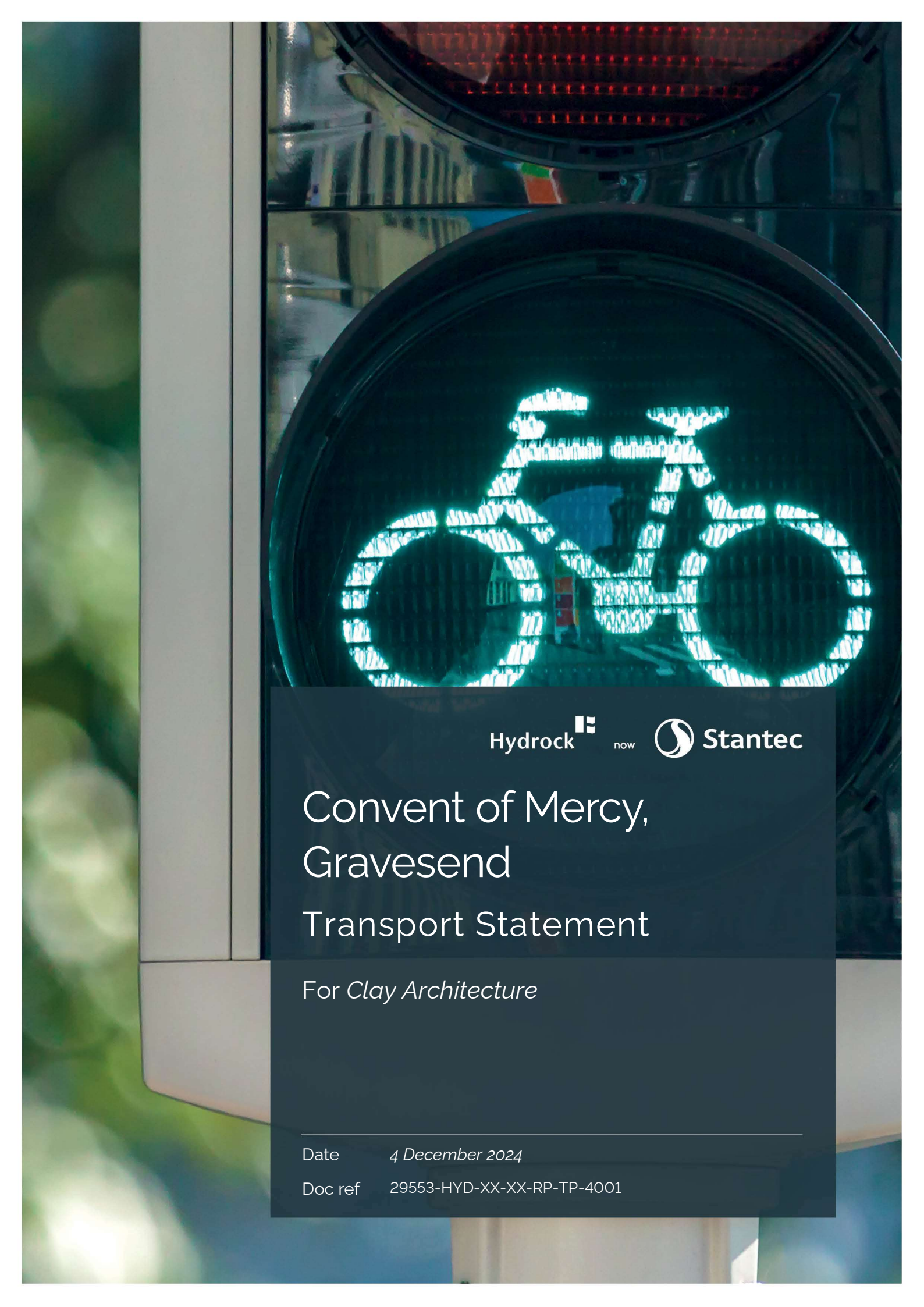


The background of the entire page is a close-up photograph of a traffic light. The light is green and shows a silhouette of a bicycle. The light is set within a dark, circular frame. The background is slightly blurred, showing some green foliage on the left side.

Hydrock

now



Stantec

Convent of Mercy, Gravesend Transport Statement

For Clay Architecture

Date *4 December 2024*

Doc ref 29553-HYD-XX-XX-RP-TP-4001

Document control sheet

Issued by	Hydrock Consultants Limited White Building 1-4 Cumberland Place Southampton Hampshire SO15 2NP United Kingdom	T +44 (0)23 82140907 E southampton@hydrock.com hydrock.com
Client	Clay Architecture	
Project name	Convent of Mercy, Gravesend	
Title	Transport Statement	
Doc ref	29553-HYD-XX-XX-RP-TP-4001	
Project number	39553	
Status	S3	
Date	04/12/2024	

Document production record		
Issue number	P07	Name
Prepared by	J. Dalley	
Checked by	S. Moody	
Approved by	S. Moody	

Document revision record			
Issue number	Status	Date	Revision details
P01	S2	10/10/2024	Draft
P02	S2	15/10/2024	Draft
P03	S2	17/10/2024	Draft
P04	S2	27/11/2024	Draft
P05	S3	03/12/2024	Final
P06	S3	04/12/2024	Final

P07	S3	04/12/2024	Final
-----	----	------------	-------

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

Contents

1.	Introduction	1
1.1	Overview	1
1.2	Site Location	1
2.	Policy	3
3.	Baseline Transport Conditions	7
3.1	Overview	7
3.2	Walking and Cycling	7
3.3	Public Transport	8
3.4	Local Highway Network	9
4.	Proposed Development	11
4.2	Site Layout Overview	11
4.3	Site Access	12
4.4	Hillside Drive	15
4.5	Turning area	16
4.6	Servicing	16
4.7	Parking provision	19
5.	Trip Generation	21
5.1	Overview	21
5.2	Existing site operation	21
5.3	Theoretical maximum trip generation	21
5.4	Proposed Development (Cumulative)	22
5.5	Trip generation comparison	23
6.	Impact on Hillside Drive Junction	24
7.	Summary and Conclusions.....	26

Tables

Table 2.1: Parking standards	5
Table 3.1: Bus services from Echo Square	8
Table 5.1: Private housing vehicle trip rates and generation	22
Table 6.1: TEMPro growth rates	24
Table 6.2: Hillside Drive / Old Road East junction operation	25

Figures

Figure 1.1: Site location 2

Figure 3.1: Bus route 483 map (Source: Arriva bus) 9

Figure 3.2: Highway Boundary map..... 10

Figure 4.1: Site masterplan 12

Figure 4.2: Site access road with pillars (Google StreetView)..... 13

Figure 4.3: Junction visibility splays 14

Figure 4.4: Traffic position on Old Road East..... 14

Figure 4.5: Gravesham BC refuse vehicle turning..... 17

Figure 4.6: Scania P280 fire tender turning 18

Figure 4.7: 10m rigid vehicle turning 19

Figure 4.8: Parking allocation 20

Figure 6.1: Baseline traffic movements 24

Figure 6.2: 2029 traffic movements..... 24

Figure 6.3: 2029 with development traffic movements 25

Appendices

Appendix A ATC Data

Appendix B Junction Visibility Drawing

Appendix C Highway Boundary

Appendix D Swept Path Analysis

Appendix E MCC Data

Appendix F Old Road East / Hillside Drive Junction Modelling

1. Introduction

1.1 Overview

- 1.1.1 Hydrock now Stantec has been commissioned by Clay Architecture on behalf of the Convent of Mercy, Hillside Drive, Gravesend to provide transport consultancy services for the conversion of part of the convent building to provide three residential dwellings.
- 1.1.2 At present, the site is a convent which is no longer fully occupied and therefore has the potential to be redeveloped to provide additional homes in the area.
- 1.1.3 An application for four 4-bed residential dwellings opposite the existing convent is likely to come as a separate application at a later date. Therefore, this has not been considered as part of the proposed development in this document. However, given this would generate vehicle trips for this scheme were to be given, the trip generation has been considered as part of the impact section in this report. This therefore assesses the cumulative trip generation that would eventuate.
- 1.1.4 In summary, this Study finds the proposed cumulative daily trip generation for both proposed conversion and four new dwellings is 66 fewer than the daily trip generation of a fully occupied convent in its current configuration and therefore the proposed development provides a betterment in highway impact terms, as the new daily trip generation to / from the site would be reduced.

1.2 Site Location

- 1.2.1 The site occupies land and is located approximately 1.6km south east of Gravesend town centre. The site is located within an existing residential area and the location is shown in Figure 1.1.



Figure 11: Site location

2. Policy

2.1.1 The site is located within Gravesend, and is under the jurisdiction of Gravesham Borough Council as the Local Planning Authority and Kent County Council as the Local Highways Authority.

2.1.2 The following documents have been reviewed:

- » National Planning Policy Framework (2023)*
- » Planning Practice Guidance (2014)
- » Gravesham Local Plan Core Strategy (2014)
- » Kent Local Transport Plan 4 (2016)
- » Kent Draft Emerging Local Transport Plan (2023)

**There are currently updates to the 2023 NPPF out for consultation, with a revised NPPF expected in late 2024/early 2025*

NPPF

2.1.3 The National Planning Policy Framework sets out the Government's overarching strategy for planning policy in England.

2.1.4 The most recent version of the National Planning Policy Framework was published in December 2023. Paragraph 115 states that

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.

2.1.5 Paragraph 117 states that

All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

2.1.6 This Transport Statement has been prepared to determine the impact of the proposed development on local transport networks.

NPPG

2.1.7 Planning Practice Guidance was published by the government online in 2014.

2.1.8 The document Travel Plans, Transport Assessments and Statements provides advice on what transport information should be provided to accompany a planning application.

2.1.9 The NPPG states that Travel Plans, Transport Assessments and Statements can positively contribute to:

- » encouraging sustainable travel;
- » lessening traffic generation and its detrimental impacts;
- » reducing carbon emissions and climate impacts;
- » creating accessible, connected, inclusive communities;
- » improving health outcomes and quality of life;

- » improving road safety; and
- » reducing the need for new development to increase existing road capacity or provide new roads.

2.1.10 The scope and level of detail in a Transport Assessment or Statement will vary from site to site but the NPPG suggests including the following:

- » Information about the proposed development, site layout and access;
- » Data about existing public transport provision, including services and frequency;
- » A description of the travel characteristics of the proposed development, including movements by all modes;
- » An assessment of trips from local committed development;
- » An analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3 or 5-year period;
- » Ways of encouraging environmental sustainability by reducing the need to travel; and
- » measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads).

Gravesham Local Plan

2.1.11 The Gravesham Local Plan considers transport in Policy CS11:

New developments should mitigate their impact on the highway and public transport networks as required. As appropriate, transport assessments and travel plans should be provided and implemented to ensure the delivery of travel choice and sustainable opportunities for travel. Transport assessment work is required to be undertaken in accordance with national and local policy guidance, and to identify detailed highway and public transport network requirements and management arising from the development.

2.1.12 This Transport Statement demonstrates that the site is situated in a location where there are walking and public transport networks, provides an assessment of the development in line with guidance, and concludes that mitigation is not required.

2.1.13 Policy CS11 continues:

Sufficient parking in new development will be provided in accordance with adopted parking standards which will reflect the availability of alternative means of transport and accessibility to services and facilities.

2.1.14 Local parking standards are detailed in Supplementary Planning Guidance SPG 4: Kent Vehicle Parking Standards (2006).

2.1.15 The standards within the document are maximum and can be provided in garages or driveways:

Table 2.1: Parking standards

Dwelling size	Car parking provision (per dwelling)
1 bedroom	1 space
2 / 3 bedrooms	2 spaces
4+ bedrooms	3 spaces

2.1.16 The proposed parking provision is in line with the local standards detailed in Supplementary Planning Guidance SPG 4: Kent Vehicle Parking Standards (2006).

Kent Local Transport Plan 4 (2016 – 2031)

2.1.17 Kent County Council's Local Transport Plan 4 is the overarching strategy for transport in the country and seeks to improve transport to enable growth.

2.1.18 The document aims to deliver the following outcomes:

- » Outcome 1: Economic growth and minimised congestion
- » Outcome 2: Affordable and accessible door-to-door journeys
- » Outcome 3: Safer travel
- » Outcome 4: Enhanced environment
- » Outcome 5: Better health and wellbeing

2.1.19 With regards to Gravesham, local priorities over the plan period include improvements to walking, cycling and public transport.

Kent Local Transport Plan 5 (Emerging)

2.1.20 The draft Kent LTP 5 was published in July 2024. The document states the following aim for Kent:

We want to improve the health, wellbeing, and economic prosperity of lives in Kent by delivering a safe, reliable, efficient, and affordable transport network across the county and as an international gateway. We will plan for growth in Kent in a way that enables us to combat climate change and preserve Kent's environment. We will do this by enabling emission-free travel by delivering effective dedicated infrastructure to electrify vehicles, increase public transport use and make walking and cycling attractive. This will be enabled by maintaining our highways network and delivering our Vision Zero road safety strategy. These priorities will ensure our networks are future-proof, resilient and meet user needs.

2.1.21 With regards to Gravesham, one key aim is improving walking and cycling routes, particularly LCWIP routes 1, 2 and 4 between the Ebbsfleet, Northfleet, Springhead and Gravesend town centre.

2.1.22 The site is located in an edge of town centre/suburban area, with footways provided on the local highway network and a range of amenities, including schools, a supermarket and bus stops, located within an 800m walking distance. The proposed development will provide EV charging points and secure cycle storage to future residents. The

accessibility of the site and provision of EV charging capabilities support both the adopted LTP4 and emerging LTP5 by providing future residents with the option to travel sustainably through active travel, public transport or by zero-emission vehicle.

3. Baseline Transport Conditions

3.1 Overview

- 3.1.1 This chapter of the transport statement reviews the baseline transport conditions at the site.

3.2 Walking and Cycling

Walking

- 3.2.1 There are no footways along Hillside Drive and therefore this operates as shared surface. Paragraph 7.2.14 of Manual for Streets states that shared surface roads work well where traffic flows are lower than 100 vehicles per hour.
- 3.2.2 Traffic surveys have been undertaken on both Old Road East and Hillside Drive. Figure 6.3 details the 2029 with development scenario, which represents the robust 'worst-case' scenario. It shows that flows along Hillside Drive will be 12 northbound and 8 southbound in the AM, and 9 northbound and 10 southbound in the PM peak hour. These flows are significantly lower than the 100 vehicles per hour cited in Manual for Streets.
- 3.2.3 Footways are on both sides of the carriageway along Old Road East and generally measure between 1.5m and 2.0m and are lit.

Cycling

- 3.2.4 There is currently not any cycle infrastructure in the vicinity of the site. Local roads are subject to a 30mph speed limit and feature street lighting.
- 3.2.5 National Cycle Network (NCN) Route 1 passes through the centre of Gravesend on a combination of on-street and shared use cycle/footways. NCN 1 is a long-distance route from Dover to the north of Scotland.
- 3.2.6 NCN 117 passes to the south of the site. It routes on dedicated traffic-free cycle routes from NCN 1 in Strood to meet NCN1 again in Ebbsfleet. Once completed, the whole route will go from Northfleet, via Rochester, Maidstone and Ashford, to join with NCN 2 on the South coast.



3.3 Public Transport

Buses

- 3.3.1 The Echo Square bus stops are the closest stops to the site and are provided on the either side of the Echo Square roundabout approximately 300m walking distance west of the main site access. To the east, the Old Road East stops offer a further selection of services. These are located 700m east of the main site access.
- 3.3.2 The main service that serves Echo Square is the 482, which runs from Gravesend town centre to Mungo Park roughly every half an hour.

Table 3.1: Bus services from Echo Square

Service	Route	First / last bus	Average frequency
482	Kings Farm - Gravesend	06:36 / 21:35	Approx every 30 mins
	Gravesend - Kings Farm	06:17 / 21:17	

- 3.3.3 Figure 3.1 shows a map of the 482 bus route map and its proximity to the site.

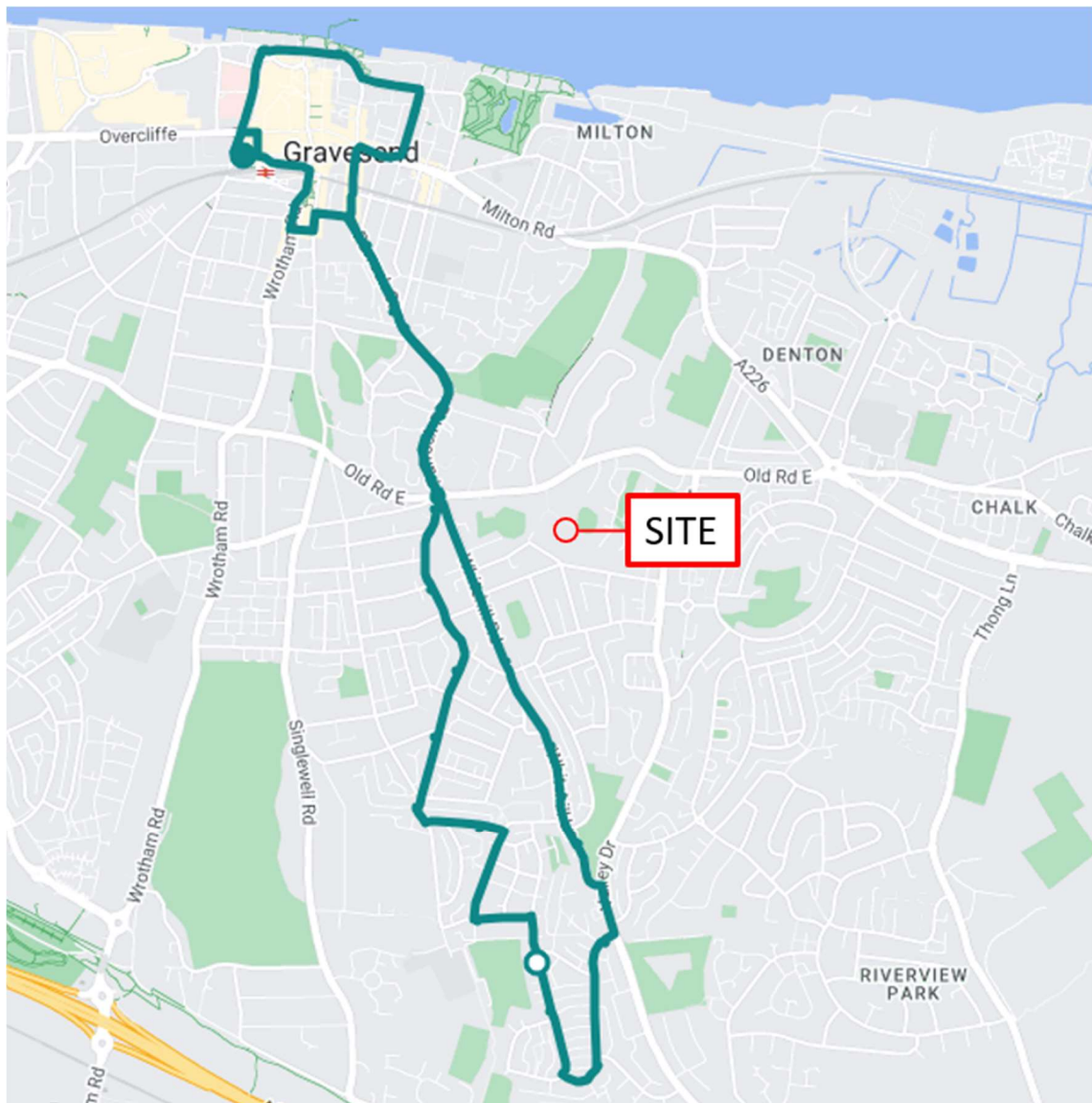


Figure 3.1: Bus route 483 map (Source: Arriva bus)

Rail

- 3.3.4 Gravesend station is located 1.6km to the north of the site on foot, providing frequent services to a range of regional destinations, such as London St Pancras, Luton, and Ramsbury.
- 3.3.5 The 483 bus which stops close to the site terminates at Barrack Row, opposite the railway station, enabling onward travel by train.

3.4 Local Highway Network

- 3.4.1 The site is located at the southeastern end of Hillside Drive, a private cul-de-sac measuring approximately 5.4m wide, narrowing to 3.1m in places. The road is shared surface and features residential frontages along its length.

- 3.4.2 Old Road East routes in a broadly east - west orientation to the north of the site. The road features footways on both sides and is subject to a 30mph speed limit.
- 3.4.3 Parking is restricted through the use of double yellow lines in the vicinity of the Old Road East. The rest of Old Road East is subject to single yellow line parking controls 08:00 to 18:30 Monday to Saturday.
- 3.4.4 A review of collision data has been undertaken using CrashMap. No collisions have been recorded at the junction in the past 5-year period, and this reinforces the point that there are not safety concerns with the existing site access junction geometry.

The highway boundary mapping has been provided by Kent County Council and is shown in

- 3.4.5 Figure 3.2.



Figure 3.2: Highway Boundary map

- 3.4.6 The highway boundary mapping as received from Kent County Council is included in Appendix C. Traffic flow data on Old Road East is reviewed as part of Chapter 4.

4. Proposed Development

4.1.1 The scheme being considered in this application is for the conversion of the western end of the convent to provide three houses. The eastern end will remain as a downsized Convent of Mercy accommodating the current number of residents (seven sisters).

4.1.2 The schedule of accommodation is as follows:

- » Convent conversion:
 - » 2x 6-bed house
 - » 1x 2-bed bungalow

4.2 Site Layout Overview

4.2.1 The scheme will retain the existing section of Hillside Drive to the north of the convent building, with the existing turning area retained and parking rationalised.

4.2.2 The masterplan detailing the scheme is shown below:



Figure 4.1: Site masterplan

4.3 Site Access

- 4.3.1 Vehicular access to the site is provided from Hillside Drive via a priority junction with Old Road East.
- 4.3.2 The site access junction is configured similar to a driveway and features three pillars to the rear or the footway, as shown in Figure 4.2. The width between the pillar on the left-

hand side and the middle pillar is 3.76m which is wide enough to accommodate the requirements of a fire tender (Manual for Streets paragraph 6.7.2), with the width between the left-hand pillar and the right-hand pillar is 5.63m.



Figure 4.2: Site access road with pillars (Google StreetView)

- 4.3.3 A 7-day Automatic Traffic Count (ATC) was installed on Old Road East from Wednesday 22nd June 2023, capturing speeds and flows. Weekday average 85th percentile speeds were recorded as 31.6mph eastbound and 33.3mph westbound. The survey data is included in Appendix A.
- 4.3.4 Based on this and the observed traffic speeds, the visibility requirements have been determined as being 46.2m westbound and 49.8m eastbound. This is based on the parameters set out in Section 7.5 of Manual for Streets.
- 4.3.5 Page 131 of the Kent Design Guide allows for an x-distance at driveway junctions to be taken 2m back from the edge of carriageway when considering visibility at driveway junctions. These visibility splays are shown in Figure 4.3 and therefore can be achieved at the site access junction.
- 4.3.6 The junction visibility splays are shown in Drawing 29553-HYD-XX-XX-DR-TP-0001, which has been included as Appendix B and is reproduced below.

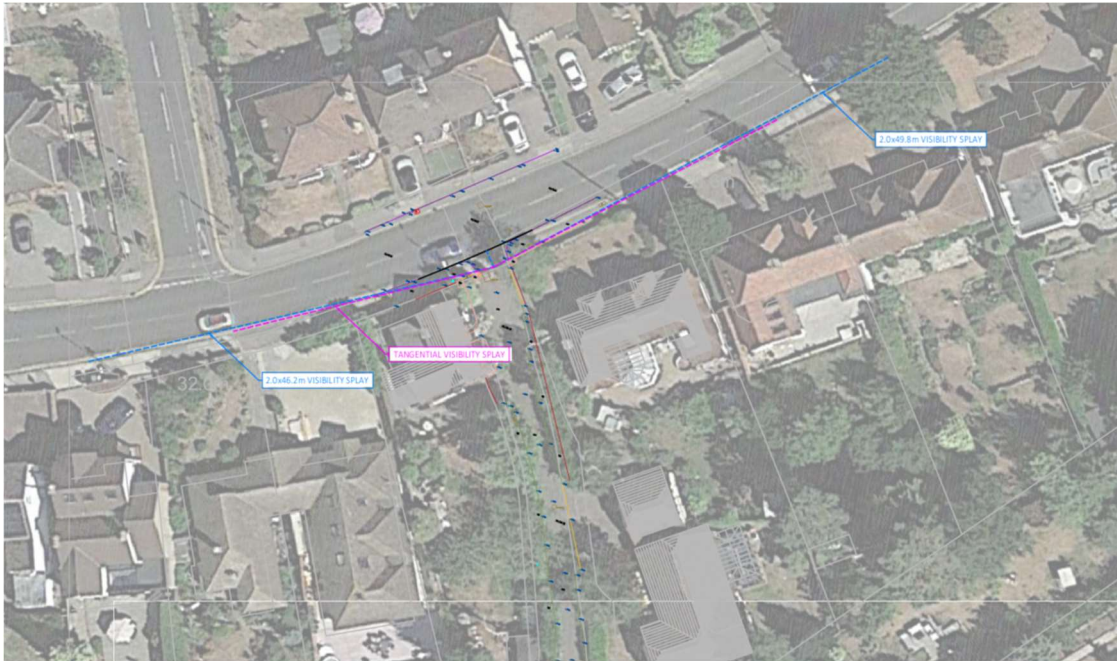


Figure 4.3: Junction visibility splays

- 4.3.7 A pre-application response from Gravesham Borough Council requested a 2.4m x-distance be used for this junction.
- 4.3.8 The footway between the carriageway and Hillside Drive measures 2.0m. Motor vehicles are observed to be travelling along Old Road East over 0.5m from the kerbside, as shown in Figure 4.4 below.



Figure 4.4: Traffic position on Old Road East

4.3.9 It also is noted that cyclists typically position themselves away from kerb. Paragraph 7.2.1 of LTN 1/20 states that:

"In normal traffic conditions, cyclists using the carriageway are advised to ride approximately 0.5m from the nearside kerb, to enable them to avoid gully grates".

4.3.10 Chapter 3 of the Traffic Signs Manual states that, for roads with a speed limit lower than 40mph, double yellow lines are to measure 75mm wide, with a 75mm gap between each line. The closest line to the kerb should be positioned 250mm from the edge of carriageway. This means that the minimum width from edge of carriageway to the edge of the furthest yellow line is 475mm. It is expected that cyclists will be positioned clear of the double yellow line markings and gully grates and therefore be at least 0.5m from the edge of carriageway.

4.3.11 Therefore, whilst a 2.4m x-distance is not achievable from the edge of the carriageway in pure geometric terms, in practice vehicles will edge out more slowly from the site access and the position where drivers and cyclists are travelling in the carriageway on Old Road East means that the x-distance to a potential conflict point is in excess of 2.4m.

4.4 Hillside Drive

Swept path analysis

4.4.1 Hillside Drive is a cul-de-sac and measures approximately 5.4m wide, narrowing to 3.1m over short distances in some places. The road is shared surface and features residential frontages and driveways along its length.

4.4.2 Drawings have been included in Appendix D and demonstrate the following:

- » A refuse vehicle can enter the site, turn, and leave in a forward gear (Drawings 29553-HYD-XX-XX-DR-TP-0004)
- » A large car and a refuse vehicle can pass in specific locations on the access road (Drawings 29553-HYD-XX-XX-DR-TP-0005)

4.4.3 Therefore, the vehicle tracking demonstrates that vehicles can enter and exit the site. This confirms what is understood to currently be occurring.

Forward visibility

4.4.4 The Kent Design Guide classifies this style of road as a Minor Access Way. It states that while the carriageway width does not necessarily have to be consistent, there should be sufficient intervisible space for two cars to pass one another at least every 40m. Forward visibility should be typically between 23m and 33m, with a required minimum of 14m.

4.4.5 Drawing 29553-HYD-XX-XX-DR-TP-0002 demonstrates that the maximum forward visibility from each of the passing opportunities is in excess of the required minimum of 14m, and in all but one case more than the lower end of the range (23m). It is also noted that intervisibility between passing spaces is 40m or greater along the full extent of the driveway. Therefore, the requirements of the Kent Design Guide are currently met.

4.4.6 In addition, the forward visibility requirement based on a design speed 10mph has also been confirmed as being achievable and this is shown in 29553-HYD-XX-XX-DR-TP-0003.

4.5 Turning area

4.5.1 Currently, parking for the convent is located on Hillside Drive. No formal bays are present, with vehicles parked on either side of the road opposite the convent.

4.5.2 It is proposed that formal bays will be marked out, based on local parking standards and explained in detail below. This rationalisation will result in more space being created on Hillside Drive opposite the convent suitable for the turning of delivery and service vehicles.

4.5.3 It is understood that existing residents' deliveries and servicing currently informally use the space at the eastern end of Hillside Drive next to the convent to turn. The rationalisation of parking spaces to create an improved turning area will provide a betterment compared to the existing situation.

4.5.4 Therefore, overall the scheme accommodates deliveries, servicing and parking in an improved manner.

4.6 Servicing

4.6.1 Tracking has been undertaken for a 10.5m Gravesham Borough Council refuse vehicle, a Scania P280 fire tender and a 10m rigid vehicle. This tracking demonstrates that the vehicles can enter the site, turn at the eastern turning head, and exit in a forward gear.

4.6.2 The refuse vehicle currently accesses and services the site, the future arrangement is just an extension of this service.

4.6.3 A new route is proposed to route to the west and south of the three new houses, providing access to rear gardens and rear parking spaces. Tracking has been undertaken for a large car and a 4.6t light van, which demonstrates that these vehicles can travel along the access route, turn in the turning head, and depart in a forward gear.



Figure 4.5: Gravesham BC refuse vehicle turning

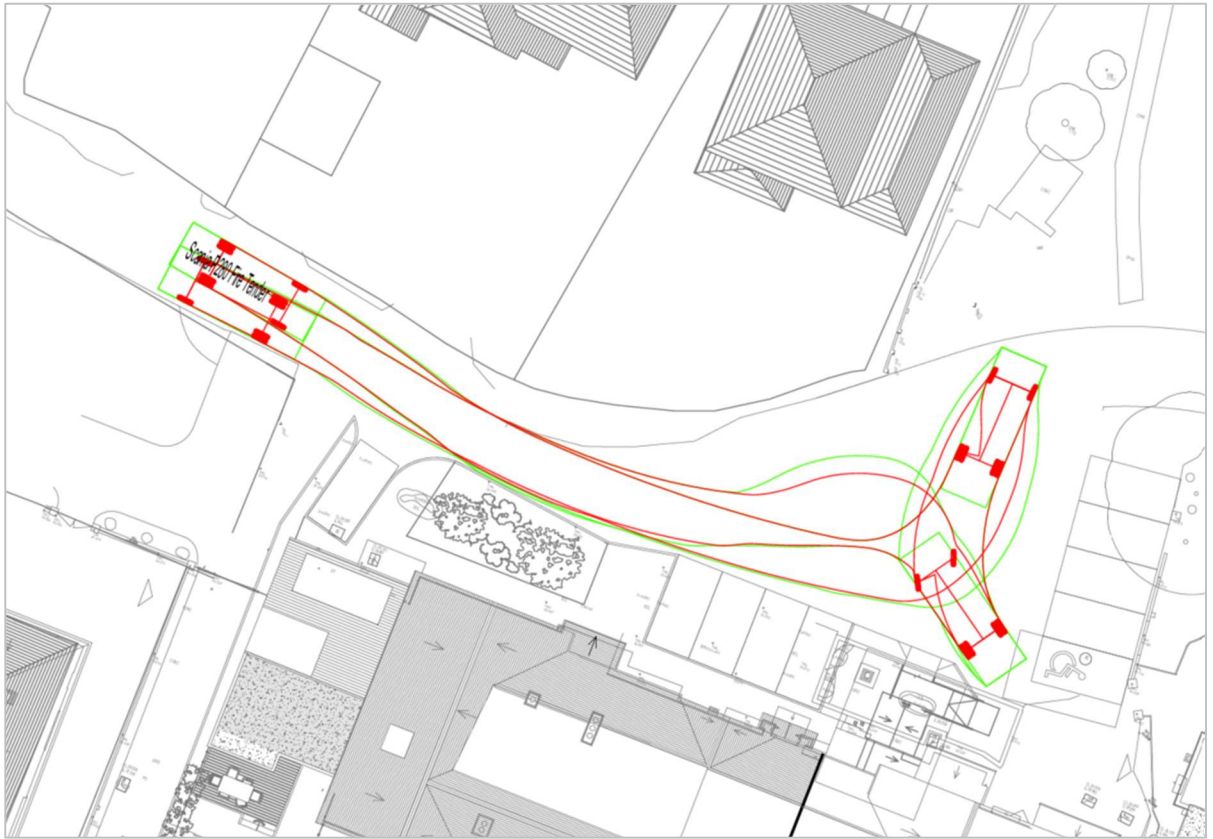


Figure 4.6: Scania P280 fire tender turning



Figure 4.7: 10m rigid vehicle turning

- 4.6.4 The swept paths above are also shown in drawings 29553-HYD-XX-XX-DR-TP-0004 PO2, 29553-HYD-XX-XX-DR-TP-0006 PO2, and 29553-HYD-XX-XX-DR-TP-0009, which are included in Appendix D.

4.7 Parking provision

- 4.7.1 The Kent parking standards are shown in Table 2.1. The 2x 6-bed house requires three spaces each and the two-bed bungalow requires two spaces. This equates to a total requirement of eight spaces for the houses in the former convent. One space for the bungalow will be provided to the front of the property and one to the rear. Two of the three required spaces for the 6-bed houses will be provided to the front, with an additional space to the rear.
- 4.7.2 There is no standard for convent as it is considered a sui generis use. The provision of nine spaces and two accessible spaces is considered acceptable based on the current requirements of the sisters and existing convent operation.
- 4.7.3 The proposed parking allocations are shown below in Figure 4.8.



Figure 4.8: Parking allocation

Cycle parking

- 4.7.4 It is proposed that secure cycle storage will be provided by means of a shed to the rear of the properties in the former convent.

5. Trip Generation

5.1 Overview

5.1.1 While this document has been prepared to consider the change of use (COU) of existing buildings to provide two 6-bed house and one 2-bed bungalow, the trip generation section considers the conversion along with the construction of four 4-bed residential dwellings on land opposite the existing convent.

5.1.2 The trip generation section takes the additional four residential units into consideration to fully understand the cumulative impact of the trip generation. This section indicates that the cumulative impact of the trip generation is not severe.

5.2 Existing site operation

5.2.1 It is understood that the Sisters of Mercy have been in Gravesend since 1860 and formerly occupied 157 Milton Road, Gravesend and 1 Edwin Street, Gravesend. In 1951 they moved to number 6 and 8 Hillside Drive, later acquiring number 7 Hillside Drive sometime between 1959 and 1961.

5.2.2 The current occupancy is seven sisters living full time at the convent, and one sister who visits and stays once a month. Six of the sisters drove, and a priest comes to the chapel every morning (by car) for mass which is between 8:30am and 9am. There are three staff employed currently to look after the household and these all drive to the site daily.

5.2.3 Other vehicle trips to the site include:

- » Handyman comes once a week by van.
- » Carers come as the occasion requires, typically 2 to 3 times a day.
- » The gardeners visit once every three weeks from March to November (and once after Christmas to do the trees). They drive up to two large vans.
- » There are visitors to the convent, with an average attendance being three lots of friends and / or family a month, usually by car.
- » The Sisters each go to retreat, once a month. When going to retreat they travel by taxi (assumed to be at least two taxis).
- » Refuse collection is once a week (on a Friday).

5.2.4 Therefore, assuming two of the seven sisters travel by car each day, there is potential for a peak daily vehicle trip generation to be 26 daily two-way vehicle movements.

5.2.5 Assuming 10% of all daily trips occur during the peak hours, this would result in 3 trips during both the AM and PM peak hours.

5.3 Theoretical maximum trip generation

5.3.1 The maximum occupancy was 52 sisters and there are currently seven sisters in the convent. Therefore, the existing land use if returned to full occupancy would generate significantly more vehicle movements when fully occupied than it does today.

- 5.3.2 Therefore, a pro-rata analysis has been undertaken on the convents' trips and visitors. For the purposes of this analysis, it is assumed that the handyman, gardeners, priest, and staff trips would remain the same, and only the carer, visitor, and sister trips would be factored up pro-rata.
- » Two sisters driving each day increases to 15 sisters driving each day (30 two-way vehicle trips)
 - » 22 carers visit each day (44 two-way vehicle trips)
 - » 22 visitor trips on a single day (44 two-way vehicle trips)
- 5.3.3 A worst-case first principles assessment therefore suggests that could be up to 126 two-way vehicle trips per day associated with a fully operational and occupied convent.
- 5.3.4 In the absence of alternative information, it is assumed that 10% of these arrivals and departures would occur during the AM and PM peak hours, resulting in 13 trips in each peak.

5.4 Proposed Development (Cumulative)

- 5.4.1 A TRICS assessment has been undertaken to determine the cumulative trip generation from the proposed residential use.
- 5.4.2 The following criteria have been applied for selection.
- » Residential
 - » Houses (Privately Owned)
 - » England (Excl. Greater London)
 - » Edge of Town Centre/Suburban Area (Houses)
- 5.4.3 All house sites with an average of three or fewer bedrooms were manually deselected, as the proposal will be for 4-bed houses. Any sites surveyed during the Covid-19 pandemic were also manually discounted.
- 5.4.4 The vehicle trip rates and cumulative generation for the 7 proposed (Use Class C3) residential properties (houses) is shown in Table 5.1 below.

Table 5.1: Private housing vehicle trip rates and generation

AM			PM			Total		
Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot
0.139	0.391	0.530	0.335	0.180	0.515	2.353	2.463	4.816
1	3	4	2	1	3	16	17	34

- 5.4.5 Table 5.1 shows the cumulative trip generation from the residential aspect of the proposed site. It is proposed that the site will generate 4 two-way trips in the AM peak, 3 two-way trips in the PM peak hour, and a daily total of 34 two-way trips.

5.5 Trip generation comparison

- 5.5.1 The trip generation for the proposed scheme is the sum of the residential element, shown in Table 5.1, and that of the current convent, which is to be retained in the downsized building. The daily trip generation of the proposed development has been compared to that of the trip generation of the theoretical maximum occupancy convent below:
- » Daily two-way trip generation - Existing Convent: 26 trips
 - » Daily two-trip generation - 7 houses: 34 trips
 - » Proposed development daily total: 60 trips
 - » Theoretical maximum trip generation of the fully occupied convent: 126 trips
- 5.5.2 The proposed daily trip generation is 66 trips fewer than the daily trip generation of the theoretical maximum capacity of the convent in its current configuration. Therefore, there is already and in principle consent for these additional vehicle trips to be travelling alongside Hillside Drive and therefore the proposed development provides a betterment as the new daily trip generation to/ from the site would be reduced through organisational alterations to the nature of the site from mostly convent to a proposed balance of mostly residential dwellings with smaller convent use.

6. Impact on Hillside Drive Junction

Overview

- 6.1.1 An assessment has been undertaken to determine the impact of the proposal on the operation of Hillside Drive, and the junction with the Old Road East.

Baseline and forecast traffic flows at the Old Road East/ Hillside Drive junction

- 6.1.2 Existing traffic flows on Old Road East and Hillside Drive have been determined from a manual classified count (MCC) undertaken on the 22nd June 2023. The traffic survey is included in Appendix E. The baseline traffic flows are shown in Figure 6.1.

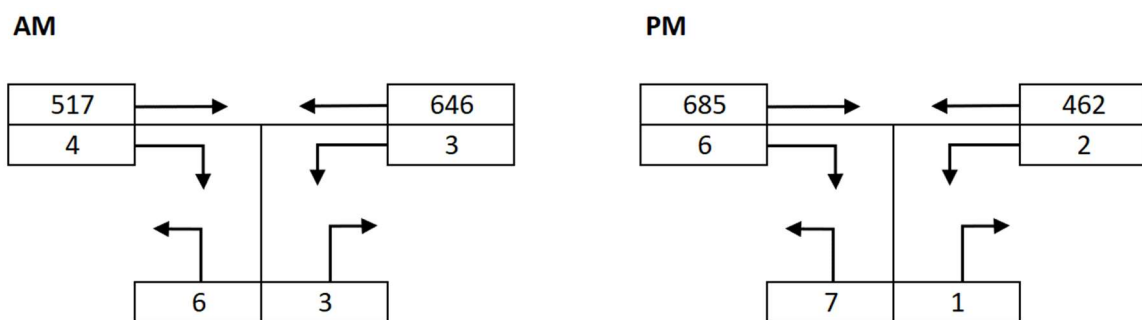


Figure 6.1: Baseline traffic movements

- 6.1.3 The forecast year is assumed to be five years in the future and therefore the baseline flows have been factored to 2029 using TEMPro Core Scenario for minor roads in the Gravesham District.

Table 6.1: TEMPro growth rates

	AM	PM
TEMPro growth rate	1.0409	1.0441

- 6.1.4 The factored baseline flows are shown in Figure 6.2.

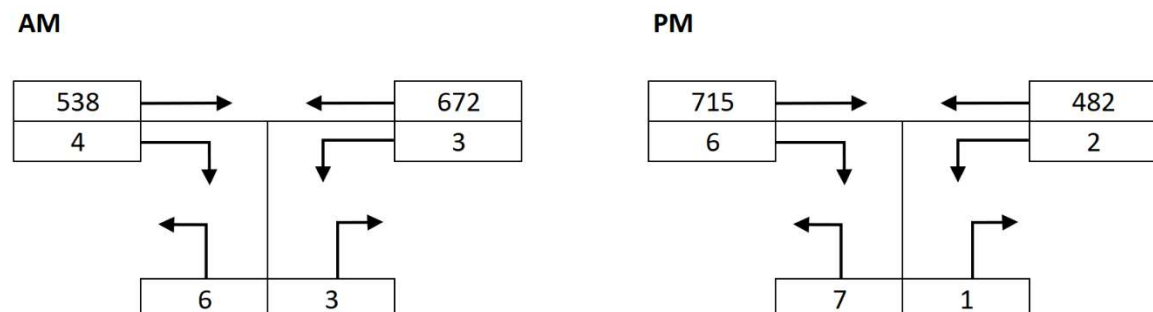


Figure 6.2: 2029 traffic movements

- 6.1.5 The proposed cumulative development trips have also been included in the 2029 forecast year assessment and these have been distributed 50:50 east and west along Oak Road East. The traffic flows are shown in Figure 6.3.

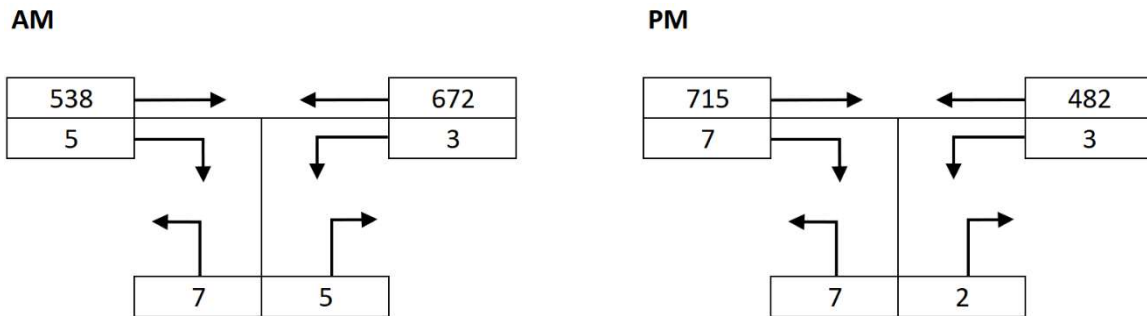


Figure 6.3: 2029 with development traffic movements

Old Road East/ Hillside Drive junction capacity

- 6.1.6 An assessment has also been undertaken of the capacity of the Hillside Drive / Old Road East junction using the industry-standard Junctions 9 PICADY software. The results of the 2029 with development scenario are presented in
- 6.1.7 Table 6.2 and the model output file is included in Appendix F.

Table 6.2: Hillside Drive / Old Road East junction operation

	AM		PM	
	Delay (s)	RFC	Delay (s)	RFC
Hillside Drive	11.53	0.04	9.17	0.02
Old Road East	4.42	0.02	3.86	0.03

- 6.1.8 The PICADY assessment indicates a maximum RFC of 0.04 on the Hillside Drive arm during the AM peak hour. The junction is therefore predicted to operate well within theoretical capacity in the 2029 with development scenario.

7. Summary and Conclusions

- 7.1.1 Hydrock has been appointed by Clay Architecture to provide transport consultancy services on behalf of the Convent of Mercy, Hillside Drive, Gravesend.
- 7.1.2 The proposal is for the conversion of part of the convent building to provide three residential dwellings. The existing convent operation will be relocated into the remainder of the convent building.
- 7.1.3 The site occupies land and is located approximately 1.6km south east of Gravesend town centre. The site is bounded by residential properties on all sides.
- 7.1.4 The masterplan shows that one of the parking spaces for the bungalow will be provided to the front of the property, with the other to the rear. Two of the three required spaces for the 6-bed houses provided to the front and an additional space to the rear. The remaining 11 spaces are for convent use, a provision which is considered acceptable based on the current convent operation.
- 7.1.5 Secure cycle storage will be provided for each property.
- 7.1.6 Tracking has been undertaken demonstrating that a refuse vehicle and a fire tender can turn in the new turning head provided. Additional tracking demonstrates that a large car and 4.6t light van can use the residential rear access, turn and depart in a forward gear.
- 7.1.7 Forward visibility along Hillside Drive has been considered, with the maximum forward visibility from each of the passing opportunities demonstrated as being in excess of the required minimum of 14m, and in all but one case more than the lower end of the range (23m). It is also noted that intervisibility between passing spaces is 40m or greater along the full extent of the driveway. Therefore, the requirements of the Kent Design Guide can be met.
- 7.1.8 The cumulative vehicular trip generation for the conversion of the convent to provide three dwellings, and the additional four new residential properties opposite, was determined using the industry-standard TRICS trip rate database. It is proposed that the new dwellings will generate an additional 4 two-way trips in the AM peak, 3 two-way trips in the PM peak hour, and a daily total of 34 two-way trips.
- 7.1.9 The proposed daily trip generation for the seven residential dwellings and the existing convent operation is 66 trips fewer than the daily trip generation of the theoretical maximum capacity of the convent in its current configuration. Therefore, there is already and in principle consent for these additional vehicle trips to be travelling alongside Hillside Drive and therefore the proposed development provides a betterment as the new daily trip generation to/ from the site would be reduced.
- 7.1.10 A PICADY assessment was undertaken for the Old Road East / Hillside Drive junction, which indicated a maximum RFC of 0.04 on the Hillside Drive arm during the AM peak hour. The junction is therefore predicted to operate well within theoretical capacity in the 2029 with development scenario.
- 7.1.11 It is considered that, based on the findings of this transport statement, that there are no unacceptable impacts that could be interpreted as being severe in the context of the

NPPF. The assessment demonstrates that the number of new vehicle trips generated would not represent a significant increase when compared with the existing traffic flows and the trip generation of the currently consented land use. It is considered that Hillside Drive has sufficient capacity to accommodate the proposed development.

Appendix A ATC Data

Intelligent Data Collection Limited

Period Commencing: 19/06/2023

Road Name: B261 Old Road E

Flow from : Milton Avenue (W)

Vehicle Classification: All Vehicles

to: Hillside Drive (E)

Prepared by: Rachael Harnby

Checked by: Luke Martin



Hour Starting	Monday 19/06/2023	Tuesday 20/06/2023	Wednesday 21/06/2023	Thursday 22/06/2023	Friday 23/06/2023	Saturday 24/06/2023	Sunday 25/06/2023	Monday 26/06/2023	Tuesday 27/06/2023	Wednesday 28/06/2023	Thursday 29/06/2023	Friday 30/06/2023	Saturday 01/07/2023	Sunday 02/07/2023	3-day Average (Tue-Thur)	5-day Average (Mon-Fri)	7-day Average (Mon-Sun)
00:00	*	*	*	56	55	99	126	53	47	50	57	*	*	*	53	53	68
01:00	*	*	*	25	37	56	65	24	21	17	32	*	*	*	24	26	35
02:00	*	*	*	18	26	40	41	12	22	13	17	*	*	*	18	18	24
03:00	*	*	*	15	18	27	30	9	12	12	12	*	*	*	13	13	17
04:00	*	*	*	31	29	22	19	25	23	28	26	*	*	*	27	27	25
05:00	*	*	*	74	75	43	31	62	74	74	72	*	*	*	74	72	63
06:00	*	*	*	161	148	88	66	179	173	143	159	*	*	*	159	161	140
07:00	*	*	*	347	347	154	77	326	316	345	325	*	*	*	333	334	280
08:00	*	*	*	511	563	251	128	514	477	488	470	*	*	*	487	504	425
09:00	*	*	383	370	377	366	272	364	401	386	386	*	*	*	385	381	367
10:00	*	*	361	338	421	487	344	374	392	382	367	*	*	*	368	376	385
11:00	*	*	397	386	446	499	431	374	397	394	374	*	*	*	390	395	411
12:00	*	*	415	440	453	531	424	436	482	399	426	*	*	*	432	436	445
13:00	*	*	392	436	483	518	419	433	432	470	*	*	*	*	433	441	448
14:00	*	*	442	491	590	475	421	436	462	488	*	*	*	*	471	485	476
15:00	*	*	595	603	571	415	354	500	540	498	*	*	*	*	559	551	510
16:00	*	*	569	579	579	402	328	594	587	551	*	*	*	*	572	577	524
17:00	*	*	724	681	623	404	360	633	700	681	*	*	*	*	697	674	601
18:00	*	*	581	653	603	391	351	530	550	604	*	*	*	*	597	587	533
19:00	*	*	451	458	461	394	314	391	435	410	*	*	*	*	439	434	414
20:00	*	*	352	359	344	243	296	305	344	342	*	*	*	*	349	341	323
21:00	*	*	275	286	330	270	221	233	209	283	*	*	*	*	263	269	263
22:00	*	*	177	200	255	285	163	126	165	221	*	*	*	*	191	191	199
23:00	*	*	94	103	170	161	76	89	81	104	*	*	*	*	96	107	110
Summary Data															Summary Data		
0700-1900	0	0	4859	5835	6056	4893	3909	5514	5736	5686	2348	0	0	0	5722	5741	5403
0600-2200	0	0	5937	7099	7339	5888	4806	6622	6897	6864	2507	0	0	0	6932	6946	6544
0600-0000	0	0	6208	7402	7764	6334	5045	6837	7143	7189	2507	0	0	0	7218	7244	6853
0000-0000	0	0	6208	7621	8004	6621	5357	7022	7342	7383	2723	0	0	0	7425	7452	7084
0700-1000	0	0	383	1228	1287	771	477	1204	1194	1219	1181	0	0	0	1205	1219	1072
1600-1900	0	0	1874	1913	1805	1197	1039	1757	1837	1836	0	0	0	0	1865	1837	1657
Peak Hour Analysis															Peak Hour Analysis		
07:00-10:00	0	0	383	511	563	366	272	514	477	488	470	0	0	0	487	504	425
10:00-16:00	0	0	595	603	590	531	431	500	540	498	426	0	0	0	559	551	510
16:00-19:00	0	0	724	681	623	404	360	633	700	681	0	0	0	0	697	674	601

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed

Intelligent Data Collection Limited

Period Commencing: 19/06/2023

Road Name: B261 Old Road E

Flow from : Hillside Drive (E)

Vehicle Classification: All Vehicles

to: Milton Avenue (W)

Prepared by: Rachael Harnby

Checked by: Luke Martin



Hour Starting	Monday 19/06/2023	Tuesday 20/06/2023	Wednesday 21/06/2023	Thursday 22/06/2023	Friday 23/06/2023	Saturday 24/06/2023	Sunday 25/06/2023	Monday 26/06/2023	Tuesday 27/06/2023	Wednesday 28/06/2023	Thursday 29/06/2023	Friday 30/06/2023	Saturday 01/07/2023	Sunday 02/07/2023	3-day Average (Tue-Thur)	5-day Average (Mon-Fri)	7-day Average (Mon-Sun)
00:00	*	*	*	44	35	68	88	32	40	39	37	*	*	*	40	38	48
01:00	*	*	*	22	20	38	55	23	16	13	15	*	*	*	17	18	25
02:00	*	*	*	15	18	28	36	19	11	9	13	*	*	*	12	14	19
03:00	*	*	*	16	21	23	22	21	14	16	16	*	*	*	16	17	19
04:00	*	*	*	41	43	28	29	41	46	43	44	*	*	*	44	43	39
05:00	*	*	*	169	145	63	37	165	184	156	173	*	*	*	171	165	137
06:00	*	*	*	349	300	98	58	356	382	375	426	*	*	*	383	365	293
07:00	*	*	*	643	545	180	128	681	649	651	753	*	*	*	674	654	529
08:00	*	*	*	639	623	383	170	668	651	633	667	*	*	*	648	647	554
09:00	*	*	484	461	513	517	363	497	517	491	505	*	*	*	492	495	483
10:00	*	*	427	451	430	529	510	432	440	449	422	*	*	*	438	436	454
11:00	*	*	424	482	447	562	438	420	440	434	430	*	*	*	442	440	453
12:00	*	*	464	442	462	472	450	381	374	374	420	*	*	*	415	417	427
13:00	*	*	417	384	460	463	486	428	431	439	*	*	*	*	418	427	439
14:00	*	*	414	418	493	422	389	448	456	439	*	*	*	*	432	445	435
15:00	*	*	454	446	505	341	287	464	458	443	*	*	*	*	450	462	425
16:00	*	*	506	474	522	386	280	471	500	499	*	*	*	*	495	495	455
17:00	*	*	491	459	521	372	300	463	468	492	*	*	*	*	478	482	446
18:00	*	*	507	481	537	372	282	484	448	511	*	*	*	*	487	495	453
19:00	*	*	365	356	423	339	285	352	369	406	*	*	*	*	374	379	362
20:00	*	*	276	299	277	273	238	252	282	282	*	*	*	*	285	278	272
21:00	*	*	204	216	261	215	171	190	163	225	*	*	*	*	202	210	206
22:00	*	*	119	152	166	185	106	85	106	134	*	*	*	*	128	127	132
23:00	*	*	68	78	131	143	70	54	54	70	*	*	*	*	68	76	84
Summary Data															Summary Data		
0700-1900	0	0	4588	5780	6058	4999	4083	5837	5832	5855	3197	0	0	0	5866	5893	5551
0600-2200	0	0	5433	7000	7319	5924	4835	6987	7028	7143	3623	0	0	0	7110	7124	6684
0600-0000	0	0	5620	7230	7616	6252	5011	7126	7188	7347	3623	0	0	0	7305	7327	6899
0000-0000	0	0	5620	7537	7898	6500	5278	7427	7499	7623	3921	0	0	0	7603	7623	7186
0700-1000	0	0	484	1743	1681	1080	661	1846	1817	1775	1925	0	0	0	1813	1796	1566
1600-1900	0	0	1504	1414	1580	1130	862	1418	1416	1502	0	0	0	0	1459	1472	1353
Peak Hour Analysis															Peak Hour Analysis		
07:00-10:00	0	0	484	643	623	517	363	681	651	651	753	0	0	0	674	654	554
10:00-16:00	0	0	464	482	505	562	510	464	458	449	430	0	0	0	450	462	454
16:00-19:00	0	0	507	481	537	386	300	484	500	511	0	0	0	0	495	495	455

Note: Peak Hour Analysis calculates and then highlights the highest flow within the period listed

Intelligent Data Collection Limited

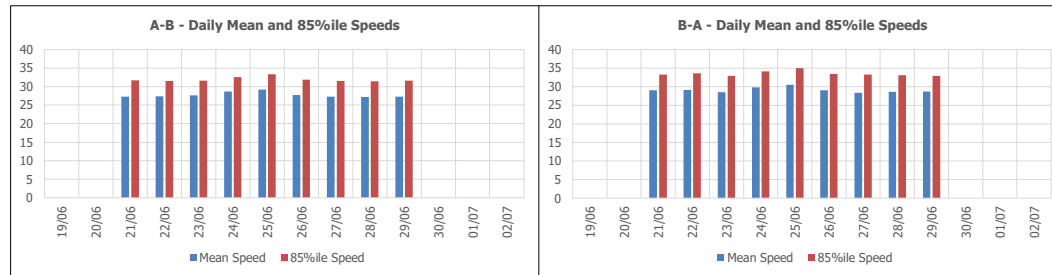
Client: Hydrock
Project Number: ID07130
Site Number: Site 1



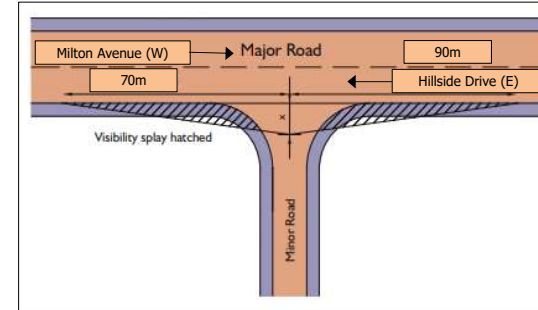
Mean and 85%ile Speed Summary

Direction A-B (Mph)															Max
Date	19/06	20/06	21/06	22/06	23/06	24/06	25/06	26/06	27/06	28/06	29/06	30/06	01/07	02/07	
Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
Mean Speed (mph)	-	-	27.3	27.4	27.6	28.7	29.2	27.7	27.3	27.2	27.3	-	-	-	29.2
85%ile Speed (mph)	-	-	31.7	31.5	31.6	32.6	33.3	31.9	31.5	31.4	31.6	-	-	-	33.3
85%ile Speed (kph)	-	-	50.7	50.4	50.6	52.2	53.28	51.04	50.40	50.24	50.56	-	-	-	53.3
Visibility Splay (m)	-	-	70	70	70	70	70	70	70	70	70	-	-	-	70

Direction B-A (Mph)															Max
Date	19/06	20/06	21/06	22/06	23/06	24/06	25/06	26/06	27/06	28/06	29/06	30/06	01/07	02/07	
Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
Mean Speed (mph)	-	-	29.0	29.1	28.5	29.8	30.5	29.0	28.4	28.6	28.7	-	-	-	30.5
85%ile Speed (mph)	-	-	33.2	33.6	32.9	34.1	35.0	33.4	33.2	33.1	32.9	-	-	-	35.0
85%ile Speed (kph)	-	-	53.1	53.8	52.6	54.6	56.0	53.4	53.1	53.0	52.6	-	-	-	56.0
Visibility Splay (m)	-	-	70	70	70	70	90	70	70	70	70	-	-	-	90



Visibility Splay



Splay Standards	
Speed (kph)	Distance (m)
30	33
40	45
50	70
60	90
70	120
85	160
100	215
120	295

Guidance Notes

The visibility splay is a line drawn from a point 2.4 metres back from a minor road stopline to the nearside kerb of the major road in both directions. This distance along the major road where the line intersects is based on the speed conditions of the major road. Any space within the resulting two triangles must remain free of any obstruction above 1.005 metres.

For our indicative illustration we have used the maximum 85th percentile speed for all of the days surveyed, and rounded it to the nearest speed given for required visibility distances.

These are for indicative purposes only and Intelligent Data are not liable for any losses from advice, or follow-on work, including design of infrastructure using this information.

Appendix B Junction Visibility Drawing



Google Earth

KEY PLAN

VEHICLE MODELS USED IN SWEEP PATH ANALYSIS

NOTES

REVISIONS

P02	SECOND ISSUE					
	DESIGNED BY	01/10/24	ISSUED BY	01/10/24	APPROVED BY	01/10/24
	J.DALLEY		S.MOODY		S.MOODY	
P01	FIRST ISSUE					
	DESIGNED BY	24/07/23	ISSUED BY	24/07/23	APPROVED BY	24/07/23
	R.OSBORNE		J.DALLEY		S.MOODY	



MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

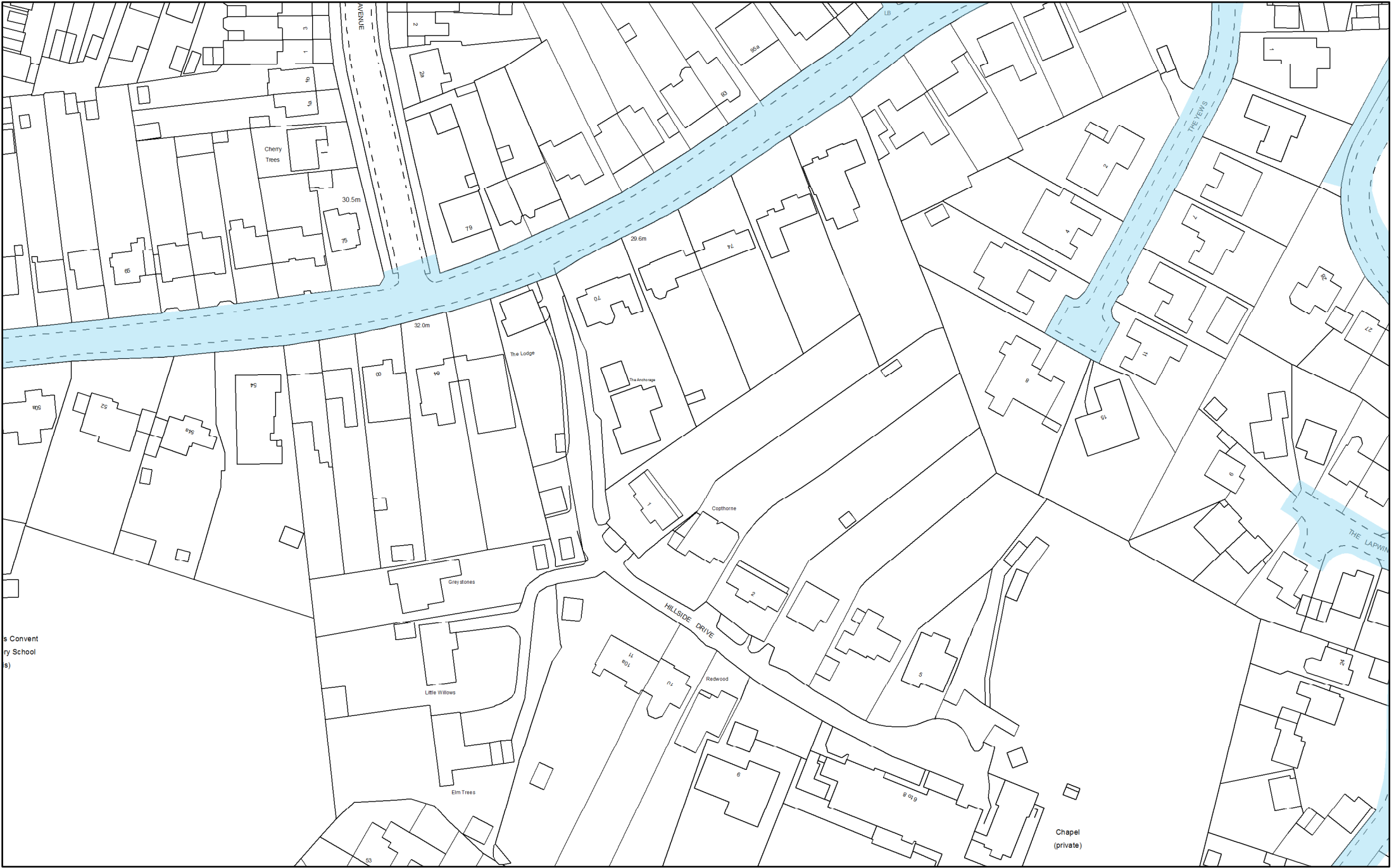
CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY

VISIBILITY SPLAYS AT SITE ACCESS

HYDROCK PROJECT NO. 29552		SCALE @ A3 1:500	STATUS S2 REVISION P01
STATUS DESCRIPTION INFORMATION			
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0001			

Appendix C Highway Boundary



Appendix D Swept Path Analysis



VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS

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

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

REVISION	REVISION DESCRIPTION	ISSUED BY	ISSUED DATE	DESIGNED BY	DESIGNED DATE	APPROVED BY	APPROVED DATE
P01	REVISION DESCRIPTION	J.DALLEY	09/10/24	S.MOODY	09/10/24	S.MOODY	09/10/24
P02	REVISION DESCRIPTION	J.DALLEY	27/11/24	S.MOODY	27/11/24	S.MOODY	27/11/24

MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY, GRAVESEND

HILLSIDE DRIVE PASSING SPACES WITH DISTANCES

HYDROCK PROJECT NO. 29553	SCALE @ A3 1:500
STATUS DESCRIPTION INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0002	REVISION P02



VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS

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

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

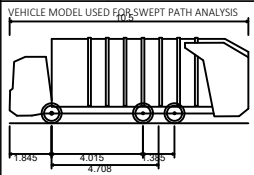
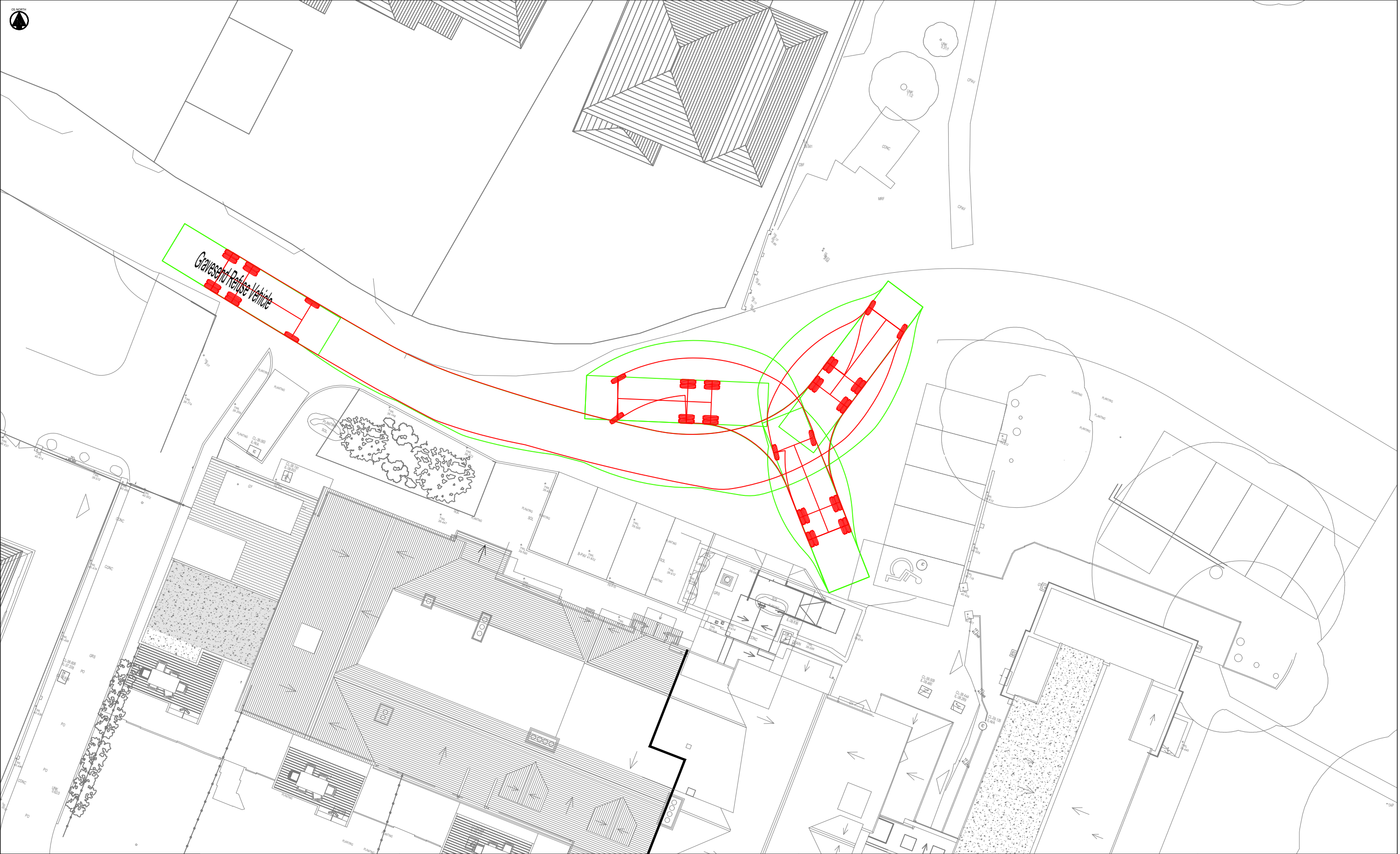
REVISIONS					
REVISION DESCRIPTION					
P01	ISSUED BY: J.DALLEY	09/10/24	DESIGNED BY: S.MOODY	09/10/24	APPROVED BY: S.MOODY 09/10/24
REVISION DESCRIPTION					
P02	ISSUED BY: J.DALLEY	27/11/24	DESIGNED BY: S.MOODY	27/11/24	APPROVED BY: S.MOODY 27/11/24

MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY, GRAVESEND

HILLSIDE DRIVE FORWARD VISIBILITY		
HYDROCK PROJECT NO. 29553		SCALE @ A3 1:500
STATUS DESCRIPTION INFORMATION		STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0003		REVISION P02



Gravesend Refuse Vehicle
Overall Length 10.500m
Overall Width 2.500m
Overall Body Height 3.756m
Min Body Ground Clearance 0.309m
Track Width 2.530m
Lock to lock time 4.00s
Wall to Wall Turning Radius 9.500m

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS (CONTINUED)



MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY, GRAVESEND

HYDROCK PROJECT NO.		SCALE @ A3	
29553		1:250	
STATUS DESCRIPTION			STATUS
INFORMATION			S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)			REVISION
29553-HYD-XX-XX-DR-TP-0004			P02



VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS

Gravesend Refuse Vehicle
Overall Length 10.500m
Overall Width 2.500m
Overall Body Height 3.756m
Min Body Ground Clearance 0.309m
Track Width 2.530m
Lock to lock time 4.00s
Wall to Wall Turning Radius 9.500m

VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS

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

NOTES

REVISIONS (CONTINUED)

REVISIONS					
P02	REVISION DESCRIPTION	ISSUED BY	27/11/24	DESIGNED BY	27/11/24
		J.DALLEY		S.MOODY	
P01	REVISION DESCRIPTION	ISSUED BY	09/10/24	DESIGNED BY	09/10/24
		J.DALLEY		S.MOODY	

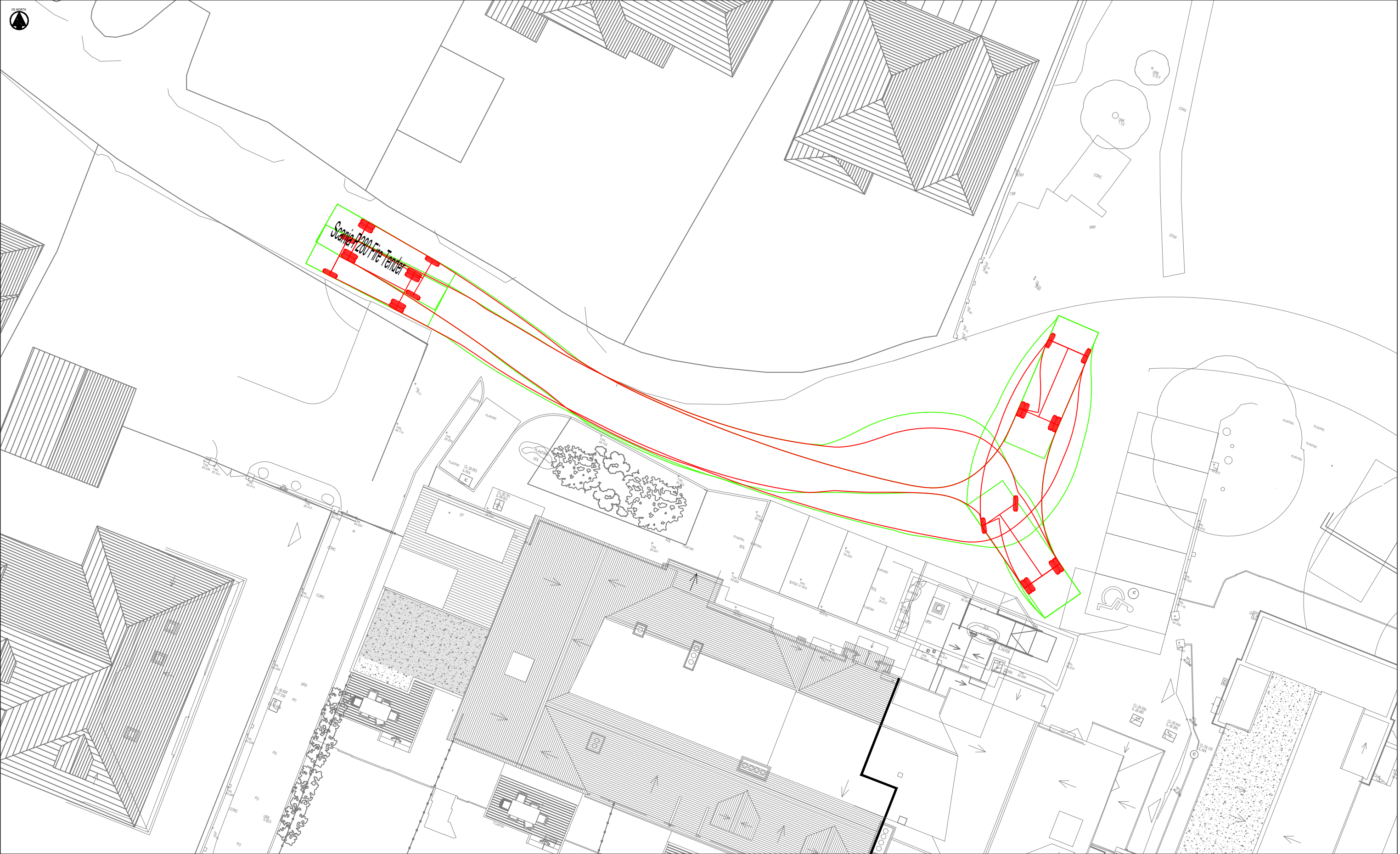
MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY, GRAVESEND

SWEEP PATH ANALYSIS OF REFUSE VEHICLE
PASSING A LARGE CAR

HYDROCK PROJECT NO. 29553	SCALE @ A3 1:750
STATUS DESCRIPTION INFORMATION	STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0005	REVISION P02



VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS

Scania P280 Fire Tender
Overall Length 7.900m
Overall Width 2.500m
Overall Body Height 3.300m
Min Body Ground Clearance 0.140m
Track Width 2.490m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 7.800m

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS					
P02					
REVISION DESCRIPTION					
ISSUED BY: J.DALLEY	27/11/24	DRAWN BY: S.MOODY	27/11/24	APPROVED BY: S.MOODY	27/11/24
P01					
REVISION DESCRIPTION					
ISSUED BY: J.DALLEY	09/10/24	DRAWN BY: S.MOODY	09/10/24	APPROVED BY: S.MOODY	09/10/24

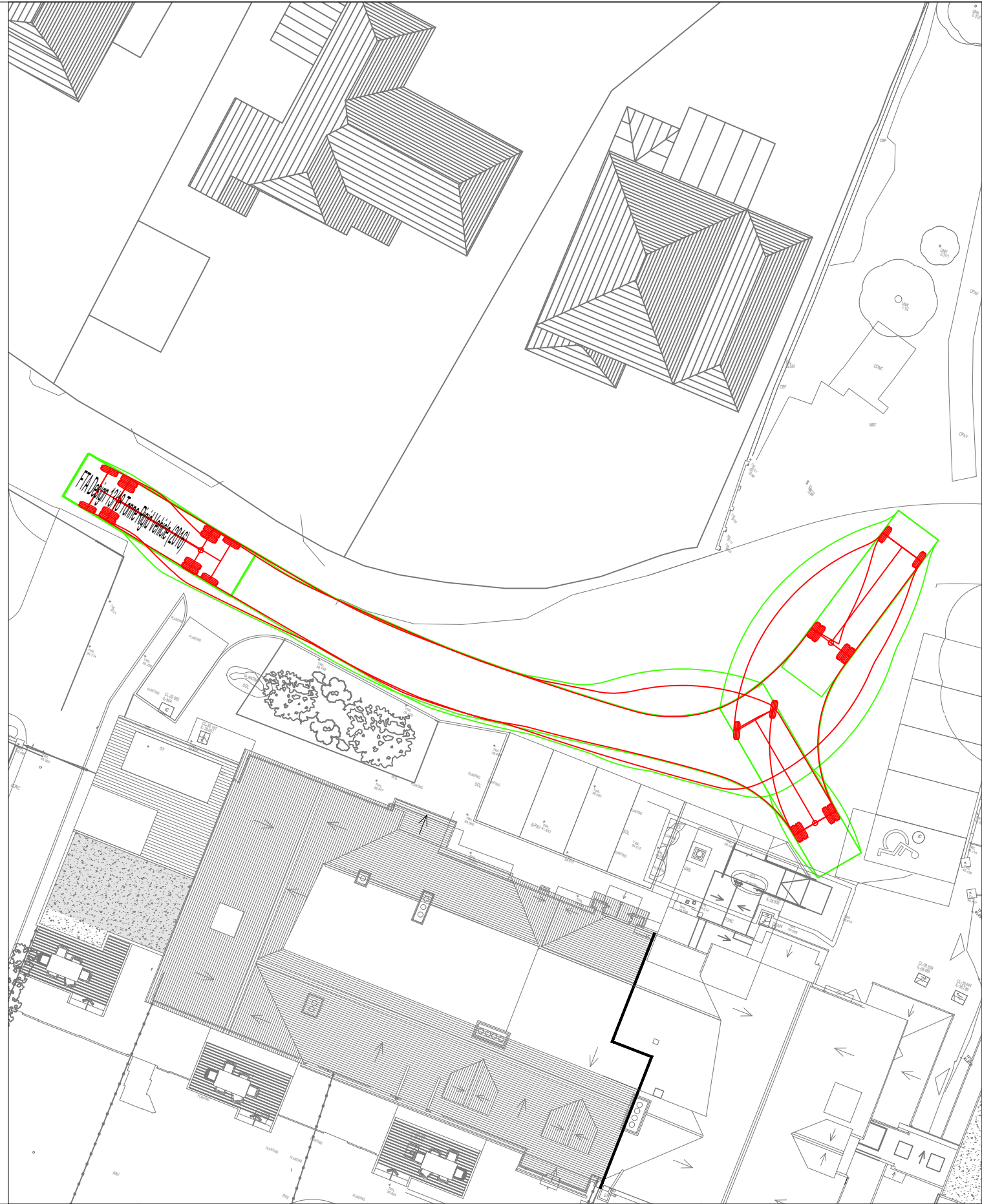
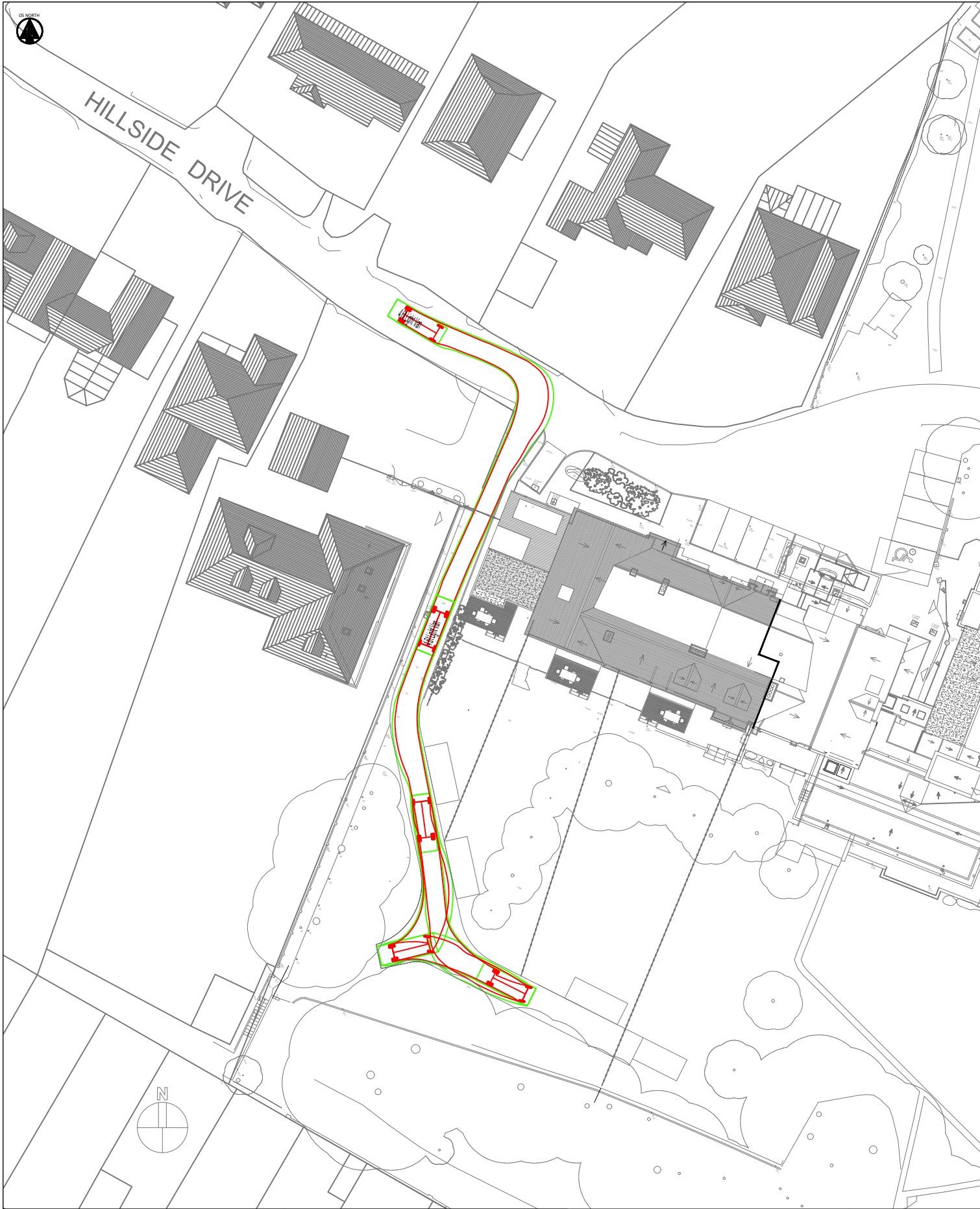
MERCHANTS' HOUSE NORTH
WAPPING ROAD
BRISTOL
BS1 4RW
t: (0117) 9459 225
e: bristol@hydrock.com

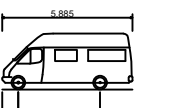
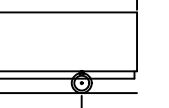
CLIENT
CLAY ARCHITECTURE

PROJECT
CONVENT OF MERCY, GRAVESEND

SWEPT PATH ANALYSIS OF FIRE TENDER MANOEUVRE

HYDROCK PROJECT NO. 29553	SCALE @ A3 1:200	
STATUS DESCRIPTION INFORMATION		STATUS S2
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0006		REVISION P01



VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS		VEHICLE MODEL USED FOR SWEEP PATH ANALYSIS		NOTES		REVISIONS (CONTINUED)		REVISIONS		MERCHANTS' HOUSE NORTH WAPPING ROAD BRISTOL, BS1 4RW t: (0117) 9459 225 e: bristol@hydrock.com		SWEEP PATH ANALYSIS OF 4.6t VAN AND 10m RIGID MANOEUVRE	
													
4.6t Light Van Overall Length 5.885m Overall Width 2.000m Overall Body Height 2.526m Min Body Ground Clearance 0.299m Track Width 1.765m Lock to lock time 4.00s Kerb to Kerb Turning Radius 6.000m		FTA Design 13/18 Tonne Rigid Vehicle (2016) Overall Length 10.000m Overall Width 2.550m Overall Body Height 3.845m Min Body Ground Clearance 0.440m Track Width 2.470m Lock to lock time 3.00s Kerb to Kerb Turning Radius 11.000m								CLIENT CLAY ARCHITECTURE		HYDROCK PROJECT NO. 29553	
										PROJECT CONVENT OF MERCY, GRAVESEND		SCALE @ A3 1:500/1:250	
										STATUS DESCRIPTION INFORMATION		STATUS S2	
										DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 29553-HYD-XX-XX-DR-TP-0009		REVISION P01	

Appendix EMCC Data

Intelligent Data Collection Limited



Client: Hydrock
 Project Number: ID07130
 Junction Number: Site 1
 Date of Survey: 22.06.2023
 Junction Name: B261 Old Road E / Hillside Drive
 Junction Type: T-Junction

Arm A: B261 Old Road E (E)
 Arm B: Hillside Drive (S)

Arm C: B261 Old Road E (W)

	A to A								A to C								A to B							
Time	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total
07:00								0	109	31	3	0	1	0	1	145	0	0	0	0	0	0	0	0
07:15								0	139	24	1	2	0	2	1	169	1	0	0	0	0	0	0	1
07:30								0	140	28	1	0	0	1	1	171	0	0	0	0	0	0	0	0
07:45								0	151	19	0	0	0	2	0	172	0	0	0	0	0	0	0	0
08:00								0	154	13	0	2	2	1	0	172	0	0	0	0	0	0	0	0
08:15								0	137	16	1	1	0	0	0	155	0	0	0	0	0	0	0	0
08:30								0	157	14	0	1	1	0	0	173	2	0	0	0	0	0	0	2
08:45								0	139	7	0	0	0	0	0	146	1	0	0	0	0	0	0	1
09:00								0	132	15	0	0	0	0	0	147	1	0	0	0	0	0	0	1
09:15								0	96	7	0	0	0	0	0	103	0	0	0	0	0	0	0	0
09:30								0	97	13	0	0	0	1	0	111	1	0	0	0	0	0	0	1
09:45								0	99	8	2	0	0	1	0	110	1	0	0	0	0	0	0	1
16:00								0	77	4	0	0	1	1	1	84	0	0	0	0	0	0	0	0
16:15								0	115	11	1	0	0	2	0	129	0	0	0	0	0	0	0	0
16:30								0	115	11	0	0	0	2	0	128	0	0	0	0	0	0	0	0
16:45								0	103	13	0	0	0	4	1	121	1	0	0	0	0	0	0	1
17:00								0	99	8	0	0	0	1	0	108	0	0	0	0	0	0	0	0
17:15								0	93	12	0	0	0	1	0	106	1	0	0	0	0	0	0	1
17:30								0	117	10	0	0	0	4	1	132	0	0	0	0	0	0	0	0
17:45								0	108	6	0	0	0	1	1	116	1	0	0	0	0	0	0	1
18:00								0	116	11	0	0	0	8	1	136	0	0	0	0	0	0	0	0
18:15								0	107	5	0	0	0	4	0	116	0	0	0	0	0	0	0	0
18:30								0	94	5	0	0	0	1	0	100	0	0	0	0	0	0	0	0
18:45								0	121	11	0	0	0	5	1	138	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	0	0	0	0	0	0	0	0	539	102	5	2	1	5	3	657	1	0	0	0	0	0	0	1
07:15	0	0	0	0	0	0	0	0	584	84	2	4	2	6	2	684	1	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	582	76	2	3	2	4	1	670	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	599	62	1	4	3	3	0	672	2	0	0	0	0	0	0	2
08:00	0	0	0	0	0	0	0	0	587	50	1	4	3	1	0	646	3	0	0	0	0	0	0	3
08:15	0	0	0	0	0	0	0	0	565	52	1	2	1	0	0	621	4	0	0	0	0	0	0	4
08:30	0	0	0	0	0	0	0	0	524	43	0	1	1	0	0	569	4	0	0	0	0	0	0	4
08:45	0	0	0	0	0	0	0	0	464	42	0	0	0	1	0	507	3	0	0	0	0	0	0	3
09:00	0	0	0	0	0	0	0	0	424	43	2	0	0	2	0	471	3	0	0	0	0	0	0	3
16:00	0	0	0	0	0	0	0	0	410	39	1	0	1	9	2	462	1	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	432	43	1	0	0	9	1	486	1	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	410	44	0	0	0	8	1	463	2	0	0	0	0	0	0	2
16:45	0	0	0	0	0	0	0	0	412	43	0	0	0	10	2	467	2	0	0	0	0	0	0	2
17:00	0	0	0	0	0	0	0	0	417	36	0	0	0	7	2	462	2	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	0	0	434	39	0	0	0	14	3	490	2	0	0	0	0	0	0	2
17:30	0	0	0	0	0	0	0	0	448	32	0	0	0	17	3	500	1	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	425	27	0	0	0	14	2	468	1	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	438	32	0	0	0	18	2	490	0	0	0	0	0	0	0	0

Intelligent Data Collection Limited



Client: Hydrock
Project Number: ID07130
Junction Number: Site 1

Date of Survey: 22.06.2023
Junction Name: B261 Old Road E / Hillside Drive
Junction Type: T-Junction

Arm A: B261 Old Road E (E)
Arm B: Hillside Drive (S)

Arm C: B261 Old Road E (W)

Time	B to B								B to A								B to C							
	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total
07:00								0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
07:15								0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
07:30								0	2	0	0	0	0	0	0	2	1	1	0	0	0	0	0	2
07:45								0	2	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0
08:00								0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3
08:15								0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3
08:30								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45								0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
09:00								0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
09:15								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45								0	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1
16:00								0	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3
16:15								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30								0	1	0	0	0	0	0	0	1	2	2	0	0	0	0	0	4
16:45								0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
17:00								0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
17:15								0	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2
17:30								0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:45								0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:00								0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
18:15								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30								0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:45								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Time	Rolling Hour							Total	Rolling Hour							Total	Rolling Hour							Total
07:00	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	8	2	1	0	0	0	0	0	3
07:15	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	8	5	1	0	0	0	0	0	6
07:30	0	0	0	0	0	0	0	0	6	2	0	0	0	0	0	8	7	1	0	0	0	0	0	8
07:45	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	6	0	0	0	0	0	0	6
08:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	6	0	0	0	0	0	0	6
08:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	0	0	0	0	0	0	3
08:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	1	0	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	6	2	0	0	0	0	0	8
16:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6	2	0	0	0	0	0	8
16:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	8	2	0	0	0	0	0	10
16:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6	1	0	0	0	0	0	7
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	6	1	0	0	0	0	0	7
17:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5	1	0	0	0	0	0	6
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3

Intelligent Data Collection Limited



Client: Hydrock
Project Number: ID07130
Junction Number: Site 1

Date of Survey: 22.06.2023
Junction Name: B261 Old Road E / Hillside Drive
Junction Type: T-Junction

Arm A: B261 Old Road E (E)
Arm B: Hillside Drive (S)

Arm C: B261 Old Road E (W)

Time	C to C								C to B								C to A							
	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total
07:00								0	0	0	0	0	0	0	0	0	50	10	1	2	0	0	0	63
07:15								0	0	0	0	0	0	0	0	0	63	3	1	1	0	1	1	70
07:30								0	2	1	0	0	0	0	0	3	65	10	1	0	1	0	2	79
07:45								0	0	1	0	0	0	0	0	1	110	9	0	0	0	0	1	120
08:00								0	1	1	0	0	0	0	0	2	117	14	1	0	1	1	0	134
08:15								0	0	0	0	0	0	0	0	0	124	10	0	0	0	2	1	137
08:30								0	1	0	0	0	0	0	0	1	130	12	1	1	1	0	0	145
08:45								0	0	0	0	0	0	0	0	0	86	11	0	2	0	2	0	101
09:00								0	0	0	0	0	0	0	0	0	76	8	1	1	1	1	0	88
09:15								0	0	0	0	0	0	0	0	0	77	12	0	0	0	1	0	90
09:30								0	1	0	0	0	0	0	0	1	73	12	2	0	1	0	0	88
09:45								0	0	0	0	0	0	0	0	0	74	18	1	0	0	2	2	97
16:00								0	4	1	0	0	0	0	0	5	125	17	1	1	0	1	0	145
16:15								0	0	1	0	0	0	0	0	1	106	20	0	0	0	2	0	128
16:30								0	2	0	0	0	0	0	0	2	139	20	0	0	1	0	0	160
16:45								0	1	0	0	0	0	0	0	1	133	12	0	0	1	4	0	150
17:00								0	1	0	0	0	0	0	0	1	139	19	0	0	1	2	1	162
17:15								0	1	1	0	0	0	0	0	2	156	19	1	0	1	1	0	178
17:30								0	2	0	0	0	0	0	0	2	149	13	0	0	0	2	0	164
17:45								0	0	1	0	0	0	0	0	1	158	10	0	0	0	12	1	181
18:00								0	1	0	0	0	0	0	0	1	141	16	0	0	1	2	0	160
18:15								0	1	0	0	0	0	0	0	1	167	10	0	0	0	5	1	183
18:30								0	3	0	0	0	0	0	0	3	133	13	0	0	2	5	2	155
18:45								0	2	0	0	0	0	0	0	2	152	8	0	0	0	3	0	163
Start Time	Rolling Hour								Rolling Hour								Rolling Hour							
	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total
07:00	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	288	32	3	3	1	4	4	332
07:15	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	6	355	36	3	1	2	2	4	403
07:30	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	6	416	43	2	0	2	3	4	470
07:45	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4	481	45	2	1	2	3	2	536
08:00	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	457	47	2	3	2	5	1	517
08:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	416	41	2	4	2	5	1	471
08:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	369	43	2	4	2	4	0	424
08:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	312	43	3	3	2	4	0	367
09:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	300	50	4	1	2	4	2	363
16:00	0	0	0	0	0	0	0	0	7	2	0	0	0	0	0	9	503	69	1	1	2	7	0	583
16:15	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	517	71	0	0	3	8	1	600
16:30	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	567	70	1	0	4	7	1	650
16:45	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	577	63	1	0	3	9	1	654
17:00	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	602	61	1	0	2	17	2	685
17:15	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	604	58	1	0	2	17	1	683
17:30	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	615	49	0	0	1	21	2	688
17:45	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	599	49	0	0	3	24	4	679
18:00	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	593	47	0	0	3	15	3	661

Intelligent Data Collection Limited



Client: Hydrock
 Project Number: ID07130
 Junction Number: Site 1
 Date of Survey: 22.06.2023
 Junction Name: B261 Old Road E / Hillside Drive
 Junction Type: T-Junction

	Arm A Approach								Arm A Exit									
Time	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total		
07:00	109	31	3	0	1	0	1	145	51	10	1	2	0	0	0	64		
07:15	140	24	1	2	0	2	1	170	64	3	1	1	0	1	1	71		
07:30	140	28	1	0	0	1	1	171	67	10	1	0	1	0	2	81		
07:45	151	19	0	0	0	2	0	172	112	11	0	0	0	0	1	124		
08:00	154	13	0	2	2	1	0	172	118	14	1	0	1	1	0	135		
08:15	137	16	1	1	0	0	0	155	125	10	0	0	0	2	1	138		
08:30	159	14	0	1	1	0	0	175	130	12	1	1	1	0	0	145		
08:45	140	7	0	0	0	0	0	147	87	11	0	2	0	2	0	102		
09:00	133	15	0	0	0	0	0	148	77	8	1	1	1	1	0	89		
09:15	96	7	0	0	0	0	0	103	77	12	0	0	0	1	0	90		
09:30	98	13	0	0	0	1	0	112	73	12	2	0	1	0	0	88		
09:45	100	8	2	0	0	1	0	111	76	18	1	0	0	2	2	99		
16:00	77	4	0	0	1	1	1	84	126	17	1	1	0	1	0	146		
16:15	115	11	1	0	0	2	0	129	106	20	0	0	0	2	0	128		
16:30	115	11	0	0	0	2	0	128	140	20	0	0	1	0	0	161		
16:45	104	13	0	0	0	4	1	122	133	12	0	0	1	4	0	150		
17:00	99	8	0	0	0	1	0	108	139	19	0	0	1	2	1	162		
17:15	94	12	0	0	0	1	0	107	157	19	1	0	1	1	0	179		
17:30	117	10	0	0	0	4	1	132	149	13	0	0	0	2	0	164		
17:45	109	6	0	0	0	1	1	117	158	10	0	0	0	12	1	181		
18:00	116	11	0	0	0	8	1	136	141	16	0	0	1	2	0	160		
18:15	107	5	0	0	0	4	0	116	167	10	0	0	0	5	1	183		
18:30	94	5	0	0	0	1	0	100	133	13	0	0	2	5	2	155		
18:45	121	11	0	0	0	5	1	138	152	8	0	0	0	3	0	163		
Start Time	Rolling Hour								Total	Rolling Hour								Total
07:00	540	102	5	2	1	5	3	658	294	34	3	3	1	1	4	340		
07:15	585	84	2	4	2	6	2	685	361	38	3	1	2	2	4	411		
07:30	582	76	2	3	2	4	1	670	422	45	2	0	2	3	4	478		
07:45	601	62	1	4	3	3	0	674	485	47	2	1	2	3	2	542		
08:00	590	50	1	4	3	1	0	649	460	47	2	3	2	5	1	520		
08:15	569	52	1	2	1	0	0	625	419	41	2	4	2	5	1	474		
08:30	528	43	0	1	1	0	0	573	371	43	2	4	2	4	0	426		
08:45	467	42	0	0	0	1	0	510	314	43	3	3	2	4	0	369		
09:00	427	43	2	0	0	2	0	474	303	50	4	1	2	4	2	366		
16:00	411	39	1	0	1	9	2	463	505	69	1	1	2	7	0	585		
16:15	433	43	1	0	0	9	1	487	518	71	0	0	3	8	1	601		
16:30	412	44	0	0	0	8	1	465	569	70	1	0	4	7	1	652		
16:45	414	43	0	0	0	10	2	469	578	63	1	0	3	9	1	655		
17:00	419	36	0	0	0	7	2	464	603	61	1	0	2	17	2	686		
17:15	436	39	0	0	0	14	3	492	605	58	1	0	2	17	1	684		
17:30	449	32	0	0	0	17	3	501	615	49	0	0	1	21	2	688		
17:45	426	27	0	0	0	14	2	469	599	49	0	0	3	24	4	679		
18:00	438	32	0	0	0	18	2	490	593	47	0	0	3	15	3	661		

Intelligent Data Collection Limited



Client: Hydrock
Project Number: ID07130
Junction Number: Site 1
Date of Survey: 22.06.2023
Junction Name: B261 Old Road E / Hillside Drive
Junction Type: T-Junction

	Arm B Approach								Arm B Exit									
Time	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total		
07:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
07:15	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1		
07:30	3	1	0	0	0	0	0	4	2	1	0	0	0	0	0	3		
07:45	2	2	0	0	0	0	0	4	0	1	0	0	0	0	0	1		
08:00	4	0	0	0	0	0	0	4	1	1	0	0	0	0	0	2		
08:15	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0		
08:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3		
08:45	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1		
09:00	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1		
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
09:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2		
09:45	3	0	0	0	0	0	0	3	1	0	0	0	0	0	0	1		
16:00	4	0	0	0	0	0	0	4	4	1	0	0	0	0	0	5		
16:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		
16:30	3	2	0	0	0	0	0	5	2	0	0	0	0	0	0	2		
16:45	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2		
17:00	3	0	0	0	0	0	0	3	1	0	0	0	0	0	0	1		
17:15	3	0	0	0	0	0	0	3	2	1	0	0	0	0	0	3		
17:30	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	2		
17:45	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	2		
18:00	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1		
18:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1		
18:30	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3		
18:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2		
Start Time	Rolling Hour								Total	Rolling Hour								Total
07:00	8	3	0	0	0	0	0	11	3	2	0	0	0	0	0	5		
07:15	11	3	0	0	0	0	0	14	4	3	0	0	0	0	0	7		
07:30	13	3	0	0	0	0	0	16	3	3	0	0	0	0	0	6		
07:45	10	2	0	0	0	0	0	12	4	2	0	0	0	0	0	6		
08:00	9	0	0	0	0	0	0	9	5	1	0	0	0	0	0	6		
08:15	6	0	0	0	0	0	0	6	5	0	0	0	0	0	0	5		
08:30	2	0	0	0	0	0	0	2	5	0	0	0	0	0	0	5		
08:45	2	0	0	0	0	0	0	2	4	0	0	0	0	0	0	4		
09:00	4	0	0	0	0	0	0	4	4	0	0	0	0	0	0	4		
16:00	8	2	0	0	0	0	0	10	8	2	0	0	0	0	0	10		
16:15	7	2	0	0	0	0	0	9	5	1	0	0	0	0	0	6		
16:30	10	2	0	0	0	0	0	12	7	1	0	0	0	0	0	8		
16:45	7	1	0	0	0	0	0	8	7	1	0	0	0	0	0	8		
17:00	7	1	0	0	0	0	0	8	6	2	0	0	0	0	0	8		
17:15	6	1	0	0	0	0	0	7	6	2	0	0	0	0	0	8		
17:30	3	1	0	0	0	0	0	4	5	1	0	0	0	0	0	6		
17:45	4	0	0	0	0	0	0	4	6	1	0	0	0	0	0	7		
18:00	3	0	0	0	0	0	0	3	7	0	0	0	0	0	0	7		

Intelligent Data Collection Limited



Client: Hydrock
 Project Number: ID07130
 Junction Number: Site 1
 Date of Survey: 22.06.2023
 Junction Name: B261 Old Road E / Hillside Drive
 Junction Type: T-Junction

	Arm C Approach								Arm C Exit									
Time	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total		
07:00	50	10	1	2	0	0	0	63	109	31	3	0	1	0	1	145		
07:15	63	3	1	1	0	1	1	70	140	24	1	2	0	2	1	170		
07:30	67	11	1	0	1	0	2	82	141	29	1	0	0	1	1	173		
07:45	110	10	0	0	0	0	1	121	151	19	0	0	0	2	0	172		
08:00	118	15	1	0	1	1	0	136	157	13	0	2	2	1	0	175		
08:15	124	10	0	0	0	2	1	137	140	16	1	1	0	0	0	158		
08:30	131	12	1	1	1	0	0	146	157	14	0	1	1	0	0	173		
08:45	86	11	0	2	0	2	0	101	139	7	0	0	0	0	0	146		
09:00	76	8	1	1	1	1	0	88	132	15	0	0	0	0	0	147		
09:15	77	12	0	0	0	1	0	90	96	7	0	0	0	0	0	103		
09:30	74	12	2	0	1	0	0	89	97	13	0	0	0	1	0	111		
09:45	74	18	1	0	0	2	2	97	100	8	2	0	0	1	0	111		
16:00	129	18	1	1	0	1	0	150	80	4	0	0	1	1	1	87		
16:15	106	21	0	0	0	2	0	129	115	11	1	0	0	2	0	129		
16:30	141	20	0	0	1	0	0	162	117	13	0	0	0	2	0	132		
16:45	134	12	0	0	1	4	0	151	104	13	0	0	0	4	1	122		
17:00	140	19	0	0	1	2	1	163	102	8	0	0	0	1	0	111		
17:15	157	20	1	0	1	1	0	180	95	12	0	0	0	1	0	108		
17:30	151	13	0	0	0	2	0	166	117	11	0	0	0	4	1	133		
17:45	158	11	0	0	0	12	1	182	109	6	0	0	0	1	1	117		
18:00	142	16	0	0	1	2	0	161	118	11	0	0	0	8	1	138		
18:15	168	10	0	0	0	5	1	184	107	5	0	0	0	4	0	116		
18:30	136	13	0	0	2	5	2	158	95	5	0	0	0	1	0	101		
18:45	154	8	0	0	0	3	0	165	121	11	0	0	0	5	1	138		
Start Time	Rolling Hour								Total	Rolling Hour								Total
07:00	290	34	3	3	1	1	4	336	541	103	5	2	1	5	3	660		
07:15	358	39	3	1	2	2	4	409	589	85	2	4	2	6	2	690		
07:30	419	46	2	0	2	3	4	476	589	77	2	3	2	4	1	678		
07:45	483	47	2	1	2	3	2	540	605	62	1	4	3	3	0	678		
08:00	459	48	2	3	2	5	1	520	593	50	1	4	3	1	0	652		
08:15	417	41	2	4	2	5	1	472	568	52	1	2	1	0	0	624		
08:30	370	43	2	4	2	4	0	425	524	43	0	1	1	0	0	569		
08:45	313	43	3	3	2	4	0	368	464	42	0	0	0	1	0	507		
09:00	301	50	4	1	2	4	2	364	425	43	2	0	0	2	0	472		
16:00	510	71	1	1	2	7	0	592	416	41	1	0	1	9	2	470		
16:15	521	72	0	0	3	8	1	605	438	45	1	0	0	9	1	494		
16:30	572	71	1	0	4	7	1	656	418	46	0	0	0	8	1	473		
16:45	582	64	1	0	3	9	1	660	418	44	0	0	0	10	2	474		
17:00	606	63	1	0	2	17	2	691	423	37	0	0	0	7	2	469		
17:15	608	60	1	0	2	17	1	689	439	40	0	0	0	14	3	496		
17:30	619	50	0	0	1	21	2	693	451	33	0	0	0	17	3	504		
17:45	604	50	0	0	3	24	4	685	429	27	0	0	0	14	2	472		
18:00	600	47	0	0	3	15	3	668	441	32	0	0	0	18	2	493		

Intelligent Data Collection Limited



Client: Hydrock
Project Number: ID07130
Junction Number: Site 1
Date of Survey: 22.06.2023
Junction Name: B261 Old Road E / Hillside Drive
Junction Type: T-Junction

Total Junction Flow								
Time	Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle	Total
07:00	160	41	4	2	1	0	1	209
07:15	205	27	2	3	0	3	2	242
07:30	210	40	2	0	1	1	3	257
07:45	263	31	0	0	0	2	1	297
08:00	276	28	1	2	3	2	0	312
08:15	265	26	1	1	0	2	1	296
08:30	290	26	1	2	2	0	0	321
08:45	227	18	0	2	0	2	0	249
09:00	210	23	1	1	1	1	0	237
09:15	173	19	0	0	0	1	0	193
09:30	172	25	2	0	1	1	0	201
09:45	177	26	3	0	0	3	2	211
16:00	210	22	1	1	1	2	1	238
16:15	221	32	1	0	0	4	0	258
16:30	259	33	0	0	1	2	0	295
16:45	239	25	0	0	1	8	1	274
17:00	242	27	0	0	1	3	1	274
17:15	254	32	1	0	1	2	0	290
17:30	268	24	0	0	0	6	1	299
17:45	268	17	0	0	0	13	2	300
18:00	260	27	0	0	1	10	1	299
18:15	275	15	0	0	0	9	1	300
18:30	231	18	0	0	2	6	2	259
18:45	275	19	0	0	0	8	1	303
Start Time	Rolling Hour							Total
07:00	838	139	8	5	2	6	7	1005
07:15	954	126	5	5	4	8	6	1108
07:30	1014	125	4	3	4	7	5	1162
07:45	1094	111	3	5	5	6	2	1226
08:00	1058	98	3	7	5	6	1	1178
08:15	992	93	3	6	3	5	1	1103
08:30	900	86	2	5	3	4	0	1000
08:45	782	85	3	3	2	5	0	880
09:00	732	93	6	1	2	6	2	842
16:00	929	112	2	1	3	16	2	1065
16:15	961	117	1	0	3	17	2	1101
16:30	994	117	1	0	4	15	2	1133
16:45	1003	108	1	0	3	19	3	1137
17:00	1032	100	1	0	2	24	4	1163
17:15	1050	100	1	0	2	31	4	1188
17:30	1071	83	0	0	1	38	5	1198
17:45	1034	77	0	0	3	38	6	1158
18:00	1041	79	0	0	3	33	5	1161

Appendix F Old Road East / Hillside Drive Junction Modelling

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.5.0.6896 © Copyright TRL Limited, 2018				
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk				
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution				

Filename: Access junction.j9

Path: P:\29000-29999\29553 - Convent of Mercy, Gravesend\01_WIP\M2_Model_2d\TP

Report generation date: 15/08/2023 10:15:28

»2028, AM

»2028, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2028								
Stream B-AC	0.0	11.47	0.04	B	0.0	9.14	0.02	A
Stream C-AB	0.0	4.40	0.02	A	0.0	3.87	0.03	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Convent of Mercy, Gravesend
Location	Gravesend
Site number	1
Date	19/07/2023
Version	P01
Status	(new file)
Identifier	-
Client	Clay Architecture
Jobnumber	29553
Enumerator	HYDROCK\JackDalley
Description	-

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028	AM	ONE HOUR	07:45	09:15	15
D2	2028	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Old Road East (E)		Major
B	Hillside Drive		Minor
C	Old Road East (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.50			160.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.20	35	35

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	466	0.079	0.200	0.126	0.286
1	B-C	594	0.085	0.215	-	-
1	C-B	667	0.241	0.241	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	670	100.000
B		✓	12	100.000
C		✓	539	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	3	667
	B	5	0	7
	C	534	5	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	11.47	0.0	B
C-AB	0.02	4.40	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	395	0.023	9	0.0	9.321	A
C-AB	7	825	0.009	7	0.0	4.401	A
C-A	398			398			
A-B	2			2			
A-C	502			502			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	367	0.029	11	0.0	10.105	B
C-AB	10	862	0.012	10	0.0	4.224	A
C-A	474			474			
A-B	3			3			
A-C	600			600			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	327	0.040	13	0.0	11.463	B
C-AB	15	917	0.017	15	0.0	3.992	A
C-A	578			578			
A-B	3			3			
A-C	734			734			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	327	0.040	13	0.0	11.465	B
C-AB	15	917	0.017	15	0.0	3.992	A
C-A	578			578			
A-B	3			3			
A-C	734			734			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	367	0.029	11	0.0	10.109	B
C-AB	10	862	0.012	10	0.0	4.226	A
C-A	474			474			
A-B	3			3			
A-C	600			600			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	395	0.023	9	0.0	9.328	A
C-AB	7	825	0.009	7	0.0	4.401	A
C-A	398			398			
A-B	2			2			
A-C	502			502			

2028, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2028	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	482	100.000
B		✓	9	100.000
C		✓	717	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	3	479
	B	2	0	7
	C	710	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	9.14	0.0	A
C-AB	0.03	3.87	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	456	0.015	7	0.0	8.005	A
C-AB	12	942	0.013	12	0.0	3.873	A
C-A	528			528			
A-B	2			2			
A-C	361			361			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	435	0.019	8	0.0	8.436	A
C-AB	17	1001	0.017	17	0.0	3.659	A
C-A	627			627			
A-B	3			3			
A-C	431			431			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	10	404	0.025	10	0.0	9.141	A
C-AB	28	1086	0.025	28	0.0	3.399	A
C-A	762			762			
A-B	3			3			
A-C	527			527			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	10	404	0.025	10	0.0	9.141	A
C-AB	28	1086	0.025	28	0.0	3.399	A
C-A	762			762			
A-B	3			3			
A-C	527			527			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	435	0.019	8	0.0	8.439	A
C-AB	17	1001	0.017	17	0.0	3.662	A
C-A	627			627			
A-B	3			3			
A-C	431			431			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	456	0.015	7	0.0	8.009	A
C-AB	12	942	0.013	12	0.0	3.873	A
C-A	528			528			
A-B	2			2			
A-C	361			361			