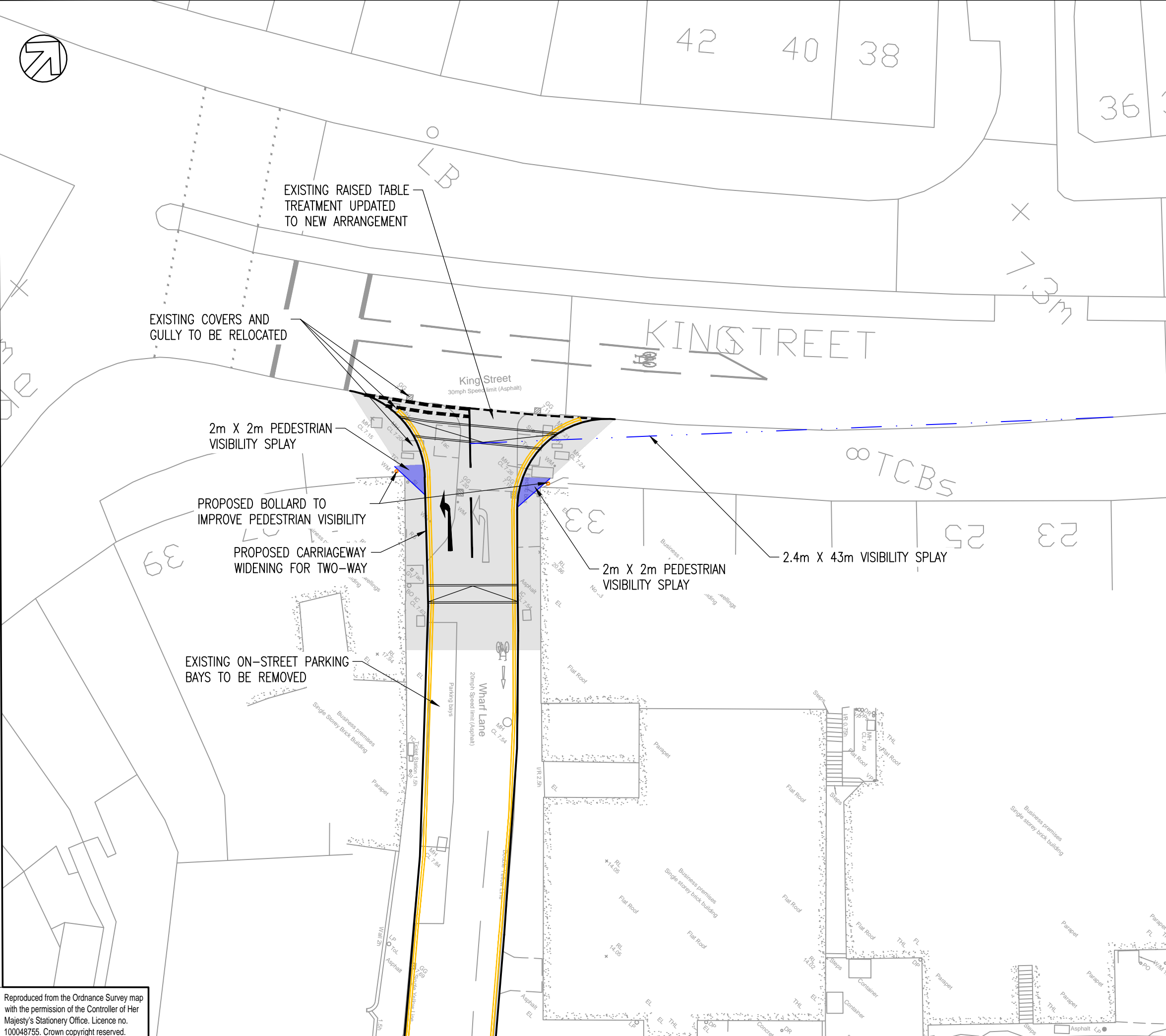


File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\3 WIP\WSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-40.DWG, printed on 15 July 2021 11:46:46, by Burton, Craig



DO NOT SCALE

NOTES
EXISTING ROAD MARKINGS ARE INDICATIVE ONLY

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	15/07/2021	CRJB	SERVICING BAY REMOVED AND KERBS EXTENDED	RT	TG
P03	14/10/2020	MR	SERVICING BAY REDUCED FROM 15M TO 10M	RT	TG
P02	24/09/2020	CRJB	BOLLARDS AND RAISED AREA AMENDED	RT	TG
P01	18/09/2020	CRJB	FIRST ISSUE	RT	TG

DRAWING STATUS: S0 - WORK IN PROGRESS



WSP House, 70 Chancery Lane, London, WC2A 1AF, UK
T+ 44 (0) 207 314 5000, F+ 44 (0) 207 314 5111
wsp.com

CLIENT:

ARCHITECT: HOPKINS

PROJECT: TWICKENHAM RIVERSIDE

TITLE: PROPOSED LEFT-IN / LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE EXTENDED RAISED TABLE

SCALE @ A3: 1:250 CHECKED: RT APPROVED: TG

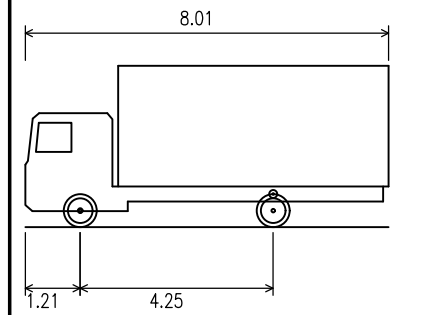
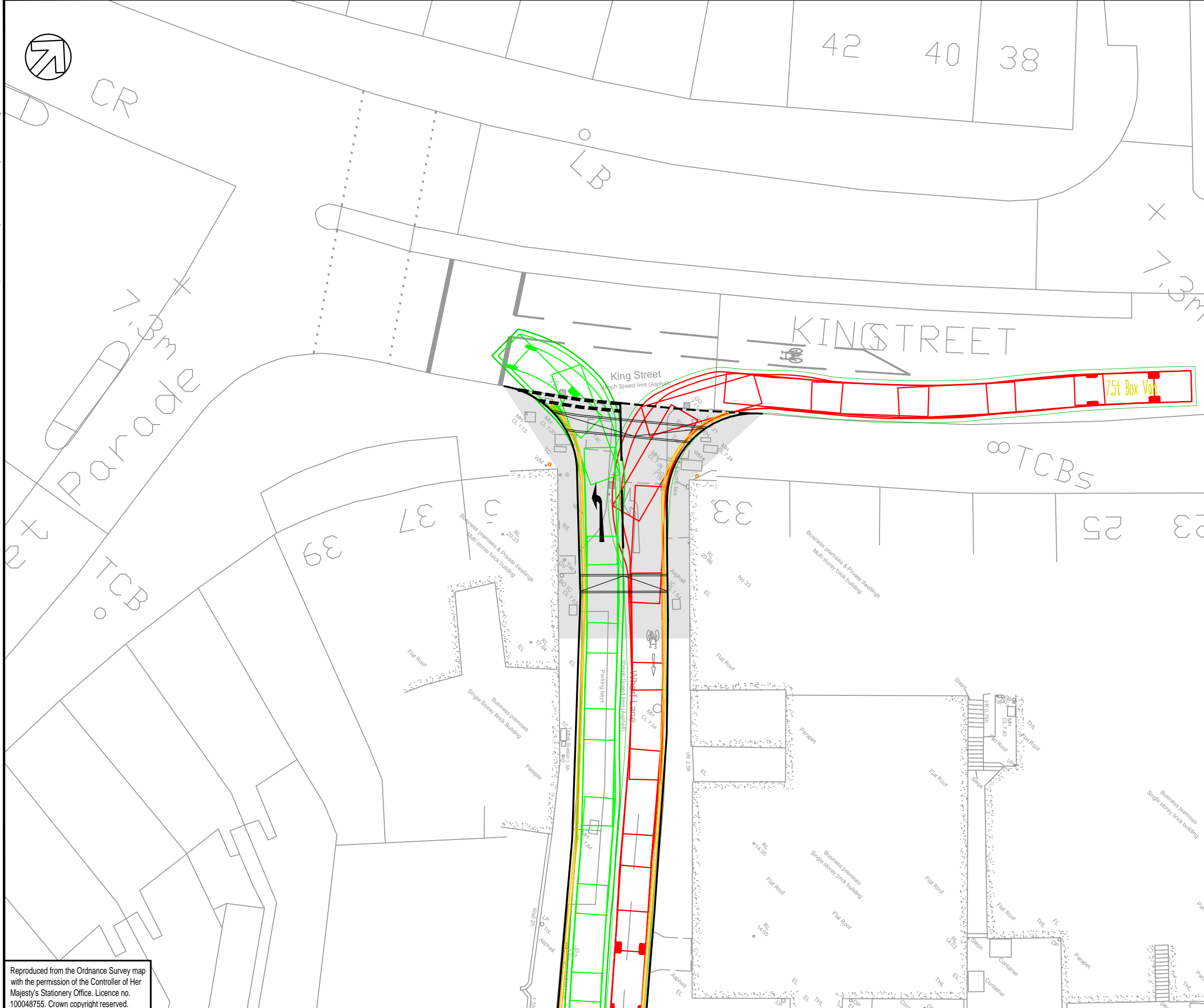
PROJECT No: 70059704 DESIGNED: DRAWN: CRJB DATE: July 21

DRAWING No: 70059704-TP-SK-40 REV: P04

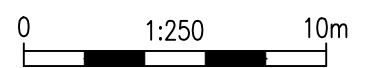
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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-40.DWG, printed on 15 July 2021 11:46:50, by Burton, Craig



7.5t Box Van
 Overall Length 8.010m
 Overall Width 2.100m
 Overall Body Height 3.556m
 Min Body Ground Clearance 0.351m
 Track Width 2.064m
 Lock to Lock Time 4.00 sec
 Kerb to Kerb Turning Radius 7.400m

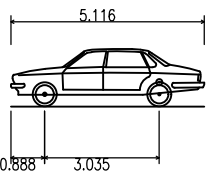
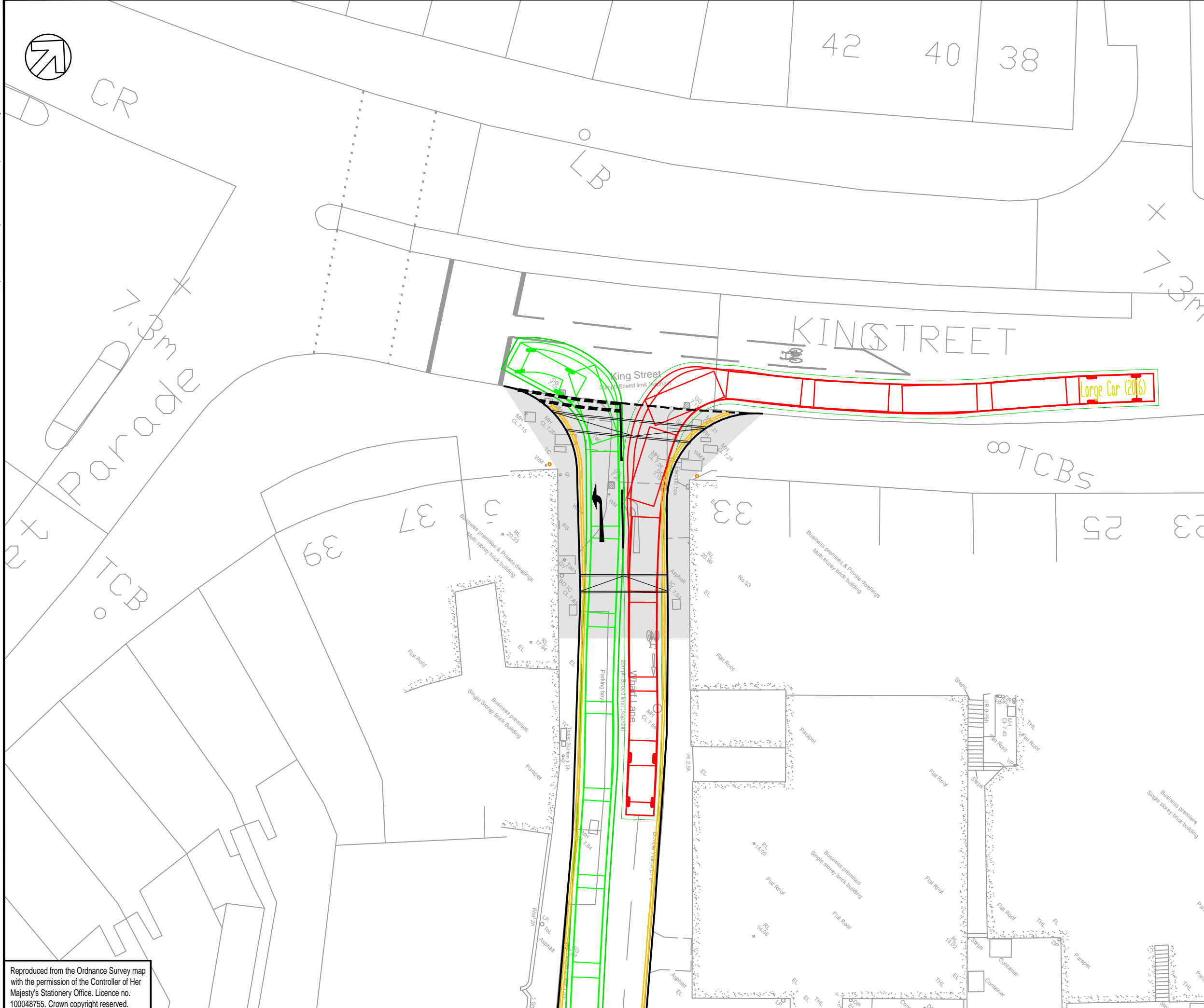


PROPOSED LEFT-IN/LEFT-OUT JUNCTION
 OF KING STREET AND WHARF LANE
 EXTENDED RAISED TABLE
 7.5T BOX VAN SWEEP PATH ANALYSIS

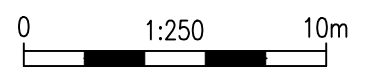
FIGURE No: 70059704-TP-SK-40-TR3

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-40.DWG, printed on 15 July 2021 11:46:53, by Burton, Craig



Large Car (2016)	
Overall Length	5.116m
Overall Width	1.899m
Overall Body Height	1.526m
Min Body Ground Clearance	0.311m
Track Width	1.834m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.150m

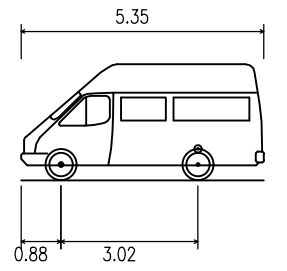
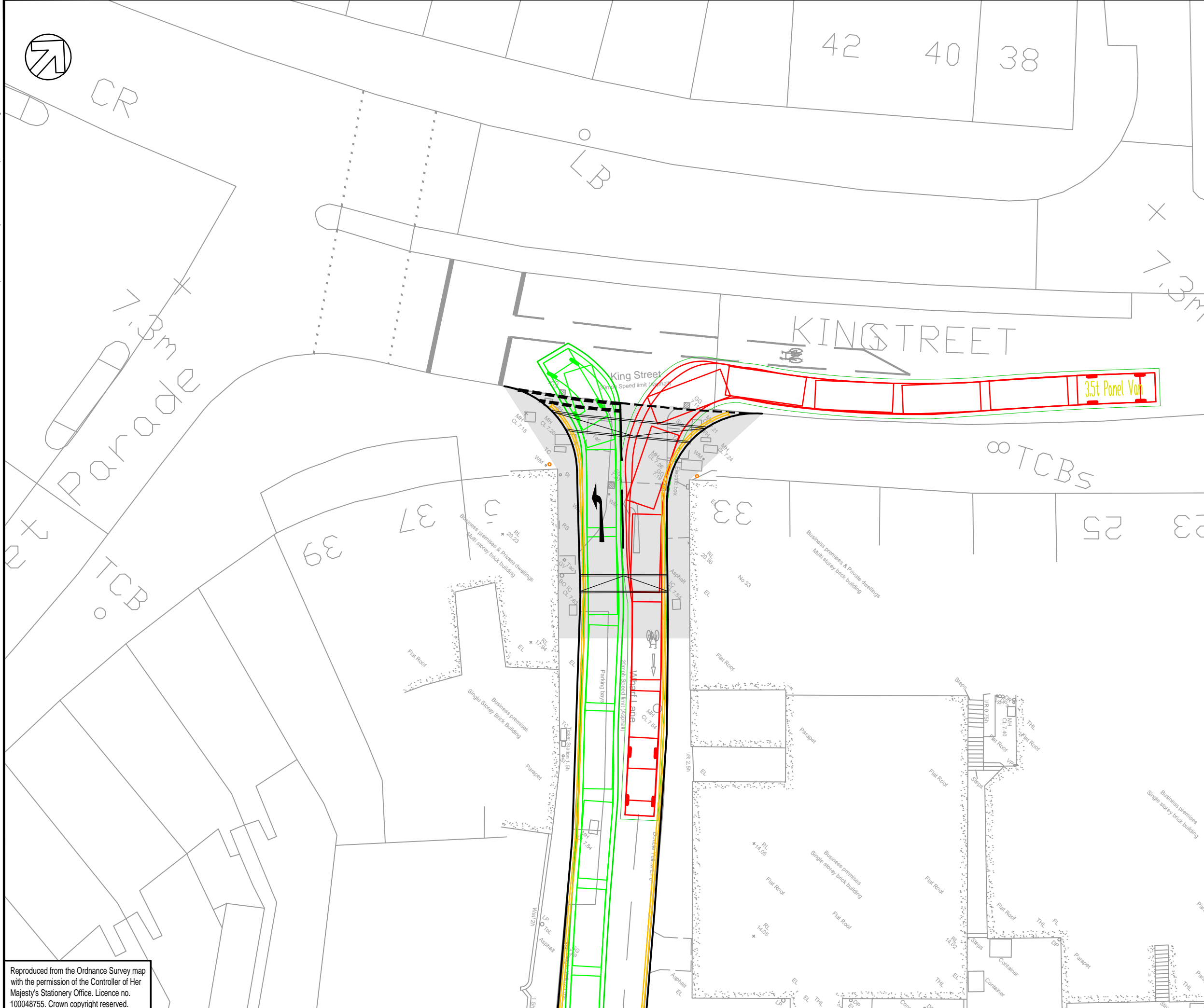


PROPOSED LEFT-IN/LEFT-OUT JUNCTION
OF KING STREET AND WHARF LANE
EXTENDED RAISED TABLE
LARGE CAR SWEEP PATH ANALYSIS

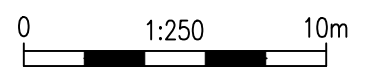
FIGURE No: 70059704-TP-SK-40-TR5

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File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70069704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70069704-TP-SK-40.DWG, printed on 15 July 2021 11:46:52, by Burton, Craig



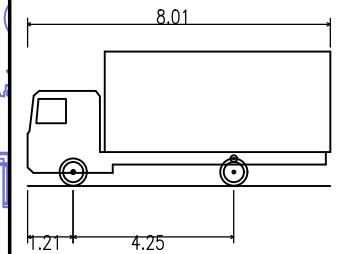
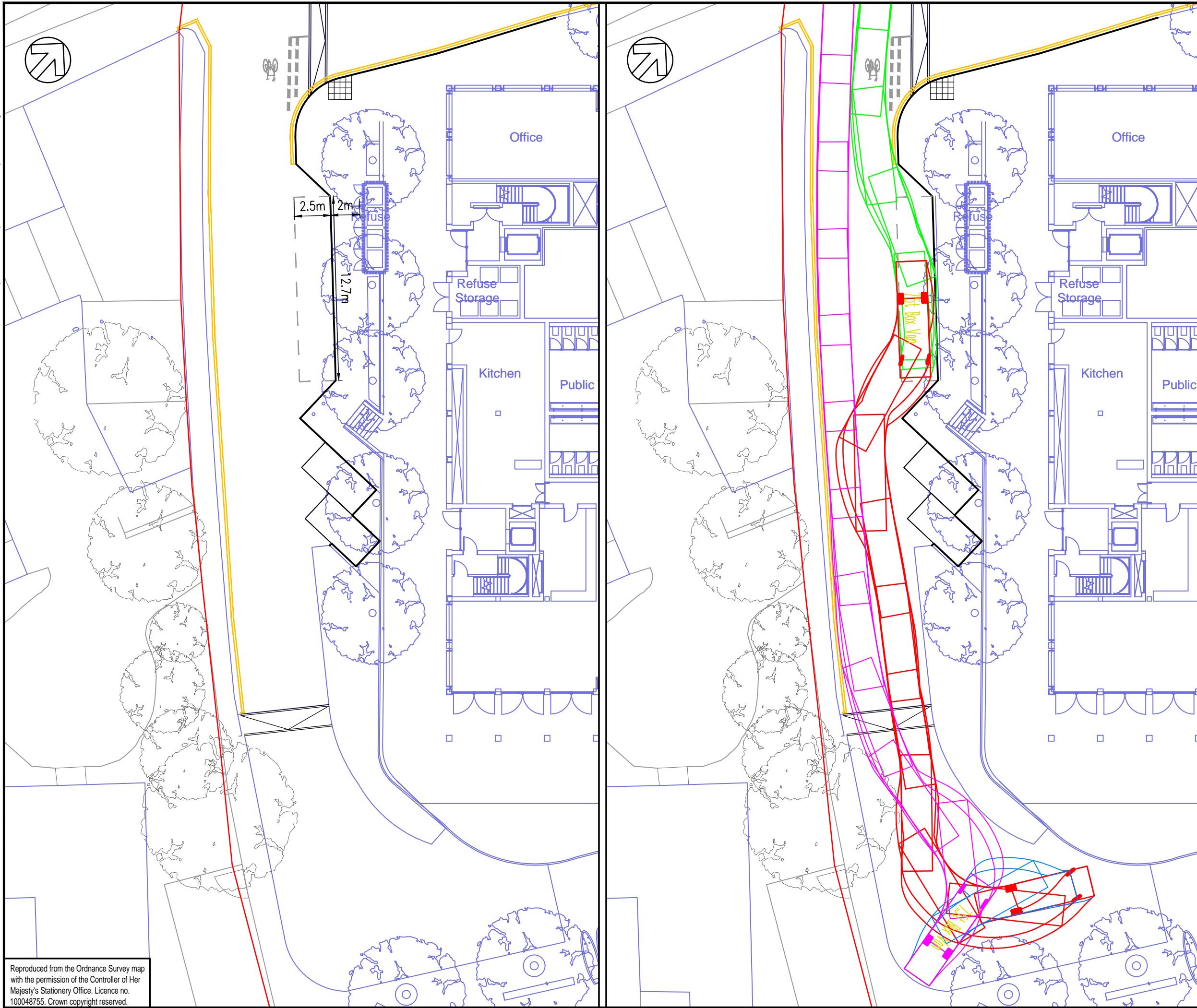
3.5t Panel Van	
Overall Length	5.350m
Overall Width	1.970m
Overall Body Height	2.562m
Min Body Ground Clearance	0.335m
Track Width	1.970m
Lock to Lock Time	4.00 sec
Kerb to Kerb Turning Radius	5.850m



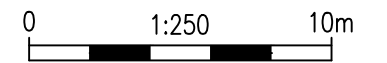
PROPOSED LEFT-IN/LEFT-OUT JUNCTION
OF KING STREET AND WHARF LANE
EXTENDED RAISED TABLE
3.5T PANEL VAN SWEEP PATH ANALYSIS

FIGURE No: 70069704-TP-SK-40-TR4

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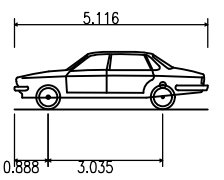
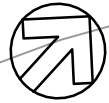
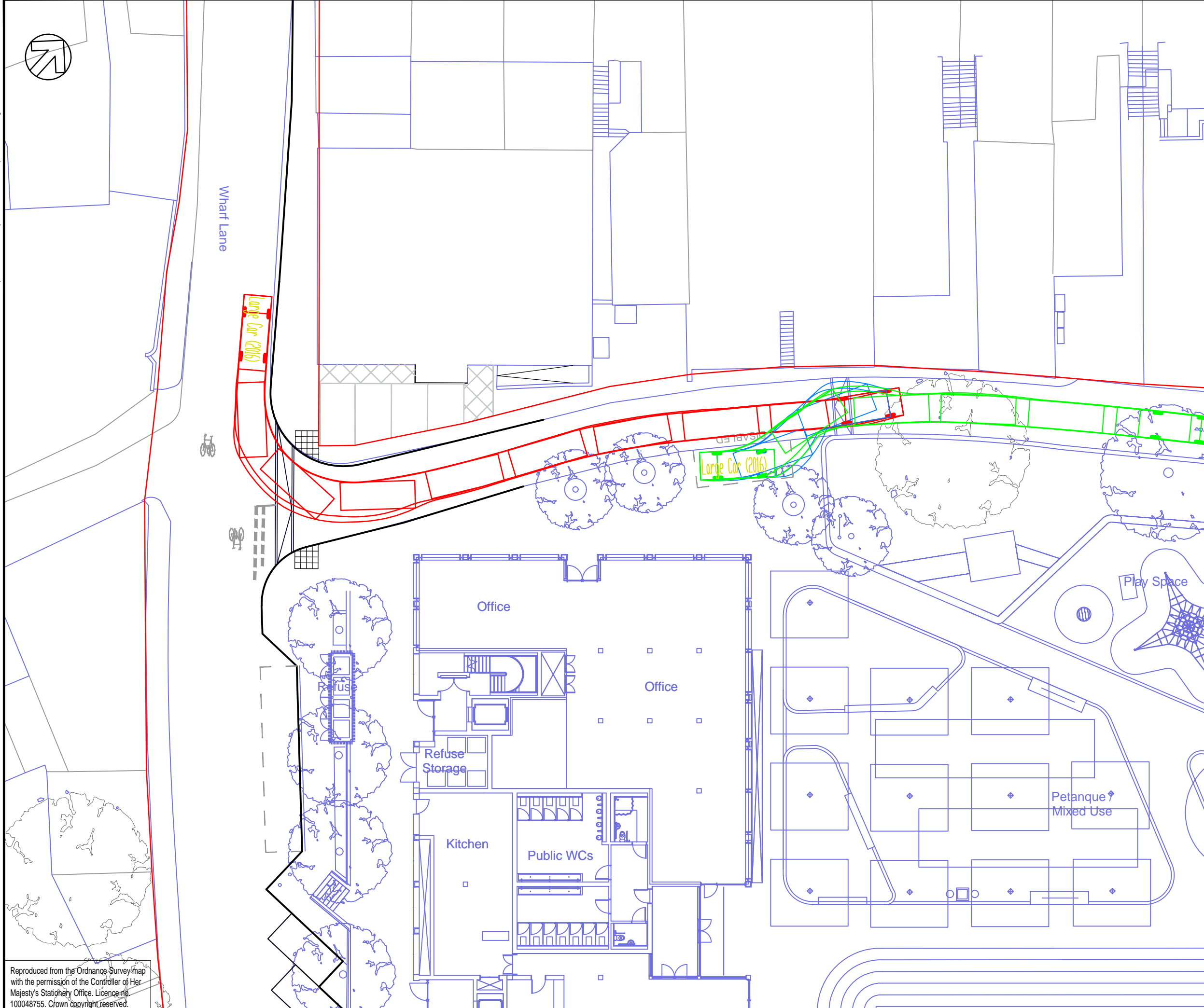
7.5t Box Van	
Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m



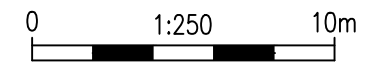
TITLE: HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
WHARF LANE LOADING BAY AND
7.5T VAN SWEEP PATH ANALYSIS

FIGURE No: 70059704-TP-SK-52-TR20

File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:50, by Burton, Craig



Large Car (2016)	
Overall Length	5.116m
Overall Width	1.899m
Overall Body Height	1.526m
Min Body Ground Clearance	0.311m
Track Width	1.834m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.150m

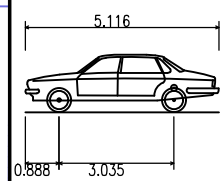
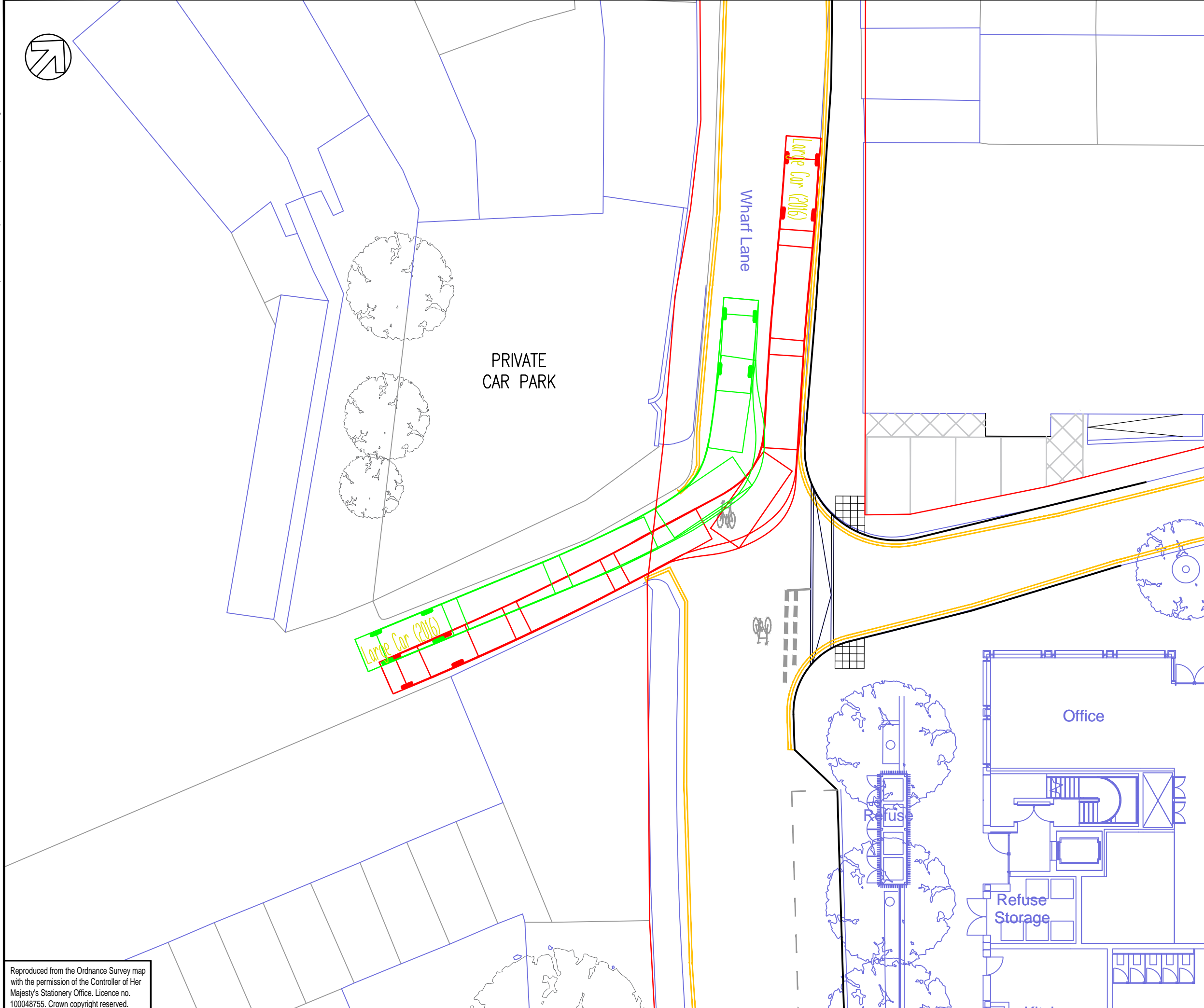


TITLE:
**HOPKINS MASTERPLAN
 PROPOSED HIGHWAY ARRANGEMENT
 SERVICE ROAD PARKING & SWEEP PATH**

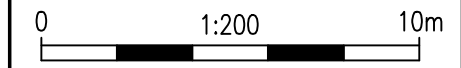
FIGURE No:
70059704-TP-SK-52-TR19

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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:36, by Burton, Craig



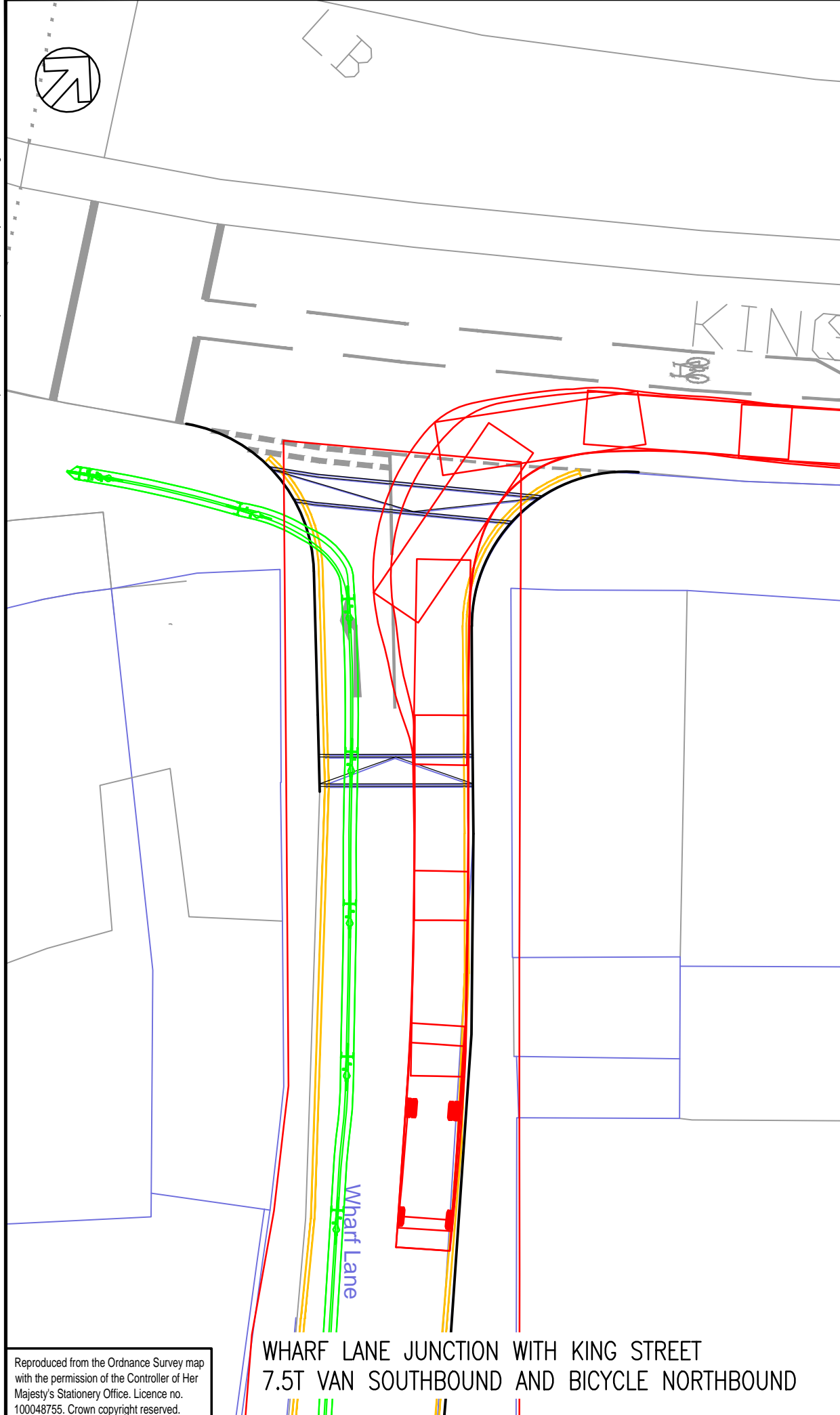
Large Car (2016)	
Overall Length	5.116m
Overall Width	1.899m
Overall Body Height	1.526m
Min Body Ground Clearance	0.311m
Track Width	1.834m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.150m



TITLE:
**HOPKINS MASTERPLAN
 PROPOSED HIGHWAY ARRANGEMENT
 EXISTING PRIVATE ROAD ACCESS**

FIGURE No:
70059704-TP-SK-52-TR17

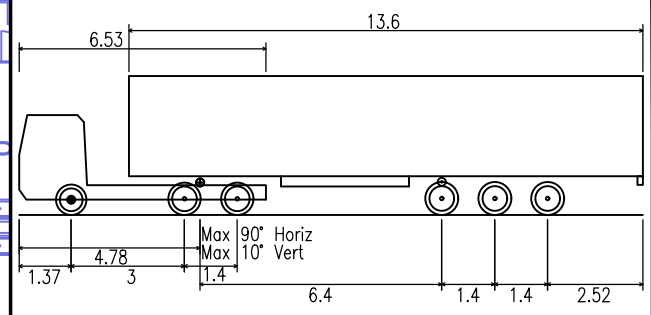
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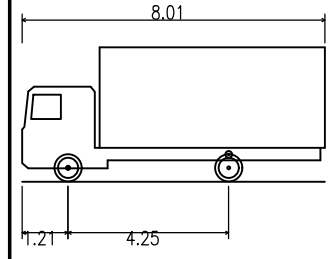
WHARF LANE JUNCTION WITH KING STREET
7.5T VAN SOUTHBOUND AND BICYCLE NORTHBOUND



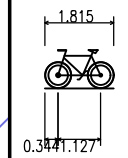
WHARF LANE JUNCTION WITH EMBANKMENT
16.5m ARTIC NORTHBOUND AND BICYCLE SOUTHBOUND



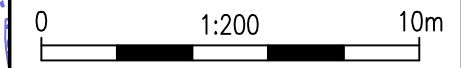
Max Legal Length Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.530m



7.5t Box Van	
Overall Length	8.010m
Overall Width	2.100m
Overall Body Height	3.556m
Min Body Ground Clearance	0.351m
Track Width	2.064m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m



WSP Bicycle	
Overall Length	1.815m
Overall Width	0.500m
Overall Body Height	1.016m
Min Body Ground Clearance	0.232m
Track Width	0.070m
Lock to lock time	2.00s
Max Wheel Angle	90.00°



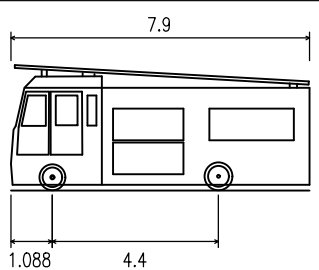
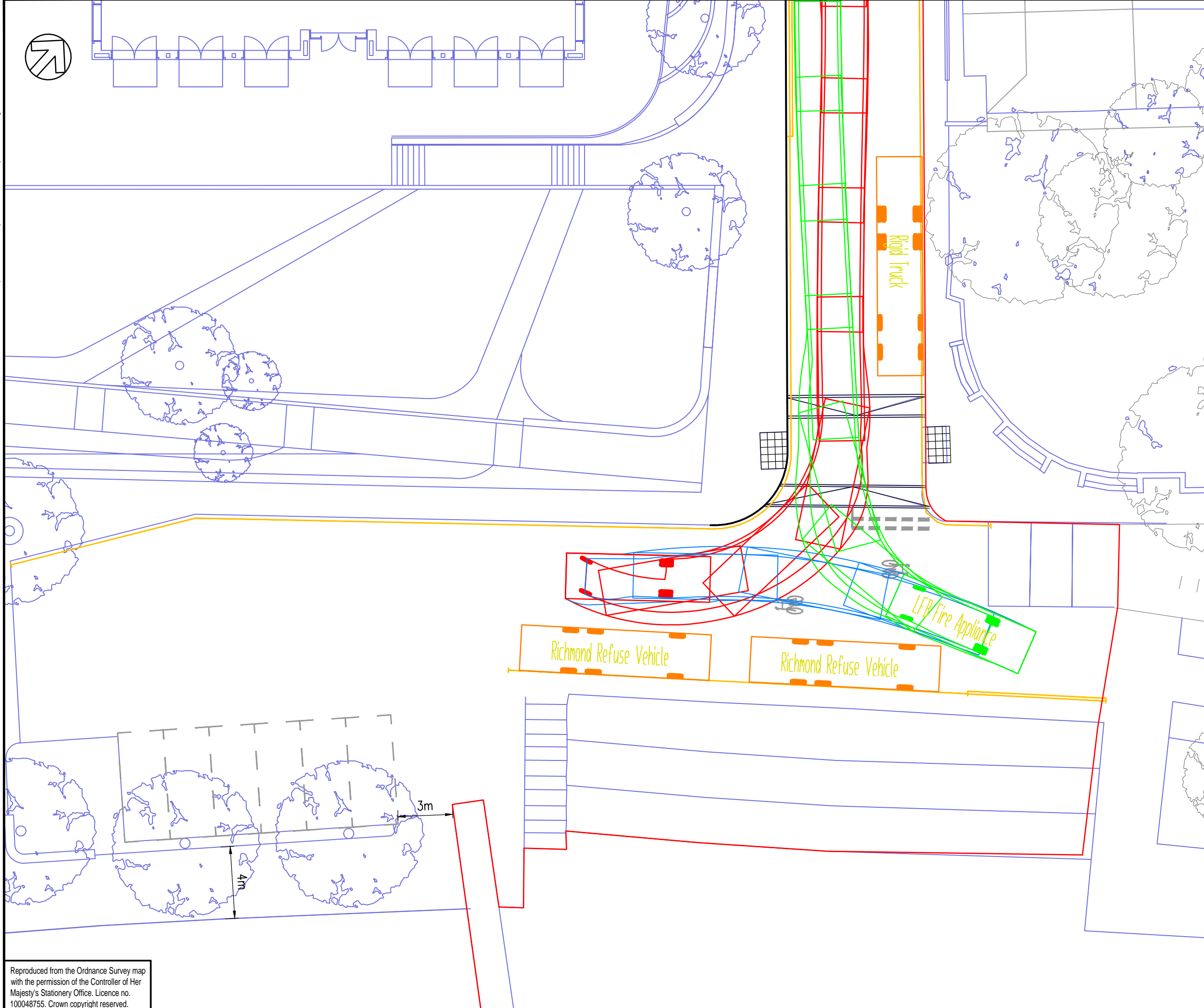
wsp

TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
BICYCLE PASSING LARGE VEHICLES

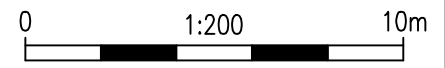
FIGURE No:
70059704-TP-SK-52-TR16

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LFB Fire Appliance
Overall Length 7.900m
Overall Width 2.500m
Overall Body Height 3.314m
Min Body Ground Clearance 0.154m
Max Track Width 2.121m
Lock to Lock Time 6.00s
Kerb to Kerb Turning Radius 8.400m



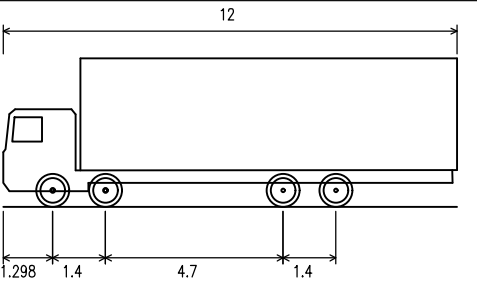
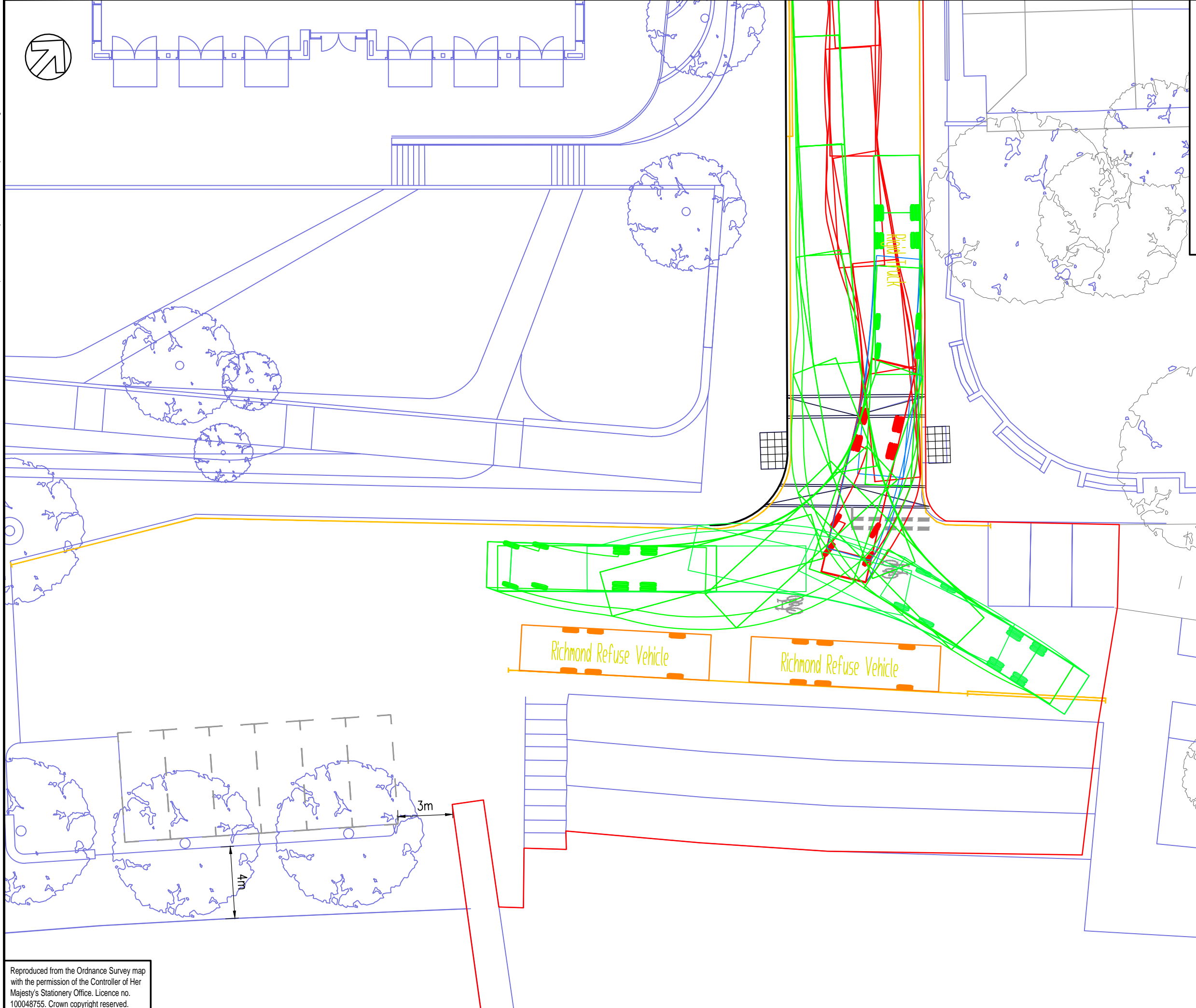
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TITLE: HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
6 TRANSIT BAYS WIDER FOOTWAY
FIRE TURNING SWEEP PATH ANALYSIS

FIGURE No: 70059704-TP-SK-52-TR14

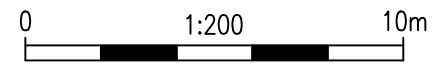
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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704-TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:06, by Burton, Craig



Rigid Truck	
Overall Length	12.000m
Overall Width	2.500m
Overall Body Height	3.928m
Min Body Ground Clearance	0.412m
Track Width	2.471m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	11.900m

THE PURPOSE OF THIS SWEEP PATH ANALYSIS IS TO TEST THE BUSIEST HIGHWAY CAPACITY SITUATION IN WHICH 2 REFUSE TRUCKS ARE ON SITE AS WELL AS A LARGE TRUCK. THE LIKELIHOOD OF SUCH A SITUATION HAPPENING IS LOW AND INFREQUENT.



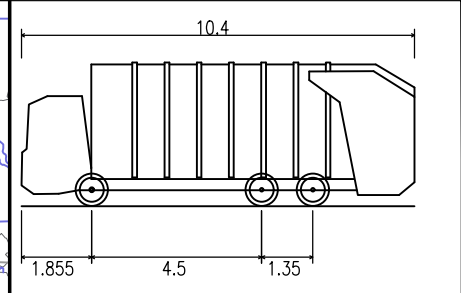
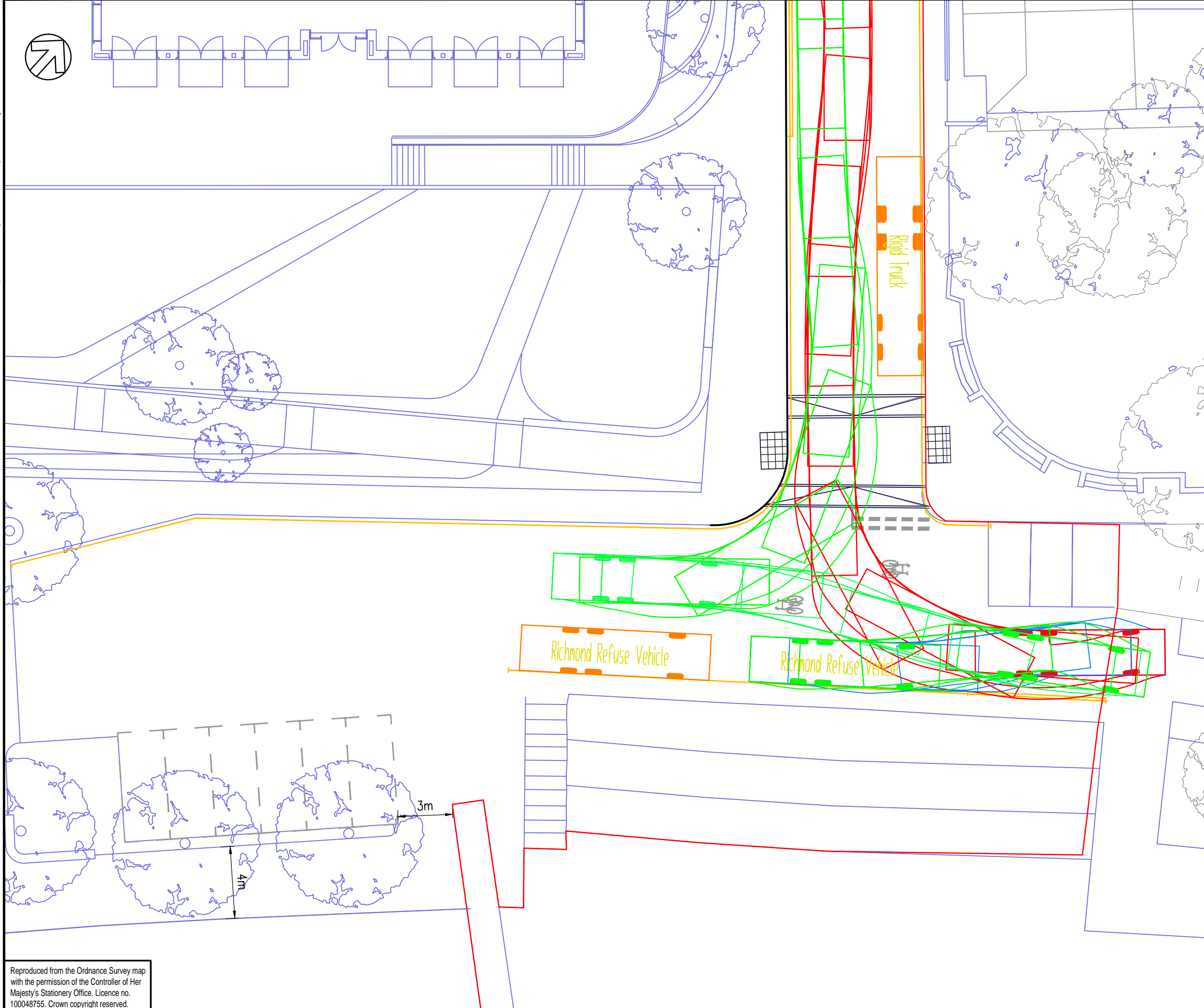
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TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
RIGID TRUCK SWEEP PATH ANALYSIS

FIGURE No:
70059704-TP-SK-52-TR13

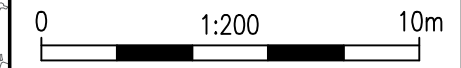
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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704-TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:01, by Burton, Craig



Richmond Refuse Vehicle
Overall Length 10.400m
Overall Width 2.500m
Overall Body Height 3.800m
Min Body Ground Clearance 0.295m
Track Width 2.450m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 9.350m

THE PURPOSE OF THIS SWEEP PATH ANALYSIS IS TO TEST THE BUSIEST HIGHWAY CAPACITY SITUATION IN WHICH 2 REFUSE TRUCKS ARE ON SITE AND ACCESS/EXIT VIA WATER. REFUSE TRACKS WILL MOST LIKELY SERVICE EPI AND THE GENERAL AREA ACCESSING VIA WATER LANE AND EXITING IN FORWARD GEAR VIA THE EMBANKMENT.



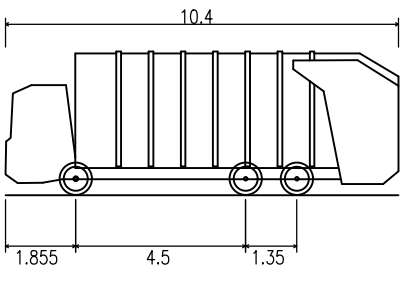
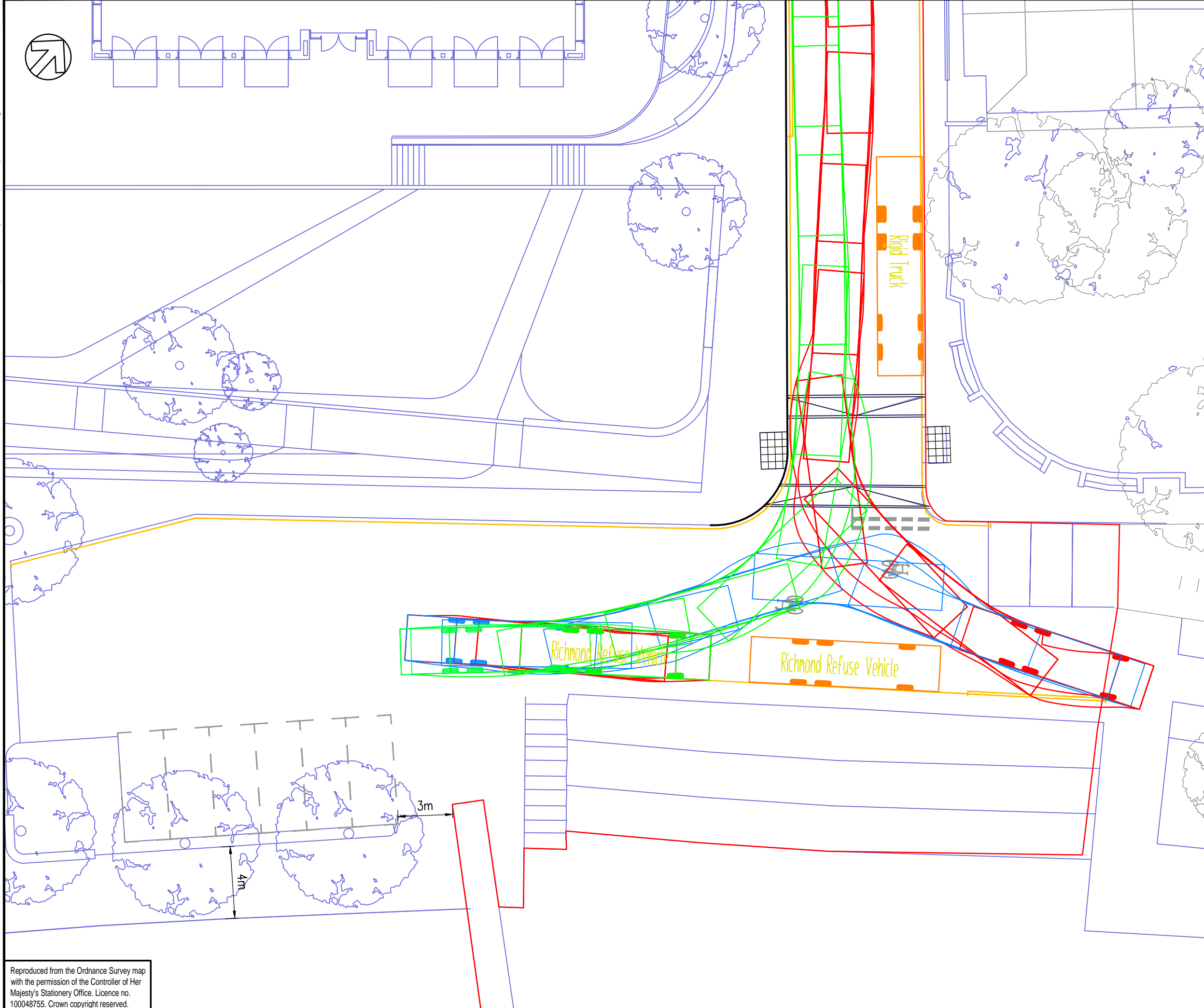
wsp

TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
REFUSE BAY SWEEP PATH ANALYSIS

FIGURE No:
70059704-TP-SK-52-TR12

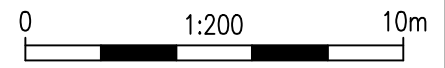
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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704-TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:55, by Burton, Craig



Richmond Refuse Vehicle	
Overall Length	10.400m
Overall Width	2.500m
Overall Body Height	3.800m
Min Body Ground Clearance	0.295m
Track Width	2.450m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.350m

THE PURPOSE OF THIS SWEEP PATH ANALYSIS IS TO TEST THE BUSIEST HIGHWAY CAPACITY SITUATION IN WHICH 2 REFUSE TRUCKS ARE ON SITE AND ACCESS/EXIT VIA WATER. REFUSE TRACKS WILL MOST LIKELY SERVICE EPI AND THE GENERAL AREA ACCESSING VIA WATER LANE AND EXITING IN FORWARD GEAR VIA THE EMBANKMENT.



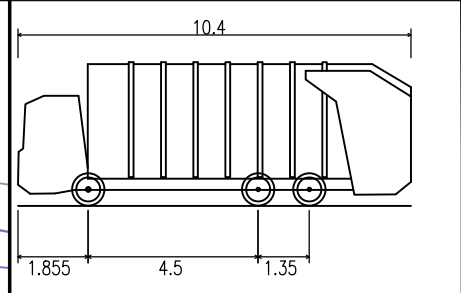
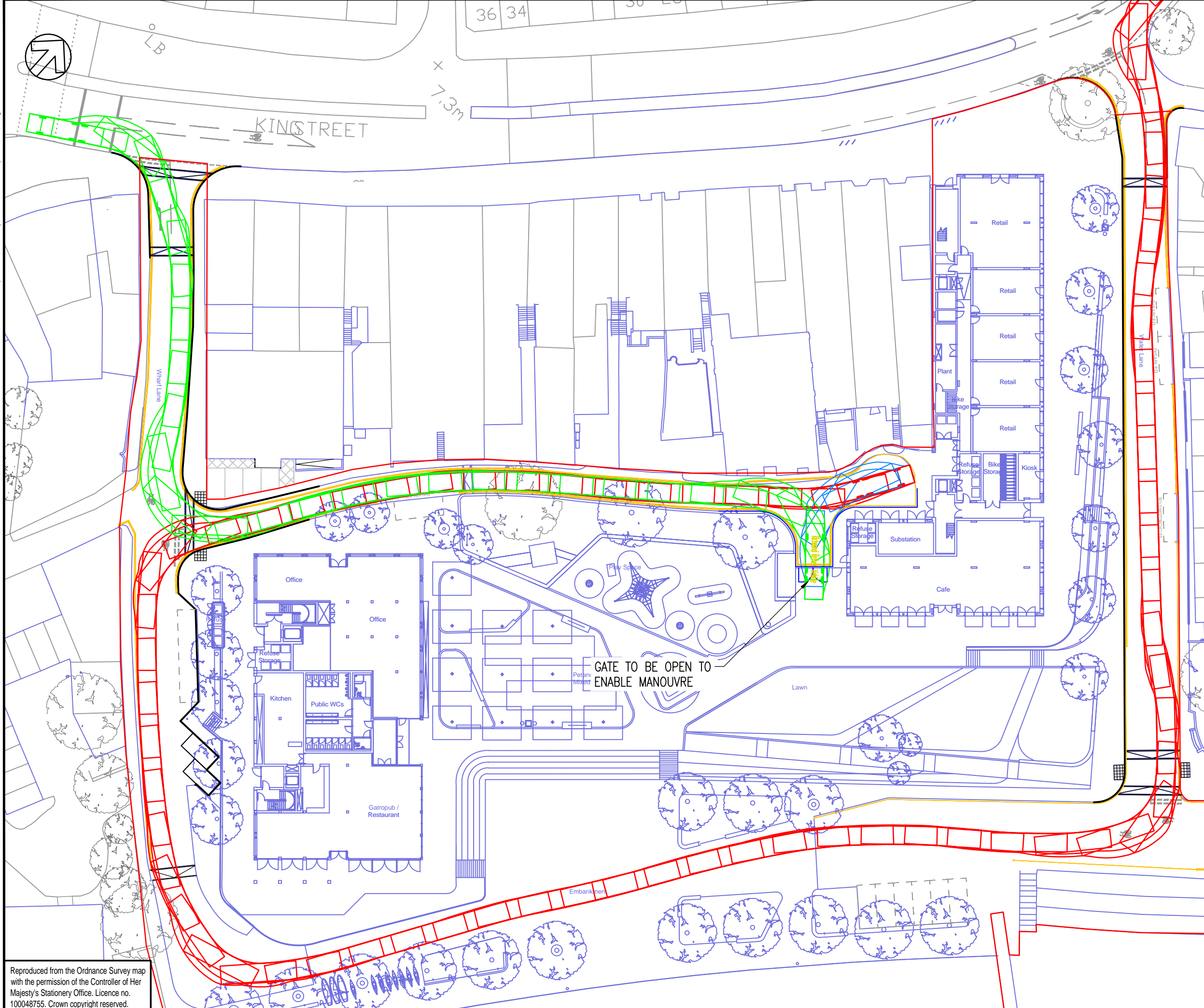
wsp

TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
REFUSE BAY SWEEP PATH ANALYSIS

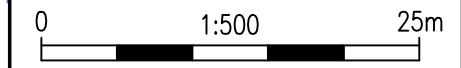
FIGURE No:
70059704-TP-SK-52-TR11

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Richmond Refuse Vehicle
Overall Length 10.400m
Overall Width 2.500m
Overall Body Height 3.800m
Min Body Ground Clearance 0.295m
Track Width 2.450m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 9.350m



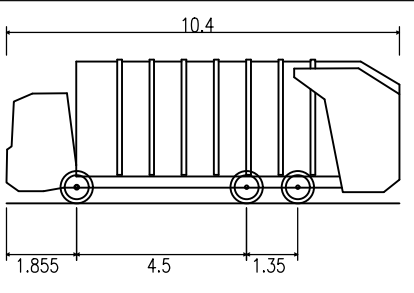
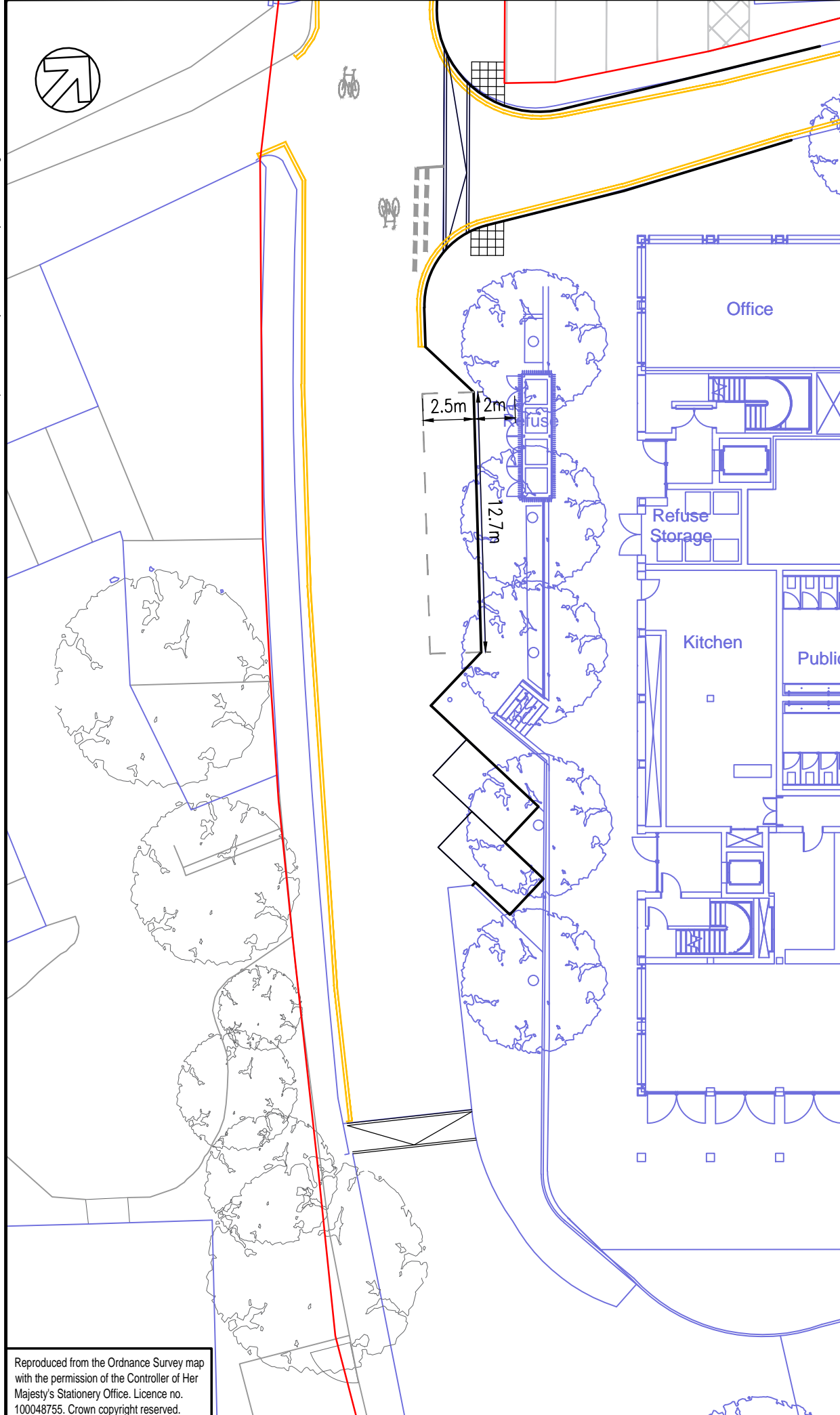
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TITLE: HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
SERVICE ROAD REFUSE ACCESS
SWEEP PATH ANALYSIS

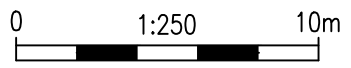
FIGURE No: 70059704-TP-SK-52-TR10

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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:05:41, by Burton, Craig



Richmond Refuse Vehicle	
Overall Length	10.400m
Overall Width	2.500m
Overall Body Height	3.800m
Min Body Ground Clearance	0.295m
Track Width	2.450m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.350m

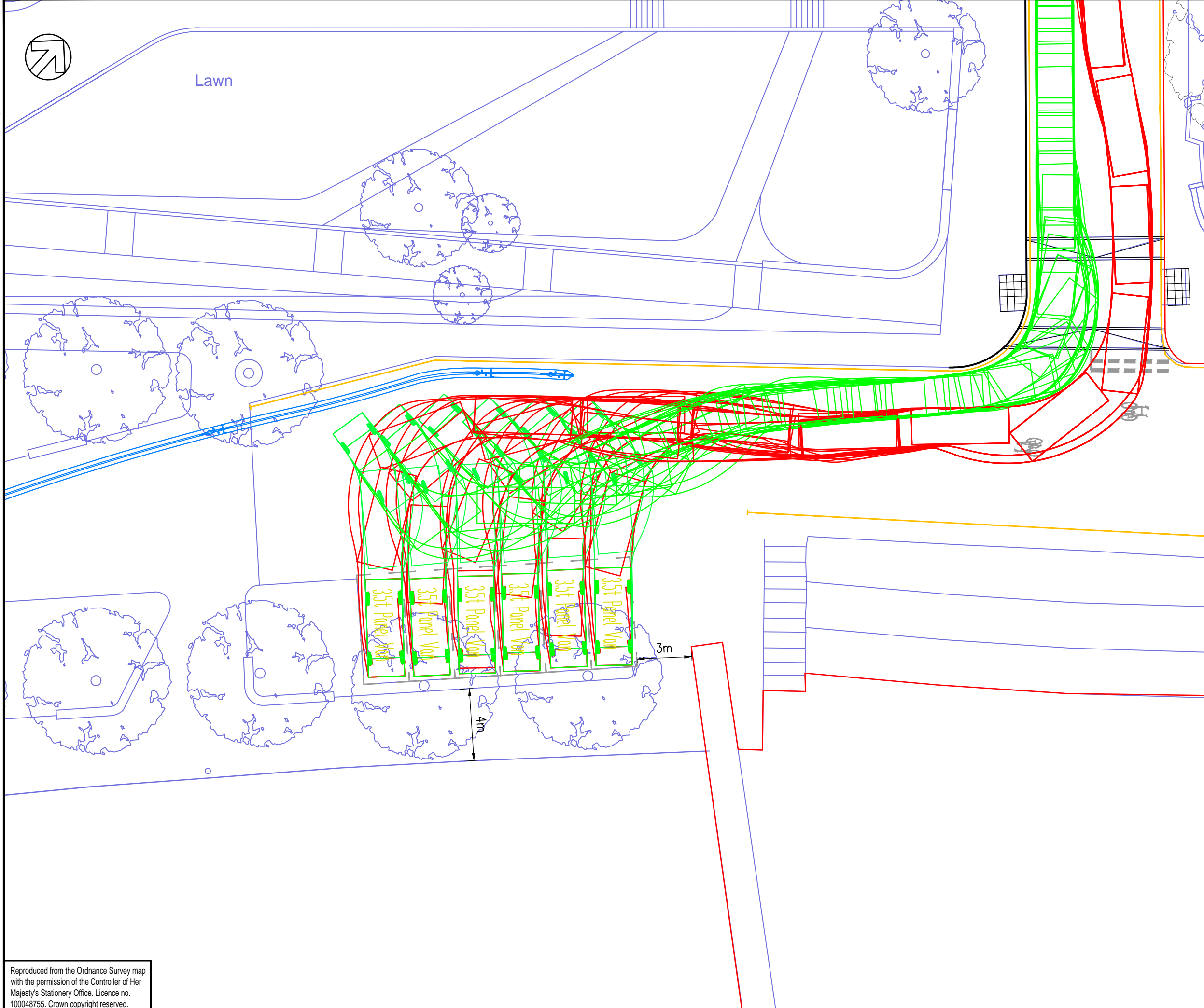


TITLE:
**HOPKINS MASTERPLAN
 PROPOSED HIGHWAY ARRANGEMENT
 PROP SERVICE RD BAY & FIRE PASSING**

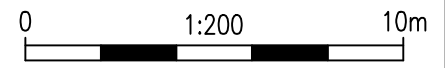
FIGURE No:
70059704-TP-SK-52-TR9

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File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:06:33, by Burton, Craig



	5.35
3.5t Panel Van	
Overall Length	5.350m
Overall Width	1.970m
Overall Body Height	2.562m
Min Body Ground Clearance	0.335m
Track Width	1.970m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.850m

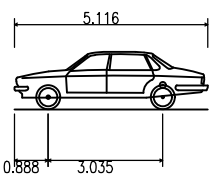
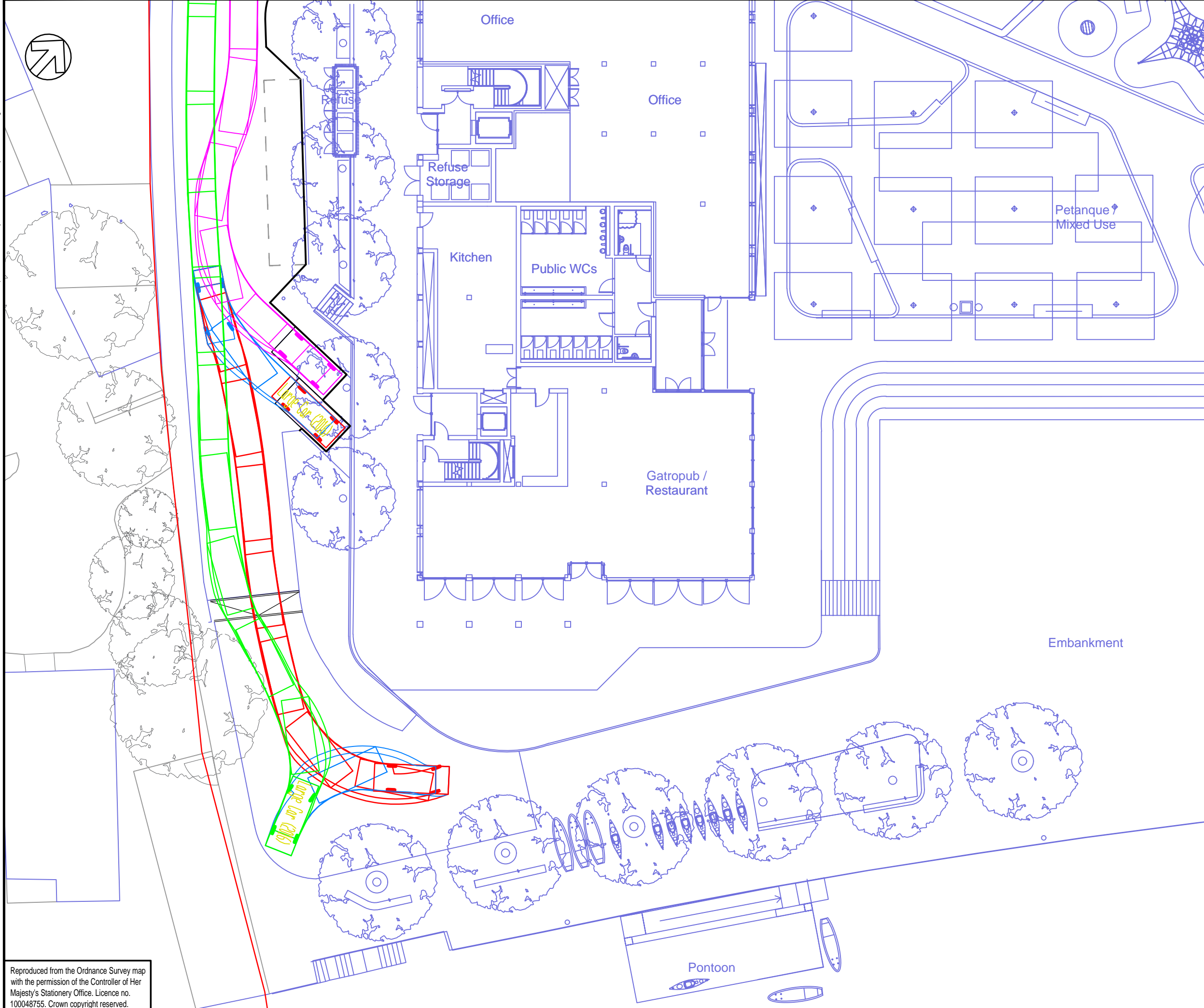


TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
EEL PIE ISLAND BAYS SWEEP PATHS

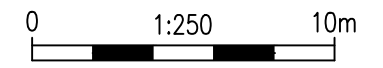
FIGURE No:
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Large Car (2016)	
Overall Length	5.116m
Overall Width	1.899m
Overall Body Height	1.526m
Min Body Ground Clearance	0.311m
Track Width	1.834m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.150m

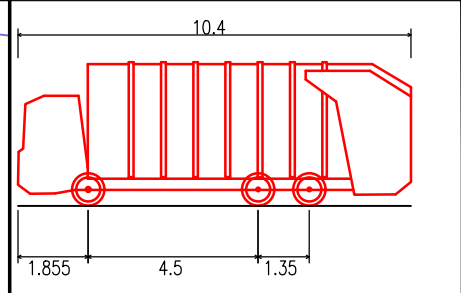
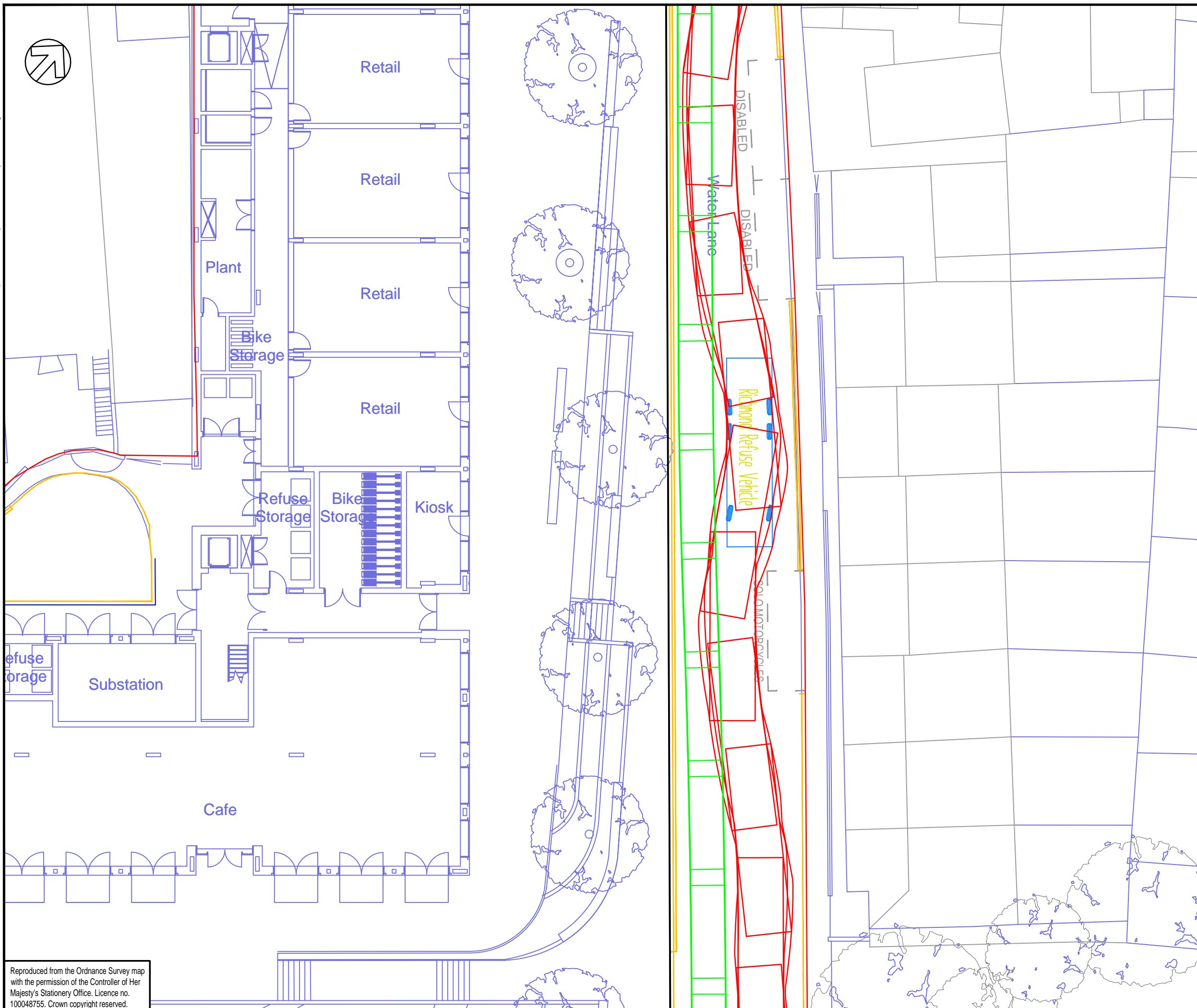


TITLE:
**HOPKINS MASTERPLAN
 PROPOSED HIGHWAY ARRANGEMENT
 WHARF LN PARKING & SWEEP PATH**

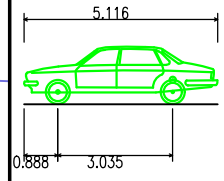
FIGURE No:
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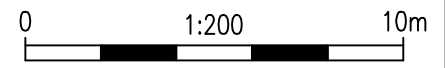
File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:05:07, by Burton, Craig



Richmond Refuse Vehicle
 Overall Length 10.400m
 Overall Width 2.500m
 Overall Body Height 3.800m
 Min Body Ground Clearance 0.295m
 Track Width 2.450m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 9.350m



Large Car (2016)
 Overall Length 5.116m
 Overall Width 1.899m
 Overall Body Height 1.526m
 Min Body Ground Clearance 0.311m
 Track Width 1.834m
 Lock to lock time 4.00s
 Kerb to Kerb Turning Radius 6.150m

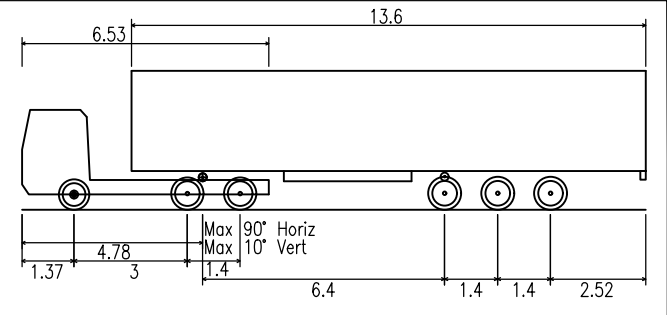
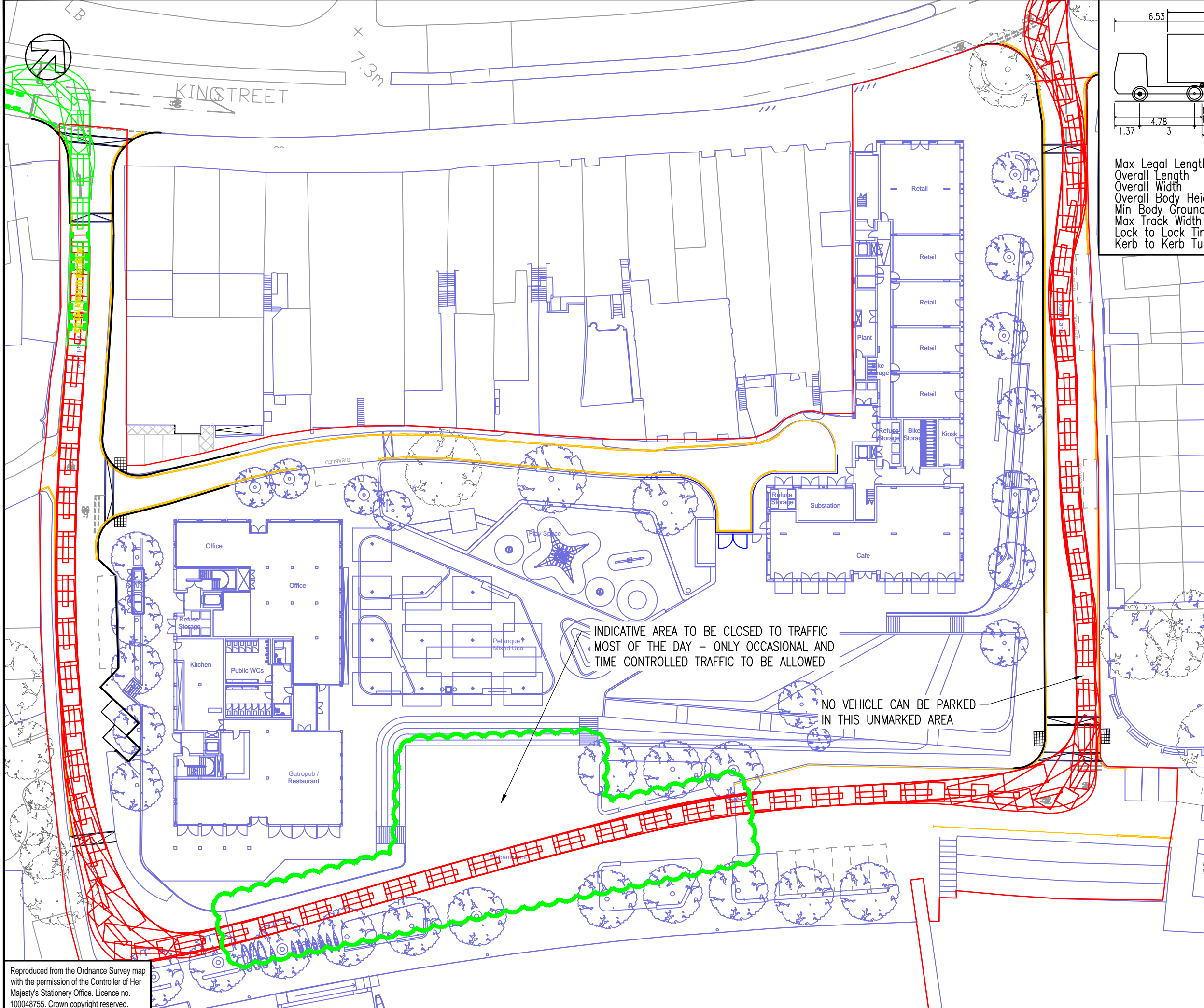


TITLE:
 HOPKINS MASTERPLAN
 PROPOSED HIGHWAY ARRANGEMENT
 2 BB BAYS ON WATER LANE

FIGURE No:
 70059704-TP-SK-52-TR4

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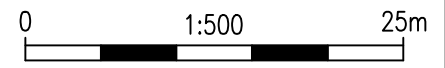
File name \\UK.WSPGROUP.COM\CENTRAL_DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\03 WIPWSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-52.DWG, printed on 27 July 2021 13:05:01, by Burton, Craig



Max Legal Length Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.530m

INDICATIVE AREA TO BE CLOSED TO TRAFFIC MOST OF THE DAY - ONLY OCCASIONAL AND TIME CONTROLLED TRAFFIC TO BE ALLOWED

NO VEHICLE CAN BE PARKED IN THIS UNMARKED AREA

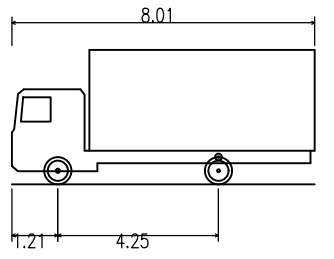
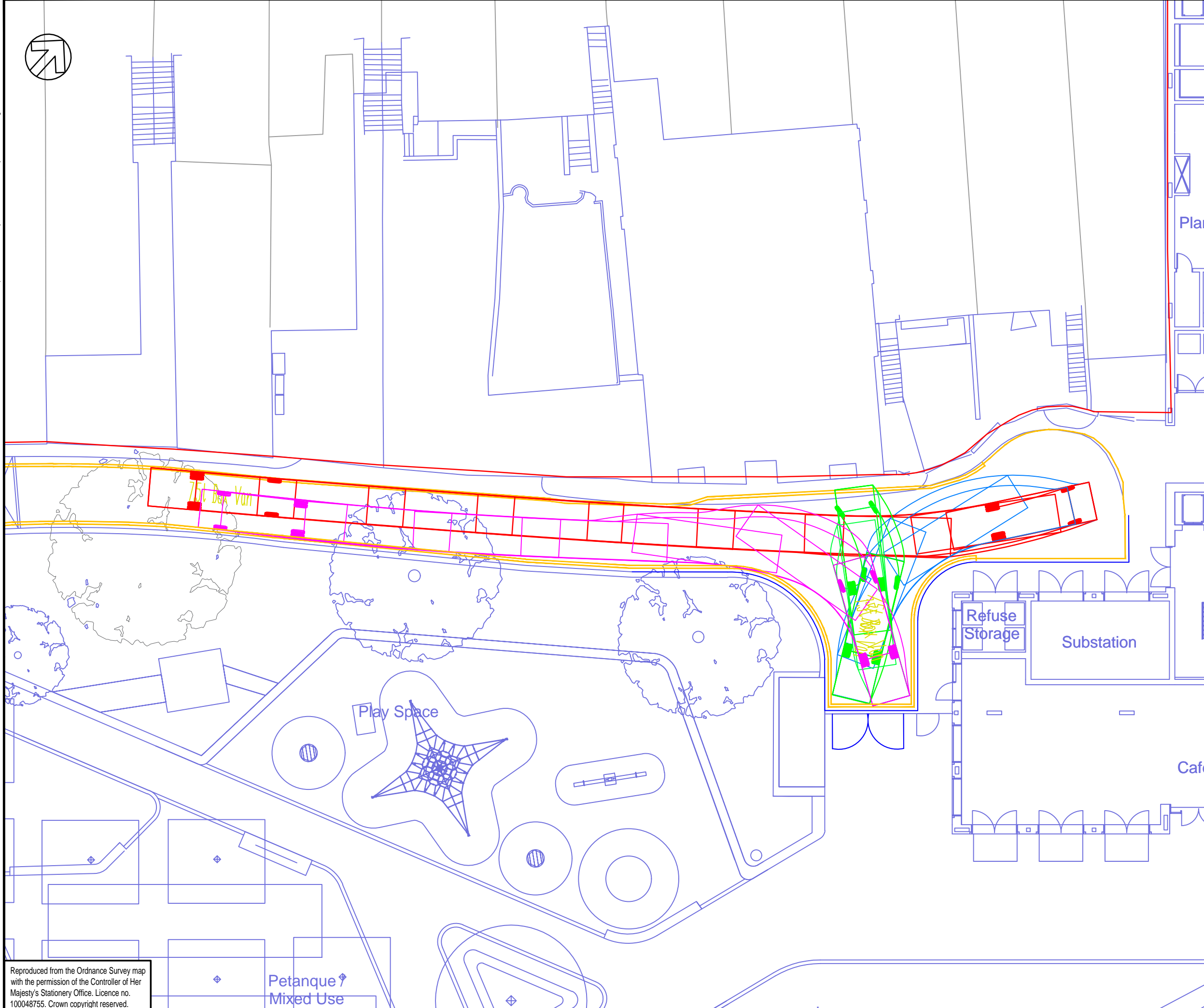


TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
ARTIC SWEPT PATH

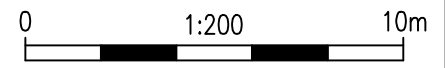
FIGURE No:
70059704-TP-SK-52-TR3

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7.5t Box Van
Overall Length 8.010m
Overall Width 2.100m
Overall Body Height 3.556m
Min Body Ground Clearance 0.351m
Track Width 2.064m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 7.400m



TITLE:
HOPKINS MASTERPLAN
PROPOSED HIGHWAY ARRANGEMENT
7.5T VAN 5-POINT TURN MANOEUVRE

FIGURE No:
70059704-TP-SK-52-TR2

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Petanque
Mixed Use

Appendix E

ATZ PHOTOS



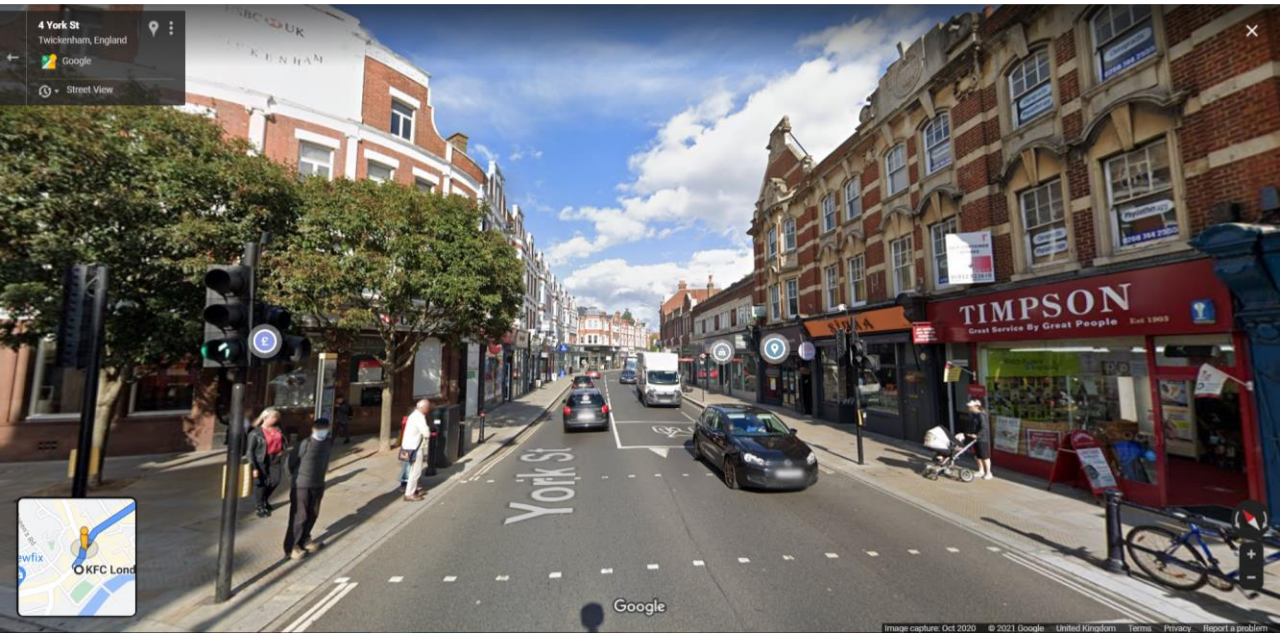
Twickenham Riverside ATZ

Route 1 – To Twickenham Railway station





Route 2 – To Orleans Park School





Route 3 – To York House Gardens





Route 4 – To St Catherine's School





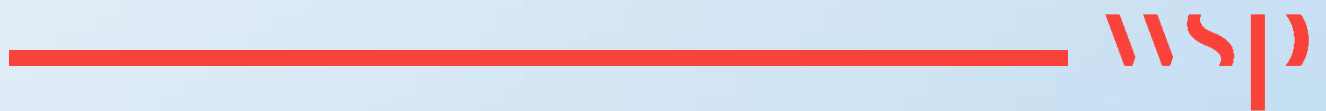
Route 5 – To St Richard Reynolds Catholic
School



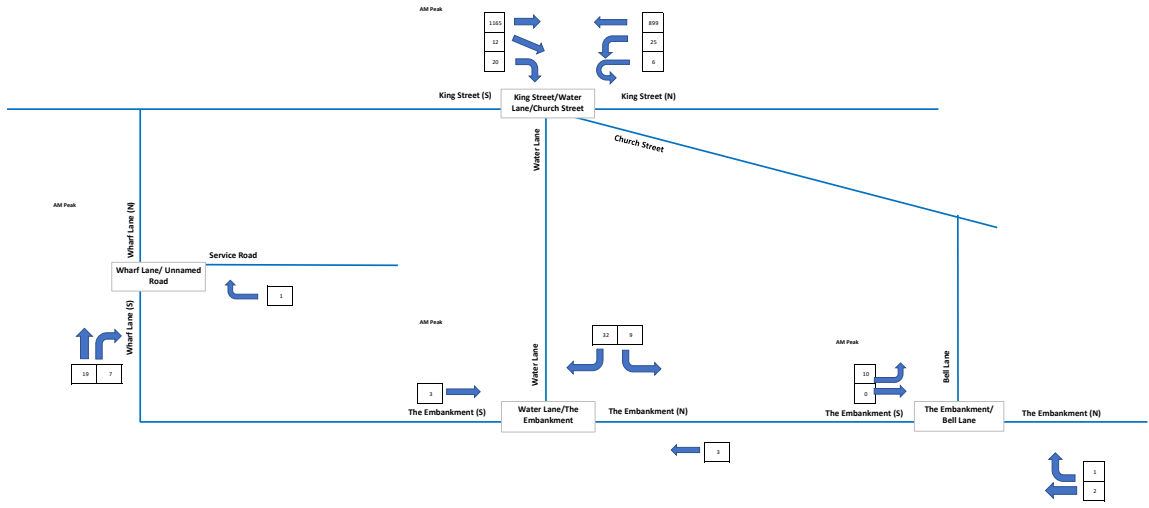


Appendix F

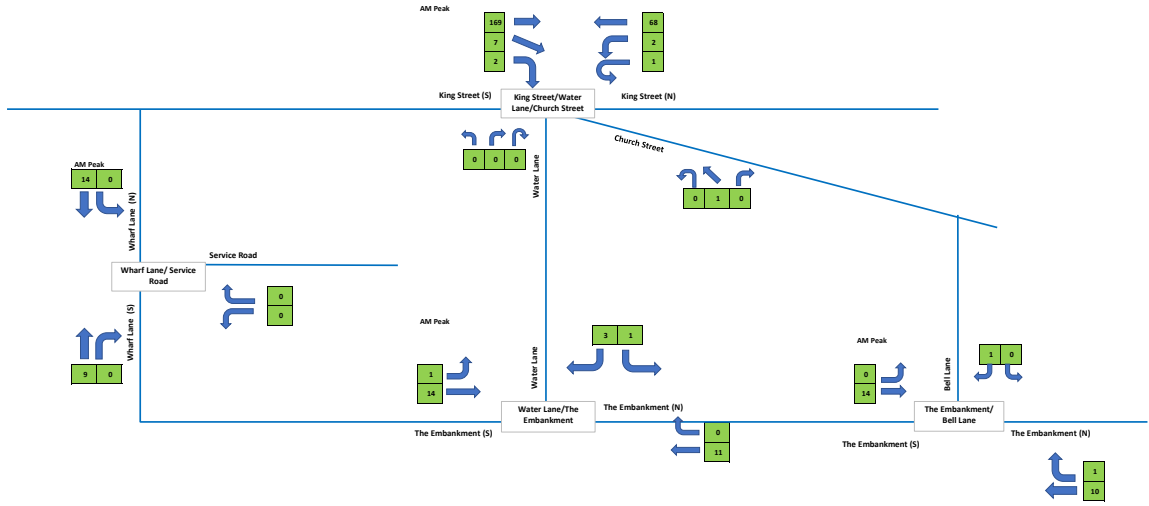
MCC ANALYSIS



AM Average, AM Peak, 08:00-09:00



AM Average, AM Peak, 08:00-09:00



Summary

Vehicles

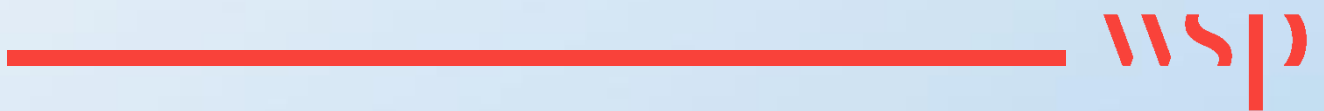
Junction	Arm	Weekday		Weekend		Event Day	
		AM Flow	PM Flow	AM Flow	PM Flow	AM Flow	PM Flow
King Street/Church Street/Water Lane	King Street (N)	929	1043	684	830	711	743
	Church Street	0	0	0	0	0	0
	Water Lane	0	0	0	0	0	0
The Embankment/Bell Lane	King Street (S)	1196	1108	733	936	804	851
	Embankment	2	3	1	10	5	6
The Embankment/Bell Lane	Embankment	10	20	7	19	4	8
	Bell Lane	0	0	0	0	0	0
The Embankment/Water Lane	Embankment	3	4	0	8	3	12
	Embankment	3	3	1	6	1	1
	Water Lane	41	67	58	63	48	45
Wharf Lane/Service Road	Wharf Lane (N)	0	0	0	0	0	0
	Service Road	1	6	4	5	2	3
Wharf Lane/Service Road	Service Road	1	6	4	5	2	3
	Wharf Lane (S)	25	49	36	58	29	38

Cyclists

Junction	Arm	Weekday		Weekend		Event Day	
		AM Flow	PM Flow	AM Flow	PM Flow	AM Flow	PM Flow
King Street/Church Street/Water Lane	King Street (N)	71	114	58	24	96	38
	Church Street	1	4	1	4	0	0
	Water Lane	0	1	0	0	2	2
The Embankment/Bell Lane	King Street (S)	178	55	29	36	61	25
	The Embankment (N)	10	14	1	12	3	1
The Embankment/Bell Lane	The Embankment (S)	14	10	1	2	10	0
	Bell Lane	1	0	0	0	0	0
The Embankment/Water Lane	The Embankment (N)	11	14	0	12	3	4
	The Embankment (S)	15	10	4	4	11	10
	Water Lane	3	4	4	3	6	3
Wharf Lane/Service Road	Wharf Lane (N)	14	5	5	3	3	1
	Service Road	0	1	1	0	1	1
Wharf Lane/Service Road	Service Road	0	1	1	0	1	1
	Wharf Lane (S)	9	15	0	12	1	0

Appendix G

ROAD SAFETY AUDIT STAGE 1





Road Safety Audit Stage 1

Twickenham Riverside

Prepared for: London Borough of Richmond upon Thames

Document Reference: 100006871

Date: September 2020

Created by
Steven Alexander
Steven.Alexander@projectcentre.co.uk
0330 008 8447

DOCUMENT CONTROL

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Rev	V01		
Reason	Issue 01		
Prepared by	J. Chana		
Date	14/09/2020		
Reviewed by	S. Alexander		
Date	15/09/2020		
Authorised by	T Mantle		
Date	19/09/2020		

File path: \\itservices.local\shared\$\Project Centre\Project-BST\1000006871 - LBRuT
Twickenham Riverside RSA 1\2 Project Delivery\3 Reports\1 final Reports\2020-09-11
Twickenham Riverside RSA 1.docx

CONTENTS PAGE	PAGE NO.
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2. ITEMS RAISED AT PREVIOUS ROAD SAFETY AUDIT(S)	3
3. STAGE 1 ROAD SAFETY AUDIT	4
3.1 GENERAL	4
3.2 LOCAL ALIGNMENT	4
3.3 JUNCTIONS	5
3.4 WALKING, CYCLING AND HORSE RIDING	5
3.5 TRAFFIC SIGNS, CARRIAGEWAY MARKING AND STREET LIGHTING	6
4. AUDIT TEAM STATEMENT	7
APPENDIX A	
APPENDIX B	
QUALITY	

1. SCHEME DETAILS

1.1 Project Details

Report Title:	Stage 1 Road Safety Audit Twickenham Riverside
Date:	15/09/2020
Document Reference and Revision:	1000006871
Prepared by:	Steven Alexander, Project Centre, The Urban Building, Albert Street, Slough, SL1 2BE
On behalf of: (Overseeing Organisation)	Rob Parsey London Borough of Richmond upon Thames, Civic Centre, 44 York Street, Twickenham, TW1 3BZ
Design Organisation:	WSP WSP House 70 Chancery Lane London WC2A 1AF

1.2 Introduction

- 1.2.1 This report details the results of a Stage 1 Road Safety Audit undertaken in September 2020 on the proposed alterations to Twickenham Riverside at Wharf Lane and Water Lane, in the London Borough of Richmond.
- 1.2.2 The scheme is located off Kings Road in central Twickenham, at the junctions of Wharf Lane and Water Lane. The works consist of:
- Conversion of Wharf Lane and Water Lane to two-way working;
 - Closure of The Embankment along the riverside, except to pedestrians and cyclists; and
 - Widening of the junction mouths of Wharf Lane and Water Lane with Kings Road to accommodate two-way traffic.
- 1.2.3 The report has been prepared in response to a brief provided by the Overseeing Organisation detailed above in September 2020.
- 1.2.4 The Road Safety Audit Team consists of:
- Steven Alexander Team Leader
 - Jatindra Chana Team Member
- 1.2.5 The Audit took place at the Slough office of Project Centre in September 2020 and comprised of an examination of the drawings and documents as listed in Appendix A of this report.

- 1.2.6 The Audit Team visited the site together on Thursday 10th September 2020. The weather was sunny and dry. Traffic conditions were free-flowing.
- 1.2.7 The terms of reference of the Road Safety Audit are as described in GG 119 (formerly HD19/15). 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.
- 1.2.8 Personal Injury Collision Data was not provided on this occasion. However, a review of the online software 'CRASHMAP' indicated that, in the last 5 years, there were no collisions on either Wharf Lane or Water Lane. However, on Kings Road there was one slight collision near Wharf Lane and three slight collisions and one serious collision at the junction with Water Lane.
- 1.2.9 No details of any departures from standards have been provided.
- 1.2.10 The plans did not include any reference to the features listed below. As such these have been excluded from this Road Safety Audit:
- Surface drainage features, such as gullies;
 - Changes to road signs;
 - Pedestrian and cyclist features on The Embankment.
- 1.2.11 All comments and recommendations are referenced to the design drawings and A4 location plans in Appendix B of this report.

2. ITEMS RAISED AT PREVIOUS ROAD SAFETY AUDIT(S)

2.1 Summary

2.1.1 No previous Road Safety Audits were provided to the Audit Team.

3. STAGE 1 ROAD SAFETY AUDIT

3.1 GENERAL

3.1.1 PROBLEM

Location: Wharf Lane and Water Lane.

Summary: Narrow two-way road may lead to a risk of collisions between vehicles and between vehicles and cyclists.

Detail: Both Wharf Lane and Water Lane are currently narrow one-way roads with parking restricting the carriageway width further. It is proposed to convert them to two-way roads. The Audit Team are aware that traffic volumes will be reduced as these roads will be for access only. However, there is still a risk that vehicles approaching in opposite directions have insufficient width to pass each other. As a result, they may need to reverse or mount the footway to proceed, resulting in an increased risk of collisions with other road users such as pedestrians.

There is an existing cycle contra-flow on Wharf Lane that will be redundant when the two-way flow is in operation. Cyclists may be at particular risk of injury at pinch points, as motorists may not leave them enough room to pass.

Recommendation: Ensure that any pinch points on the carriageway are minimised so that there is sufficient width for vehicles to pass each other safely.

3.2 LOCAL ALIGNMENT

3.2.1 PROBLEM

Location: Wharf Lane and Water Lane.

Summary: Insufficient width at junction mouths, resulting in collisions between vehicles travelling in opposite directions and collisions between vehicles and pedestrians.

Detail: The swept path analysis drawings show significant overlap between vehicles entering and exiting the junctions. There are also instances of the swept paths crossing the kerb lines.

The narrow junction mouths may lead to a risk of vehicles colliding with other vehicles at the junction; or over-running the footway and striking pedestrians.

Recommendation: If possible, retain the one-way arrangement for Wharf Lane and Water Lane. As a minimum, provide bell-bollards or other physical features on the corners of the junctions to protect waiting pedestrians.

3.2.2 PROBLEM

Location: Wharf Lane and Water Lane.

Summary: Two-way working introduces the risk of reversing vehicles, which may result in collisions between vehicles and collisions between vehicles and pedestrians.

Detail: It is proposed to provide two-way working on Wharf Lane and Water Lane, however the Audit Team have not been provided with details of how and where vehicles will be expected to turn around to exit the two roads.

If there is insufficient room for vehicles to turn around, then they may have to reverse out of the two roads, resulting in an increased risk of collisions with other vehicles and with pedestrians.

- 3.2.3 **Recommendation: Ensure that there is sufficient carriageway space at the ends of Wharf Lane and Water Lane for vehicles to turn around.**

3.3 JUNCTIONS

- 3.3.1 No issues have been identified at this location.

3.4 WALKING, CYCLING AND HORSE RIDING

3.4.1 **PROBLEM:**

Location: North-west corner of Water Lane.

Summary: Proposed kerb line runs alongside the existing bench, increasing the risk of pedestrian injury or vehicle damage.

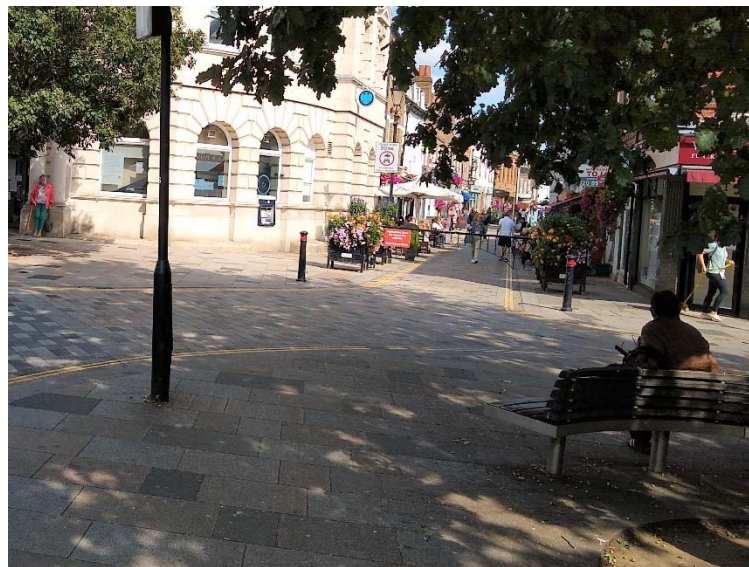


Figure 1 – Bench alongside carriageway

Detail: It is proposed to run the western kerb line of Water Lane directly alongside an existing seating bench. Pedestrians sitting at the bench may be struck by a passing vehicle. Vehicles may also strike the bench while manoeuvring, resulting in damage or injury.

Recommendation: Ensure that the kerb line of the carriageway is kept a suitable distance away from any street furniture.

3.4.2 **PROBLEM:**

Location: Junction mouths of Wharf Lane and Water Lane.

Summary: Pedestrians with sight impairments may enter the road without realising, resulting in conflict with passing traffic leading to injury.

Detail: It is proposed to provide raised tables at the junctions with Wharf Lane and Water Lane. The details of the surfacing have not been provided, however if the raised tables are installed in a similar way to the existing, then there will not be a significant colour contrast between the surface of the carriageway and the footway. There is a risk that pedestrians with sight impairments may enter the road without realising and come into conflict with traffic, resulting in pedestrian injury.



Recommendation: Provide suitable high-contrast tactile paving on the footway at the pedestrian crossing points, to warn pedestrians with sight impairments that they are entering a traffic environment.

3.5 TRAFFIC SIGNS, CARRIAGEWAY MARKING AND STREET LIGHTING

3.5.1 No issues have been identified at this location.

4. AUDIT TEAM STATEMENT

We certify that this road safety audit has been carried out in accordance with GG 119.

ROAD SAFETY AUDIT TEAM LEADER	
Name:	Steven Alexander
Signed:	
Organisation:	Project Centre Ltd
Date:	14/09/2020
ROAD SAFETY AUDIT TEAM MEMBER	
Name:	Jatindra Chana
Signed:	
Organisation:	Project Centre Ltd
Date:	15/09/2020

Appendix A

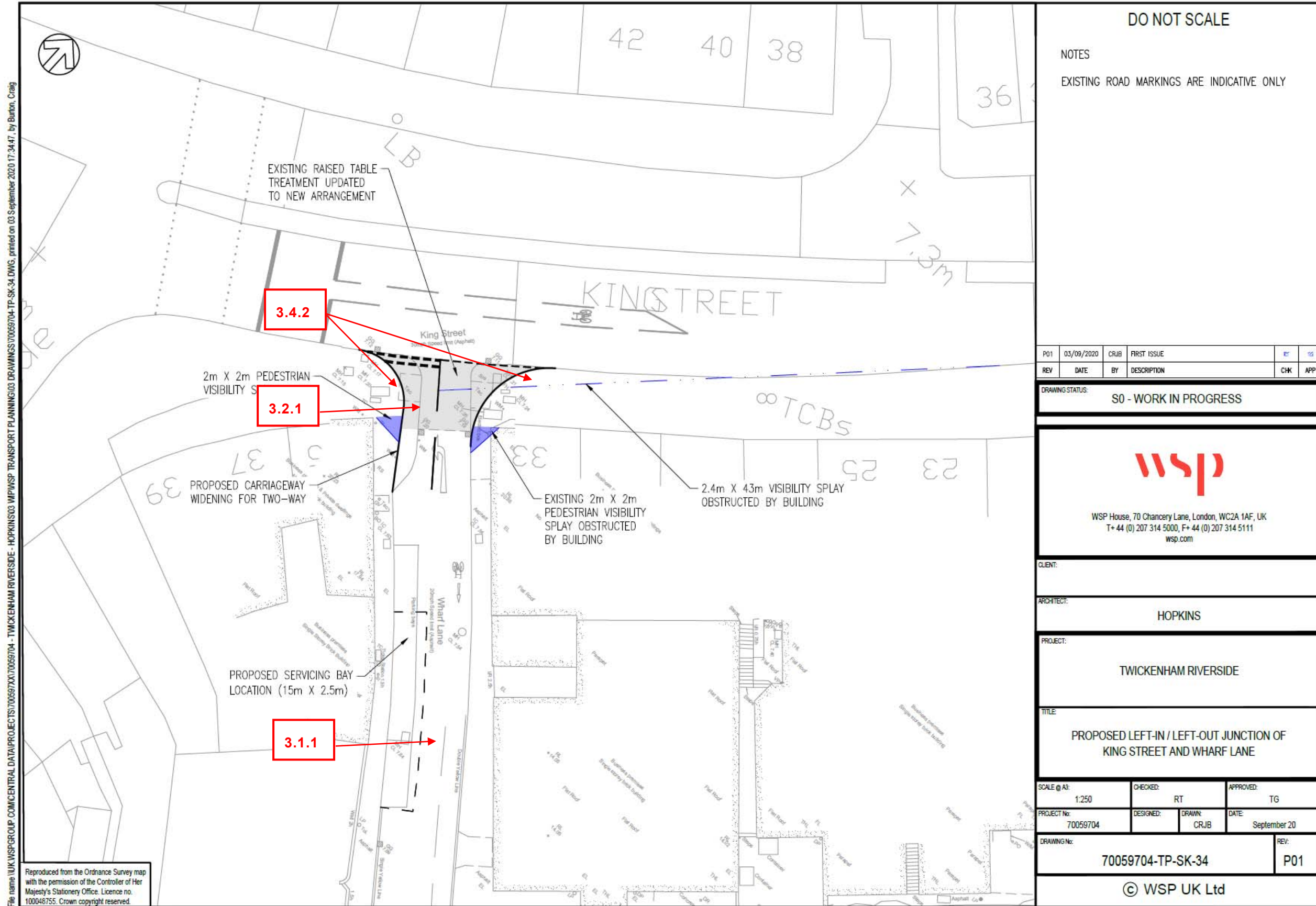
SCHEDULE OF DOCUMENTS EXAMINED

(Documents Forming the Audit Brief)

Title	Numbers (s)
PROPOSED LEFT-IN / LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE	70059704-TP-SK-34 P01
PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE REFUSE SWEPT PATH ANALYSIS	70059704-TP-SK-34-TR1
PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE 10m RIGID SWEPT PATH ANALYSIS	70059704-TP-SK-34-TR2
ROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE 7.5T BOX VAN SWEPT PATH ANALYSIS	70059704-TP-SK-34-TR3
PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE 3.5T PANEL VAN SWEPT PATH ANALYSIS	70059704-TP-SK-34-TR4
PROPOSED LEFT-IN/LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE LARGE CAR SWEPT PATH ANALYSIS	70059704-TP-SK-34-TR5
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER	70059704-TP-SK-35 P01
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 12m RIGID SWEPT PATH ANALYSIS	70059704-TP-SK-35-TR1
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER REFUSE SWEPT PATH ANALYSIS	70059704-TP-SK-35-TR2
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 7.5T BOX VAN SWEPT PATH ANALYSIS	70059704-TP-SK-35-TR3
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER 3.5T PANEL VAN SWEPT PATH ANALYSIS	70059704-TP-SK-35-TR4
PROPOSED JUNCTION OF KING STREET AND WATER LANE WITH EXIT LANE TAPER LARGE CAR SWEPT PATH ANALYSIS	70059704-TP-SK-35-TR5
Proposed Site Plan	TRS-HAL-ZZ-ZZ-DR-A-3100
Ground Floor Plan - DJG Floodplain Overlay	SK-001 P03

OTHER DOCUMENTS: - N/A

Appendix B



DO NOT SCALE

NOTES
EXISTING ROAD MARKINGS ARE INDICATIVE ONLY

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	03/09/2020	CRJB	FIRST ISSUE		

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

wsp

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK
T+ 44 (0) 207 314 5000, F+ 44 (0) 207 314 5111
wsp.com

CLIENT:

ARCHITECT: **HOPKINS**

PROJECT: **TWICKENHAM RIVERSIDE**

TITLE: **PROPOSED LEFT-IN / LEFT-OUT JUNCTION OF KING STREET AND WHARF LANE**

SCALE @ A3:	CHECKED:	APPROVED:	
1:250	RT	TG	
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70059704	CRJB	CRJB	September 20
DRAWING No:	70059704-TP-SK-34		REV: P01
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File name: LUK:WSPGROUP.COM\CENTRAL DATA\PROJECTS\70059704 - TWICKENHAM RIVERSIDE - HOPKINS\3 WIP\WSP TRANSPORT PLANNING\03 DRAWINGS\70059704-TP-SK-34.DWG, printed on 03 September 2020 17:24:47, by Burton, Craig

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Quality

It is the policy of Project Centre to supply Services that meet or exceed our clients' expectations of Quality and Service. To this end, the Company's Quality Management System (QMS) has been structured to encompass all aspects of the Company's activities including such areas as Sales, Design and Client Service.

By adopting our QMS on all aspects of the Company, Project Centre aims to achieve the following objectives:

- Ensure a clear understanding of customer requirements;
- Ensure projects are completed to programme and within budget;
- Improve productivity by having consistent procedures;
- Increase flexibility of staff and systems through the adoption of a common approach to staff appraisal and training;
- Continually improve the standard of service we provide internally and externally;
- Achieve continuous and appropriate improvement in all aspects of the company;

Our Quality Management Manual is supported by detailed operational documentation. These relate to codes of practice, technical specifications, work instructions, Key Performance Indicators, and other relevant documentation to form a working set of documents governing the required work practices throughout the Company.

All employees are trained to understand and discharge their individual responsibilities to ensure the effective operation of the Quality Management System.



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tel: 0330 1358 950

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EC1V 9HL

Edinburgh Office
12 Lower Gilmore
Place
Edinburgh, EH3 9NY

Brighton Office
38 Foundry Street
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