

Land off Bullen's Green Lane, Colney Heath, St Albans

Transport Assessment Addendum

November 2020



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Report Reference

18770/TAA

Revision History

Rev	Amendments	Prepared By	Checked By	Date
First Issue	N/A	JK	GBR	05/11/2020



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Introduction



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Introduction

The following paragraphs state the purpose of this document, and its constraints. A summary of the development proposals; together with relevant pre-application correspondence is also provided.

- 1.1 This Transport Assessment Addendum (TAA) has been prepared by Woods Hardwick Infrastructure LLP on behalf of Canton Ltd in support of an Outline Planning Application for the proposed residential development on a site known as 'Land off Bullen's Green Lane, Colney Heath, St Albans' (Welwyn Hatfield Borough Council reference: 6/2020/2248/OUTLINE; St Albans Council reference: 5/2020/1992). A Site Location Plan is included within **Appendix A**.
- 1.2 The main Transport Assessment (ref: 18770/TA) was produced by Woods Hardwick Infrastructure LLP in August 2020 and included when the outline planning application was submitted. Comments on the submitted documentation were provided by Hertfordshire County Council (HCC) who represent the Local Highway Authority for the area.
- 1.3 Current development proposals still comprise up to 100 residential dwellings with associated parking, landscaping and open space. Access to the site is to be taken off Bullen's Green Lane. A Site Masterplan is included in **Appendix B**.
- 1.4 Due to the Covid-19 pandemic and its associated impacts on both work and travel; traffic counts were unable to be undertaken at the time of writing the Transport Assessment. Junction Traffic Counts (JTC) have since been undertaken on 17/09/20; and Automatic Traffic Counts (ATC) were also undertaken between 25/09/20 and 01/10/20.
- 1.5 Following correspondence with HCC Highway Authority a qualitative assessment of the impact of the development on the local highway network has been conducted. The remainder of this Addendum presents the results to the aforementioned junction assessments; and addresses any outstanding comments received from the Highway Authority and also Colney Heath Parish related to the development proposals.
- 1.6 This document addresses the transportation and highways issues raised by the development and concludes that development proposals are not anticipated to pose a significant adverse impact on the local highway network.



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Impact Assessment



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Impact Assessment

The following paragraphs provide a detailed review of the proposed developments resultant impact on the surrounding highway network.

2.1 Pre-application correspondence was sought from HCC’s Highways Officer as to which junctions it would be necessary to assess. It was confirmed by the Highways Officer that the following junctions would require assessment:

- Junction 1 - Proposed Site Access (T-junction)
- Junction 2 - Fellowes Lane / Tollgate Road (T-junction)

2.2 A full copy of the Pre-Application Correspondence is provided in **Appendix C**.

Trip Generation

Proposed Development

2.3 The trip generation calculations are based on trip rates for the 100 proposed dwellings; the output is presented in Table 2.1 below. Trip generation calculations from the proposed development are therefore shown to generate a total of 48 two-way trips during the AM Peak hour, and 49 two-way trips during the PM Peak hour. This equates to less than one vehicle travelling either to or from the site per minute within the peak hours. These trip rates have been approved by HCC in the Pre-Application Correspondence; this can be viewed in **Appendix C**.

Table 2.1: TRICS Trip Rates - Residential - Mixed Private / Affordable

Peak Hour	Trip Rate (per dwelling)	
	Arrivals	Departures
AM (08:00-09:00)	0.111	0.360
PM (17:00-18:00)	0.328	0.159

Peak Hour	Trip Rate (100 dwellings)	
	Arrivals	Departures
AM (08:00-09:00)	12	36
PM (17:00-18:00)	33	16

Committed Development

2.4 The Highway Officer confirmed in the Pre-Application Correspondence that there are no committed developments within the local area that need to be considered within the assessment.

Trip Distribution

Proposed Development

- 2.5 The proposed development vehicle distribution has been based on the 2011 Census data for the merged local authority district 'E02004938: St Albans 015' in which the site resides, taking account of the most popular workplace destinations.
- 2.6 The list of available workplace destinations was narrowed down by selecting only those destinations that received equal to or more than the average number of commuters from Colney Heath. Using this method, the top 15 most popular workplace destinations have been identified.
- 2.7 The Google Maps journey planner tool was used to determine the quickest routes to each workplace destination. This methodology is considered robust seeing as the interactive website facility takes into account delays due to peak hour traffic.

Growth Rates

- 2.8 In order to ensure that the proposed development can be suitably accommodated on the existing surrounding highway network, junction modelling carried out will be tested up until the future year 2030. This exceeds the 5-year period which is generally expected for junctions on the local highway network. The below growth rates have been agreed by HCC in their pre-app response.
- 2.9 Growth rates have been calculated using the latest available TEMPro dataset for the Parish region of Colney Heath in which the site resides. The resultant AM and PM growth figures are presented in Table 2.2 below.

Table 2.2: TEMPro Growth Rates (2030)

Growth Rates	
AM	PM
1.0862	1.0863

Data Collection

- 2.10 Existing traffic data for Bullen's Green Lane was obtained through Automatic Traffic Count (ATC) surveys carried out by Streetwise Services. ATCs were installed approximately 43m to the north and south of the proposed site access. The ATCs recorded the number of vehicles and vehicle classification in both directions; in addition to vehicle speeds. A Junction Traffic Count (JTC) was also undertaken at the Fellowes Lane / Tollgate Road T-junction; as requested by the Highways Officer.
- 2.11 The ATC survey was undertaken between 25/09/20 and 01/10/20; and the JTC was undertaken on 17/09/20. Copies of the JTC and ATC data obtained by Streetwise Services can be viewed in **Appendices D** and **E** respectively.

Junction Modelling

- 2.12 The proposed site access junction off Bullen's Green Lane and the existing Fellowes Lane / Tollgate Road T-junction will be assessed using the TRL software Junctions 9 for the AM peak period (08:00-09:00) and PM peak period (17:00-18:00). The junction model will be tested for six separate Demand Sets, as listed below:
- Demand Set 1 - Do Nothing 2020, AM
 - Demand Set 2 - Do Nothing 2020, PM
 - Demand Set 3 - Do Nothing 2030, AM
 - Demand Set 4 - Do Nothing 2030, PM
 - Demand Set 5 - Do Something 2030, AM
 - Demand Set 6 - Do Something 2030, PM

Definition of Scenarios Used

- 2.13 **Do Nothing 2020** - This scenario includes traffic data recorded during the surveys carried out for this site. These traffic flows will represent the base flows.
- 2.14 **Do Nothing 2030** - This scenario is made up of the base flow data multiplied by the appropriate TEMPro growth factors to represent the equivalent flows anticipated for 2030.
- 2.15 **Do Something 2030** - This scenario will be the summation of the 'Do Nothing 2030' and the proposed development traffic flows to be generated by the site.

Network Diagrams

- 2.16 The vehicle network diagrams showing how the proposed developments' trips have been distributed throughout the adjacent road network being modelled for the site are enclosed in **Appendix F**.

Modelling Capacity Requirements

- 2.17 The capacity of a non-signalised junction is usually expressed in terms of its Ratio of Flow to Capacity (RFC) value. The calculated capacities are an average and the values can vary about this average from day to day.
- 2.18 An RFC value typically lies between 0 and 1. An RFC of 1 indicates that the junction is operating at its maximum theoretical capacity, although it is commonly accepted that junctions do continue to operate above this level, albeit with some delays. Where RFC values remain less than 0.85, the junction arm in question is considered to remain within operating capacity. An RFC value of 0.85 is the preferred maximum for operational capacity typically accepted by the Local Highway Authority.

Junctions 9 Assessment Results

Junction 1 - Site Access

- Arm A - Bullen's Green Lane (southbound)
- Arm B - Site Access
- Arm C - Bullen's Green Lane (northbound)

Table 2.3: Summary of Junction 1 Performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Nothing 2020								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2030								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2030								
Stream B-AC	0.0	7.93	0.02	A	0.0	7.86	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

- 2.19 From the results presented in the table above, and the Junctions 9 Output included in **Appendix G**, it can be appreciated that the proposed site access junction operates well within capacity with the proposed development fully occupied and only produces an RFC value of 0.02 in the AM, and 0.01 in the PM.
- 2.20 An impact of this nature is considered to be negligible and there is expected to be little to no impact on the local highway network.

Junction 2 - Fellowes Lane / Tollgate Road (T-junction)

- Arm A - Tollgate Road (northbound)
- Arm B - Fellowes Lane
- Arm C - Tollgate Road (southbound)

Table 2.4: Summary of Junction 2 Performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Nothing 2020								
Stream B-AC	0.0	8.41	0.01	A	0.0	8.55	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.27	0.00	A
Do Nothing 2030								
Stream B-AC	0.0	8.48	0.02	A	0.0	8.63	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.32	0.00	A
Do Something 2030								
Stream B-AC	0.0	8.63	0.03	A	0.0	8.71	0.02	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.33	0.00	A

- 2.21 From the results presented in Table 2.2 above, and the Junctions 9 Output enclosed in **Appendix G**, it can be appreciated that both the ‘Do Nothing 2030’ and ‘Do Something 2030’ scenarios do not generate any significant delay, queue or RFC value. The results also show that there is ample capacity at the junction until the future growth year 2030.
- 2.22 For the ‘Do Something 2030’ scenario, the addition of the proposed development traffic demonstrates that there is a very slight increase in RFC; by 0.01 in both the AM and PM respectively. These changes are negligible and are therefore the proposed development traffic is not anticipated to have a significant impact at this existing junction.

Summary

- 2.23 In summary, it can be appreciated that the proposed development traffic has no significant impact on the assessed junctions. The proposed site access junction is shown to operate well within capacity at both the present time and in the future growth year 2030. Additionally, the Fellowes Lane / Tollgate Road T-junction is also shown to provide sufficient capacity to accommodate the proposed development traffic up to the growth year 2030.

Speed Survey Results

- 2.24 In order to determine whether speeds at the proposed site access need to be addressed, Automatic Traffic Counters (ATCs) were installed approximately 100m to the north and south of the proposed site access on Bullen's Green Lane. The ATCs recorded vehicle speeds, in addition to the number of vehicles and vehicle classifications in both directions. The survey was carried out between 25/09/20 and 01/10/20. A full copy of the survey, which was carried out by Streetwise Services, is included in Appendix E.
- 2.25 The mean and 85th percentile speeds recorded over 24 hours at both ATC locations, are presented in Table 2.5 below.

Table 2.5: Speed Survey Results Northbound and Southbound on Bullen's Green Lane

	Mean Speed (mph)	85 th Percentile Speed (mph)
Northbound - ATC 1	22.6	28.7
Southbound - ATC 1	23.4	28.5
Northbound / Southbound - ATC 1	23.0	28.6

	Mean Speed (mph)	85 th Percentile Speed (mph)
Northbound - ATC 2	26.4	33.7
Southbound - ATC 2	27.7	33.5
Northbound / Southbound - ATC 2	27.1	33.6

2.26 From the results presented in Table 2.3 above, it can be appreciated that along Bullen's Green Lane, the 85th percentile speed varies between 28.6mph and 34.2mph. The current speed restriction on this road is 60mph; therefore, it is evident that vehicles travelling along Bullen's Green Lane already travel at a speed significantly below the current speed limit, and only slightly above the new proposed speed limit of 30mph. It is therefore anticipated that the proposed speed limit change would be achievable and appropriate given the nature of the road and the current vehicle speeds along this carriageway.

Response to Highway Authority and Parish Council Comments



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Response to Highway Authority and Parish Council Comments

The following paragraphs provide responses to the comments received by Hertfordshire County Council's Highway Authority and Colney Heath Parish Council.

Response to Highway Authority Comments

- 3.1 During the preparation of this Addendum, comments from the HCC's Highway Authority have been received on the submitted Transport Assessment; the responses to these comments are provided below.
- 3.2 Comments relating to the speed limit along Bullen's Green Lane; specifically in relation to the suitability of a 30mph speed limit roundel in consideration of the fact that dwellings are not directly fronting the carriageway, and therefore drivers may not be aware of the residential nature of the area; are satisfied by virtue of the speed data presented in Section 2 of this Addendum. The data confirmed that average speeds on Bullen's Green Lane are well below the current limit of 60mph, ranging between 28.6mph and 34.2mph.
- 3.3 Therefore, it is anticipated that since vehicles travelling along Bullen's Green Lane already travel at speeds close to the proposed new 30mph limit; the introduction of the proposed speed limit will be achievable, and the presence of the speed roundel will be sufficient to alert drivers of the reduced speed restriction.
- 3.4 Additionally, the speed survey confirms that due to the reduced speeds along Bullen's Green Lane and the conclusion that the proposed 30mph speed limit will be achievable; the 43.0m vision splay, as detailed in Manual for Streets, is acceptable for use.
- 3.5 The Proposed Footpath Connection Drawing (included in **Appendix H**), demonstrates that 2.0m wide footways have been proposed along Fellowes Lane, with a dropped kerb and tactile paving crossing to enable pedestrian movement between the pedestrian infrastructures on either side of the carriageway. This ensures that the development can be safely and conveniently accessed by pedestrians and vulnerable road users. This footpath connection is in place of the route previously proposed through Roestock Park.
- 3.6 A small part of the footpath link will pass close to an existing Oak Tree; the client's arboricultural consultant has advised that this would be acceptable subject to the small area being a no-dig construction. The necessary details will be agreed with the Highway Authority at such time as S278 detailed design drawings are prepared.

- 3.7 The Refuse Tracking Drawing (included in **Appendix I**) demonstrates that the largest refuse vehicle can suitably access the dwellings and bin collection points within the proposed development site. This also addresses the radii of the junction and concludes that it is adequate for the anticipated use of the access.
- 3.8 Bullen’s Green Lane is proposed to be widened to 5.5m along the site frontage. Details of this can be viewed on the Site Access Drawing included in **Appendix J**.

Response to Parish Council Comments

- 3.9 A comment was made in the response of Colney Heath Parish Council in reference to the Census data used to represent the methods of travel to work, and distance travelled to work for the area of Colney Heath in which the site resides. The Parish area of Colney Heath was chosen for both datasets, as shown in Figure 3.1 below; whilst the alternative smaller super output area - lower layer is shown in Figure 3.2. The slightly larger Parish area was used as it allows a good catchment area for workplace destinations and the corresponding datasets for method and distance travelled to work. This influences the catchment area in which workplace destinations are to be determined; which subsequently affects the anticipated trip distribution of the proposed site, and therefore which junctions are expected to experience the greatest impact. It is standard practice to use this dataset for this reason.

Figure 3.1: Output area for Colney Heath (Parish)

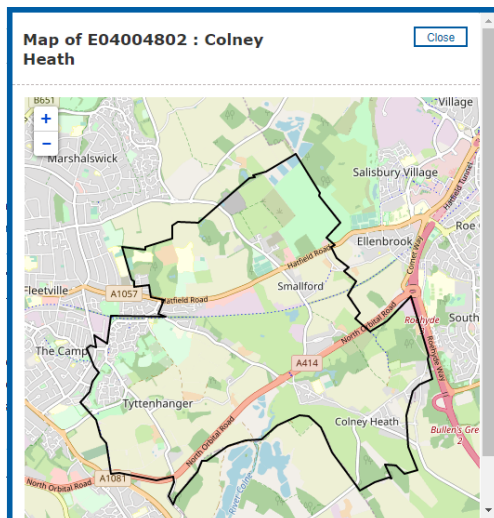
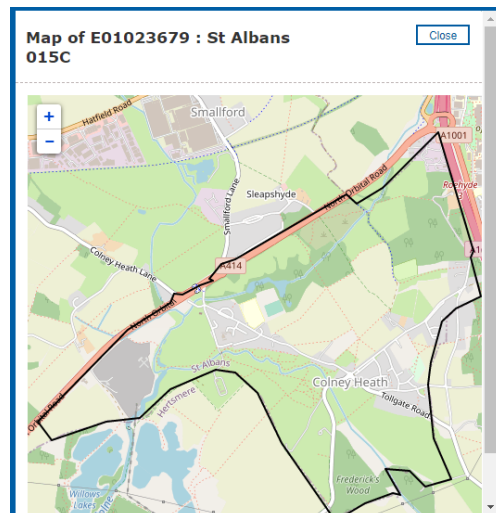


Figure 3.2: Output area for St Albans 015C (2011 Super Output Areas - Lower Layer)



- 3.10 As can be appreciated from Figures 3.1 and 3.2 above, the additional area included in the Parish output encompasses primarily rural land, with the small residential areas of Tyttenhanger and Smallford. As previously mentioned, using this area is deemed to benefit the output for workplace destinations, which allows for a more accurate trip generation and junction assessment to be undertaken.
- 3.11 Tables 3.1 and 3.2 below present the 2011 Census data and corresponding percentage for Distance Travelled to Work (QS702EW) and Method of Travel to Work (SQ701EW) for the Parish Output area and St Albans 015C Super Output Area - Lower Layer.

Table 3.1: Comparison of 2011 Census Data QS702EW Distance Travelled to Work - Parish and Super Output Area, Lower Layer

Distance Travelled to Work	E04004802: Colney Heath, Parishes, 2011		E01023679: St Albans 015C, 2011 Super Output Area - Lower Layer	
	2011	%	2011	%
Less than 2km	253	10.5%	45	7.4%
2km to less than 5km	556	23.1%	128	21%
5km to less than 10km	394	16.4%	163	26.7%
10km to less than 20km	470	19.6%	138	22.6%
20km to less than 30km	492	20.5%	97	15.9%
30km to less than 40km	134	5.6%	16	2.6%
40km to less than 60km	47	2.0%	10	1.6%
60km and over	58	2.4%	13	2.1%

Table 3.2: Comparison of 2011 Census Data Q5701EW Method of Travel to Work - Parish and Super Output Area, Lower Layer

Method of Travel to Work	E04004802: Colney Heath, Parishes, 2011		E01023679: St Albans 015C, 2011 Super Output Area - Lower Layer	
	2011	%	2011	%
Work mainly at or from home	218	7.2%	47	6.0%
Underground, metro, light rail, tram	32	1.1%	12	1.5%
Train	451	14.9%	50	6.4%
Bus, minibus or coach	73	2.4%	19	2.4%
Taxi	11	0.4%	3	0.4%
Motorcycle	17	0.6%	5	0.6%
Driving a car or van	1,899	62.7%	562	72.1%
Passenger in a car or van	105	3.5%	44	5.6%
Bicycle	40	1.3%	8	1.0%
On foot	185	6.1%	30	3.8%

3.12 As can be appreciated from Tables 3.1 and 3.2, the use of Super Output Area - Lower Layer does not significantly change the data output and results in the same categories with the highest percentage. It is acknowledged that this may have resulted in the predicted use of sustainable modes of travel being slightly overestimated; although as a Travel Plan will be in place for the development the aim will be to achieve a higher uptake of sustainable transport modes. However, as previously mentioned, the use of the Parish Output Area has been used to gain a more accurate representation of workplace destinations, which allows for a more representative trip distribution and therefore which junctions are modelled.

3.13 A comment was made in relation to bus services and timetabling, not running at suitable times or providing suitable routes. It is agreed that the current services are not ideal for all commuters; and therefore, it is proposed that the developer will engage with the Local Highway Authority and Local Planning Authority in consideration as to whether funding via the Section 106 Agreement to subsidise additional bus services would be appropriate.

3.14 A comment was made in relation to failing to include the ‘desirable’ and ‘acceptable’ walking distances as defined by the Chartered Institute of Highways and Transportation’. The Transport Assessment correctly quotes the ‘preferred maximum walking distance for the purposes of commuting / school journeys / sight-seeing is 2km’. Not referencing the ‘desirable’ or ‘acceptable’ distances, and by instead referencing the ‘preferred maximum’ distances is not considered to be incorrect; but rather enables a wider range of services, facilities and amenities to be identified for the potential new resident. For clarification, the distances and their respective classifications are provided below.

Table 3.1: Chartered Institution of Highways and Transportation Suggested Acceptable Walking Distances

	Town Centres (m)	Commuting / School / Sight-seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred maximum	800	2000	1200

3.15 A comment was made in relation to ‘HCC Comet Traffic modelling which highlights traffic congestion in and around the village’. During scoping discussion with the Highway Authority, use of their model to assess the impact of the development proposals was not requested and instead the Highway Authority advised that the standalone junction capacity assessments, the results of which are included within this Addendum, are appropriate.

3.16 A comment was made which states that ‘HCC latest (2019) Comet traffic modelling shows a significant increase in Tollgate Road, Colney Heath resulting considerable delays in Tollgate Road this has not been noted nor considered’. As previously mentioned, Woods Hardwick were not requested by the Highway Authority to utilise the model to assess the impact of the proposals. Furthermore, the Fellowes Lane / Tollgate Road T-junction assessment has demonstrated that the number of trips from the development do not have a significant impact on the road network.

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- 3.17 Comments were made with regards to the omission of 'Hertsmere's proposed Garden Village either side of Coursers Road'. Additionally, a further comment stated: 'No account has been taken of the 6000-8000 potential at Bowmans Cross off Coursers Road being actively considered by Hertsmere BC'. During correspondence with Hertfordshire County Council's Highway Officer the question was raised as to any notable committed developments that would need to be included in the assessments. The Highway Officer confirmed that there were no committed developments locally that would need to be included in the assessment. A copy of this correspondence can be viewed in **Appendix C**.
- 3.18 A comment was made with regards to the omission of the fact that 'the farmer has a problem with bringing agricultural vehicles to the site'. This comment was not made within the submitted Transportation document and this is not considered to be a developmental constraint given that the farming vehicles alluded to would not be required to enter a residential development. Furthermore, it has been demonstrated that a refuse vehicle can comfortably enter and exit the site and the proposed access works also include localised widening of Bullen's Green Lane.
- 3.19 A comment was made that the document 'fails to consider safety when cycling'. There is no formal cycle provision within the vicinity of the site; therefore, the provision of cycling infrastructure as part of the development proposals is not considered to be beneficial as any new cycling infrastructure would not have anything to tie into. It is considered that this would not be the most suitable use of sustainable travel related funding and that funding would be better directed to other alternative sustainable modes such as the local bus services.
- 3.20 A comment was made in relation to the proposed trip generation which stated: 'with St Albans District having an average of 1.44 cars per household (2011 census) this forecast appears very low, considering the limited alternatives to car use for Colney Heath village residents'. The proposed trip generation presented in Section 2 of this Addendum was approved by the Highways Officer in the pre-application response; this can be viewed in **Appendix C**.
- 3.21 A comment was made in relation to point 7.8 of the Transport Assessment which stated that 'A potential pedestrian link is also being considered through the adjacent recreation ground'; the Parish Council commented that this was factually incorrect. This comment was not incorrect as the proposal was being considered at the time the TA was submitted. Notwithstanding this, alternative pedestrian infrastructure provisions are now proposed along Fellowes Lane as indicated on the Masterplan included in **Appendix B**.

Summary and Conclusion



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Summary and Conclusions

The following paragraphs summarise the findings of this Addendum and provides a conclusive recommendation for whether the development should be supported through the planning process.

- 4.1 This Transport Assessment Addendum has been prepared by Woods Hardwick Infrastructure LLP on behalf of Canton Ltd in support of an Outline Planning Application for the proposed residential development on a site known as 'Land off Bullen's Green Lane, Colney Heath, St Albans'.
- 4.2 The main Transport Assessment (ref: 18770/TA) was produced by Woods Hardwick Infrastructure LLP in August 2020. Comments on this submitted documentation have been addressed within this Addendum.
- 4.3 It is proposed that the site will be accessed by a priority T-junction off Bullen's Green Lane with visibility splays measuring 2.4m x 43m. This is in accordance with the guidance outlined in Manual for Streets.
- 4.4 Footpaths are proposed to run in line with Bullen's Green Lane but within the site boundary. Additionally, 2.0m wide footpaths are proposed along Fellowes Lane, with a dropped kerb and tactile paving crossing to enable safe pedestrian movement between either side of the carriageway.
- 4.5 The proposed speed limit change on Bullen's Green Lane from 60mph to 30mph is considered to be achievable given the speed survey data, which confirms that vehicles are travelling between 28.6mph and 34.2mph.
- 4.6 An assessment was undertaken to determine the impact of the proposed development on the local highway network. It has been shown that the proposed development is anticipated to generate a total of 48 two-way trips during the AM peak hour, and 49 two-way trips during the PM peak hour.
- 4.7 Based on the modelling results, it can be concluded that the proposed site access and the existing T-junction between Fellowes Lane and Tollgate Road provide sufficient capacity to accommodate the additional traffic expected as a result of the development proposals; and will continue to provide further capacity for future traffic growth in 2030.
- 4.8 **It can therefore be concluded that the development has no significant impact upon the local highway network. There is therefore no reason in terms of Transportation or Highways why the proposed development should not be fully supported through the planning process.**



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Appendix A

Site Location Plan



NOTES

- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.
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REV	DESCRIPTION	DRN	CHD	DATE	
<input checked="" type="checkbox"/>	PRELIMINARY	<input type="checkbox"/>	INFORMATION	<input type="checkbox"/>	TENDER
<input type="checkbox"/>	CONSTRUCTION	<input type="checkbox"/>	AS BUILT		

SCALE 1:1250@ A2 DATE MAY 20

DRAWN RR CHK TF

DRAWING NO. 17981-1002 REV B

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Colney Heath

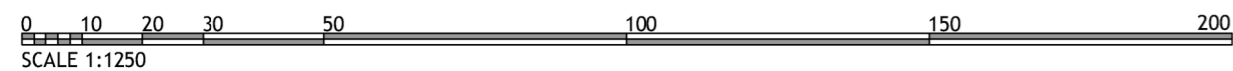
DETAILS Site Location Plan

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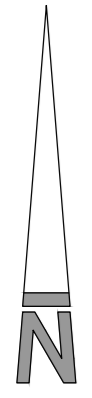
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Appendix B

Site Masterplan



- NOTES**
- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.
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- Key:**
- Existing Trees & RPAs
 - Existing Listed Building
 - Denotes Existing PRoW
 - Denotes Existing 'walked route'
 - Denotes Existing Drainage
 - Denotes Existing HV Cable
 - Proposed Landscape Buffer
 - Proposed Trees
 - Proposed Green Space
 - Denotes Proposed Site Access
 - Potential Play Space
 - Proposed Location of New Pump Station
 - Denotes Proposed Attenuation
 - Denotes Key/Focal Buildings
 - Denotes New Footpath Route

F	New footpath route to Fellows Lane indicated.	AJS	TF	02.11.2020	
D	Redline Boundary updated to suit Title Boundary and new site access location.	AJS	TF	13.08.2020	
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<input type="checkbox"/>	CONSTRUCTION	<input type="checkbox"/>	AS BUILT		

SCALE 1:1000 @ A2 DATE July 2020

DRAWN AJS CHK TF

DRAWING NO. 17981/1005 REV F

TITLE **Land West of Bullens Green Lane Colney Heath**

DETAILS **Proposed Illustrative Layout**

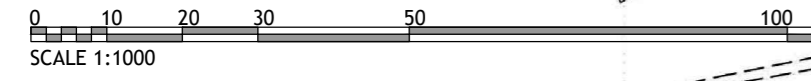
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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING



Appendix C

Pre-Application Correspondence

**George Beevor-Reid
Woods Hardwick**

**Development Management
Hertfordshire County Council
1st Floor Link
County Hall
Pegs Lane
Hertford, Herts SG13 8DF
www.hertfordshire.gov.uk**

Tel: 01992 658326
Email: Alan.story@hertfordshire.gov.uk
My ref: SA/2246/2020
Your ref:
Date: 11/08/2020

Dear George

Re: North of Fellowes Lane and West of Bullens Green Lane, Colney Heath

Please accept my apology for the delay in providing the following. I recognise that you have sought a pre-application advice meeting, however I provide the following comments as an interim and suggest availability for a MS Teams meeting as follows;

Friday 14th August 2020 AM (10:00 – 12:00)
Monday 17th August 2020 Any
Wednesday 19th August 2020 PM (14:00 – 16:00)

If none of the above availabilities are convenient for yourself and / or client, please let me know and I will look to provide alternatives.

Pre-application advice is sought on land North of Fellowes Lane and West of Bullens Green Lane, Colney Heath, understood to pertain to development of upto 100 residential units.

The following review has regard to the following;

- Transport Scoping Note (Woods Hardwick 12/6/2020)
- Topo Survey (dwg 17981-7-855)
- Location Plan
- District Boundary Layout
- Illustrative Layout (dwg 17981/1001)

With regrets, I have been unable to open and view drwg provided entitled 17981-7-851-854 provided as .dwg format. Can this be provided in a pdf form (or similar) please.

Fellowes Lane is an unclassified road, providing a local access function. Speeds are 30mph, west of the junction of Fellowes Lane with Bullens Green Lane. Beyond this point speeds are subject to 60mph limit.

Bullens Green Lane provides the eastern boundary of the site, an unclassified, Local Access road subject to 60mph limit

Site is bounded (northern boundary) by Colney Heath Footpath 048, with links to Colney Heath Footpath 023 in turn enabling access to Roestock Lane. Roestock Lane is similarly an unclassified road, providing local access function, subject to 30mph limit.

I can confirm from the level of development proposed, a Transport Assessment would be a requirement of any formal application for planning.

Access

A priority junction to Fellowes Lane is proposed. Noting this is within 30mph limit section, visibility shall need to be demonstrated to a minimum of 2.4m (X distance) x 43m (SSD adjusted) in both directions, provided within Land in the applicants control and / or highway extents. Plans demonstrating such standards are met should form part of the Transport Assessment.

The form of access, being a simple priority junction, appears appropriate.

Whilst, a level of development of 100 dwellings may reasonably be served by a local access road of 4.8m width, you are advised that Roads in Hertfordshire (the Highway Authorities design guide) is undergoing review at this time. General direction of travel in such review is to require carriageway width of 5.5m – as such width removes the potential for obstruction to large vehicles arising from parked vehicles. Bellmouth access should be sufficient in design to accommodate all turning movements anticipated (swept paths to be provided).

I would observe that whilst the TA scope suggests single point of access onto Fellowes Lane is proposed, reference to Illustrative Layout (dwg 17981/1001) suggests the proposal includes a secondary access onto Bullens Green Lane. This appears to serve a limited number of dwellings. At this point Bullens Green Lane is 60mph. Provision of visibility splays would need to be DMRB standards. It is recommended that a single point of vehicular access is maintained to this site. Given the limited width of Bullens Green Lane and prevalence of on-street parking, any access at this point would require junction protection (DYLs) in order to ensure that turning movements can be accommodated. Further, whilst footways commence in the vicinity of 58 Bullens Green Lane, there would be a requirement to link the site to this network at this location.

Any application should include Road Safety Audit (Stage 1) of access proposals in order to demonstrate that their design represents an acceptable impact on network safety.

There shall be a need, as part of technical approval of the access (S278 stage) to consider street lighting as part of the final design.

Trip rates

I can confirm satisfaction with the TRICS assessment presented within the Transport Scoping Note. I further confirm acceptance of the TEMPRo growing factor applied to these rates.

Clarity is sought whether proposals shall represent a site within either the emerging Welwyn Hatfield Local Plan (further call for sites 2019) or the recent St Albans Local Plan.

I can confirm no committed development locally that shall need to be considered within the TA.

I am satisfied that modelling of junction (J3), being Tollgate Rd / Roestock Lane / Coursers Road shall be unnecessary, given development impacts. I would observe that parking within Fellowes Lane in the immediate vicinity to Tollgate Lane appears to restrict carriageway width, giving rise to potential for queuing existing – modelling of this junction should be undertaken. Opportunities to improve the operation of this junction (DYLs, or a scheme to provide inset bays such that the junction problems arising from parked vehicles in close proximity may be necessary).

In respect of traffic counts, it is recognised that the government has relaxed many covid restrictions and has issued a commitment that children will be back in full time education come the next academic year. Whilst the HA recognise traffic conditions have not quite returned to normal, they are approaching a reasonable reflection of historical use. I would be satisfied that traffic counts undertaken on existing flows shall suffice for the purposes of this application. It is necessary to observe that the Technical Note suggests a summer application, but I cannot accept traffic flows measured during the school break – as this is too far removed from usual conditions. It is an accepted fact that we would not accept flows that are measured during school vacations and, whilst the above, is a pragmatic view consider there is no way to avoid directing you to ensure flows are assessed during a reasonable approximation of normal conditions (accepting the above).

Clearly the above advice is caveated that it a local lock down is announced affecting Hertfordshire, or a major urban settlement within close proximity to your site, then the above advice shall not be applicable.

Alternatively, you are invited to contact our data team who may have historical flow data in the vicinity, but noting the reasonably isolated location on non-strategic routes, this cannot be guaranteed. Our data team can be consulted here;

<https://www.hertfordshire.gov.uk/services/highways-roads-and-pavements/speed-awareness-and-driver-training/transport-and-accident-data/transport-and-accident-data.aspx#traffic>

Sustainability

Footway network adjacent to the site, on Fellowes Lane is limited – expiring at the limit of the spur road (Fellowes Lane serving properties numbered 20 to 48). It shall be necessary for development proposals to provide appropriate links between the development and the wider footway network. Without the provision of appropriate footway links the site would be poorly served in terms of any mode of travel except use of the private car, contrary to the Highway Authorities Local Transport Plan Policies 1 and 5.

Highway boundary extents may be sourced here;

<https://www.hertfordshire.gov.uk/services/highways-roads-and-pavements/changes-to-your-road/extent-of-highways.aspx>

Development proposals should identify the means by which adequate footways to an acceptable standard (2m) may be delivered in order that the development is safely accessible by pedestrians and other vulnerable road users. There shall be a need, wherever footway availability (and constraints) require pedestrian movement from opposite sides of carriageway to identify opportunities for safe crossing points (minimum dropped kerb with tactile provision).

Whilst it is recognised that the site contains within its curtilage rights of way, that potentially provide links to Roestock Lane, such routes are unlit internally and unlikely to be attractive for users in hours of darkness. Reliance therefore on RoW connections for wider permeability is limited.

Colney heath to the east provides limited shopping facilities and a primary school (approx. 1.2km west of the site, 15 min walk distance). Bus stops locally are available on Tollgate Road, and similarly, shall require the site to provide appropriate footway connectivity to enable residents the opportunity to have a choice of travel modes. Stops locally are provided with bus flag, timetable (and for westbound routes) shelter, but fail to provide kassel (accessible) kerbing. The highway authority would expect that the development includes provision for upgrade of stops to enable residents (including those with mobility impairment) the ability to access such services.

Tollgate Road / High Street Colney Heath provide an on-carriageway advisory cycle route, linking to the North Orbital Road. The Highway Authorities A414 Strategy identifies improvements at the Colney Heath Longabout to address safety concerns and improve conditions to overcome the severance that the A414 represents in order to enable onward travel linking to the Alban Way (NCN 61). The HA sets out its approach to developer contributions within its' toolkit available here;

<https://www.hertfordshire.gov.uk/about-the-council/freedom-of-information-and-council-data/open-data-statistics-about-hertfordshire/who-we-are-and-what-we-do/property/planning-obligations-guidance.aspx>

And emerging revised guidance here;

<https://www.hertfordshire.gov.uk/about-the-council/consultations/environment/draft-developer-contributions-guide-consultation.aspx>

It would be reasonable, to any scheme found acceptable to the HA to require a contribution towards measures presented within the above supporting strategies to the Hertfordshire Local Transport Plan.

It is recognised that whilst some of the site would be within 400m of bus stops in Hall Gardens and Tollgate Rd bus services within Colney Heath are very limited. There are 3 routes with only one service in each direction on one day of the week, and the best bus route (the 305 Potters Bar/Colney Heath-St Albans/Sandridge) only has up to 4 per day (less freq Sat). It is recognised that the site is not large enough to fund a service diversion or improvement, however Local Plan growth identified within the Hertsmere area may lead to service enhancements. On the scale of development proposed, whilst access to alternatives to car use are of limited capacity, subject to improving facilities and the above required links to local footway network, I do not consider that the HA would present significant concern in respect of sustainability.

Servicing and Refuse

Noting that the site spans cross boundary, the HA would advise that refuse vehicle specifications shall reasonably differ. Presently the HA can confirm that the types of vehicles in employ of the local authority as waste collection authority are as follows;

Welwyn & Hatfield District:	Olympus Twin Pack, Elite2, L:11.375m, W:2.550m.
St Albans	L:10.875m x W:2.5m.

It is recommended that tracking for the more onerous vehicle (WHDC) is utilised. The HA itself would recommend tracking be undertaken for a Mercedes Econic 12.2m long vehicle for the purposes of tracking of refuse vehicles, and as this features four wheel steer does not provide particularly onerous. Whilst this may not represent the largest in use by Welwyn Hatfield / SADC it does 'future proof' the development noting that

other districts use larger vehicles, and that any future contract change by the district might involve use of this larger vehicle for economy reasons.

In terms of emergency vehicle access, the Hertfordshire Fire and Rescue Service have the following requirements.

Appliance Type	Min. width of road between kerbs (m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min. clearance height (m)	Min. carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	19
ALP	3.7	3.1	26	29	4	26

Maximum length	8.1m
Maximum height	3.3m
Maximum width	2.9m (including mirrors)
Laden weight	19 tonnes
Minimum ground clearance	220mm

Layout

As above, only the main access road would be considered for adoption. All other areas shall remain in private control, and arrangements should be put in place to ensure that the future maintenance of such areas shall be appropriately funded.

Notwithstanding the above concerns about the secondary point of access to Bullens Green Lane, the general form of development is acceptable. All areas for the turning (turning heads) for refuse / emergency access should be tracked, recognising that the Masterplan currently submitted may be subject to change.

A concern is presented on the short cul-de-sac in proximity to the main access to Fellowes Lane. This short cul-de-sac appears to be provided by dropped kerb access (not unreasonably) but should be minimum 15m off-set from the junction effective give way line in the interest of safety.

Trees adjacent to any vehicle crossover access to private parking should not interfere with necessary visibility splays appropriate for the expected speeds. Any trees' within the liits of the adoptable highway network would be expected to secure commuted sums for their future maintainance and provided within agreed tree pits to limit their impacts on the maintenance of footways.

Travel Plan

Given the scale of development proposed, it shall be necessary to secure a residential travel plan. Full details may be found here;

<https://www.hertfordshire.gov.uk/media-library/documents/highways/development-management/travel-plan-guidance.pdf>

It is the policy of Hertfordshire County Council to secure a contribution towards the costs of monitoring, evaluating and supporting the delivery of the Travel Plan. Such contribution shall be £6,000 indexed in accordance with the provisions in the above guidance.

Adoption

The Highway Authority sets out its' approach to adoption of streets here;

<https://www.hertfordshire.gov.uk/media-library/documents/highways/development-management/section-3-legal-and-procedural-highways-design-guide.pdf>

And describes that HCC will need to be satisfied that any roads or areas that are to be adopted are of significant public utility and have been constructed in accordance with the approved details and in compliance with the specification of works and materials.

In this context utility has the meaning of usefulness. On developments with no through route, only the main access road will be considered for adoption. Residential access roads serving underground car parks, supported by structures or taking the form of short cul-desac with no wider highway benefit will not be considered for adoption.

Rights of Way

Any proposals impacting on the Rights of Way within the site should be discussed with the County Councils Rights of Way team, particularly in respect of any changes to the materiality of the routes provided, as well as any potential diversions or other impacts. The Rights of Way team can be contacted here;

row@hertfordshire.gov.uk

Finally, it is necessary for me to conclude with observing that in accordance with Hertfordshire County Councils Highways DM Protocol for pre-application advice (<http://www.hertsdirect.org/docs/pdf/h/hwaysprotocol.pdf>) any advice given by County Council officers for transport pre-application enquiries does not constitute a formal response or decision of the Council with regards to future planning consents. Any views or opinions expressed are given in good faith, and to the best of ability, without prejudice to the formal consideration of any planning application, which will be subject

to public consultation and ultimately decided by the Planning Authority. The County Council cannot guarantee that new issues will not be raised following submission of a planning application and consultation upon it. It should be noted that the weight given to pre-application advice will decline over time.

Please be aware that Hertfordshire County Council is subject to requirements under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. Where the County Council receives a request to disclose any information in relation to this discussion, it will notify and consult with you concerning its possible release. However, the County Council reserves the right to disclose any such information it deems appropriate and shall be responsible for determining at its absolute discretion whether the information is exempt from disclosure in accordance with the EIR or FOIA.

Sincerely

Alan Story
Senior Development Officer



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Appendix D

Junction Traffic Count Data



Colney Heath, St Albans - Manual Traffic Survey: Thursday, 17 September 2020

Prepared by: Transport Services Ltd

Location: A - Fulford Lane / B - Stone Tollygate Road / C - Private Road / D - Stone Tollygate Road

Approach: D - Stone Tollygate Road

Table with 30 columns (Time, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total) and 100 rows of traffic data for Section A.

Table with 30 columns (Time, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total, Peds, Mofc, Car, LRV, Ovv, Ovv, Baa, Pcu, Total) and 100 rows of traffic data for Section B.



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Appendix E

Automatic Traffic Count Data

Formulario de datos personales

Nombre y Apellido: _____
Fecha de Nacimiento: _____
Domicilio: _____
Celular: _____
Correo Electrónico: _____

Profesión: _____
Nivel de Estudios: _____
Experiencia: _____

Objetivos: _____
Motivación: _____
Fortalezas: _____
Debilidades: _____

Referencias: _____
Comentarios: _____

ESTADÍSTICAS		
Indicador	Valor	Unidad
Grupos de Estadísticas		
1	10	kg
2	20	kg
3	30	kg
4	40	kg
5	50	kg
6	60	kg
7	70	kg
8	80	kg
9	90	kg
10	100	kg

ESTADÍSTICAS		
Indicador	Valor	Unidad
Grupos de Estadísticas		
11	110	kg
12	120	kg
13	130	kg
14	140	kg
15	150	kg
16	160	kg
17	170	kg
18	180	kg
19	190	kg
20	200	kg

ESTADÍSTICAS		
Indicador	Valor	Unidad
Grupos de Estadísticas		
21	210	kg
22	220	kg
23	230	kg
24	240	kg
25	250	kg
26	260	kg
27	270	kg
28	280	kg
29	290	kg
30	300	kg

ESTADÍSTICAS		
Indicador	Valor	Unidad
Grupos de Estadísticas		
31	310	kg
32	320	kg
33	330	kg
34	340	kg
35	350	kg
36	360	kg
37	370	kg
38	380	kg
39	390	kg
40	400	kg

ESTADÍSTICAS		
Indicador	Valor	Unidad
Grupos de Estadísticas		
41	410	kg
42	420	kg
43	430	kg
44	440	kg
45	450	kg
46	460	kg
47	470	kg
48	480	kg
49	490	kg
50	500	kg

Project Information		Dates		Locations		Status		Priority		Risk		Impact		Resources		Notes	
ID	Name	Start	End	Region	Country	Phase	Progress	Level	Score	Category	Value	Count	Area	Count	Type	Count	Text
1	Project A	2023-01-01	2023-06-30	North	USA	Phase 1	75%	High	9.5	Strategic	\$1M	50	Urban	10	Personnel	20	Initiated
2	Project B	2023-02-15	2023-08-31	South	BRA	Phase 2	40%	Medium	7.8	Operational	\$500K	25	Rural	5	Equipment	10	Planning
3	Project C	2023-03-01	2023-09-30	East	IND	Phase 3	20%	Low	6.2	Support	\$200K	10	Urban	2	Materials	5	Design
4	Project D	2023-04-01	2023-10-31	West	MEX	Phase 4	10%	High	8.1	Strategic	\$750K	30	Rural	8	Personnel	15	Procurement
5	Project E	2023-05-01	2023-11-30	Central	ARG	Phase 5	5%	Medium	7.0	Operational	\$300K	15	Urban	3	Equipment	8	Design

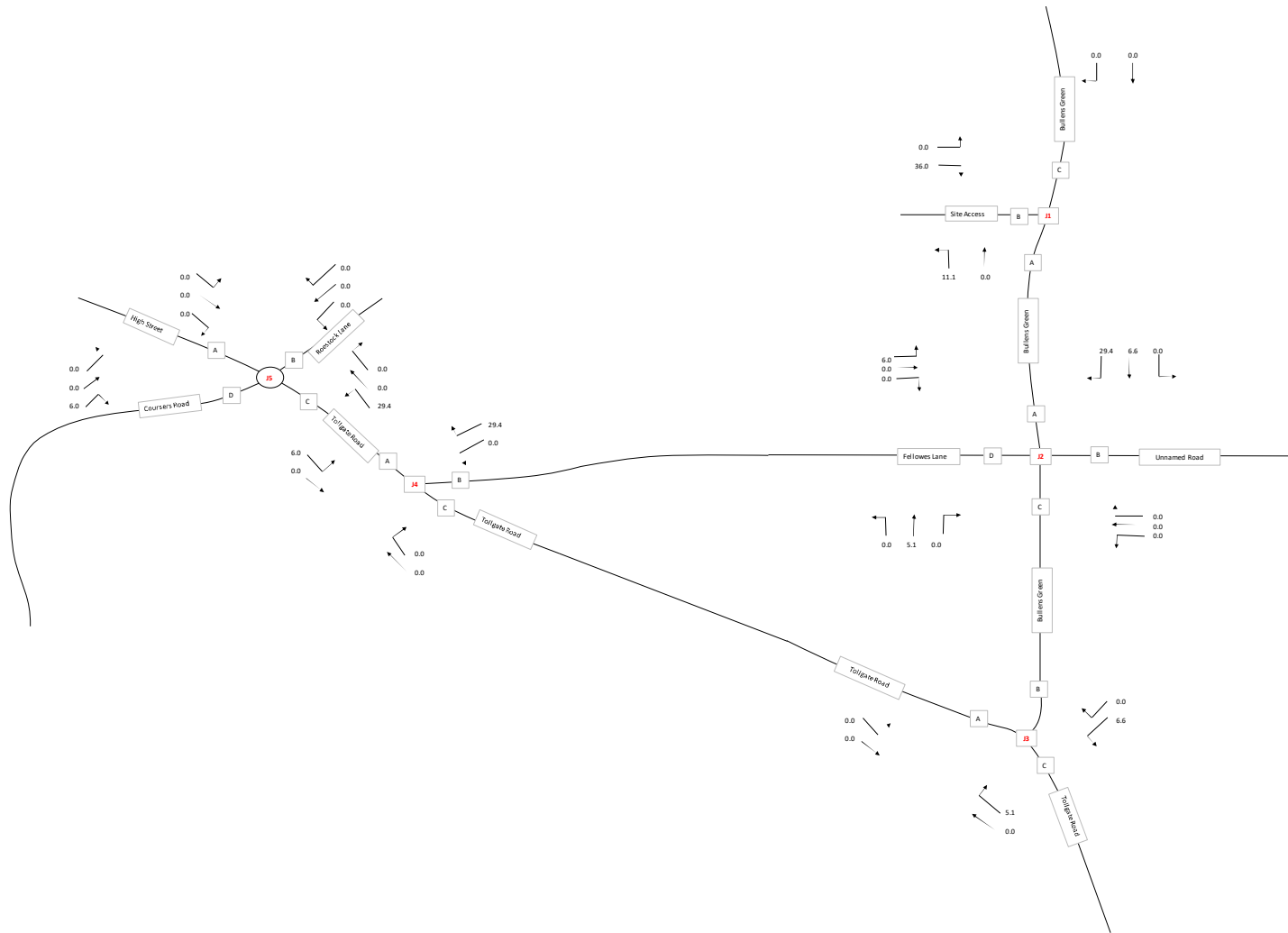


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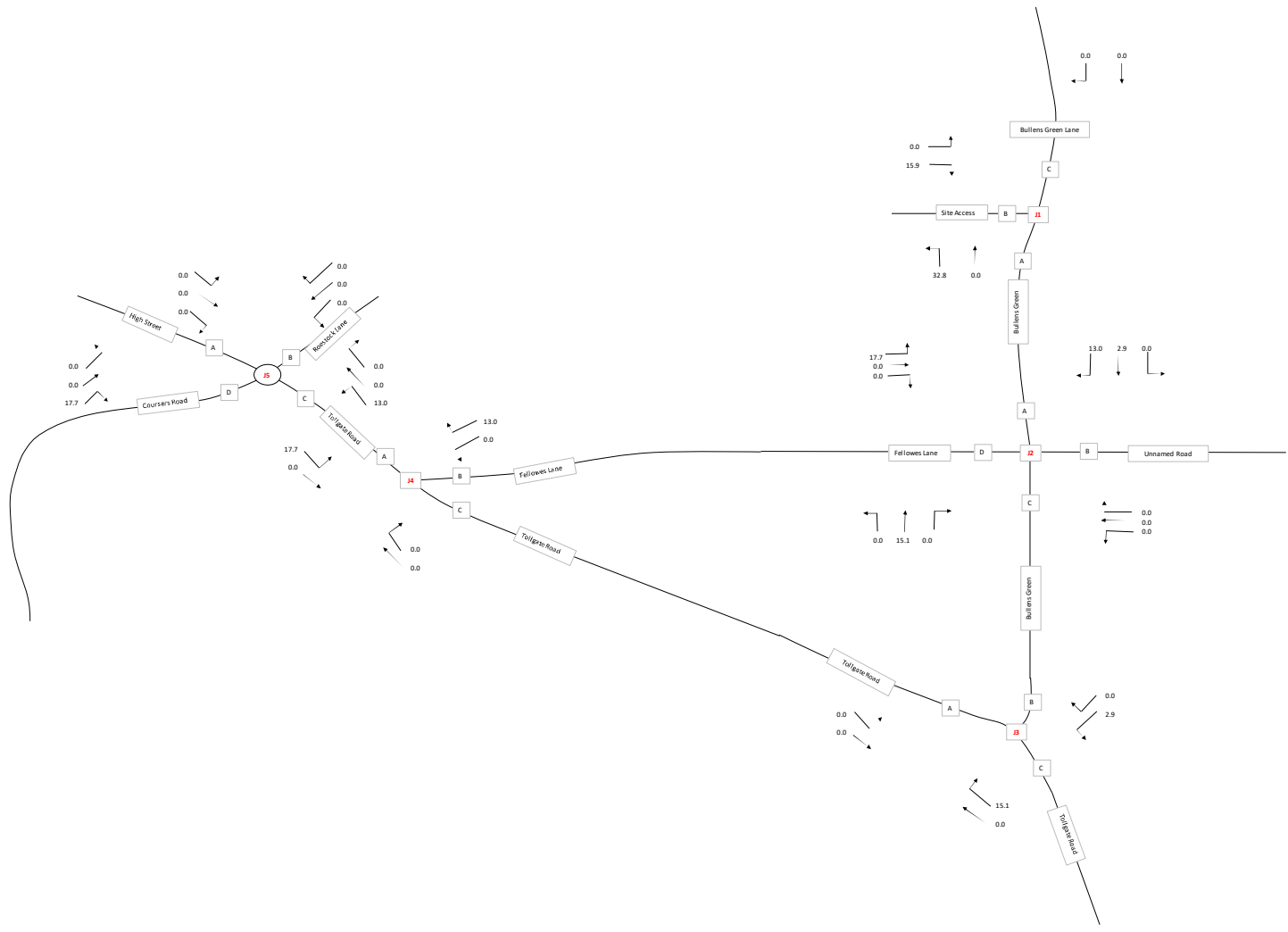
Appendix F

Network Diagrams

Colney Heath
Development Network Diagram - AM



Colney Heath
Development Network Diagram - PM





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Appendix G

Junctions 9 Output

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
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Filename: Site Access.j9
 Path: F:\Engineer\18770\09-Transportation\03-Traffic Models\02-Junctions
 Report generation date: 22/10/2020 16:00:51

- »Do Nothing 2020, AM
- »Do Nothing 2020, PM
- »Do Nothing 2030, AM
- »Do Nothing 2030, PM
- »Do Something 2030, AM
- »Do Something 2030, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Nothing 2020								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2030								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2030								
Stream B-AC	0.0	7.93	0.02	A	0.0	7.86	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	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	
Location	
Site number	
Date	30/09/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WH\j.katsoulis
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically
D1	Do Nothing 2020	AM	DIRECT	08:00	09:00	60	15	✓
D2	Do Nothing 2020	PM	DIRECT	17:00	18:00	60	15	✓
D3	Do Nothing 2030	AM	DIRECT	08:00	09:00	60	15	✓
D4	Do Nothing 2030	PM	DIRECT	17:00	18:00	60	15	✓
D5	Do Something 2030	AM	DIRECT	08:00	09:00	60	15	✓
D6	Do Something 2030	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Do Nothing 2020, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	Site Access		Minor
C	untitled		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	5.50			127.0	✓	1.00

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	2.75	0	0

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	0.087	0.219	0.138	0.313
1	B-C	608	0.095	0.241	-	-
1	C-B	648	0.256	0.256	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	Do Nothing 2020	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	
08:00 - 08:15	From	A	0	0	6
		B	0	0	0
		C	7	0	0

Demand (PCU/hr)

		To			
		A	B	C	
08:15 - 08:30	From	A	0	0	9
		B	0	0	0
		C	3	0	0

Demand (PCU/hr)

		To			
		A	B	C	
08:30 - 08:45	From	A	0	0	2
		B	0	0	0
		C	3	0	0

Demand (PCU/hr)

		To			
		A	B	C	
08:45 - 09:00	From	A	0	0	4
		B	0	0	0
		C	4	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	14	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					4	4
A-B					0	0
A-C					5	5

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1384	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	0	0			0				
A-C	6	2			6				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	525	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1383	0.000	0	0.0	0.0	0.000	A
C-A	3	0.75			3				
A-B	0	0			0				
A-C	9	2			9				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	527	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1386	0.000	0	0.0	0.0	0.000	A
C-A	3	0.75			3				
A-B	0	0			0				
A-C	2	0.50			2				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1385	0.000	0	0.0	0.0	0.000	A
C-A	4	1			4				
A-B	0	0			0				
A-C	4	1			4				

Do Nothing 2020, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
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		0.00	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 period length (min)	Time segment length (min)	Run automatically
D2	Do Nothing 2020	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

17:00 - 17:15

		To		
		A	B	C
From	A	0	0	6
	B	0	0	0
	C	6	0	0

Demand (PCU/hr)

17:15 - 17:30

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	7	0	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	0	11
	B	0	0	0
	C	5	0	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	6	0	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					6	6
A-B					0	0
A-C					6	6

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1292	0.000	0	0.0	0.0	0.000	A
C-A	6	2			6				
A-B	0	0			0				
A-C	6	2			6				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1293	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	0	0			0				
A-C	4	1			4				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	525	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1289	0.000	0	0.0	0.0	0.000	A
C-A	5	1			5				
A-B	0	0			0				
A-C	11	3			11				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	527	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1294	0.000	0	0.0	0.0	0.000	A
C-A	6	2			6				
A-B	0	0			0				
A-C	2	0.50			2				

Do Nothing 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	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 period length (min)	Time segment length (min)	Run automatically
D3	Do Nothing 2030	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	
08:00 - 08:15	From	A	0	0	7
		B	0	0	0
		C	8	0	0

Demand (PCU/hr)

		To			
		A	B	C	
08:15 - 08:30	From	A	0	0	10
		B	0	0	0
		C	3	0	0

Demand (PCU/hr)

08:30 - 08:45

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	3	0	0

Demand (PCU/hr)

08:45 - 09:00

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	4	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	14	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					5	5
A-B					0	0
A-C					6	6

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	525	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1384	0.000	0	0.0	0.0	0.000	A
C-A	8	2			8				
A-B	0	0			0				
A-C	7	2			7				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	525	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1382	0.000	0	0.0	0.0	0.000	A
C-A	3	0.81			3				
A-B	0	0			0				
A-C	10	2			10				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	527	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1386	0.000	0	0.0	0.0	0.000	A
C-A	3	0.81			3				
A-B	0	0			0				
A-C	2	0.54			2				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1385	0.000	0	0.0	0.0	0.000	A
C-A	4	1			4				
A-B	0	0			0				
A-C	4	1			4				

Do Nothing 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
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		0.00	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 period length (min)	Time segment length (min)	Run automatically
D4	Do Nothing 2030	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

17:00 - 17:15

		To		
		A	B	C
From	A	0	0	7
	B	0	0	0
	C	7	0	0

Demand (PCU/hr)

17:15 - 17:30

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	8	0	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	0	12
	B	0	0	0
	C	5	0	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	7	0	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					7	7
A-B					0	0
A-C					6	6

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1292	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	0	0			0				
A-C	7	2			7				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	526	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1293	0.000	0	0.0	0.0	0.000	A
C-A	8	2			8				
A-B	0	0			0				
A-C	4	1			4				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	524	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1289	0.000	0	0.0	0.0	0.000	A
C-A	5	1			5				
A-B	0	0			0				
A-C	12	3			12				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	0	527	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	1294	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	0	0			0				
A-C	2	0.54			2				

Do Something 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.23	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 period length (min)	Time segment length (min)	Run automatically
D5	Do Something 2030	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	
08:00 - 08:15	From	A	0	3	7
		B	9	0	0
		C	8	0	0

Demand (PCU/hr)

		To			
		A	B	C	
08:15 - 08:30	From	A	0	3	10
		B	9	0	0
		C	3	0	0

Demand (PCU/hr)

08:30 - 08:45

		To		
		A	B	C
From	A	0	3	2
	B	9	0	0
	C	3	0	0

Demand (PCU/hr)

08:45 - 09:00

		To		
		A	B	C
From	A	0	3	4
	B	9	0	0
	C	4	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	14	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	7.93	0.0	A	9	9
C-AB	0.00	0.00	0.0	A	0	0
C-A					5	5
A-B					3	3
A-C					6	6

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	463	0.019	9	0.0	0.0	7.924	A
C-AB	0	0	1382	0.000	0	0.0	0.0	0.000	A
C-A	8	2			8				
A-B	3	0.69			3				
A-C	7	2			7				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	463	0.019	9	0.0	0.0	7.928	A
C-AB	0	0	1381	0.000	0	0.0	0.0	0.000	A
C-A	3	0.81			3				
A-B	3	0.69			3				
A-C	10	2			10				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	465	0.019	9	0.0	0.0	7.899	A
C-AB	0	0	1385	0.000	0	0.0	0.0	0.000	A
C-A	3	0.81			3				
A-B	3	0.69			3				
A-C	2	0.54			2				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	464	0.019	9	0.0	0.0	7.910	A
C-AB	0	0	1384	0.000	0	0.0	0.0	0.000	A
C-A	4	1			4				
A-B	3	0.69			3				
A-C	4	1			4				

Do Something 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.
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		1.25	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 period length (min)	Time segment length (min)	Run automatically
D6	Do Something 2030	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

17:00 - 17:15

		To		
		A	B	C
From	A	0	8	7
	B	4	0	0
	C	7	0	0

Demand (PCU/hr)

17:15 - 17:30

		To		
		A	B	C
From	A	0	8	4
	B	4	0	0
	C	8	0	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	8	12
	B	4	0	0
	C	5	0	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	8	2
	B	4	0	0
	C	7	0	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	7.86	0.0	A	4	4
C-AB	0.00	0.00	0.0	A	0	0
C-A					7	7
A-B					8	8
A-C					6	6

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	0.99	463	0.009	4	0.0	0.0	7.844	A
C-AB	0	0	1287	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	8	2			8				
A-C	7	2			7				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	0.99	463	0.009	4	0.0	0.0	7.839	A
C-AB	0	0	1289	0.000	0	0.0	0.0	0.000	A
C-A	8	2			8				
A-B	8	2			8				
A-C	4	1			4				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	0.99	462	0.009	4	0.0	0.0	7.862	A
C-AB	0	0	1285	0.000	0	0.0	0.0	0.000	A
C-A	5	1			5				
A-B	8	2			8				
A-C	12	3			12				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	0.99	464	0.009	4	0.0	0.0	7.828	A
C-AB	0	0	1290	0.000	0	0.0	0.0	0.000	A
C-A	7	2			7				
A-B	8	2			8				
A-C	2	0.54			2				

Junctions 9
PICADY 9 - Priority Intersection Module
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Filename: Fellowes Lane_Tollgate Road (T junction).j9
Path: F:\Engineer\18770\09-Transportation\03-Traffic Models\02-Junctions
Report generation date: 22/10/2020 16:07:27

- »Do Nothing 2020, AM
- »Do Nothing 2020, PM
- »Do Nothing 2030, AM
- »Do Nothing 2030, PM
- »Do Something 2030, AM
- »Do Something 2030, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Nothing 2020								
Stream B-AC	0.0	8.41	0.01	A	0.0	8.55	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.27	0.00	A
Do Nothing 2030								
Stream B-AC	0.0	8.48	0.02	A	0.0	8.63	0.01	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.32	0.00	A
Do Something 2030								
Stream B-AC	0.0	8.63	0.03	A	0.0	8.71	0.02	A
Stream C-AB	0.0	0.00	0.00	A	0.0	6.33	0.00	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	
Location	
Site number	
Date	30/09/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WH\j.katsoulis
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically
D1	Do Nothing 2020	AM	DIRECT	08:00	09:00	60	15	✓
D2	Do Nothing 2020	PM	DIRECT	17:00	18:00	60	15	✓
D3	Do Nothing 2030	AM	DIRECT	08:00	09:00	60	15	✓
D4	Do Nothing 2030	PM	DIRECT	17:00	18:00	60	15	✓
D5	Do Something 2030	AM	DIRECT	08:00	09:00	60	15	✓
D6	Do Something 2030	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Do Nothing 2020, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Tollgate Road		Major
B	Fellowes Lane		Minor
C	Tollgate Road		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	6.14			81.0	✓	1.00

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	2.48	14	20

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	0.084	0.213	0.134	0.305
1	B-C	603	0.092	0.232	-	-
1	C-B	621	0.239	0.239	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	Do Nothing 2020	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

08:00 - 08:15

		To		
		A	B	C
From	A	0	1	97
	B	2	0	1
	C	79	0	0

Demand (PCU/hr)

08:15 - 08:30

		To		
		A	B	C
From	A	0	4	101
	B	6	0	0
	C	79	0	0

Demand (PCU/hr)

08:30 - 08:45

		To		
		A	B	C
From	A	0	4	92
	B	4	0	0
	C	81	0	0

Demand (PCU/hr)

08:45 - 09:00

		To		
		A	B	C
From	A	0	8	92
	B	4	0	0
	C	82	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	8.41	0.0	A	4	4
C-AB	0.00	0.00	0.0	A	0	0
C-A					80	80
A-B					4	4
A-C					96	96

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	3	0.75	474	0.006	3	0.0	0.0	7.634	A
C-AB	0	0	1201	0.000	0	0.0	0.0	0.000	A
C-A	79	20			79				
A-B	1	0.25			1				
A-C	97	24			97				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	2	434	0.014	6	0.0	0.0	8.414	A
C-AB	0	0	1197	0.000	0	0.0	0.0	0.000	A
C-A	79	20			79				
A-B	4	1			4				
A-C	101	25			101				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	435	0.009	4	0.0	0.0	8.348	A
C-AB	0	0	1202	0.000	0	0.0	0.0	0.000	A
C-A	81	20			81				
A-B	4	1			4				
A-C	92	23			92				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	435	0.009	4	0.0	0.0	8.356	A
C-AB	0	0	1200	0.000	0	0.0	0.0	0.000	A
C-A	82	21			82				
A-B	8	2			8				
A-C	92	23			92				

Do Nothing 2020, 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		0.18	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 period length (min)	Time segment length (min)	Run automatically
D2	Do Nothing 2020	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	
17:00 - 17:15	From	A	0	4	158
		B	3	0	2
		C	70	0	0

Demand (PCU/hr)

		To			
		A	B	C	
17:15 - 17:30	From	A	0	3	168
		B	3	0	1
		C	30	1	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	4	185
	B	2	0	1
	C	60	2	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	4	164
	B	4	0	0
	C	43	1	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	8.55	0.0	A	4	4
C-AB	0.00	6.27	0.0	A	1	1
C-A					51	51
A-B					4	4
A-C					169	169

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	470	0.011	5	0.0	0.0	7.735	A
C-AB	0	0	1164	0.000	0	0.0	0.0	0.000	A
C-A	70	18			70				
A-B	4	1			4				
A-C	158	40			158				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	454	0.009	4	0.0	0.0	8.005	A
C-AB	1	0.25	580	0.002	0.99	0.0	0.0	6.216	A
C-A	30	7			30				
A-B	3	0.75			3				
A-C	168	42			168				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	3	0.75	456	0.007	3	0.0	0.0	7.944	A
C-AB	2	0.50	576	0.003	2	0.0	0.0	6.272	A
C-A	60	15			60				
A-B	4	1			4				
A-C	185	46			185				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	425	0.009	4	0.0	0.0	8.551	A
C-AB	1	0.25	581	0.002	1	0.0	0.0	6.211	A
C-A	43	11			43				
A-B	4	1			4				
A-C	164	41			164				

Do Nothing 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.20	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 period length (min)	Time segment length (min)	Run automatically
D3	Do Nothing 2030	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

08:00 - 08:15

		To		
		A	B	C
From	A	0	1	105
	B	2	0	1
	C	86	0	0

Demand (PCU/hr)

08:15 - 08:30

		To		
		A	B	C
From	A	0	4	110
	B	7	0	0
	C	86	0	0

Demand (PCU/hr)

08:30 - 08:45

		To		
		A	B	C
From	A	0	4	100
	B	4	0	0
	C	88	0	0

Demand (PCU/hr)

08:45 - 09:00

		To		
		A	B	C
From	A	0	9	100
	B	4	0	0
	C	89	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	8.48	0.0	A	5	5
C-AB	0.00	0.00	0.0	A	0	0
C-A					87	87
A-B					5	5
A-C					104	104

Main Results for each time segment
08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	3	0.81	472	0.007	3	0.0	0.0	7.681	A
C-AB	0	0	1197	0.000	0	0.0	0.0	0.000	A
C-A	86	21			86				
A-B	1	0.27			1				
A-C	105	26			105				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	2	431	0.015	6	0.0	0.0	8.480	A
C-AB	0	0	1193	0.000	0	0.0	0.0	0.000	A
C-A	86	21			86				
A-B	4	1			4				
A-C	110	27			110				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	433	0.010	4	0.0	0.0	8.405	A
C-AB	0	0	1198	0.000	0	0.0	0.0	0.000	A
C-A	88	22			88				
A-B	4	1			4				
A-C	100	25			100				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	432	0.010	4	0.0	0.0	8.416	A
C-AB	0	0	1196	0.000	0	0.0	0.0	0.000	A
C-A	89	22			89				
A-B	9	2			9				
A-C	100	25			100				

Do Nothing 2030, 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		0.18	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 period length (min)	Time segment length (min)	Run automatically
D4	Do Nothing 2030	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	
17:00 - 17:15	From	A	0	4	172
		B	3	0	2
		C	76	0	0

Demand (PCU/hr)

		To			
		A	B	C	
17:15 - 17:30	From	A	0	3	182
		B	3	0	1
		C	33	1	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	4	201
	B	2	0	1
	C	65	2	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	4	178
	B	4	0	0
	C	47	1	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.01	8.63	0.0	A	4	4
C-AB	0.00	6.32	0.0	A	1	1
C-A					55	55
A-B					4	4
A-C					183	183

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	1	467	0.012	5	0.0	0.0	7.803	A
C-AB	0	0	1158	0.000	0	0.0	0.0	0.000	A
C-A	76	19			76				
A-B	4	1			4				
A-C	172	43			172				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	450	0.010	4	0.0	0.0	8.074	A
C-AB	1	0.27	577	0.002	1	0.0	0.0	6.255	A
C-A	33	8			33				
A-B	3	0.81			3				
A-C	182	46			182				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	3	0.81	452	0.007	3	0.0	0.0	8.022	A
C-AB	2	0.54	572	0.004	2	0.0	0.0	6.316	A
C-A	65	16			65				
A-B	4	1			4				
A-C	201	50			201				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	4	1	421	0.010	4	0.0	0.0	8.631	A
C-AB	1	0.27	577	0.002	1	0.0	0.0	6.246	A
C-A	47	12			47				
A-B	4	1			4				
A-C	178	45			178				

Do Something 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.49	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 period length (min)	Time segment length (min)	Run automatically
D5	Do Something 2030	AM	DIRECT	08:00	09:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

08:00 - 08:15

		To		
		A	B	C
From	A	0	3	105
	B	10	0	1
	C	86	0	0

Demand (PCU/hr)

08:15 - 08:30

		To		
		A	B	C
From	A	0	6	110
	B	14	0	0
	C	86	0	0

Demand (PCU/hr)

08:30 - 08:45

		To		
		A	B	C
From	A	0	6	100
	B	12	0	0
	C	88	0	0

Demand (PCU/hr)

08:45 - 09:00

		To		
		A	B	C
From	A	0	10	100
	B	12	0	0
	C	89	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	8.63	0.0	A	12	12
C-AB	0.00	0.00	0.0	A	0	0
C-A					87	87
A-B					6	6
A-C					104	104

Main Results for each time segment
08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	3	443	0.024	11	0.0	0.0	8.313	A
C-AB	0	0	1196	0.000	0	0.0	0.0	0.000	A
C-A	86	21			86				
A-B	3	0.65			3				
A-C	105	26			105				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	3	431	0.032	14	0.0	0.0	8.633	A
C-AB	0	0	1192	0.000	0	0.0	0.0	0.000	A
C-A	86	21			86				
A-B	6	1			6				
A-C	110	27			110				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	3	433	0.027	12	0.0	0.0	8.556	A
C-AB	0	0	1197	0.000	0	0.0	0.0	0.000	A
C-A	88	22			88				
A-B	6	1			6				
A-C	100	25			100				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	3	432	0.027	12	0.0	0.0	8.566	A
C-AB	0	0	1195	0.000	0	0.0	0.0	0.000	A
C-A	89	22			89				
A-B	10	3			10				
A-C	100	25			100				

Do Something 2030, 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		0.29	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 period length (min)	Time segment length (min)	Run automatically
D6	Do Something 2030	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT	✓	100.000
B		DIRECT	✓	100.000
C		DIRECT	✓	100.000

Origin-Destination Data

Demand (PCU/hr)

17:00 - 17:15

		To		
		A	B	C
From	A	0	9	172
	B	7	0	2
	C	76	0	0

Demand (PCU/hr)

17:15 - 17:30

		To		
		A	B	C
From	A	0	8	182
	B	7	0	1
	C	33	1	0

Demand (PCU/hr)

17:30 - 17:45

		To		
		A	B	C
From	A	0	9	201
	B	5	0	1
	C	65	2	0

Demand (PCU/hr)

17:45 - 18:00

		To		
		A	B	C
From	A	0	9	178
	B	8	0	0
	C	47	1	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	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	8.71	0.0	A	8	8
C-AB	0.00	6.33	0.0	A	1	1
C-A					55	55
A-B					9	9
A-C					183	183

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	2	447	0.019	9	0.0	0.0	8.206	A
C-AB	0	0	1155	0.000	0	0.0	0.0	0.000	A
C-A	76	19			76				
A-B	9	2			9				
A-C	172	43			172				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	2	437	0.017	8	0.0	0.0	8.376	A
C-AB	1	0.27	575	0.002	1	0.0	0.0	6.266	A
C-A	33	8			33				
A-B	8	2			8				
A-C	182	46			182				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	7	2	432	0.015	7	0.0	0.0	8.470	A
C-AB	2	0.54	571	0.004	2	0.0	0.0	6.328	A
C-A	65	16			65				
A-B	9	2			9				
A-C	201	50			201				

17:45 - 18:00

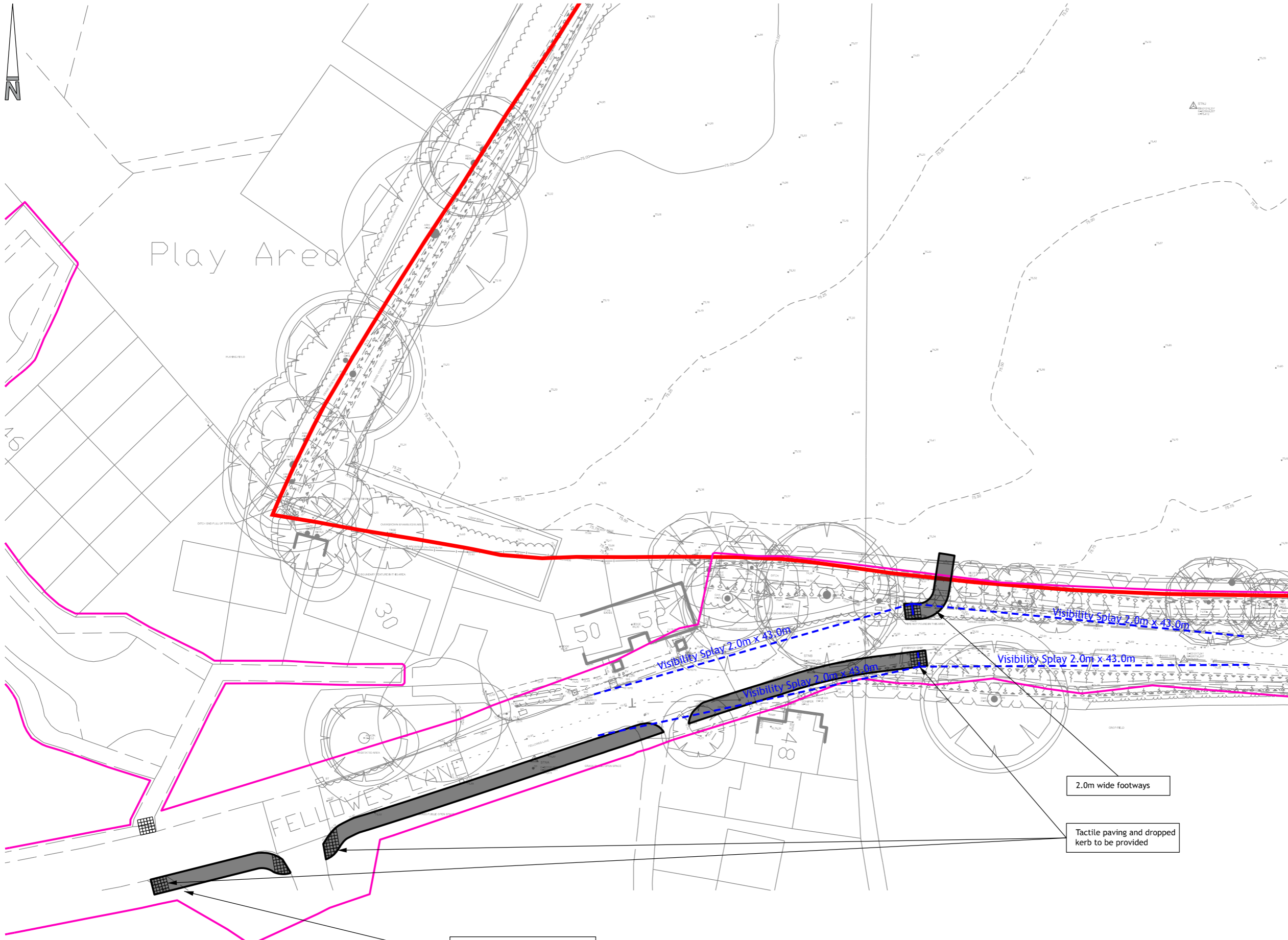
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B-AC	8	2	421	0.018	8	0.0	0.0	8.708	A
C-AB	1	0.27	576	0.002	1	0.0	0.0	6.260	A
C-A	47	12			47				
A-B	9	2			9				
A-C	178	45			178				



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Appendix H

Proposed Footpath Connection Drawing



NOTES

- Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding.
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SAFETY, HEALTH AND ENVIRONMENTAL

There are no exceptional risks associated with these works. Refer to the designers risk assessment for the full assessment of risks.

- Site Boundary
- - - Pedestrian Visibility Splays 2.0m x 43.0m
- Highway Extent based on Hertfordshire County Council Plan

REV	DESCRIPTION	IZ	DRN	CHD	GBR	DATE
A	Location of footpath amended					15/10/2020

SCALE: 1:500 @ A3 DATE: October 2020

DRAWN: IZ CHK: GBR

DRAWING NO. 18770-FELL-5-501 REV: A

TITLE: Land of Bullens Green Lane Colney Heath

DETAILS: Proposed Footpath Connection

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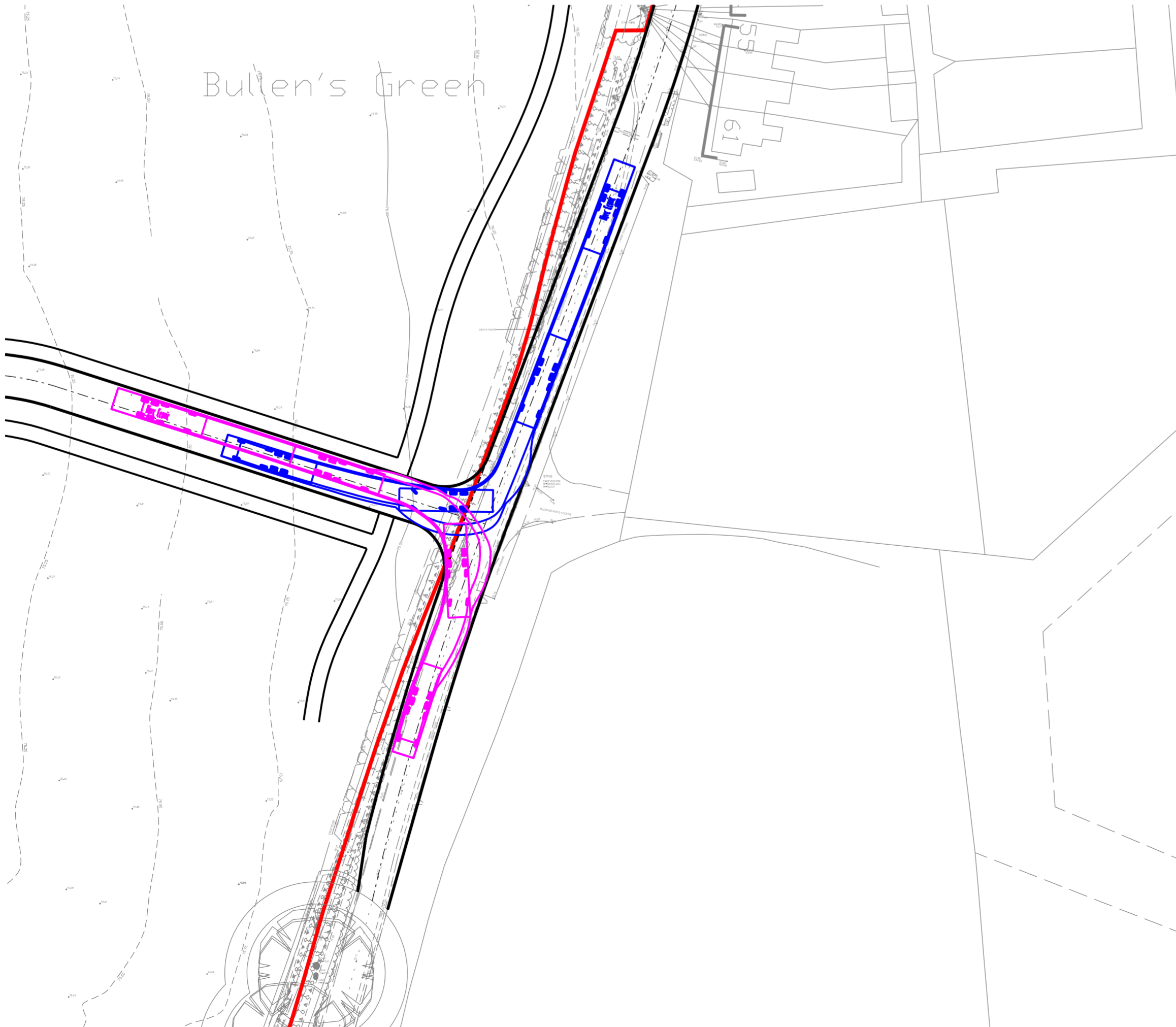
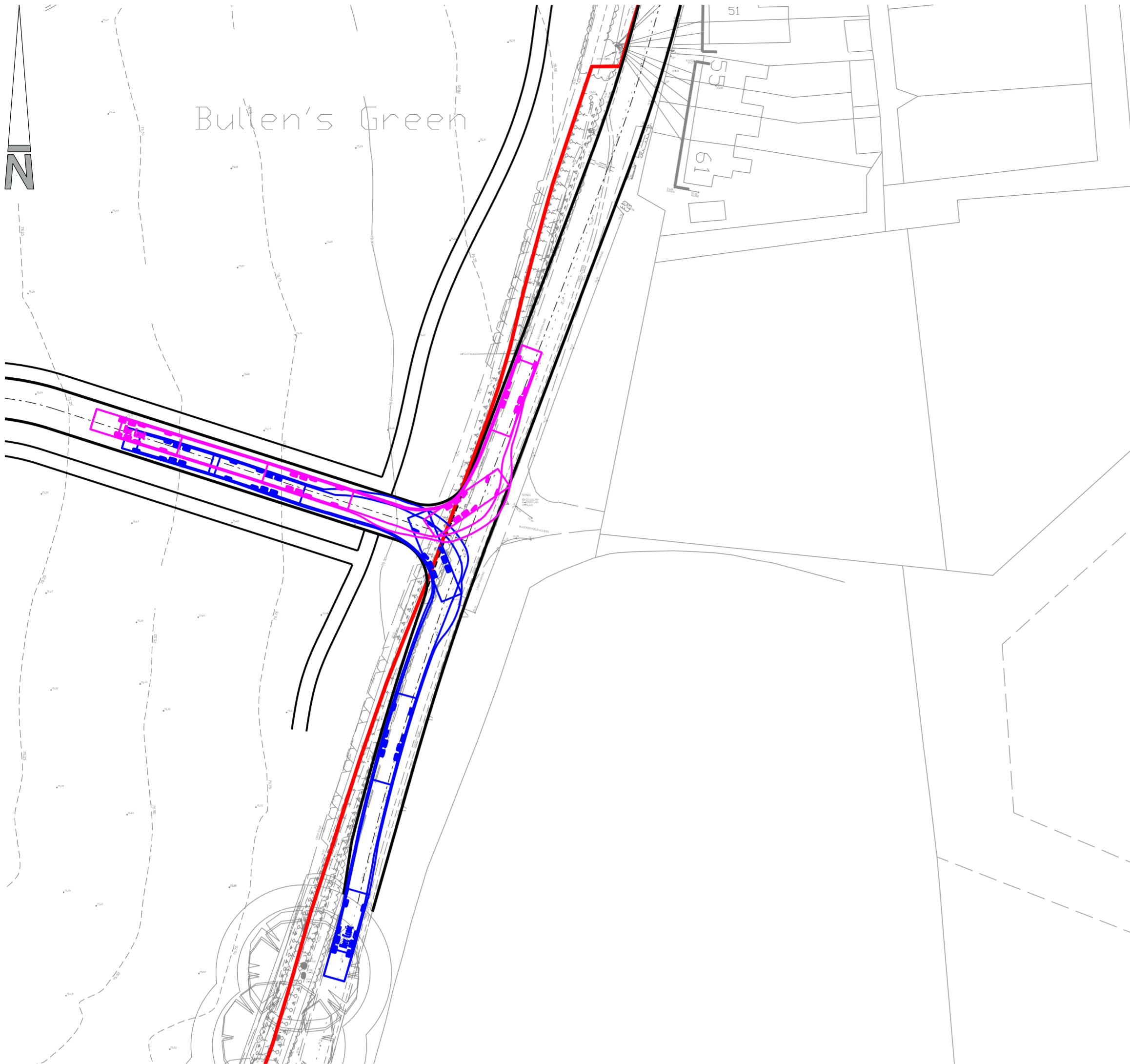
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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS DRAWING

Appendix I

Refuse Tracking Drawing



- NOTES**
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SAFETY, HEALTH AND ENVIRONMENTAL

There are no exceptional risks associated with these works. Refer to the designers risk assessment for the full assessment of risks.

KEY

— Site Boundary

Merc Econic	12.205m
Overall Length	2.890m
Overall Width	3.751m
Overall Body Height	0.304m
Min Body Ground Clearance	2.500m
Track Width	4.00s
Lock to lock time	11.250m

REV	DESCRIPTION	DRN	CHD	DATE	
<input checked="" type="checkbox"/>	PRELIMINARY	<input type="checkbox"/>	INFORMATION	<input type="checkbox"/>	TENDER
<input type="checkbox"/>	CONSTRUCTION	<input type="checkbox"/>	AS BUILT		
SCALE	1:500 @ A2	DATE	October 2020		
DRAWN	IZ	CHK	GBR		
DRAWING NO.	18770-FELL-5-502	REV	-		
TITLE	Land of Bullens Green Lane Colney Heath				
DETAILS	Refuse Vehicle Tracking				

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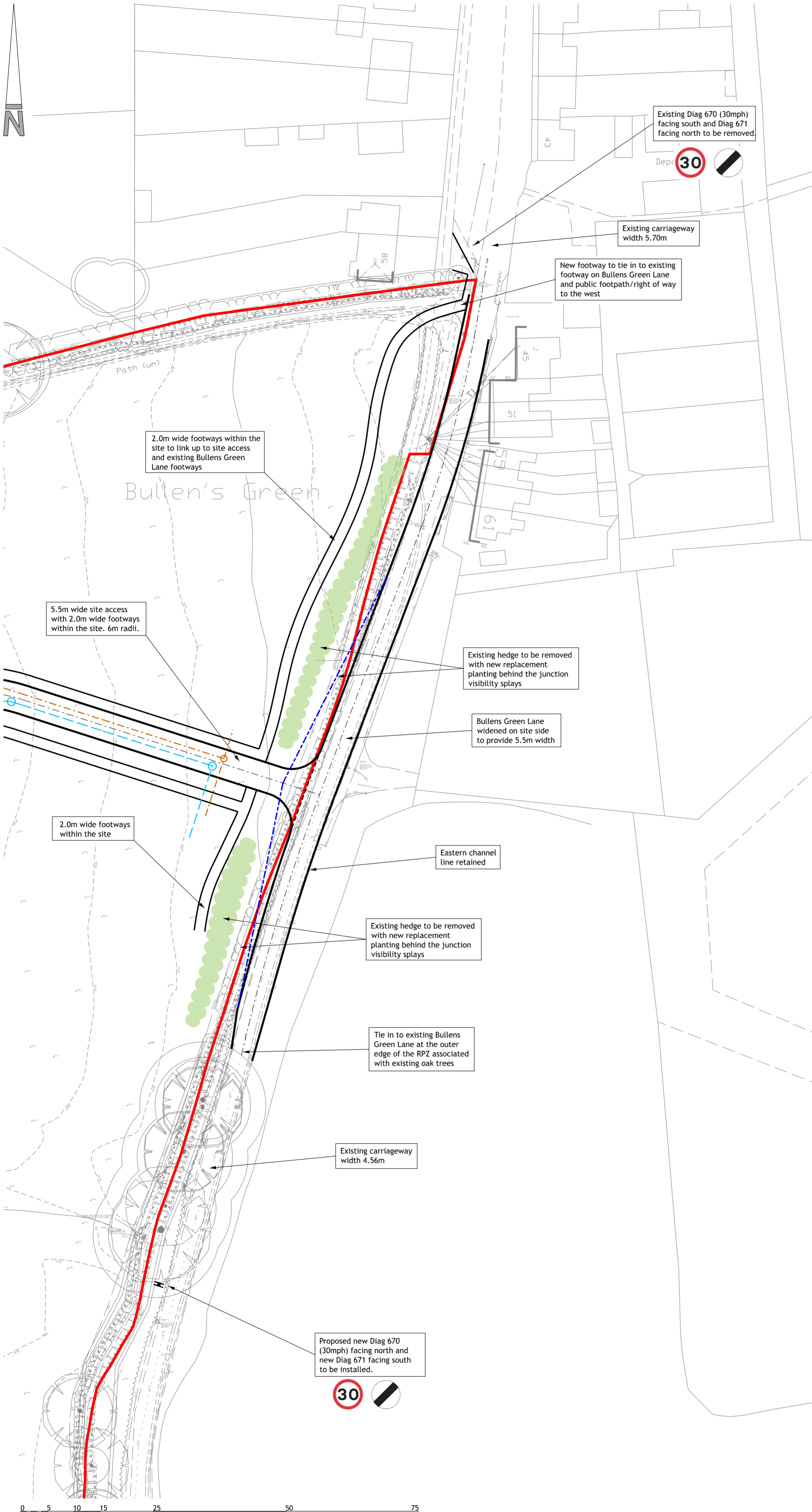
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Appendix I

Site Access Drawing



- NOTES**
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SAFETY, HEALTH AND ENVIRONMENTAL

In addition to the hazards, risks normally associated with the type of work detailed on this drawing, note the following significant risks and information.

Construction:

-
-

For information relating to end use, maintenance, demolition, see the health and safety file.

It is assumed that all works will be carried out by a competent Contractor, where appropriate, to an approved method statement.

KEY

— Site Boundary

- - - Visibility Splays 4.5m x 43.0m

B	Visibility splays reduced to 4.5m x 43.0m	IZ	GBR	20/10/2020	
A	Access moved from Fellowes Lane	JGF	JGF	13/08/2020	
REV	DESCRIPTION	DRN	CHD	DATE	
<input checked="" type="checkbox"/>	PRELIMINARY	<input type="checkbox"/>	INFORMATION	<input type="checkbox"/>	TENDER
<input type="checkbox"/>	CONSTRUCTION	<input type="checkbox"/>	AS BUILT		

SCALE: 1:500 @ A2 DATE: July 2020

DRAWN: IZ CHK: GBR

DRAWING NO. 18770-FELL-5-500 REV: B

TITLE: Land of Bullens Green Lane
Colney Heath

DETAILS: Site Access

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