AQUIND Limited

AQUIND INTERCONNECTOR

Environmental Statement – Volume 3 – Appendix 22.1 Transport Assessment - Low Resolution Part 2

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)

Document Ref: 6.3.22.1

PINS Ref.: EN020022

AQUIND Limited

AQUIND INTERCONNECTOR

Environmental Statement – Volume 3 – Appendix 22.1 Transport Assessment - Low Resolution Part 2

PINS REF.: EN020022

DOCUMENT: 6.3.22.1

DATE: 14 NOVEMBER 2019

WSP

WSP House

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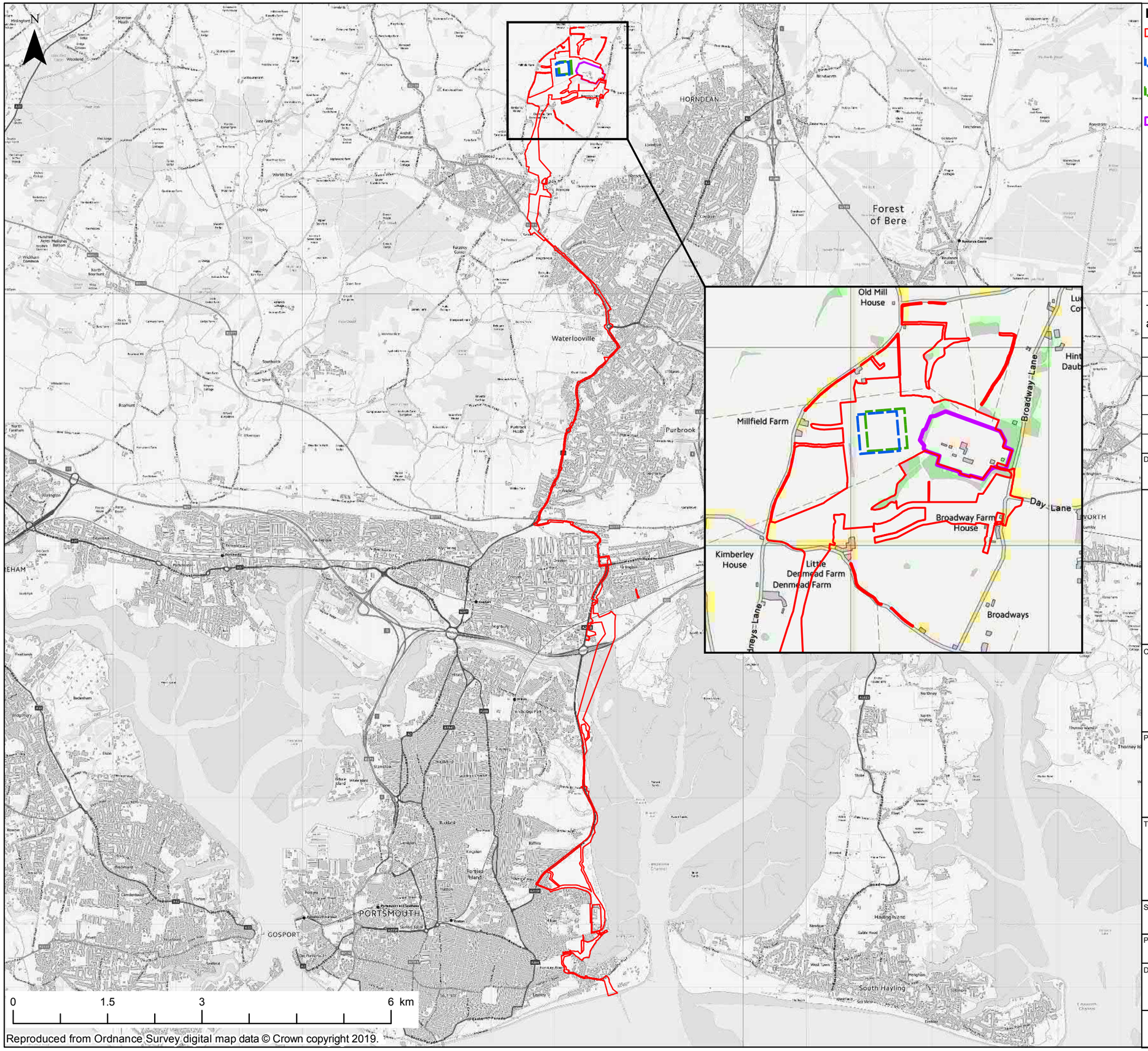
DOCUMENT

Document	**6.3.22.1 Environmental Statement – Volume 3 – Appendix 22.1 Transport Assessment Low Resolution Part 2**
Revision	001
Document Owner	WSP UK Limited
Prepared By	L. Jones / H. Shrimpton
Date	13 November 2019
Approved By	C. Williams
Date	13 November 2019

Appendix 1 – Order Limits



Key

- Order Limits
- Converter Station Perimeter Option B (i)
- Converter Station Perimeter Option B (ii)
- Existing Substation Boundary

The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2017 – Regulation 5(2)(a)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	29/10/2019	JT	Final	GI	MMcG

DRAWING STATUS: Final

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK,
T+ 44 (0) 020 7314 5000
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: Figure 3.2
Order Limits (Onshore)

SCALE AT A3	CHECKED:		APPROVED:
1:59,806	GI		MMcG
PROJECT NO: EN020022	DESIGNED: JT	DRAWN: JT	DATE: 29/10/2019

DRAWING NO: EN020022-ES-3.2 REV.NO. 01

Appendix 2 – Converter Station Access Drawing

N

LOVEDEAN SUBSTATION ACCESS

BROADWAY LANE

132kV POWER CABLES

EXISTING JUNCTION TO BE RETAINED
23m CURVE RADIUS SHOULD LIMIT VEHICLE SPEEDS TO APPROXIMATELY 22mph (MfS2)

9.6m

OVERHEAD POWER LINE. TO BE UNDERGROUNDED

SSE UNDERGROUND INFRASTRUCTURE TO BE AVOIDED. EXACT LOCATION TO BE CONFIRMED IN SURVEY

AREA WITHIN VISIBILITY SPLAYS TO BE CLEARED OF VEGETATION AND DEDICATED AS HIGHWAY

7.3m

R30

GATES TO CONTROL ACCESS TO LINK

PROPOSED OFF HIGHWAY LINK TO PROVIDE SITE ACCESS FOR CONSTRUCTION AND FUTURE LARGE/OVERSIZED VEHICLES. TO BE CLOSED OFF FROM GENERAL TRAFFIC

DAY LANE

LOVEDEAN LANE (SITE ACCESS ROUTE)

5.8m

70m CURVE RADIUS SHOULD LIMIT VEHICLE SPEEDS TO APPROXIMATELY 39mph (MfS2)

PROPOSED PERMANENT SITE ACCESS JUNCTION

R10

7.3m

R10

R30

TREE TO BE REMOVED

GATES TO CONTROL ACCESS TO LINK

TREES/LARGE HEDGEROW TO BE REMOVED

ROOT PROTECTION AREA WITH ASSUMED 3m DIAMETER TREE

BROADWAY LANE

7.0m

50m CURVE RADIUS SHOULD LIMIT VEHICLE SPEEDS TO APPROXIMATELY 33mph (MfS2)

UTILITY RECORDS OVERLAY

KEY TO HEALTH AND SAFETY SYMBOLS

SERVICES SHOWN ON RECORD MAPPING WITHIN PROPOSED WORKS:
-132kV POWER CABLES
-11kV OVERHEAD POWER LINES
-GAS
-POTABLE WATER
-TELECOM SERVICES

NOTES

1. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS OTHERWISE STATED.
2. CONFLICTING INFORMATION SHOWN ON THE ENGINEER'S DRAWINGS OR DISCREPANCIES BETWEEN THE INFORMATION GIVEN BY THE ENGINEER AND THAT PROVIDED BY OTHERS MUST BE REFERRED TO THE ENGINEER BEFORE THE WORKS COMMENCE.
3. MANUAL FOR STREETS (MfS) STANDARDS HAVE BEEN ADOPTED TO EVALUATE APPROPRIATE VISIBILITY AND SPEEDS. THIS STANDARD IS TYPICALLY APPLIED TO URBAN AREAS BUT FOR THESE ELEMENTS IS MORE SUITABLE FOR MINOR RURAL ROADS THAN DMRB STANDARDS.
4. 85TH PERCENTILE SPEEDS OF 31mph MEASURED SOUTHBOUND JUST BEFORE BEND TO NORTH OF ACCESS, AND 41mph MEASURED NORTHBOUND WELL SOUTH OF THE ACCESS. 50m RADIUS BEND TO SOUTH OF ACCESS SHOULD LIMIT SPEEDS TO 33mph (MfS2 PARA 8.3.5). THEREFORE A 31mph/50kph DESIGN SPEED HAS BEEN ADOPTED.
5. 45m SSD BASED ON MfS TABLE 7.1
6. ARTICULATED LORRY / LOW LOADER VEHICLE MOVEMENTS INTO ACCESS JUNCTION AND EXISTING SUBSTATION JUNCTION WILL TAKE UP WIDTH OF CARRIAGEWAY SO WILL REQUIRE CONTROL.

KEY

- DEVELOPMENT CONSENT ORDER BOUNDARY
- HIGHWAY BOUNDARY / ASSUMED HIGHWAY BOUNDARY
- 45m FORWARD VISIBILITY
- 2.4m x 45m VISIBILITY SPLAY
- 2.4m x OUTSIDE OF BEND VISIBILITY SPLAY
- ROOT PROTECTION AREA

SERVICES KEY

DISCLAIMER NOTE

INFORMATION ON THE LOCATION AND SIZE FOR EACH SERVICE HAS BEEN BASED ON RECORD INFORMATION PROVIDED BY THE RELEVANT SERVICE COMPANIES. THE POSITIONS SHOWN ARE INDICATIVE ONLY AND MAY NOT BE COMPLETE. THE PRESENCE OF SERVICES ON SITE SHOULD BE VERIFIED PRIOR TO ANY CONSTRUCTION WORK OR INTRUSIVE INVESTIGATIONS.

- EXISTING GAS PIPE
- EXISTING HIGH VOLTAGE (OVERHEAD)
- EXISTING EXTRA HIGH VOLTAGE (U/G)
- EXISTING VODAFONE CABLE
- EXISTING BRITISH TELECOM (U/G)
- EXISTING POTABLE WATER PIPE

Infrastructure Planning (Applications: Prescribed Forms & Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
02	31/10/2019	MFB	UPDATED DRG FRAME & ADDED TREE LOCATIONS	CW	CW
01	19/09/2019	MFB	FIRST ISSUE	CW	CW

DRAWING STATUS: SUBMISSION FOR APPROVAL

wsp
Regus House, Southampton Int. Bus. Park, George Curl Way, Southampton, SO18 2RZ, UK
T+ 44 (0) 2380 302 529, F+ 44 (0) 2380 302 001
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: BROADWAY LANE
SITE ACCESS JUNCTION - OPTION B
GENERAL ARRANGEMENT

SCALE AT A1:	CHECKED:		APPROVED:
1:500	CW		CW
PROJECT No: 62100616	DESIGNED: MFB	DRAWN: MFB	DATE: 19/09/2019

DRAWING No: AQD-WSP-UK-OS-DR-Z-200215 REV: 02

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XX\62100616 - AQUIND VO NO.3\E MODELS AND DRAWINGS\300 - SITES\20 - TASK 7 UK ROUTE\HIGHWAY ARRANGEMENTS\AQD-WSP-UK-OS-DR-Z-200215.DWG

Appendix 3 – Construction Programme

			2021		2022				2023				2024			
Key Task	Related Activities	Indicative Duration (Weeks)	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Landfall Installation	**All activities**															
	Preparation, drilling and duct installation	44														
	Transition Joint Bay															
	ORS															
Onshore Cable Installation (UK)	All activities															
	Route construction															
	Cable pulling															
	Jointing and terminating															

			2021		2022				2023				2024			
Key Task	Related Activities	Indicative Duration (Weeks)	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Converter Station Construction	All activities, including reinstatement															
	Enabling /Diversion Works															
	Main Civils Construction works															
	Mechanical and Electrical Work															

Appendix 4 – Sensitive Receptors and Temporary Access Locations

N

SECTION 1

AQUIND Interconnector

TYPE

Campsite

Pub

Education

School Type

Other Educational Facility

Order Limits

Sections

Public Rights of Way

BOAT

Footpath

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK,
T+ 44 (0) 020 7314 5000
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 1

SCALE AT A3	CHECKED:		APPROVED:
1:9,651	CW		CW
PROJECT NO: EN020022	DESIGNED: SG	DRAWN: SG	DATE: 13/11/2019

DRAWING NO: EN020022-ESAPPENDIX-22.1.F.1

REV.NO. 01

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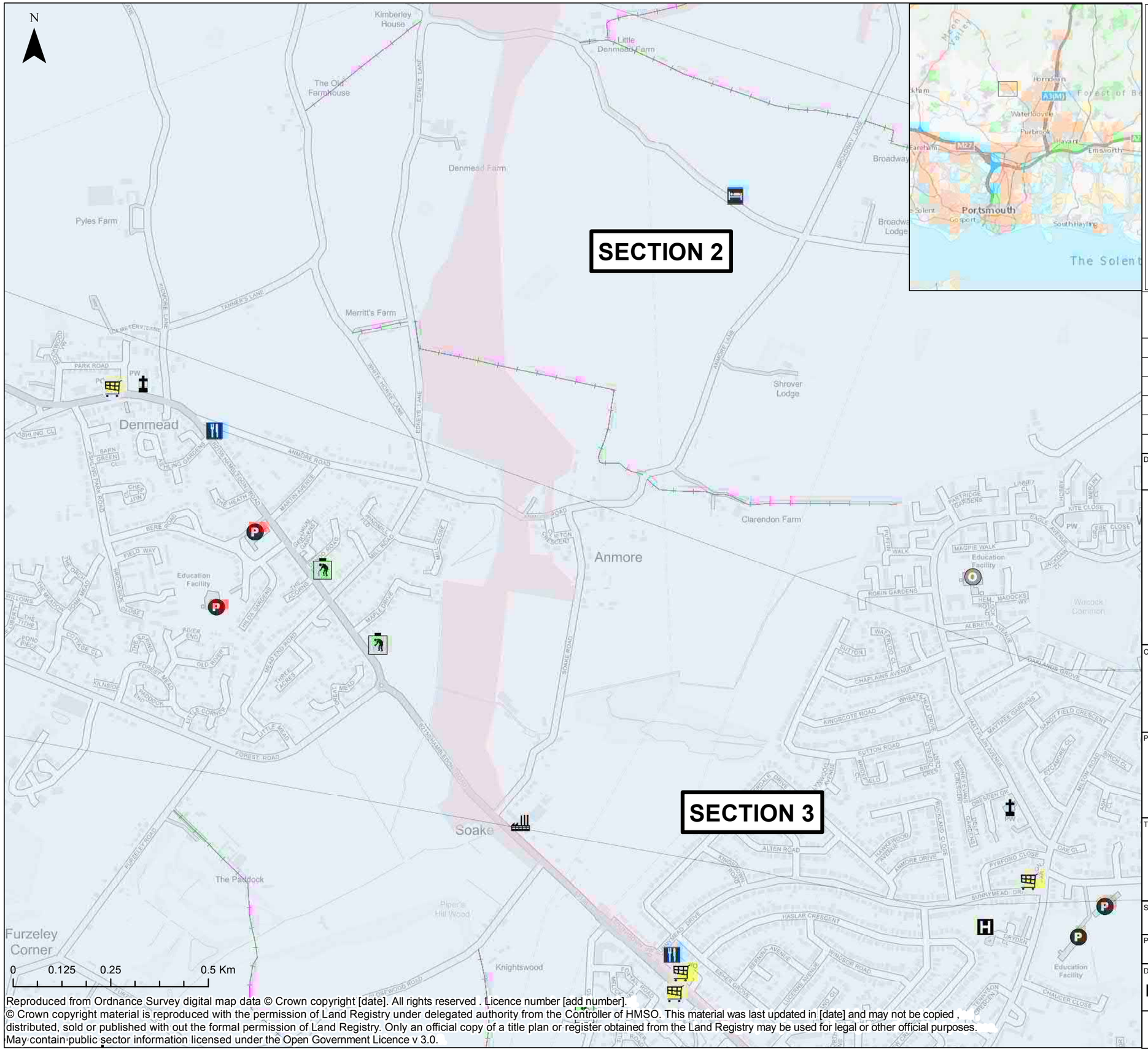

AQUIND Interconnector

TYPE

- B&B
- Campsite
- Caravan Park
- Care Home
- Church
- Community Centre
- Education
- Guesthouse
- Industrial Estate
- Leisure
- Lifeboat Station
- Marina
- Medical Group
- Pub
- Retail
- Scout Hut

Order Limits

Public Rights of Way

- Bridleway
- Footpath
- Sections

School Type

- Primary
- Other Educational Facility

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

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CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 2/3

SCALE AT A3	CHECKED:		APPROVED:
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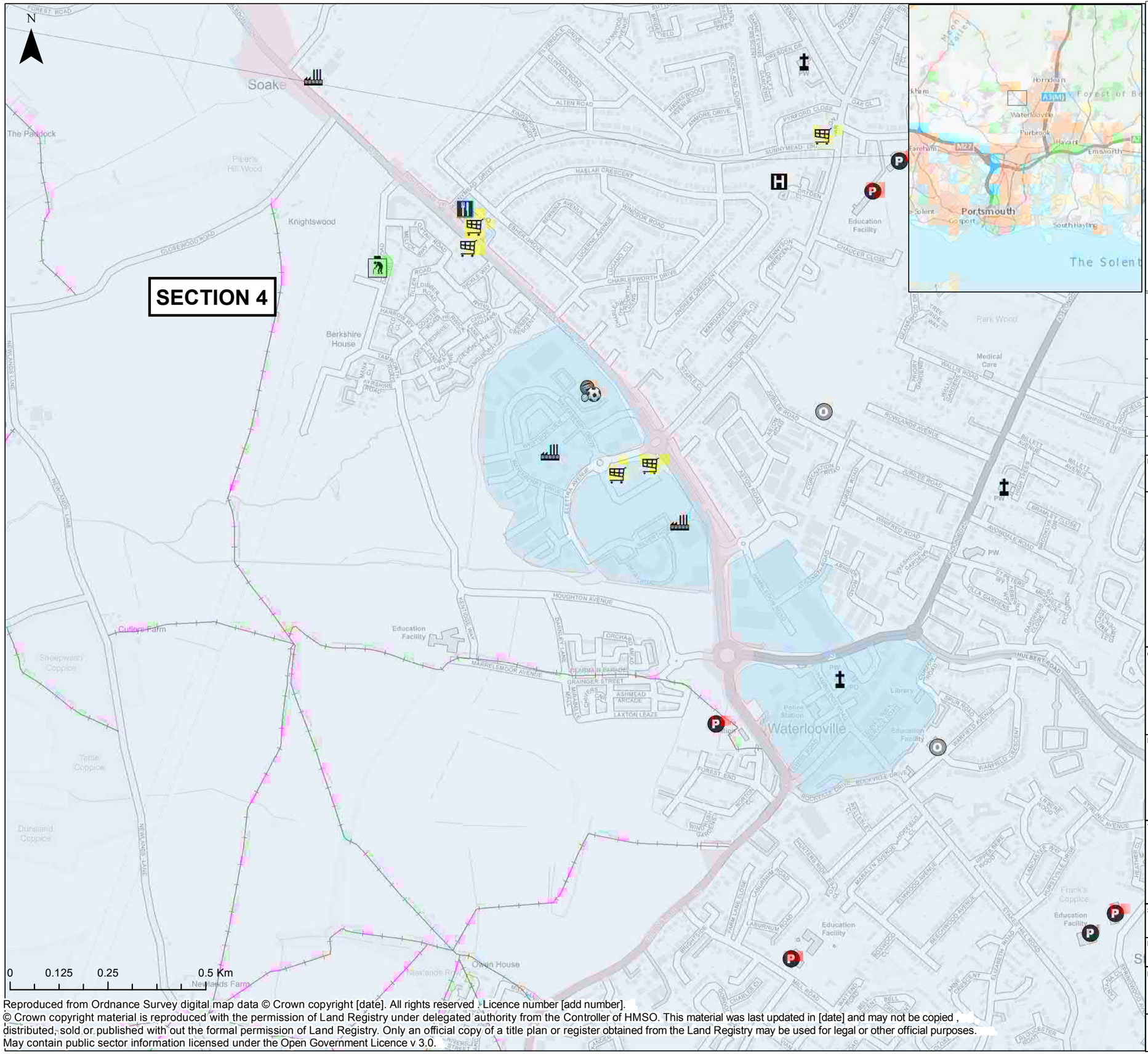
DRAWING NO: EN020022-ESAPPENDIX-22.1.F.2

REV.NO. 01



AQUIND Interconnector

TYPE

- Care Home
- Church
- Industrial Estate
- Leisure
- Medical Group
- Pub
- Retail
- Order Limits

Public Rights of Way

- Bridleway
- Footpath
- Restricted Byway
- Sections
- Existing
- Primary
- Secondary
- Other Educational Facility

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

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CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 4.1

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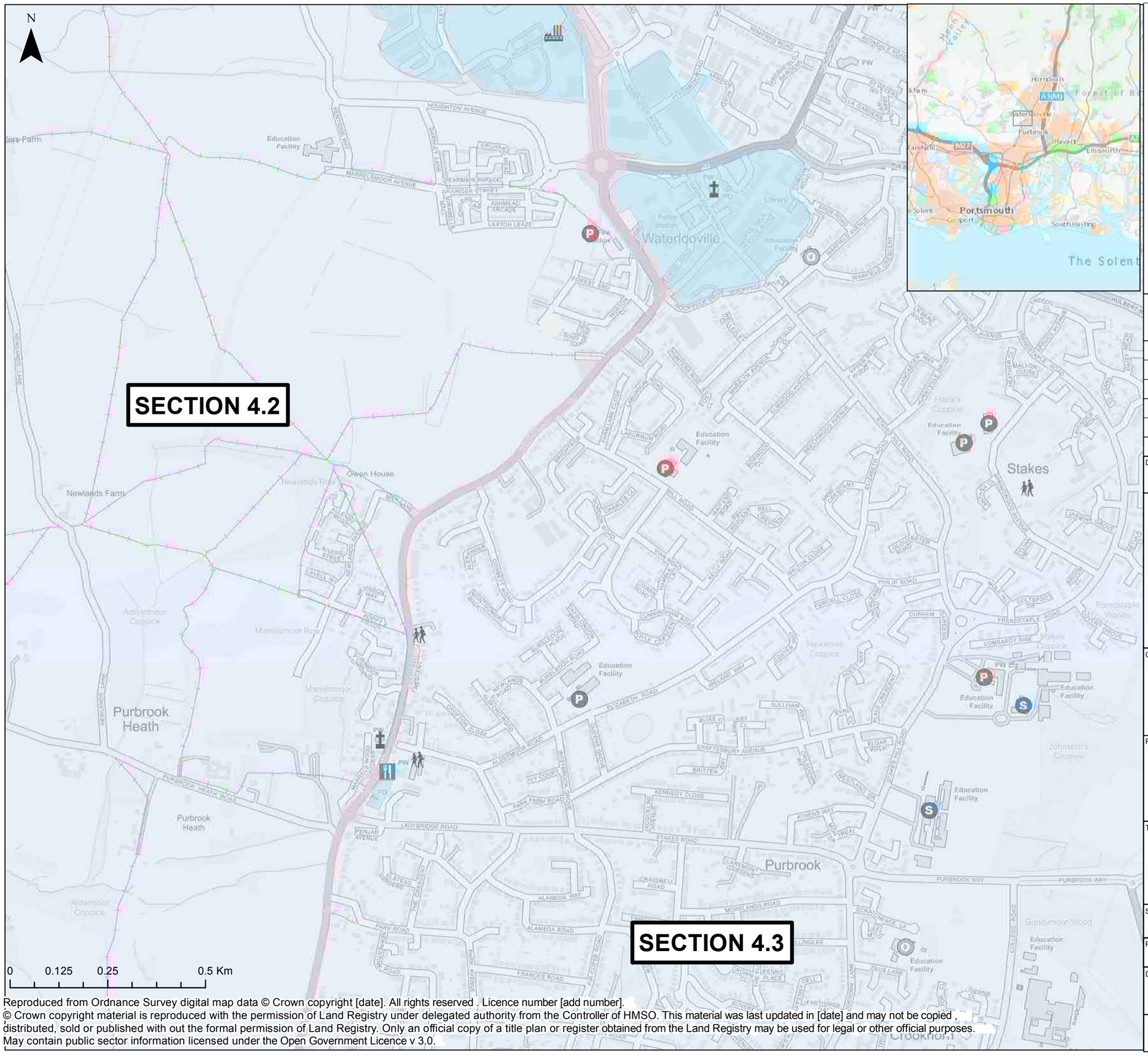
DRAWING NO: EN020022-ESAPPENDIX-22.1.F.3 REV.NO. 01



AQUIND Interconnector

Sections

TYPE

Church

Community Centre

Industrial Estate

Pub

Existing

School Type

Primary

Secondary

Other Educational Facility

Public Rights of Way

BOAT

Bridleway

Footpath

Restricted Byway

Order Limits

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS:

FINAL

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CLIENT:

AQUIND

PROJECT:

AQUIND Interconnector

TITLE:

CTMP Sensitive Receptors - Section 4.2 / 4.3

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PROJECT NO:	DESIGNED:	DRAWN:	DATE:
EN020022	SG	SG	13/11/2019

DRAWING NO:	REV.NO.
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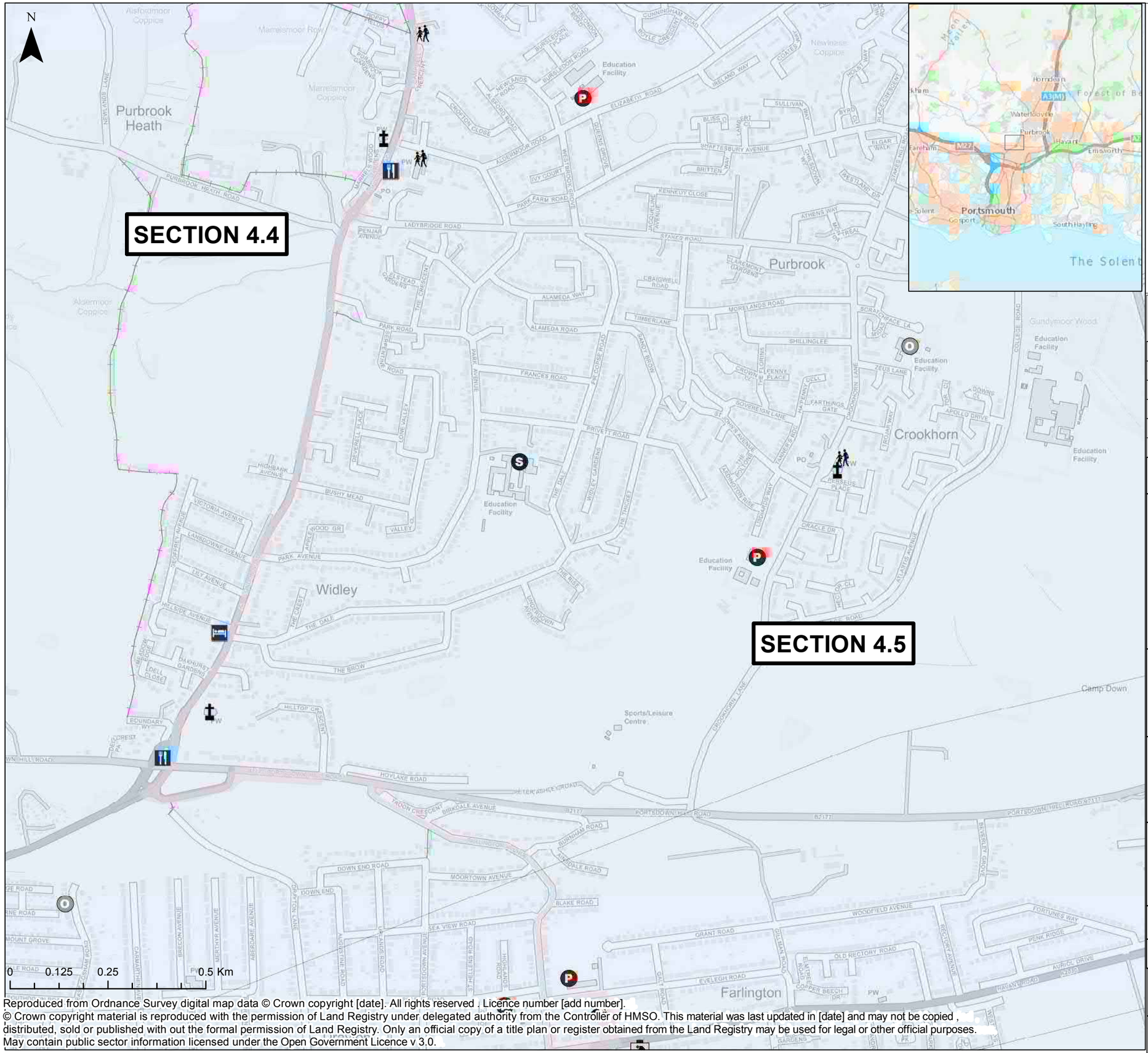

AQUIND Interconnector

TYPE

- Care Home
- Church
- Community Centre
- Guesthouse
- Pub
- Scout Hut
- Red Line Boundary

School Type

- Primary
- Secondary
- Other Educational Facility
- Sections

Public Rights of Way

- Footpath

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST DRAFT	CW	CW

DRAWING STATUS: FINAL

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK,
T+ 44 (0) 020 7314 5000
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 4.4 / 4.5

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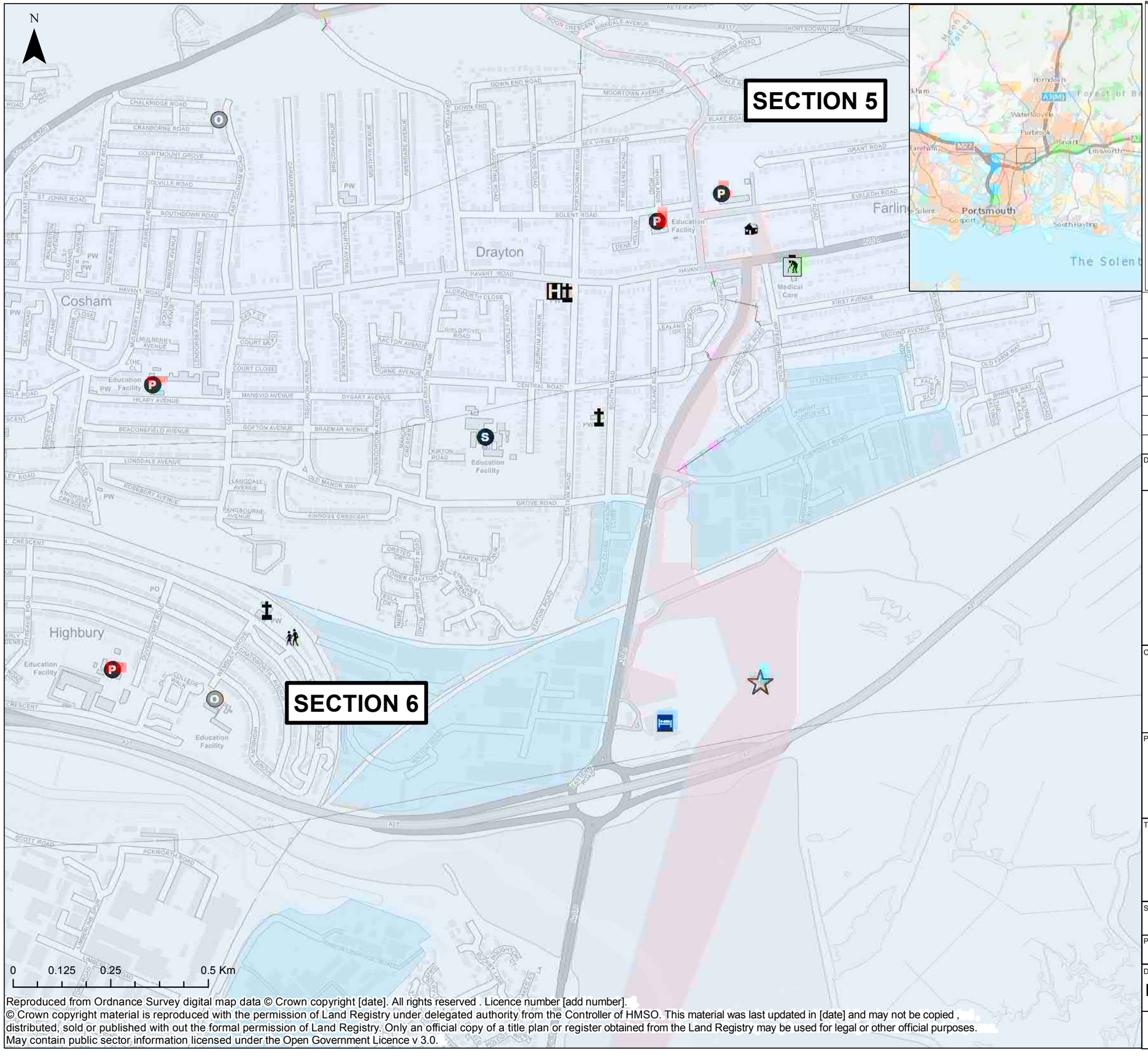
1:9,651	CW	CW

PROJECT NO:	DESIGNED:	DRAWN:	DATE:
EN020022	SG	SG	13/11/2019

DRAWING NO:	REV.NO.
EN020022-ESAPPENDIX-22.1.F.5	01



TYPE

- Care Home
- Church
- Community Centre
- Guesthouse
- Medical Group
- Scout Hut
- Victorious Music Festival

- Order Limits

Public Rights of Way

- Footpath
- Sections
- Existing

School Type

- Primary
- Secondary
- Other Educational Facility

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

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wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 5.1 / 5.2 / 6

SCALE AT A3	CHECKED:		APPROVED:
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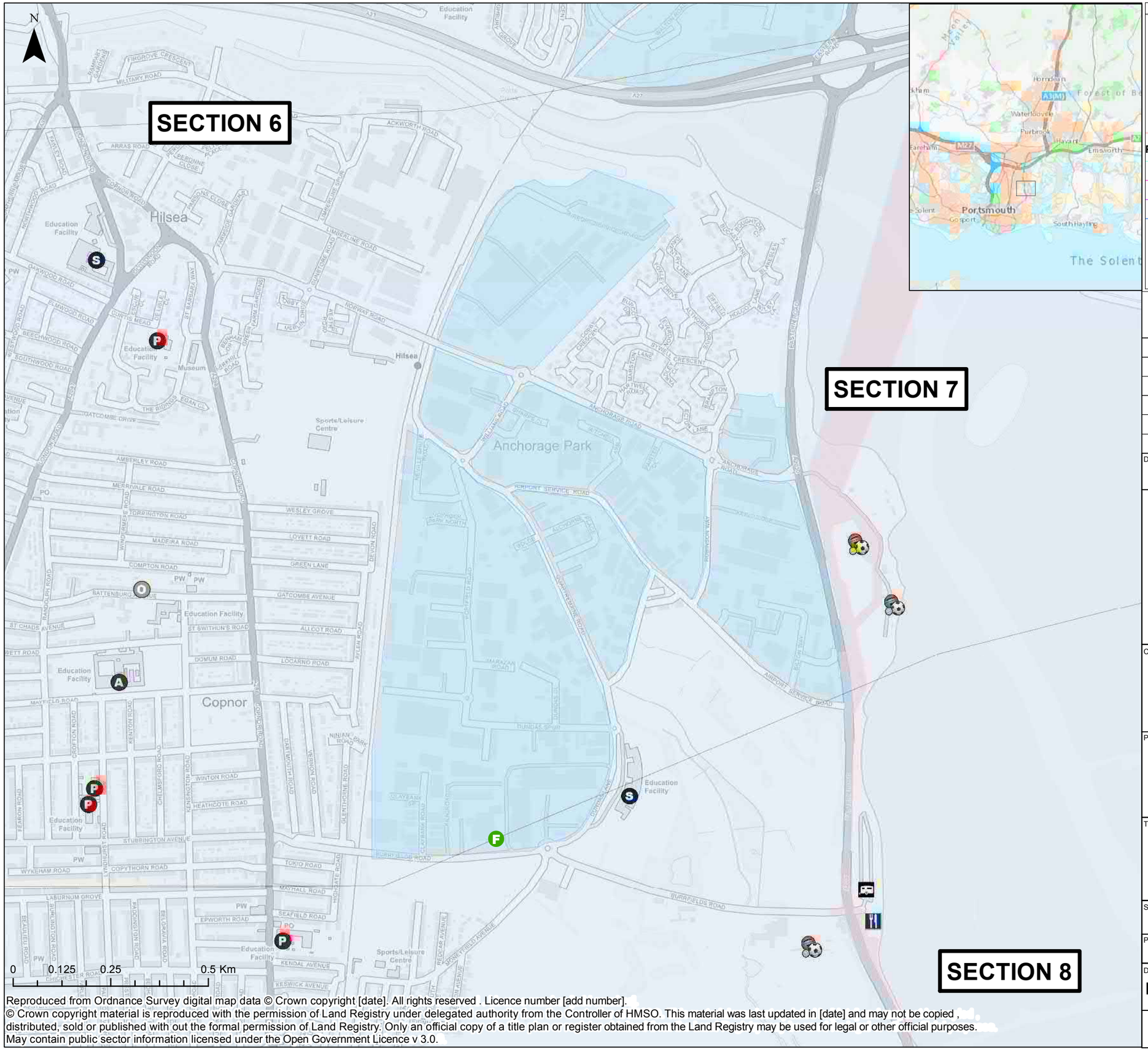
DRAWING NO: EN020022-ESAPPENDIX-22.1.F.6 REV.NO. 01



TYPE

- Caravan Park
- Leisure
- Pub
- Order Limits

Public Rights of Way

- BOAT
- Bridleway
- Footpath
- Restricted Byway

School Type

- Nursery
- Primary
- Middle Deemed Primary
- Secondary
- Middle Deemed Secondary
- Further Education
- All Through
- Other Educational Facility

- Sections
- Existing

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

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CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 7 / 8.1

SCALE AT A3	CHECKED:		APPROVED:
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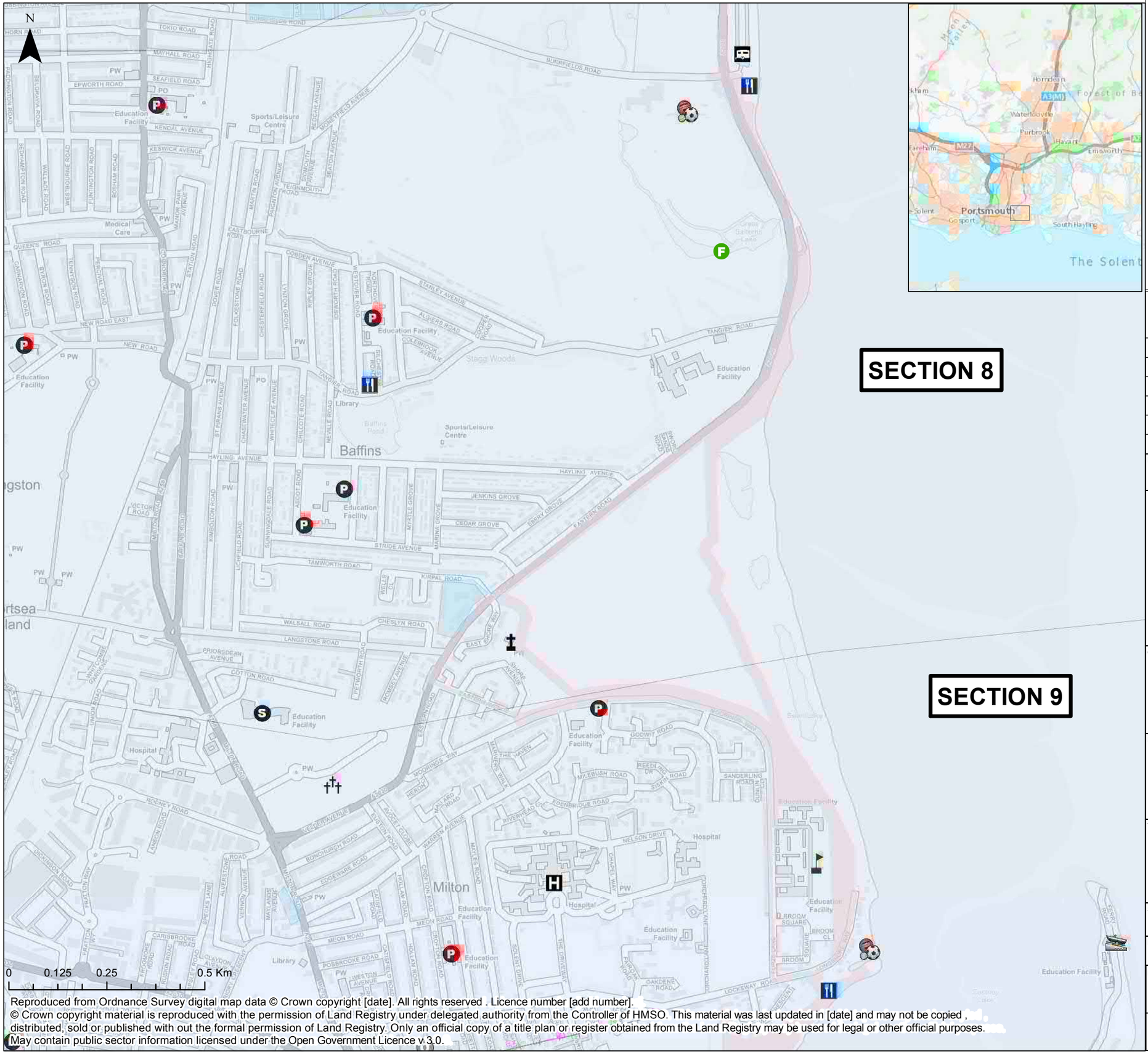
DRAWING NO: EN020022-ESAPPENDIX-22.1.F.7 | REV.NO. 01



TYPE

- Caravan Park
- Cemetery
- Church
- Education
- Leisure
- Lifeboat Station
- Medical Group
- Pub
- Order Limits

Public Rights of Way

- Footpath
- Sections
- Existing

School Type

- Primary
- Secondary
- Other Educational Facility
- Further Education

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK,
T+ 44 (0) 020 7314 5000
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: CTMP Sensitive Receptors - Section 8.2 / 9

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EN020022	SG	SG	13/11/2019

DRAWING NO:	REV.NO.
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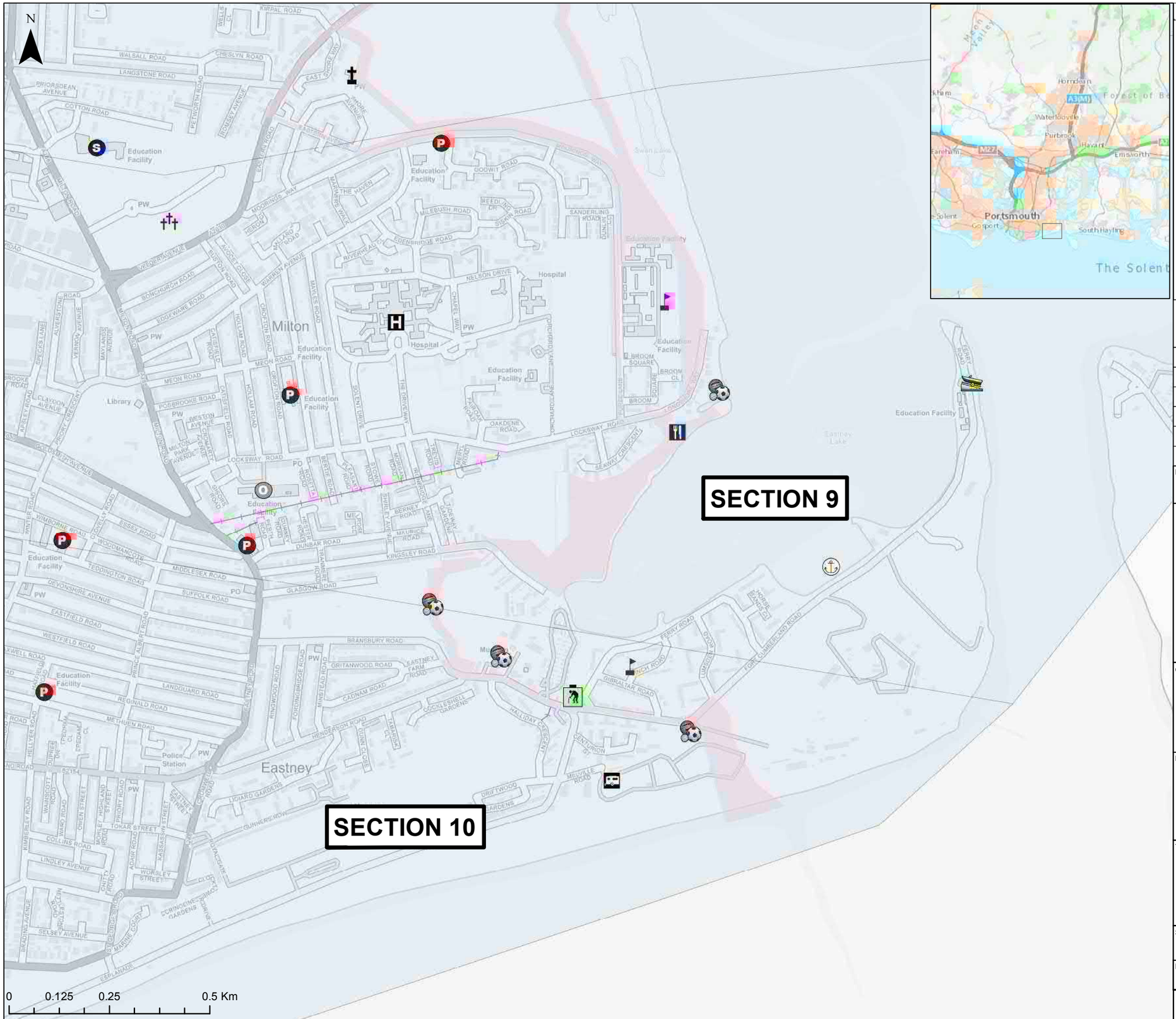

TYPE

- Caravan Park
- Care Home
- Cemetery
- Church
- Education
- Leisure
- Lifeboat Station
- Marina
- Medical Group
- Pub

Public Rights of Way

- Footpath
- Order Limits

School Type

- Primary
- Secondary
- Other Educational Facility

Sections

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	13/11/2019	SG	FIRST ISSUE	CW	CW

DRAWING STATUS: FINAL

WSP House, 70 Chancery Lane, London, WC2A 1AF, UK,
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wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: Outline Traffic Management Proposals - Section 10

SCALE AT A3	CHECKED:	APPROVED:
1:9,651	CW	CW

PROJECT NO:	DESIGNED:	DRAWN:	DATE:
EN020022	SG	SG	13/11/2019

DRAWING NO: EN020022-ESAPPENDIX-22.1.F.9

REV.NO. 01

Appendix 5 – Abnormal Indivisible Load Study

COLLETT

EXPERTS IN MOTION

Route Access Survey
333100

A3(M) J2 to AQUIND Lovedean

WSP
September 2019

COLLETT
EXPERTS IN MOTION

Victoria Terminal
Albert Road
HALIFAX
West Yorkshire
HX2 0DF

Mistral Point
AW Nielsen Road
GOOLE
East Yorkshire
DN14 6UE

Baltic House
Central Dock Road
GRANGEMOUTH
Central Scotland
FK3 8TY

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Email info@collett.co.uk

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Contents

Report Details

Report for
Stewart Urquhart
WSP
Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL

Attendees of Survey
Steven Mangham

Time / Date of Survey: 2nd July 2019

General weather conditions: Mixed

Issued by
Steven Mangham

Approved by
Steven Mangham

Collett & Sons Ltd
Victoria Terminal
Albert Road
Halifax
West Yorkshire
HX2 0DF
Tel: +44 (0) 8456 255288
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Document Revisions

No	Date	Details
1	04/11/2019	Updated to client comments
2	08/11/2019	Updated to client comments

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Company Profile

Collett & Sons Ltd established in Halifax over 45 years ago specialise in the multimodal logistics throughout the UK, Europe and Worldwide.

Our Company owns a modern fleet of over 60 vehicles and over 100 trailers, operating from 3 depots located in Halifax, Goole and Grangemouth.

The depots situated in Google and Grangemouth offer strategically located sites suitable to provide central hubs for distribution throughout the UK. Each facility is complete with up to 110 tonnes lifting capacity in order to be able to handle all various abnormal load types. As logistical partners, the company is able to offer the complete transport solution from point of manufacture through to job site.

Collett & Sons Limited operate an in-house consultancy that deals with transport feasibility, route and site access surveys, Swept Path Analysis, Traffic Management Plans, Test Drives and Environment Statements.

In addition to consulting services, Collett & Sons Limited delivers the following services;

Marine
Port Operation
Heavy Lift Storage
Heavy Transport
Project Management
Freight Forwarding
Heavy Lift
General Haulage
Warehousing
Test Station (DVSA-authorised)
SHEQ Training





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1. Executive Summary

1.1. This report comprises of a study of the road route as detailed here in for the road transport of a transformer to the proposed AQUIND Lovedean site, Lovedean, Hampshire.

1.2. One route has been assessed from the A3(M) Junction 2 to the Day Lane/Broadway Lane junction, Lovedean.

1.3. Due to the height of the proposed transformer and subsequent vehicle configuration, a suitable high load route is required from Port to start of the route detailed in this report body.

Third party land

1.4. Third party land is required that the Day Lane/Broadway Lane junction if Option 2 is selected as the preferred method of navigating that junction.

Road widening

1.5. Road widening within highways owned land is required at the A3/Lovedean Lane junction on the nearside footpath. Area to be made suitable to withstand axle loadings.

Modifications to street furniture

1.6. Modifications to street furniture will be required along the route at a number of locations. The locations where street furniture removal is required are: B2149/A3 Junction, A3/Lovedean Lane Junction, Right bend on Lovedean Lane, Lovedean Lane/Day Lane Junction and Day Lane/Broadway Lane Junction.

Vertical Alignment and Height Clearances

1.7. Due to the length and nature of the route there are a high number of overhead utility lines. The heights of these lines have not been assessed as part of this survey and further investigation is required with the utility companies, once the final load dimensions are determined, to establish their cable heights and any remedial measures that may be required.

1.8. There are no overhead structures on the routes.

1.9. On Day Lane, there is an incline gradient which will require the loaded vehicle to be towed. Towing vehicles will be required for deliveries.

Structural Assessment

1.10. Consultation with the relevant authorities has not been undertaken as part of this assessment due to the high G.V.W of the loaded configuration.

1.11. For loads of this nature, it is usually expected/recommended that full structural surveys are undertaken of any structures on the route. Once the exact load dimensions are established, consultation with the relevant authorities is required to determine the structural suitability of the route.

1.12. It should be noted that this route has been used for delivery of transformers to the Lovedean facility although that does not necessarily mean that this route is suitable for loads of this nature.

Other areas of note

1.13. Tree pruning will be required at numerous locations to ensure that a clear envelope is present for the vehicle.

1.14. As part of the delivery convoy, tree surgeons and utility companies will be required to accompany the loads to make any necessary amendments.

Unloading on site to Bund/Plinth

1.15. Once the loaded vehicle arrives at the proposed site, the load will require unloading to the bund/plinth.

1.16. It is recommended that the proposed site is designed to allow the loaded girder set to navigate alongside the plinth, where the transformer can then be unloaded from the Girder set and then moved into position using the Jack and Skate method.

1.17. If this site cannot be designed to achieve the above, transhipment on site to a SPMT vehicle will be required to move then transformer to the plinth for Jacking and Skating.

2. Introduction

2.1 Collett & Sons Ltd. were commissioned by WSP to undertake an abnormal loads route access study to assess the transportation of a transformer components to the proposed AQUIND Lovedean Facility at Lovedean, Hampshire.

2.2 The road routes as detailed herein are for the road transport of the transformer component identified in Section 4.

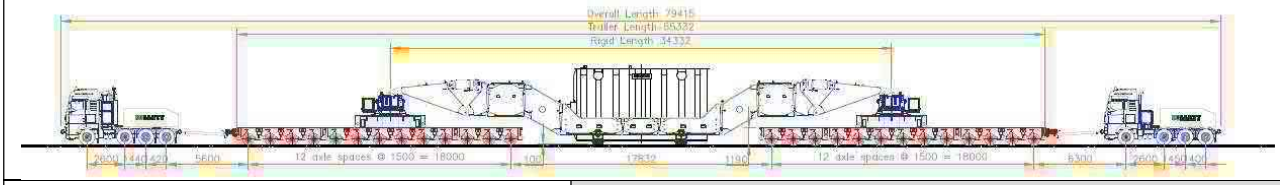
2.3 The purpose of this report is to detail access from Junction 2 of the A3(M).

3. Candidate Abnormal Loads

3.1. WSP have requested that the assessment on which this report is compiled be based on the following Cargo Details: Length 10200mm, depth 4100mm, height 5100mm.

4. Abnormal Indivisible Load Profiles

4.1. The abnormal load components are assessed based on weight, length, width and height and loaded to the most appropriate vehicle the weights and dimensions of these are detailed below. The loading diagrams are detailed in Appendix 1.

4.2.	COL-D-333100-1-1
LIN STORAGE TANK	
	
	Loaded vehicle dimensions
Overall vehicle Length	79.415m
Rigid Length	34.332m
Width	6.20m
Height	5.452m
Gross Vehicle Weight exc. Tractor Units	492.82Te
Maximum axle line weight	15.275Te

5. Responses from Statutory Consultees (Structures Suitability)

Summary of Structural Issues

5.1. Consultation with the relevant authorities has not been undertaken as part of this assessment due to the high G.V.W of the loaded configuration.

5.2. For loads of this nature, it is usually expected/recommended that full structural surveys are undertaken of any structures on the route. Once the exact load dimensions are established, consultation with the relevant authorities is required to determine the structural suitability of the route.

5.3. It should be noted that this route has been used for delivery of transformers to the Lovedean facility although that does not necessarily mean that this route is suitable for loads of this nature.

6. Route Assessment Overview

6.1. This section of the report illustrates the route assessed for the delivery of the storage tank components from Ellesmere Port to Air Liquide Facility at Coleshill.

6.2. For the purpose of this report, one route to the site was surveyed. All the routes surveyed in this report have been identified by Collett Consulting.

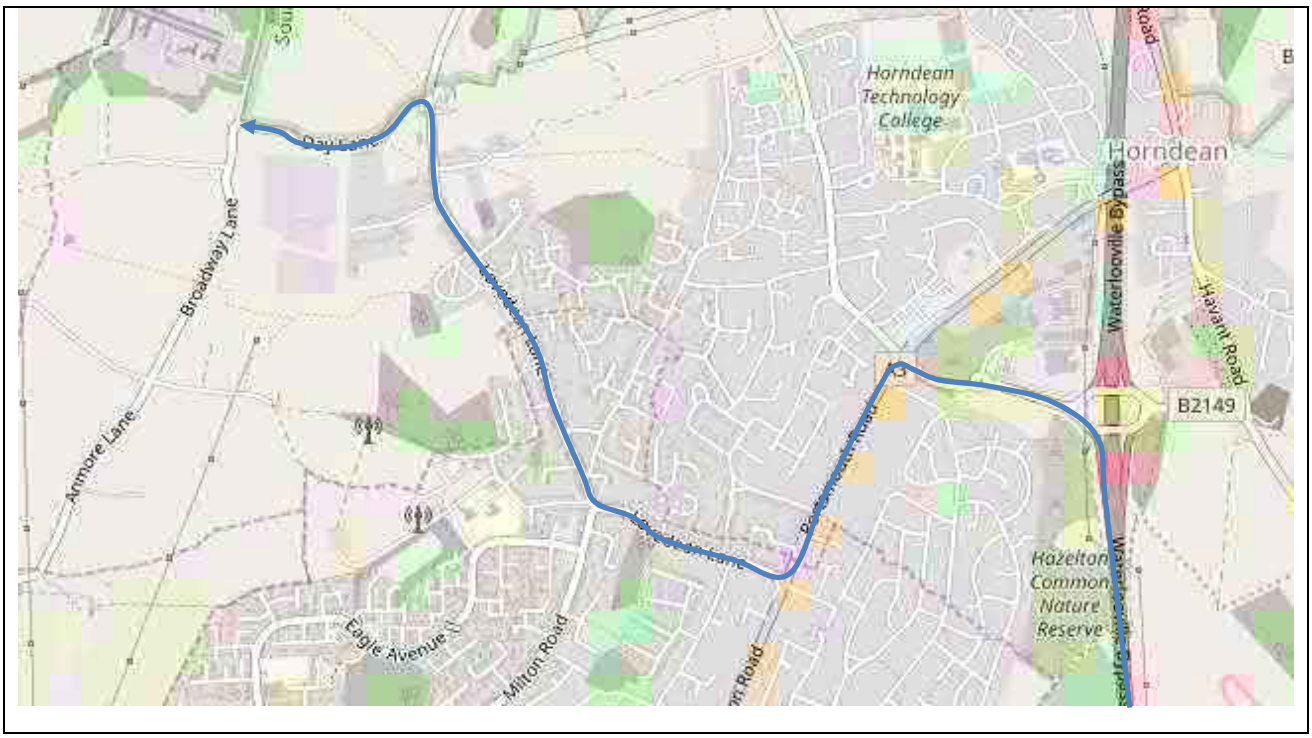
6.3.

Route A

Start Location	M3 Junction 2	Distance of Route	Km	Miles
Via:	B2149/A3/Lovedean Ln		4.1	2.5

- Exit M3 Northbound at Junction 2
- At roundabout, turn left onto B2149
- At roundabout, continue straight on B2149
- Turn left onto A3
- Turn right onto Lovedean Lane
- Turn left onto Day Lane
- At junction with Broadway Lane, continue onto new access road.

6.4. Map Overview



6.5. Amendment Categorisation

For the purposes of this report, the route amendments have been identified into 3 categories.

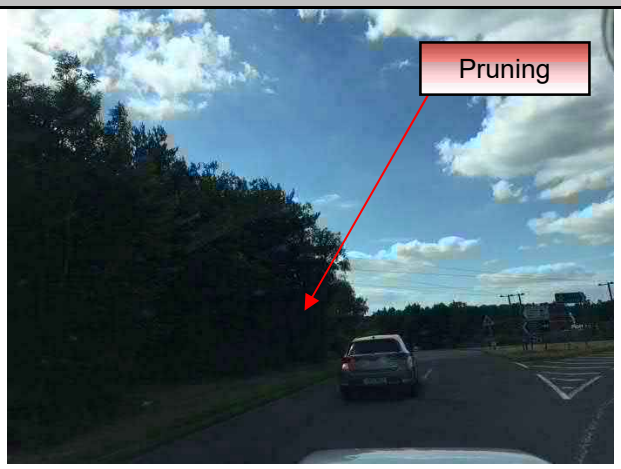
Major Amendments – Third Party Land, Road Widening
Minor Amendments – Modifications to Street Furniture, Pruning, Contraflow Manoeuvre, Manual Steering
No Amendments - Location is suitable as assessed during this survey

The categories have been colour coded for each report item as per the below key.

KEY					
	Major Amendments		Minor Amendments		No Amendments

6.6. Map extract of survey locations

ITEM NUMBER	6.6.1	LOCATION	A3(M) JUNCTION 2/B2149 ROUNDABOUT
DIRECTION	Take 1st Exit at the roundabout		
GRID REFERENCE	SU 70411 12347		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Swept path analysis indicates that pruning of vegetation on the nearside will need to be made in order for the vehicle to pass through this section of the route.	 View of exiting the roundabout
	 Vehicle Direction

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	Swept Path Analysis
RELATED DOCUMENT NUMBERS	COL-D-333100-10-2		

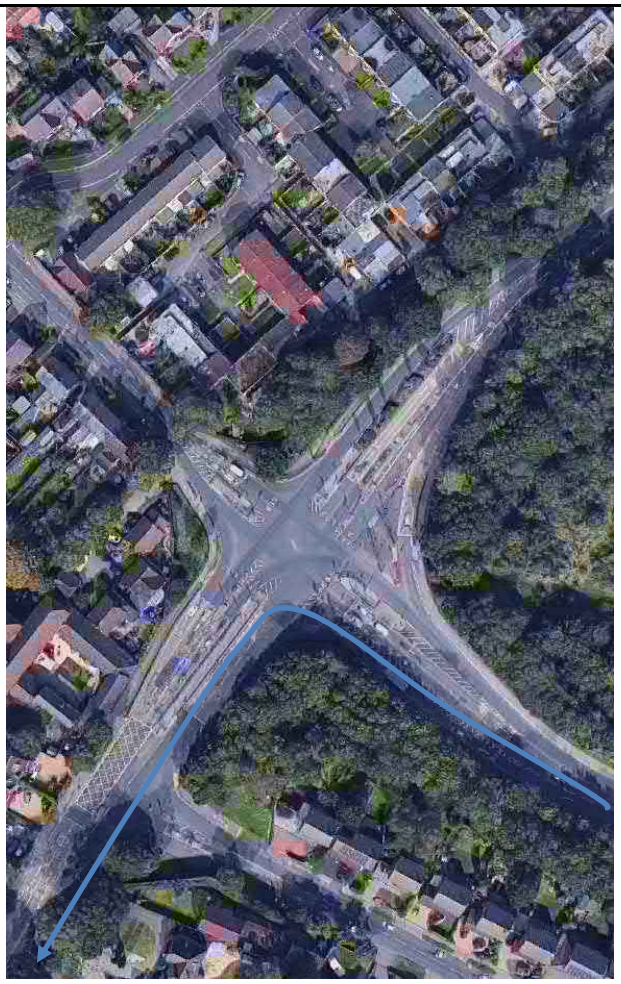
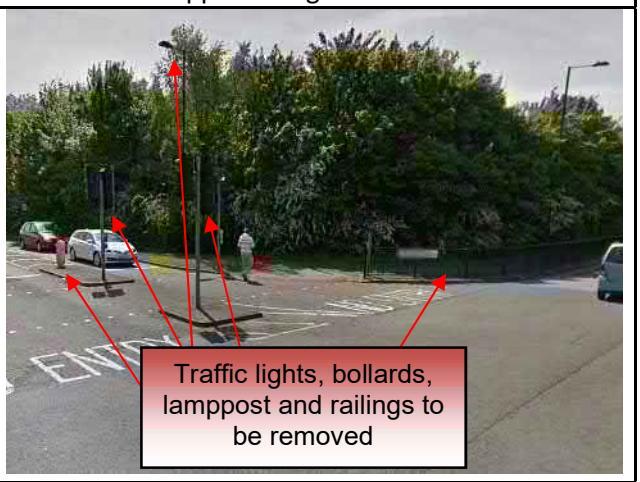
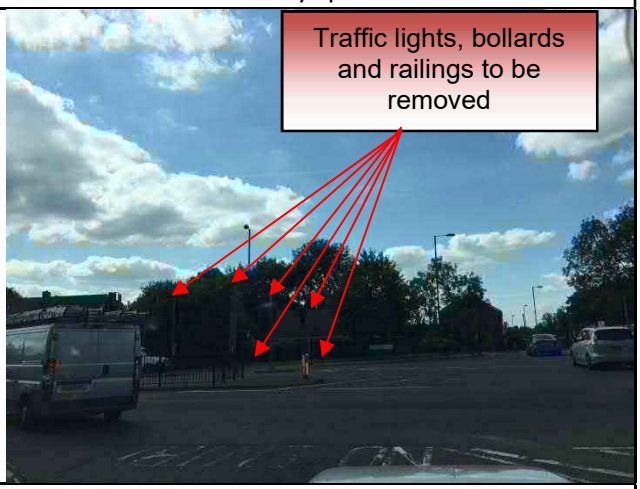
ITEM NUMBER	6.6.2	LOCATION	B2149 ROUNDABOUT
DIRECTION	Take 1st Exit at the roundabout		
GRID REFERENCE	SU 70065 12480		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Visual inspection indicates that the vehicle will have no issues at this location.	
	Entry to roundabout
	
	Vehicle Direction

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	NO	TYPE	N/A
RELATED DOCUMENT NUMBERS	N/A		

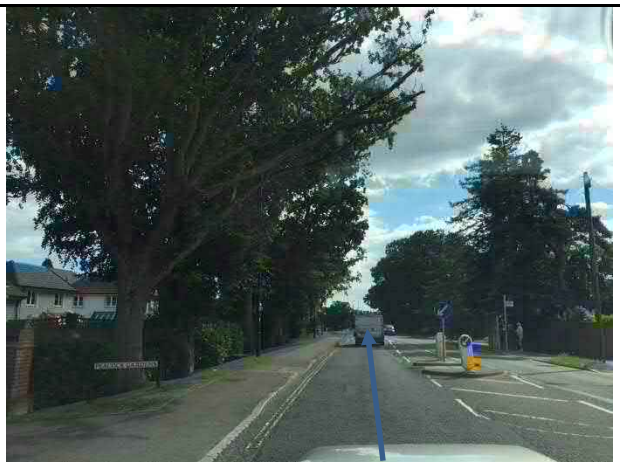
ITEM NUMBER	6.6.3	LOCATION	B2149/A3 JUNCTION
DIRECTION	Turn left at this junction		
GRID REFERENCE	SU 69831 12559		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Swept path analysis indicates that modifications to street furniture are required at this location. The filter splitter lane, traffic lights and bollards to be removed. The central reservation needs to be cleared to allow over sail, removal of traffic lights and barriers on the offside are also required. Loaded vehicle will contraflow the central reservation on the A3.	 Approaching Crossroads
 Aerial View of Location	 View of entry splitter island  View of spliter island

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	Swept Path Analysis
RELATED DOCUMENT NUMBERS	COL-D-333100-10-3		

ITEM NUMBER	6.6.4	LOCATION	SPLITTER ISLAND ON A3
DIRECTION	Continue straight at this location		
GRID REFERENCE	SU 69566 12079		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Visual inspection indicates that pruning of vegetation will be requried at this location. Tree on nearside to be pruned to provide a clear envelope.	
	View of splitter island



Vehicle Direction

View of splitter island

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	NO	TYPE	N/A
RELATED DOCUMENT NUMBERS	N/A		

ITEM NUMBER	6.6.5	LOCATION	A3/LOVEDEAN LANE JUNCTION
DIRECTION	Turn right at this junction		
GRID REFERENCE	SU 69483 11884		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Swept path analysis indicates that road widening is required on the nearside of the A3 to allow axles to run on the footpath area. Area to be made suitable to withstand axle loadings. Swept path analysis indicates that modifications to street furniture are required on the nearside at this location. Road signs to be removed in order for the trailer to oversail the grass patch.	 Reverse view of junction  View of approaching junction

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	Swept Path Analysis
RELATED DOCUMENT NUMBERS	COL-D-333100-10-4		

ITEM NUMBER	6.6.6	LOCATION	RIGHT BEND ON LOVEDEAN LANE
DIRECTION	Continue straight at this location		
GRID REFERENCE	SU 68900 12105		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Swept path analysis indicates that modifications to street furniture will be required at this location. Bollards on the splitter island to be removed to allow trailer oversail.	
	Approaching right bend
	
	Reverse view of vehicle direction

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	Swept Path Analysis
RELATED DOCUMENT NUMBERS	COL-D-333100-10-5		

6.7. Map extract of survey locations

ITEM NUMBER	6.7.1	LOCATION	LOVEDEAN LANE/DAY LANE JUNCTION
DIRECTION	Turn left at this junction		
GRID REFERENCE	SU 68375 13325		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Swept path analysis indicates that modifications to street furniture on the nearside will be needed at this location, Road sign to be removed to allow the vehicle to oversail land on the nearside of the bend. Trailer to be raised to oversail area. **NOTE** From this junction to the junction with Broadway Lane, there is an incline in the road levels. It is anticipated that a towing vehicle(s) will be required on this stretch of road.	 Vehicle Direction  Reverse view of junction

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	Swept Path Analysis
RELATED DOCUMENT NUMBERS	COL-D-333100-10-6		

ITEM NUMBER	6.7.2	LOCATION	RIGHT BEND ON DAY LANE
DIRECTION	Continue straight at this location		
GRID REFERENCE	SU 68227 13211		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Visual inspection indicates that pruning will be required on both sides of the road.	
	View of approaching right bend

Pruning of trees before right bend

Vehicle Direction

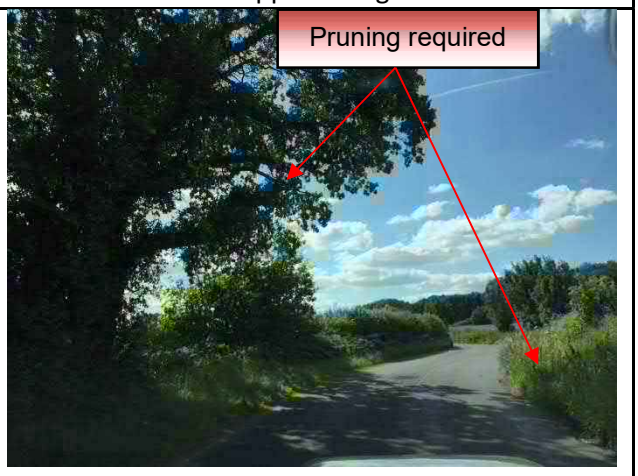
Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	NO	TYPE	N/A
RELATED DOCUMENT NUMBERS	N/A		

ITEM NUMBER	6.7.3	LOCATION	S-BEND ON DAY LANE
DIRECTION	Continue straight at this location		
GRID REFERENCE	SU 67975 13207		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
Visual inspection indicates that pruning will be required on both sides of the road at this location.	
	View of approaching S-Bend

Vehicle Direction

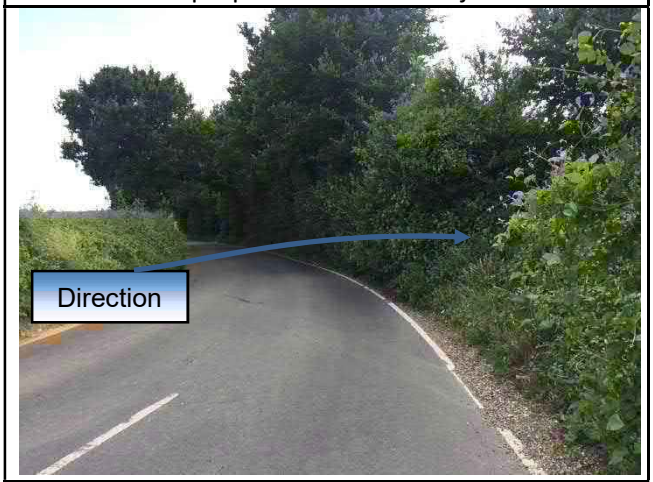


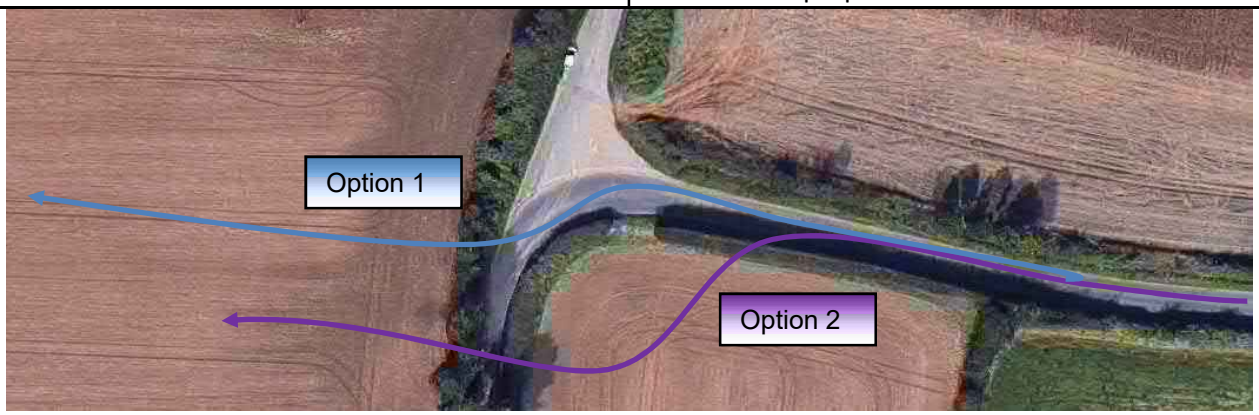
View of S-Bend

Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	NO	TYPE	N/A
RELATED DOCUMENT NUMBERS	N/A		

ITEM NUMBER	6.7.4	LOCATION	DAY LANE/PROPOSED ACCESS TRACK JUNCTION
DIRECTION	Continue straight at this location		
GRID REFERENCE	SU 67788 13245		

MODIFICATION AND DESCRIPTION	PHOTOGRAPH OF LOCATION
OPTION 1 – COL-D-333100-10-7 Swept path analysis indicates that hedgerow on the nearside to be removed and cleared to allow the girder set to navigate onto the road. New access as per drawing required and modifications undertaken to accommodate this. OPTION 2 – COL-D-333100-10-8 Swept path analysis indicates that new track to be constructed through third party land on the nearside. Hedgerow to be removed to allow new track to be constructed. New access as per drawing required and modifications undertaken to accommodate this. GENERAL Both these options are considered to be more cost effective and less disruptive than creating a transhipment area in land on the nearside at the Solar frame. Both these options allow for the load to be transported to the final destination without the need to tranship to a SPMT vehicle or similar.	 View of proposed access track junction  View of proposed access track enterance



Aerial View of Location

FURTHER INVESTIGATION UNDERTAKEN?	YES	TYPE	SWEPT PATH ANALYSIS
RELATED DOCUMENT NUMBERS	COL-D-333100-10-7/8		

7. Important Notes

7.1. The recommendations in this report are made from a purely transport orientated view, and do not consider any political issues in terms of land ownership, or any other precincts raised that may otherwise be restrictive.

7.2. The information contained in this report is privileged and confidential and is for the exclusive use of the client nominated herein.

7.3. A Police escort or pilot car will be required in order to assist with traffic control for the entire route surveyed.

7.4. Permits will be required for the movement of all loads. These permits are at the discretion of the Highways Agency (H.A). Therefore, approval of these permits by the H.A is a major consideration before any movements can be undertaken.

7.5. It is recommended to have adequate warning signs implemented to warn other road users at critical points.

7.6. All hedges, shrubs, bushes, trees and overhanging branches along the nominated routes must be trimmed to allow a suitable minimum envelope.

7.7. All street furniture, signage etc. along the nominated route must be removed to allow a suitable minimum envelope on the road. Other specific street furniture has been nominated in this report to facilitate over-sailed and swept areas.

7.8. Overhead utility cables have not been measured as part of this survey and correspondence with the utility companies regarding cable heights and possible remedial solutions should be undertaken prior to any delivery.

7.9. It should be noted that all assessments and inspections have been done so with the intention of producing information to highlight anticipated problems. This includes highlighting of potential land take requirements, possible street furniture implications, and highway alignment issues.

7.10. Land take is usually referred to when land is required from private land owners; road widening is usually referred to when land is required within highways boundaries. However the details of the nominated land take and road widening contained in this report are highlighting the expected areas of concern, and can only be confirmed by swept path analysis. The boundaries between private land and highways property are assumed by using obvious demarcation such as fence lines/hedges etc. It should be noted that actual boundaries between highways and private land are not substantiated in this report and can only be authenticated by carrying out land searches.

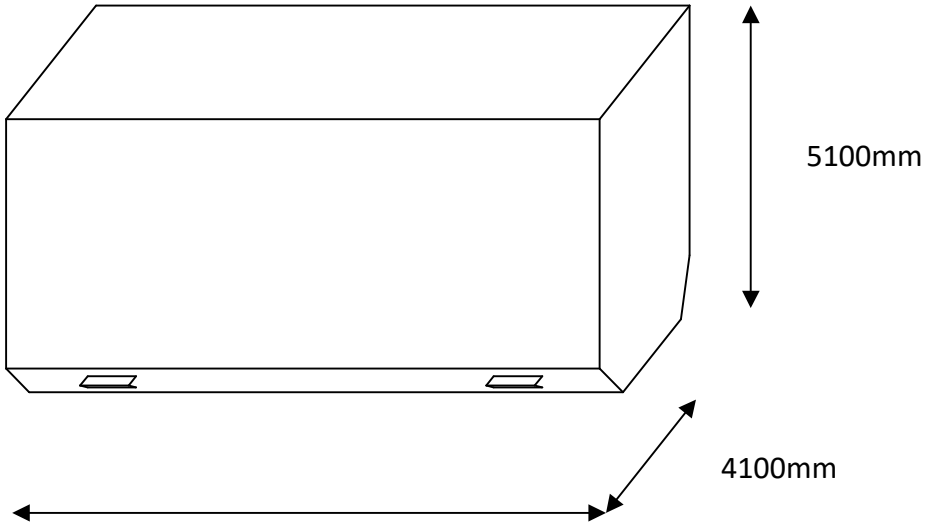
7.11. All inspections and assessments are made for the road movement of loaded trailer equipment carrying specific storage tank components. These dimensions are based on the turning circles and specification of Collett & Sons trailer equipment.

7.12. All route inspections and assessments, and subsequent conclusions and recommendations are deemed accurate by Collett & Sons Limited at the date that this report is created. We cannot be held responsible for the development of future road schemes or alterations to the routes surveyed that may leave this report inaccurate.

7.13. This report is based solely on a preliminary visual inspection. Nothing in this report shall be construed in any way as committing Collett & Sons Limited to being able to deliver to site using this route before further structural analysis has been undertaken, and any accommodation/remedial works undertaken which are to Collett & Sons satisfaction.

APPENDIX 1
TRANSFORMER DRAWING

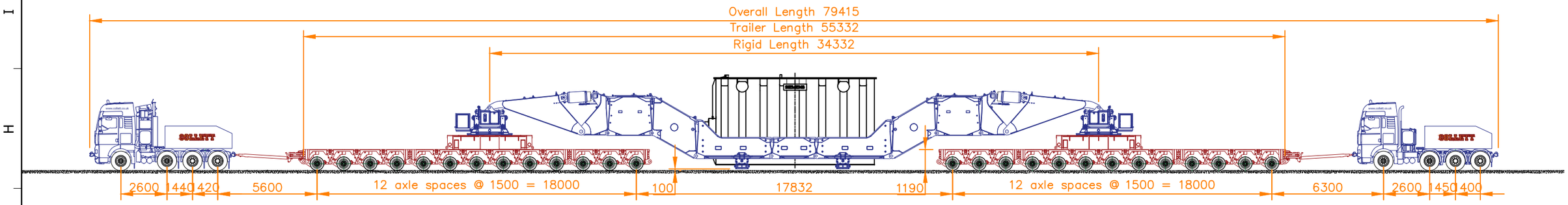
Estimated Transformer Dimensions



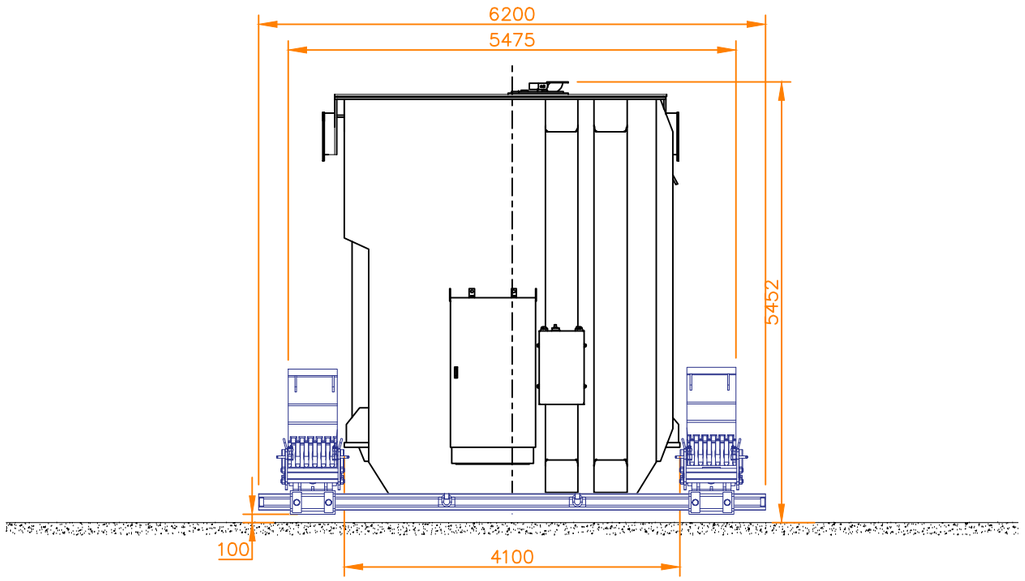
Shipping mass 332000 Kg

APPENDIX 2
LOADED CONFIGURATION DRAWING

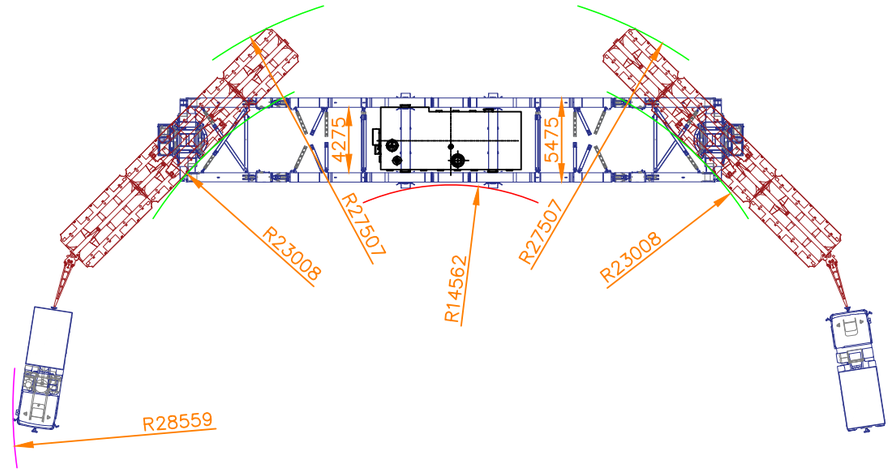
SIDE ELEVATION VIEW. SCALE 1:225



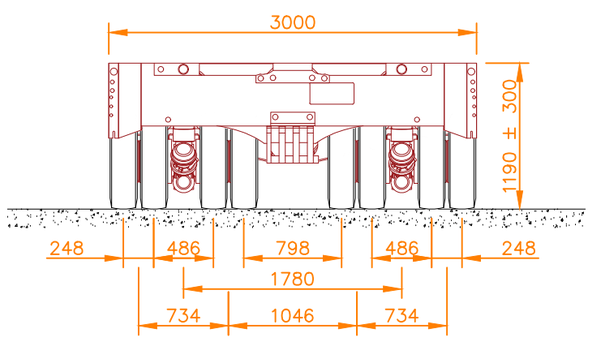
TRAFO ON BEAMS REAR ELEVATION VIEW. SCALE 1:75



TURNING PLAN VIEW. SCALE 1:400



END ELEVATION VIEW OF MODULAR AXLES. SCALE 1:50



Weights Table		
Type	Description	Weight
Type of Trailer	13 Axle Girder Set 13 Axle	160.820 t
Type of Load	Transformer	332.000 t
	Total loaded weight excluding tractor units	492.820 t
	Load per axle line on trailer	15.275 t
	Load per axle per file	7.638 t
	Load per wheel on trailer	1.909 t
Abnormal Load Classification: **Special Order (BE16)**		

For Information

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3.	ALL WEIGHTS ARE IN METRIC TONNES (t) UNLESS OTHERWISE STATED.
4.	THE CLIENT IS RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF THE LOAD TRANSPORTED.
5.	THE CLIENT IS TO IDENTIFY AND CONFIRM THE SUITABILITY OF THE SUPPORT POINTS ON THE LOAD TO BE UTILISED DURING TRANSPORT.
6.	ALL EQUIPMENT IS SUPPLIED IN ACCORDANCE WITH COLLETT & SONS LIMITED TERMS AND CONDITIONS, AND THE RELEVANT R.H.A. 2009 TERMS AND CONDITIONS.
7.	WITHOUT AUTHORISED SIGNATURES THIS DOCUMENT IS UNCONTROLLED, NOT BINDING AND FOR INDICATIVE PURPOSES ONLY.

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00	A.Abdallah	27/08/2019	E.Crosby	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Transformer Transport Arrangement**

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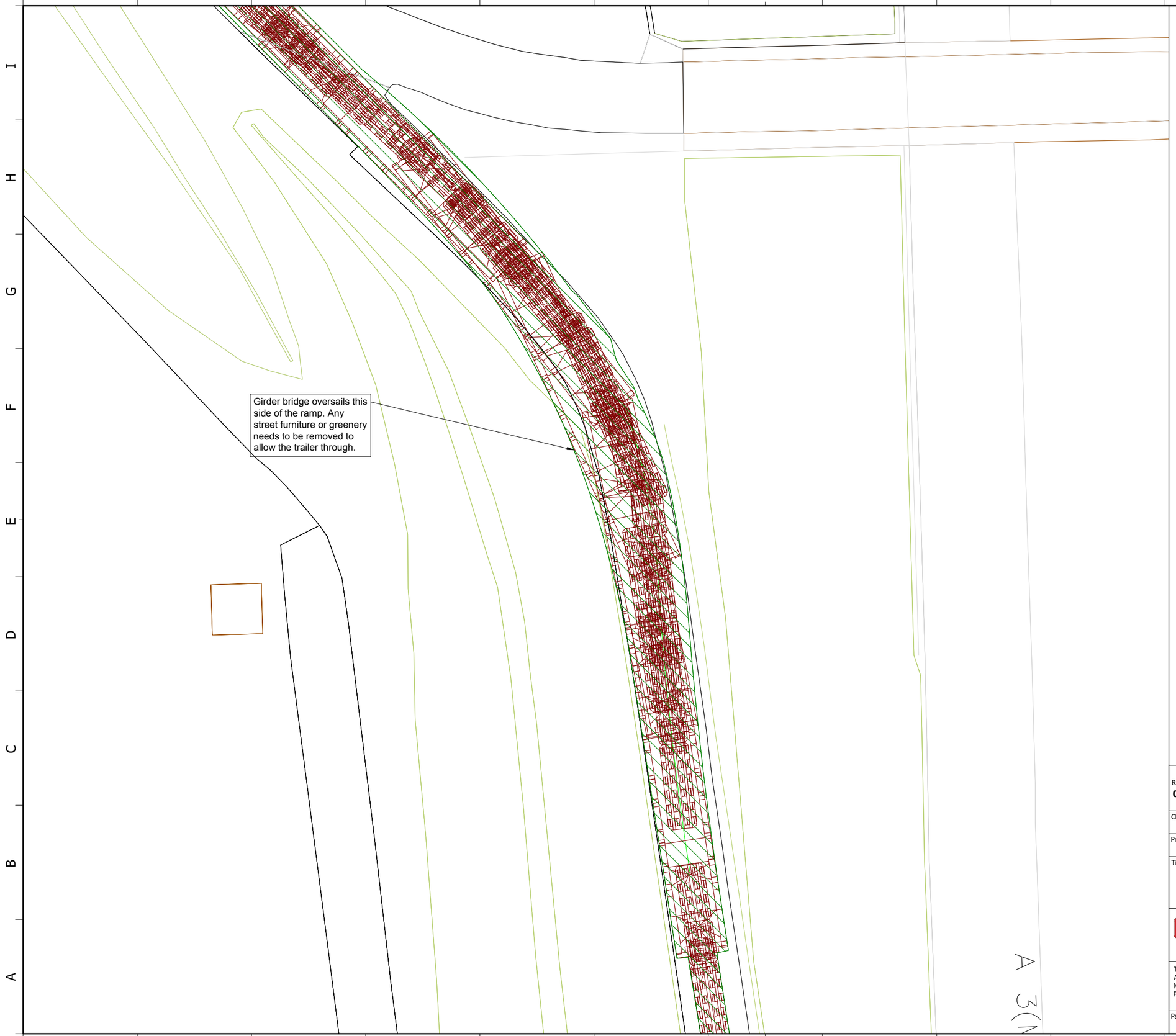
APPENDIX 3
SWEPT PATH ANALYSIS DRAWINGS



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5.	THE CLIENT IS RESPONSIBLE FOR THE STRUCTURAL INTEGRITY OF THE LOAD TRANSPORTED.
6.	THE CLIENT IS TO IDENTIFY AND CONFIRM THE SUITABILITY OF THE SUPPORT POINTS ON THE LOAD TO BE UTILISED DURING TRANSPORT.
7.	SECURE CARGO ONTO THE TRAILER USING LASHING MATERIAL TO PREVENT SLIDING AND/OR TIPPING OF THE LOAD. ALL STRAPS AND CHAINS TO BE TIGHTENED WITH RATCHET BINDERS. ANTI SLIP RUBBER MATTING TO BE USED BETWEEN THE TRAILER AND THE BASE OF THE LOAD INCLUDING ALL STEEL CONTACT AREAS TO PROMOTE FRICTION.
8.	ALL EQUIPMENT IS SUPPLIED IN ACCORDANCE WITH COLLETT & SONS LIMITED TERMS AND CONDITIONS, AND THE RELEVANT R.H.A. 2009 TERMS AND CONDITIONS.
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00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **A3 (M) Jct. 2 SPA**

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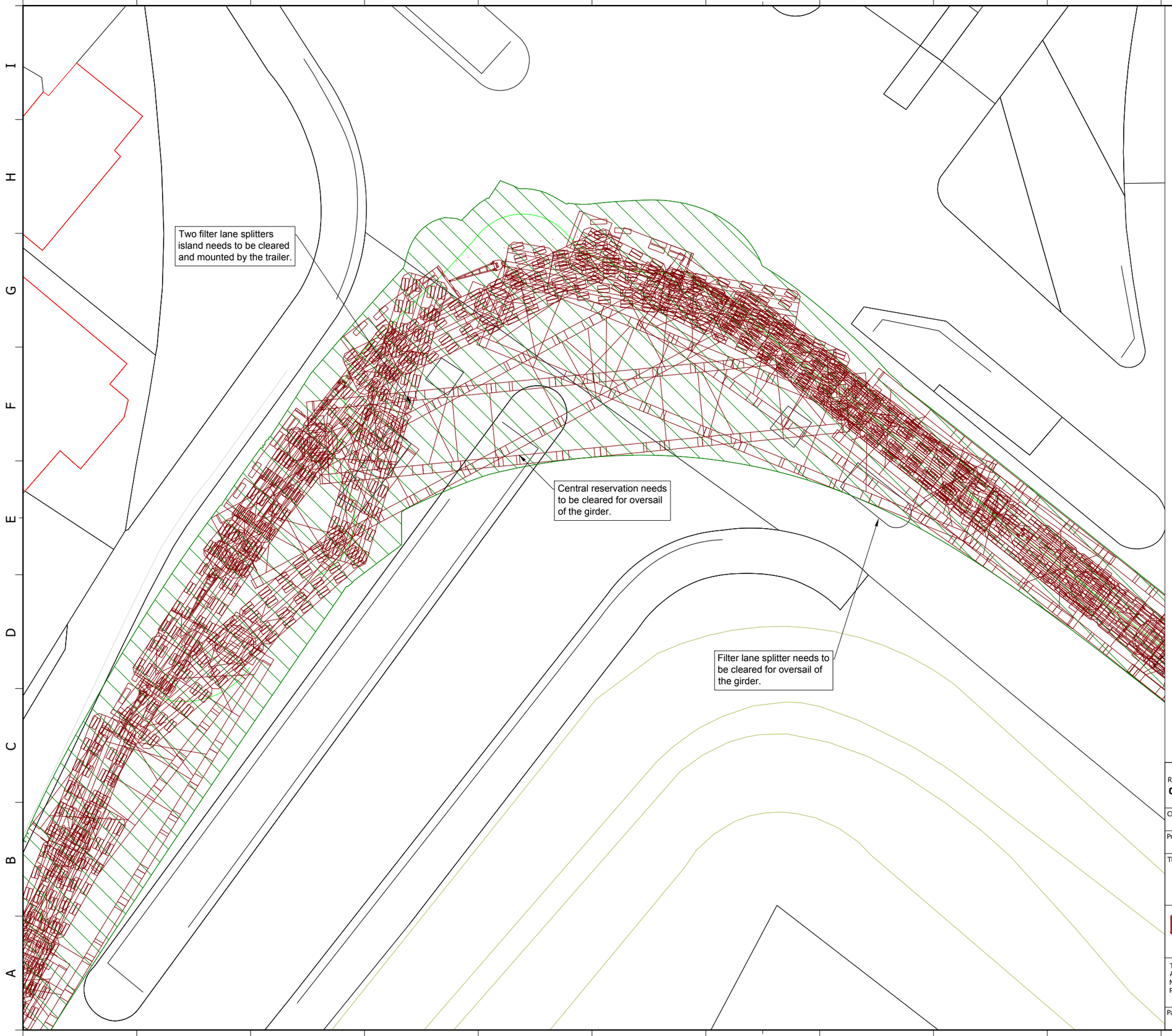

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Rev:	Drawn by:	Date:	Checked by:	Date:
00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Portsmouth Road Jct. SPA**

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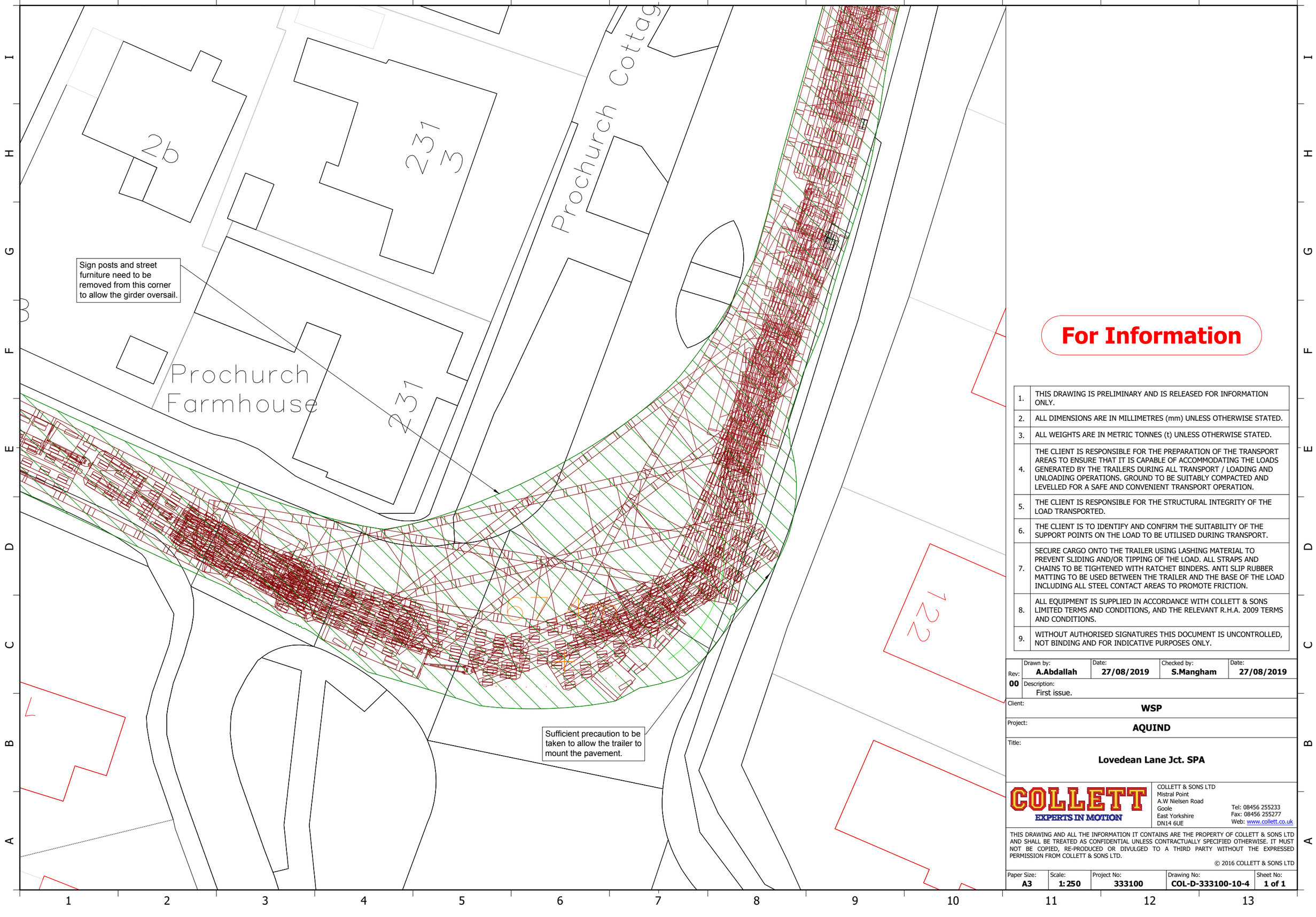

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Rev:	Drawn by:	Date:	Checked by:	Date:
00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Lovedean Lane Jct. SPA**

COLLETT & SONS LTD
Mistral Point
A.W Nielsen Road
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DN14 6UE
Tel: 08456 255233
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Web: www.collett.co.uk

Paper Size:	Scale:	Project No:	Drawing No:	Sheet No:
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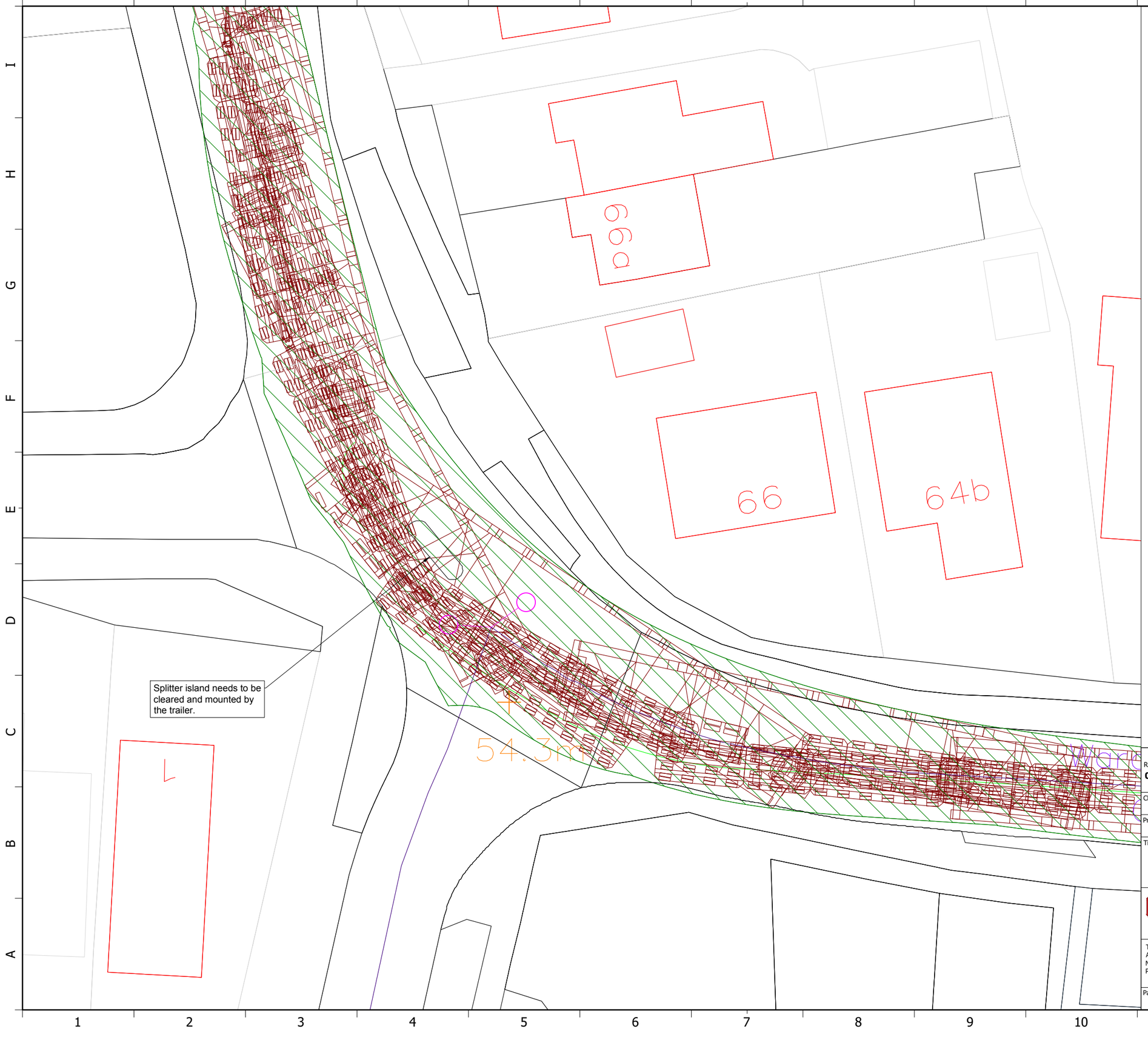

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00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Lovedean Lane Milton Road Jct. SPA**

COLLETT & SONS LTD
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A3	1:250	333100	COL-D-333100-10-5	1 of 1

For Information

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00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Day Lane Jct. SPA**

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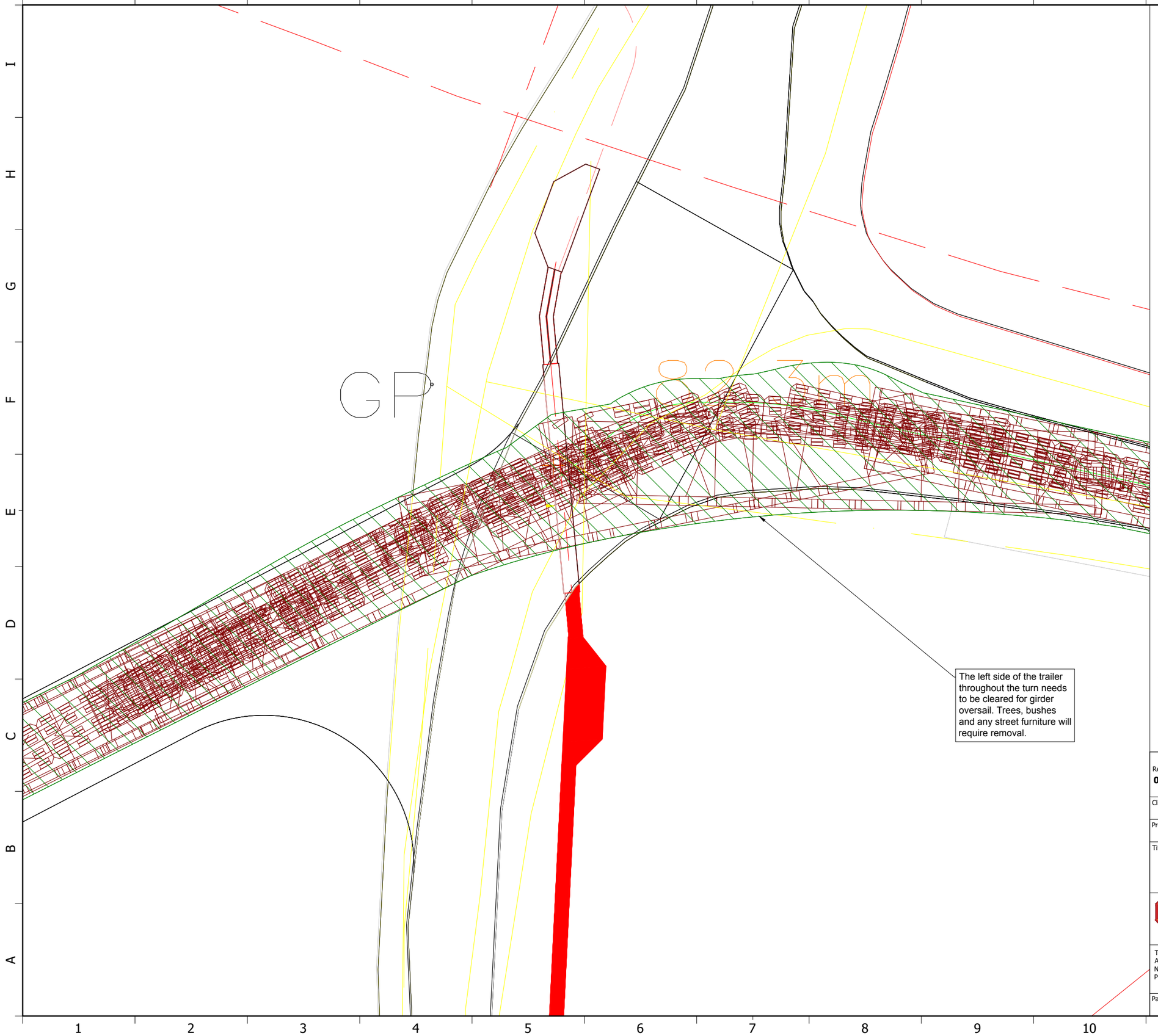

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00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Site Entrance Option 1 SPA**

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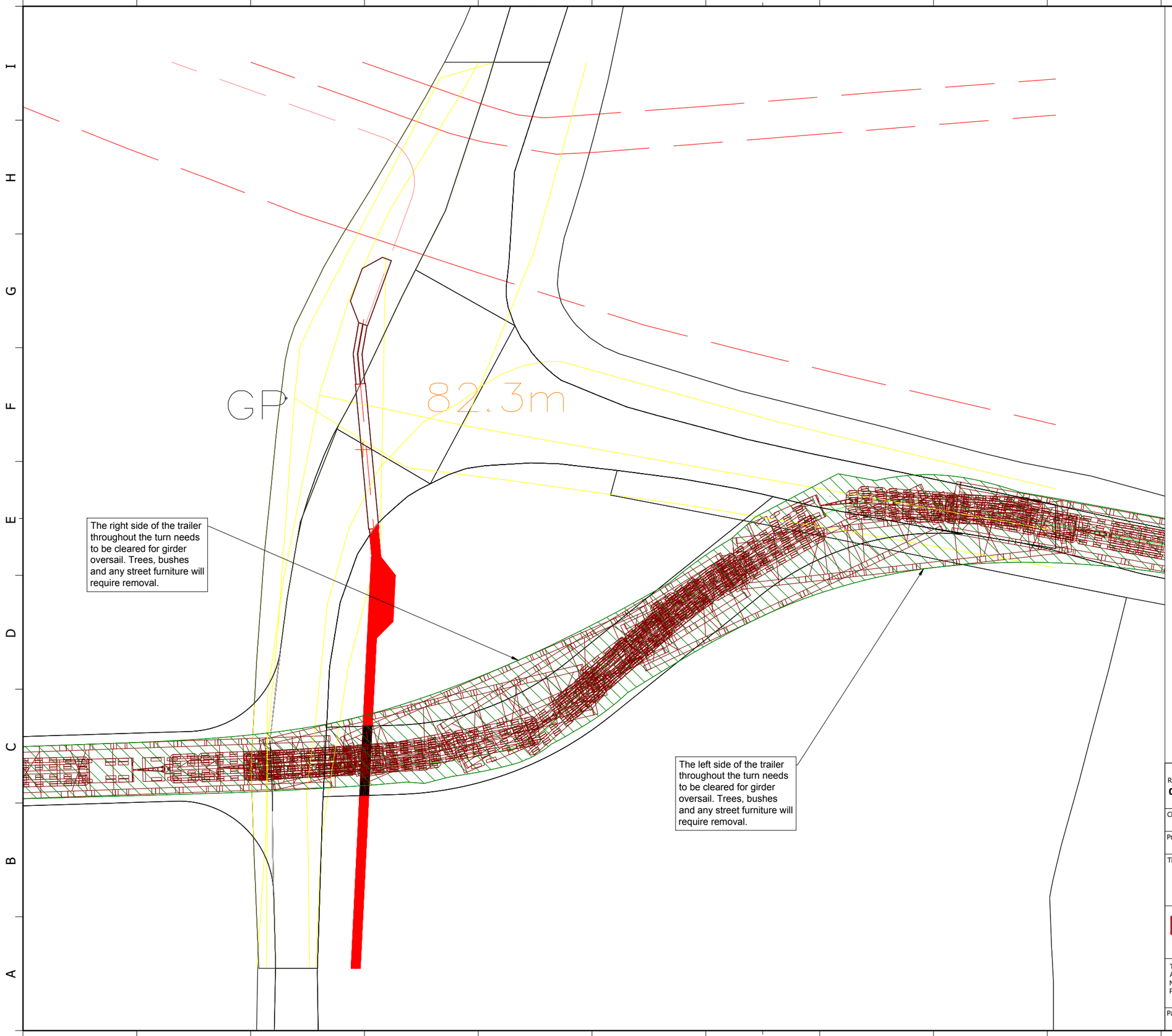

For Information

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00	A.Abdallah	27/08/2019	S.Mangham	27/08/2019

Description: First issue.

Client: **WSP**

Project: **AQUIND**

Title: **Site Entrance Option 2 SPA**

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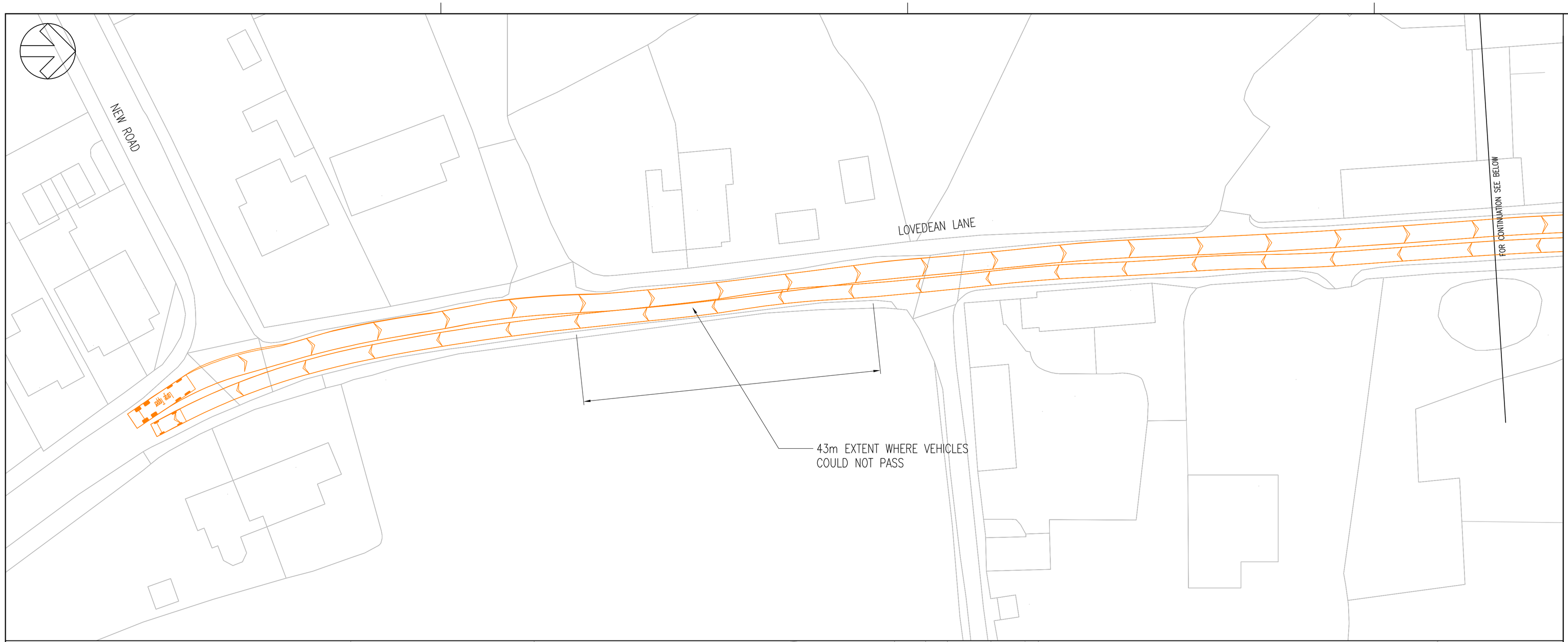
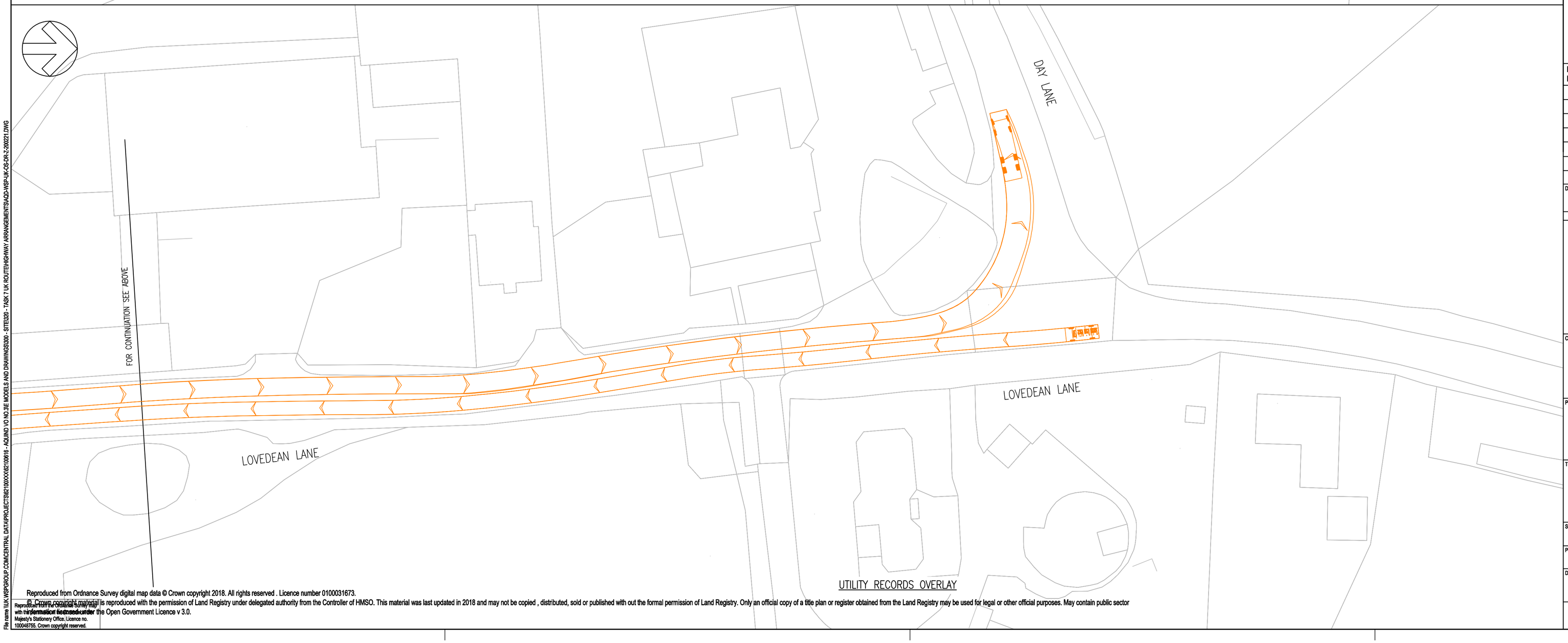
Paper Size:	Scale:	Project No:	Drawing No:	Sheet No:
A3	1:400	333100	COL-D-333100-10-8	1 of 1

Appendix 6 – Swept Path Analysis





NOTES

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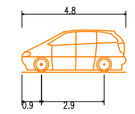
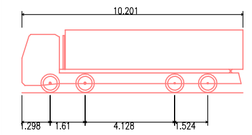
3. VEHICLES TRACKED AT 10mph.
4. TRACKING IS BASED ON OS MAPPING DATA. THIS MAY BE INACCURATE AND THE AVAILABLE CARRIAGEWAY MAY BE WIDER OR NARROWER THAN INDICATED.

KEY

DEVELOPMENT CONSENT ORDER BOUNDARY



STANDARD DESIGN VEHICLE (SDV)	
OVERALL LENGTH	4.800m
OVERALL WIDTH	2.000m
OVERALL BODY HEIGHT	1.950m
MIN BODY GROUND CLEARANCE	0.100m
TRACK WIDTH	2.000m
LOCK TO LOCK TIME	4.00s
WALL TO WALL TURNING RADIUS	6.000m



LARGE TIPPER	
OVERALL LENGTH	10.201m
OVERALL WIDTH	2.495m
OVERALL BODY HEIGHT	2.890m
MIN BODY GROUND CLEARANCE	0.341m
TRACK WIDTH	2.471m
LOCK TO LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	11.550m

Infrastructure Planning (Applications: Prescribed Forms & Procedure) Regulations 2009 - Regulation 5(2)(i)

REV	DATE	BY	DESCRIPTION	CHK	APP
01	25/10/2019	MB	FIRST ISSUE	DP	CW

DRAWING STATUS:

SUBMISSION FOR APPROVAL

wsp

Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
T+ 44 (0) 2380 101 700
wsp.com

CLIENT:

AQUIND

PROJECT:

AQUIND Interconnector

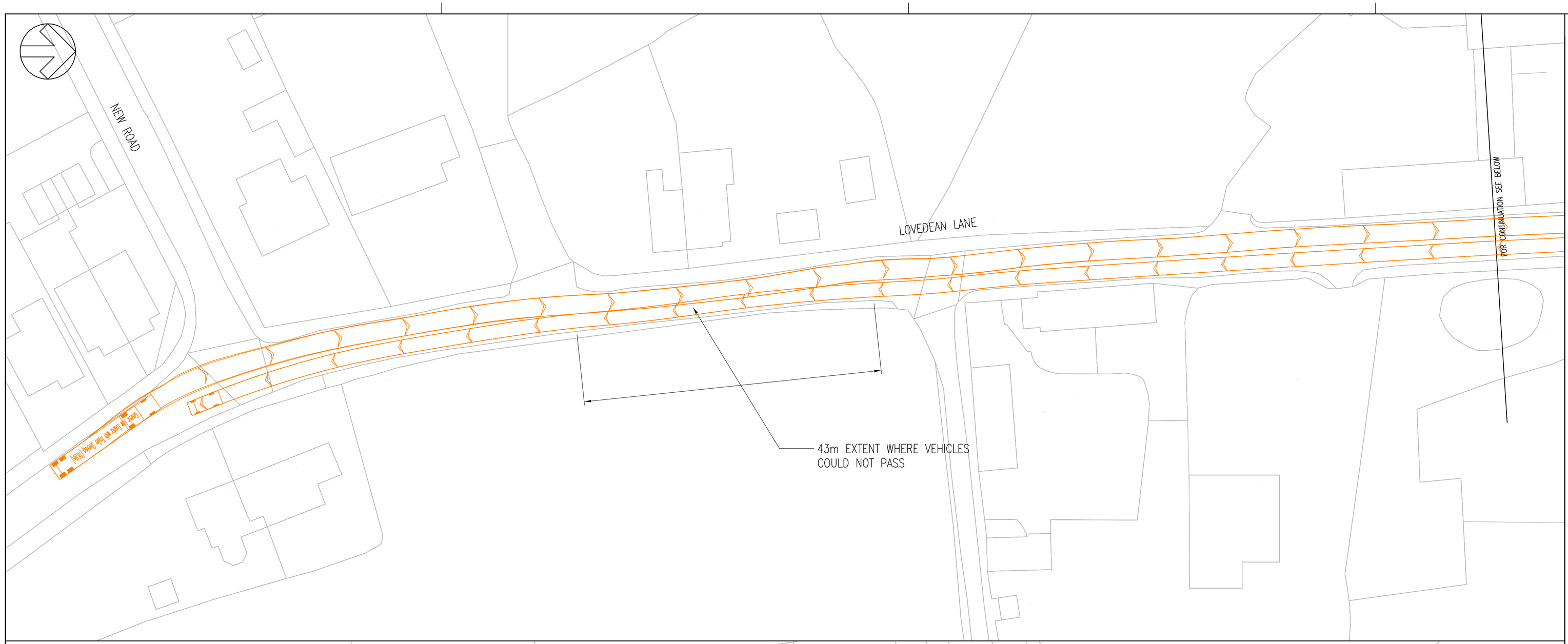
TITLE:

LOVEDEAN LANE
FOUR AXLE TIPPER TRACKING
SHEET 1 OF 1

SCALE AT A1:	CHECKED:		APPROVED:
1:500	DP		DP
PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	MB	MB	25/10/2019

DRAWING No: AQD-WSP-UK-OS-DR-Z-200215 REV: 01

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\62100XX\62100616 - AQUIND V01 WO 3\E.MODELS AND DRAWINGS\300 - SITES\300 - TASK 7 UK ROUTE\HIGHWAY ARRANGEMENTS\AQD-WSP-UK-OS-DR-Z-200221.DWG



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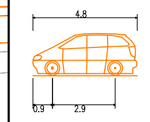

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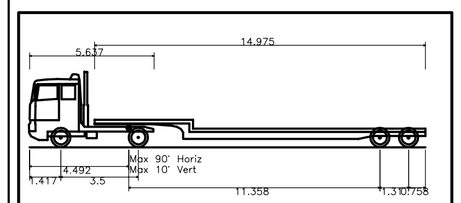
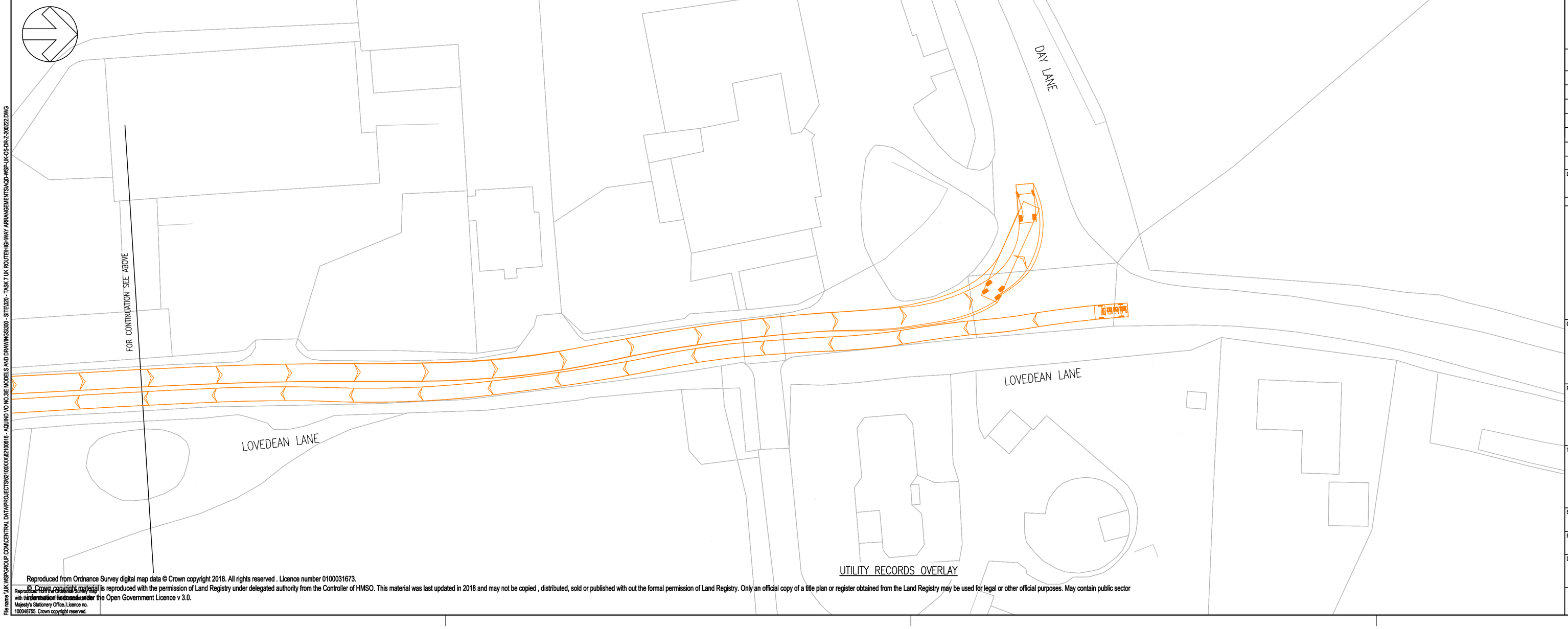
WALL TO WALL TURNING RADIUS	6.000m



Generic Low Loader with Trailer Steering (18.0m	
Overall Length	17.918m
Overall Width	2.540m
Overall Body Height	3.408m
Min Body Ground Clearance	0.332m
Max Track Width	2.520m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.350m



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Grosvenor House, 2 Grosvenor Square, Southampton, SO15 2BE, UK
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wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: LOVEDEAN LANE LOW LOADER TRACKING SHEET 1 OF 1

SCALE AT A1:	CHECKED:		APPROVED:
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PROJECT No: 62100616	DESIGNED: MB	DRAWN: MB	DATE: 25/10/2019

DRAWING No: AQD-WSP-UK-OS-DR-Z-200215 REV: 01

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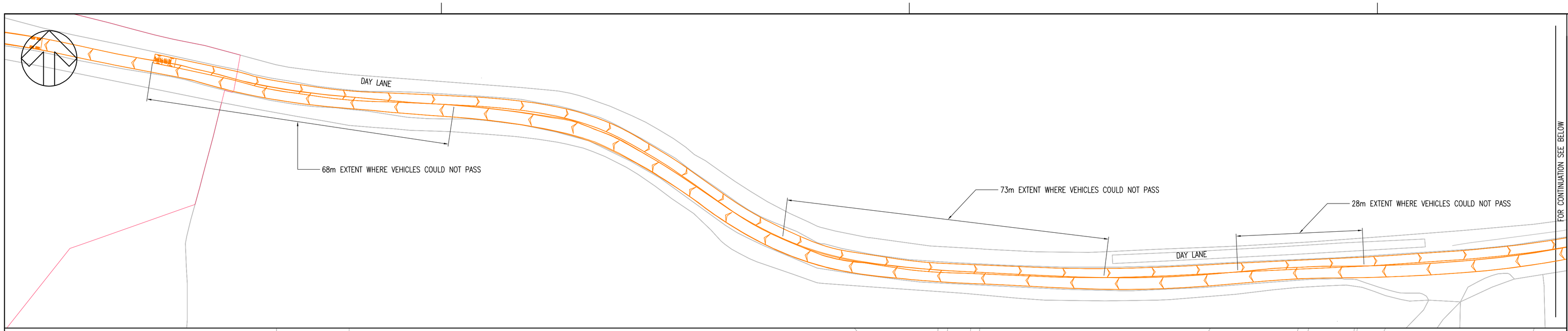

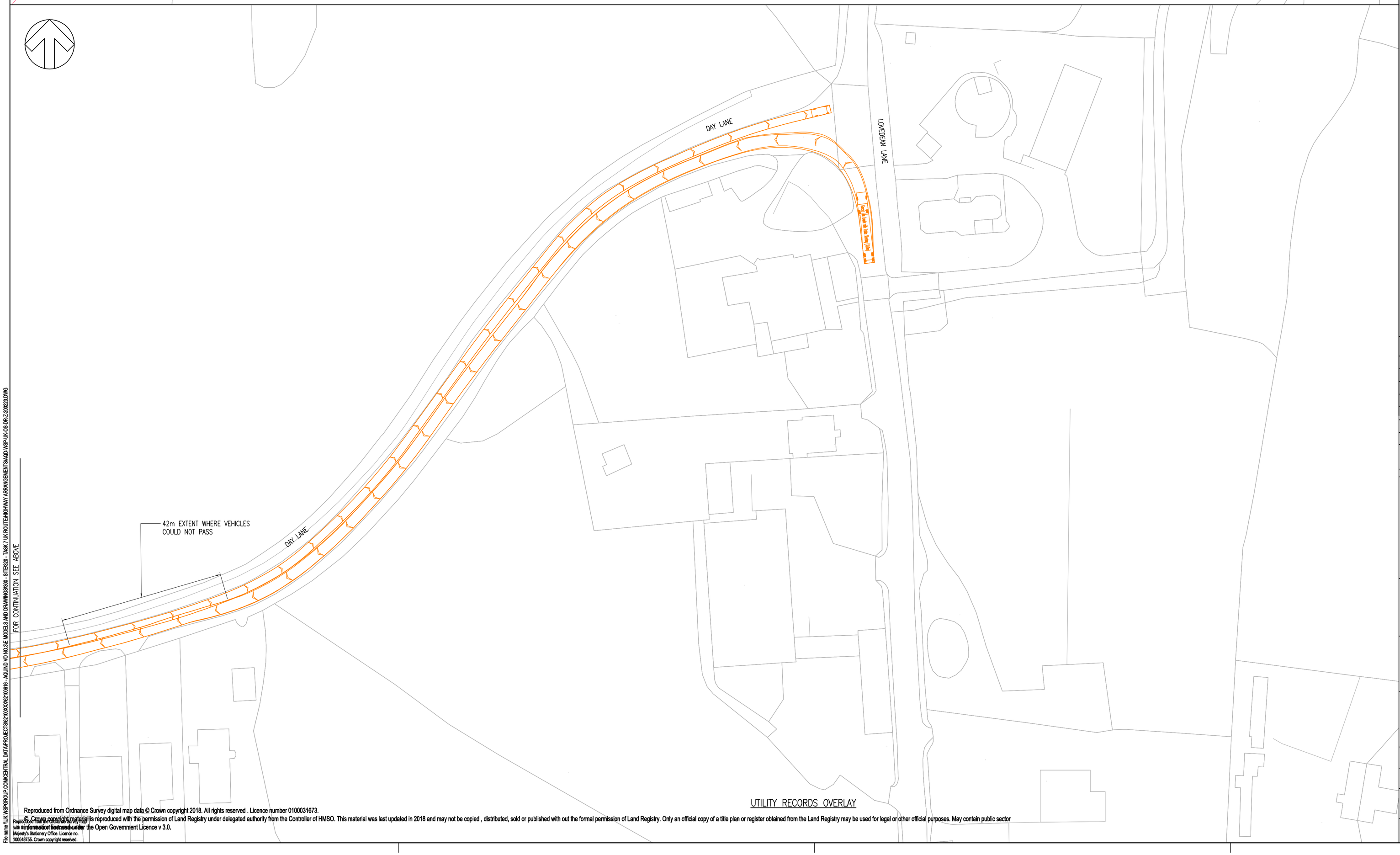

UTILITY RECORDS OVERLAY

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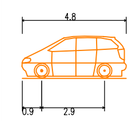
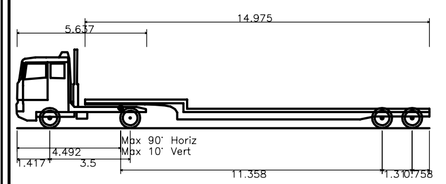
DEVELOPMENT CONSENT ORDER BOUNDARY



STANDARD DESIGN VEHICLE (SDV)	
OVERALL LENGTH	4.800m
OVERALL WIDTH	2.000m
OVERALL BODY HEIGHT	1.950m
MIN BODY GROUND CLEARANCE	0.100m
TRACK WIDTH	2.000m
LOCK TO LOCK TIME	4.00s
WALL TO WALL TURNING RADIUS	6.000m



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Overall Body Height	3.408m
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Kerb to Kerb Turning Radius	6.350m

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REV	DATE	BY	DESCRIPTION	CHK	APP
01	25/10/2019	MB	FIRST ISSUE	DP	DW

DRAWING STATUS: SUBMISSION FOR APPROVAL

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T+ 44 (0) 2380 101 700
wsp.com

CLIENT: AQUIND

PROJECT: AQUIND Interconnector

TITLE: DAY LANE
LOW LOADER TRACKING
SHEET 1 OF 1

SCALE AT A1:	CHECKED:	APPROVED:
1:500	DP	DP

PROJECT No:	DESIGNED:	DRAWN:	DATE:
62100616	MB	MB	25/10/2019

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