BETTER SOLUTIONS, INTELLIGENTLY ENGINEERED

TRANSPORT & INFRASTRUCTURE PLANNING

Avant Homes Ltd

Land North of B6096 Hawshaw Lane

Hoyland, Barnsley

Transport Assessment

www.bwbconsulting.com

TRANSPORT & INFRASTRUCTURE PLANNING

Avant Homes Ltd

Land North of B6096 Hawshaw Lane

Hoyland, Barnsley

Transport Assessment

Birmingham
Livery Place, 35 Livery Street
Birmingham, B3 2PB
T: 0121 233 3322

Cambridge
14-16 High Street, Histon
Cambridge, CB24 9JD
T: 0122 323 5173

Leeds
Whitehall Waterfront
2 Riverside Way
Leeds, LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 0207 407 3879

Manchester
Carver's Warehouse, 77 Dale Street
Manchester, M1 2HG
T: 0161 233 4260

Market Harborough
12a Woodcock House, Compass Point,
Market Harborough, Leicestershire, LE16 9HW
T: 0185 845 5020

Nottingham
5th Floor Waterfront House, Station Street
Nottingham, NG2 3DQ
T: 0115 924 1100

September 2018

DOCUMENT ISSUE RECORD

Document Number:	HLH-BWB-GEN-XX-RP-TR-001_Transport Assessment
BWB Reference:	LDP2191

Status	Revision	Date of Issue	Author	Checked	Approved
S2	P0.1	18.09.2018	Ahmad Huneidi	Matthew Addison	Shazad Khan
S2	P0.2	19.09.2018	Ahmad Huneidi	Matthew Addison	Shazad Khan
S2	**P2**	**27.09.2018**	**Ahmad Huneidi**	**Matthew Addison**	**Shazad Khan**

Notice

CONTENTS PAGE

1.0 INTRODUCTION 6
Appointment 6
Planning History and Proposed Development 6
Scoping Discussions 6
Report Structure 6
2.0 POLICY CONTEXT 8
Introduction 8
National Policy 8
Local Policy 9
3.0 EXISTING CONDITIONS 13
Site Location 13
Existing Use 13
Local Highway Network 13
Sustainability Infrastructure 14
Pedestrian Accessibility 14
Cycling Accessibility 15
Public Transport Accessibility 16
Road Safety Review 18
Existing Traffic Conditions 19
4.0 DEVELOPMENT PROPOSALS 20
Introduction 20
Access Arrangements 20
Internal Layout 20
Parking Provision 21
Servicing Arrangements 21
5.0 TRIP RATES & TRAFFIC GENERATION 23
Introduction 23
Vehicular Trip Rates & Traffic Generation 23
Traffic Distribution 25
Committed Developments 26
Future Traffic Growth 26
6.0 HIGHWAY IMPACT ASSESSMENT 28
Introduction 28
Highway Impact Assessment 28
B6096 Hawshaw Lane / Northern Site Access 29
B6096 Hawshaw Lane / Southern Site Access 29

A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane 30
Highway Mitigation 31
7.0 SUMMARY & CONCLUSIONS 33

LIST OF FIGURES

Figure 1: General Site Location Plan 13
Figure 2: Walking Isochrones 14
Figure 3: Barnsley Public Rights of Way Plan 15
Figure 4: Cycling Isochrones 16
Figure 5: Trip Distribution Proportions 25

LIST OF TABLES

Table 1: B6096 Hawshaw Lane Bus Services Summary 17
Table 2: Direct Train Services to/from Elsecar 17
Table 3: BMBC Parking Standards (SPD, March 2012) 21
Table 4: Consented Average Weekday Person Trip Rates 23
Table 5: Method of Travel To Work - E02001536: Barnsley 028 MSOA 23
Table 6: Average Weekday Person Trip Generation by Mode Share 24
Table 7: Development's Traffic Generation 24
Table 8: Traffic Growth Factors 26
Table 9: B6096 Hawshaw Lane / Northern Site Access Modelling Results 29
Table 10: B6096 Hawshaw Lane / Southern Site Access Modelling Results 30
Table 11: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane Without Mitigation Results #1 30
Table 12: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane Without Mitigation Results #2 31
Table 13: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane with Mitigation Results 32

DRAWINGS

HLH-BWB-GEN-01-DR-TR-001	Approved Northern Access Arrangements
HLH-BWB-GEN-01-DR-TR-002	Proposed Southern Access Arrangements
HLH-BWB-GEN-01-DR-TR-110	Northern Access Swept Path Analysis
HLH-BWB-GEN-01-DR-TR-111	Southern Access Swept Path Analysis
HLH-BWB-GEN-01-DR-TR-112	Internal Layout Swept Path Analysis #1
HLH-BWB-GEN-01-DR-TR-113	Internal Layout Swept Path Analysis #2

3406 SK003 004 Approved Mitigation Scheme for A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane

TRAFFIC FLOW DIAGRAMS

Diagram 1 Development Trip Distribution - (Based on Consented TA)
Diagram 2 Proposed Development Trip Assignment
Diagram 3 Committed Development Trip Assignment
Diagram 4 Total Development Trip Assignment
Diagram 5 2016 Baseline Traffic Flows
Diagram 6 2018 Baseline Traffic Flows
Diagram 7 2023 Baseline Traffic Flows
Diagram 8 2023 Baseline Traffic Flows + Proposed Development
Diagram 9 2023 Baseline Traffic Flows + Committed Development
Diagram 10 2023 Baseline Traffic Flows + Proposed + Committed Development

APPENDICES

Appendix A Indicative Site Layout Plan
Appendix B Personal Injury Collision Data
Appendix C Automatic Traffic Count Survey Data
Appendix D Approved TRICS Person Trip Rates
Appendix E B6096 Hawshaw Lane / Northern Site Access Junctions 9 Model Report
Appendix F B6096 Hawshaw Lane / Southern Site Access Junctions 9 Model Report
Appendix G Existing A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane LinSig Model Report
Appendix H Mitigated A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane LinSig Model Report

1.0 INTRODUCTION

Appointment

1.1 BWB Consulting Ltd (BWB) has been appointed by Avant Homes Ltd (The Applicant) to prepare this Transport Assessment (TA) to support a planning application for residential development at land to the north of Hawshaw Lane in Hoyland, Barnsley.

Planning History and Proposed Development

1.2 The local planning and highways authority is Barnsley Metropolitan Borough Council (BMBC), a unitary authority.

1.3 The Site benefits from outline planning consent (Application Ref. No. **2016/1531**) for a residential development of up to 100 units with all matters reserved apart from access. The application made by Hoyland Developments Ltd, was supported by a Transport Assessment and Travel Plan prepared by Fore Consulting, dated December 2016. This included an approved vehicular access from the B6096 Hawshaw Lane in the form of a simple priority junction with appropriate geometry and visibility splays.

1.4 The Client is now submitting a planning application for the 100 units already approved. The north-western side of the site has also been future proofed for development of further 68 units. Therefore, this TA assesses the impact of the total 168 units alongside transport related master planning advice for the full scheme. The indicative site layout plan is included in **Appendix A** for reference.

Scoping Discussions

1.5 BWB has engaged in pre-application scoping discussions with BMBC Highways and AECOM by email to agree the scope of the assessment.

1.6 In summary, it was agreed that the same principles set out in the TA prepared as part of the outline consent should be used. This includes the access provision, traffic impact parameters (trip rates, growth factors and distribution proportions) and study area junctions.

1.7 The study area junctions comprise:

- B6096 Hawshaw Lane / Northern Site Access (consented)
- B6096 Hawshaw Lane / Southern Site Access (proposed)
- A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction.

1.8 It should be highlighted that as part of the outline consent, a mitigation scheme was approved for the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction.

1.9 The junction was modelled with this mitigation to assess whether it would be able to accommodate the traffic generation of 168 units, hence assessing the worst case scenario. The results are further detailed within **Section 7.0**.

Report Structure

1.10 Following the introductory section this TA report is structured as follows:

- **Section 2: Policy Context** - summarises the key national and local planning policies relating to transport within the context of the scale and location of the proposed development;

- **Section 3: Existing Conditions** - describes the local highway network, sustainable infrastructure and review of existing road safety and traffic conditions;

- **Section 4: Development Proposals** – provides details of the proposed development and access arrangements including confirmation on parking numbers and servicing arrangements;

- **Section 5: Trip Generation, Distribution and Assignment** – quantifies the estimated trip generation of the proposed development during the peak hours of the highway network and describes how these would be assigned to the study area. Key assumptions relating to background traffic growth, committed developments and assessment years are also detailed in this section;

- **Section 6: Highway Impact Assessment** – details the impact of the proposed development on the local network in terms of highway capacity;

- **Section 7: Summary and Conclusions**

2.0 POLICY CONTEXT

Introduction

2.1 This chapter of the TA examines the context of the application site and how this relates to relevant planning policies and guidelines. It provides an overall spatial and planning context for the development proposal.

2.2 The following national and local planning documents have been reviewed:

- The adopted National Planning Policy Framework (March, 2012);
- The revised National Planning Policy Framework (July, 2018);
- Barnsley Core Strategy (2011);
- Barnsley Unitary Development Plan (2000);
- Barnsley Local Plan Publication Draft (2016); and the
- Parking Supplementary Planning Document (SPD).

National Policy

2.3 In March 2012, the Department for Communities and Local Government (DCLG) published the NPPF document which replaces historical National Planning Policy. This has since been updated and the Revised NPPF document was published on 24th July 2018.

2.4 The NPPF constitutes guidance for local planning authorities and decision-takers both in drawing up plans and as a material consideration in determining applications.

2.5 Planning law requires that applications for planning permission must be determined in accordance with the local development plan, unless material considerations indicate otherwise. It suggests that encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport.

2.6 Part 9 of the Revised NPPF relates to 'Promoting sustainable transport' and highlights the needs for transport issues to be considered from the earliest stages of development proposals, "*so that:*

a) the potential impacts of development on transport networks can be addressed;

b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised;

c) opportunities to promote walking, cycling and public transport use are identified and pursued;

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account;

e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and continue to making highway quality places."

2.7 In relation to 'considering development proposals', paragraph 108 of the Revised NPPF stipulates that in assessing specific application for development, "*it should be ensured that:*

a) Appropriate opportunities to promote sustainable transport modes can or have been taken up, given the type of development and its location;

b) Safe and suitable access to the site can be achieved for all users;

c) Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree".

2.8 In response to the above, the proposed development includes measures as part of the Travel Plan to promote sustainable transport modes. This report demonstrates that safe and suitable access can be achieved by all modes of travel.

2.9 Paragraph 109 of the Revised NPPF is key in terms of clarifying when a development should or should not be allowed planning permission. Paragraph 109 reads as follows:

> *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe".*

2.10 The outcomes of this report demonstrate that the proposal would not have an unacceptable impact on highway safety, neither would the residual cumulative impacts on the road network be considered 'severe'. On this basis, it is considered that the proposed development is planned in accordance with the Revised NPPF policy.

Local Policy

Overview

2.11 In 2014, BMBC resolved to bring the Local Development Scheme (LDS) into effect, which would involve the preparation of a new Local Plan. Once adopted as a whole, the LDS will set out BMBC's policies relating to the development of land across the authority area over the time of the Local Plan period (2014 – 2033). When it becomes adopted, the new Local Plan will form the statutory development plan for Barnsley and replace the following documents:

- The Core Strategy (2011);
- Education Sites (2009); and
- The Unitary Development Plan (UDP) saved policies (2000).

2.12 At the time of writing (September 2018), the timescales for the adoption of the Local Plan is yet to be confirmed. However, adoption is anticipated for late 2018[1].

2.13 Until the new Local Plan is adopted, the BMBC's Statutory Development Plan is the principal planning policy guidance for all planning applications, this consists of the following two planning policy documents:

[1] https://www.barnsley.gov.uk/services/planning-and-buildings/local-planning-and-development/our-new-local-plan/barnsleys-local-plan/

- The Core Strategy (2011); and
- The Unitary Development Plan (UDP) saved policies (2000).

2.14 As such, the above planning policy documents are considered in detail as part of this policy review as well as the adopted supplementary planning documents and the Local Plan Publication Draft (2016) for completeness.

Core Strategy

2.15 The Core Strategy was adopted by BMBC in September 2011 and therefore pre-dates the original and revised versions of the NPPF. The aim of the Core Strategy is to provide a key planning framework for the borough, and provide a long-term approach to spatial planning in order to achieve the Council's vision.

2.16 It is considered that the following policies are relevant to the development in terms of transport and highways:

2.17 ***CS Strategic Objective 2:*** *To improve access, movement and connectivity by sustainable travel by ensuring new developments reduce the need for car parking provision to a minimum.*

2.18 ***CS Strategic Objective 3:*** *To secure safe, healthy and inclusive communities and promote wellbeing.*

2.19 **CSP 25: New Development and Sustainable Travel:** New development will be expected to

- *"be located and designed to reduce the need to travel, be accessible by public transport and meet the needs of pedestrians and cyclists*
- *provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people, and should not provide more than the maximum number of parking spaces set out in a SPD*

- *provide a transport statement and assessment in line with the thresholds and guidance set out in Department for Transport 'Guidance on Transport Assessments' as published in March 2007 (or any subsequent version)*

- *provide a travel plan statement or a travel plan in accordance with the thresholds and guidance set out in Department for Transport 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process' as published in April 2009 (or any subsequent version). Travel Plans will be secured through a planning obligation or a planning condition*

- *Where levels of accessibility through public transport, cycling and walking are unacceptable, we will expect developers to take action or make financial contributions in accordance with policy CSP 42.*

- *If it is not possible or appropriate for the minimum amount of parking for cycles, motorbikes, scooters and mopeds to be met on site, the developer must provide, or contribute towards, off-site parking, or improve or provide other forms of travel."*

2.20 **CSP 26: New Development and Highway Improvement**

"New development will expected to be designed and built to provide safe, secure and convenient access for all road users.

If a development is not suitably served by the existing highway, or would create or add to highway safety problems or the efficiency of the highway for all road users, we will expect developers to take mitigating action or to make a financial contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition."

2.21 Therefore proposed development is planned in accordance with the Strategic Objectives of the Core Strategy by providing housing in an accessible location that is convenient placed in relation to access to local services and amenities.

2.22 This TA report demonstrates that the cumulative impact of the proposed development would not result in a severe impact on highways safety or capacity on the local highway network within the agreed study area. Furthermore, it is demonstrated that suitable access arrangements can be achieved to enable pedestrian, cycle, public transport and vehicular access to the development.

Unitary Development Plan (UDP)

2.23 BMBC adopted their UDP in December 2000. Since then, and following the adoption of the Core Strategy, some policies have been 'saved' and others superseded by the Core Strategy. The 'saved' policies remain in force and will be used for decisions on planning applications until the new Local Plan is adopted. There are no current UDP policies of relevant to the proposed development in terms of highways and transport.

Local Plan Publication Consultation Draft 2016

2.24 Barnsley's Local Plan was submitted to the Secretary of State for Communities and Local Government for examination on 23rd December 2016. The consultation for proposed modifications to the 2016 draft ran between 13th July 2018 and 28th August 2018. Adoption of the new Local Plan is expected late 2018. In light of this, only limited weight can be attached to its policies.

2.25 All policies relative to transport and land use planning are already aligned with the adopted Core Strategy (2011), and therefore there are no new policies of relevance.

2.26 Notwithstanding this, the Local Plan Publication Consultation does identify The Site in the allocation of sites for residential development. The wider site is known as '**Site H16 – Land North of Hoyland Road, Hoyland Common**' and it is indicated that it can accommodate 603 units. The guidance on the allocation expressed the following principles for development:

"The development will be subject to the production of a masterplan covering the entire site which ensures that:

- *All hedgerows and woodland blocks must be retained, enhanced and managed.*
- *A wildlife corridor should be created across The Site.*
- *The hedgerows and woodland areas within The Site are protected and enhanced.*

- *Appropriate access is provided.*

- *Appropriate acoustic measures are provided to mitigate against noise from the road."*

2.27 In relation to the above, BWB has identified a suitable, safe and permeable access strategy for The Site that accommodate all modes of transport.

'Parking' Supplementary Planning Document (SPD)

2.28 The Parking SPD was adopted by BMBC in March 2012 and supports Policy CSP 29 'Design' of the Core Strategy. It sets out the principles that will apply to the consideration of planning application for new residential development.

2.29 The SPD references the principles of Manual for Streets (MfS) and the South Yorkshire Residential Design Guide for all technical planning requirements.

3.0 EXISTING CONDITIONS

Site Location

3.1 The proposed development site is located to the east of the M1 Junction 36 in Hoyland, approximately 5.55km south of Barnsley City Centre. **Figure 1** shows the location of the proposed development site and the local highway network.

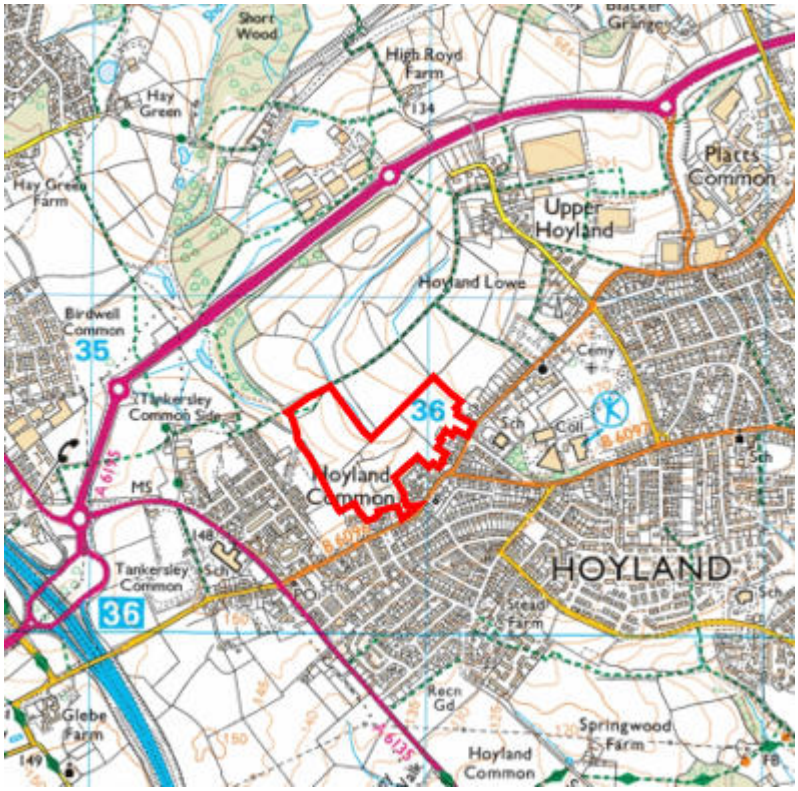


Figure 1: General Site Location Plan

Existing Use

3.2 The existing site currently comprises agricultural land bound to the southeast by a number of properties along the B6096 Hawshaw Lane and Stoney Croft. Access to the site is currently provided via a gated wooden entry circa 30m to the north of the B6096 Hawshaw Lane / West Street junction.

Local Highway Network

3.3 The B6096 Hawshaw Lane is a single carriageway road running between Wombwell Wood Roundabout to the northeast and the A6135 Sheffield Road / Tankersley Lane signalised junction. Footways are provided on both sides of the carriageway and along the site frontage, the B6096 Hawshaw Lane is subject to a 30 mph speed limit.

3.4 The B6097 West Street provides access to the wider Hoyland suburb, including Elsecar train station. It runs between Wath Roundabout to the east and the B6096 Hawshaw Lane to the west.

3.5 The A6135 runs between the A61 Derek Dooley Way in Sheffield and the A6195, which in turn links to the M1 Junction 36 at Tankersley Roundabout. The A6135 Sheffield Road section is a single carriageway subject to a 50 mph speed limit, which reduces to 30 mph near the A6135 Sheffield Road / Parkside Road junction towards Hoyland.

3.6 Overall, it is considered that the site is well located for access to the local, regional and national highway network.

Sustainability Infrastructure

Pedestrian Accessibility

3.7 The Chartered Institution of Highways and Transportation (CIHT) publication 'Guidelines for Providing for Journeys on Foot' (2000) describes what are considered acceptable walking distances for pedestrians without mobility impairment.

3.8 The guidance suggests that for commuting, school, and sight-seeing, up to 500m is the desirable walking distance, up to 1.0 km is an acceptable walking distance, and 2.0 km is the preferred maximum walking distance.

3.9 For bus stops in residential areas, 400m has traditionally been regarded as the maximum recommended walking distance. For train stations however, people are willing to walk up to 800m.

3.10 **Figure 2** shows 0.5 km, 1 km and 2 km walking isochrones from The Site access, covering most of Hoyland, Elsecar and Birdwell.

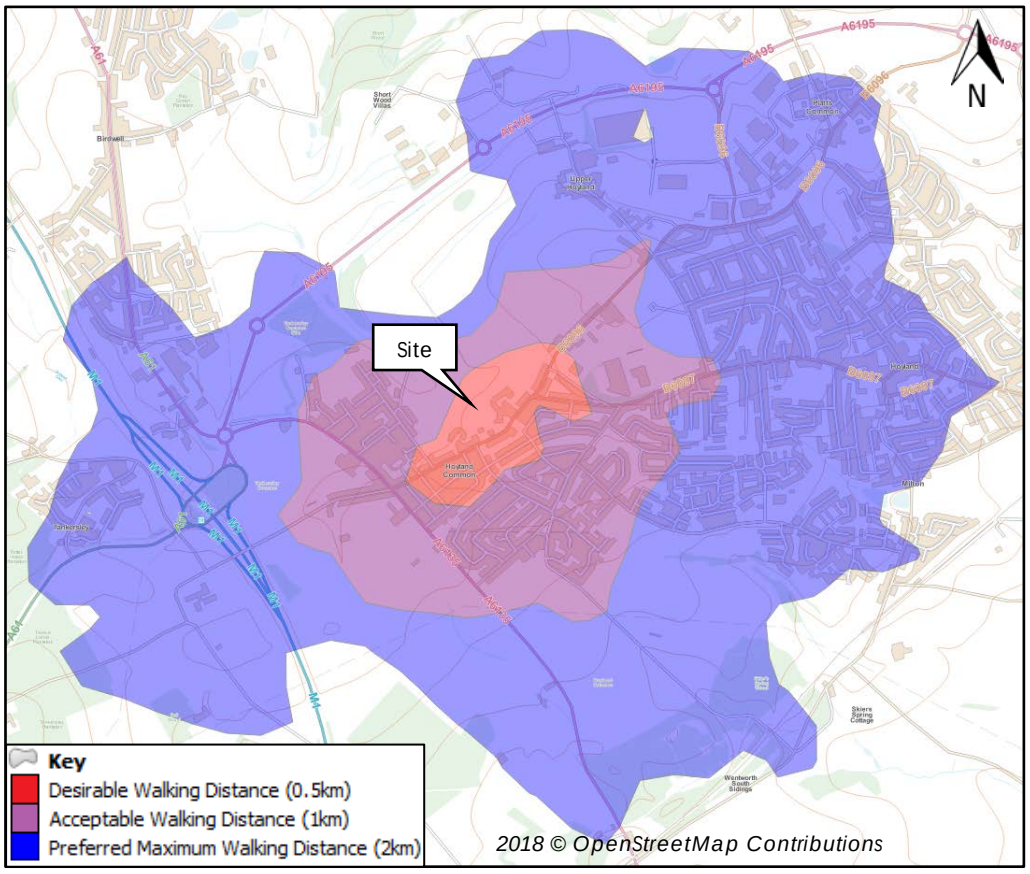


Figure 2: Walking Isochrones

3.11 A number of key local amenities and public transport facilities are therefore located within 2.0 km walking distance, including:

- Hoyland Road / Police Station bus stops – 370m

- West Meadows Primary School and Kirk Balk Academy – 490m
- Hoyland Leisure Centre – 650m
- Hoyland Road Co-op Food Store – 540m
- Hoyland Common Primary School – 850m

3.12 A number of key local employment destinations are also located within walking distance, which include Aldi / Rockingham Business Park north of the M1 Junction 36, Platts Common Industrial Estate and Ashroyd Business Park to the northeast of The Site.

3.13 In terms of existing pedestrian infrastructure, footways are provided on both sides of the B6096 Hawshaw Lane. A Public Right of Way (PRoW) also runs to the rear of The Site between the Playing Fields, Tinker Lane and towards Birdwall, under-passing the A6195. **Figure 3** shows PRoW from BMBC online definitive map record.

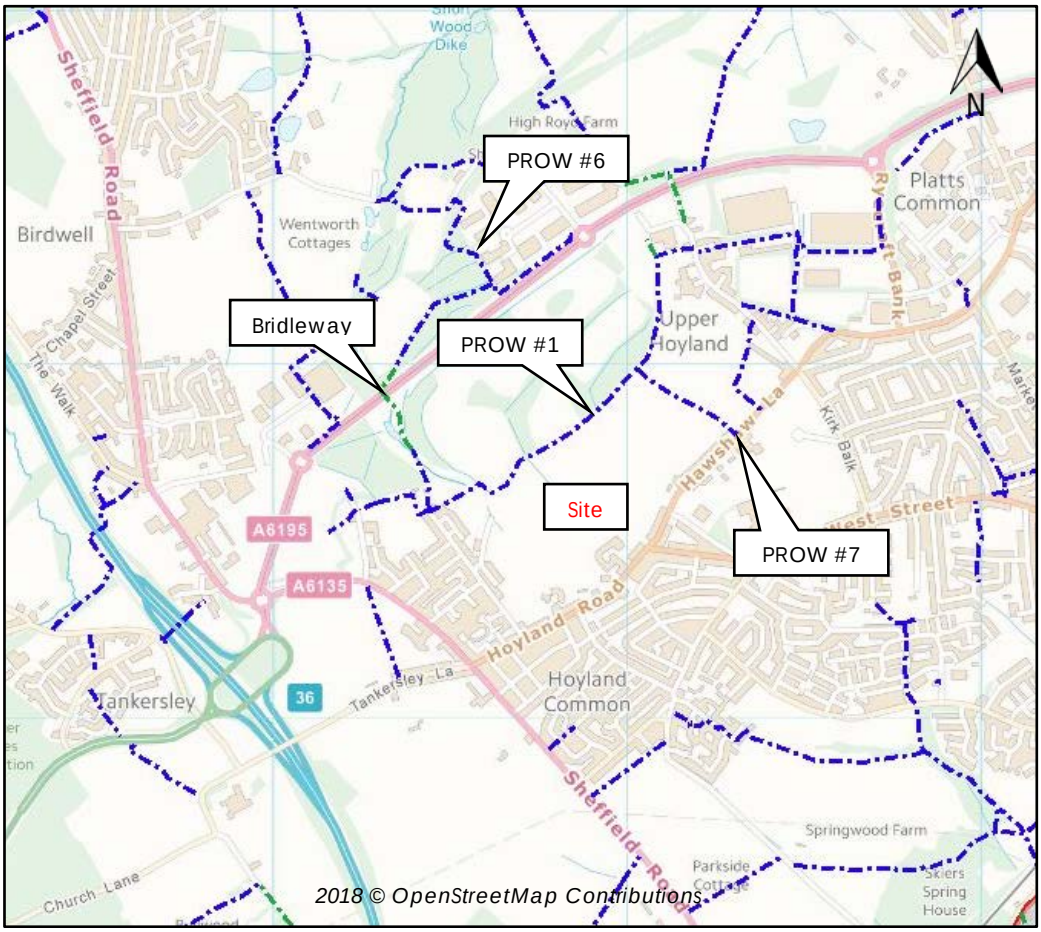


Figure 3: Barnsley Public Rights of Way Plan

Cycling Accessibility

3.14 Local Transport Note 2/08- Cycle Infrastructure design (DfT, October 2008) states that 'many cycle journeys are under three miles (5km), although for commuter journeys, a trip distance of five miles (8km) or more is not uncommon'. **Figure 4** shows a 5km catchment area centred on The Site.

3.15 DfT's Local Transport Note (LTN) 1/04 suggest that there are limits to the distances generally considered acceptable for cycling. The mean average length for cycling is 4km (2.4 miles), although journeys of up to three times this distance are not uncommon for regular commuters.

3.16 It is widely considered that cycling has the potential to substitute for short car trips, particularly those under 5km, and form part of a longer journey by public transport. Cycling is therefore an important journey to work mode that has the potential to perform a more significant role.

3.17 **Figure 4** shows 1 km, 2.5 km and 5 km isochrones from The Site access.

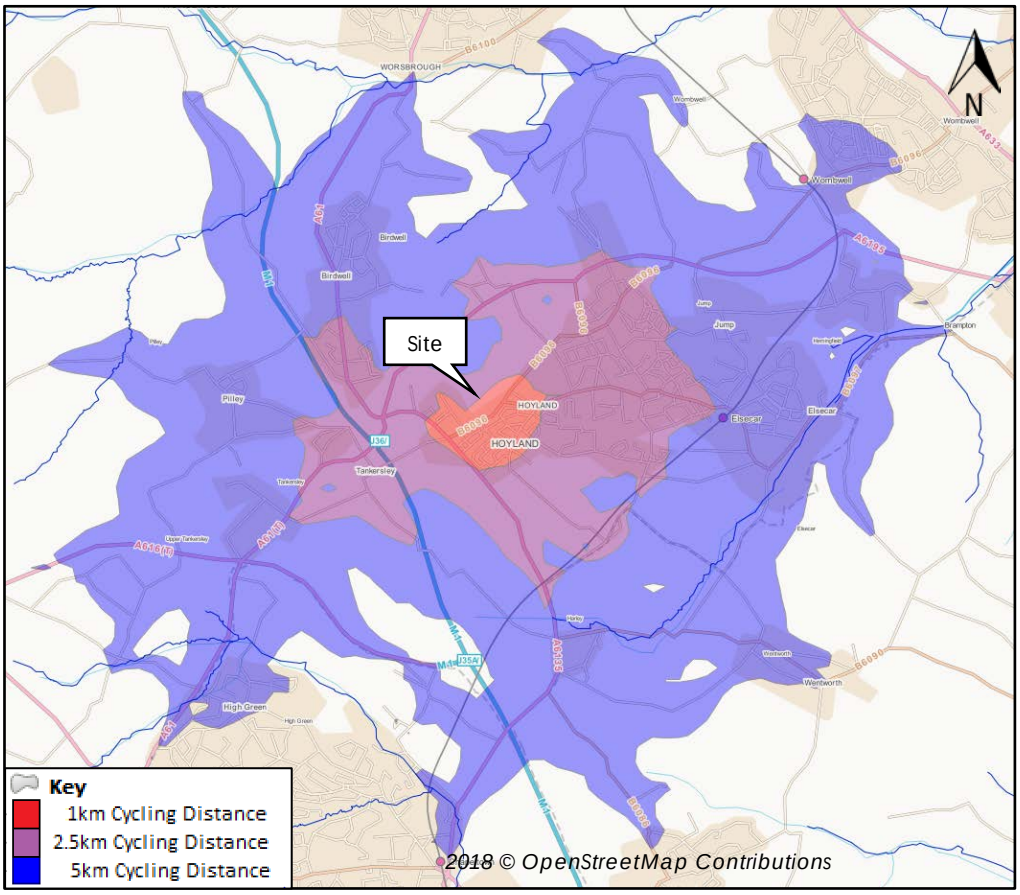


Figure 4: Cycling Isochrones

3.18 As shown, Hoyland, Elsecar and parts of Tankersley are within cycling distance from The Site. This includes Elsecar train station, which is located within 2.7m, hence providing for journeys by cycling and public transport.

Public Transport Accessibility

Bus Travel

3.19 In relation to bus accessibility, the Chartered Institute of Highways and Transportation's (CIHT) '*Buses in Urban Developments, January 2018*' publication, recommends that the maximum walking distance to '*single high-frequency routes (every 12 minutes or better)*' should be 400m. For less frequent bus routes, the maximum recommended walking distance is 300m.

3.20 The nearest bus stops to The Site are located on the B6096 Hawshaw Lane, approximately 370m from the centre of The Site. The bus stops are sheltered with seats and timetabling information for bus routes 66, 72/72A.

3.21 A summary of the local bus services is provided in **Table 1**.

Table 1: B6096 Hawshaw Lane Bus Services Summary

Service	Route (two-way)	Time of Operation & Frequency		
		Weekdays	Saturdays	Sundays
66	Barnsley – Birdwell – Hoyland Common – Hoyland – Jump - Elsecar	06:19-00:09 (every 10-20 minutes until 20:18)	06:38-23:55 (every 15-30 minutes until 18:56)	08:52-23:55 (every 30 minutes until 16:54)
72/72A	Chapeltown – High Green – Tankersley - Hoyland – Elsecar – Wath upon Dearne – Manvers	06:17-18:31 (every 60 minutes)	06:31-18:31 (every 60 minutes)	No Service
Source: https://www.travelsouthyorkshire.com/default.aspx				

3.22 As shown, bus route 66 operates seven days a week with an average frequency of one bus every 10 minutes (20 minutes outside peak hours). Bus route 66 connects to Barnsley Interchange and Elsecar train station, whereas bus routes 72/72A provide hourly service to Chapeltown and Hoyland Common.

Train Travel

3.23 As mentioned previously, Elsecar train station is located within cycling distance to/from The Site and is accessible by both bus routes 66 & 72/72A. **Table 2** shows the direct train journeys to/from Elsecar, including frequency and journey time.

Table 2: Direct Train Services to/from Elsecar

Destination (two-way)	Journey Time	Time of Operation & Frequency		
		Weekdays	Saturdays	Sundays
Barnsley	8-10 minutes	05:35-23:35 (every 30 minutes)	08:57-23:01 (every 60 minutes)	08:57-23:01 (every 60 minutes)
Sheffield	20-35 minutes	05:32-00:01 (every 30 minutes)	09:29-23:14 (every 60 minutes)	09:29-23:14 (every 60 minutes)
Source: https://www.thetrainline.com/				

3.24 As shown, Elsecar train station provides direct hourly train journeys to/from Barnsley and Sheffield train stations throughout the week. Elsecar train station is on the Penistone – Hallam Line, hence connecting to a number of train stations along, such as Meadowhall Interchange, Chapeltown and Wombwell.

Summary

3.25 In summary, the site is considered to be located in a sustainable location with access to a number of local amenities and public transport facilities. The TP, which has been prepared as a standalone document, will also promote the sustainable travel opportunities to future residents and reduce the reliance on single occupancy car travel.

3.26 In addition, the internal layout of the proposed development will be designed to adoptable standards, with provision of pedestrian, cycling and public transport infrastructure that links to the surrounding sustainable infrastructure.

Road Safety Review

3.27 Personal Injury Collision (PIC) data has been obtained from BMBC for the latest five-year period (2013-2017). Including the B6096 Hawshaw Lane, the study area covers the A6195 Dearne Valley Parkway to the north of The Site and the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane junction.

3.28 **Figure 5** below shows the PIC location plan and colour coded severity plot. The obtained PIC data is included in **Appendix B** for reference.

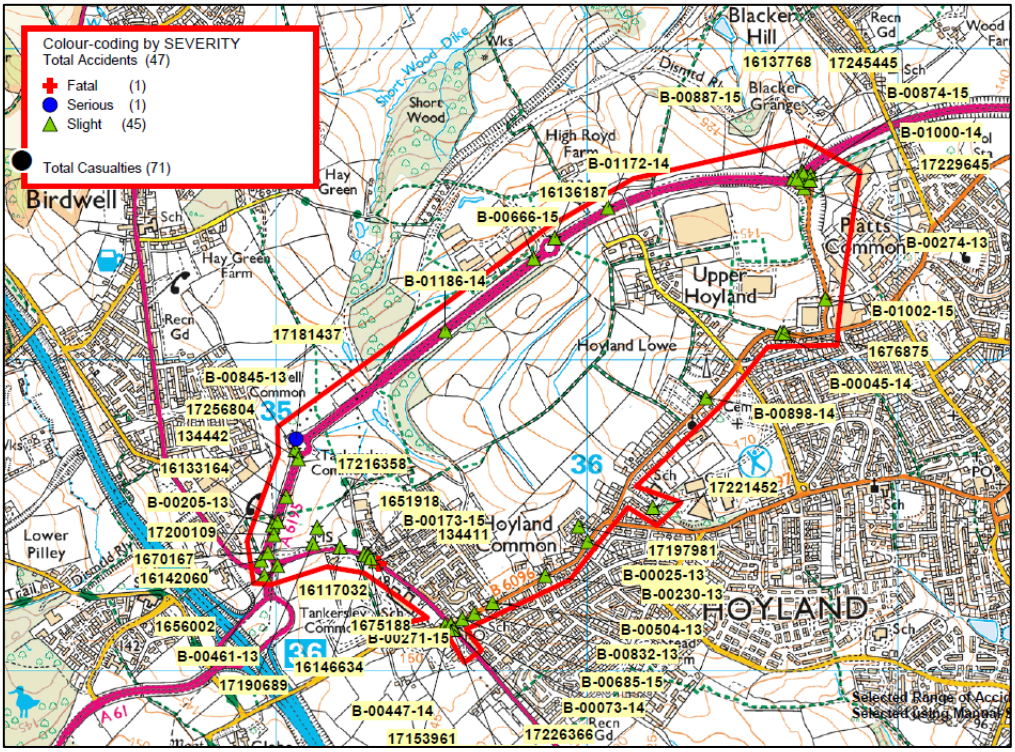


Figure 5: Personal Injury Collision Plot

3.29 As indicated within the plot, a total of 47 PICs occurred within the study area with a total of 71 casualties. Of the total 47 PICs, one was fatal, one serious and 45 slight.

3.30 The fatal PIC took place near the A6135 Sheffield Road / Regent Street junction and involved a private hire (taxi) vehicle. The driver was travelling northwest towards Birdwell Roundabout and has struck a nearside kerb and wall, resulting in vehicle turning over. Three passengers were injured, one with fatal injuries. The PIC report indicated that the first contributory factor is driver exceeding speed limit, followed by swerving and loss of control.

3.31 The serious PIC occurred on Rockingham Roundabout on the A6195 Dearne Valley Parkway and involved one vehicle (Goods > 7.5t). As the driver was manoeuvring around the roundabout, the vehicle overturned onto its nearside and collided with a lamp post. The PIC report suggested the main contributory factor is overloaded or poorly loaded vehicle.

3.32 PIC analysis has been undertaken for the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane junction as part of the TA prepared in support of the outline consent for the 100 units.

3.33 There were in total seven PIC of slight severity which occurred in proximity of the junction. The TA concluded that the *"majority of the accidents appear to be the result of driver error, typically involving collisions on entry / on approach to the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction".*

3.34 The TA suggested that *"There is no evidence to suggest that inadequate or masked signs, poor or defective road surfaces were contributory factors in any of the accidents"*, as the most common contributory factors included 'failed to look properly', 'poor turn or manoeuvre' and 'failed to judge other person's path or speed'.

3.35 BWB reviewed the PIC history between 2015 and 2017 (2018 data is currently unavailable). It was identified that only three PICs of slight severity took place along the study area and in proximity of the proposed site accesses.

3.36 BWB considers that the number of PICs that have occurred on the study area between 2015 and 2017 to be low and unlikely to have occurred due to physical characteristics associated with the road network.

3.37 The proposed development is also unlikely to cause a detrimental impact on the PIC rate, as the proposed access junctions would be designed to adoptable standards and the mitigation scheme on the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction would be subject to the relevant Road Safety Audit (RSA) process.

Existing Traffic Conditions

3.38 As part of the consented scheme, baseline traffic surveys were undertaken on Tuesday 10th May 2016. Junction Turning Count (JTC) surveys were undertaken on the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction.

3.39 In addition, Automatic Turning Counters (ATC) were installed on the B6096 Hawshaw Lane to identify the existing ahead traffic flows, vehicular classification and speeds. The ATC covered 7-day period between 6th and 12th July 2018. The data is included in **Appendix C** for reference.

3.40 As the JTC surveys were undertaken in May 2016, growth factors were applied to estimate the 2018 baseline traffic conditions, which is the planning application year for the 168 units development. Therefore the JTC survey data would be in line with the 2018 ATC data. This is detailed further within **Section 5.0** in this report.

3.41 The identified morning and evening peak periods of the highway network were 08:15-09:15 and 17:00-18:00 respectively.

4.0 DEVELOPMENT PROPOSALS

Introduction

4.1 The site measures approximately 5.7 hectares and will comprise 100 residential units (Class C3) with associated highways and landscaping improvements. The indicative site layout plan is included in **Appendix A** for reference.

4.2 As mentioned previously, the proposed 100 units benefit from outline planning consent, under Application Ref. **2016/153.** However this TA assesses the impact of additional 68 units, which would be developed at a later stage. The cumulative impact of total 168 units has therefore been considered.

Access Arrangements

4.3 Vehicular access to the site is proposed to be taken from two locations off the B6096 Hawshaw Lane. The northern access, which has been approved as part of the outline consent, is located circa 30m north of B6096 Hawshaw Lane / West Street junction. The southern access would be located around 103m southwest of B6096 Hawshaw Lane / Stoney Croft junction.

4.4 BWB drawing **HLH-BWB-GEN-01-DR-TR-001,** which is included towards the end of the report, shows the approved northern access arrangements. The access would have a carriageway width of 6.0m, 2.0m wide footways on either sides and a kerb radii of 10.0m. Dropped kerb pedestrian crossing with tactile paving will also be provided across the junction's bell mouth.

4.5 In terms of visibility splays, 2.4m x 82.5m to the north and 2.4m x 70.4m to the south are required for the northern access as the recorded 85th percentile speeds along this section of the B6096 Hawshaw Lane were 36.7 mph and 34.7 mph respectively.

4.6 As for the southern access, BWB drawing **HLH-BWB-GEN-01-DR-TR-002** shows the general arrangements. The junction would also have a carriageway width of 6.0m, 2.0m wide footways and junction kerb radii of 10.0m. Dropped kerb pedestrian crossing with tactile paving will also be provided across the junction's bell mouth.

4.7 2.4m x 43.4m and 2.4m x 48.5m visibility splays have been plotted to the north and south of the junction respectively. These are based on 85th percentile speeds of 30.27 mph to the north (southbound traffic) and 31.43 mph to the south (northbound traffic). The 85th percentile speeds were identified based on ATC surveys undertaken between 6th and 12th July 2018.

4.8 As shown within the drawing, the visibility splays can be achieved within the adopted highway boundary, providing that the stone wall and hedges are cleared, particularly on the immediate sides of the access. These are under the Client's ownership and an agreement could be reached with the local highways authority in order to deliver the highway works to achieve the required visibility splays.

Internal Layout

4.9 As the proposed development will be served by two access points, an internal spine road is proposed to link the eastern and western sections of The Site. The internal road width would be 5.5-6.0m wide, determined by extent of the opencast coal mine.

4.10 The spine road would link to various plots of the development, designed to adoptable standards to become potentially a bus route and accommodate a large refuse vehicle.

4.11 The spine road will link to carriageways with turning heads that could accommodate the necessary turning movements for refuse vehicles. The internal carriageways will link to minor roads of shared surface material with access to driveways.

4.12 As mentioned in the TA prepared in support of the outline scheme *"The internal road network will be built to adoptable standards and the majority will be offered for adoption under Section 38 of the Highways Act."*

Parking Provision

4.13 Car and cycle parking will be provided in accordance with the adopted BMBC Supplementary Planning document, March 2012. **Table 3** below shows extract of car and cycle parking requirements for C3 residential units.

Table 3: BMBC Parking Standards (SPD, March 2012)

Type	Barnsley Urban	Barnsley Wide (excluding Barnsley urban)	Thresholds which standards applies
Maximum car parking standards	1 space for dwellings with 1 or 2 bedrooms 2 spaces for dwellings with 3 or more bedrooms	1 space for dwellings with 1 or 2 bedrooms 2 spaces for dwellings with 3 or more bedrooms	All developments
Minimum cycle parking standards	Housing/ Flats/ Bedsits/ Houses in Multiple Occupation to be assessed individually		
Source: https://www.barnsley.gov.uk/media/4047/parking.pdf			

4.14 The proposed development is located in Hoyland and outside Barnsley urban area, hence 'Barnsley Wide' standards, albeit similar, are considered appropriate for this development.

4.15 Car parking will be provided at each residential unit in the form of private driveways and garages. Each driveway will be at least 6.0m long to ensure vehicles do not overhang the footways, and garages will be minimum of 6.5m x 3.0m to sufficiently accommodate a vehicle.

4.16 Cycle parking for residential developments is usually provided as cycle stands within the garage area, as long as this does not impact the space allowed for vehicle storage.

4.17 Overall, the car parking provision across The Site will be balanced between meeting demand, minimising on-street parking and promoting sustainable means of travel by reducing the need for a private car. The cycle parking provision and a potential bus route along the proposed spine road would encourage future residents to travel sustainably.

Servicing Arrangements

4.18 Swept path analysis of Large Refuse Vehicle (4-Axle) has been undertaken at the proposed access junctions, including the internal layout and turning heads.

4.19 BWB Drawings **HLH-BWB-GEN-01-DR-TR-110** and **HLH-BWB-GEN-01-DR-TR-111** show the swept path analyses for the northern and southern accesses respectively. The swept paths show worst case assessment of two-way movements between a large refuse vehicle and large car.

4.20 Drawings **HLH-BWB-GEN-01-DR-TR-112** and **HLH-BWB-GEN-01-DR-TR-113** show the relevant swept paths used to inform the design of the internal layout and turning heads.

5.0 TRIP RATES & TRAFFIC GENERATION

Introduction

5.1 This section details the trip rates and traffic generation of the proposed development during the morning and evening peak hours of the highway network.

5.2 As mentioned previously, it was agreed during scoping discussions that the approach used in the consented scheme's (100 units) TA in terms of trip rates, traffic distribution and future year assessment will be used for assessment of the proposed development (68 units) and the cumulative impact (168 units).

Vehicular Trip Rates & Traffic Generation

5.3 For reference, *'TRICS Person Trip Rates'* were used to derive *'Residential – Houses privately owned'* trip rates. The consented TRICS trip rates are shown in **Table 4** below. Full outputs are included in **Appendix D**.

Table 4: Consented Average Weekday Person Trip Rates

Trip Rates	Morning Peak Hour (08:00-09:00)			Evening Peak Hour (17:00-18:00)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Trip Rates	0.219	0.814	1.033	0.603	0.374	0.977

5.4 As shown, the average weekday person trip rate per unit during the morning and evening peak hour is 1.033 and 0.977 respectively.

5.5 To derive baseline mode share for the proposed development, the 2011 Census database – Method of Travel to Work for The Site area has been used. This would accurately represent the likely travel characteristics of future residents of the proposed development, similar to how current residents in the area travel to work.

5.6 **Table 5** below shows the resultant mode share for the super output area – middle layer E02001536: Barnsley 028, which include Hoyland Common, Upper Hoyland and Birdwell.

Table 5: Method of Travel To Work - E02001536: Barnsley 028 MSOA

Method of Travel to Work	Count (no. of people)	Mode Share
Underground, metro, light rail or tram	5	0.1%
Train	11	0.3%
Bus, minibus or coach	209	5.8%
Taxi	19	0.5%
Motorcycle, scooter or moped	26	0.7%
Driving a car or van	2,739	76.7%
Passenger in a car or van	262	7.3%
Bicycle	37	1.0%
On foot	265	7.4%
Total	**3,573**	**100%**

5.7 Using TRICS person trip rates and the mode share proportions shown in the above table, the person trip generation can be calculated. As a worst case, **Table 6** below shows the trip generation of 168 units during the peak hours.

Table 6: Average Weekday Person Trip Generation by Mode Share

Method of Travel	Morning Peak Hour (08:15-09:15)			Evening Peak Hour (17:00-18:00)		
	Arrival	Departure	Two-way	Arrival	Departure	Two-Way
Underground, metro, light rail or tram	0	0	0	0	0	0
Train	0	0	1	0	0	1
Bus, minibus or coach	2	8	10	6	4	10
Taxi	0	1	1	1	0	1
Motorcycle, scooter or moped	0	1	1	1	0	1
Driving a car or van	28	105	133	77	48	126
Passenger in a car or van	3	10	13	7	5	12
Bicycle	0	1	2	1	1	2
On foot	3	10	13	7	5	12
Total	**37**	**136**	**173**	**101**	**62**	**163**

5.8 As shown, cumulatively the proposed development is expected to generate 132 and 125 two-way vehicle trips during the morning and evening peak hours respectively.

5.9 In terms of sustainable travel trips, the proposed development would generate 11 public transport (bus & train) trips during the peak hours, 2 bicycle trips and 13 pedestrian trips.

5.10 **Table 7** below shows the traffic generation of 68 units that will be developed at a later stage. The traffic generation of the consented 100 units and the total 168 units are also shown for comparison.

Table 7: Proposed Development Traffic Generation

Traffic Generation	Morning Peak Hour (08:15-09:15)			Evening Peak Hour (17:00-18:00)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
68 Units	11	43	54	32	19	51
100 Units	17	62	79	46	29	75
Total - 168 Units	**28**	**105**	**133**	**78**	**48**	**126**

5.11 As shown, the development of 68 units would generate 54 and 51 two-way vehicular trips during the morning and evening peak hours respectively. The consented 100 units would generate 79 and 75 trips and therefore the overall development is expected to generate 133 and 126 two-way trips during the respective peaks.

Traffic Distribution

5.12 The traffic distribution proportions detailed in the TA prepared for the consented scheme have been used to calculate the traffic distribution of the proposed development.

5.13 Census 2011 database location of usual residence and place of work by method of travel to work (MSOA level) was used to estimate the vehicular trip distribution. The destination of travel to work for people who live in Barnsley 028 MSOA has been considered, as The Site is located in this area.

5.14 It should be highlighted that the consented scheme considered all vehicles would use the northern access point, as the additional southern access didn't form part of the development proposals. Therefore, as now there would be two access junctions for the overall development (168 units), the distribution proportions have been slightly altered, where it was assumed that vehicles would equally use both accesses.

5.15 The resulting development trip distribution is shown in the **Figure 6** below.

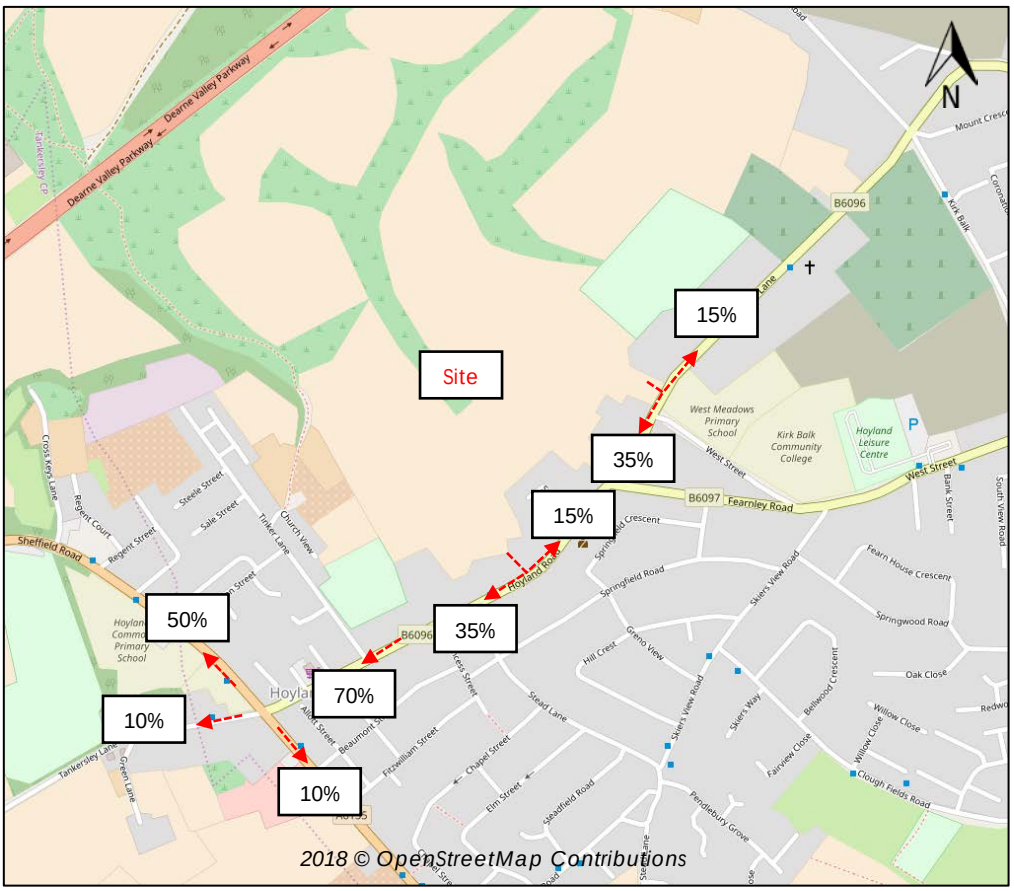


Figure 6: Trip Distribution Proportions

5.16 As mentioned, the above proportions are slightly different to those shown in the TA for the consented scheme. This is mainly due to the split at two proposed access junctions and omitting traffic travelling to/from West Street and Fearnley Road. Nonetheless, the distribution to/from the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction matches the consented schemes'.

Committed Developments

5.17 In terms of committed developments, it was suggested by BMBC during scoping that the cumulative impact of the proposed development should be accounted for in the highway impact assessment of the study area.

5.18 As such, the impact of proposed 168 units is considered, whereby the calculated traffic generation is 132 and 125 two-way trips during the morning and evening peak hours respectively.

Future Traffic Growth

5.19 The baseline traffic surveys were undertaken in May 2016, and to determine the baseline traffic conditions of the planning application year, i.e. 2018; traffic growth factors were applied. The assessment of future baseline 2023 has also been undertaken to identify the impact of the proposed development at five years following grant of planning permission.

5.20 Therefore, TEMPRO version 7.0 software has been used to obtain the base traffic growth factors for the baseline year, 2018, and future design year, 2023, for the geographical area of Barnsley 028 MSOA (urban and all roads). Table 8 below shows the obtained traffic growth factors.

Table 8: Traffic Growth Factors

Year	Weekday AM Peak Period (0700 - 0959)	Weekday PM Peak Period (1600 - 1859)
2016-2018	1.0291	1.0286
2018-2023	1.0827	1.0823

5.21 2016-2018 traffic growth factors were only applied to the turning count flows at the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction and the ahead traffic movements on the B6096 Hawshaw Lane, near the northern site access. This is to make the traffic flows consistent across the study area and to the ATC surveys undertaken in July 2018 near the southern site access.

5.22 Following distribution and assignment of the proposed development traffic flows, accounting for the consented scheme's traffic generation and applying the relevant traffic growth factors, the below traffic flow diagrams were created. These are included towards the end of the TA.

- **Diagram 1** → Development Trip Distribution - (Based on Consented TA)
- **Diagram 2** → Proposed Development Trip Assignment
- **Diagram 3** → Committed Development Trip Assignment
- **Diagram 4** → Total Development Trip Assignment
- **Diagram 5** → 2016 Baseline Traffic Flows
- **Diagram 6** → 2018 Baseline Traffic Flows
- **Diagram 7** → 2023 Baseline Traffic Flows
- **Diagram 8** → 2023 Baseline Traffic Flows + Proposed Development

- **Diagram 9** → 2023 Baseline Traffic Flows + Committed Development
- **Diagram 10** → 2023 Baseline Traffic Flows + Proposed + Committed Development

5.23 **Diagrams 8** and **9** show respectively the additional traffic of 68 units and the consented 100 units scheme in the future 2023 baseline. The cumulative traffic generation of both developments (i.e. 168 units) in 2023 is shown in **Diagram 10**, which represents worst case scenario in terms of traffic assessment and modelling of the study area.

6.0 HIGHWAY IMPACT ASSESSMENT

Introduction

6.1 This section of the TA details the impact of the proposed development on the following agreed study area junctions:

- B6096 Hawshaw Lane / Northern Site Access (consented).
- B6096 Hawshaw Lane / Southern Site Access (proposed).
- A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction.

6.2 As mentioned previously, part of the consented 100 units, a mitigation scheme was approved for the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction. The operation of the junction was tested with and without this mitigation as detailed within this section.

Highway Impact Assessment

6.3 The operation of the proposed northern and southern access junctions would be undertaken using Transport Research Laboratory's (TRL) modelling software Junctions 9 (PICADY/ARCADY 9).

6.4 PICADY and ARCADY models return results in Ratio of Flow to Capacity (RFC) and queuing in each 15-minute time segment, measured in the number of Passenger Car Units (PCUs).

6.5 RFC values between 0.00 and 0.85 indicate satisfactory operating conditions, values of between 0.85 and 1.00 represent variable operation (i.e. queues building at the junction resulting in increased vehicle delay moving through the junction). RFC values in excess of 1.00 represent overloaded conditions.

6.6 LinSig V3 software is widely used for signalised junctions and has been interpreted to assess the operation of the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane crossroads. It should be noted that this junction was modelled part of the consented 100 units scheme. The TA submitted in support of that application included LinSig outputs for the junction, hence for consistency, the signal timing information contained in the outputs has been used when re-assessing the impact of the proposed development on this junction.

6.7 The results from LinSig models are expressed in Practical Reserve Capacity (PRC), which is calculated based on a maximum Degree of Saturation (DoS) on each signalised approach and is a measure of how much additional traffic could pass through a junction whilst maintaining a maximum DoS of 90% on all links/streams. Therefore, if the worst link's DoS is 90%, the PRC then would be 0%. Negative numbers indicate that the junction would experience longer delays and overloading.

6.8 The DoS is a function of Demand vs Capacity and the results are interpreted using the following bands:

- 0%-90% - The junction operates within capacity, traffic clears the junction every cycle of the signals.

- 90%-100% - Traffic will experience some delay, it is unlikely as to whether every queued vehicle at the start of the green phase will clear the junction within the same cycle, an arm experiencing a DoS above 90% is considered to be failing.

- 100%+ - The arm is significantly over capacity, queues may exponentially increase as traffic struggles to clear the junction.

6.9 LinSig V3 also illustrates the queuing results as Mean Maximum Queuing (MMQ), which is the mean number of vehicles (or PCUs) that have been added onto the back of the queue line, up to the time when the queue is cleared at the junction stop line.

B6096 Hawshaw Lane / Northern Site Access

6.10 **Table 9** below show the results of Junctions 9 model for the northern site access junction during the 2023 baseline scenario with proposed and consented development impact. The full Junctions 9 output is included in **Appendix E** for reference.

Table 9: B6096 Hawshaw Lane / Northern Site Access Modelling Results

Stream	Morning Peak Hour (08:15-09:15)			Evening Peak Hour (17:00-18:00)		
	Queue (PCU)	Delay (S)	RFC	Queue (PCU)	Delay (S)	RFC
2023 Baseline + Proposed + Consented Development						
Site Access left turn to B6096 Hawshaw Lane (E)	0	6	0.02	0	5	0.01
Site Access right turn to B6096 Hawshaw Lane (W)	0	10	0.10	0	10	0.05
B6096 Hawshaw Lane (E) ahead to B6096 Hawshaw Lane (W) and right turn to Site Access	0	6	0.01	0	7	0.02

6.11 As shown, the proposed northern access junction will operate within capacity during the morning and evening peak hours of the local highway network.

B6096 Hawshaw Lane / Southern Site Access

6.12 **Table 10** below show the results of Junctions 9 model for the southern site access junction during the 2023 baseline scenario with proposed and consented development impact. The full Junctions 9 output is included in **Appendix F** for reference.

Table 10: B6096 Hawshaw Lane / Southern Site Access Modelling Results

Approach	Morning Peak Hour (08:15-09:15)			Evening Peak Hour (17:00-18:00)		
	Queue (PCU)	Delay (S)	RFC	Queue (PCU)	Delay (S)	RFC
2023 Baseline + Proposed + Consented Development						
Site Access left turn to B6096 Hawshaw Lane (E)	0	7	0.03	0	7	0.01
Site Access right turn to B6096 Hawshaw Lane (W)	0	11	0.11	0	12	0.06
B6096 Hawshaw Lane (E) ahead to B6096 Hawshaw Lane (W) and right turn to Site Access	0	6	0.01	0	6	0.02

6.13 As shown, the proposed southern access junction will operate within capacity during the morning and evening peak hours of the local highway network in 2023.

A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane

6.14 **Table 11** shows the operation of A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction during the 2018 and 2023 baseline with consented development, and excluding the proposed development trips. The full LinSig V3 Model is presented in **Appendix G** for reference.

Table 11: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane Without Mitigation Results #1

Approach Lane	Morning Peak Hour (08:15-09:15)		Evening Peak Hour (17:00-18:00)	
	DoS %	MMQ (PCU)	DoS %	MMQ (PCU)
2018 Baseline				
A6135 Sheffield Road (North)	74	14	82	17
B6096 Hoyland Road	76	11	82	13
A6135 Sheffield Road (South)	52	8	61	10
Tankersley Lane	52	5	50	5
Overall Operation	PRC = 19.0%		PRC = 9.5%	
	Delay (PCU/hr) = 15		Delay (PCU/hr) = 18	
2023 Baseline + Consented Development				
A6135 Sheffield Road (North)	86	18	94	24
B6096 Hoyland Road	83	14	91	18
A6135 Sheffield Road (South)	63	9	72	11
Tankersley Lane	52	6	52	6
Overall Operation	PRC = 5.0%		PRC = -4.5%	
	Delay (PCU/hr) = 19		Delay (PCU/hr) = 27	

6.15 The LinSig modelling results suggest that the junction currently (2018) operates with a PRC of +19.0% and +9.5% during the morning and evening peak hours respectively. This is based on a full cycle time of 83 seconds during the morning peak hour and 85 seconds during the evening peak hour.

6.16 During the 2023 future baseline with the addition of consented development traffic, the PRC would become 5.0% during the morning peak hour and -4.5% during the evening peak hour, predicting that the junction would operate over-capacity during this peak. The impact would primarily occur on the A6135 Sheffield Road northern approach and B6096 Hoyland Road approach.

6.17 **Table 12** shows the operation of A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction during the peak hours in 2023 with the inclusion of consented and proposed development traffic (i.e. 168 units), hence assessing the worst case scenario.

Table 12: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane Without Mitigation Results #2

Approach Lane	Morning Peak Hour (08:15-09:15)		Evening Peak Hour (17:00-18:00)	
	DoS %	MMQ (PCU)	DoS %	MMQ (PCU)
2023 Baseline + Proposed + Consented Development				
A6135 Sheffield Road (North)	86	18	96	26
B6096 Hoyland Road	88	16	94	19
A6135 Sheffield Road (South)	62	9	74	12
Tankersley Lane	52	6	53	6
Overall Operation	PRC = 2.1%		PRC = -6.7%	
	Delay (PCU/hr) = 21		Delay (PCU/hr) = 31	

6.18 As expected, the junction would approach capacity during the morning peak hour with a PRC of only 2.1%, whereas it would continue to operate over-capacity during the evening peak hour at a PRC of -6.7%.

6.19 The proposed development of 68 units would decrease the PRC by 2.9% and 2.2% during the morning and evening peak hours respectively. The average delay per cycle would also increase by 2 and 4 PCUs per hour during the respective peaks.

Highway Mitigation

6.20 A mitigation scheme has been approved under the outline planning consent (**2016/1531**) for the 100 units development. The mitigation scheme drawing **3406 SK003 004** developed by Fore Consulting is included towards the end of this report for reference.

6.21 In summary, the mitigation scheme is to provide a *"more formalised / clearer lane markings along the B6096 Hoyland Road arm and opposing right turn 'box' markings along the A6135 Sheffield Road"*.

6.22 The proposed lane markings on the B6096 Hoyland Road approach could cater for 5 PCUs before vehicles start queuing in a single lane. This would slightly improve vehicle flows along this approach, hence providing some PRC.

6.23 The opposing right turn lanes in the centre of the junction, along the A6135 Sheffield Road would accommodate vehicles turning right to the B6096 Hoyland Road and Tankersley Lane. This would avoid blocking the left turning and ahead traffic streams on both the A6135 Sheffield Road approaches, hence providing additional PRC.

6.24 **Table 13** below shows the operation of the junction with this mitigation in place. The full LinSig results are included in **Appendix H** for reference.

Table 13: A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane with Mitigation Results

Approach Lane	Morning Peak Hour (08:15-09:15)		Evening Peak Hour (17:00-18:00)	
	DoS %	MMQ (PCU)	DoS %	MMQ (PCU)
2023 Baseline + Consented Development				
A6135 Sheffield Road (North)	86	18	87	20
B6096 Hoyland Road	83	9	87	10
A6135 Sheffield Road (South)	63	9	66	10
Tankersley Lane	55	6	64	7
Overall Operation	PRC = 5.0%		PRC = 2.8%	
	Delay (PCU/hr) = 19		Delay (PCU/hr) = 22	
2023 Baseline + Proposed + Consented Development				
A6135 Sheffield Road (North)	84	18	91	22
B6096 Hoyland Road	86	11	87	10
A6135 Sheffield Road (South)	62	9	74	11
Tankersley Lane	65	6	61	6
Overall Operation	PRC = 4.2%		PRC = -1.5%	
	Delay (PCU/hr) = 21		Delay (PCU/hr) = 24	

6.25 As shown, the mitigation scheme would better the overall operation of the junction by providing more capacity, particularly on the B6096 Hoyland Road approach. Although the PRC during the critical evening peak hour is negative at -1.5%, the improvement scheme would mitigate this by 3% compared to the 2023 baseline with proposed and consented development scenario without mitigation.

6.26 The impact of the proposed development (68 units) is also considered negligible on the overall performance of the junction, and hence no further mitigation scheme is considered necessary at this stage.

7.0 SUMMARY & CONCLUSIONS

7.1 BWB Consulting Ltd has been appointed by Avant Homes Ltd to prepare this Transport Assessment to support a planning application for residential development at land to the north of Hawshaw Lane in Hoyland, Barnsley.

7.2 The Site benefits from outline planning consent for a residential development of up to 100 units with all matters reserved apart from access.

7.3 This Transport Assessment has been prepared to support a Reserved Matters planning application for the 100 units already approved, plus the traffic impact of 68 units, which would be developed at a later stage.

7.4 Vehicular access to The Site is proposed to be taken from two locations off the B6096 Hawshaw Lane. The northern access, which has been approved as part of the outline consent, is located circa 30m north of B6096 Hawshaw Lane / West Street junction. The southern access would be located around 103m southwest of B6096 Hawshaw Lane / Stoney Croft junction.

7.5 The Site is considered to be located in a sustainable location with access to a number of local amenities and public transport facilities. In addition, a Travel Plan has been prepared as a standalone document to support the planning application and more importantly, promote the sustainable travel opportunities to future residents and reduce the reliance on single occupancy car travel.

7.6 As the proposed development will be served by two access points, an internal spine road is proposed to link the eastern and western sections of The Site. The internal road width would be 5.5-6.0m wide, determined by extent of the opencast coal mine.

7.7 The spine road will link to carriageways with turning heads that could accommodate the necessary turning movements for refuse vehicles. The internal carriageways will link to minor roads of shared surface material with access to driveways.

7.8 Using TRICS person trip rates and the mode share proportions for the local area, the additional 68 units would generate 54 and 51 two-way vehicular trips during the morning and evening peak hours respectively. The consented 100 units would generate 79 and 75 trips and therefore the overall development is expected to generate 133 and 126 two-way trips during the respective peaks.

7.9 As part of the consented scheme of the 100 units development, a mitigation scheme was approved for the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction. This is because the junction was forecasted to operate over-capacity during the peak hours.

7.10 In summary, the mitigation scheme is to provide a *"more formalised / clearer lane markings along the B6096 Hoyland Road arm and opposing right turn 'box' markings along the A6135 Sheffield Road"*.

7.11 The proposed lane markings on the B6096 Hoyland Road approach could cater for 5 PCUs before vehicles start queuing in a single lane. This would slightly improve vehicle flows along this approach, hence providing additional capacity.

7.12 The opposing right turn lanes in the centre of the junction, along the A6135 Sheffield Road would accommodate vehicles turning right to the B6096 Hoyland Road and Tankersley Lane. This would avoid blocking the left turning and ahead traffic streams on both the A6135 Sheffield Road approaches, hence providing additional capacity.

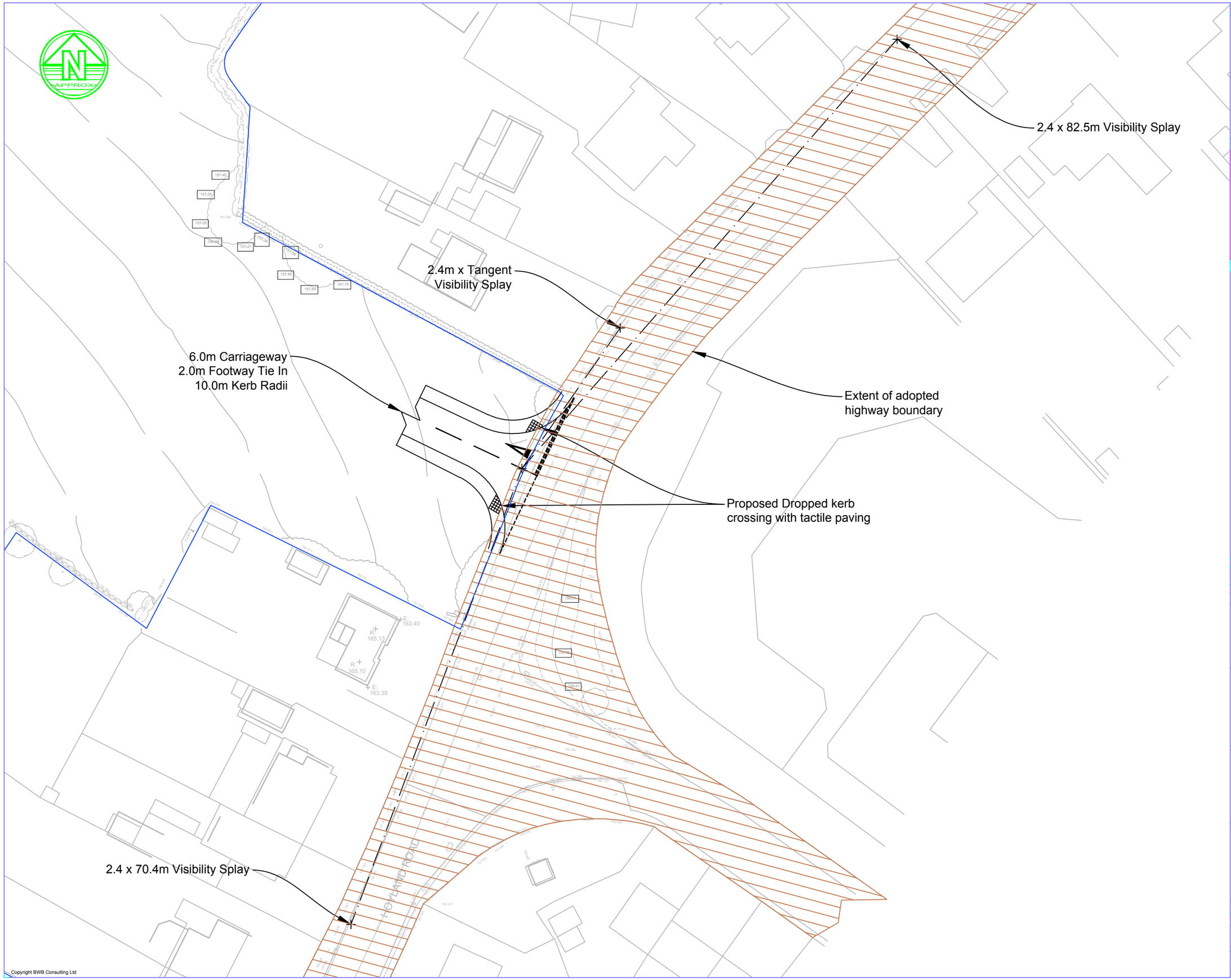
7.13 The junction was modelled with this mitigation in place, and the overall operation of the junction would improve, particularly the B6096 Hoyland Road approach.

7.14 In conclusion, this Transport Assessment report has demonstrated that the traffic impact of the proposed development during the peak hours of the local highway network would not be 'severe'. Where the impact is apparent, mitigation schemes were provided, particularly for the A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane signalised junction.

7.15 Furthermore, the Transport Assessment has demonstrated that The Site is situated in a sustainable location with established pedestrian, cycling and public transport infrastructure. As such, BWB considers that the proposed development is consistent with the National Planning Policy Framework and the local development policies and therefore should not be refused on highway grounds.

DRAWINGS

HLH-BWB-GEN-01-DR-TR-001
Approved Northern Access Arrangements



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P3	19.09.18	PRELIMINARY ISSUE: HIGHWAY BOUNDARY	ATH	MA
P2	16.08.18	PRELIMINARY ISSUE: EXTENDED TOPO MAP	ATH	MA
P1	10.08.18	PRELIMINARY ISSUE	ATH	MA

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

AVANT HOMES (YORKSHIRE) LTD

Project Title

HAWSHAW LANE, HOYLAND, BARNSLEY SOUTH YORKSHIRE

Drawing Title

APPROVED NORTHERN ACCESS ARRANGEMENTS

Drawn:	AT. Huneidi		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	19.09.18	Scale@A3:	1:500

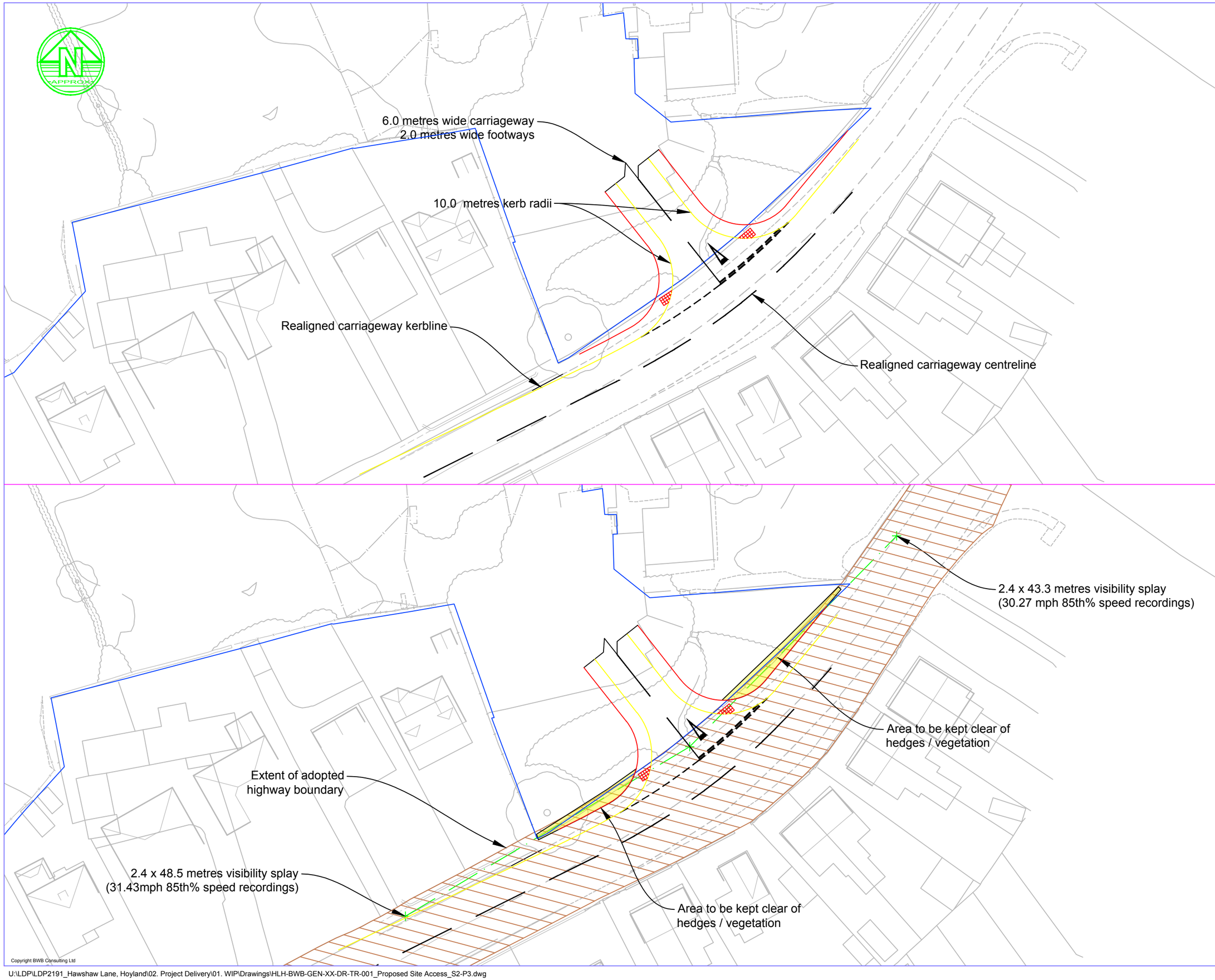
Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-01-DR-TR-001	S2	P3

U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-001_Proposed Site Access_S2-P2.dwg

HLH-BWB-GEN-01-DR-TR-002
Proposed Southern Access Arrangements



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P5	24.09.18	PRELIMINARY ISSUE: JUNCTION RELOCATION	NB	MA
P4	19.09.18	PRELIMINARY ISSUE: JUNCTION REDESIGNED	ATH	MA
P3	16.08.18	PRELIMINARY ISSUE: EXTENDED TOPO MAP	ATH	MA
P2	10.08.18	PRELIMINARY ISSUE	ATH	MA
P1	20.07.18	PRELIMINARY ISSUE	AJ	MA

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS
Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

AVANT HOMES (YORKSHIRE) LTD

Project Title

HAWSHAW LANE, HOYLAND, BARNSLEY, SOUTH YORKSHIRE

Drawing Title

PROPOSED SOUTHERN ACCESS ARRANGEMENTS

Drawn:	N Bell		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	24.09.18	Scale@A3:	1:500

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-01-DR-TR-002	S2	P5

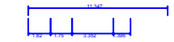
U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-001_Proposed Site Access_S2-P3.dwg

HLH-BWB-GEN-01-DR-TR-110
Northern Access Swept Path Analysis

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan



Large Refuse Vehicle (4 axle)

Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

Vehicle Wheel Track

Vehicle Body Overhang

Legend

P2	10.08.18	PRELIMINARY ISSUE	ATH	MA
P1	20.07.18	PRELIMINARY ISSUE	AJ	MA
Rev	Date	Details of issue / revision	Drw	Rev

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

Avant Homes (Yorkshire) Ltd

Project Title

Hawshaw Lane, Hoyland, Barnsley, South Yorkshire

Drawing Title

Northern Access Swept Path Analysis

Drawn:	N Bell		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	19.09.18	Scale@A3:	1:500

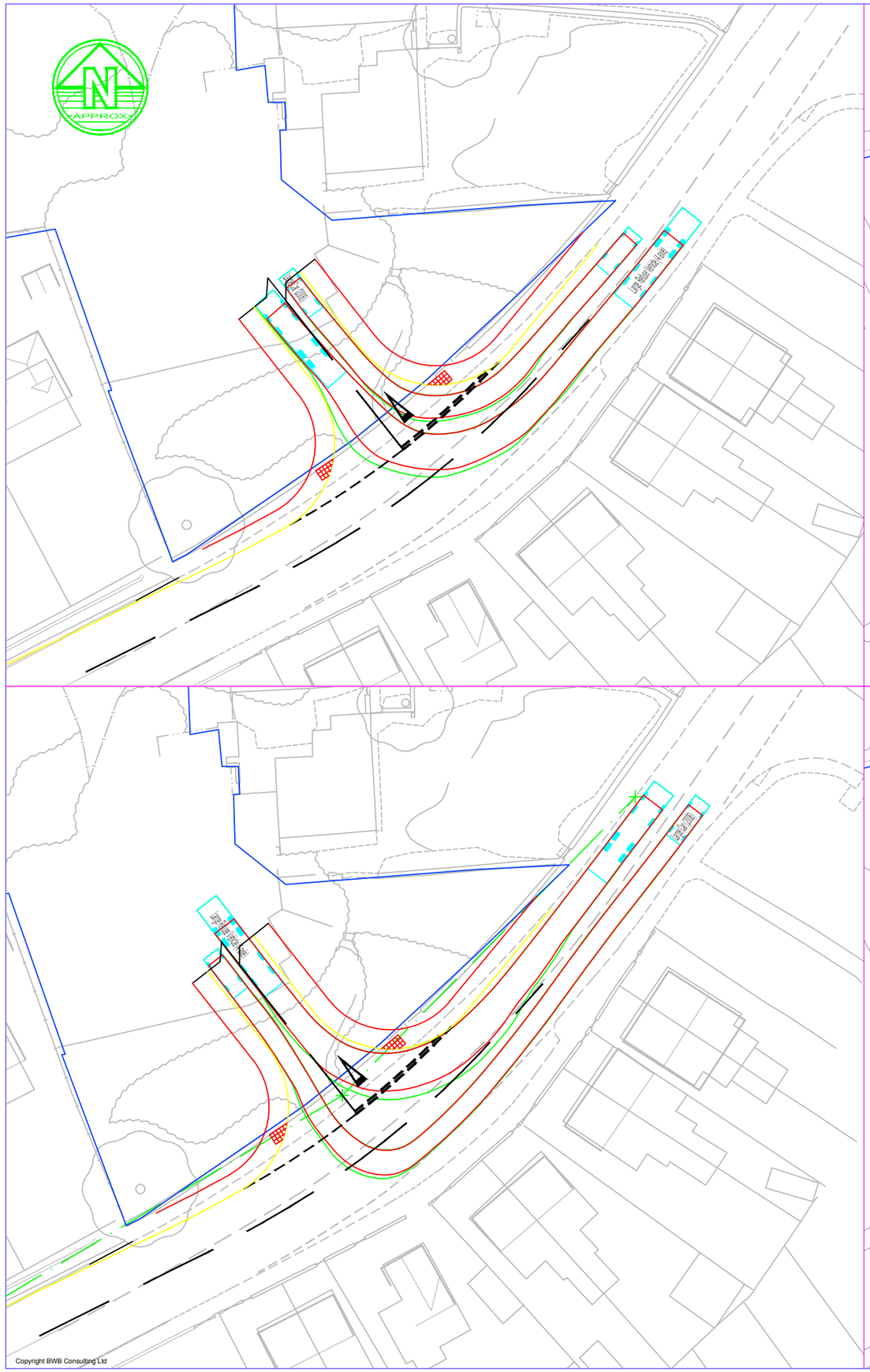
Drawing Status

For Information

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-01-DR-TR-110	S2	P2

U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-001_Proposed Site Access_S2-P2.dwg

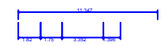
HLH-BWB-GEN-01-DR-TR-111
Southern Access Swept Path Analysis



Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan



Large Refuse Vehicle (4 axle)

Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.200m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.900m

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P5	24.09.18	PRELIMINARY ISSUE: JUNCTION RELOCATION	NB	MA
P4	19.09.18	PRELIMINARY ISSUE: JUNCTION REDESIGNED	ATH	MA
P3	16.08.18	PRELIMINARY ISSUE: EXTENDED TOPO MAP	ATH	MA
P2	10.08.18	PRELIMINARY ISSUE	ATH	MA
P1	20.07.18	PRELIMINARY ISSUE	AJ	MA

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

Avant Homes (Yorkshire) Ltd

Project Title

Hawshaw Lane, Hoyland, Barnsley, South Yorkshire

Drawing Title

Southern Access Swept Path Analysis

Drawn:	N Bell		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	24.09.18	Scale@A3:	1:500

Drawing Status

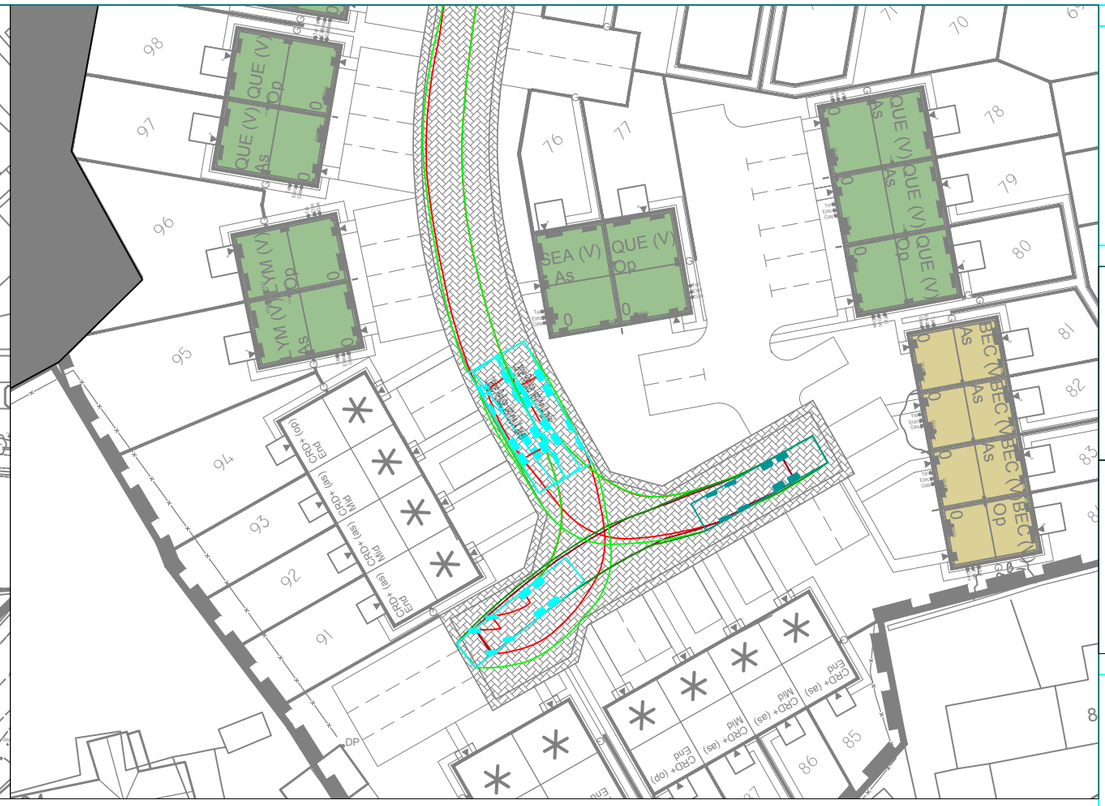
For Information

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-01-DR-TR-111	S2	P5

U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-001_Proposed Site Access_S2-P3.dwg

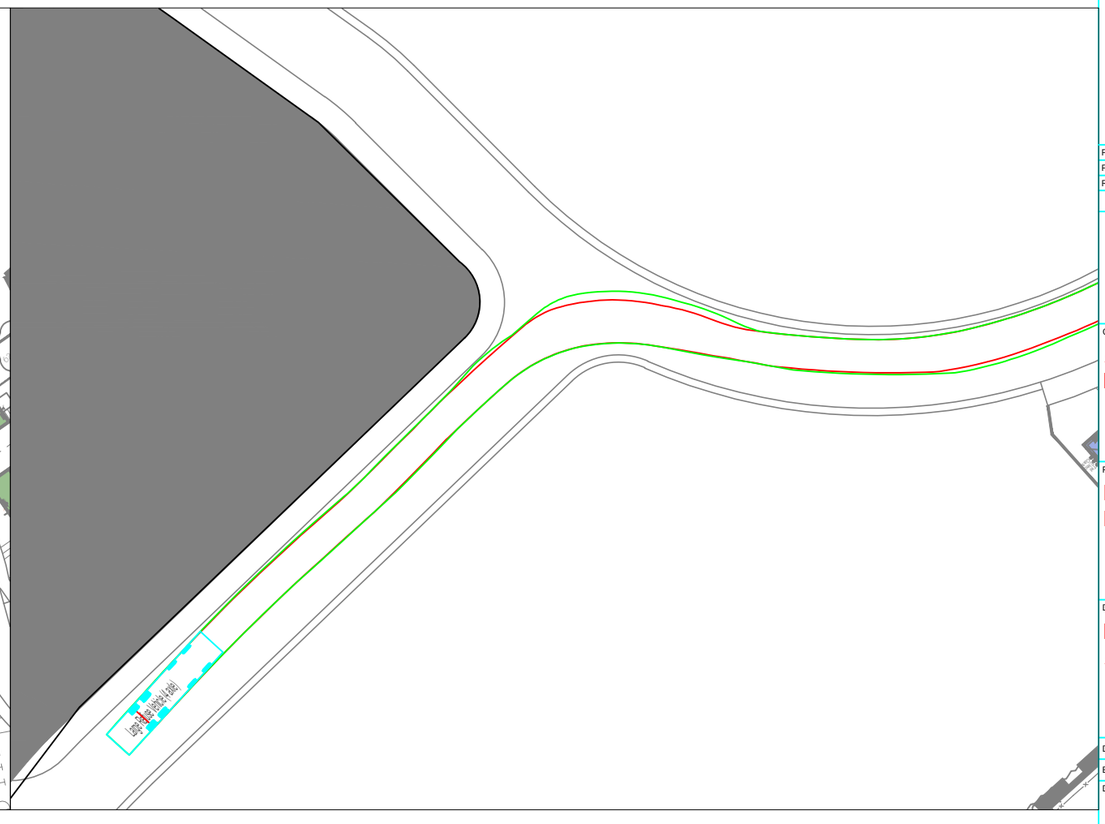
HLH-BWB-GEN-01-DR-TR-112
Internal Layout Swept Path Analysis #1

Scale 1:1000



Scale 1:500

Scale 1:1000



Scale 1:500

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Large Refuse Vehicle (4 axle)	
Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Vehicle Wheel Track

Vehicle Body Overhang

Legend

P2	27.09.18	REVISED ISSUE		NB	MA
P1	26.09.18	PRELIMINARY ISSUE		NB	MA
Rev	Date	Details of issue / revision		Drw	Rev

Issues & Revisions

BWB CONSULTANCY | ENVIRONMENT INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

Avant Homes (Yorkshire) Ltd

Project Title

Hawshaw Lane, Hoyland, Barnsley, South Yorkshire

Drawing Title

Internal Swept Paths Analysis

Drawn:	N Bell		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	26/09/18	Scale@A3:	As Shown

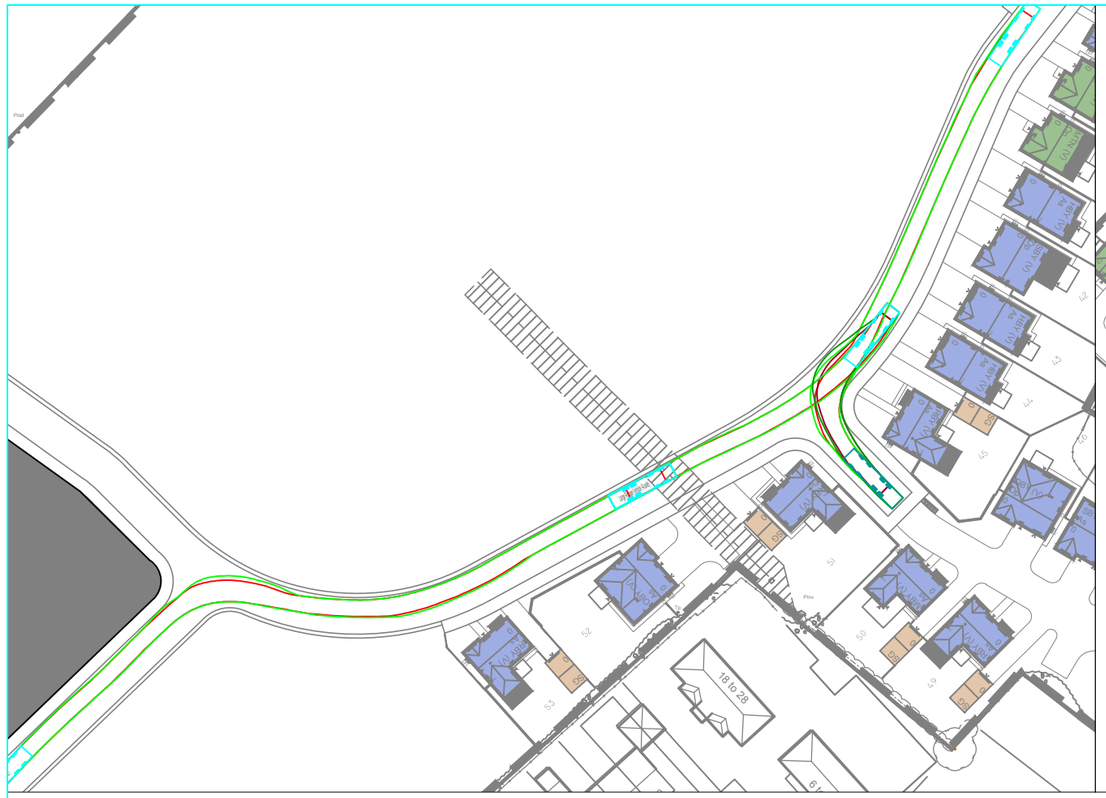
Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-XX-DR-TR-112	S2	P2

U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-112_Internal Swept Paths_S2-P2.dwg

HLH-BWB-GEN-01-DR-TR-113
Internal Layout Swept Path Analysis #2



Scale 1:1000

Scale 1:1000

Scale 1:500

Scale 1:1000

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.

Key Plan

Large Refuse Vehicle (4 axle)	
Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Vehicle Wheel Track

Vehicle Body Overhang

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P2	27.09.18	REVISED ISSUE AMENDED TURNING HEAD	NB	MA
P1	26.09.18	PRELIMINARY ISSUE	NB	MA

Issues & Revisions

BWB
CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

Birmingham | 0121 233 3322
Leeds | 0113 233 8000
London | 020 7234 9122
Manchester | 0161 233 4260
Nottingham | 0115 924 1100
www.bwbconsulting.com

Client

Avant Homes (Yorkshire) Ltd

Project Title

Hawshaw Lane, Hoyland, Barnsley, South Yorkshire

Drawing Title

Internal Swept Paths Analysis

Drawn:	N Bell		Reviewed:	M Addison	
BWB Ref:	LDP 2191	Date:	26/09/18	Scale@A3:	As Shown

Drawing Status

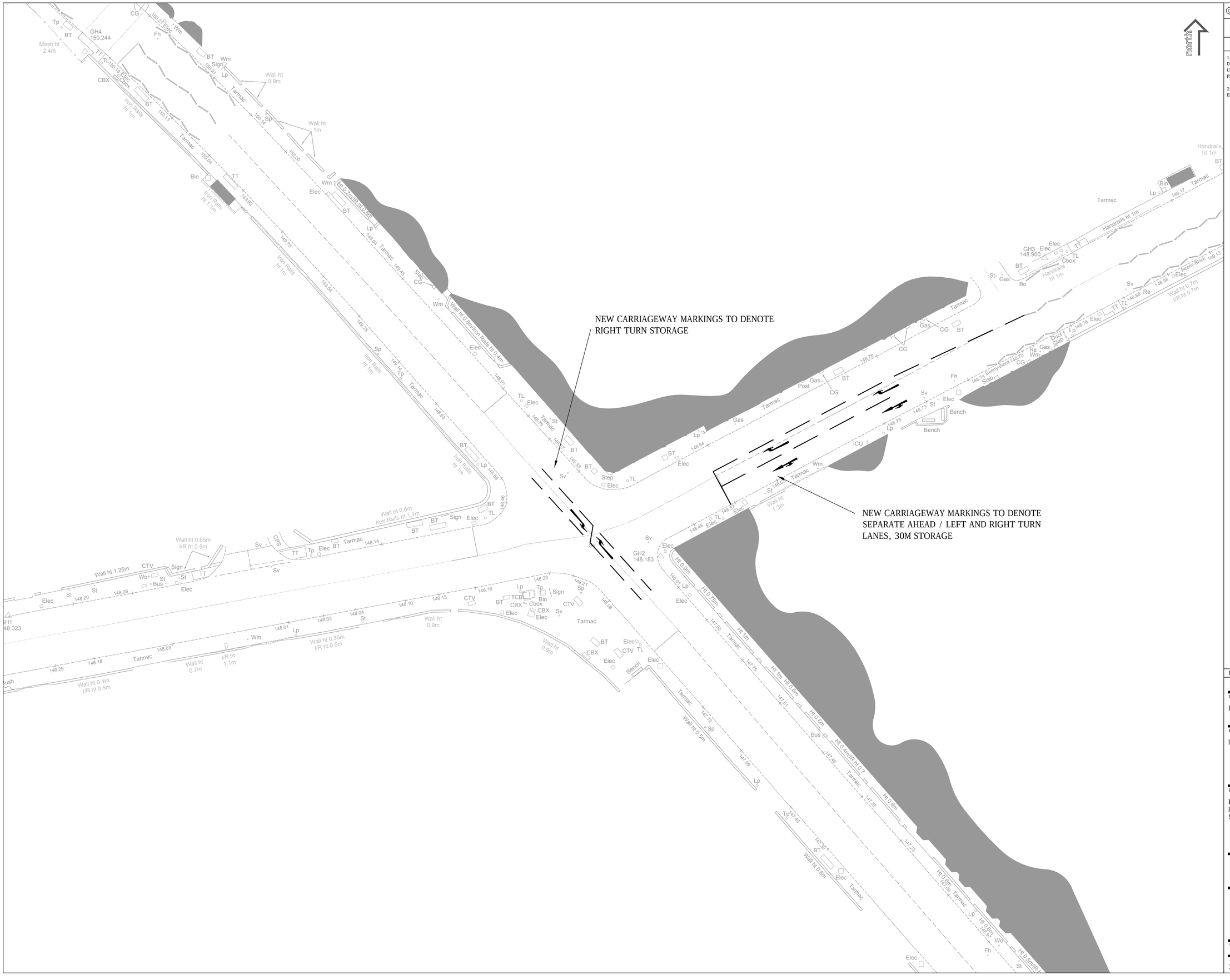
PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HLH-BWB-GEN-XX-DR-TR-113	S2	P2

U:\LDP\LDP2191_Hawshaw Lane, Hoyland\02. Project Delivery\01. WIP\Drawings\HLH-BWB-GEN-XX-DR-TR-112_Internal Swept Paths_S2-P2.dwg

3406 SK003 004

Approved Mitigation Scheme for A6135 Sheffield Road / B6096 Hoyland Road / Tankersley Lane



DO NOT SCALE

NOTES

1. PRELIMINARY LAYOUT SUBJECT TO FULL TOPOGRAPHICAL SURVEY & DETAILED DESIGN INCLUDING CDM COMPLIANCE, STATUTORY UNDERTAKERS SEARCH, DIVERSION REQUIREMENTS, HIGHWAY DRAINAGE PROVISION, LAND AVAILABILITY AND LOCAL AUTHORITY APPROVAL.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS & SPECIALISTS DRAWINGS AND SPECIFICATIONS.

REV	DESCRIPTION	DATE	BY

CLIENT:

HOYLAND DEVELOPMENTS LTD

PROJECT

LAND NORTH OF HAWSHAW LANE

DRAWING TITLE

PROPOSED IMPROVEMENTS AT THE A6135 SHEFFIELD ROAD / B6096 HOYLAND ROAD / TANKERSLEY LANE SIGNALISED JUNCTION

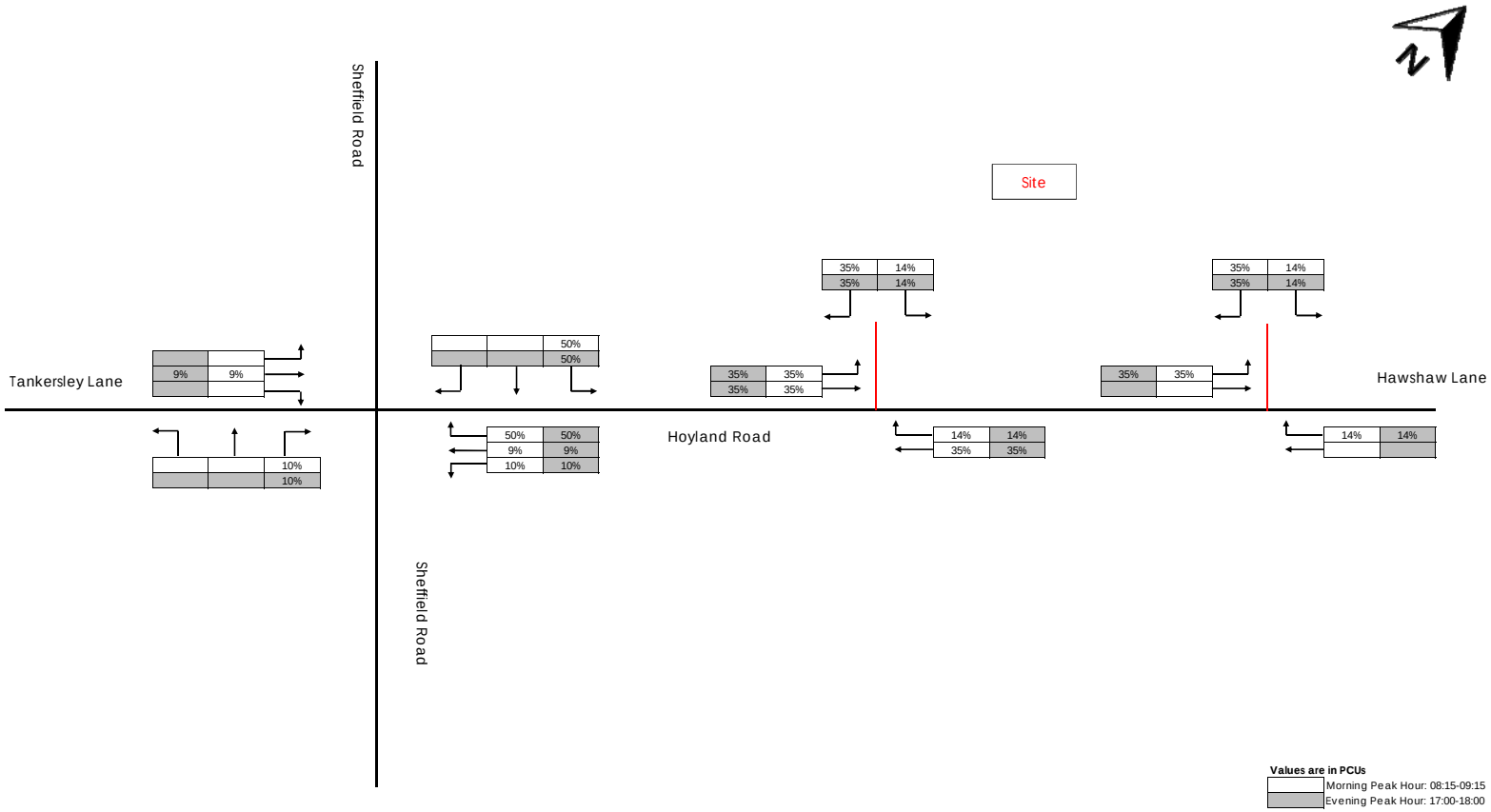
PRELIMINARY

Fore Consulting Limited
2nd Floor, Queens House
34 Wellington Street
Leeds
LS1 2DE
0113 2460204
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk

Drawn by	Checked by	Date	Scale	Format
VP	GM	2016	1:250	A1

Job Number	Drawing Number	Revision
3406	3406 SK003 004	-

TRAFFIC FLOW DIAGRAMS



Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

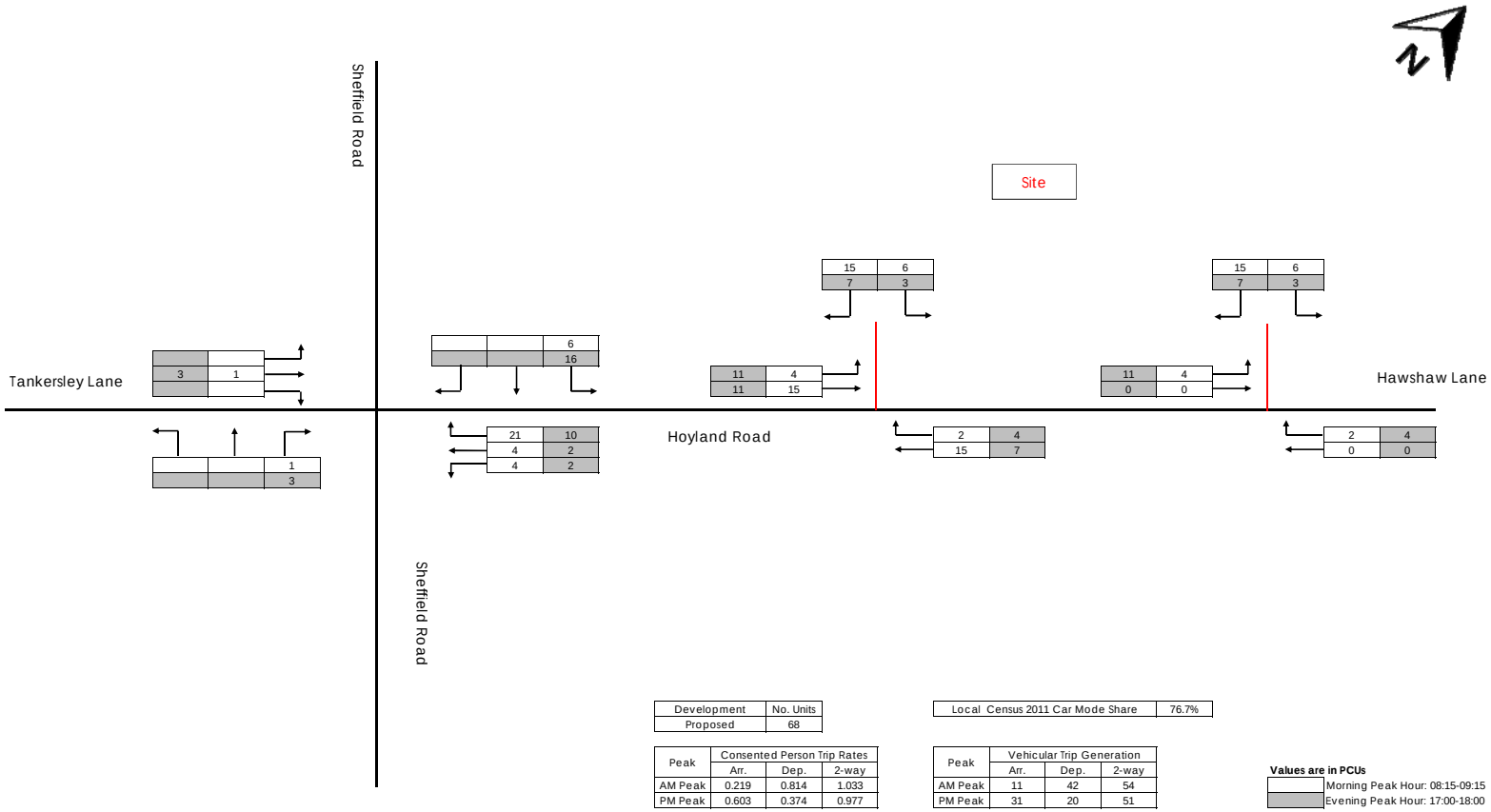
Drawing Title

Diagram 1

Development Trip Distribution - (Based on Consented TA)

Project Number

LDP 2191



Development	No. Units
Proposed	68

Local Census 2011 Car Mode Share	76.7%

Peak	Consented Person Trip Rates		
	Arr.	Dep.	2-way
AM Peak	0.219	0.814	1.033
PM Peak	0.603	0.374	0.977

Peak	Vehicular Trip Generation		
	Arr.	Dep.	2-way
AM Peak	11	42	54
PM Peak	31	20	51

Values are in PCUs

Morning Peak Hour: 08:15-09:15

Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

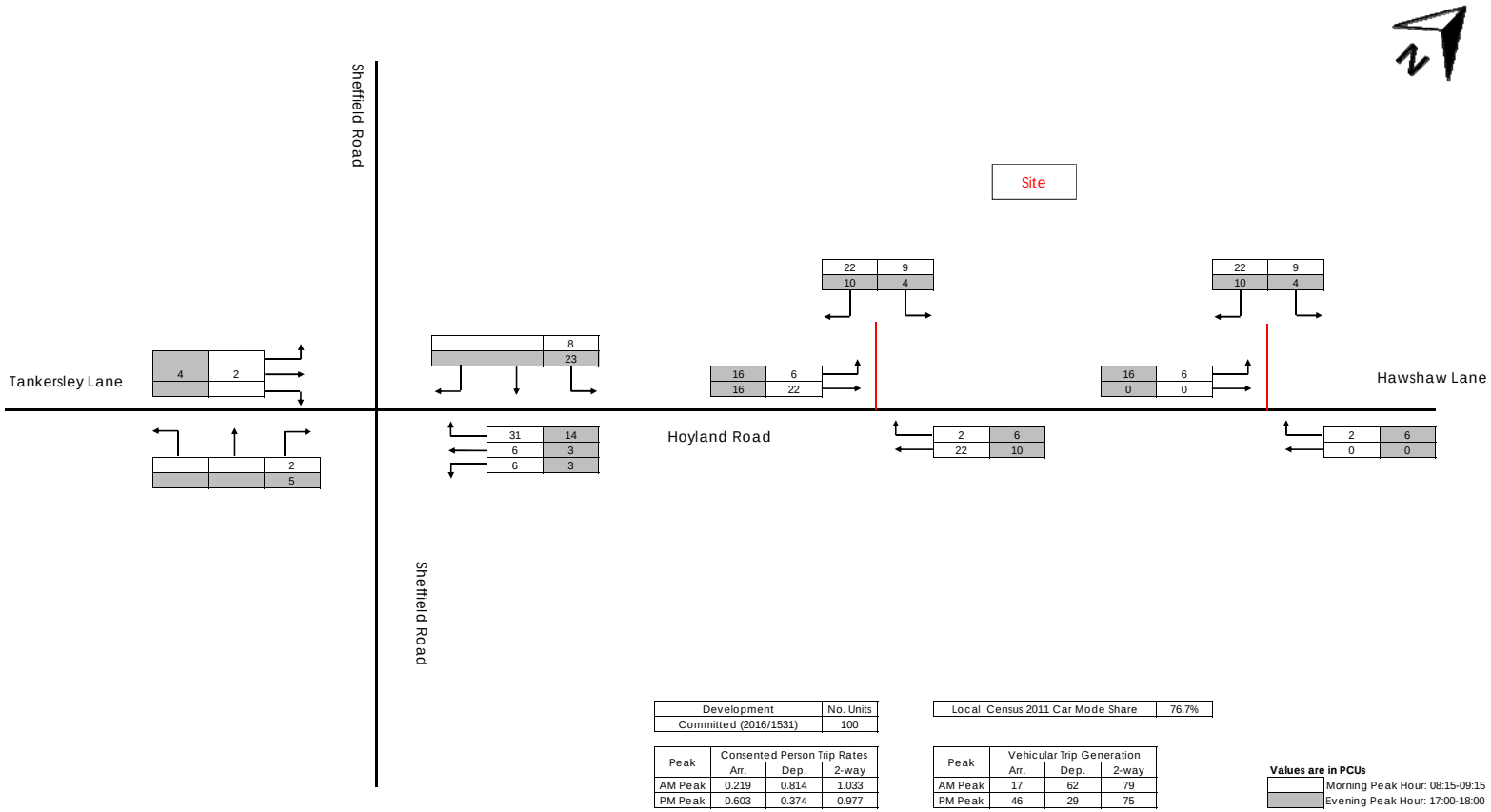
Drawing Title

Diagram 2

Proposed Development Trip Assignment

Project Number

LDP 2191



Development	No. Units
Committed (2016/1531)	100

Local Census 2011 Car Mode Share	76.7%

Peak	Consented Person Trip Rates		
	Arr.	Dep.	2-way
AM Peak	0.219	0.814	1.033
PM Peak	0.603	0.374	0.977

Peak	Vehicular Trip Generation		
	Arr.	Dep.	2-way
AM Peak	17	62	79
PM Peak	46	29	75

Values are in PCUs

Morning Peak Hour: 08:15-09:15

Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

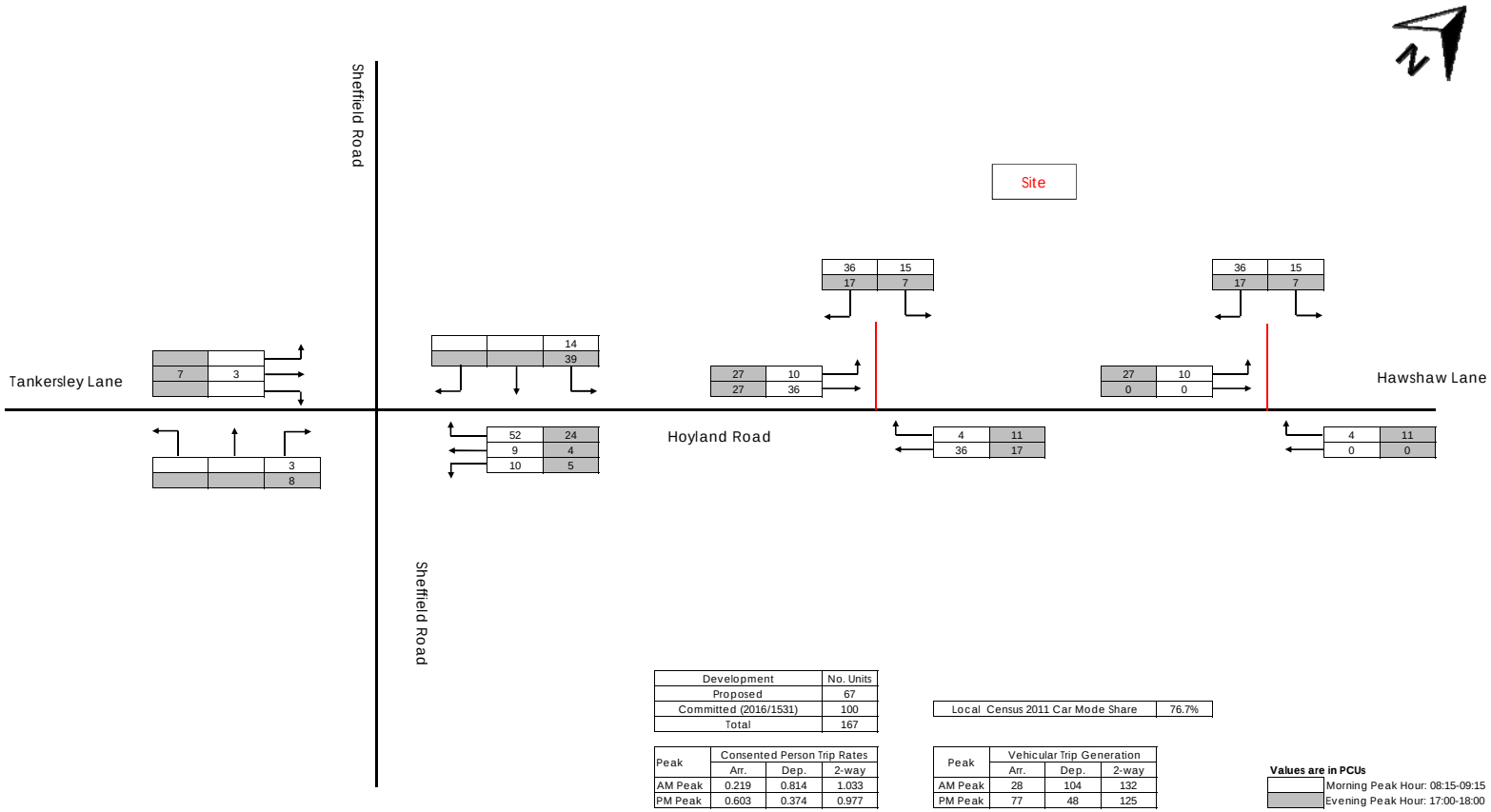
Drawing Title

Diagram 3

Committed Development Trip Assignment

Project Number

LDP 2191



Development	No. Units
Proposed	67
Committed (2016/1531)	100
Total	167

Local Census 2011 Car Mode Share	76.7%

Peak	Consented Person Trip Rates		
	Arr.	Dep.	2-way
AM Peak	0.219	0.814	1.033
PM Peak	0.603	0.374	0.977

Peak	Vehicular Trip Generation		
	Arr.	Dep.	2-way
AM Peak	28	104	132
PM Peak	77	48	125

Values are in PCUs

Morning Peak Hour: 08:15-09:15

Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

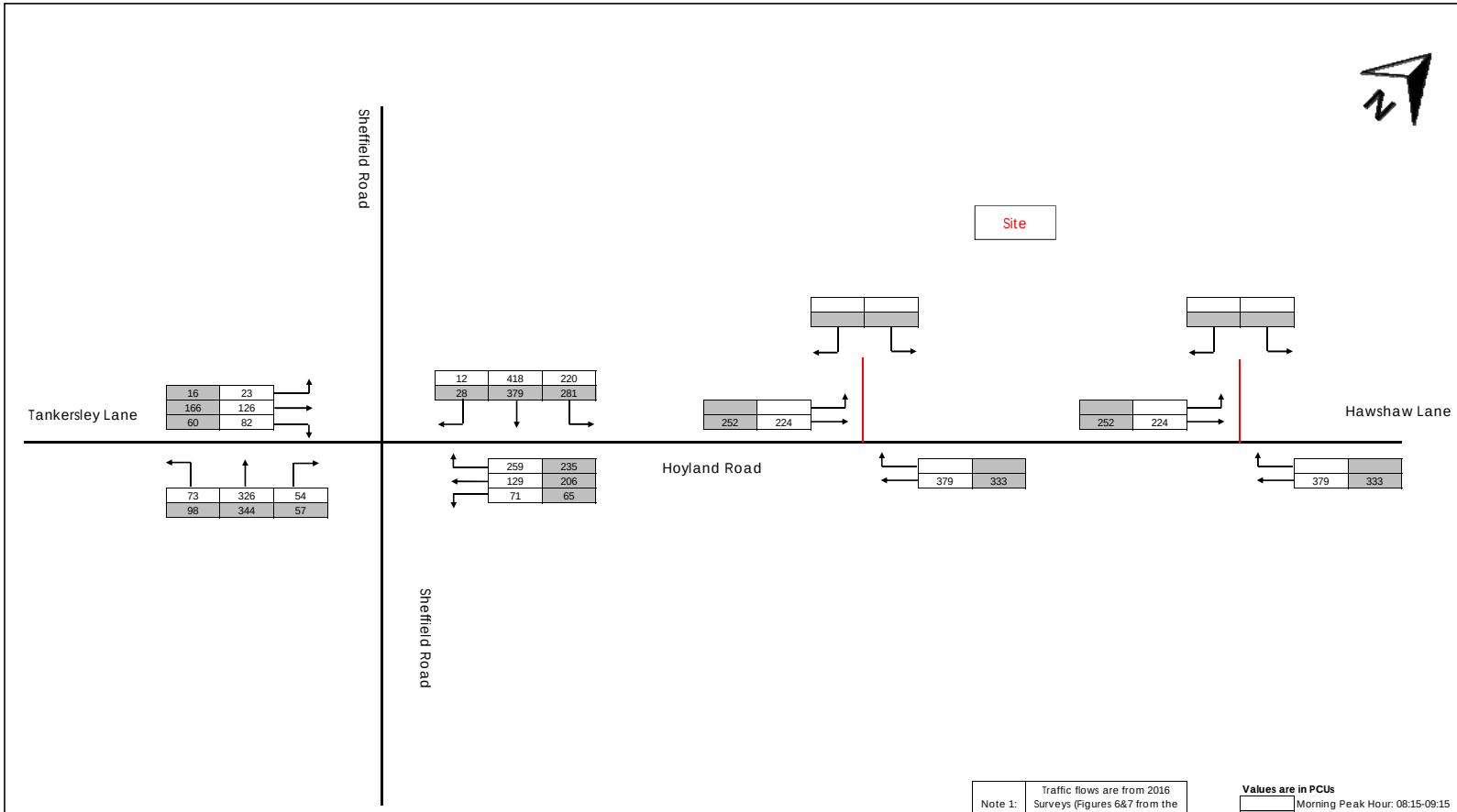
Drawing Title

Diagram 4

Total Development Trip Assignment

Project Number

LDP 2191



Note 1:	Traffic flows are from 2016 Surveys (Figures 6&7 from the consented TA)

Values are in PCUs

Morning Peak Hour: 08:15-09:15

Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

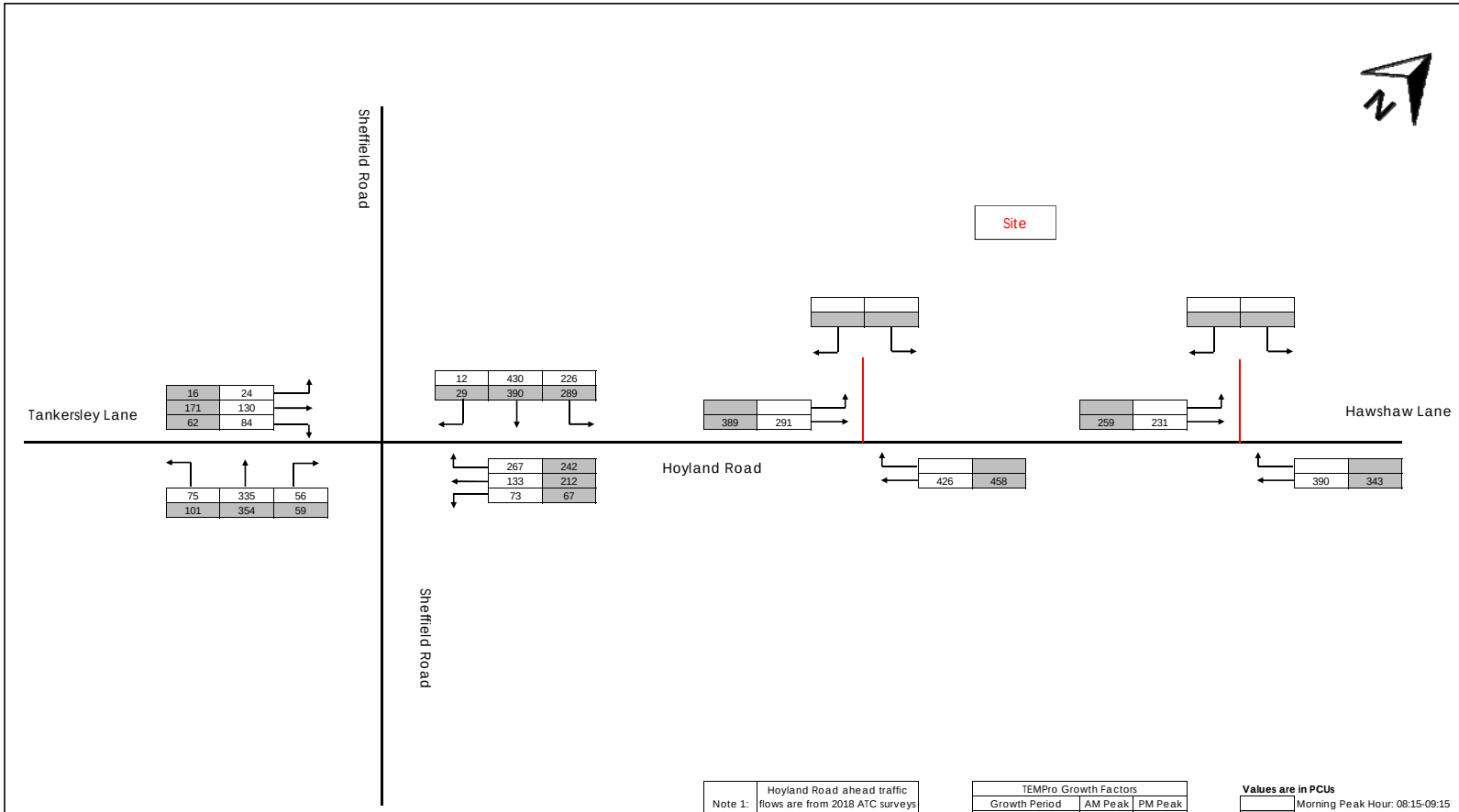
Drawing Title

Diagram 5

2016 Baseline Traffic Flows

Project Number

LDP 2191



Note 1:	Hoyland Road ahead traffic flows are from 2018 ATC surveys rather than growthed

TEMPro Growth Factors		
Growth Period	AM Peak	PM Peak
2016-2018	1.0291	1.0286

Values are in PCUs

	Morning Peak Hour: 08:15-09:15
	Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	Approved	MA
Checked	MA	Date	20.07.18

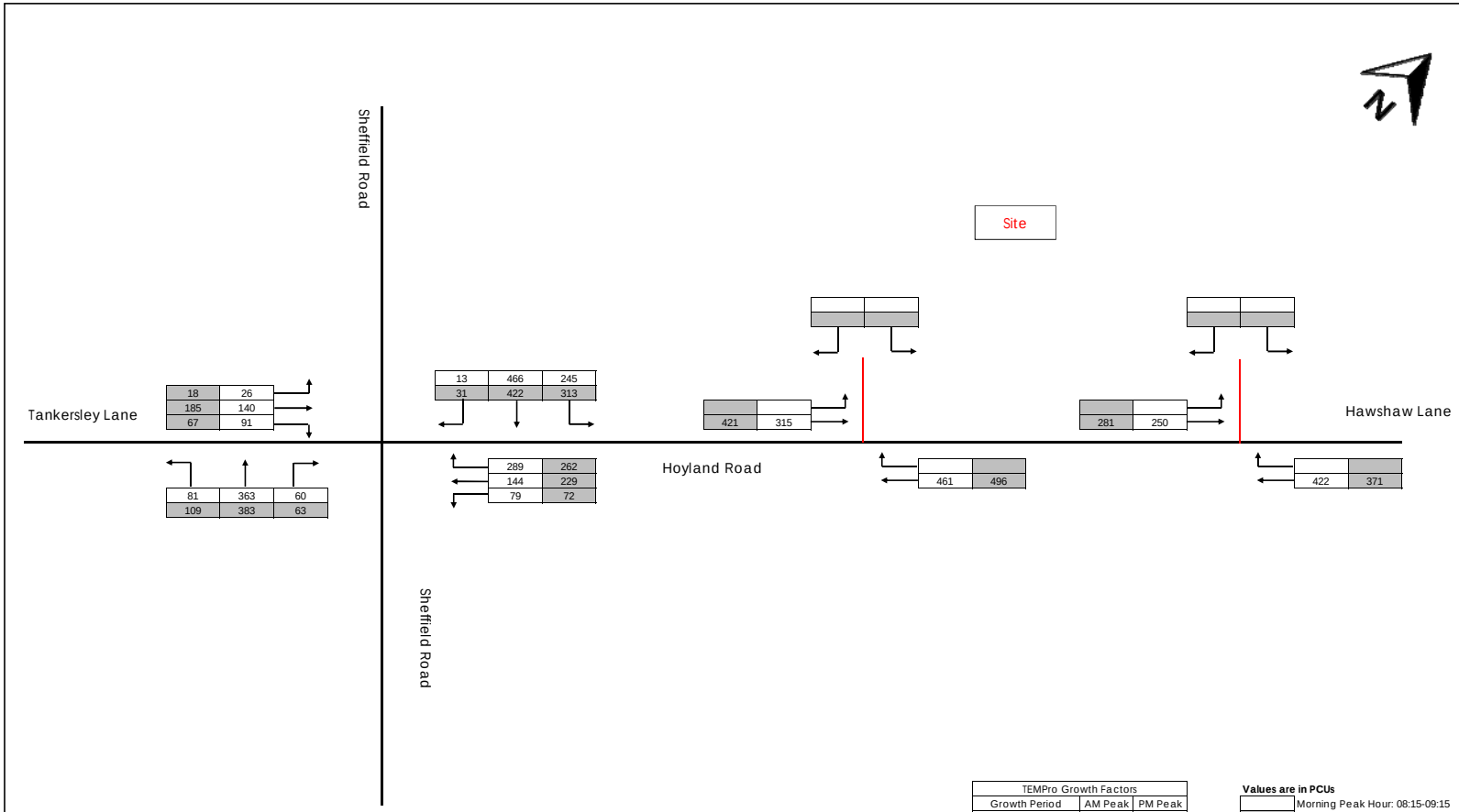
Drawing Title

Diagram 6

2018 Baseline Traffic Flows

Project Number

LDP 2191



TEMPro Growth Factors		
Growth Period	AM Peak	PM Peak
2018-2023	1.0827	1.0823

Values are in PCUs

Morning Peak Hour: 08:15-09:15

Evening Peak Hour: 17:00-18:00

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

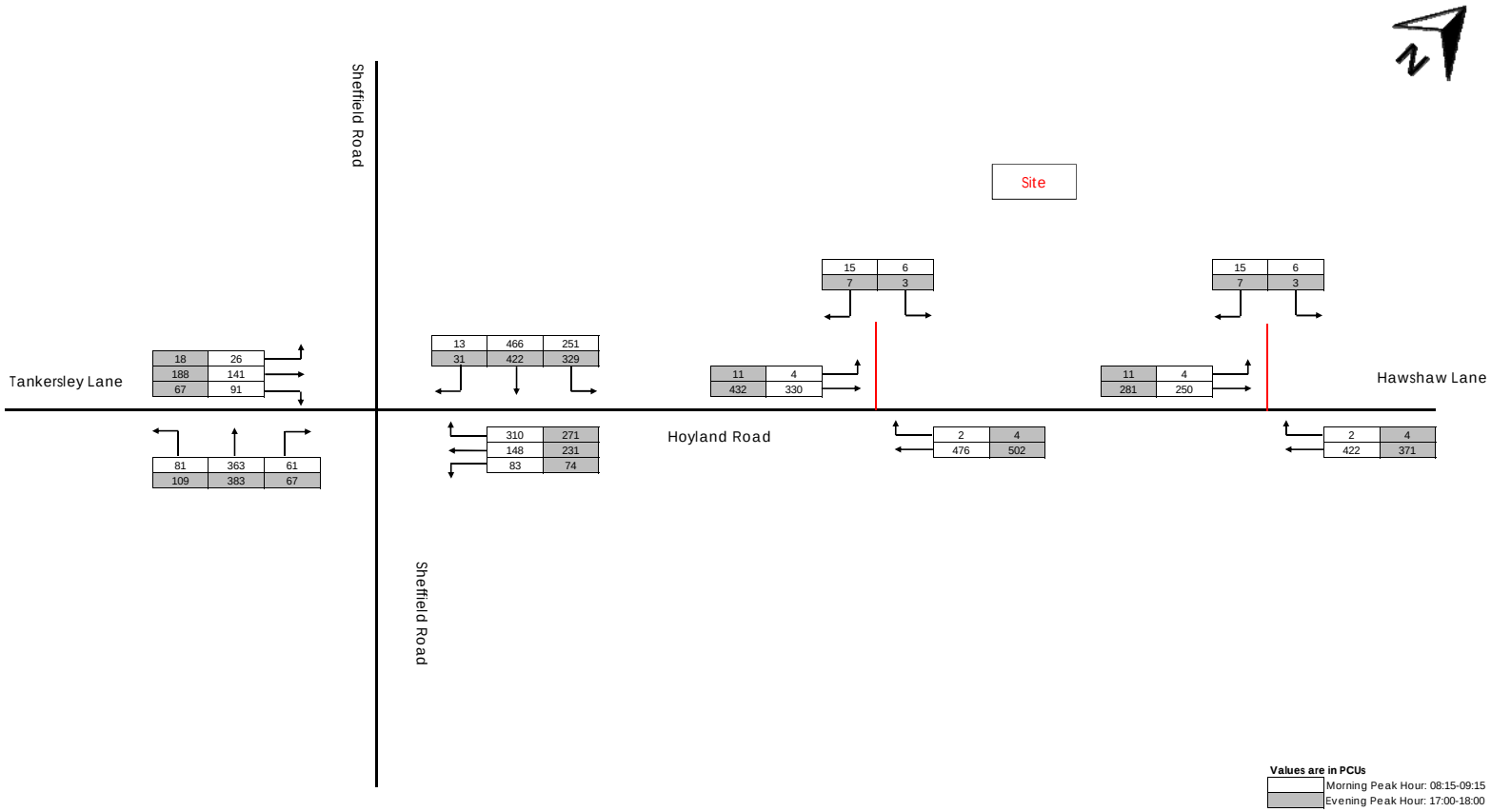
Drawing Title

Diagram 7

2023 Baseline Traffic Flows

Project Number

LDP 2191



Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

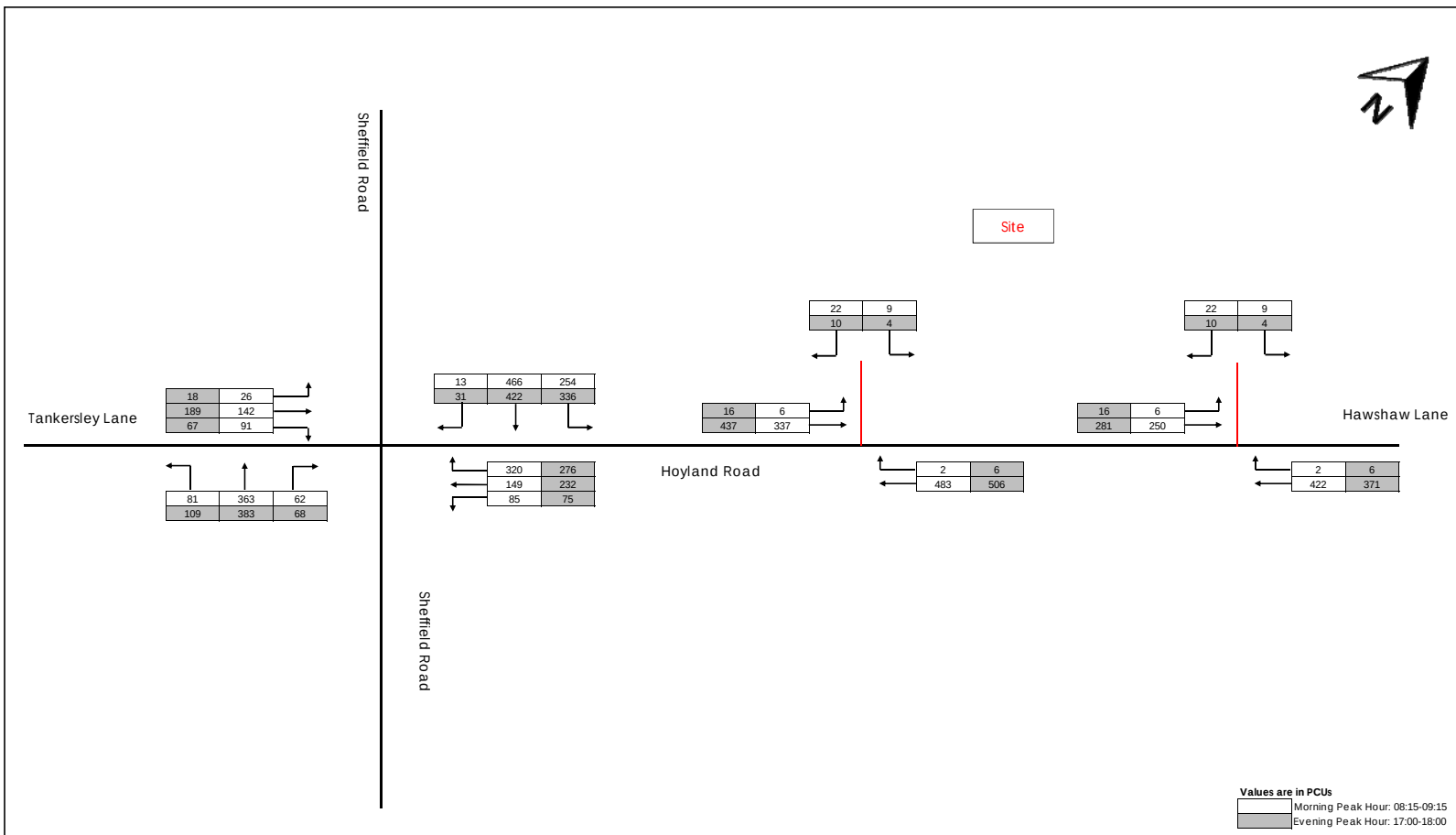
Drawing Title

Diagram 8

2023 Baseline Traffic Flows + Proposed Development

Project Number

LDP 2191



Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

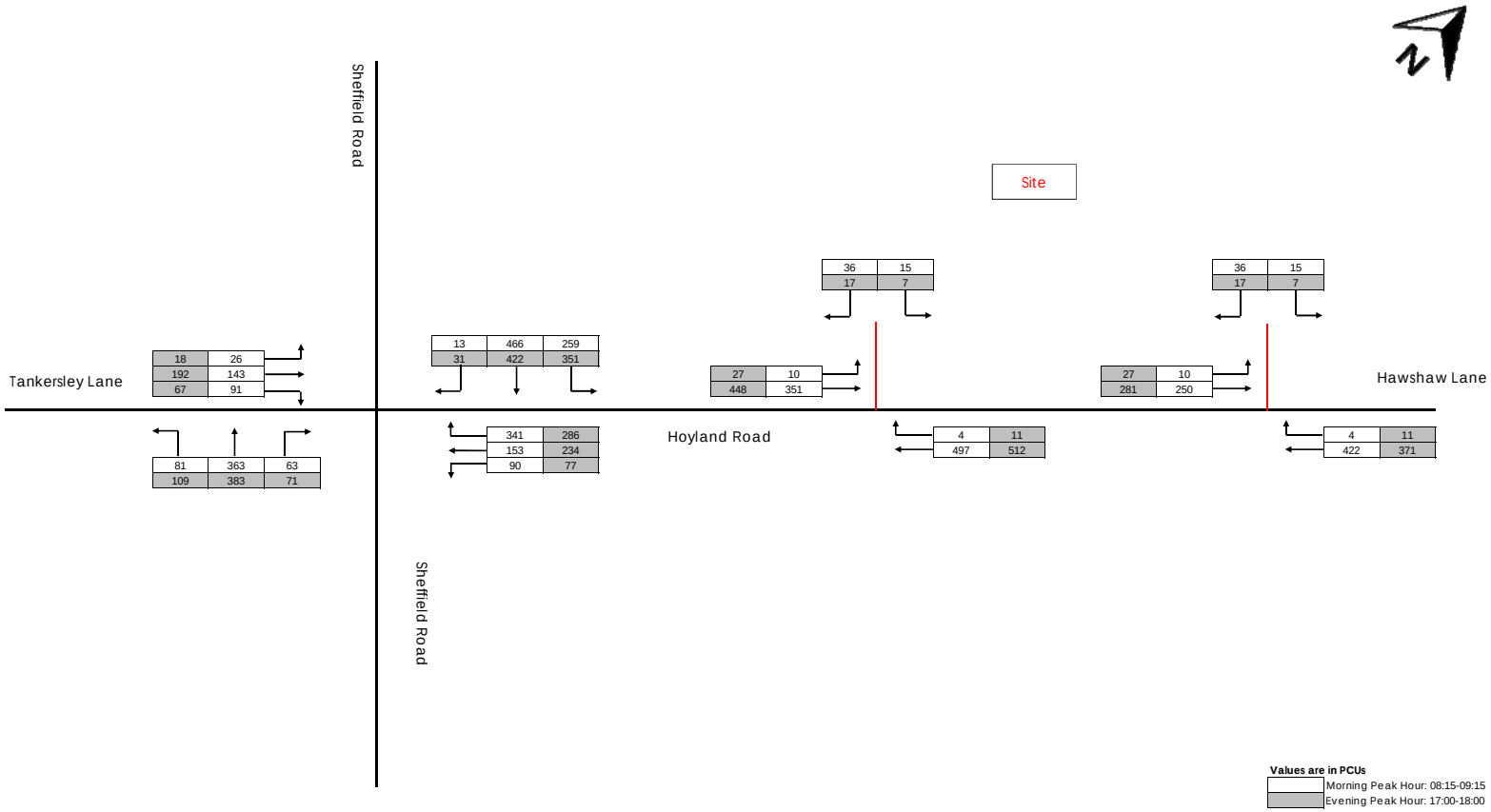
Drawing Title

Diagram 9

2023 Baseline Traffic Flows + Committed Development

Project Number

LDP 2191



Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds LS1 4EH
T: 0113 233 8000

London
11 Borough High Street
London, SE1 9SE
T: 020 7407 3879

Manchester
4th Floor Carvers Warehouse, 77 Dale StreetManchester, M1 2HG
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

Project

Land North of Hawshaw Lane, Hoyland, Barnsley

Drawn	AH	**Approved**	MA
Checked	MA	**Date**	20.07.18

Drawing Title

Diagram 10

2023 Baseline Traffic Flows + Proposed + Committed Development

Project Number

LDP 2191

APPENDICES

Appendix A
Indicative Site Layout Plan