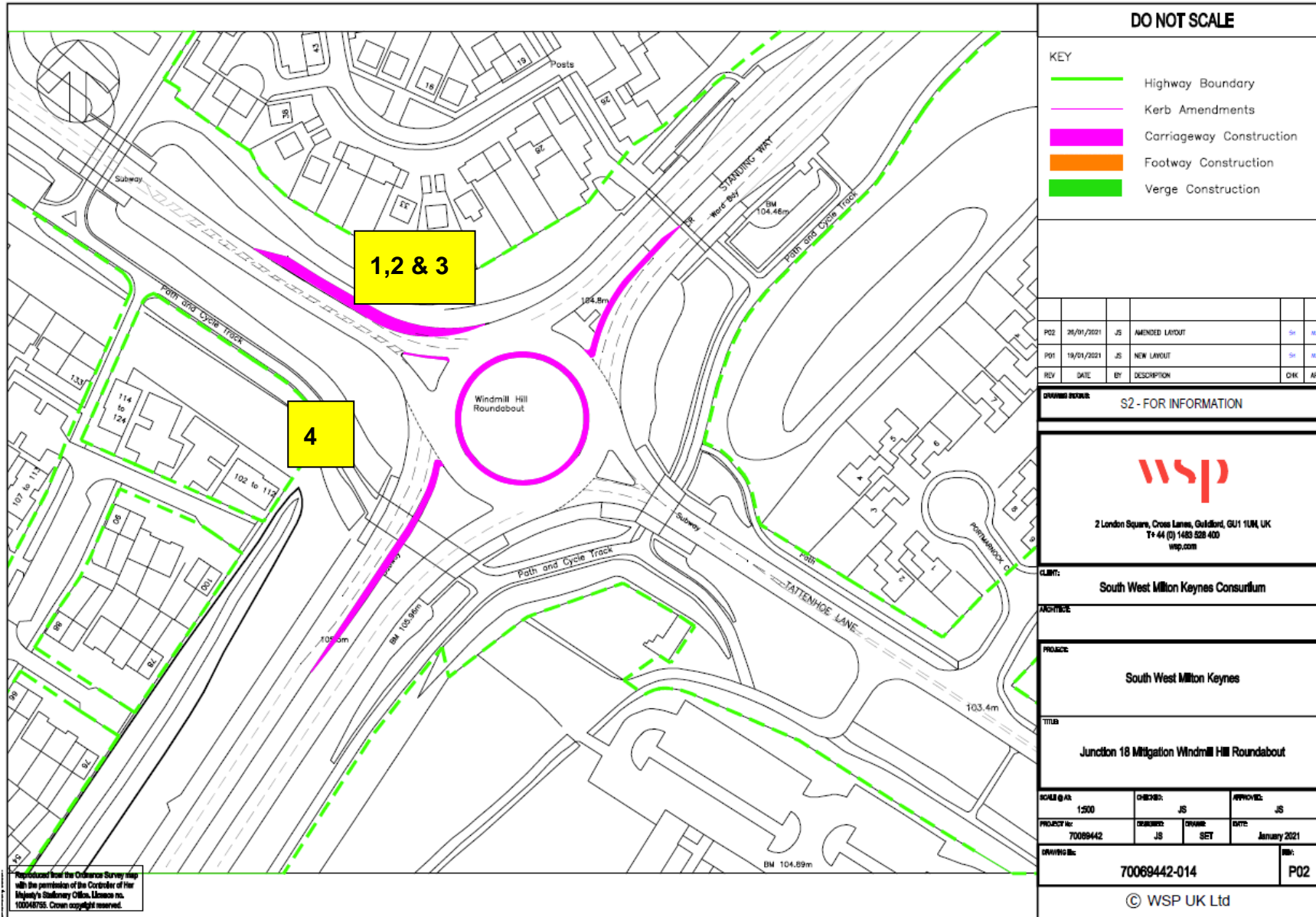
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PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-012		DATE: January 2021
		REV: P03

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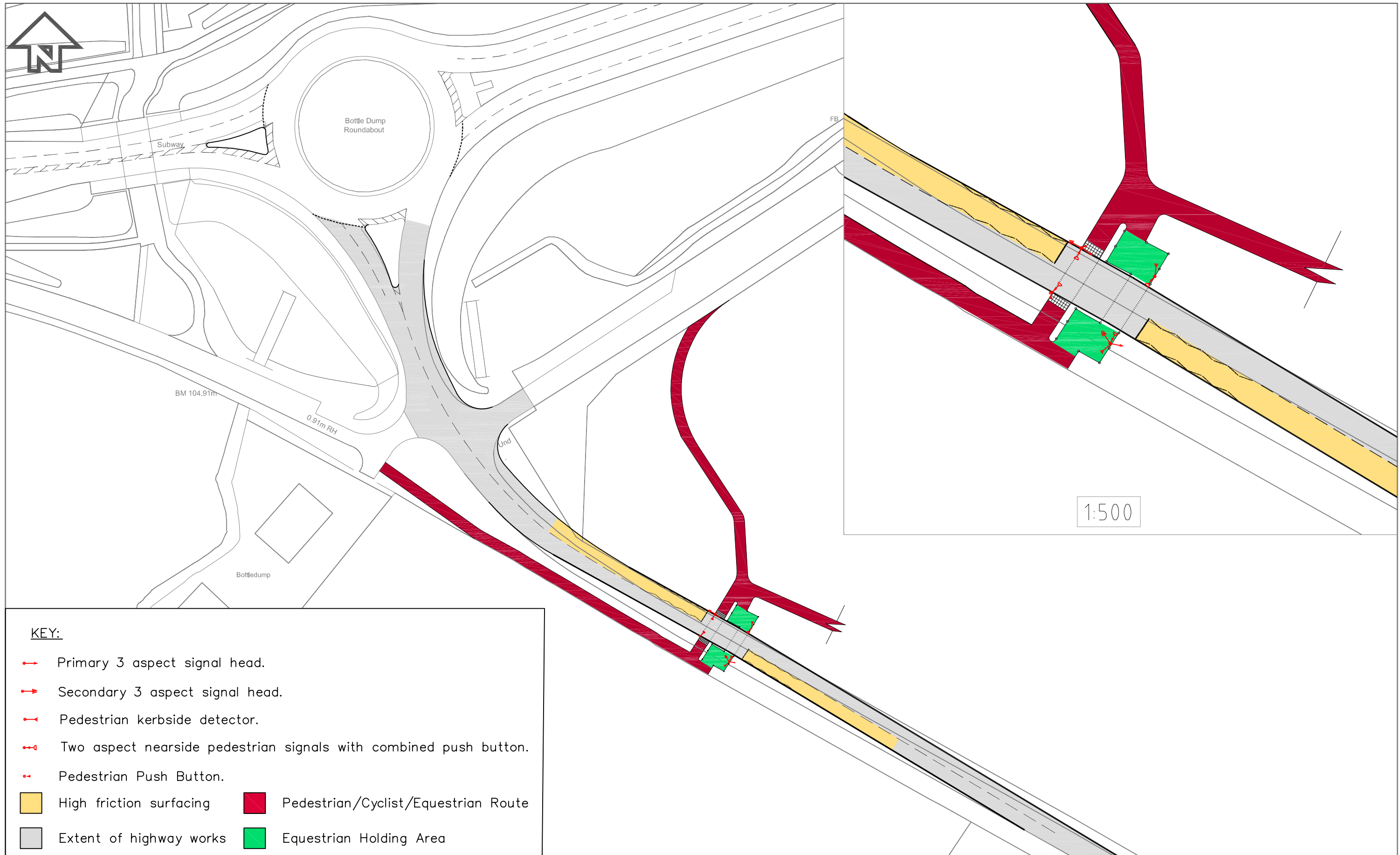
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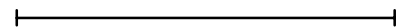
2 DRAWINGS TO BE AUDITED



KEY:

- Primary 3 aspect signal head.
- Secondary 3 aspect signal head.
- Pedestrian kerbside detector.
- Two aspect nearside pedestrian signals with combined push button.
- Pedestrian Push Button.
- High friction surfacing
- Pedestrian/Cyclist/Equestrian Route
- Extent of highway works
- Equestrian Holding Area

At original drawing size (A3) this line measures 50mm



Notes
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Rev.	Amendment	By	Chkd.	Date	Appd.
D	Minor Amendments	SH	MP	29/07/16	MP
C	Existing Roundabout Markings	CEW	MP	05/04/16	MP
B	Minor Amendments	CEW	SH	18/12	SH
A	Relocated Crossing	CEW	MP	15/12	MP

Cad Ref. No. L:\106xxx\1067760 South West Milton Keynes\12 Dwgs

Drawn CEW	Date 11-12-2015	Checked SH	Date 18-12-2015	Approved MP	Date 18-12-2015
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Project
SOUTH WEST MILTON KEYNES

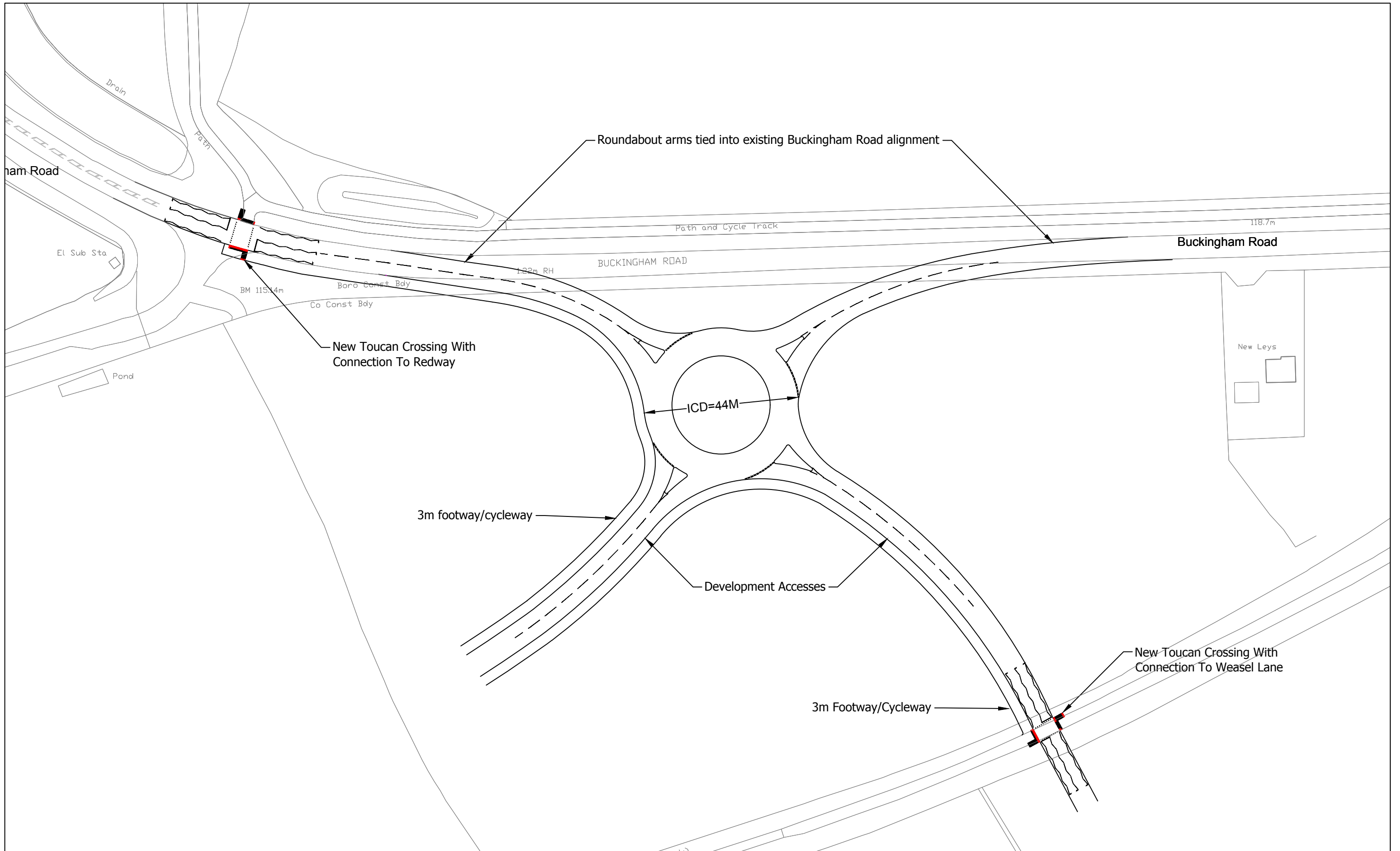
Title
BOTTLEDUMP ROUNDABOUT
PROPOSED PEGASUS CROSSING




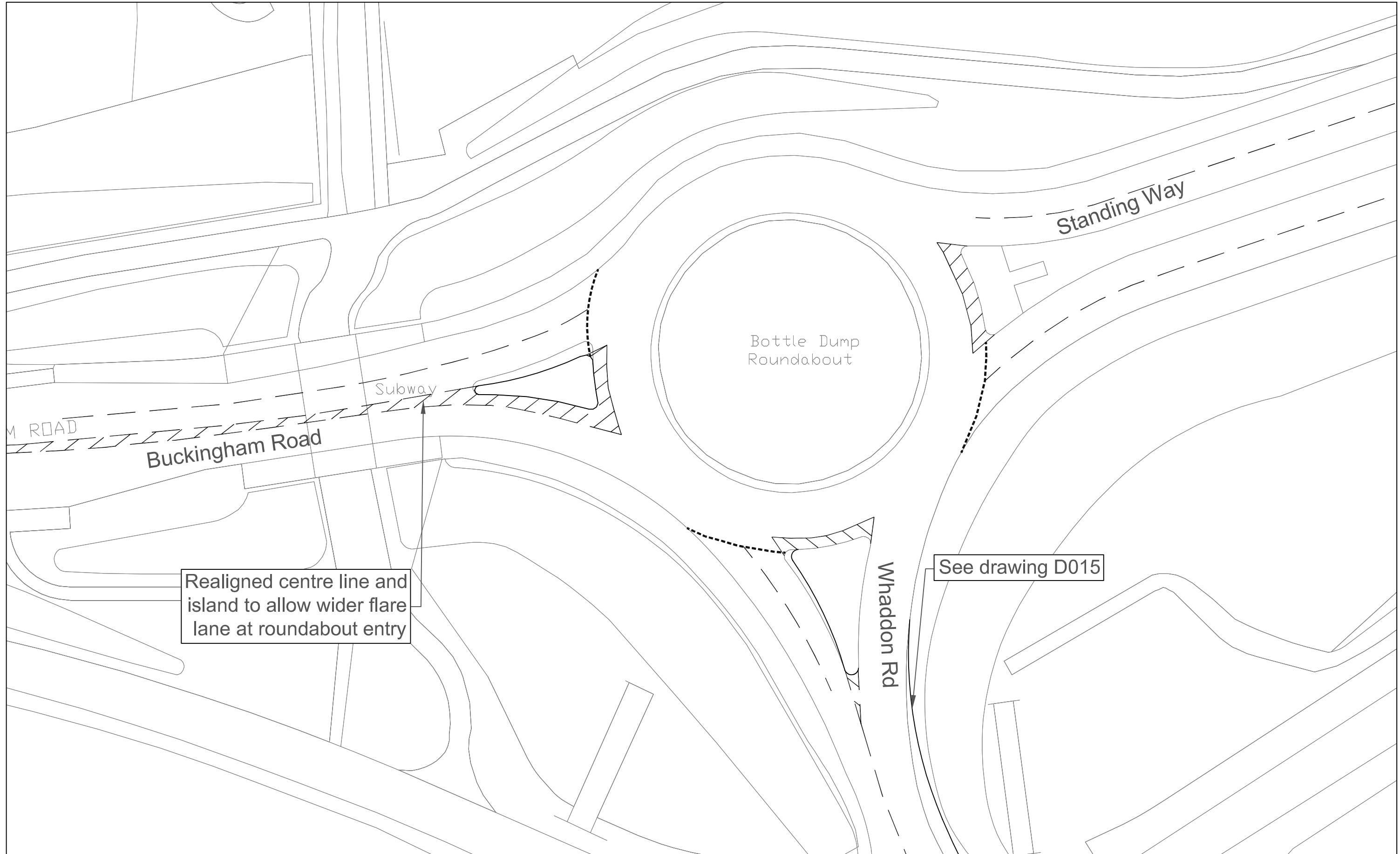
Export House
Woking, Surrey. GU21 6QX
Tel: +44 (0)1483 731000
Fax: +44 (0)1483 731010


Scale 1:1000@A3
Job No. 1067760
Client SWMK Consortium
Drawing No. D015
Rev. D

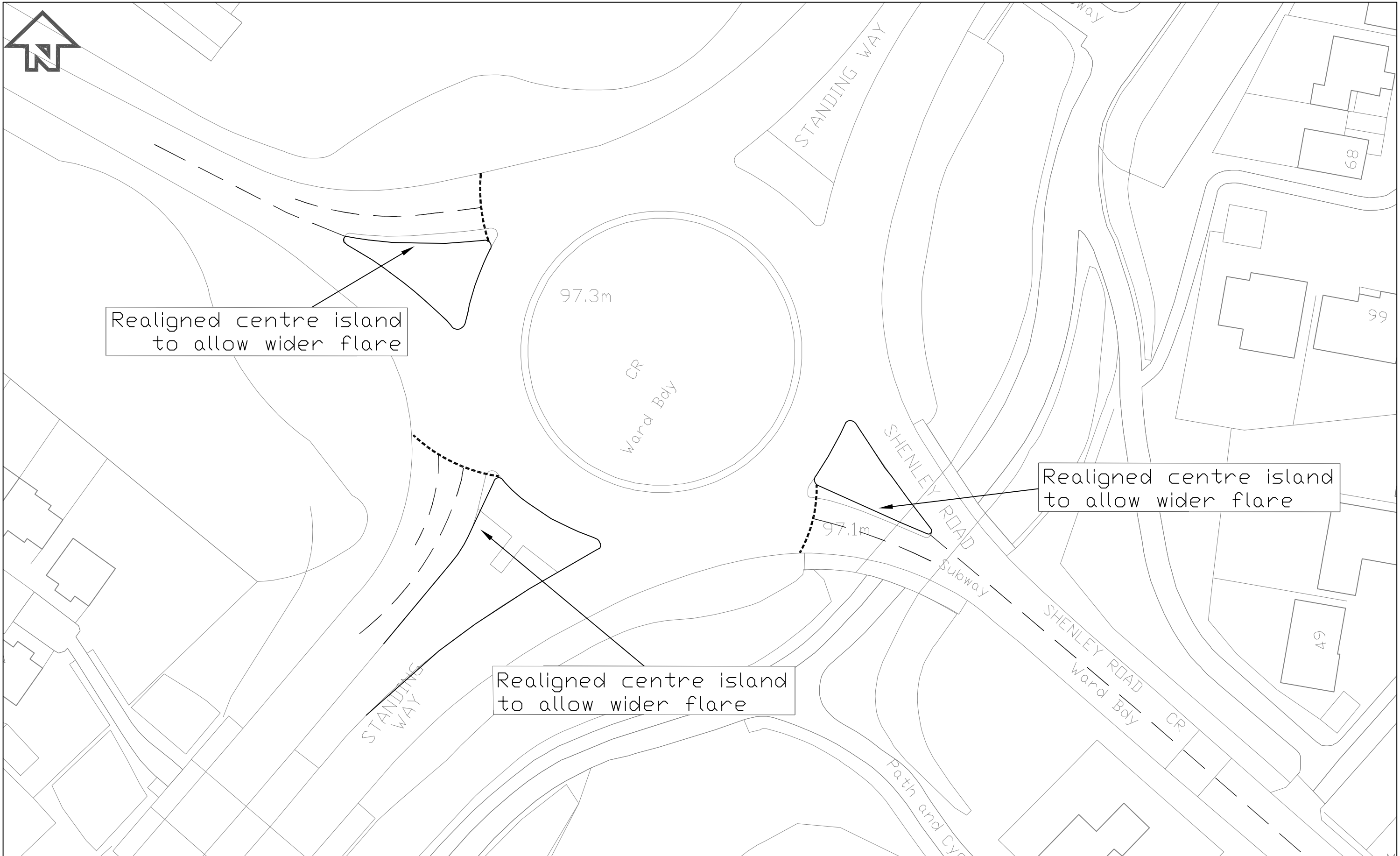
PRELIMINARY FOR APPROVAL



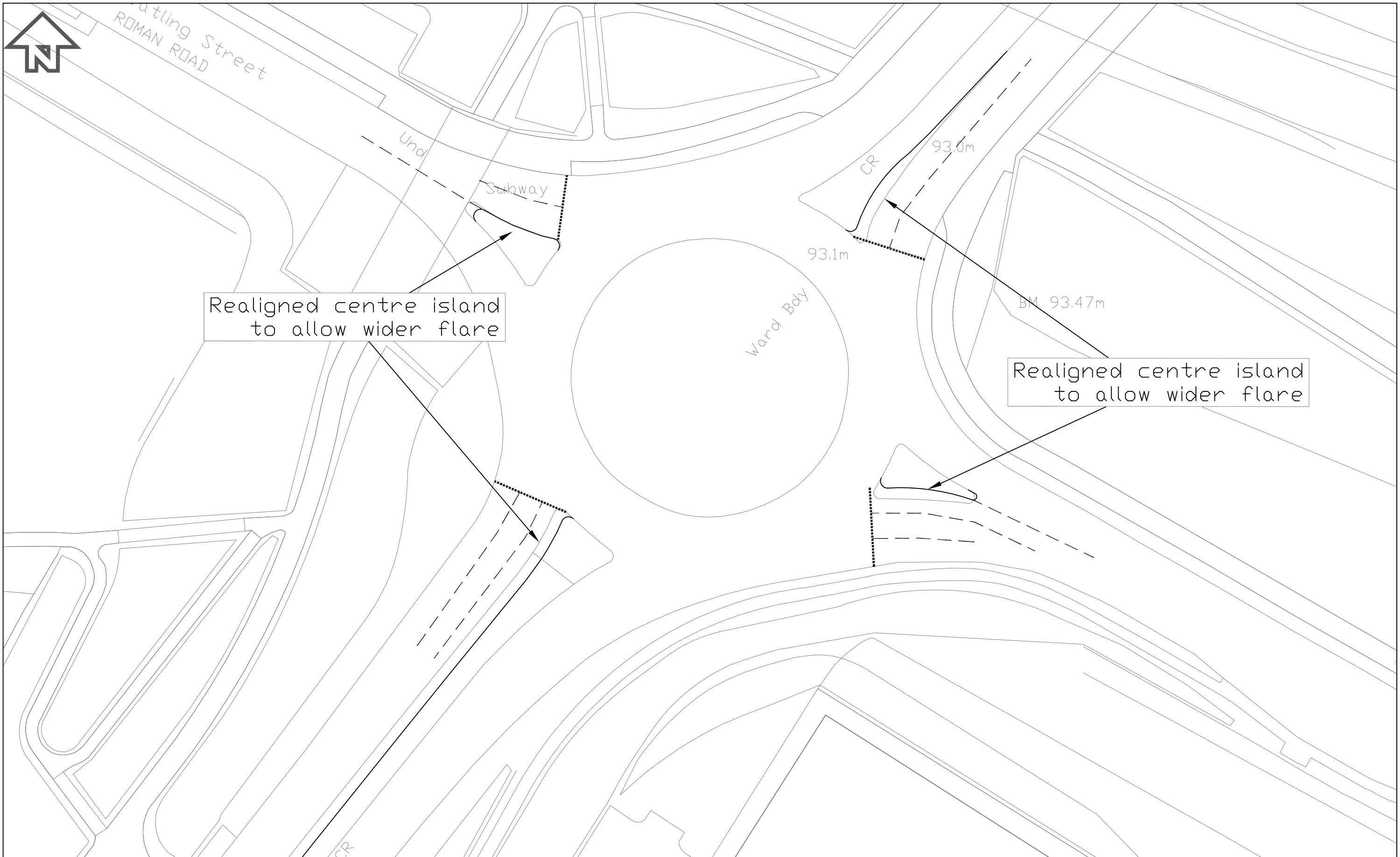
At original drawing size (A3) this line measures 50mm		Cad Ref. No. L:\106xxx\1067760 South West Milton Keynes\12 Dwgs				Drawn RJP	Date 14-12-2015	Checked SH	Date 18-12-15	Approved MJP	Date 18-12-15																							
Notes Contains OS data © Crown copyright [and database right] (2017)		Project SOUTH WEST MILTON KEYNES						Scale 1:1000@A3		Job No. 1067760																								
<table border="1"> <tr> <td>C</td> <td>Extended flare length on Buckingham Road East</td> <td>EC</td> <td>SH</td> <td>20-03-17</td> <td>MP</td> </tr> <tr> <td>B</td> <td>Minor Amendments</td> <td>SH</td> <td>SH</td> <td>04-08-16</td> <td>MP</td> </tr> <tr> <td>A</td> <td>Amended Location and Alignment of Roundabout</td> <td>CEW</td> <td>SH</td> <td>03-06-16</td> <td>MP</td> </tr> <tr> <td>Rev.</td> <td>Amendment</td> <td>By</td> <td>Chkd.</td> <td>Date</td> <td>Appd.</td> </tr> </table>		C	Extended flare length on Buckingham Road East	EC	SH			20-03-17	MP	B	Minor Amendments	SH	SH	04-08-16	MP	A	Amended Location and Alignment of Roundabout	CEW	SH	03-06-16	MP	Rev.	Amendment	By	Chkd.	Date	Appd.	Title ALTERNATIVE JUNCTION ARRANGEMENT FOR PROPOSED ACCESS ON BUCKINGHAM ROAD				Client SWMK Consortium		Drawing No. D017
C	Extended flare length on Buckingham Road East	EC	SH	20-03-17	MP																													
B	Minor Amendments	SH	SH	04-08-16	MP																													
A	Amended Location and Alignment of Roundabout	CEW	SH	03-06-16	MP																													
Rev.	Amendment	By	Chkd.	Date	Appd.																													
PRELIMINARY FOR APPROVAL						Export House Woking, Surrey. GU21 6QX Tel: +44 (0)1483 731000 Fax: +44 (0)1483 731010																												




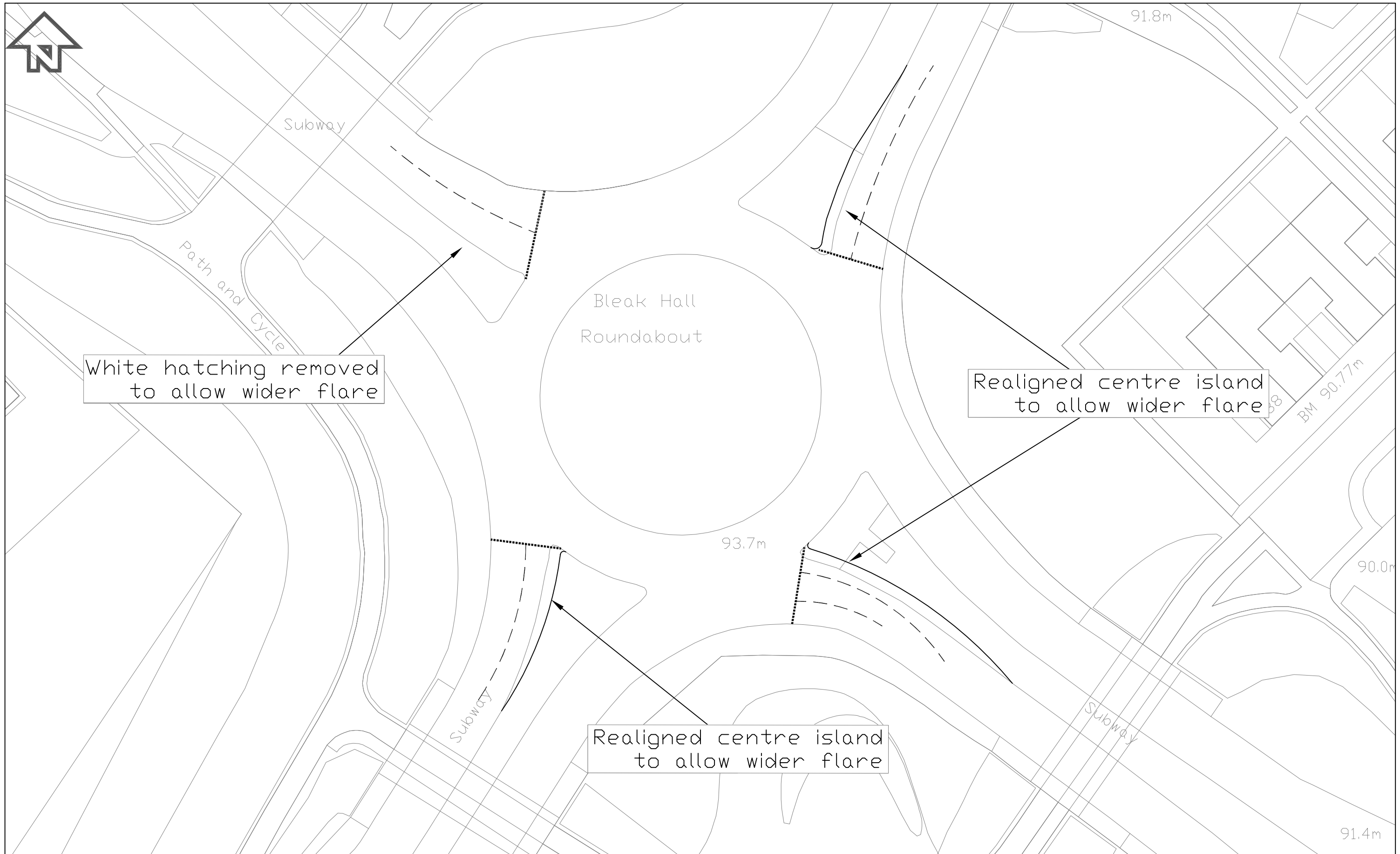
At original drawing size (A3) this line measures 50mm		Cad Ref. No. L:\106xxx\1067760 South West Milton Keynes\09 Docs				Drawn FSC	Date 15-03-16	Checked SH	Date 16-03-16	Approved MP	Date 16-03-16
Notes Contains OS data © Crown copyright [and database right] (2015)		Project SOUTH WEST MILTON KEYNES						Scale 1:500@A3		Job No. 1067760	
PRELIMINARY FOR APPROVAL		Title Bottle Dump Roundabout Potential Mitigation Scheme						Client SWMK Consortium		Drawing No. D018	
Rev.	Amendment	By	Chkd.	Date	Appd.						
A	Kerb and marking amendments	CEW	SH	21/03/2016	MP						




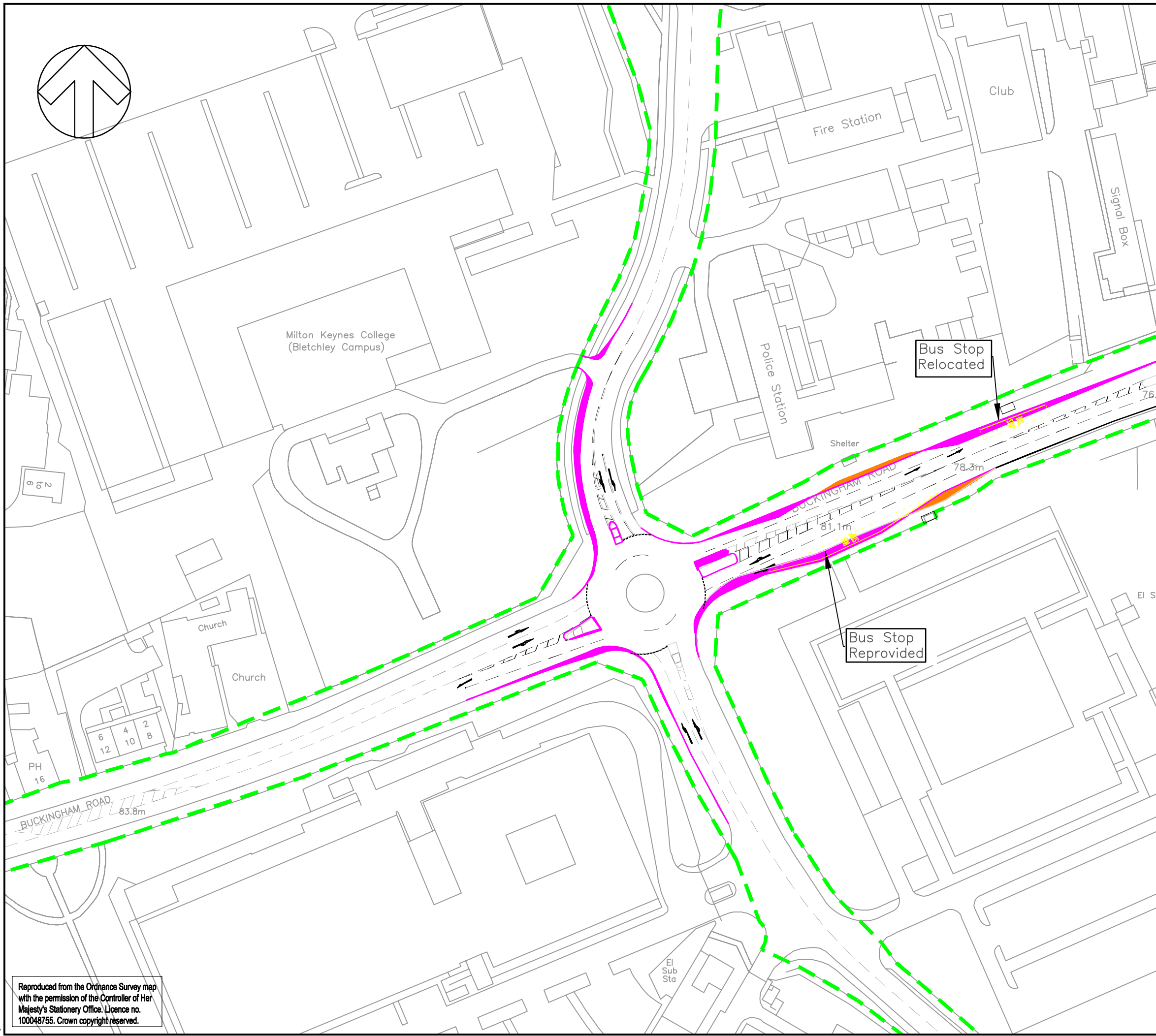
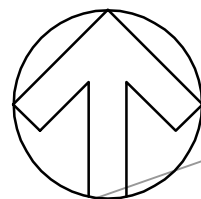
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Contains OS data ©Crown copyright [and database right] (2015)		Project SOUTH WEST MILTON KEYNES						Scale 1:500@A3		Job No. 1067760	
PRELIMINARY FOR APPROVAL		Title EMERSON ROUNDABOUT POTENTIAL MITIGATION						Client SWMK Consortium		Drawing No. D024	
A	AMENDED LANE WIDTHS	CEW	SH	24/03/2016							
Rev.	Amendment	By	Chkd.	Date	Appd.						



At original drawing size (A3) this line measures 50mm		Cad Ref. No. Master 2016-05-09				Drawn CEW	Date 11-05-2016	Checked SH	Date 11-05-16	Approved MP	Date 11-05-16
Contains OS data ©Crown copyright [and database right] (2015)	Project SOUTH WEST MILTON KEYNES							Scale 1:500@A3		Job No. 1067760	
	Title ELFIELD PARK ROUNDABOUT POTENTIAL MITIGATION							Client SWMK Consortium		Drawing No. D025	
PRELIMINARY FOR APPROVAL	Rev.	Amendment	By	Chkd.	Date	Appd.					



At original drawing size (A3) this line measures 50mm		Cad Ref. No. Master 2016-05-09				Drawn CEW	Date 11-05-2016	Checked SH	Date 11-05-16	Approved MP	Date 11-05-16
Contains OS data ©Crown copyright [and database right] (2015)		Project SOUTH WEST MILTON KEYNES						Scale 1:500@A3		Job No. 1067760	
PRELIMINARY FOR APPROVAL		Title BLEAK HALL ROUNDABOUT POTENTIAL MITIGATION						Client SWMK Consortium		Drawing No. D026	
Rev.	Amendment	By	Chkd.	Date	Appd.	Export House Woking, Surrey. GU21 6QX Tel: +44 (0)1483 731000 Fax: +44 (0)1483 731010					



DO NOT SCALE

KEY

- - - Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	25/01/2021	JS	REFINED LAYOUT	SH	MJP
P03	22/01/2021	JS	REFINED LAYOUT	SH	MJP
P02	19/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 1 Mitigation Buckingham Road/Sherwood Drive Roundabout Layout

SCALE @ A3: 1:1000 **CHECKED:** JS **APPROVED:** JS

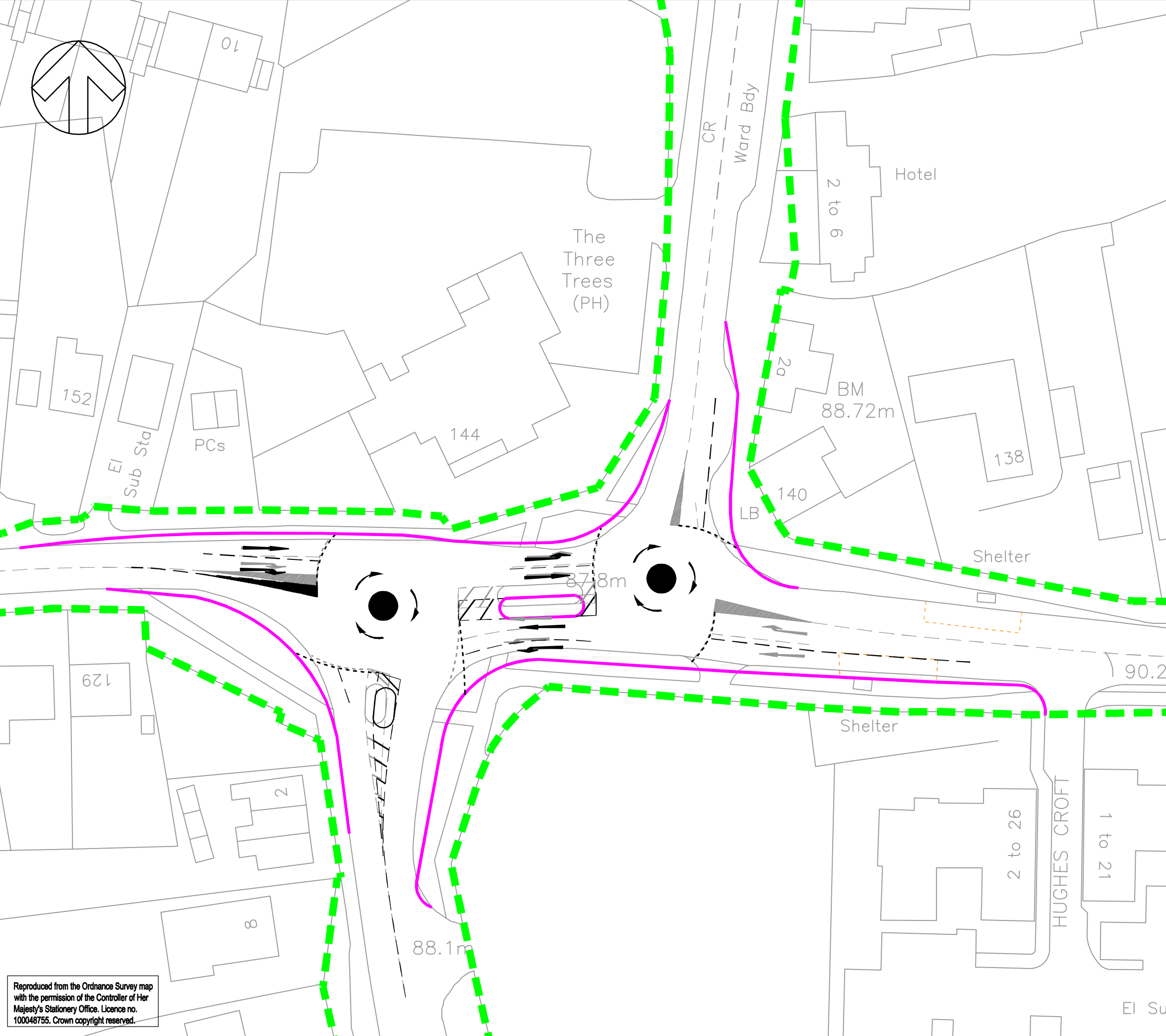
PROJECT No: 70069442 **DESIGNED:** JS **DRAWN:** SET **DATE:** January 2021

DRAWING No: 70069442-001B **REV:** P04

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File name \\UK.WSPGROUP\PROJECTS\70069442\WIP\TP TRANSPORT PLANNING\ANALYSIS\2021 JUNCTION MODELLING\MITIGATION\212 - MINI ROUNDABOUT MITIGATION P02.DWG, printed on 27 January 2021 18:04:12, by Sheriff, Justin



DO NOT SCALE

KEY

- - - Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	21/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 2 Mitigation Buckingham Road/Shenley Road Mini-Roundabout Layout

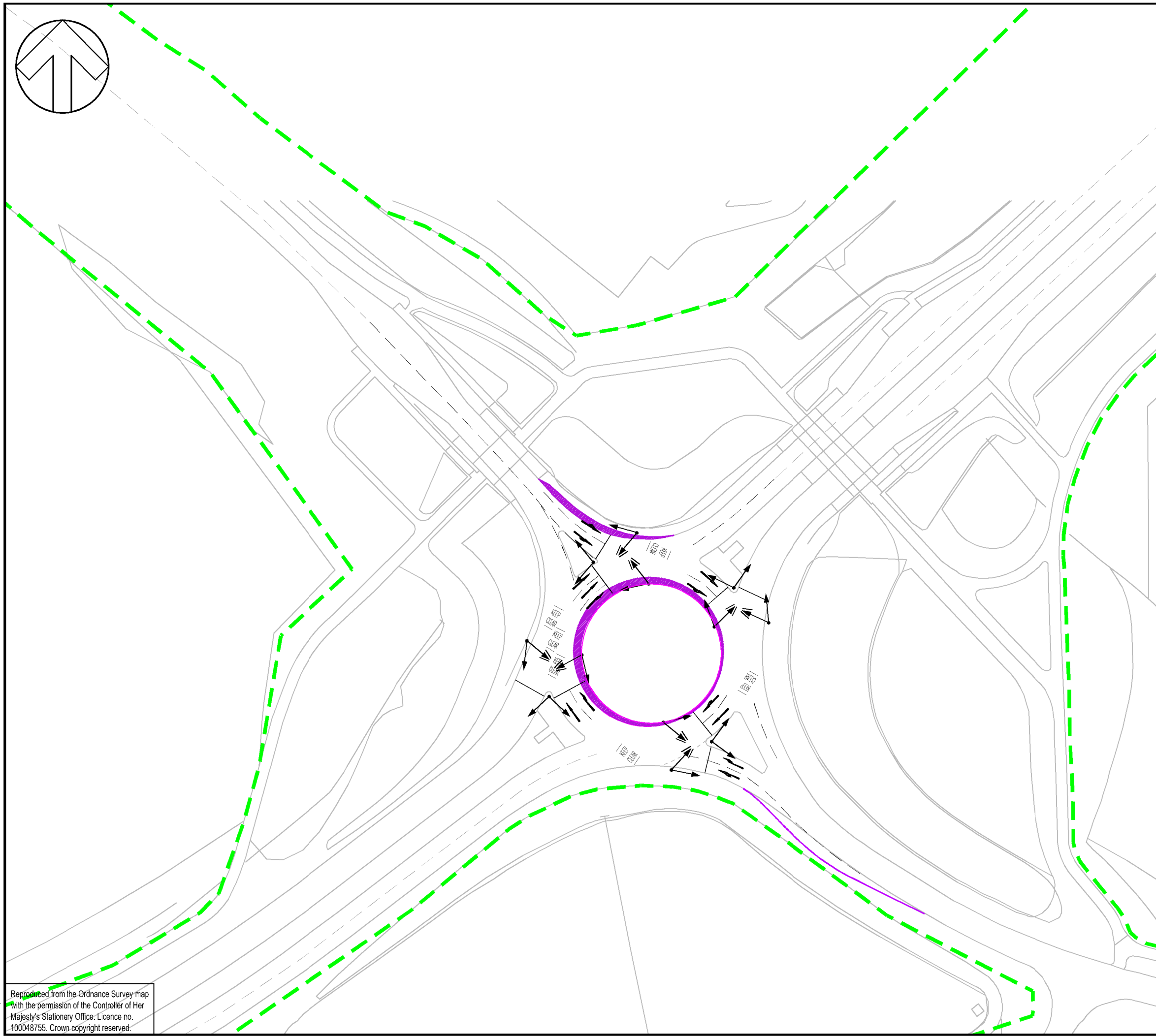
SCALE @ A3: 1:500 **CHECKED:** JS **APPROVED:** JS

PROJECT No: 70069442 **DESIGNED:** JS **DRAWN:** SET **DATE:** January 2021

DRAWING No: 70069442-015 **REV:** P02

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DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Verge Construction

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REV	DATE	BY	DESCRIPTION	CHK	APP
P05	25/01/2021	ST	MARKINGS REVISED	SH	MP
P04	12/11/2020	ST	LANE WIDENING ON SNELSHALL STREET	SH	MP
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S2 - FOR INFORMATION**

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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **J5 - TATTENHOE ROUNDABOUT JUNCTION MITIGATION**

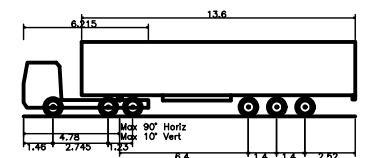
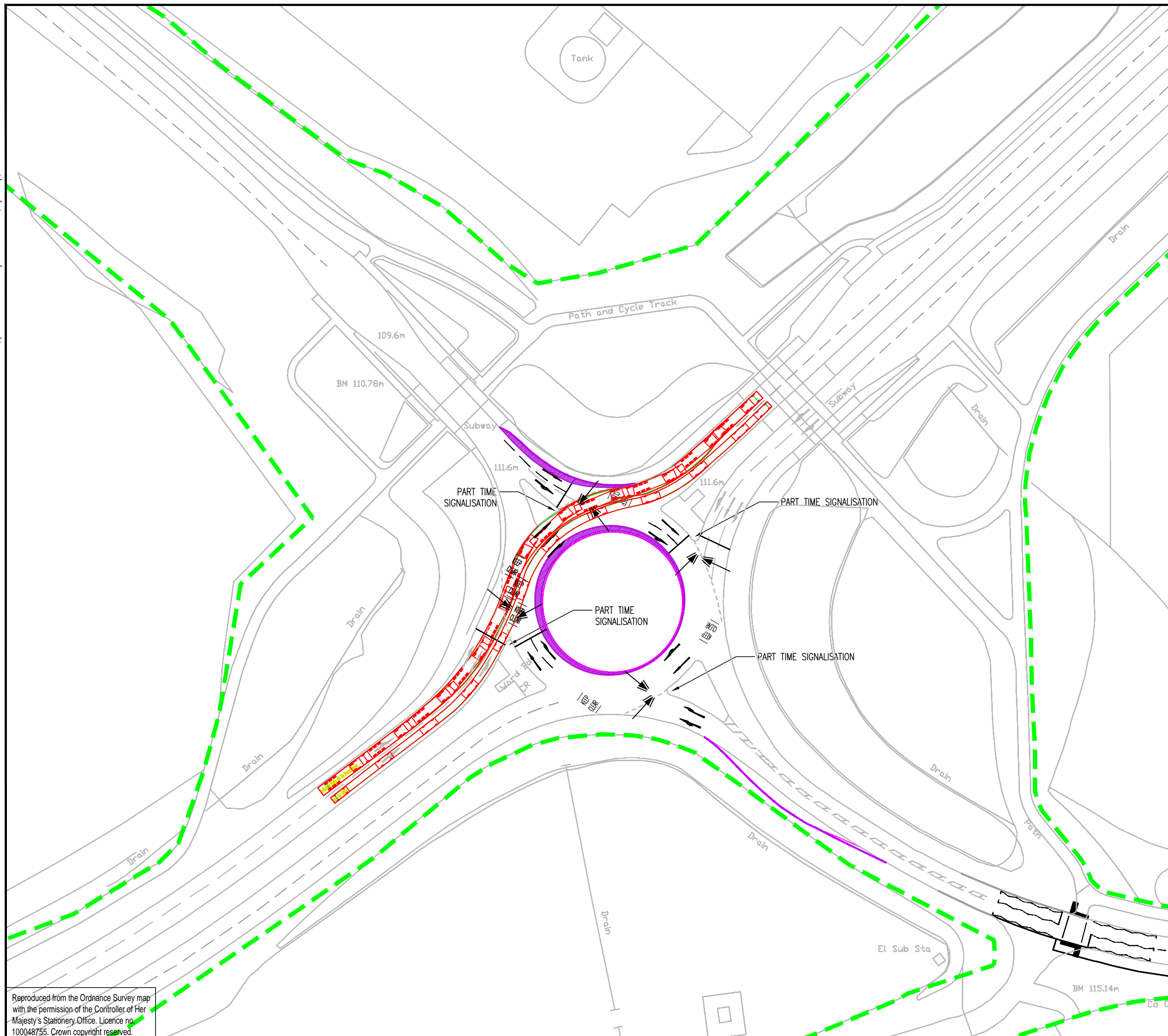
SCALE @ A3: 1:1000 CHECKED: SH APPROVED: MP

PROJECT No: 70069442 DESIGNED: ST DRAWN: ST DATE: November 2020

DRAWING No: **9442-TP-SK-004** REV: **P05**

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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.891m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP
 PATH ANALYSIS - 16.5M ARTIC**

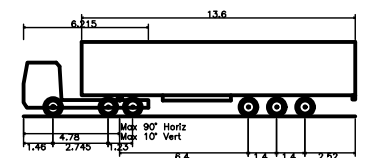
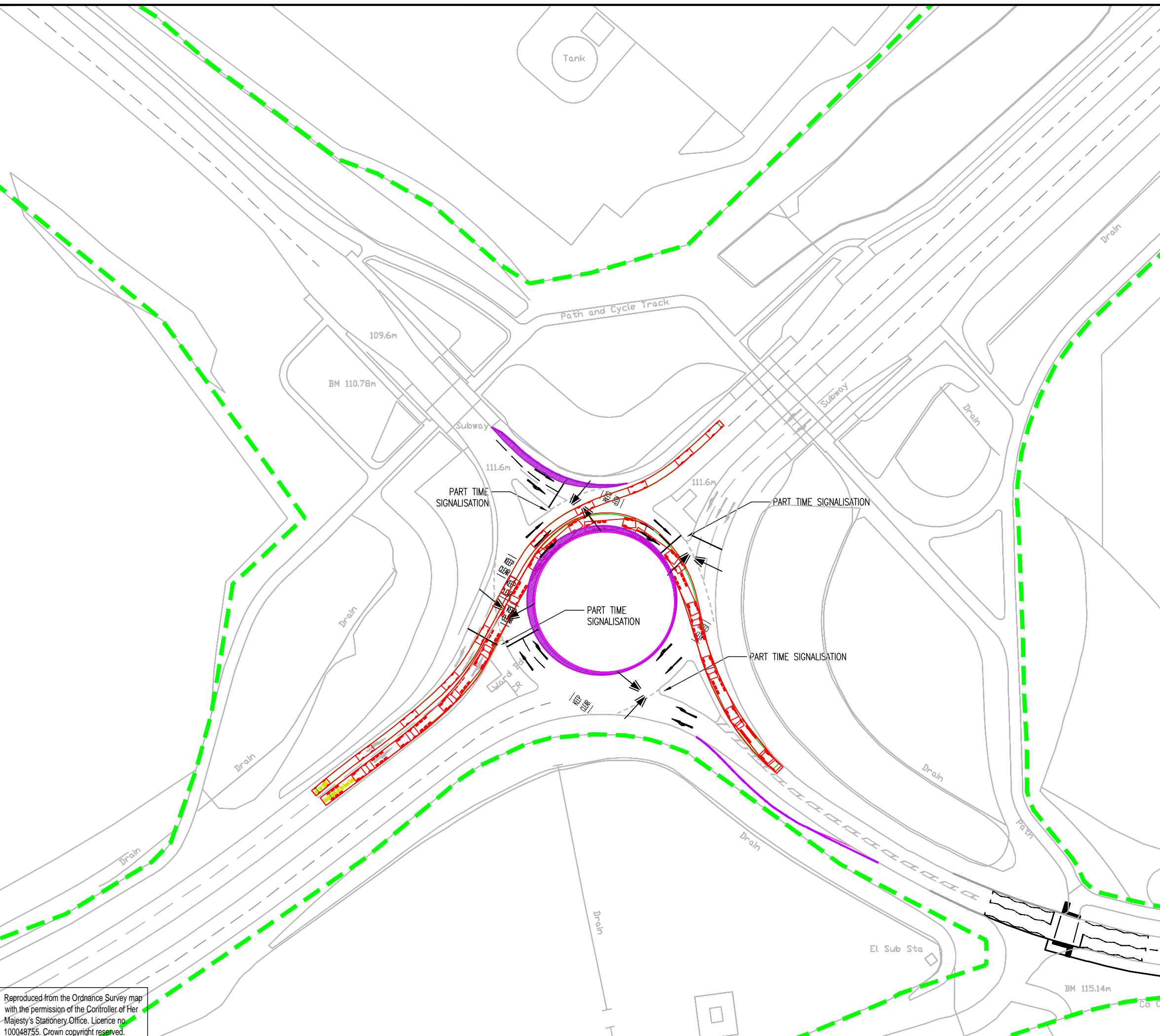
SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: October 2020

DRAWING No: 9442-TP-ATR-002 REV: P01

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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.891m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	14/12/2020	JK	UPDATED TRACKING	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

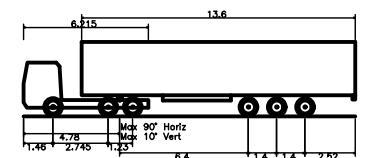
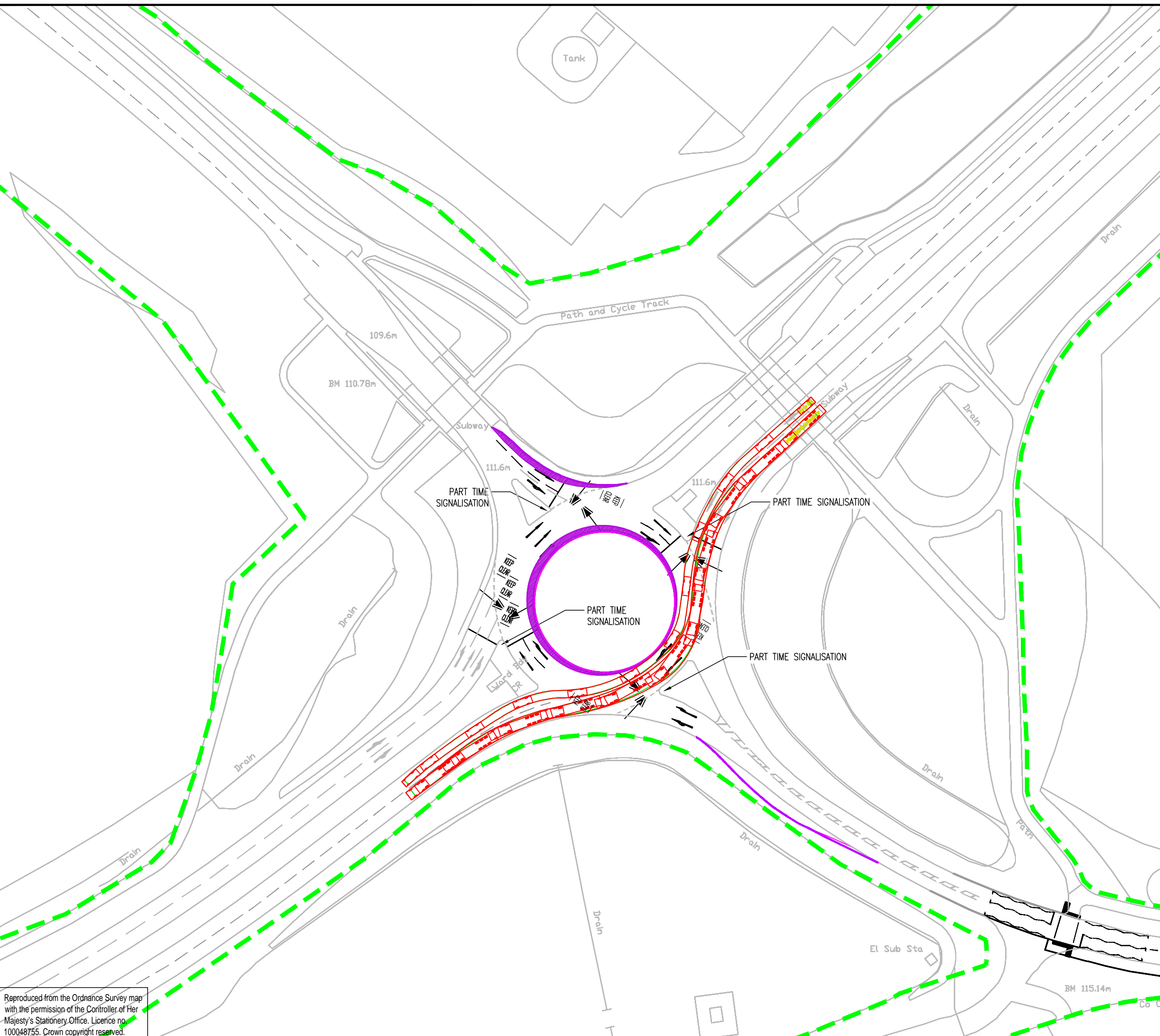
SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: January 2021

DRAWING No: **9442-TP-ATR-004** REV: **P04**

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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.891m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	21/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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 T+ 44 (0) 1483 528 400
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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

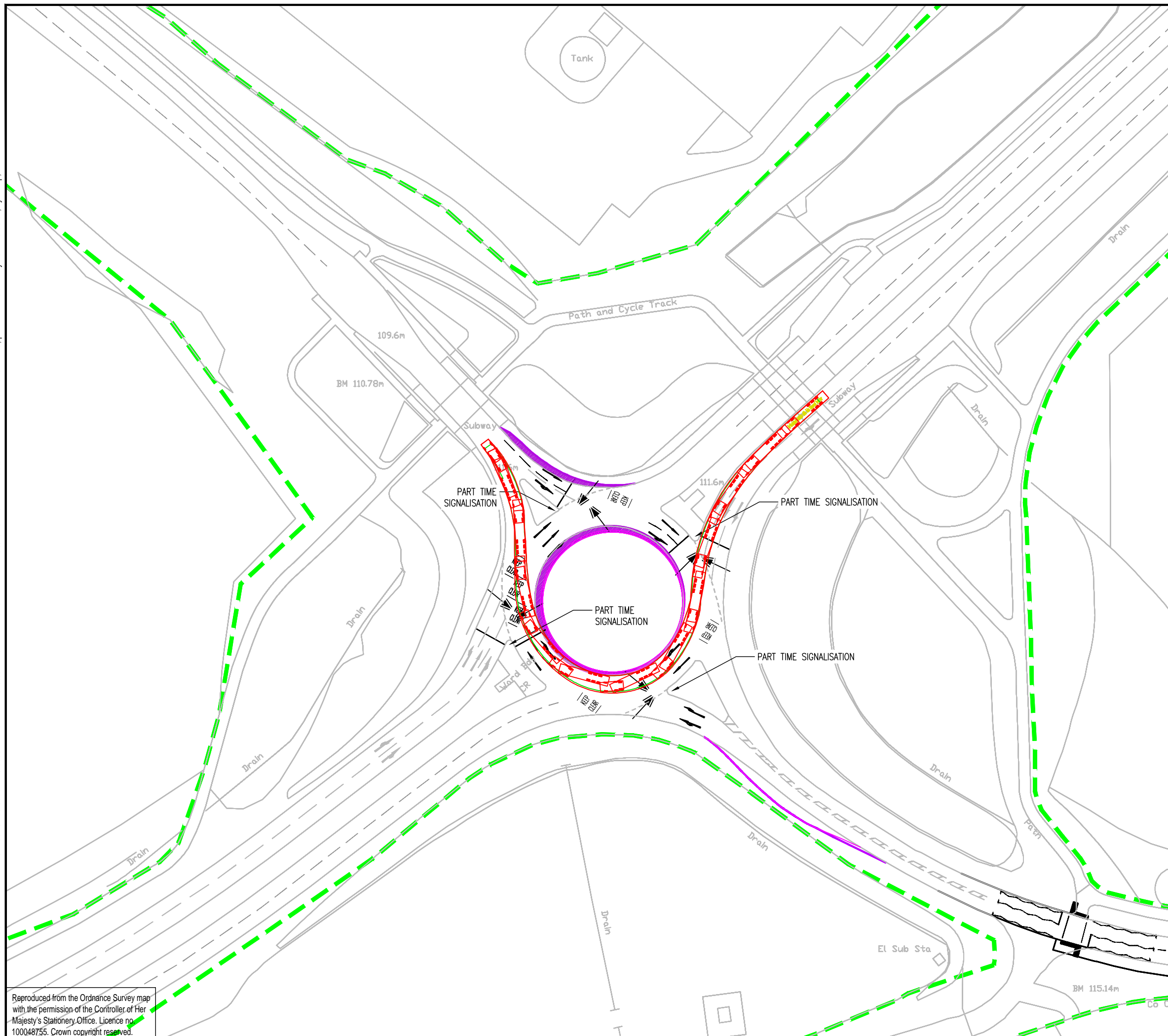
SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: January 2021

DRAWING No: 9442-TP-ATR-005 REV: P04

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70069442 - SWMK - 2020\03 WIP\TP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\9442-TP-ATR-005-007 JK02.DWG, printed on 26 January 2021 15:56:07, by Kemp, James



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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	21/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTIC**

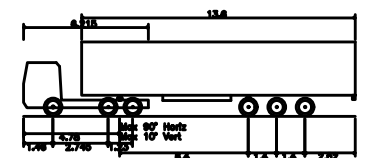
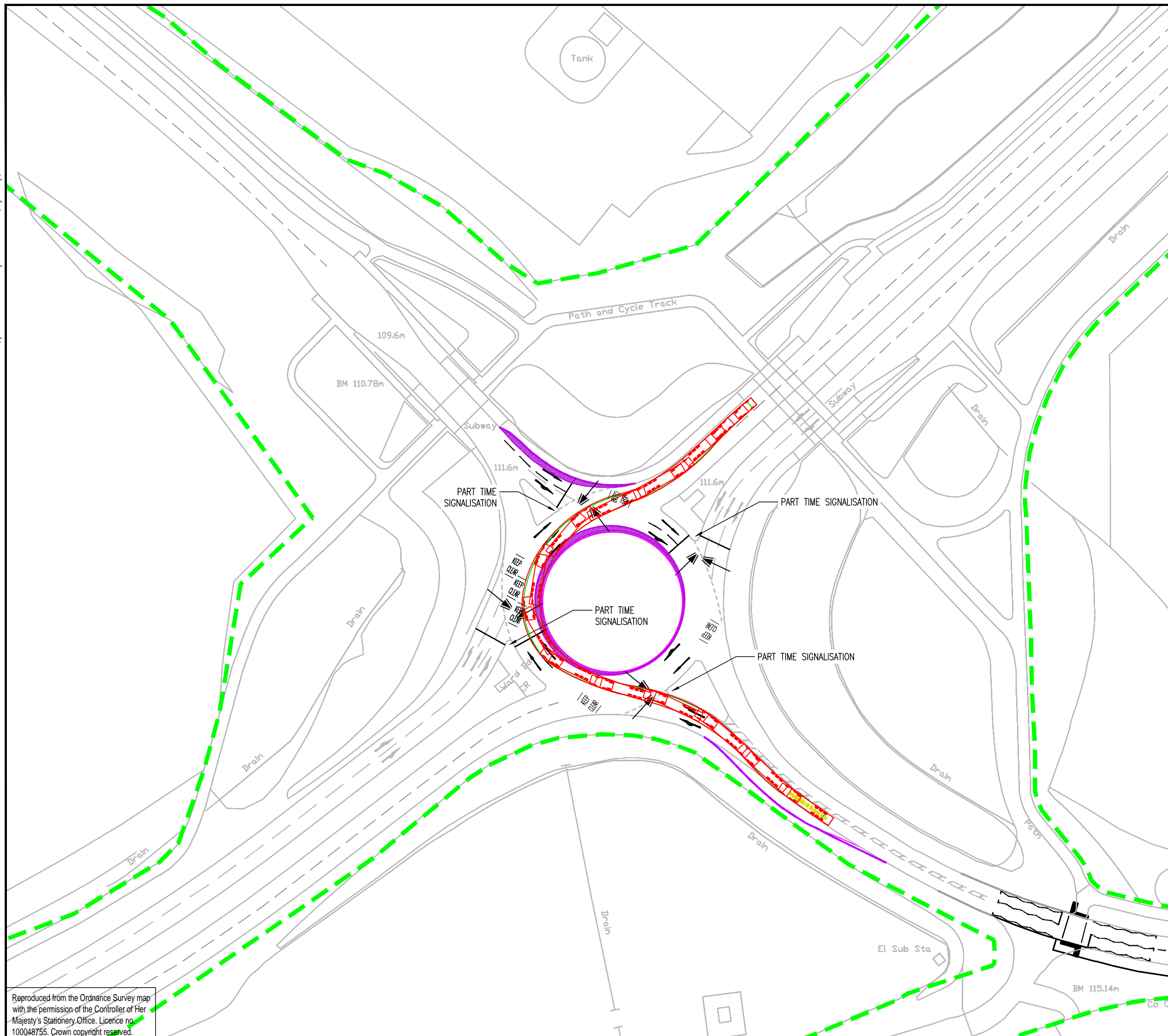
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PROJECT No: 70069442	DESIGNED: JK	DRAWN: JK	DATE: January 2021
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DRAWING No: 9442-TP-ATR-007	REV: P04
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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 4.250m
 Overall Body Height 0.425m
 Min Body Ground Clearance 2.500m
 Max Track Width 6.000m
 Lock to lock time 8.000s
 Kerb to Kerb Turning Radius 6.957m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	20/01/2021	JK	ROUNDABOUT AND TRACKING AMENDED	JK	JK
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP
 PATH ANALYSIS - 16.5M ARTIC**

SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

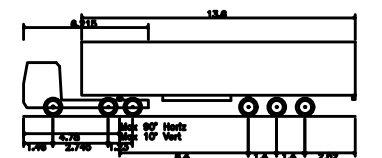
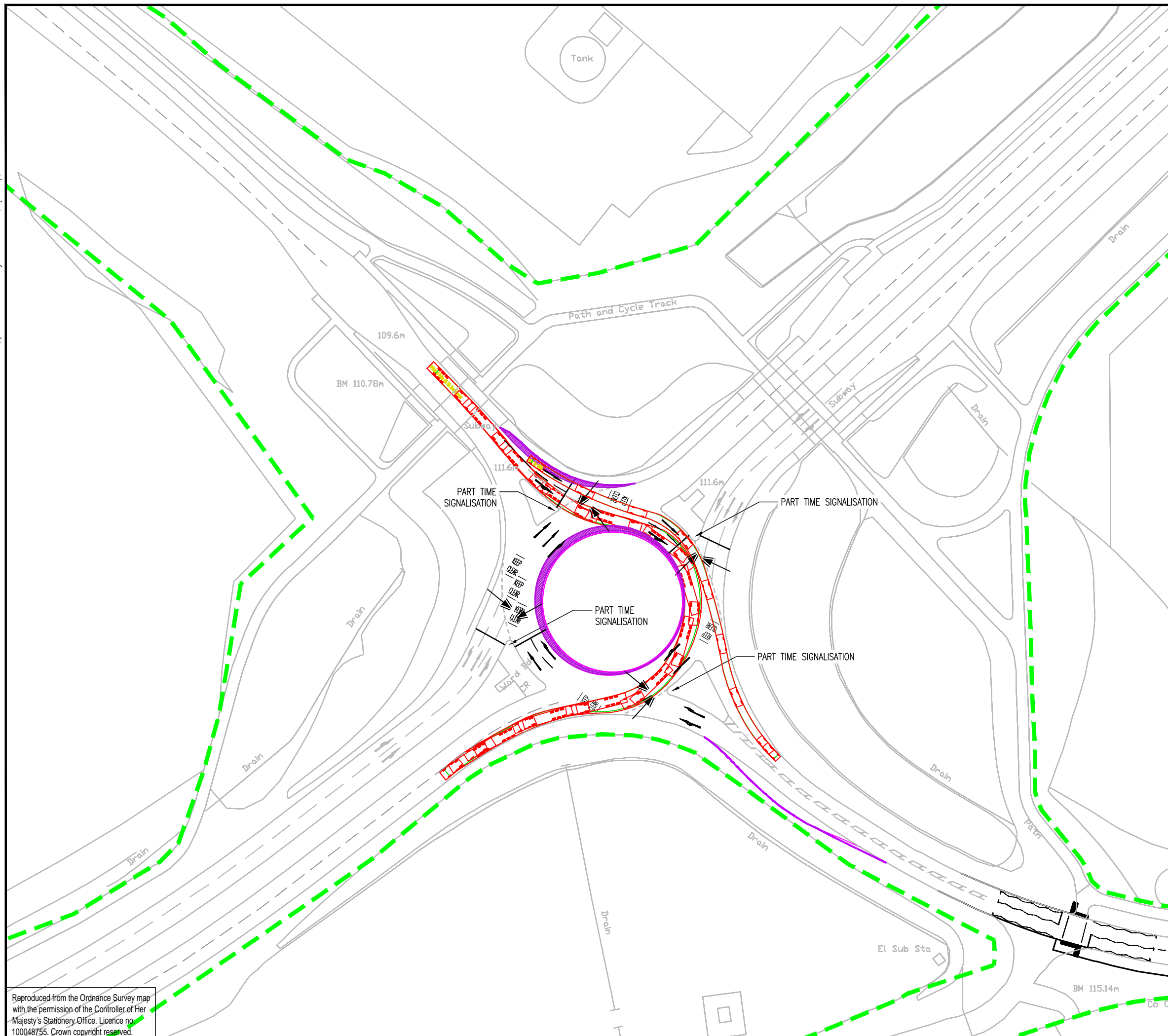
PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: January 2021

DRAWING No: **9442-TP-ATR-009** REV: **P04**

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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.50m
 Overall Width 4.25m
 Overall Body Height 0.42m
 Min Body Ground Clearance 2.50m
 Max Track Width 6.00m
 Lock to lock time 8.00s
 Kerb to Kerb Turning Radius 6.957m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P04	20/12/2020	JK	TRACKING UPDATED	JS	JS
P03	16/10/2020	ST	LANE MARKINGS UPDATED	SH	MP
P02	24/08/2020	ST	ADDITIONAL LANE ADDED ON GYRATORY N	SH	MP
P01	24/08/2020	ST	FIRST ISSUE	SH	MP

DRAWING STATUS: **S0 - WORK IN PROGRESS**



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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEP
 PATH ANALYSIS - 16.5M ARTIC**

SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

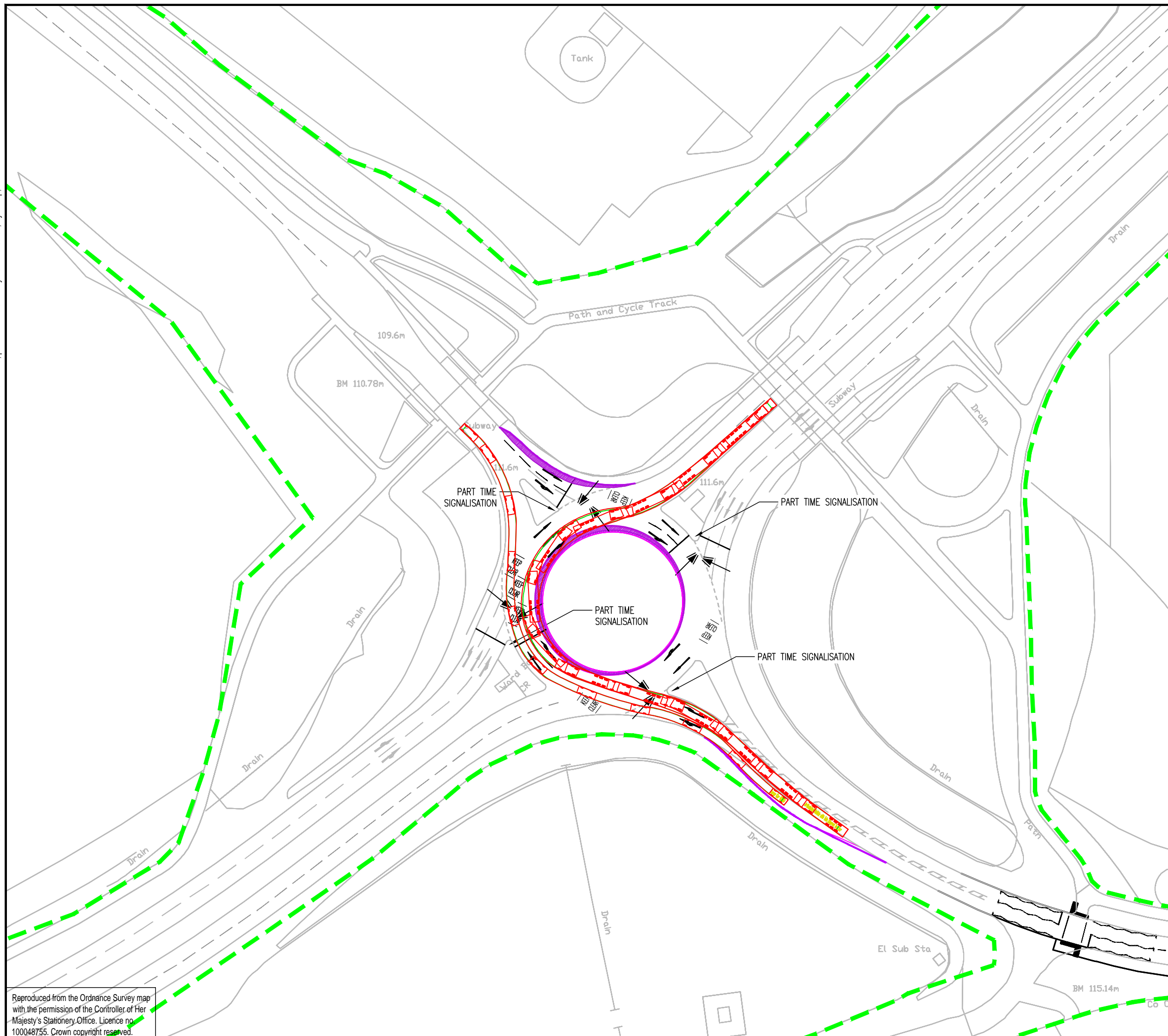
PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: January 2021

DRAWING No: **9442-TP-ATR-012** REV: **P04**

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P01	20/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

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ARCHITECT:

PROJECT: **SOUTH WEST MILTON KEYNES**

TITLE: **TATTENHOE ROUNDABOUT JUNCTION - SWEEPED PATH ANALYSIS - 16.5M ARTICULATION**

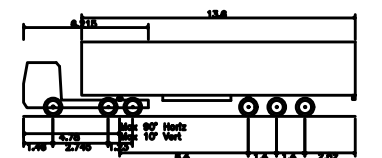
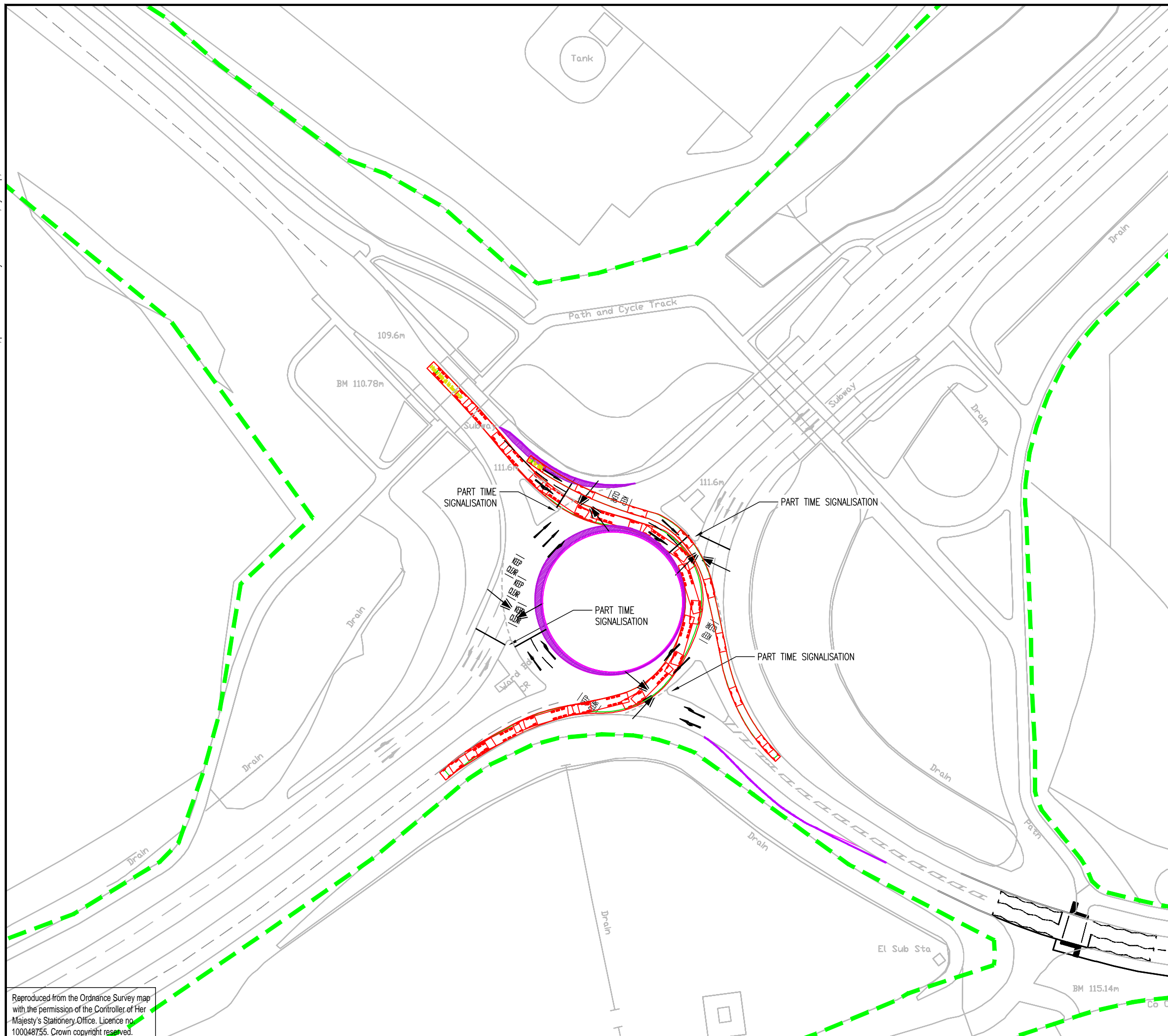
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1:1000	JS	JS

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70069442	JK	JK	January 2021

DRAWING No:	REV:
9442-TP-ATR-013	P01

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Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 4.250m
 Overall Body Height 0.426m
 Min Body Ground Clearance 2.500m
 Max Track Width 6.000m
 Lock to lock time 8.000s
 Kerb to Kerb Turning Radius 6.987m

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REV	DATE	BY	DESCRIPTION	CHK	APP
P01	20/01/2021	JK	FIRST ISSUE	JS	JS

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CLIENT: **SOUTH WEST MILTON KEYNES CONSORTIUM**

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PROJECT: **SOUTH WEST MILTON KEYNES**

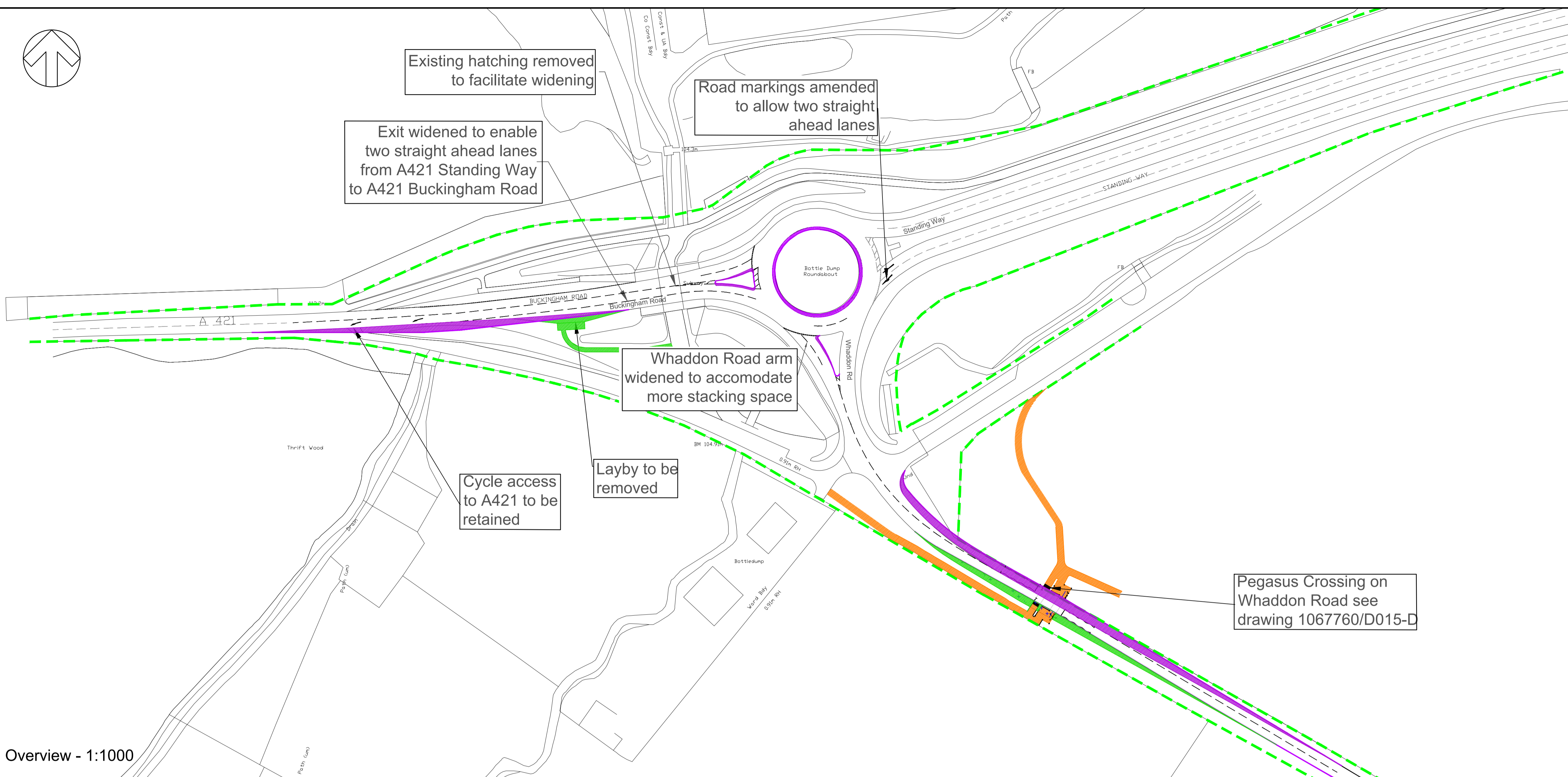
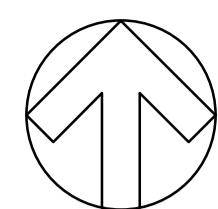
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SCALE @ A3: 1:1000 CHECKED: JS APPROVED: JS

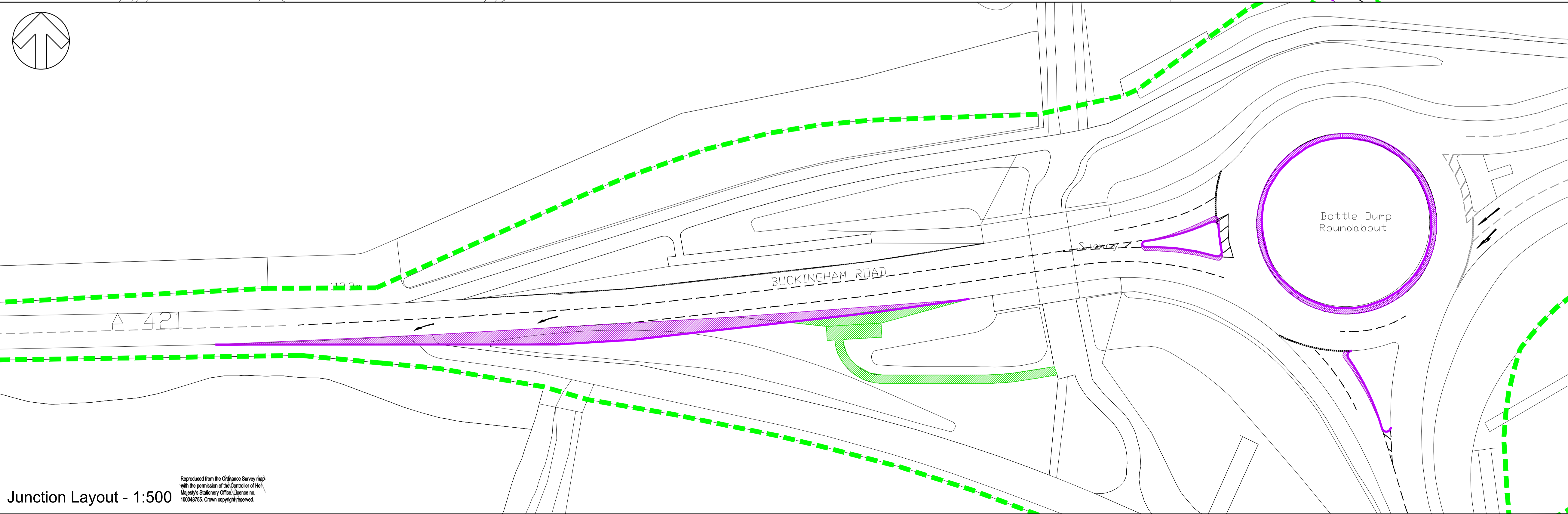
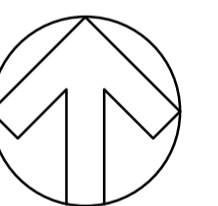
PROJECT No: 70069442 DESIGNED: JK DRAWN: JK DATE: January 2021

DRAWING No: **9442-TP-ATR-014** REV: **P01**

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Overview - 1:1000



Junction Layout - 1:500

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DO NOT SCALE

- KEY
- - - Highway Boundary
 - Kerb Amendments
 - Carriageway Construction
 - Footway Construction
 - Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P05	25/01/2021	JS	AMENDED LAYOUT	SH	MJP
P04	12/11/2020	JK	AMENDED LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

SITE/PROJECT: South West Milton Keynes

TITLE: Junction 6 Mitigation Layout
Bottle Dump Roundabout

SCALE @ A1: Varies	CHECKED: SH	APPROVED: MJP
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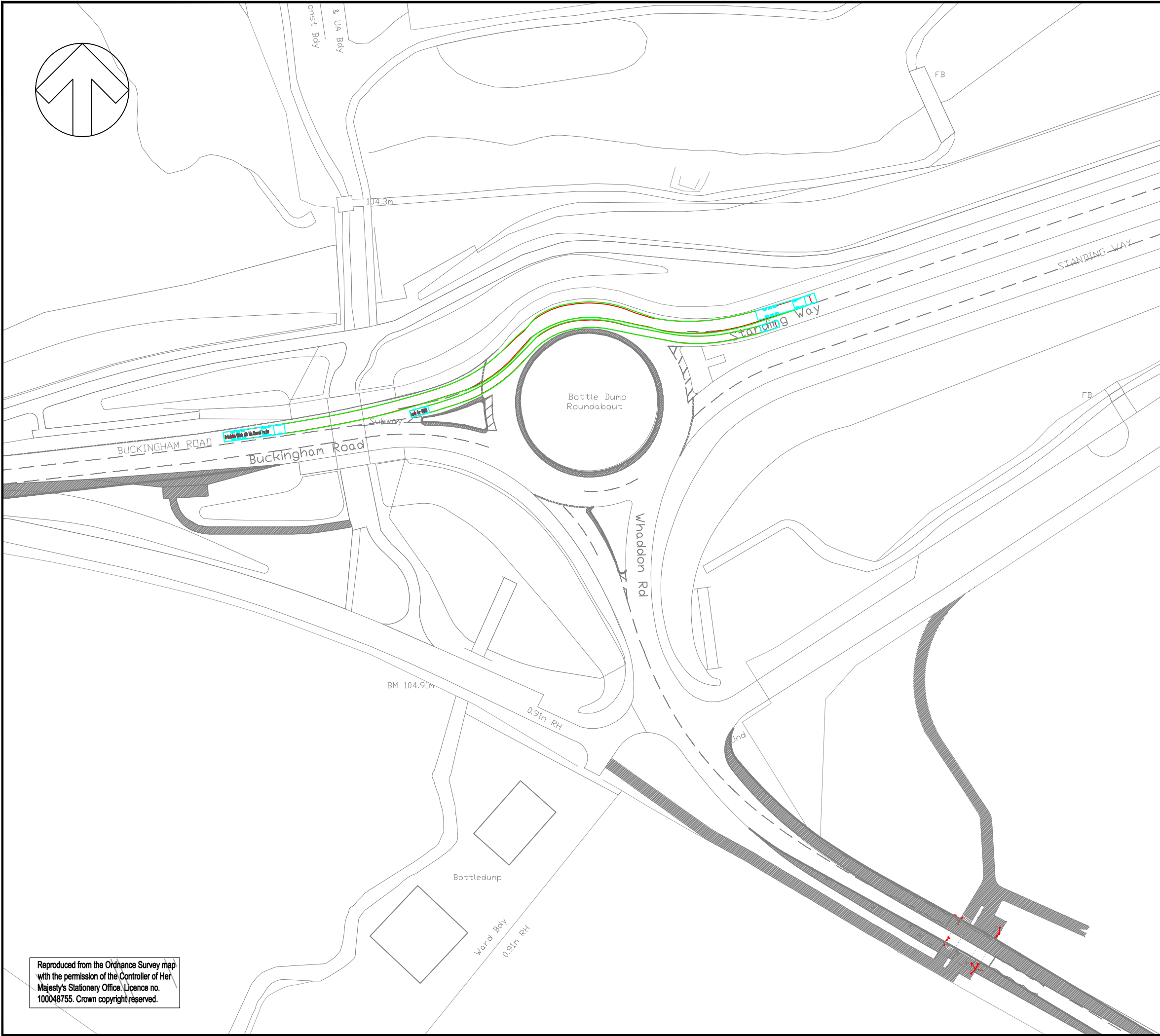
PROJECT NO: South West Milton Keynes	DESIGNED: JS	DRAWN: JK	DATE: January 21
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DRAWING NO: 70069442-004	REV: P05
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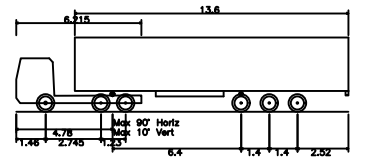
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File name: \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70069442 - SWMK - 2020\03 WIPTP TRANSPORT PLANNING\GIS\CAD\DRAWINGS\J6 - BOTTLEDUMP - ATR.DWG, printed on 26 January 2021 11:42:12, by Kemp, James



DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.550m
 Overall Body Height 3.831m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

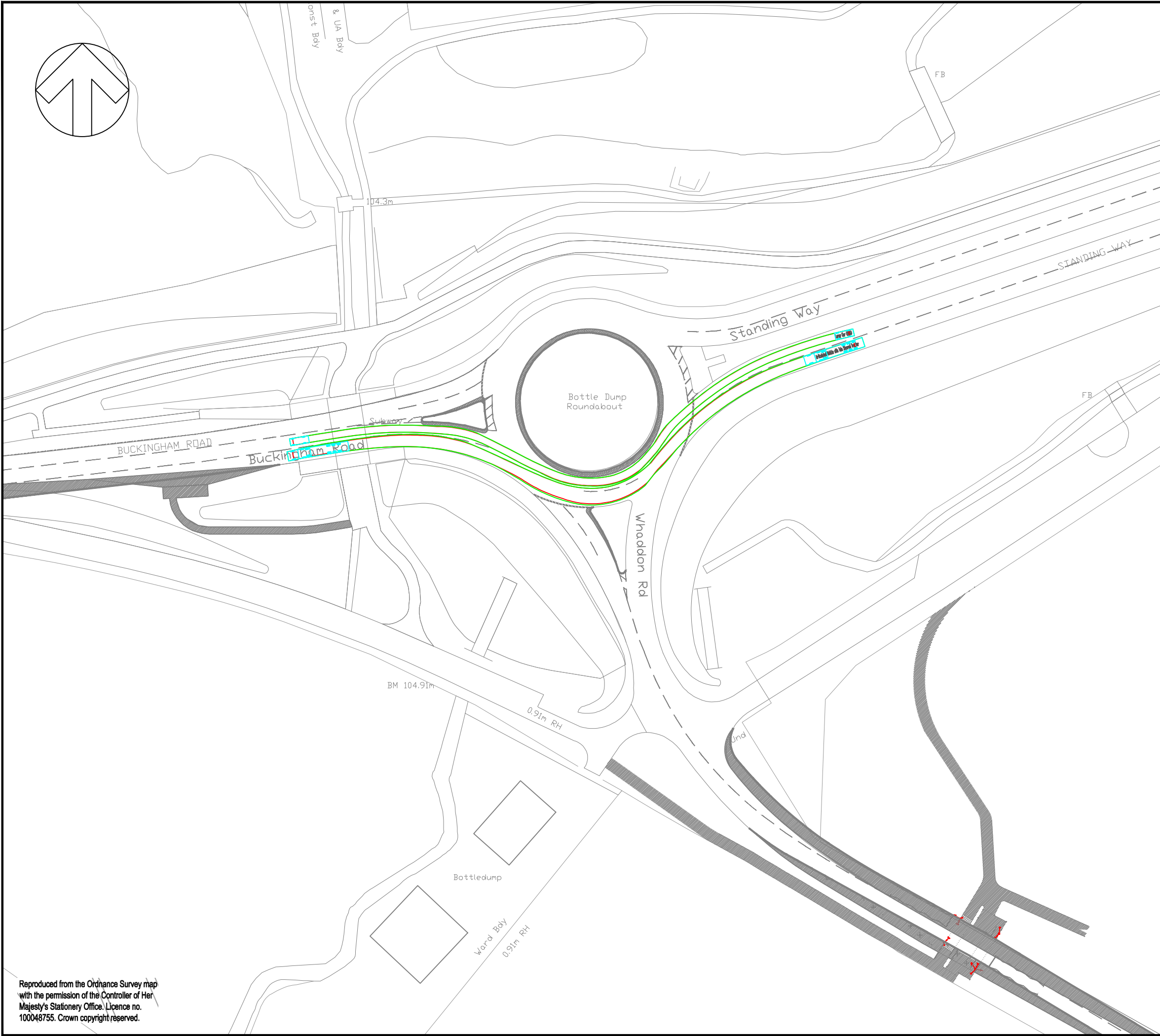
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		DATE: January 21

DRAWING No: 70069442-004-ATR-001	REV: P01
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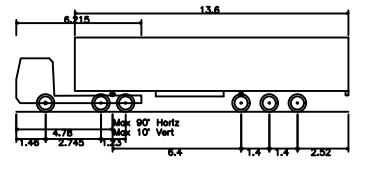
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.831m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

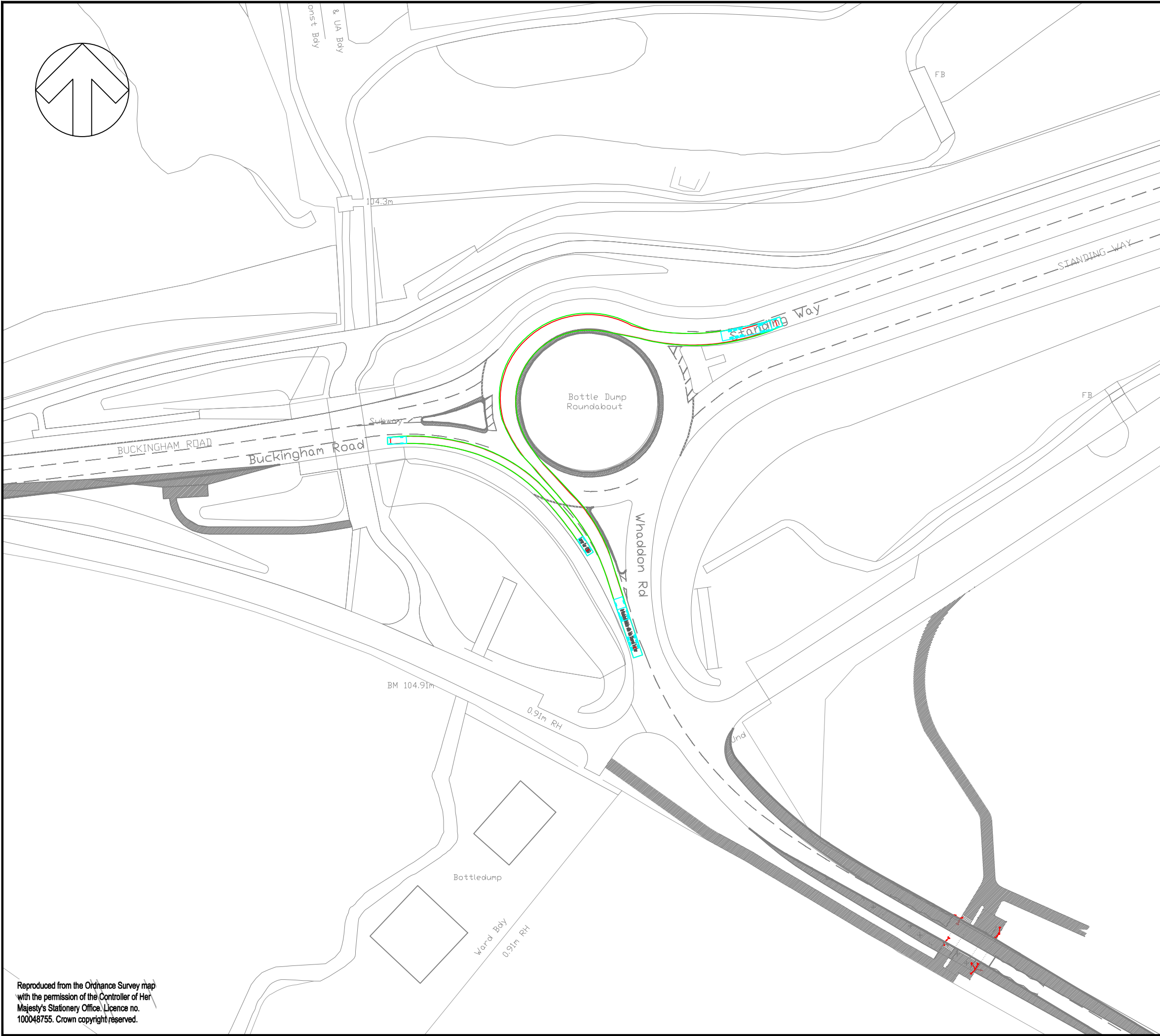
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		DATE: January 21

DRAWING No: 70069442-004-ATR-002 REV: P01

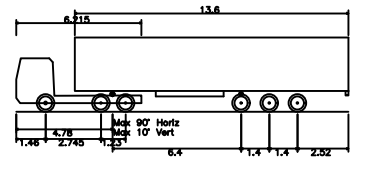
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.831m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	25/01/2021	JK	FIRST ISSUE	JS	JS

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 6 - Bottle Dump Roundabout - Swept Path Analysis - 16.5m Artic

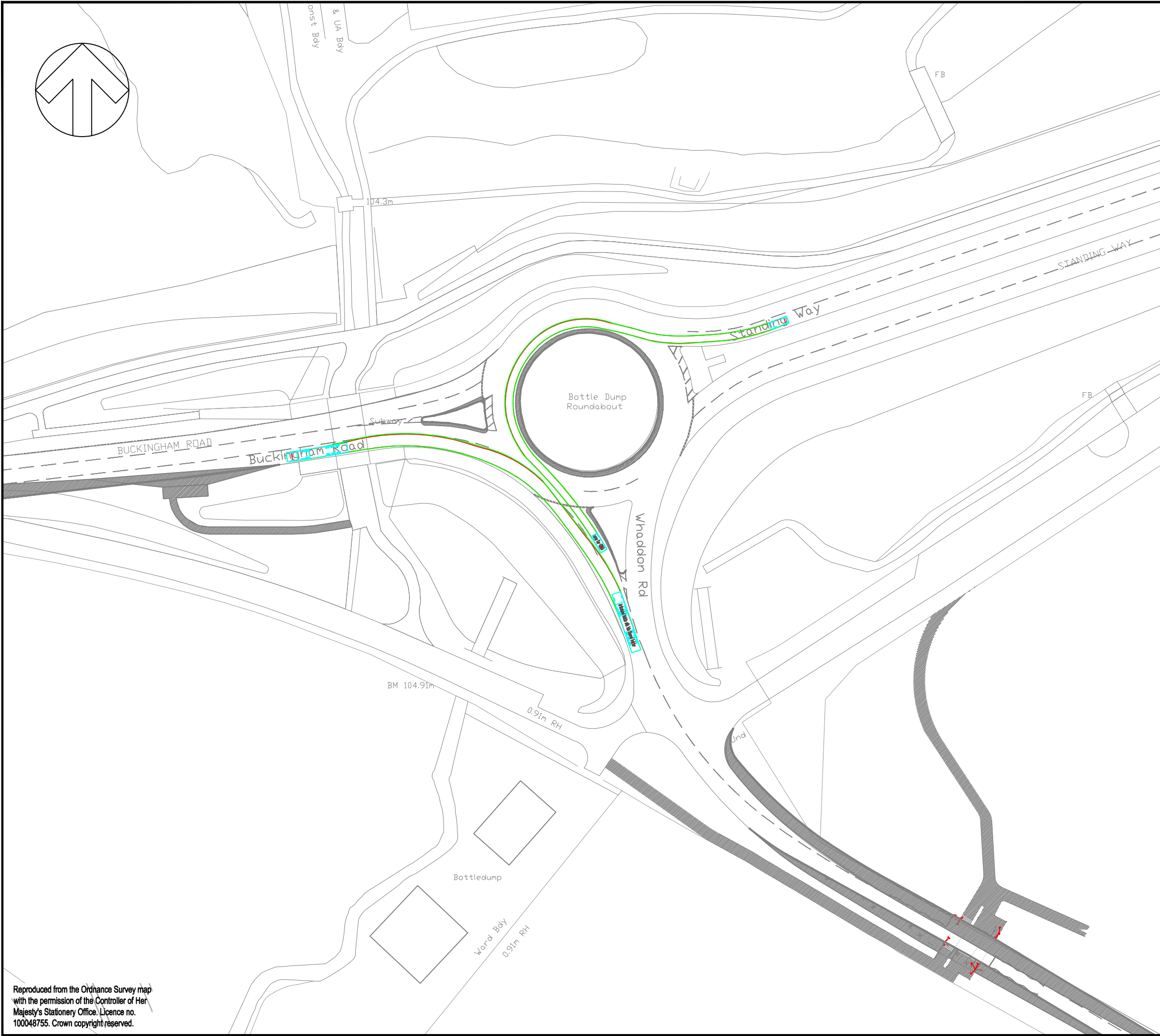
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		DATE: January 21

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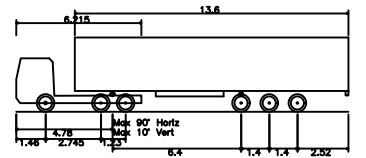
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DO NOT SCALE



Articulated Vehicle with Twin Steered Tractor
 Overall Length 16.500m
 Overall Width 2.500m
 Overall Body Height 3.831m
 Min Body Ground Clearance 0.426m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.987m

P02	25/01/2021	JK	FIRST ISSUE	JS	JS
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION



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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

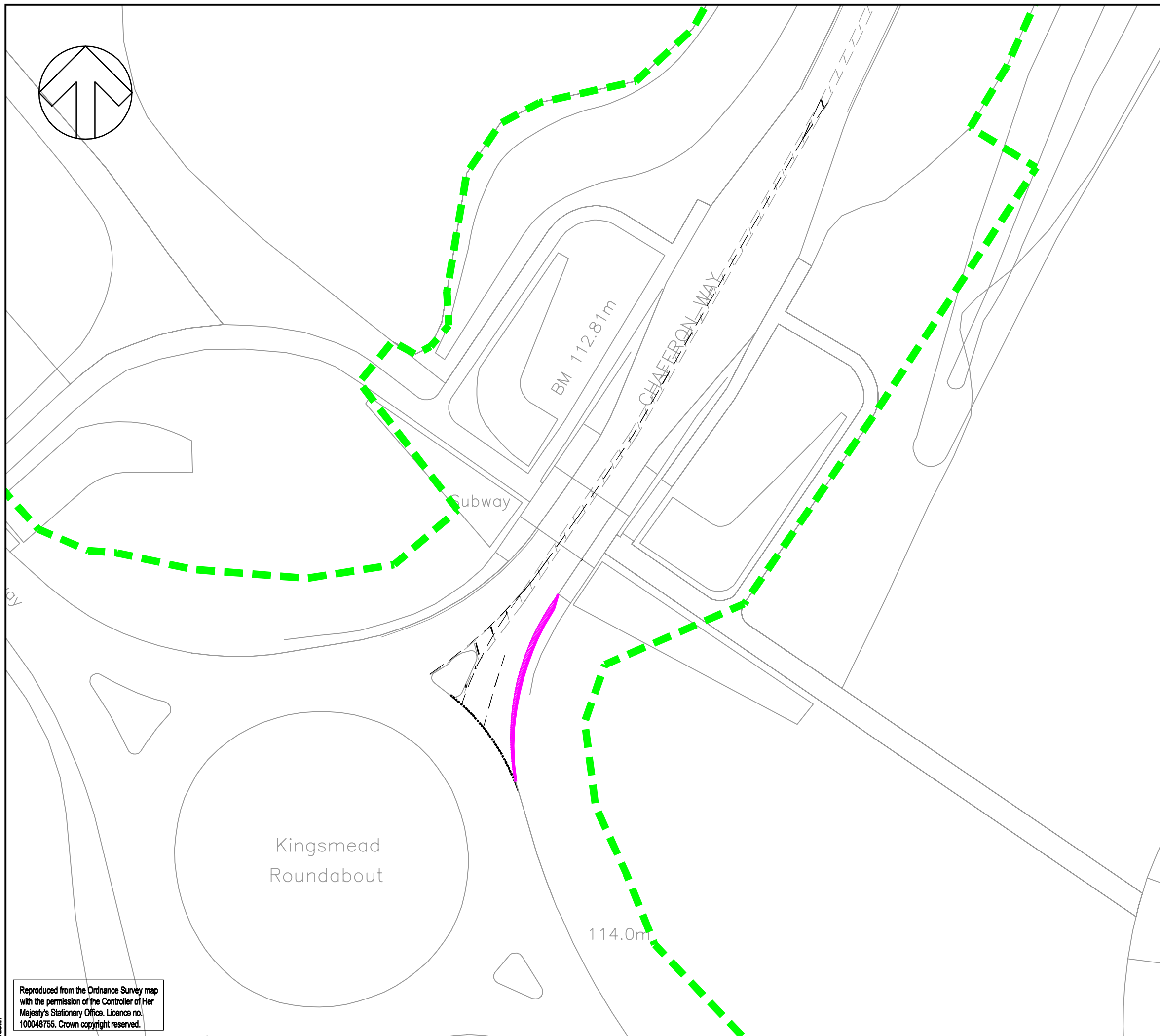
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SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: JK
		DATE: January 21

DRAWING No: 70069442-004-ATR-004	REV: P01
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DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	22/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

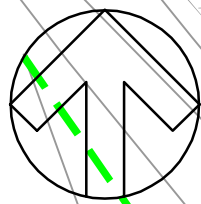
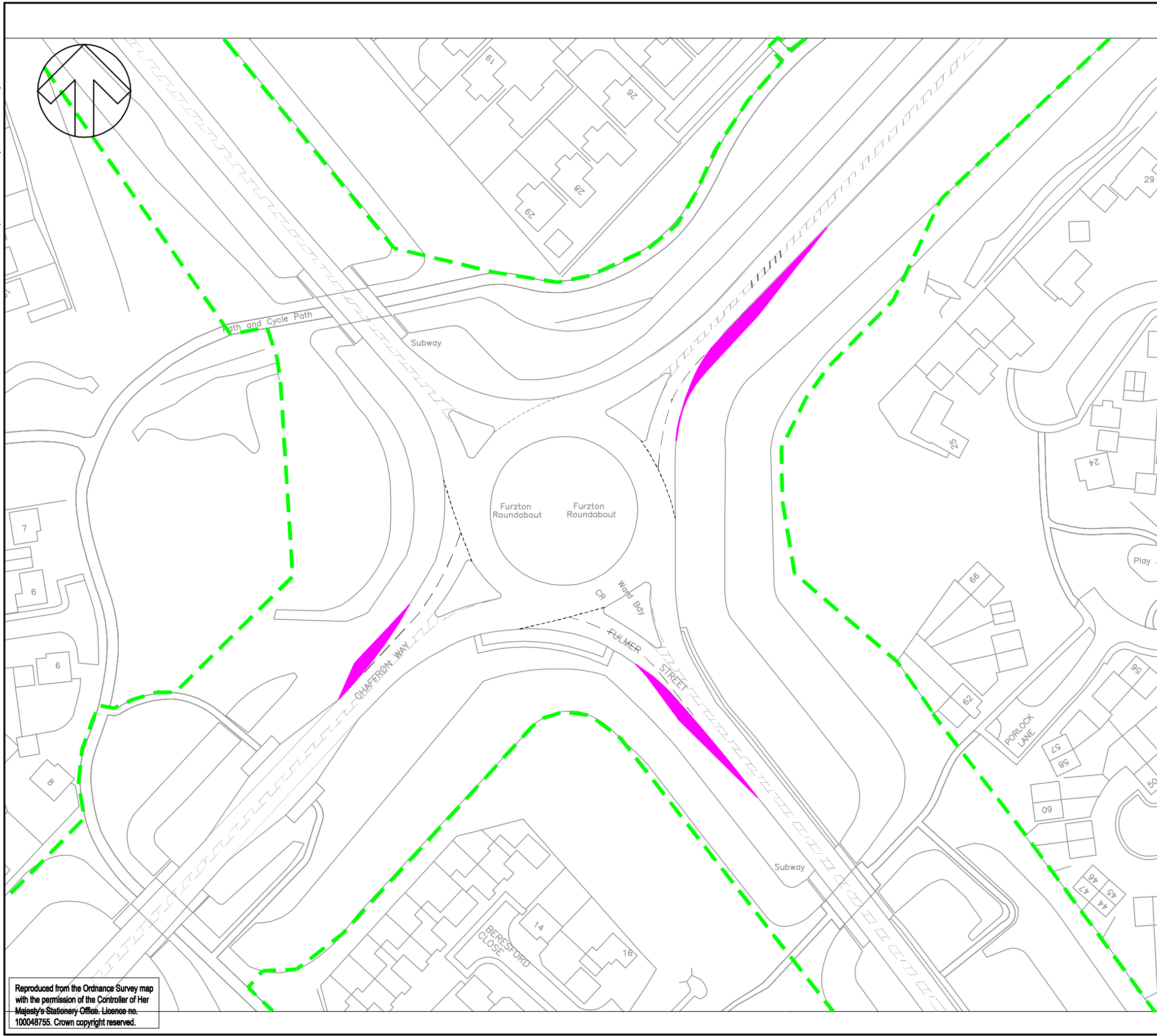
PROJECT: South West Milton Keynes

TITLE: Junction 12 Mitigation Kingsmead Roundabout

SCALE @ A3: 1:500	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-010		DATE: January 2021
		REV: P02

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DO NOT SCALE

KEY

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	22/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION



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T+ 44 (0) 1483 528 400
wsp.com

CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

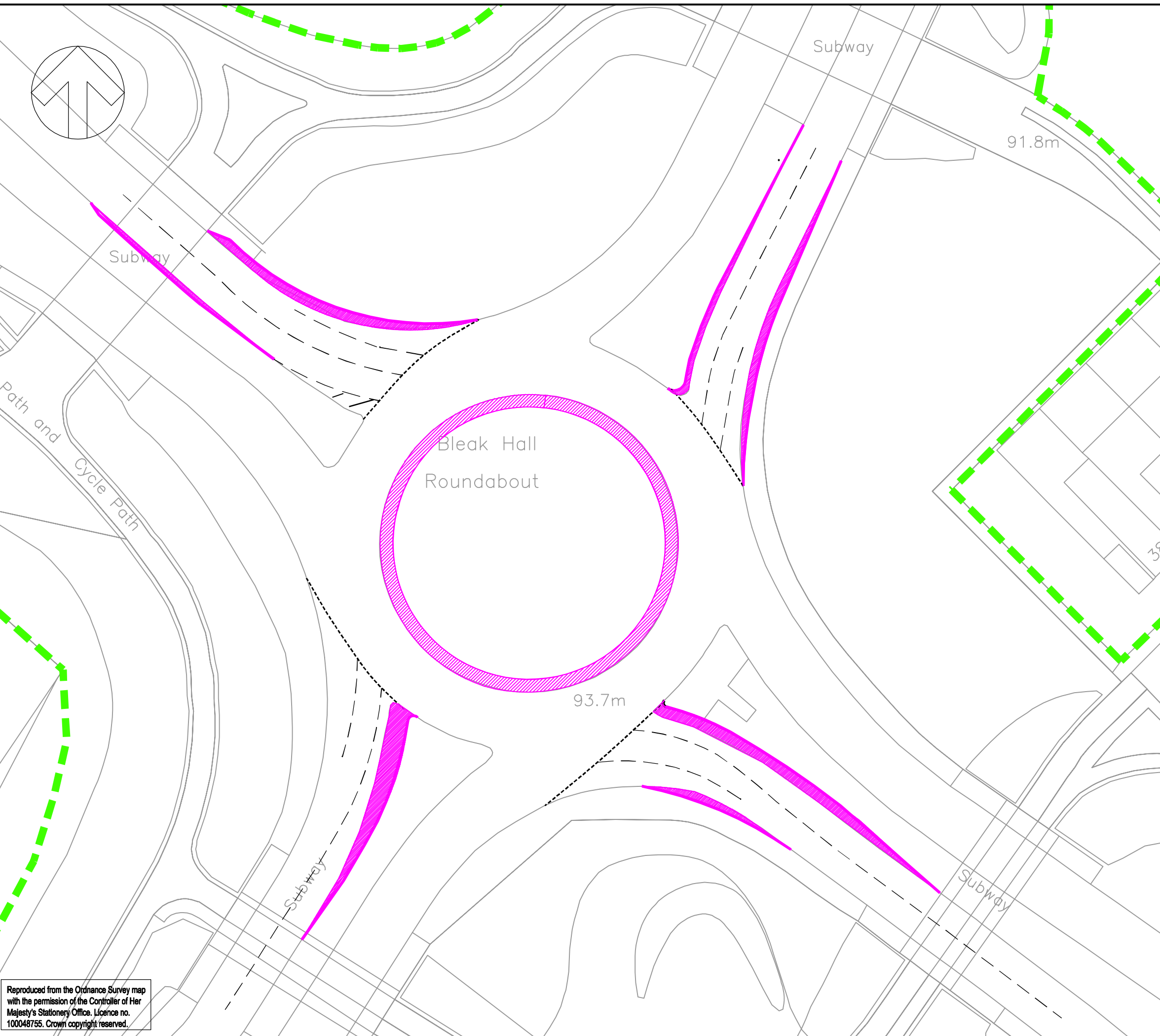
TITLE: Junction 14 Mitigation Furzton Roundabout

SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-011		REV: P02

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File name \\UK.WSP\GROUP\PROJECTS\70069442\SWMK - 202003 WIP\TP TRANSPORT PLANNING\ANALYSIS\2021 JUNCTION MODELLING\MITIGATION\15\15 - BLEAK HALL - RBT MITIGATION_P03.DWG, printed on 27 January 2021 17:29:23, by Sheriff, Justin



DO NOT SCALE

KEY

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	25/01/2021	JS	UPDATED LAYOUT	SH	MJP
P02	22/01/2021	ST	UPDATED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

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TITLE: Junction 15 Mitigation Bleak Hall Roundabout

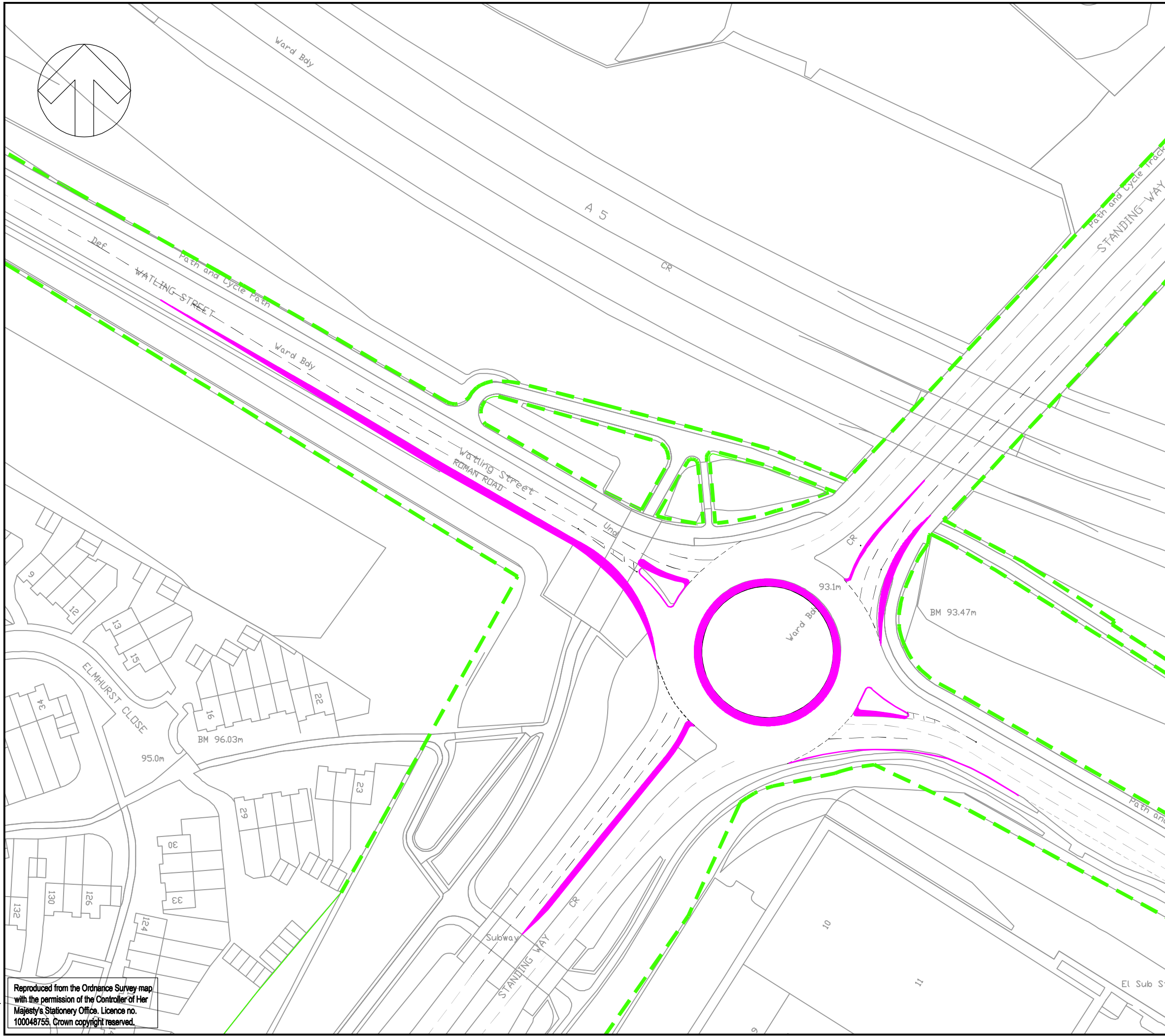
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PROJECT No: 70069442 **DESIGNED:** JS **DRAWN:** SET **DATE:** January 2021

DRAWING No: 70069442-012 **REV:** P03

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DO NOT SCALE

KEY

- Highway Boundary
- Kerb Amendments
- Carriageway Construction
- Footway Construction
- Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P02	25/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

DRAWING STATUS: S2 - FOR INFORMATION



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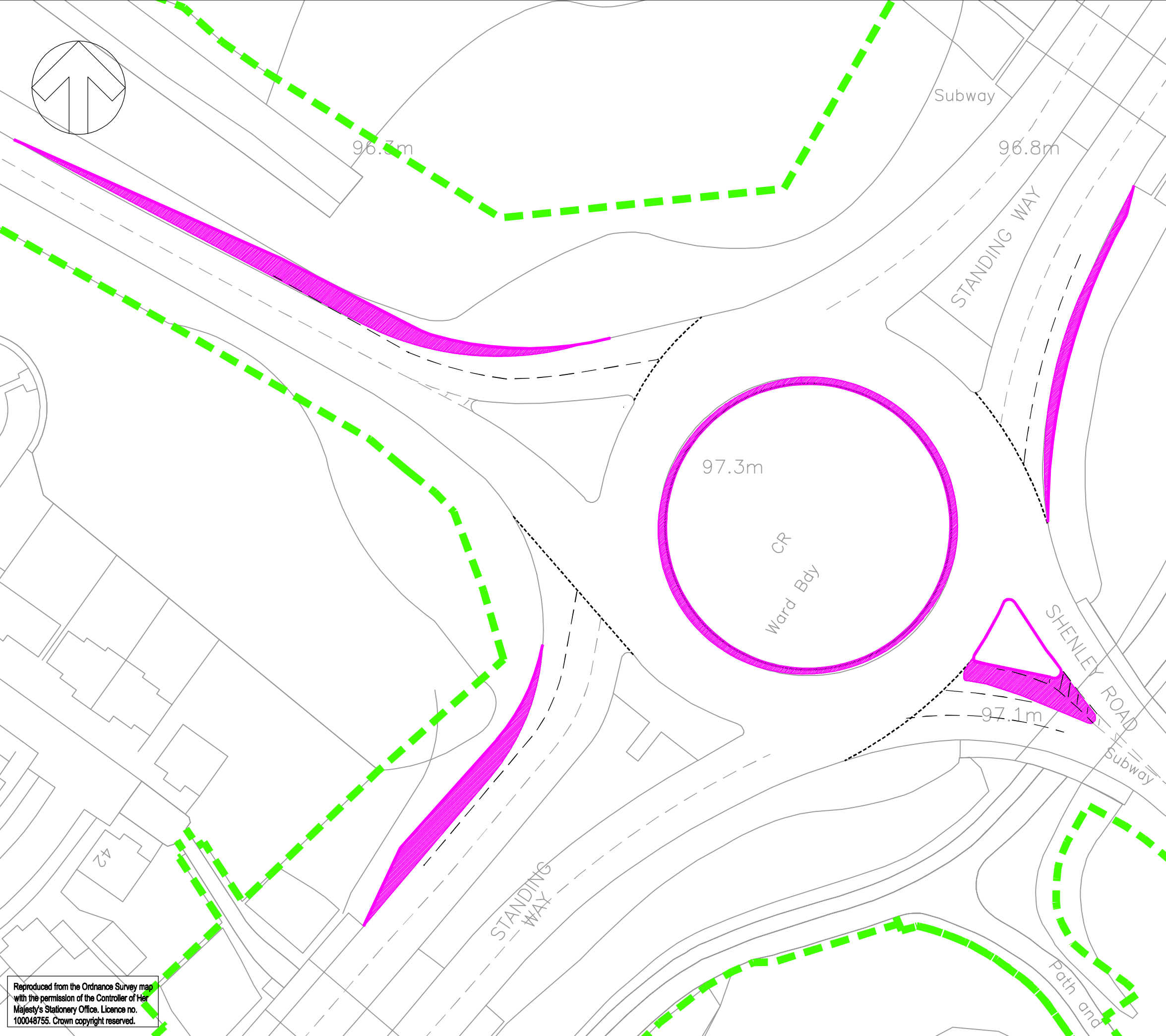
PROJECT: South West Milton Keynes

TITLE: Junction 16 Mitigation Elfield Park Roundabout

SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-016		REV: P03






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DO NOT SCALE

KEY

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

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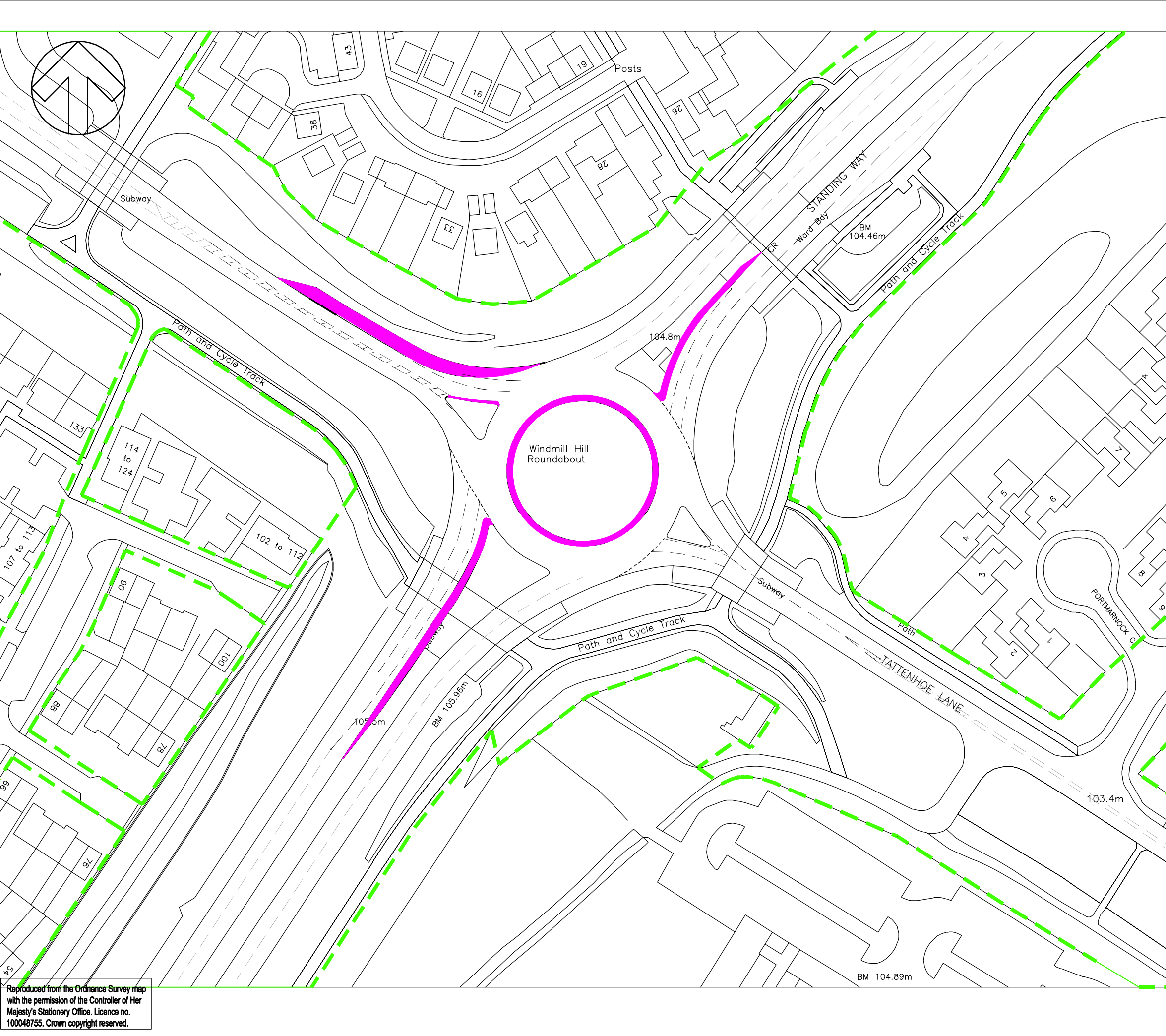
TITLE: Junction 17 Mitigation Emerson Roundabout

SCALE @ A3: 1:500	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-013		REV: P02

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DO NOT SCALE

KEY

	Highway Boundary
	Kerb Amendments
	Carriageway Construction
	Footway Construction
	Verge Construction

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	26/01/2021	JS	AMENDED LAYOUT	SH	MJP
P01	19/01/2021	JS	NEW LAYOUT	SH	MJP

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CLIENT: South West Milton Keynes Consortium

ARCHITECT:

PROJECT: South West Milton Keynes

TITLE: Junction 18 Mitigation Windmill Hill Roundabout

SCALE @ A3: 1:1000	CHECKED: JS	APPROVED: JS
PROJECT No: 70069442	DESIGNED: JS	DRAWN: SET
DRAWING No: 70069442-014	DATE: January 2021	
		REV: P02

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3 DESIGNER'S RESPONSE



South West Milton Keynes Consortium

SOUTH WEST MILTON KEYNES

Designer's Response to RSA S1 - Junctions in Milton Keynes





TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70069442

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QUALITY CONTROL

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Date	27/01/2021			
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Signature	 <p>Howard, Stephanie (UKSCH600) I am the author of this document 2021.01.29 11:15:21</p>			
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Signature	<p>Sherlock, Justin (UKJRS006)</p> <p>Digitally signed by Sherlock, Justin (UKJRS006) DN: cn=Sherlock, Justin (UKJRS006), ou=Guildford (London Square), email=Justin.Sherlock@wsp.com Date: 2021.01.29 13:52:31</p>			
Authorised by	M Paddle			
Signature	 <p>Martin Paddle I am approving this document 2021.01.29 13:54:38</p>			
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1 INTRODUCTION

- 1.1.1. This Technical Note sets out the design team's response to the following Stage 1 Road Safety Audit (RSA) which was carried out by an independent team at WSP on the proposed off-site highway works for junctions in Milton Keynes associated with the proposed development at 'South West Milton Keynes'.
- 1.1.2. The Stage 1 RSA dated January 2021, document number ITS/569/2021/MKC, should be read alongside this report. The documents submitted for the RSA comprised drawings as listed within Appendix A of the RSA and submitted within WSP application/appeal document Transport Response Note 3, dated January 2021.
- 1.1.3. The items raised from the RSA have been reproduced within this report. The design team response is also provided for each item raised.

2 RESPONSE TO STAGE 1 RSA PROBLEMS RAISED

2.1 PROBLEM 1

- LOCATION: Junctions 1, 5, 6, 12, 14, 15, 16, 17 & 18
- SUMMARY: Lane widening on the roundabout entries may require repositioning of chevron signing on the roundabout.
 - At the roundabouts detailed above, there is a to be lane widening on at least one of the approaches to the roundabout. The existing chevron signs are positioned for optimal visibility for drivers on approach to the roundabout. The widening of the lanes on approach to the roundabout is likely to alter drivers view of the chevrons. This could increase the risk of drivers overshooting the roundabout Give Way line and colliding with a vehicle on the circulatory carriageway.
- RECOMMENDATION
 - It is recommended that, where carriageway widening is proposed, the positioning of the chevron signing be amended as required or additional signing be provided.

RESPONSE

- 2.1.1. Noted. The existing chevron signing will be relocated to a more appropriate position or additional signage provided as necessary at the roundabout junctions. The signage strategy will be reviewed and finalised in discussion with Milton Keynes Council (MKC) as part of the detailed design of the junction improvements, which will be subject to a Stage 2 RSA.

2.2 PROBLEM 2

- LOCATION: Junctions 6, 12, 14, 15, 16, 17 & 18
- SUMMARY: Encouraging two or more lanes of through traffic could increase the risk of side swipe collisions on the roundabout.
 - At the roundabouts, one or more of the arms are being widened to allow two or more lanes to enter and proceed through the roundabout or the lane destination marking are changing. The roundabouts in general currently do not include any lane markings and the proposals don't include any such proposals. There is a risk that, due to poor lane discipline, that should two vehicles attempt to negotiate the roundabout side-by-side, it could result in side swipe collisions.
- RECOMMENDATION:
 - It is recommended that appropriate lane markings be provided on the approach to and through the roundabout.

RESPONSE

- 2.2.1. Noted. Lane markings will be added to the proposals as part of the detailed design of the junction improvements, which will be subject to a Stage 2 RSA.

2.3 PROBLEM 3

- LOCATION: Junctions 1, 2, 5, 6, 12, 14, 15, 16, 17 & 18
- SUMMARY: Verge widening on the nearside verge may increase the risk of street furniture being struck
 - On the approaches to the roundabout, local widening is to be proposed to allow for extra carriageway space on entering the roundabout. The widening will be achieved by reducing the width of the highway verge either offside or nearside. Within the highway verge, there is street furniture currently set-back from the edge of the carriageway, however once the widening is completed, the A421 carriageway or local roads will be very close to the current location of the street furniture which could result in vehicles striking the street furniture resulting in a higher risk severity of injury.
- RECOMMENDATION
 - It is recommended that all the street furniture be adequately set-back from the edge of the carriageway or protected by road restraint systems where required.

RESPONSE

- 2.3.1. Noted. The existing street furniture will be relocated to a more appropriate position and, if necessary, either made passively safe or protected by a road restraint system. The street furniture locations will be reviewed and finalised in discussion with MKC as part of the detailed design of the junction improvements, which will be subject to a Stage 2 RSA.

2.4 PROBLEM 4

- LOCATION: Junctions 15, 16, 17 and 18
- SUMMARY: Lack of lane destination markings could lead to side-swipe incidents.
 - At the above Junctions, these are being widened to 3 lane entries to the roundabout, however, there are no destination markings and arrows proposed. The lack of these markings along with markings from problem 2 could lead to side-swipe collisions as vehicles negotiate their position on the approach to and through the roundabout.
- RECOMMENDATION:
 - It is recommended that destination markings and arrows are installed on the 3 lane entries roundabouts.

RESPONSE

- 2.4.1. Noted. Lane destination markings and arrows will be added to the proposals as part of the detailed design of the junction improvements, which will be subject to a Stage 2 RSA.

2.5 PROBLEM 5

- LOCATION: B4034 Buckingham Road/Newton Road/ Shenley Road Junction.

- **SUMMARY:** Widening of the southbound approach to the mini roundabouts removes a layby which may lead to vehicular/pedestrian collisions.
 - From the drawing (70069442-015 P02), it appears that the road is to be widened on the southbound approach to the mini roundabouts, removing an existing layby. Whilst the layby has double yellow lines within it to prevent parking it also houses a drop kerb for access to property 140 Buckingham Road. Currently the user of this access can stop in the layby to open the gates, but now it would appear they will need to stop in the road or across the footway. No details have been given as to the replacement of the dropped kerbs. This could lead to rear end shunts in Shenley Road due to following the vehicle believing they have stopped for the roundabout or leading to collisions involving pedestrians on the footway.
- **RECOMMENDATION:**
 - It is recommended that the dropped kerbed access be retained and pedestrians are made aware that vehicles could be on the footway.

RESPONSE

- 2.5.1. Noted. The dropped kerbs will be retained to allow access to the rear of the property at 140 Buckingham Road. Pedestrian flow in this location is low, however the presence of the dropped kerbs will alert pedestrians to the possibility of vehicles turning across the footway into the driveway. The dropped kerbs will be added to the drawings at the detailed design stage, which will be subject to a Stage 2 RSA.

2.6 PROBLEM 6

- **LOCATION:** B4034 Buckingham Road/Newton Road/ Shenley Road Junction
- **SUMMARY:** Traffic islands being moved, which may lead to vehicular/pedestrian collisions.
 - From the drawing (70069442-015 P02), the traffic islands are being relocated to make room for two lanes of traffic. It is not clear from the drawing that the pedestrian crossing facilities are to be retained. The removal of these facilities could lead to vehicular/pedestrian collisions if pedestrians try to cross the road where vehicles are not expecting them.
- **RECOMMENDATION:**
 - It is recommended that the pedestrian crossing facilities are retained on all traffic islands.

RESPONSE

- 2.6.1. Noted. It is intended that the existing pedestrian crossing facilities will be retained in all locations to provide pedestrians with a safe place to cross and to alert vehicle drivers of their presence. The pedestrian crossings will be added to the drawings at the detailed design stage, which will be subject to a Stage 2 RSA.

2.7 PROBLEM 7

- **LOCATION:** New Roundabout on Buckingham Road
- **SUMMARY:** New shared footway/cycleway are of minimal width which could lead to conflict

- The new shared footway/cycle way is being proposed as 3m wide (drawing number D017 Rec C). Cycle infrastructure design (Local Transport Note (LTN) 1/20) states a preferred minimum effective width of 3m, which should be the actual width of the route, where the route is not bounded by vertical features. The width of the shared use facility strongly influences the quality of the shared routes and with insufficient widths tending to reduce user comfort and therefore increase the potential for conflict between pedestrians and cyclists or cyclists and vehicles should they be more inclined to cycle on the carriageway.
 - No details have been given with regards to the locations of the lighting column and signs.
- **RECOMMENDATION:**
- It is recommended that the shared footway/cycleway facility is widened to ensure that the effective width is maintained through-out the route to reduce the potential for conflict between pedestrians/cyclists and vehicles.
 - Where signposts or lamp columns are present, they should be located outside the effective width of the proposed facility where possible.
 - NB. Cycle infrastructure design (LTN 1/20) provides guidance of additional width requirements dependent on the edge constraint (e.g. kerb upstand).

RESPONSE

- 2.7.1. Noted. The new shared footway/cycleway was designed to the specification agreed with BC and MKC as part of the WSP 2016 Transport Assessment. The design has not changed since that time, which was prior to the publication of LTN 1/20 by the DfT in July 2020. Nonetheless, the width of the shared footway/cycleway will be reviewed at the detailed design stage and will be widened if required by BC/MKC to ensure sufficient effective width of at least 3.2m, to account for the additional width at edge constraints now required by LTN 1/20. The detailed design will be subject to a Stage 2 RSA.

2.8 PROBLEM 8

- **LOCATION:** Junction 5 - A421/ Tattenhoe Roundabout
- **SUMMARY:** Southbound right turning HGV encroaching into adjacent lane leading to side-swipe collision
- From the drawing 9442-TP-ATR-012 the HGV travelling southbound into the roundabout to turn right clearly encroaches in the adjacent lane, and there is a real risk of the two HGV's coming together in a side swipe collision.
- **RECOMMENDATION:**
- It is recommended that the available carriageway area is widened to allow both HGVs to continue on their path in a safe manner.

RESPONSE

- 2.8.1. Noted. The likelihood of two HGVs side by side across the circulatory area of the roundabout would be extremely low. The central island is proposed to be reduced in size to accommodate a third lane on the northern side of the roundabout. A further reduction in the size of the central island could be made on the eastern side of the roundabout to accommodate a wider swept path for HGVs if

deemed necessary. This will be reviewed with the highway authority and updated if necessary, at the detailed design stage. The detailed design will be subject to a Stage 2 RSA.

2.9 PROBLEM 9

- LOCATION: Buckingham Road - Recycling Centre Lane.
- SUMMARY: Proposed location of Walkers/Cyclists & Horse Riders (WCHR) /Bridleway tie-in could lead to WCHR / vehicular conflicts.
 - The audit team are concerned of the proposed location of the pedestrian/cycle and equestrian route tie-in on Buckingham Road outside the recycling centre. The proposed design makes WCHR's join Buckingham Road at the entrance into the recycling centre depot and within the vicinity of the entrance off Whaddon Road. There is a risk that WCHR users joining Buckingham Road at this location could come into conflict with passing or turning vehicles, potentially leading to serious/fatal injury.
 - This risk is increased due to regular LGV/HGV movements in the immediate area.
- RECOMMENDATION:
 - It is recommended that good visibility splays, removal of vegetation, signing and enhanced visual features are proposed at this tie-in, warning vehicle users to expect WCHR activity.

RESPONSE

- 2.9.1. Noted. Vegetation will be trimmed to ensure good visibility for WCHR in this location and advance signage and markings will be used to ensure drivers using the recycling centre access are warned of the equestrian route. The specification and location of the features will be provided at the detailed design stage, which will be subject to a Stage 2 RSA.

2.10 PROBLEM 10

- LOCATION: Whaddon Road - New Pegasus Crossing.
- SUMMARY: Location of the equestrian push-button location could cause equestrian / vehicular conflicts.
 - From the drawings provided for the audit, the audit team are concerned with the proposed location of the push-button for equestrian users. The proposed location does not appear to provide sufficient width for equestrians to safely wait for traffic to stop. This may result in horse's heads protruding into the live carriageway. This could potentially lead to horses being struck by passing vehicles at the crossing.
- RECOMMENDATION:
 - It is recommended that sufficient facility width be provided and the equestrian push-button is located back from the carriageway to ensure that when the rider is using the facility, the horses head does not cross the kerb-line.

RESPONSE

- 2.10.1. Noted. The push button for equestrian users will be located at least 2m back from the kerb edge to ensure a horse's head does not cross the kerb line. This will be shown on the drawings at the detailed design stage, which will be subject to a Stage 2 RSA.

2.11 PROBLEM 11

- LOCATION: Whaddon Road - New Pegasus crossing.
- SUMMARY: Reduced visibility of the Pegasus crossing could cause collisions between walking, cycling and horse-riders (WCHR) and also late breaking leading to rear end shunts.
 - From the drawings and online mapping, the audit team place the proposed Pegasus crossing in the vicinity of the red arrow on google image 3. The location is behind a mass of vegetation on the nearside and in vicinity of the tree on the offside looking to the southeast.
 - The vegetation will need to be completely removed in order to afford visibility to the Pegasus crossing on both sides of the carriageway to reduce the likelihood of collisions involving WCHR and motor vehicles.
- RECOMMENDATION:
 - It is recommended that all vegetation in the visibility splay of the Pegasus crossing is removed to allow adequate visibility to the crossing at all times of the year.

RESPONSE

- 2.11.1. Noted. Vegetation will be cut back in this location. Routine maintenance of the vegetation to ensure visibility is not restricted will be the responsibility of Buckinghamshire Council (BC) as local highway authority for Whaddon Road.

2.12 PROBLEM 12

- LOCATION: Whaddon Road - New Pegasus Crossing.
- SUMMARY: ADS sign in visibility splay will reduce visibility leading to collisions between WCHR's and vehicles and also late breaking leading to rear end shunts.
 - Google Image 3 above identifies the approximate location of the Pegasus crossing, as well as the vegetation in the visibility splay. There is also an ADS sign for the Bottledump Roundabout which will also infringe on visibility to and from the crossing. The ADS sign in the visibility splay will reduce visibility to the Pegasus crossing potentially leading to collisions between WCHR's and vehicles and also late breaking leading to rear end shunts.
- RECOMMENDATION:
 - It is recommended that the ADS is relocated to allow adequate visibility to the Pegasus crossing at all times.



RESPONSE

- 2.12.1. Noted. The location of the ADS will be reviewed with BC and/or MKC at the detailed design stage and will be relocated outside the visibility splay for equestrians if necessary. The detailed design will be subject to a Stage 2 RSA.



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