



Land at Albion Road and Copper Lane, Marden

Proof of Evidence of Mark Gimingham Volume 2
Appendices

Client: B.Yond Homes Limited

PINS Ref: APP/U22W/24/334817

Date: 23 October 2024

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Date: 23 October 2024

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Quality Management

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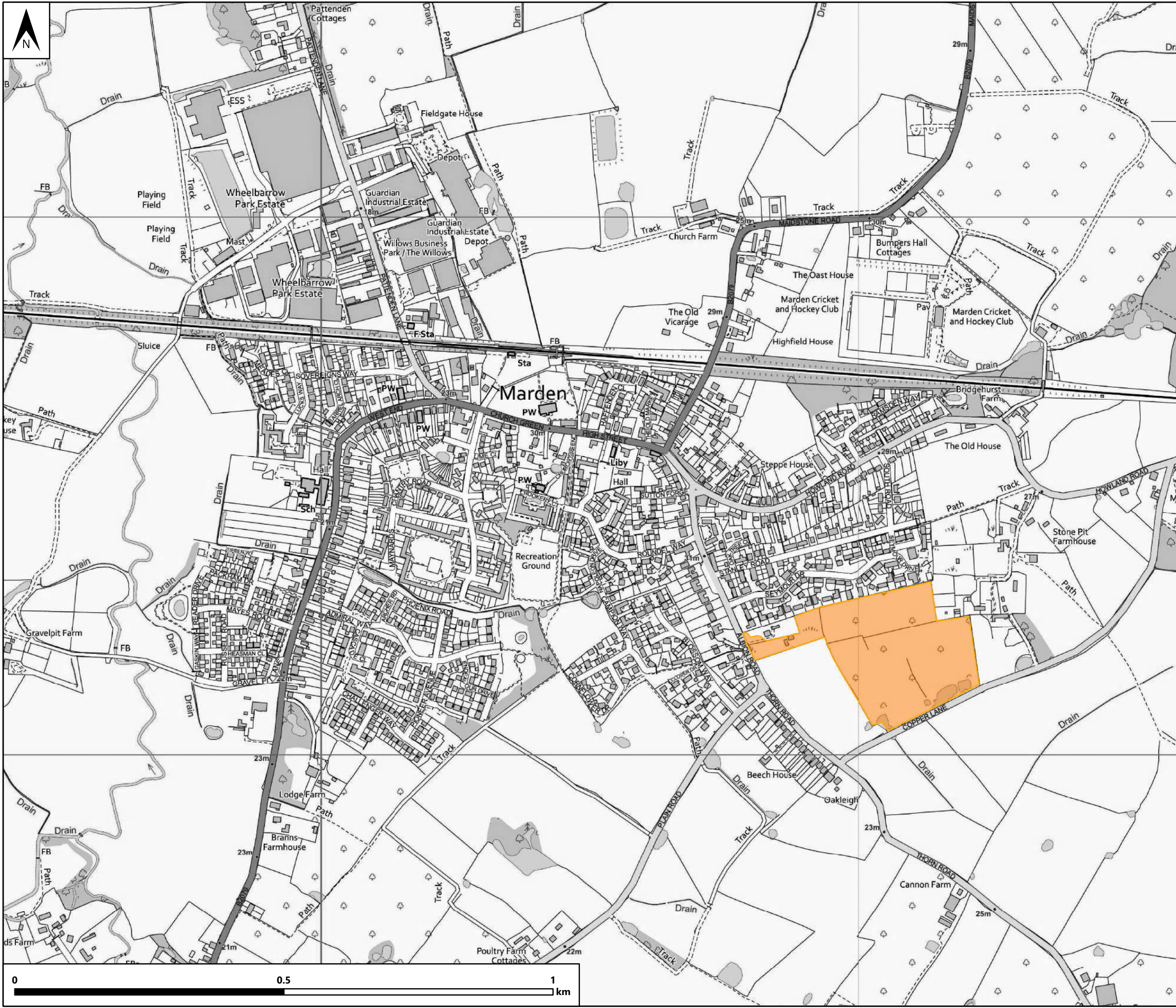
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APPENDIX MCG1. Site Location Plan



Key
 Land East of Albion Road and North of Copper Lane: Indicative Site Boundary

Additional Sources: KCC Open Data

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Title:
Site Location Plan

Project:
**Land East of Albion Road and North of
Copper Lane, Marden**

Project Number:
ITB15098

Figure Number:
Figure 1.1

Revision:
-

APPENDIX MCG2. **FLAC Note on Trees**

FLAC 42-1043
ALBION ROAD

Arboricultural input to the no-dig footway comprising cellular confinement system over tree root protection areas –

Technical Note, 141024

Context

No-dig (i.e. constructed above existing ground level in such a manner as to preserve soil structure) new permanent hard surfaces are a known and accepted response to the possibility or occurrence of damage to trees where new permanent hard surfacing, including pedestrian footways and/or footpaths, are to be routed close to trees. As such, no-dig footways are a **mitigation measure**, that is, a measure designed to reduce or remove harm that would otherwise occur.

It is for this reason that *British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations* provides guidance, including a range of suitable designs, to achieve a tree-friendly permanent hard surface, and also the reason why local councils and county highways authorities frequently require their installation.

This is the case at Albion Road, Marden, where Kent County Council Highways has agreed to the principle of a no-dig footway as a mitigation measure for potential damage to trees close to the carriageway by the proposed footway link (KCC Highways and Transportation letter, 13th May 2024).

The potential adverse effects of typical footway construction damage on trees

Negative impacts leading to deterioration of tree condition may include:

1. Root severance (trenching and/or lowering of levels) and consequent loss of water and nutrient uptake and loss of storage by woody roots impairing physiological condition
2. Root wounding leading to sites of decay initiation
3. Loss of structural stability and increased risk of whole tree windthrow adjacent to footways/carriageways and third-party land
4. Soil compaction to localised bulk densities that exceed the range tolerated by roots leading to their decline of function
5. Contamination of rootable soil by substances hazardous to trees e.g. cement
6. Resulting tree stress, rendering affected trees vulnerable to frequently lethal, endemic, soil-dwelling pathogens such as *Armillaria* and *Phytophthora* and abiotic impacts by drought or waterlogged conditions.

Tree root protection areas and tree-friendly designs

BS5837:2012 specifically endorses the use of technical designs including 3-dimensional cellular confinement systems (CCS) where new permanent hard surfacing is to be constructed above tree root protection areas (RPAs).

FLAC have undertaken a BS5837 tree survey (appended to this note) on both sides of Albion Road. In effect the entire unmade verge is subject to root protection area constraints. RPAs are shown on the Structa drawings, harvested from the FLAC tree survey, which is based upon the topographical site survey providing spatially accurate tree positions. The existing carriageway is not considered to be hospitable to roots, so excavation/construction within the existing built form of the carriageway is not a material risk to roots.

Proposal at Albion Road

The Structa drawings include use of a CCS no-dig design at the north section where the footway will be constructed outside of the existing carriageway and thereby over the unmade ground hosting tree roots. A standard footway design is to be used for the central and southern sections of the footway within the existing carriageway.

Fig. 1 - Plan view of no-dig section comprising CCS design outside of carriageway at north of footway

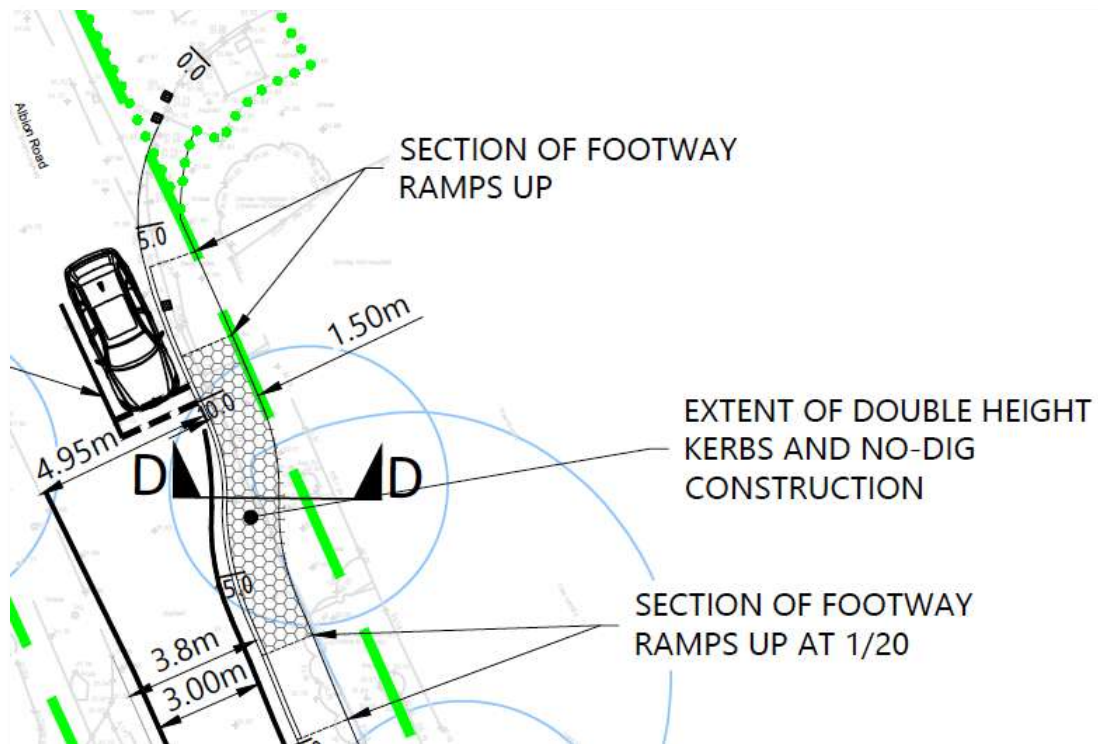
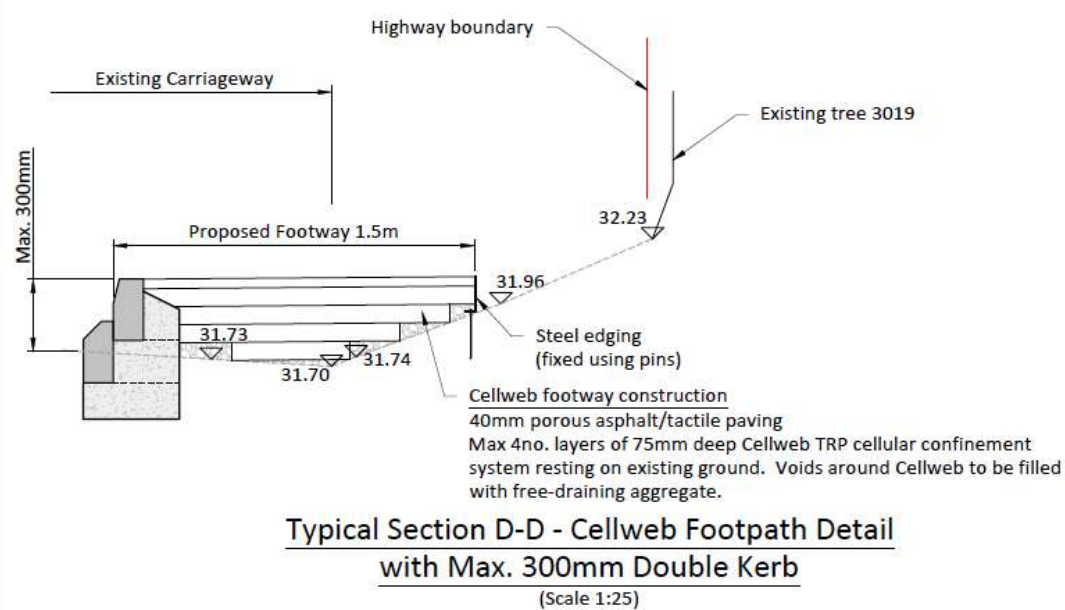


Fig. 2 - Section D-D through no-dig CCS at north of footway



The above section D-D shows a tree-friendly design over the rootable verge with the new kerb constructed within the existing carriageway at no risk to roots. Stacked layers of no-dig CCS avoid excavation of the unmade ground hosting roots. A porous asphalt wearing course and voids beneath filled by a free-draining aggregate to maintain moisture and gaseous permeability. Roots are thereby preserved by no-dig principles.

Fig. 3 – Plan view of footway constructed within existing carriageway

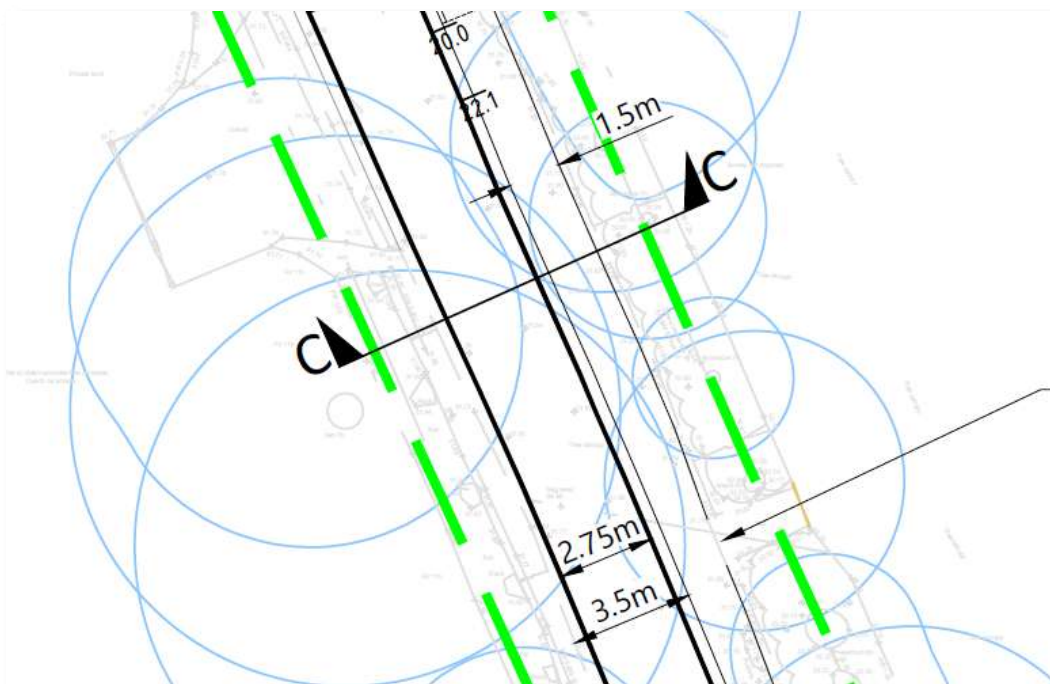
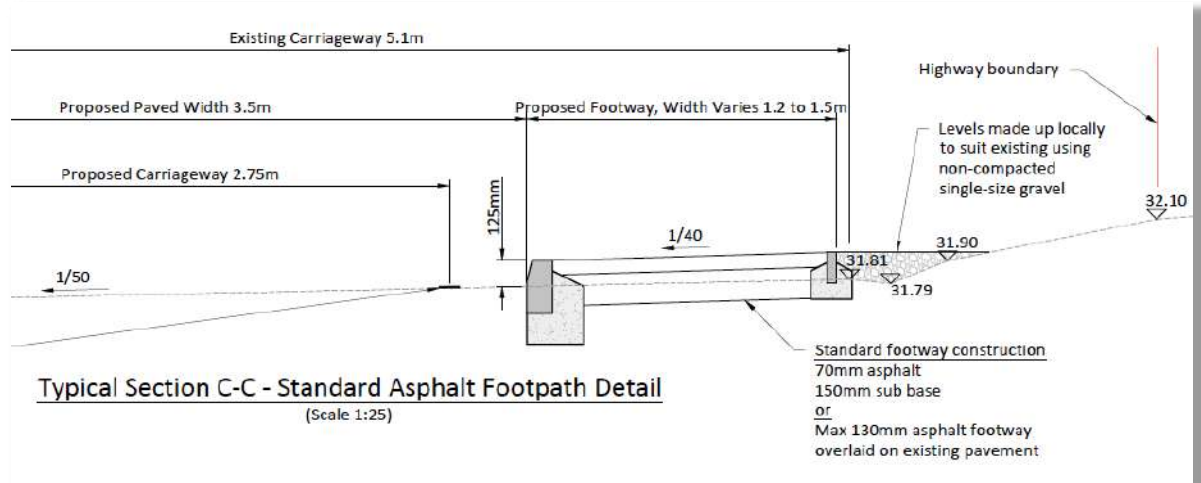


Fig. 3 above shows plan view of the footway constructed within the footprint of the existing carriageway. A traditional footway design is used within the carriageway because the existing built form does not host roots.

Fig. 4 – Section C-C through traditional footway make-up constructed within existing carriageway



Section C-C at Fig. 4 depicts a traditional footway design constructed entirely within the footprint of the existing carriageway. Roots are safeguarded by construction occurring within the existing built form, which is already inhospitable to tree roots, avoiding disturbance within the unmade verge.

Impact assessment

Tree removals

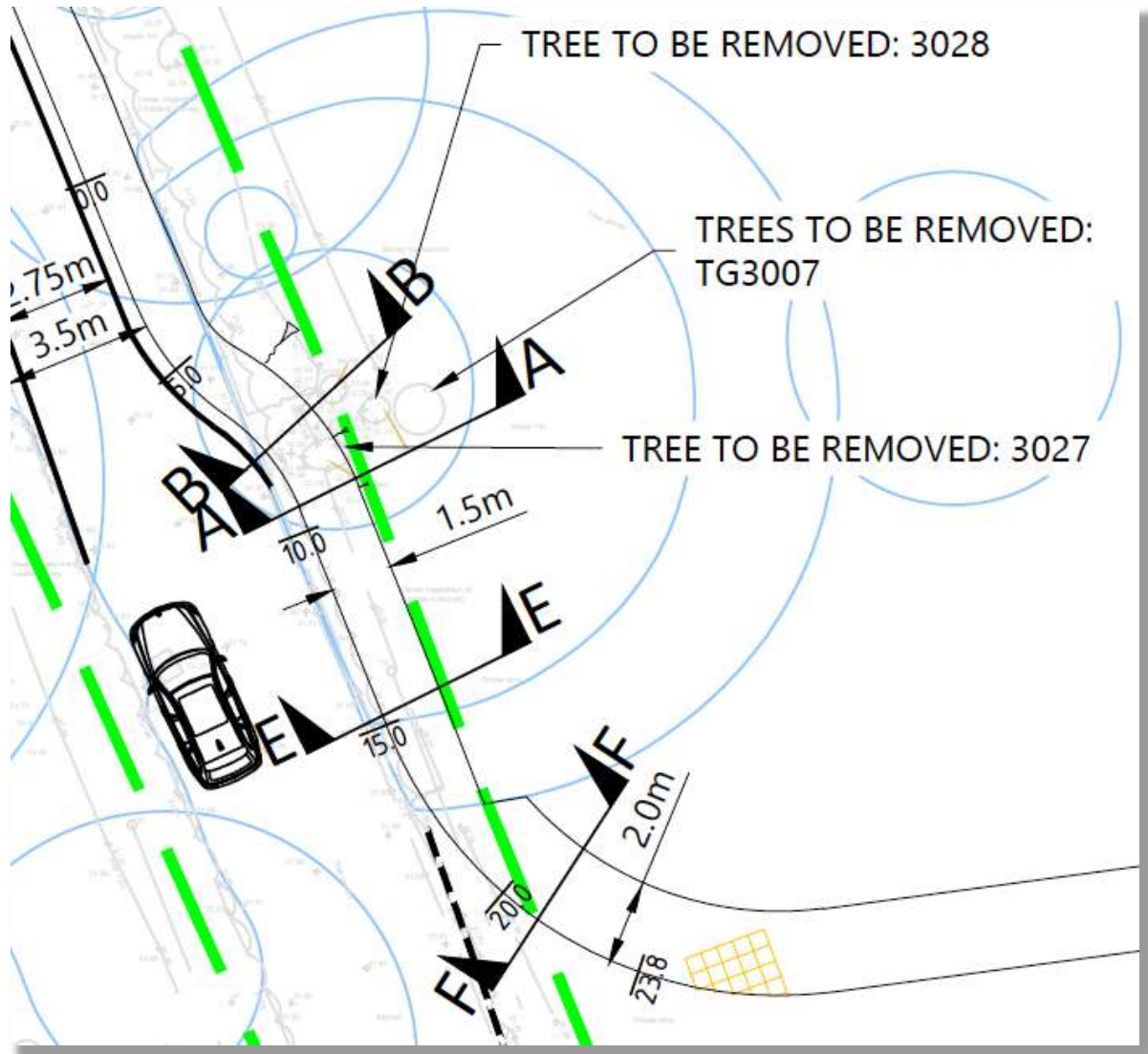
Four trees are shown by the Structa drawings to be removed. Fig. 5 below shows their locations near to the south end of the footway.

By reference to the FLAC tree survey, Scots pine 3027 is a dead U category specimen (BS5837 for unsuitable for retention), located within the highway boundary and recommended for removal in any event due to its condition and risk of collapse into the highway.

Plum 3028 is a C category individual specimen (BS5837 low quality and value) and sycamore tree group TG3007 is a B category feature (BS5837 moderate quality and value) comprising two close-set trees. 3028 and TG3007 are shown for removal as the design response following a Stage 1 Road Safety Audit Report (Fenley, dated September 2024) of a former design worked up with multi-disciplinary inputs from arboriculture, highways and engineering, which had incorporated a no-dig raised-deck design over tree roots.

However, to address the safety audit comments footway levels would necessarily be lowered, consequently the use of no-dig design is impracticable. Deletion of the no-dig element results in excavations within the RPAs to a degree that would be expected to impact their structural and/or physiological condition. Tree removal is the realistic outcome.

Fig. 5 – Structa's labels identify trees for removal at southern end of the footway



Hedge H3002 (see FLAC survey, following) is identified for removal to facilitate the site access bell mouth.

Chalara ash dieback

Our survey finds ash 3019 (under third-party ownership) to be visibly infected by Chalara ash dieback (*Hymenoscyphus fraxinea*) and not expected to survive beyond 10 years, accordingly a BS5837 U category tree. However, for avoidance of doubt, both the FLAC tree survey plan and the footway scheme afford 3019 a modified protection area that is greater over the unmade ground than the notional circular RPA would be, to account for that portion occupied by the carriageway.

Potential impacts of CCS no-dig design

There is a suitable offset between the edge of the CCS footway and tree stems (informed by enhanced topographical survey information), the closest offset being ash 3019 (see section D-D) at just over 0.5 metres, noting we expect this tree to be a casualty to Chalara ash dieback in relatively short timeframe.

Edge supports associated with the CCS within the RPA are steel upstands fixed into place with steel pins (see Structa's section D-D) avoiding excavations within the RPA. The road-side kerb adjacent the CCS shall be located within the existing carriageway at no material risk to roots.

By their nature no-dig designs necessitate a raised finished level, relative to ground level. The Structa plan shows that locations of ramping up/down to/from the no-dig section (either side of section D-D) will occur both in the existing carriageway and beyond RPAs, avoiding grading within RPAs.

Tree pruning

Tree pruning will be required for pedestrian access (ca. 2.5 metres height) along the footway. The precise pruning specification is not known but it is anticipated to require shortening and/or removal of lower crown and small diameter material on the carriageway side of the trees. Larger limbs in this footway envelope are absent due to the current vehicle clearance above the carriageway. A need for periodic repeat pruning management is foreseeable.

Conclusion

The combination of a no-dig design and otherwise traditional construction within the carriageway will safeguard the existing soil structure resulting in no impairment to tree root function and support. We do not expect the footway to result in any measurable or permanent adverse impact upon the trees.

Construction methodology and implementation

The success of technical solutions to safeguard trees is part design but equally part implementation on site. The no-dig proposal would benefit from detailed but relatively routine tree protection measures to be adhered to, which would include the following key considerations:

- Schedules of tree protection phasing with arboricultural overwatch and site monitoring reporting at key stages
- An agreed construction method for working close to the trees
- Means to safeguard the above ground tree structures and the below ground RPA both outside and inside the construction envelope

A tree protection strategy with arboricultural method statement can be secured via a suitably worded planning condition.

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ALBION ROAD



- BASELINE TREE SURVEY TO BS5837:2012



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KEY TO TREE SURVEY DATA SCHEDULE

Note

This survey has been undertaken in compliance with BS5837:2012; it is not intended to be a tree safety survey. Any notes offered on structural integrity of trees are incidental, though where trees are considered to be in immediately hazardous condition (identified by red font in the *Structural condition & Notes* column, see below), our recommendations given for immediate intervention should be put in hand by the owner / site manager as soon as can be arranged.

Trees are dynamic living organisms capable of achieving considerable size and structural complexity. They are exposed to and can become damaged by the elements and by human activity, and have co-evolved with decay-causing organisms that can degrade and sometimes destroy their structural integrity. Due to genetic characteristics and local microenvironmental factors this integrity can be innately uncertain. The laws and forces of nature dictate a natural failure rate even among trees that are healthy and structurally sound. By their very nature, therefore, trees cannot be considered entirely hazard-free.

Tree surveys and / or tree inspections are, inherently, only a snapshot in time of the physiological and structural condition of the trees concerned.

Unless otherwise stated in our reporting material, all such surveys and inspections are undertaken from ground level and no internal inspections or tests have been undertaken. Any structural defects present might not be visible, for example being masked by vegetation, whether the tree's foliage, plants growing round the base of the tree, or climbing plants growing on the stem and into the crown.

Unless otherwise stated, the survey data should be considered time-limited **for planning purposes** to a maximum of three years (absent revisions of BS5837, which render pre-existing data obsolete).

FLAC Ref. No.

Tree numbers per relevant FLAC dwg

In line with the advice of BS5837:2012, where trees occur as a cohesive group feature (prefixed TG for tree group or WG for woodland group), they are assessed as such

Size data for TG or WG are given as mean figures for trees at roughly the 80 percentile of the population concerned. Trees in the 90-100 percentile range for the group are identified on the TSP

Trees within TG / WG boundaries that have more than one stem and which are sub-dominant within the TG / WG (i.e. <80 percentile) are subsumed within the TG / WG data; dominant multi-stemmed trees (i.e. >80 percentile) within TG / WG boundaries are listed as individual trees

TG / WG outlines follow the mapping base (typically either topographical survey or geo-rectified aerial imagery)

Hedges (domestic) are recorded prefixed H and are always excluded from the provisions of the Hedgerows Regulations 1997

Hedgerows (rural) are recorded prefixed HR and possibly fall within the provisions of the Hedgerows Regulations 1997

All numbering starts from x001 **for each type of vegetation**, where x identifies the surveyor (3000 series = AJC). Thus:

3000	Individual tree
TG3000	Tree group
WG3000	Woodland group
H3000	Domestic hedge
HR3000	Rural hedgerow

The addition of the FLAC instruction ref. ahead of the tree number provides a unique, non-repeated reference number for the particular tree in question

Any trees omitted from the topo survey are listed on the referenced plan, though their positions are only shown indicatively. Off-site trees are included where deemed relevant, though their positions are also shown indicatively if omitted from the topo base

TPO Ref.

Statutory protection listing for individual trees, TG and WG

ATTENTION: SEE NOTE IMMEDIATELY BELOW

Note

This column is only completed in cases where FLAC has been instructed to undertake a TPO search and correlation to FLAC reference numbers. The absence of data in this column **must not** be taken to indicate that the trees concerned are not under TPO protection. Statutory protection may also arise from the trees' location within a Conservation Area. Further statutory control over tree removal may be conferred by the Forestry Act 1967

Species

Tree species as listed in the schedule by common name. Species present are:

<i>Common name</i>	<i>Botanical name</i>	<i>Provenance</i>	<i>Notes</i>
Ash	Fraxinus excelsior	Native	
Cockspur thorn	Crataegus crus-galli	Exotic	
Common lime	Tilia x europaea	Native	
Elder	Sambucus nigra	Native	
Field maple	Acer campestre	Native	
Gean	Prunus avium	Native	
Holly	Ilex aquifolium	Native	
Hornbeam	Carpinus betulus	Native	
Lawson cypress	Chamaecyparis lawsoniana	Exotic	
Leyland cypress	x Cupressocyparis leylandii	Exotic	
Lilac	Syringa vulgaris	Exotic	
Lombardy poplar	Populus nigra 'Italica'	Exotic	
Pear	Pyrus communis	Native	
Pedunculate oak	Quercus robur	Native	
Plum	Prunus domestica	Native	
Privet	Ligustrum vulgare	Native	
Scots pine	Pinus sylvestris	Native	
Silver birch	Betula pendula	Native	
Sycamore	Acer pseudoplatanus	Naturalised	
Yew	Taxus baccata	Native	Present as 'Fastigiata'

Tree Count

For trees assessed as groups (ident. prefix TG), number of trees present, according to:

2-10 trees	Accurate count
11-50 trees	Close estimate
51-100 trees	Estimate

Area m²

For trees assessed as woodland (ident. prefix WG), existing area in square metres within survey envelope, derived from CAD interrogation of the completed tree survey plan

Ht. (m)

Tree height in metres

Either:

Crown Spread

For individual trees, measured radial crown spread in metres, listed for each of the four cardinal points

Or:

MRCS

For trees assessed as groups or woodland, an estimated mean radial crown spread in metres for trees at the 80 percentile size

Note

For trees assessed as woodland, sample measurements for canopy overhang beyond woodland boundary (i.e. hedgerow, fence, ditch etc.) are given on the tree survey plan

Or:

Mean Width

Mean width in metres of hedge or hedgerow

Length

Approximate length in metres of hedge or hedgerow

Ht. 1st Br.

For individual trees and trees assessed as groups or woodland, height in metres above ground of attachment point of first significant branch (cardinal point may be given indicating growing direction)

Ht. Can.

For individual trees and trees assessed as groups or woodland, mean height in metres of lower extent of tree canopy above ground

Stem Count

For individual trees, number of stems present below 1.5m AGL. Stem count affects diameter entry as follows:

Where the stem count is 1 the diameter should be entered into the 1 column under Stem Dia.

Where the stem count is up to 5 each stem dia. should be listed

Where the stem count exceeds 5, the mean stem diameter should be entered in the 1 column

Either:

Stem Dia. (mm)

Stem diameter(s) at 1.5m above ground level (see measurement system in BS5837:2012 Annex C), given in millimetres

Where entered 1:

Single measured stem diameter

Where entered 2-5:

Multiple measured stem diameters, listed per stem

Where entered >5:

For trees with more than five stems, diameter is listed as an estimated mean

Where the diameter entry for trees with 1 or 2-5 stems appears in italics, this indicates that it was estimated by the surveyor (for example, due to the presence of ivy on the stem)

It is our practice to round up when estimating stem diameters

Or:

Specimen Stem Dia.

For trees assessed as groups or woodland, stem diameter in millimetres at 1.5m above ground level for 80 percentile member of TG or WG. Trees with larger diameters are identified on the TSP

Or:

Mean Stem Dia.

Mean stem diameter in millimetres above the basal flare of hedge or hedgerow component plants

Either:

RPA Rad.

Radius in metres of the notionally circular Root Protection Area, based on 12x stem diameter (example for single stemmed trees), capped to 15m radial to stem centre

Note

Where trees are identified as being *notable* (i.e. very large trees that have yet to attain veteran status), FLAC removes the cap such that the RPA is simply 12x stem diameter

Or:

Specimen RPA Rad.

For trees assessed as groups or woodland, radius in metres of the notionally circular Root Protection Area based on specimen diameter for TG or WG 80 percentile tree

Either:

Conversion of RPA radius to an area, given in m², capped to a maximum of 707m² (in line with BS5837:2012), except for *notable* trees

Or:

Specimen RPA Area

For trees assessed as groups or woodland, conversion of specimen RPA radius to an area, given in m², capped to a maximum of 707m²

Note

RPA for hedges or hedgerows is to be taken as 3m from the centreline, half the height or 2m beyond existing width, whichever is the greater

Life Stage

Life stage assessment according into:

Y	Young
SM	Semi-mature
EM	Early mature
M	Mature
OM	Over-mature

Phys. Condition

An assessment of the **physiological** condition (i.e. health/vitality) status of the tree summarised according to:

GOOD	Generally in healthy condition
FAIR	Condition satisfactory though below mean species performance
POOR	Tree in decline/retrenching
DEAD	Self explanatory

Structural condition & Notes

Notes on the apparent structural integrity of the tree based on visual tree assessment, including notes on form, taper, forking habit, storm damage, decay fungi, pests, etc. plus other pertinent observations

Management recommendations

Preliminary recommendations for intervention (e.g. tree surgery, felling, etc) in relation to existing context

Trees assessed as being in apparently immediately hazardous condition will be notified to the client separately as soon as practical. Where the recommendation is for further investigation, including removal of ivy and reinspection, the given retention span and quality/value grade (see below) should be treated as provisional

Notes

This is **not** intended to comprise a specification for tree work: further advice should be sought prior to implementation

Change in land use (target value) requires further assessment

Ret. Span

Estimated remaining retention span based on species, condition & context divided into the following bands (relates to quality and value grade achievable as stated):

Years Best QV grade

<10	U
10+	C
20+	B
>40	A

QV Grade

Quality & Value grade classification according to BS5837:2012 (see attached extract from BS5837:2012 'Table 1 - Cascade Chart for Tree Quality Assessment') –

<i>Grade</i>	<i>Summary meaning</i>	<i>Ident. colour spot on TSP</i>
U	Trees that are unretainable in viable condition	Dark red
A	High quality & value and consequent high retention priority	Light green
B	Moderate quality and value (moderate priority for retention)	Mid-blue
C	Low quality and value (generally considered to be sacrificial)	Grey

Note

Trees present which we consider to be **exceptional** specimens are identified by the suffix * after the A grade, e.g. A1*

Proposal

This column identifies:

1. Pre-planning (Arboricultural Stages 1, Tree Survey, & 2, Design):
Our initial view of a defensible tree retention / removal balance
2. Planning submission (Arboricultural Stage 3):
The actual tree retention / removal balance as proposed

The following codes are used:

RET	1. Trees preferably retained 2. Trees that would be retained
PRET	<i>For tree groups (TG), woodlands (WG) & hedgerows (HR)</i> – signifies partial retention (see below)
REM	1. Trees defensibly removed to facilitate development 2. Trees that would be removed
U	Trees identified to be unsuitable for retention

No. of trees retained

For tree groups only

Number of trees retained out of the total recorded for the group. Outcomes are as follows:

Survey grade U	Number of trees for retention defaults to 0 (can be amended by manual override)
Proposal code RET	Number of trees for retention defaults to total from <i>Tree Count</i> data field
Proposal code PRET	No. of trees for retention requires manual input following interrogation of relevant plans
Proposal code REM	Number of trees for retention defaults to 0

Trees retained %

For tree groups only

Percentage of pre-existing TG tree count that would be retained, based on an auto-sum derived from inputs into the preceding column

Area retained m²

For woodlands only

Area, in square metres, of woodland (WG) proposed for retention. Outcomes are as follows:

Survey grade U	Area for retention defaults to 0 (can be amended by manual override)
Proposal code RET	Area for retention defaults to existing area
Proposal code PRET	Area for retention requires manual input following interrogation of relevant plans
Proposal code REM	Area for retention defaults to 0

Area retained %

For woodlands only

Percentage of pre-existing WG area that would be retained, based on an auto-sum derived from inputs into the preceding column

Length retained m

For hedgerows only

Length, in metres, of hedgerow (HR) proposed for retention. Outcomes are as follows:





Survey grade U	Length for retention defaults to 0 (can be amended by manual override)
Proposal code RET	Length for retention defaults to existing length
Proposal code PRET	Length for retention requires manual input following interrogation of relevant plans
Proposal code REM	Length for retention defaults to 0

Length retained %

For hedgerows only

Percentage of pre-existing HR length that would be retained, based on an auto-sum derived from inputs into the preceding column

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none">Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)Trees that are dead or are showing signs of significant, immediate, and irreversible overall declineTrees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</i>			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

FLAC Note

The original contents of the column *Identification on plan* have been replaced by FLAC in the version above; spot colours to RGB codes given in BS5837:2012 Table 2

ALBION ROAD : TREE SURVEY DATA TABLE

Data for individual trees

FLAC Ref. No.	TPO Ref	Species	Ht. (m)	Crown Spread (m)				Ht. 1 st Rr. (m)	Ht. Can. (m)	Stem Count	Stem Dia. (mm)					RPA Rad. (m)	RPA Area (m2)	Life Stage Y-SM-EM-M-OM	Phys. Condition G-F-P-D	Structural condition & Notes	Management recommendations	Ret. Span <10, 10+ 20+, >40	QV Grade U-A-B-C
				N	S	W	E				1 / mean	2	3	4	5								
3001		Pedunculate oak	17	8	8	8	7	4 SW	2.5	1	800					9.60	289	M	F	Third party tree, remote inspection only. Maiden tree. Principal branch structure and unions in satisfactory condition. Dead wood may affect highway. Crown raised at east above overhead cables.	Remove dead wood >20mm in diam.	40+	B1
3002		Pedunculate oak	18	8	6	10	6	4 W	3	1	800					9.60	289	M		Third party tree, remote inspection only. Maiden tree. Principal branch structure and unions in satisfactory condition. Crown raised at east above overhead cables.	No action required at time of survey	40+	B1
3003		Scots pine	16	0.5	4	2	3	8 S	8	1	500					6.00	113	M	F	Third party tree, remote inspection only. Stem incline to east. Recent fracture of upper crown leader leaves stem wound behind residual limb. Poor overall condition. Only few limbs remain. Lowest limb to south has longitudinal decay evident.	Fell (no plausible alternative).	<10	U
3004		Pedunculate oak	15	6	7	8	8	3 N	3	1	650					7.80	191	M	F	Third party tree, remote inspection only. Very dense ivy impedes assessment. Has rather splayed form due to pat companion shelter and pruning for overhead cable.	No action required at time of survey	40+	C1
3005		Sycamore	16	1	3	1	1	2.5 E	3	1	350					4.20	55	EM	P	Third party tree, remote inspection only. Slender, tree with multiple past limb removals, possibly decline related. Now with decline of principal leader. Limited potential.	Fell.	<10	U
3006		Sycamore	18	6	6	3	5	3 SW	3	1	500					6.00	113	M	P	Third party tree, remote inspection only. Maiden tree. Principal branch structure and unions in satisfactory condition. Crown raised at east above overhead cables. Distal decline developing, nearby trees have died-off, potential spreading infection by Armillaria.	No action required at time of survey	10+	C1
3007		Yew	6	3	4	4	4	1 SW	1	1	160					1.92	12	SM	F	Third party tree, remote inspection only. Small specimen, now just reaching height of overhead cables.	No action required at time of survey	40+	C1
3008		Pedunculate oak	18	7	7	8	6	5 W	4	1	900					10.80	366	M	G	Third party tree, remote inspection only. Stout lower stem. Whole crown appears to have regrown from past heavy topping to ca. 10 metres but difficult to assess condition of regrowth remotely.	No action required at time of survey	40+	B1
3009		Yew	11	4	6	5	3	1 S	1	1	650					7.80	191	M	G	Third party tree, remote inspection only. Typical form and structure. Some crown asymmetry after companion shelter. Cut back from highway at east crown.	No action required at time of survey	40+	B1
3010		Ash	20	0	10	5	4	4 W	4	1	650					7.80	191	M	F	Third party tree, remote inspection only. Ivy partially obscures lower stem. Stem kinks acutely from 3 metres towards south, then acutely towards upright, poor mechanical form. Remnant detached Inonotus hispidus fruiting body on ground outside small fence. Crown previously heavily reduced with subsequent regrowth . Wounding seen in region of co-dominant fork at 7 metres.	Detailed risk-facing assessment recommended.	10+	C1
3011		Leyland cypress	6	1	1	1	1	1.3 S	1	1	100					1.20	5	SM	F	Third party tree, remote inspection only. Slender specimen with compact crown outside picket fence.	No action required at time of survey	40+	C1
3012		Holly	7	3	3	3	3	3 E	2	1	260	220				4.09	53	EM	F	Third party tree, remote inspection only. Twin-stemmed from ground level. Compact crown form.	No action required at time of survey	40+	B1
3013		Sycamore	14	6	6	5	5	4 S	2	2	310	290				5.10	82	EM	F	Third party tree, remote inspection only. Twin-stemmed from ground level. Principal branch structure and unions in satisfactory condition. Crown raised at east above overhead cables.	No action required at time of survey	40+	B1
3014		Cockspur thorn	3	2	2	3	2	1 S	1	1	100					1.20	5	SM	G	Third party tree, remote inspection only. Small, compact specimen.	No action required at time of survey	40+	C1
3015		Lombardy poplar	17	2	2	0	2	2.5 S	2.5	1	600					7.20	163	M	G	Third party tree, remote inspection only. Upright stem. Previously topped at 6 metres. Crown asymmetry due to large companion tree to west.	No action required at time of survey	20+	B1
3016		Common lime	18	6	6	6	6	3 N	2	1	800					9.60	289	M	G	Lower stem becomes co-dominant from 4 metres. Smaller tree at north-east. Crown previously reduced.	No action required at time of survey	40+	B1
3017		Pedunculate oak	17	4	5	6	6	2 S	2	1	650					7.80	191	M	G	Assumed a highways specimen. Upright stem. Crown asymmetry after loss of former companion shelter to south. Principal limbs to east raised above overhead cable.	No action required at time of survey	40+	B1
3018		Field maple	14	7	3	7	6	4 N	3	1	520					6.24	122	M	G	Assumed a highways specimen. Slight stem incline to north. Crown asymmetry after companion shelter. Large fractured branch from upper west crown, potential for further similar failures.	Crown reduction by 2 metres.	40+	B1
3019		Ash	12	2	4	3	5	3.5 S	3.5	2	230	220				3.82	46	EM	P	Twin-stemmed from ground level. Crown asymmetry after loss of former crown asymmetry to north. Dead wood appears fragile. Crown now displays ca. 20% distal dieback attributable to Chalara infection. Realistic prospects for this tree are low, unlikely to survive greater than 10 years in safe condition.	Fell. NB Tree is under third-party ownership, not a highways tree.	<10	U
3020		Sycamore	13	4	5	5	5	2 N	2	2	400	290				5.93	110	EM	G	Dense ivy on lower stem and obscuring union at ca. 1.2 metres. Principal branch structure and unions in satisfactory condition.	No action required at time of survey	40+	B1
3021		Sycamore	13	1	4	3	4	1 SE	2	2	260	250				4.33	59	EM	F	Dense ivy on lower stem and obscuring union at ca. 1.2 metres. Principal branch structure and unions in satisfactory condition. Crown asymmetry after companion shelter.	No action required at time of survey	40+	B1
3022		Gean	11	2	5	2	5	3 E	2.5	1	280					3.36	35	EM	F	Lower vegetation impedes assessment. Stem becomes swept towards east by light competition. Tree of relatively low significance.	No action required at time of survey	40+	B1
3023		Gean	6	4	2	4	5	2.5 N	2.5	1	190					2.28	16	SM	F	Rather suppressed and asymmetrical. Low arboricultural merit.	No action required at time of survey	20+	C1
3024		Sycamore	14	4	3	3	5	0.5 S	3	2	260	240				4.25	57	EM	G	Dense ivy on lower stem and obscuring union at ca. 0.5 metres. Principal branch structure and unions in satisfactory condition. Excavations at south for new footpath.	No action required at time of survey	40+	B1
3025		Sycamore	14	5	5	5	5	3 N	3	3	300	290	280			6.03	114	M	G	Very dense ivy impedes assessment, stem measurement and crown structure appraisal.	No action required at time of survey	40+	B1
3026		Yew	3	4	3	1.5	2	0	0	1	90					1.08	4	Y	G	Compact, shrubby specimen.	No action required at time of survey	40+	C1
3027		Scots pine	9	7	0	0.5	2	4 N	5	1	330					3.96	49	EM	D	Dead. Dense ivy impedes assessment of lower stem. Stem becomes acutely swept to north. Poor form.	Fell.	<10	U
3028		Plum	6	5	5	2	2	2 N	2	2	180	150	120	90		3.34	35	M	F	Scrubby, splayed multi-stemmed specimen. Largest stem at west topped at 2.5 metres.	No action required at time of survey	10+	C1
3029		Lawson cypress	7	3	4	3	3	0	0	7	125					3.97	49	M	F	Cultivar Ellwoodii or similar. Now typically splaying as stems fall out of mean crown shape. Low arboricultural merit.	No action required at time of survey	10+	C1
3030		Silver birch	13	5	5	4	4	3 E	2	1	360					4.32	59	M	F	Ivy on stem. Some crown asymmetry after companion shelter. Satisfactory overall condition.	No action required at time of survey	20+	B1
3031		Silver birch	14	4	4	4	2	3 S	3	1	320					3.84	46	M	F	Ivy on stem. Some crown asymmetry after companion shelter. Satisfactory overall condition.	No action required at time of survey	20+	B1
3032		Sycamore	10	3	4	2	3	2 N	2	2	120	110				1.96	12	SM	F	Twin-stemmed. Squirrel damage to leaders. Low arboricultural.	No action required at time of survey	10+	C1

FLAC Ref. No.	TPO Ref	Species	Ht. (m)	Crown Spread (m)				Ht. 1 st Rr. (m)	Ht. Can. (m)	Stem Count	Stem Dia. (mm)					RPA Rad. (m)	RPA Area (m2)	Life Stage Y-SM-EM-M-OM	Phys. Condition G-F-P-D	Structural condition & Notes	Management recommendations	Ret. Span <10, 10+ 20+, >40	QV Grade U-A-B-C
				N	S	W	E				1 / mean	2	3	4	5								
3033		Silver birch	12	5	6	4	4	2.5 E	2.5	1	410					4.92	76	M	F	Ivy on stem. Some crown asymmetry after companion shelter. Satisfactory overall condition.	No action required at time of survey	20+	B1
3034		Lilac	4	2	3	1.5	3	1.5 N	2	2	140	130				2.30	17	EM	F	Scrubby multi-stemmed specimen.	No action required at time of survey	10+	C1
3035		Ash	7	1	3	3	3	3 S	2	1	135					1.62	8	SM	F	Slender scrubby specimen. Low arboricultural merit.	No action required at time of survey	20+	C1
3036		Pear	7	2	3	2	2	1 S	1	3	360	120	100			4.71	70	M	F	Scrubby former orchard tree. Densely ivy clad. Relatively low arboricultural merit.	No action required at time of survey	10+	C1
3037		Ash	7	5	1	3	3	2 S	2	1	160					1.92	12	SM	F	Scrubby specimen. Stem incline to north. Low arboricultural merit.	No action required at time of survey	20+	C1
3038		Ash	7	1	1	0	3	1 E	1	3	75	65	60			1.40	6	SM	P	Regrown from cutting to 1 metre stump. Leaders dying back from Chalara infection.	No action required at time of survey	<10	U
3039		Pear	8	4	2	1	4	2 N	1	3	400	140	100			5.23	86	M	F	Scrubby former orchard tree. Some distal decline at upper crown. Densely ivy clad. Relatively low arboricultural merit.	No action required at time of survey	10+	C1
3040		Pear	5	2	3	1	2	2 E	2	1	420					5.04	80	M	P	Scrubby former orchard tree. Densely ivy clad to detriment of live crown ratio. Relatively low arboricultural merit.	No action required at time of survey	10+	C1
3041		Pear	6	2	2	0	2	2 E	2	1	410					4.92	76	M	F	Scrubby former orchard tree. Densely ivy clad to detriment of live crown ratio. Relatively low arboricultural merit.	No action required at time of survey	10+	C1

Data for trees assessed as groups (TG)


FLAC Ref. No.	TPO Ref	Species	Tree Count	Ht. (m)	M RCS (m)	Ht. 1 st Br. (m)	Ht. Can. (m)	Specimen Stem Dia. (mm)	Specimen RPA Rad. (m)	Specimen RPA Area (m2)	Life Stage Y-SM-EM-M-OM	Phys. Condition G-F-P-D	Structural condition & Notes	Management recommendations	Ret. Span <10, 10+ 20+, >40	QV Grade U-A-B-C
TG3001		Leyland cypress x4, Lawson cypress x1, yew x1,	6	8	4	0.5 W	0.5	230	2.76	24	EM	F	Linear tree group. Small holly to north. Small broken branch in Leyland cypress at south hitting traffic. Unremarkable trees, some screening function.	No action required at time of survey	40+	C2
TG3002		Leyland cypress	5	18	4	1 S	2	350	4.20	55	EM	F	Formerly topped below overhead cables but regrowth west of cables allowed to grow up, periodic pruning east of cables. Tall growth to west appears vulnerable to typical fractures, also unsightly due to asymmetrical pruning.	Reduce and manage below cables.	10+	C2
TG3003		Yew	2	11	5	1 S	1	500	6.00	113	M	G	Close-set pair share companion shelter and common crown profile. East crowns pruned back from highway and lifted above overhead cables.	No action required at time of survey	40+	B2
TG3004		Sycamore x6, Lawson cypress x1	6	4	1	0	0	200	2.40	18	EM	F	Close-set cluster with dense ivy. Topped.	No action required at time of survey	20+	C2
TG3005		Hornbeam	3	4.5	1.5	2 S	2	120	1.44	7	Y	F	Dispersed tree group. Relatively recent plantings.	No action required at time of survey	40+	C2
TG3006		Plum	2	7	3	1 S	2	230	2.76	24	EM	F	Scrubby pair with dense ivy on stems. Saplings to north and south.	No action required at time of survey	20+	C2
TG3007		Sycamore	2	20	8	4 E	2	700	8.40	222	M	G	Close-set pair share companion shelter and common crown profile. Larger tree at east, has had secondary stem removed at 1.8 metres north-west, decayed stump present. Both stems bear a degree of ivy into crowns. Principal branch structure and unions in satisfactory condition. Both individuals are heavily asymmetrical and each reliant upon the other.	No action required at time of survey	40+	B2
TG3008		Hawthorn x2, plum x2	4	5	3	1 S	1	130	1.56	8	SM	F	Scrubby cluster of unremarkable, asymmetrical specimens.	No action required at time of survey	20+	C2
TG3009		Sycamore x1, ash x4, pedunculate oak x2	7	8	3	1 N	1	200	2.40	18	SM	P	Dense brambles impede assessment. Viewed remotely. Includes dead and dying oak and ash. Low arboricultural merit.	No action required at time of survey	10+	C2
TG3010		Ash x2, sycamore x1	3	8	5	2 W	2	250	3.00	28	EM	F	Former hedgerow plants that have fallen out of management, presumably hedgerow is flailed from south, now growing above hedgerow. Sycamore at east has squirrel damage of upper leader. Tree group of relatively low significance.	No action required at time of survey	20+	C2

Data for hedges (H)

FLAC Ref. No.	Species	Ht. (m)	Mean Width (m)	Length (m)	Mean Stem Dia. (mm)	Life Stage Y-SM-EM-M- OM	Phys. Condition G-F-P-D	Structural condition & Notes	Management recommendations	Ret. Span <10, 10+ 20+, >40	QV Grade U-A-B-C
H3001	Hornbeam	1.2	0.6	42	50	Y	F	Relatively recently planted boundary hedge. Two separate sections.	No action required at time of survey	10+	C2
H3002	Privet, hawthorn	3	1.5	17	100	EM	F	Very scrubby boundary hedge now choked by ivy and bramble.	No action required at time of survey	10+	C2

Data for hedgerows (HR)

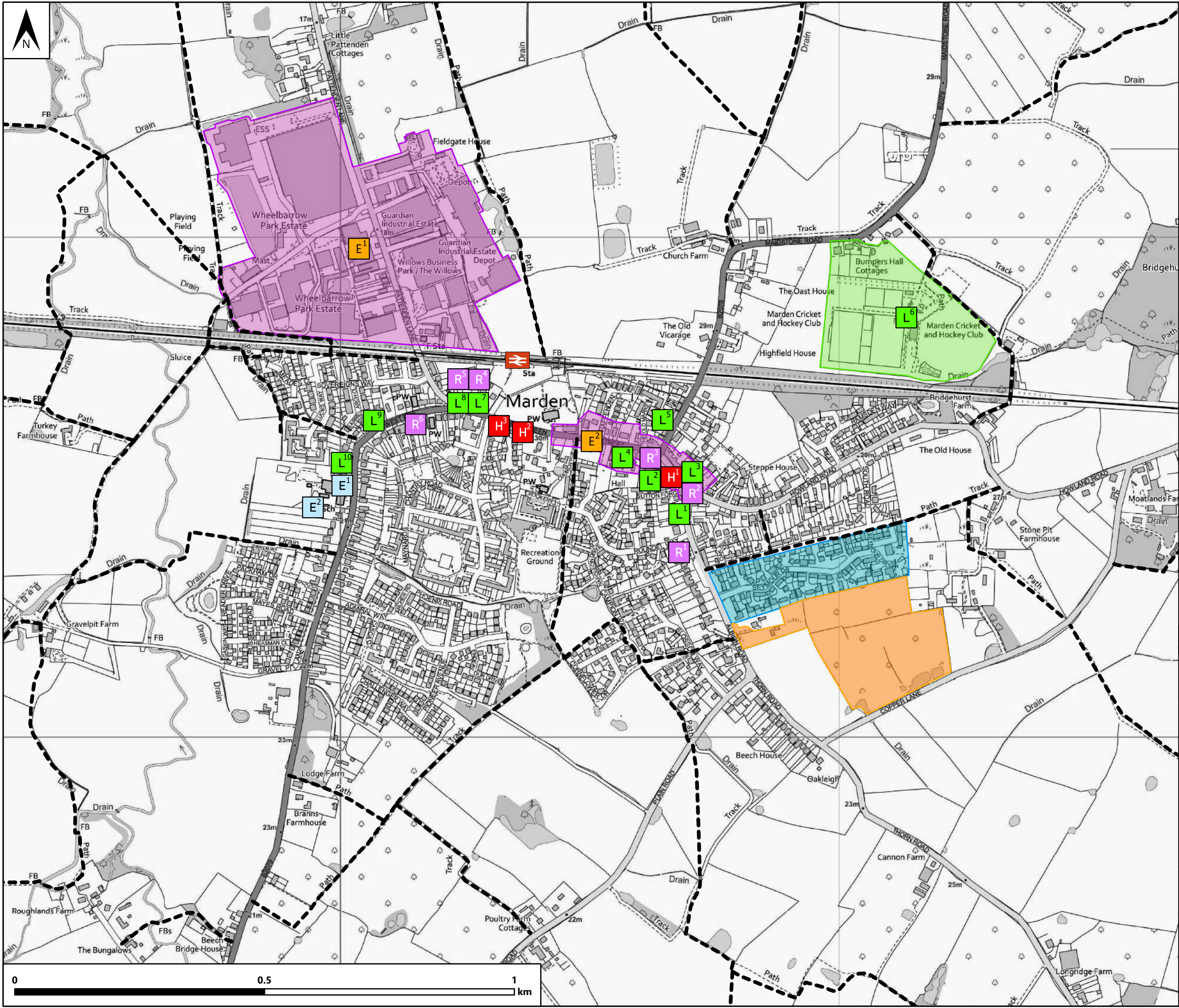
FLAC Ref. No.	Species	Ht. (m)	Mean Width (m)	Length (m)	Mean Stem Dia. (mm)	Life Stage Y-SM-EM-M- OM	Phys. Condition G-F-P-D	Structural condition & Notes	Management recommendations	Ret. Span <10, 10+ 20+, >40	QV Grade U-A-B-C
HR3001	Ash, field maple, hawthorn	2	1.5	26	150	EM	F	Periodic management. Satisfactory overall condition. Some ivy and bramble.	No action required at time of survey	40+	B2
HR3002	Hawthorn, ash, field maple, elder, sycamore	2	2	20	200	M	F	Fairly dense. Flailed. Some saplings and stems biased to north getting away. Hedgerow continues to east beyond the scope of FLAC's survey.	No action required at time of survey	40+	B2



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APPENDIX MCG3. Local Amenities Plan



Key

Land East of Albion Road and North of Copper Lane: Indicative Site Boundary	L ⁷ Taj of Kent
Seymour Drive Residential Development	L ⁸ Kebab Fish Knight
Employment Area	L ⁹ West End Tavern
Leisure Area	L ¹⁰ Marden Memorial Hall
Marden Railway Station	E ¹ Pattenden Lane Industrial Area
Public Footpath	E ² Marden High Street
E ¹ Marden Pre-School	R ¹ Stanley's Petrol Station
E ² Marden Primary School	R ² Marden Farm Shop
L ¹ Marden Tandoori	R ³ Crowhurst and Tompsett
L ² The Old Post Office Coffee House	R ⁴ Ken Ballard Butchers
L ³ Unicorn Pub and Restaurant	R ⁵ Nisa Local Marden Stores
L ⁴ Marden Library	R ⁶ West End Stores
L ⁵ The Cherry Tree Chinese Takeaway	H ¹ Marden Pharmacy
L ⁶ Marden Sports Club	H ² Marden Dentist
	H ³ Marden Medical Centre (GP)

Additional Sources: KCC Open Data

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Title:

Local Amenities - Marden

Project:

Land East of Albion Road and North of Copper Lane, Marden

Project Number:	Figure Number:	Revision:
ITB15098	Figure 4.1	-

APPENDIX MCG4. Public Right of Way Network

The map shows Marden situated between Maidstone to the north and Ashford to the south. Key features include:

- Road Network:** Major roads are shown in red/brown, including the A20 (Maidstone Road), A26 (Ashford Road), and A249 (Marden Road). Local streets are shown in yellow.
- Landmarks:** Marden Station, Marden Beech, Marden Thorne, and several large farms like Chequer Tree Farm and Longend Farm are labeled.
- Geography:** The River Stour flows through the area, with several bridges crossing it.
- Boundaries:** The map includes parish boundaries and district divisions.

APPENDIX MCG5. Bus Timetables

from Maidstone

Mondays to Fridays

A Saturdays service operates on work-days between Christmas and New Year., No Service on Bank and Public Holidays



Codes																	SDO	SDO	NSD	SDO	NSD	SDO				
Nu-Venture bus service number	27	27	22	26	23	23A	23	25	23	23A	23	23	25	23	23	23	23A	26	25	22	23	527	23	25	23	23A
London Road Somerfield Hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1550	-	-	-	-	-	-	-	-
Tonbridge Road A26 (adj Oakwood Pk)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1550	-	-	-	-
Maidstone opp Cannon (Bus Stop T)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1555	-	-	-	-
Maidstone King St (Greggs), Bus Stop L3	0609	0848	0859	0954	1014	1040	1110	1140	1210	1240	1310	1337	1357	1432	1457	1537	1603	1604	1604	1607	1607	1608	1655	1725	1738	1820
Maidstone Chequers - Bus Stop J4	0610	0849	0900	0955	1015	1041	1111	1141	1211	1241	1311	1338	1358	1433	1458	1538	1605	1606	1606	1609	1609	1610	1656	1726	1739	1821
Old Tovil Rd Brenchley Road	-	-	0904	0959	1019	1045	1115	1145	1215	1245	1315	1342	1402	1437	1502	1542	1610	1611	1611	1613	1613	-	1700	1730	1744	1825
Tovil Hill opp Albert Reed Gardens	-	-	-	-	-	-	1117	-	-	-	1317	-	-	1440	1505	1545	-	-	-	-	-	-	1703	-	-	-
Tovil Green opp Launder Way	-	-	0907	1002	1022	1048	1120	1148	1218	1248	1320	1345	1405	1442	1507	1547	1613	1614	1614	1616	1616	-	1705	1733	1747	1828
East Farleigh opp The Bull Inn	-	-	0911	-	1026	1052	-	1152	1222	1252	-	1349	1409	-	-	-	1617	-	-	1620	1620	-	-	-	R	R
West Farleigh opp Good Intent	-	-	-	-	1033	1059	-	-	1229	1259	-	1356	-	-	-	-	1625	-	-	-	1627	-	-	-	R	R
Dean Street Forge Lane	-	-	-	1006#	-	-	-	-	-	-	-	-	-	-	-	-	-	1620#	1619#	-	-	-	-	R	-	-
Wilkins Corner	-	-	-	1009	-	-	-	-	-	-	-	-	-	-	-	-	-	1624	1622	-	-	-	-	R	-	-
Gallants Lane	-	-	0919	-	-	-	-	1157	-	-	-	-	1414	-	-	-	-	-	1624	1624	-	-	-	R	-	-
Hunton East Street/West Street	-	-	-	1013	-	-	-	1204	-	-	-	-	1420	-	-	-	-	1631	1631	1630	-	-	-	R	-	-
Chainhurst Raynham Villas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1635	-	-	-	-	-	-
Hunton opp Bensted Close	-	-	-	1015	-	-	-	1206	-	-	-	-	1423	-	-	-	-	-	-	-	-	-	-	R	-	-
Yalding War Memorial	-	-	-	1021	1043	1109	-	1212	1239	1309	-	1406	1429	-	-	-	-	1635	1635	-	1636	-	-	-	R	R
Benover Woolpack	-	-	-	1024	-	1112	-	1215	-	1312	-	-	1432	-	-	-	-	1638	1638	-	-	-	-	-	-	R
Laddingford Chequers	-	-	-	1030	1047	1118	-	1221	1243	1318	-	1410	1438	-	-	-	-	1644	1644	-	1640	-	-	-	R	R
Collier Street Church	-	-	-	-	1053	-	-	-	1249	-	-	1416	-	-	-	-	-	-	-	1646	1646	-	-	-	R	-
Claygate B2162/Sheephurst Lane	-	-	-	-	1056	-	-	-	1252	-	-	1419	-	-	-	-	-	-	-	1649	1649	-	-	-	R	-
Marden Beech	-	-	-	-	1101	-	-	-	1257	-	-	1424	-	-	-	-	-	-	-	1654	1654	-	-	-	R	-
The Wheatsheaf	0614	0854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1618	-	-	-	-
Loose opp Old Loose Hill	0616	0856	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1621	-	-	-	-
Linton Corner	0619	0900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1626	-	-	-	-
Linton opp Redwall Lane	0622	0903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1628	-	-	-	-
Underling Green	0625	0906	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1631	-	-	-	-
Marden Library	0629	0910	-	-	1104	-	-	-	1300	-	-	1427	-	-	-	-	-	-	-	1657	1657	1636	-	-	R	-
Marden opp Station	0630	0911	-	-	1105	-	-	-	1301	-	-	1428	-	-	-	-	-	-	-	1658	1658	1637	-	-	R	-
Marden Beech	0633	0914	-	-	1108	-	-	-	1304	-	-	1431	-	-	-	-	-	-	-	1701	1701	1640	-	-	R	-
MARDEN Albion Rd Roundel Way	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1644	-	-	-	-
Winchet Hill	0636	0917	-	-	1111	-	-	-	1307	-	-	1434	-	-	-	-	-	-	-	1704	1704	-	-	-	R	-
Goudhurst War Memorial	0643	0925	-	-	1119	-	-	-	1315	-	-	1442	-	-	-	-	-	-	-	1712	1712	-	-	-	R	-

This point will not be served during closures of Dean St - Journeys will instead serve East Farleigh opp The Bull Inn 4 minutes after the Launder Way Timing Point and Gallants Ln 9 minutes after the Launder Way Timing Point

CODES	M-F	=	Operates on Mondays - Fridays only Operates on Kent schooldays only Operates on non-schooldays only
	SDO	=	
	NSD	=	

from Maidstone

SATURDAYS

A Saturdays service operates on work-days between Christmas and New Year., No Service on Bank and Public Holidays



Nu-Venture bus service number	27	23	26	23	23	25	23	23	25	23	23	23	25	23	23A
Maidstone King St (Greggs), Bus Stop L3	0753	0849	0927	0950	1115	1140	1210	1310	1340	1440	1540	1607	1635	1725	1825
Maidstone Chequers - Bus Stop J4	0754	0850	0928	0951	1116	1141	1211	1311	1341	1441	1541	1608	1636	1726	1826
Old Tovil Rd Brenchley Road	-	0854	0932	0955	1120	1145	1215	1315	1345	1445	1545	1612	1641	1730	1830
Tovil Hill opp Albert Reed Gardens	-	0856	-	-	1122	-	-	1317	-	-	1548	-	-	1733	-
Tovil Green opp Launder Way	-	0859	0935	0958	1125	1148	1218	1320	1348	1448	1550	1615	1644	1735	1833
East Farleigh opp The Bull Inn	-	-	-	1002	-	1152	1222	-	1352	1452	-	1619	1648	-	R
West Farleigh opp Good Intent	-	-	-	1009	-	-	1229	-	-	1459	-	1626	-	-	R
Dean Street Forge Lane	-	-	0939#	-	-	-	-	-	-	-	-	-	-	-	-
Wilkins Corner	-	-	0942	-	-	-	-	-	-	-	-	-	-	-	-
Gallants Lane	-	-	-	-	-	1157	-	-	1357	-	-	-	1653	-	-
Hunton East Street/West Street	-	-	0949	-	-	1204	-	-	1404	-	-	-	1700	-	-
Hunton opp Bensted Close	-	-	0951	-	-	1206	-	-	1406	-	-	-	1703	-	-
Yalding War Memorial	-	-	0957	1019	-	1212	1239	-	1412	1509	-	1636	1709	-	R
Benover Woolpack	-	-	1000	-	-	1215	-	-	1415	-	-	-	1712	-	R
Laddingford Chequers	-	-	1006	1023	-	1221	1243	-	1421	1513	-	1640	1718	-	R
Collier Street Church	-	-	-	1029	-	-	1249	-	-	1519	-	1646	-	-	-
Claygate B2162/Sheephurst Lane	-	-	-	1032	-	-	1252	-	-	1522	-	1649	-	-	-
Marden Beech	-	-	-	1037	-	-	1257	-	-	1527	-	1654	-	-	-
The Wheatsheaf	0759	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Loose opp Old Loose Hill	0801	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linton Corner	0805	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Linton opp Redwall Lane	0808	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Underling Green	0811	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marden Library	0815	-	-	1040	-	-	1300	-	-	1530	-	1657	-	-	-
Marden opp Station	0816	-	-	1041	-	-	1301	-	-	1531	-	1658	-	-	-
Marden Beech	0820	-	-	1045	-	-	1305	-	-	1535	-	1702	-	-	-
Winchet Hill	0824	-	-	1049	-	-	1309	-	-	1539	-	1706	-	-	-
Goudhurst War Memorial	0830	-	-	1055	-	-	1315	-	-	1545	-	1712	-	-	-

This point will not be served during closures of Dean St - Journeys will instead serve East Farleigh opp The Bull Inn 4 minutes after the Launder Way Timing Point and Gallants Ln 9 minutes after the Launder Way Timing Point

CODES R = Operates on Request beyond this point

NO SERVICE ON SUNDAYS, BANK, NATIONAL OR PUBLIC HOLIDAYS including 1 Jan, 25/26 Dec.

to Maidstone



Mondays to Fridays

A Saturdays service operates on work-days between Christmas and New Year., No Service on Bank and Public Holidays

	Codes		SDO	SDO	NSD																		
Nu-Venture bus service number	25	23	25A	527	25	25	23A	23	25	23	23A	23	25	23	23A	23	23	26	27	23	23	23A	27
Goudhurst North Road	-	0645	-	-	-	-	-	0935	-	-	-	1126	-	-	-	1326	-	-	1444	-	-	-	1717
Winchet Hill	-	0651	-	-	-	-	-	0941	-	-	-	1132	-	-	-	1332	-	-	1450	-	-	-	1723
MARDEN Albion Rd opp Roundel Way	-	-	-	0712	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marden Beech	-	0655	-	0718	-	-	-	0945	-	-	-	1136	-	-	-	1336	-	-	1454	-	-	-	1727
Marden Station	-	0658	-	0722	-	-	-	0948	-	-	-	1139	-	-	-	1339	-	-	1457	-	-	-	1730
Marden opp Library	-	0659	-	0724	-	-	-	0949	-	-	-	1140	-	-	-	1340	-	-	1458	-	-	-	1731
Stile Bridge	-	-	-	0728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1501	-	-	-	1734
Linton Redwall Lane	-	-	-	0731	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1504	-	-	-	1737
Linton Corner	-	-	-	0735	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1507	-	-	-	1740
Loose Old Loose Hill	-	-	-	0738	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1510	-	-	-	1743
The Wheatsheaf	-	-	-	0744	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1513	-	-	-	1746
Marden Beech	-	0703	-	-	-	-	-	0953	-	-	-	1144	-	-	-	1344	-	-	-	-	-	-	-
Claygate White Hart	-	0707	-	-	-	-	-	0957	-	-	-	1148	-	-	-	1348	-	-	-	-	-	-	-
Collier Street opp Church	-	0711	-	-	-	-	-	1001	-	-	-	1152	-	-	-	1352	-	-	-	-	-	-	-
Chainhurst George St SOUTHBOUND	-	-	0706	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Yalding The George	-	-	-	-	-	-	0920	-	1021	-	1109	-	1212	-	1309	-	-	1429	-	-	-	1635	-
Benover Woolpack	-	-	-	-	-	-	0923	-	1024	-	1112	-	1215	-	1312	-	-	1432	-	-	-	1638	-
Laddingford Chequers arr	-	-	-	-	-	-	0929	-	1030	-	1118	-	1221	-	1318	-	-	1438	-	-	-	1644	-
Laddingford Chequers dep	-	0718	-	-	-	-	0930	1006	1031	-	1127	1157	1222	-	1327	1357	-	1439	-	-	-	1649	-
Benover OPP Woolpack	-	-	0716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YALDING War Memorial	-	0725	0723	-	0725	-	0934	1010	1035	-	1131	1201	1226	-	1331	1401	-	1443	-	-	-	1653	-
Hunton Bensted Close	-	-	0731	-	0733	-	-	-	1040	-	-	-	1231	-	-	-	-	1448	-	-	-	-	-
Hunton East Street/West Street	-	-	0734	-	0736	-	-	-	1043	-	-	-	1234	-	-	-	-	1451	-	-	-	-	-
Gallants Lane	0653	-	0741	-	0743	0930	-	-	1050	-	-	-	1241	-	-	-	-	-	-	-	-	-	-
Wilkins Corner	0655x	-	0743x	-	0745x	-	-	-	-	-	-	-	-	-	-	-	-	1454	-	-	-	-	-
Dean Street Forge Lane	0658x	-	0746x	-	0748x	-	-	-	-	-	-	-	-	-	-	-	-	1457\$	-	-	-	-	-
Ewell Lane	-	0730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Farleigh Good Intent	-	0735	-	-	-	-	0942	1018	-	-	1139	1209	-	-	1339	1409	-	-	-	-	-	1701	-
East Farleigh The Bull Inn	-	0740	-	-	-	0935	0946	1022	1055	-	1143	1213	1246	-	1343	1413	-	-	-	-	-	1705	-
Tovil Hill opp Albert Reed Gardens	-	-	-	-	-	-	-	-	-	1117	-	-	-	1317	-	-	1440	-	-	1545	1703	-	-
Tovil Green Launder Way	0702	0747	0751	-	0752	0939	0953	1029	1059	1120	1150	1220	1250	1320	1350	1420	1442	1501	-	1547	1705	1711	-
Old Tovil Road Brenchley Road	0705	0751	0754	-	0755	0942	0956	1032	1102	1123	1153	1223	1253	1323	1353	1423	1445	1504	-	1550	1708	1714	-
Maidstone Chequers - Bus Stop H1	-	0758	0803	0803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maidstone King Street	0711	-	-	-	0801	0950	1004	1040	1110	1131	1201	1231	1301	1331	1401	1431	1453	1512	1525	1558	1716	1722	1759
Maidstone Town Hall	-	-	0805	0805	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tonbridge Road A26 (adj Clare Park)	-	-	-	0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
London Road Somerfield Hospital	-	-	0815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

x This point will not be served during closures of Dean St - Journeys will instead serve East Farleigh adj The Bull 5 minutes after the Gallants Ln Timing Point
\$ This point will not be served during closures of Dean St - Journeys will instead serve Gallants Ln 2 minutes after the Wilkins Corner Timing Point and East Farleigh adj The Bull 7 minutes after Wilkins Corner

CODES	M-F	=	Operates on Mondays - Fridays only
	SDO	=	
	NSD	=	

to Maidstone

SATURDAYS

A Saturdays service operates on work-days between Christmas and New Year., No Service on Bank and Public Holidays

23

23A

25

26

27

Nu-Venture bus service number	23A	25	23	23	25	23	23	25	23	23	26	23	27	23A	27
Goudhurst North Road	-	-	-	0835	-	-	1100	-	-	1326	-	-	1547	-	1717
Winchet Hill	-	-	-	0841	-	-	1106	-	-	1332	-	-	1553	-	1723
Marden Beech	-	-	-	0845	-	-	1110	-	-	1336	-	-	1557	-	1727
Marden Station	-	-	-	0848	-	-	1113	-	-	1339	-	-	1600	-	1730
Marden opp Library	-	-	-	0849	-	-	1114	-	-	1340	-	-	1601	-	1731
Stile Bridge	-	-	-	-	-	-	-	-	-	-	-	-	1604	-	1734
Linton Redwall Lane	-	-	-	-	-	-	-	-	-	-	-	-	1607	-	1737
Linton Corner	-	-	-	-	-	-	-	-	-	-	-	-	1610	-	1740
Loose Old Loose Hill	-	-	-	-	-	-	-	-	-	-	-	-	1613	-	1743
The Wheatsheaf	-	-	-	-	-	-	-	-	-	-	-	-	1616	-	1746
Marden Beech	-	-	-	0853	-	-	1118	-	-	1344	-	-	-	-	-
Claygate White Hart	-	-	-	0857	-	-	1122	-	-	1348	-	-	-	-	-
Collier Street opp Church	-	-	-	0901	-	-	1126	-	-	1352	-	-	-	-	-
Yalding The George	-	-	-		0957	-	-	1212	-	-	1412	-	-	1709	-
Benover Woolpack	-	-	-		1000	-	-	1215	-	-	1415	-	-	1712	-
Laddingford Chequers arr	-	-	-		1006	-	-	1221	-	-	1421	-	-	1718	-
Laddingford Chequers dep	-	-	-	0906	1011	-	1131	1226	-	1357	1429	-	-	1719	-
YALDING War Memorial	0719	-	-	0910	1015	-	1135	1230	-	1401	1433	-	-	1723	-
Hunton Bensted Close	-	-	-	-	1020	-	-	1235	-	-	1438	-	-	-	-
Hunton East Street/West Street	-	-	-	-	1023	-	-	1238	-	-	1441	-	-	-	-
Gallants Lane	-	0825	-	-	1030	-	-	1245	-	-	-	-	-	-	-
Wilkins Corner	-	-	-	-	-	-	-	-	-	-	1444	-	-	-	-
Dean Street Forge Lane	-	-	-	-	-	-	-	-	-	-	1447\$	-	-	-	-
West Farleigh Good Intent	0728	-	-	0918	-	-	1143	-	-	1409	-	-	-	1731	-
East Farleigh The Bull Inn	0732	0830	-	0922	1035	-	1147	1250	-	1413	-	-	-	1735	-
Tovil Hill opp Albert Reed Gardens	-	-	0856	-	-	1122	-	-	1320	-	-	1548	-	-	-
Tovil Green Launder Way	0739	0834	0859	0929	1039	1125	1154	1254	1322	1420	1451	1550	-	1741	-
Old Tovil Road Brenchley Road	0742	0837	0902	0932	1042	1128	1157	1257	1325	1423	1454	1553	-	1744	-
Maidstone King Street	0748	0845	0910	0940	1050	1136	1205	1305	1333	1431	1502	1601	1629	1752	1759

\$ This point will not be served during closures of Dean St - Journeys will instead serve Gallants Ln 2 minutes after the Wilkins Corner Timing Point and East Farleigh adj The Bull 7 minutes after the Wilkins Corner Timing Point

CODES

R

=

Operates on Request beyond this point

NO SERVICE ON SUNDAYS, BANK, NATIONAL OR PUBLIC HOLIDAYS including 1 Jan, 25/26 Dec.

Marden - Stile Bridge - Linton - Linton Corner - Loose - The Wheatsheaf - Maidstone - Oakwood Park

527

Kent Schooldays Only from September 2024

	527	130	88
Marden Albion Road opp Roundel Way	0712	-	-
Marden Beech	0718	-	-
Marden Station	0722	-	-
Marden opp Library	0724	-	-
Stile Bridge	0728	-	-
Linton Redwall Lane	0731	-	-
Linton Corner	0735	-	-
Loose Old Loose Hill	0738	-	-
The Wheatsheaf	0744	-	-
Maidstone Chequers Bus Station Stop H1	0803	-	-
Maidstone King Street Boots		0806	0813
Maidstone Town Hall	0805	0807	0814
Maidstone West Rail Station	0809	0813	0818
Tonbridge Road Clare Park	0815	0819	0825

	Mondays	All Days	All Days
	6	6	527
Tonbridge Road Oakwood Park	1451	1531	1550
Maidstone Cannon	1459	1542	1555
Maidstone King Street Greggs	1500	1543	1608
Maidstone Chequers Bus Station Stop J4	-	-	1610
The Wheatsheaf	-	-	1618
Loose opp Old Loose Hill	-	-	1621
Linton Corner	-	-	1626
Linton opp Redwall Lane	-	-	1628
Underling Green	-	-	1631
Marden Library	-	-	1636
Marden opp Station	-	-	1637
Marden Beech	-	-	1640
Marden Albion Road Roundel Way	-	-	1644

Bus Fares and information

We welcome card or cash. Pay the driver for; Day Singles, Returns, Weekly and Discovery Tickets. (Reduced fares on the afternoon journey for those aged 5th to 16th birthday) - Sorry tickets issued by Arriva are not valid on this service.

We welcome KENT COUNTY COUNCIL TRAVEL SAVER/16+ TRAVEL SAVER for travel on this service and other Nu-Venture buses within the permitted hours. Details from kent.gov.uk/publictransport. Passes must be scanned on every trip otherwise the applicable fare must be paid at the time of travel. Call 03000 418484 for lost or damaged KTS passes.

When boarding the bus please always give a clear hand signal to the driver of the approaching bus, and be ready to pay your fare or scan your bus pass. When leaving the bus please ring the bell only once to alert the driver that you wish to alight.

This service is open to the general public

Onboard Emergencies whilst travelling (eg illness); Please tell the driver at once.

www.nu-venture.co.uk

APPENDIX MCG6. Extracts from Relevant Documents

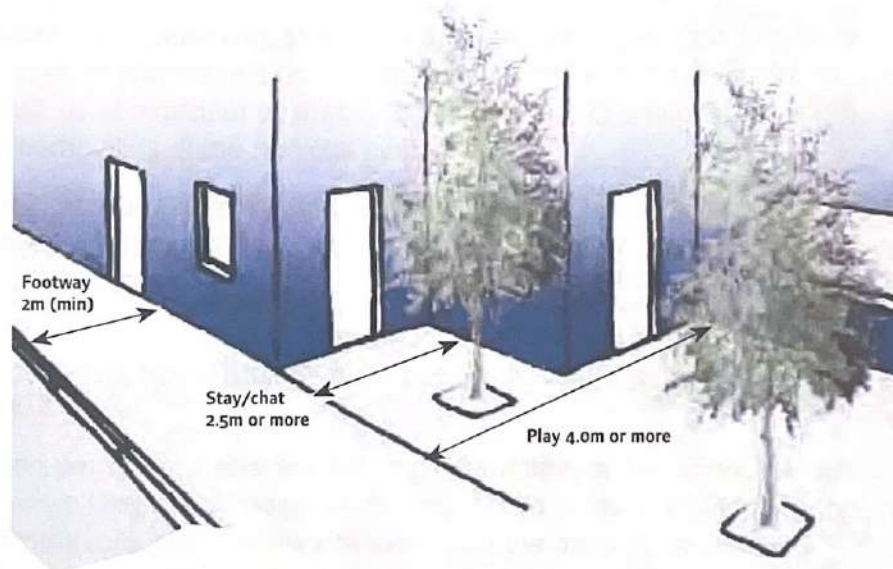
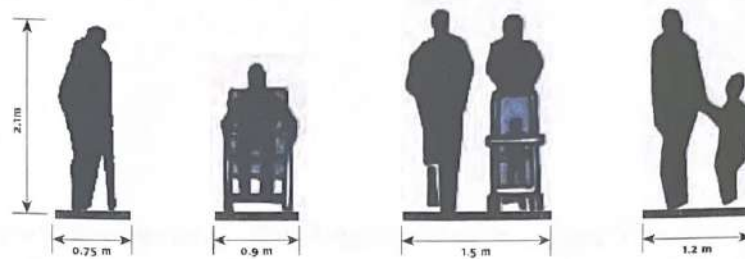


Figure 6.8 The footway and pedestrian areas provide for a range of functions which can include browsing, pausing, socialising and play.

6.3.20 *Inclusive Mobility* gives guidance on design measures for use where there are steep slopes or drops at the rear of footways.

6.3.21 Places for pedestrians may need to serve a variety of purposes, including movement in groups, children's play and other activities (Fig. 6.8).

6.3.22 There is no maximum width for footways. In lightly used streets (such as those with a purely residential function), the minimum unobstructed width for pedestrians should generally be 2 m. Additional width should be considered between the footway and a heavily used carriageway, or adjacent to gathering places, such as schools and shops. Further guidance on minimum footway widths is given in *Inclusive Mobility*.

6.3.23 Footway widths can be varied between different streets to take account of pedestrian volumes and composition. Streets where people walk in groups or near schools or shops, for example, need wider footways. In areas of high pedestrian flow, the quality of the walking experience can deteriorate unless sufficient width is provided. The quality of service goes down as pedestrian flow density increases. Pedestrian congestion through insufficient capacity should be avoided. It is inconvenient and may encourage people to step into the carriageway (Fig. 6.9).

6.3.24 Porch roofs, awnings, garage doors, bay windows, balconies or other building elements should not oversail footways at a height of less than 2.6 m.

- hearing impairments: RNID reports that there are 12 million people in the UK with hearing loss greater than 25dB, of whom 151,000 are British Sign Language (BSL) users (www.rnid.org.uk)
- limitations with reaching, stretching and dexterity: these are frequently the result of arthritis, which can make these movements painful and difficult, or of muscular dystrophy causing a loss of muscular strength, or of complaints of the nervous system
- neurological and learning differences: including those making it hard to understand complicated information or use complex machines (like some ticket machines)

It should be remembered that these categories are not mutually exclusive. Many disabled people, particularly older people, have more than one impairment.

The following paragraphs give some basic information on the space needed by people when they are standing or moving. There is much variation in this, but if the dimensions given below are used then the majority of disabled people will be able to move around buildings and the environment more easily.

3.2 People with a mobility impairment and vision impaired people

Someone who does not use a walking aid can walk along a passageway less than 700mm wide, but just using a stick requires greater width than this: a minimum of **750mm**. A person who uses two sticks or crutches, or a walking frame, needs a minimum of **900mm**, while a vision impaired person using a long cane, or with an assistance dog, needs **1100mm**. A vision impaired person being guided needs a width of **1200mm**. A wheelchair user and a non-wheelchair using person side-by-side need **1500mm** width. Paragraph 4.2 provides guidance on footways and footpaths as wide as practicable and a minimum width of **2000mm** under normal circumstances.

Unobstructed height above a pedestrian way is also important, especially for vision impaired people. Generally, this should be a minimum of **2300mm**, except on sub-surface station platforms, where it should be **3000mm**. Where a sign is suspended over a **footway** or pedestrian area, for example in a

railway station, a minimum clearance of **2100mm** is acceptable (**2300mm** on cycle routes). Where trees and similar overhang a footway, they should be managed, as described in Section 4.2, to maintain a minimum of 2300mm unobstructed height above the pedestrian way.

3.3 Wheelchair users

Although a minority among disabled people, wheelchair users need quite a lot of space to move around comfortably and safely, while those who walk with two sticks can occupy a greater width than someone using a wheelchair.

A comprehensive set of measurements of wheelchair users visiting the Mobility Roadshow (1999) provides figures for length and width summarised here. The range of dimensions is considerable, particularly that for overall length. The greatest lengths are those for conventional wheelchair users with a leg support (maximum **1545mm**, though this was the only measurement of 745 that exceeded 1500mm) and electric mobility scooters (with a maximum of **1500mm**). Conventionally, seated wheelchair users do not occupy more than approximately **1250mm**. However, if a wheelchair user has a personal assistant their combined length will typically be **1750mm**. The figures given for width, with a 95th percentile of slightly over **700mm** at maximum (for powered chairs), do not make allowance for the wheelchair user's elbows and hands. The ISO standard for wheelchairs (ISO 7193) notes that propelling a wheelchair manually needs a minimum clearance of **50mm**, and preferably **100mm**, on both sides.

The Mobility Roadshow survey also measured the height of wheelchair users. The overall mean height for all types of wheelchair users was **1243mm**, with a 5th percentile of **1076mm**, 95th percentile of **1374mm** and a maximum of just over **1450mm**. As with overall length, mobility scooter users gave slightly greater height figures, with a mean height of **1340mm**, 5th and 95th percentiles of **1202mm** and **1438mm**, respectively, and a maximum of **1502mm**.

Other basic measurements that are of importance when considering design standards for wheelchair users are:

Wheelchair type	Mean (mm)	Min (mm)	Max (mm)	5th percentile (mm)	95th percentile (mm)
Attendant propelled	596	520	674	528	658
Electric/ powered wheelchair	635	521	755	552	706
Manual wheelchair	638	511	741	579	702
Older style manual wheelchair	616	511	722	560	686
Mobility scooter	607	501	695	529	685
All wheelchairs	627	501	755	558	695

Width of wheelchair (excluding children)

(Source: A survey of occupied wheelchairs to determine their overall dimensions and weight: 1999 survey by R.E. Stait, J. Stone and T.A. Savill. (Unpublished Project Report, Transport Research Laboratory)).

An easy way of judging whether there is good contrast is to take a black and white photograph of the scene or a black and white photocopy of a colour photograph. Good contrast will show up black and white, poor contrast will show up as grey.

4.2 Width and height clearance

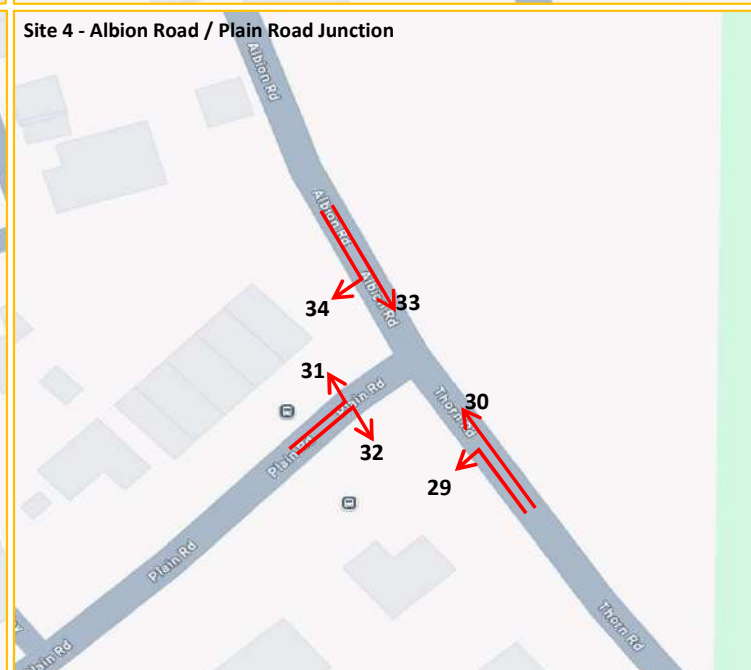
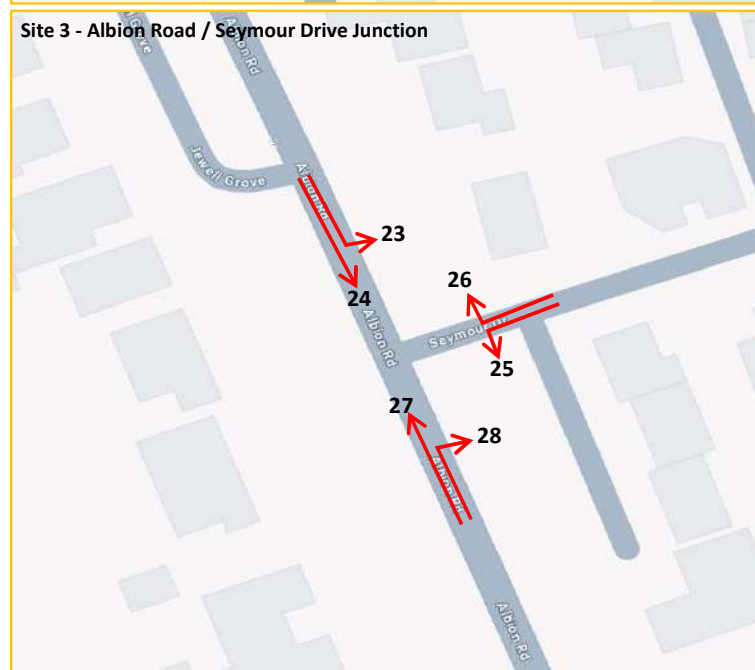
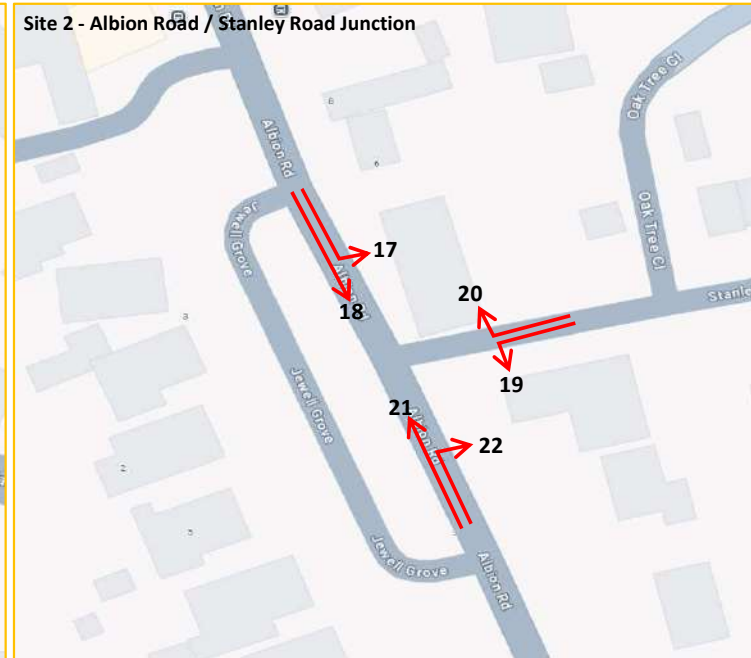
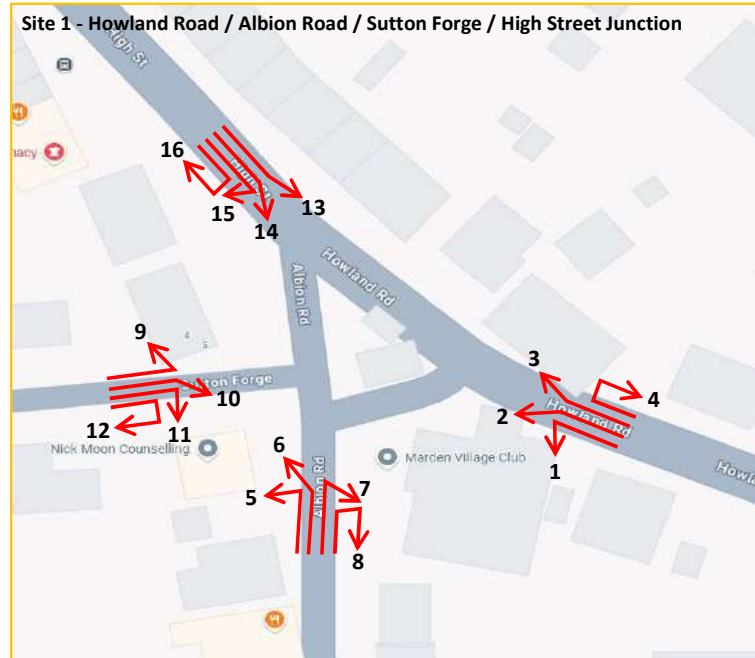
Footways and footpaths should be made as wide as is practicable, but under normal circumstances, a width of **2000mm** is the minimum that should be provided, as this allows enough space for two wheelchair users to pass, even if they are using larger electric mobility scooters. If this is not feasible due to physical constraints, then a minimum width of **1500mm** could be regarded as the minimum acceptable under most circumstances, as this should enable a wheelchair user and a walker to pass each other. Where there is an obstacle, such as lamp columns, sign posts or electric vehicle charging points, the absolute minimum width should be **1000mm**, but the maximum length of such a restricted space should be **6 metres**.

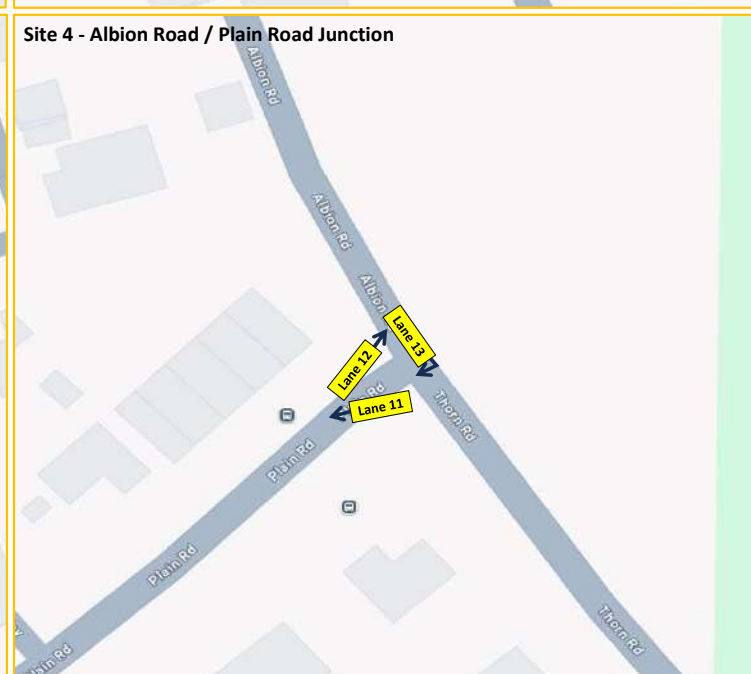
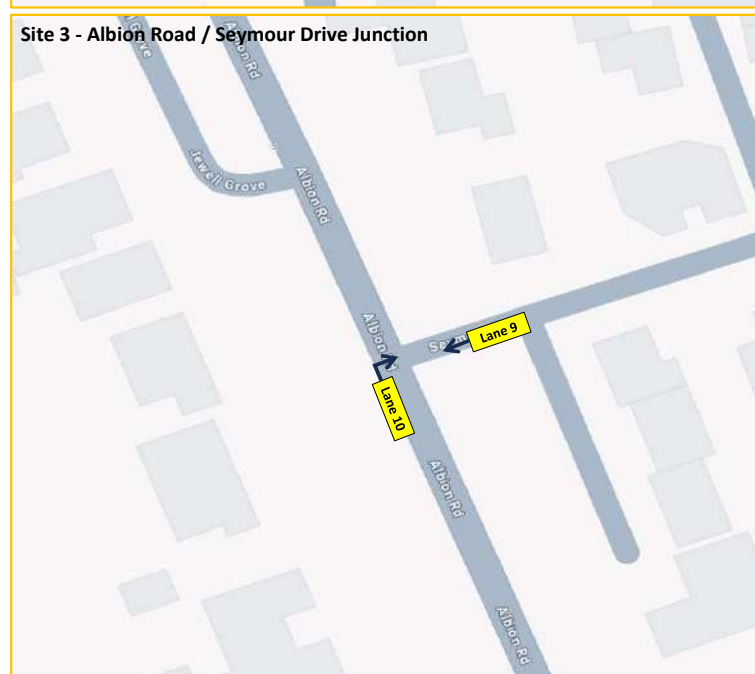
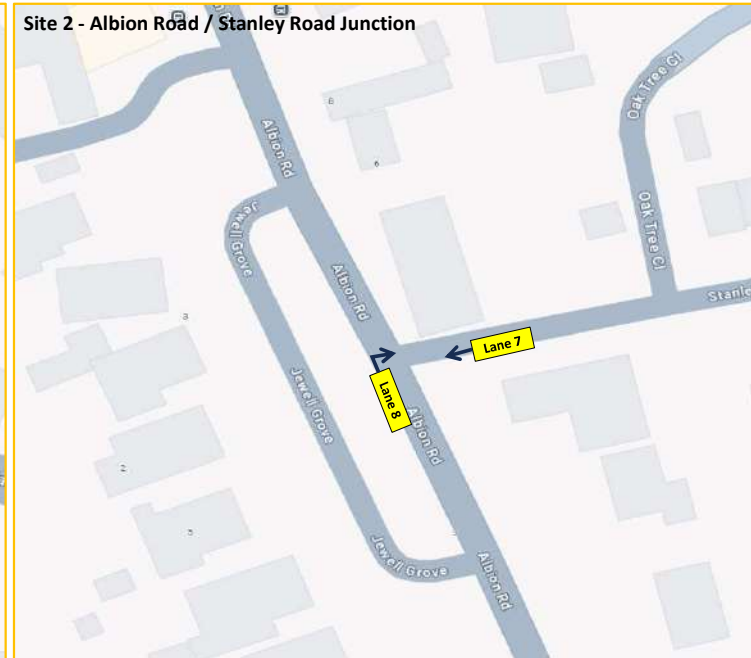
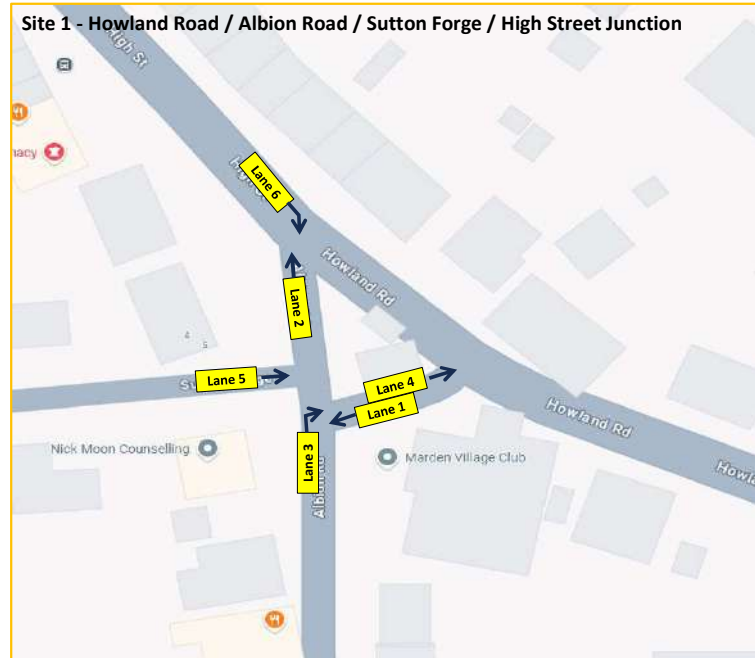
Unobstructed height above a pedestrian way is also important, especially for vision impaired people. Generally, this should be a minimum of **2300mm**, except on sub-surface station platforms, where it should be **3000mm**. Where a sign is suspended over a footway or pedestrian area, for example in a railway station, a minimum clearance of **2100mm** is acceptable (**2300mm** on cycleways). Signs should be placed at a height that is appropriate for those for whom the message is intended. For example, signs for cyclists should be placed at a height that makes them legible from a good distance, but they should also be legible for recumbent cyclists.

Where trees overhang a footway, the management of them, covered by Forestry Commission Operations Note 051 Highway Tree Management (available on GOV.UK), should ensure the maintenance of a minimum of 2300mm unobstructed height above the pedestrian way. The specific approach and height of pruning to ensure this is maintained after regrowth will need to be carried out to appropriate arboriculture standards, taking into consideration the tree species and how they respond to targeted pruning, avoiding clearance issues that can arise if branches regrow rapidly.

Tapering overhead obstructions, such as a flight of steps with an open area underneath, can constitute a particularly dangerous hazard for many,

APPENDIX MCG7. September 2024 Traffic Data





Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (07:00-10:00) AM Peak

	MOVEMENT 1										MOVEMENT 2										MOVEMENT 3										MOVEMENT 4									
	FROM HOWLAND ROAD LEFT TURN TO ALBION ROAD										FROM HOWLAND ROAD LEFT TURN TO SUTTON FORGE										FROM HOWLAND ROAD STRAIGHT AHEAD TO HIGH STREET										FROM HOWLAND ROAD U-TURN BACK TO HOWLAND ROAD									
	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL				
0700-0715	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	22	5	1	0	0	0	28	28.50	0	0	0	0	0	0	0	0	0.00			
0715-0730	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	23	3	1	0	0	1	28	29.50	0	0	0	0	0	0	0	0	0.00			
0730-0745	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	29	2	0	0	0	0	31	31.00	0	0	0	0	0	0	0	0	0.00			
0745-0800	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	24	3	0	0	0	0	27	27.00	0	0	0	0	0	0	0	0	0.00			
0800-0815	0	0	1	1	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	32	2	1	0	0	0	35	35.50	0	0	0	0	0	0	0	0	0.00			
0815-0830	0	0	5	0	0	0	0	5	5.00	0	0	1	0	0	0	0	1	1.00	0	0	35	1	0	0	0	0	36	36.00	0	0	1	0	0	0	0	1	1.00			
0830-0845	0	0	1	0	1	0	0	2	2.50	0	0	0	0	0	0	0	0	0.00	0	0	18	5	0	1	0	0	24	25.30	0	0	0	0	0	0	0	0	0.00			
0845-0900	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	20	4	0	0	0	0	24	24.00	0	0	0	0	0	0	0	0	0.00			
0900-0915	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	21	5	1	0	0	0	27	27.50	0	0	0	0	0	0	0	0	0.00			
0915-0930	0	0	1	2	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	1	0	21	2	0	0	0	0	24	23.20	0	0	0	0	0	0	0	0	0.00			
0930-0945	0	0	1	1	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	15	4	0	0	0	0	19	19.00	0	0	0	0	0	0	0	0	0.00			
0945-1000	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	14	1	1	1	0	0	17	18.80	0	0	0	0	0	0	0	0	0.00			
0700-1000	0	0	23	4	1	0	0	28	28.50	0	0	1	0	0	0	0	1	1.00	1	0	274	37	5	2	1	0	320	325.30	0	0	1	0	0	0	0	1	1.00			
HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										
0700-0800	0	0	10	0	0	0	0	10	10.00	0	0	0	0	0	0	0	0	0.00	0	0	98	13	2	0	1	0	114	116.00	0	0	0	0	0	0	0	0	0.00			
0715-0815	0	0	9	1	0	0	0	10	10.00	0	0	0	0	0	0	0	0	0.00	0	0	108	10	2	0	1	0	121	123.00	0	0	0	0	0	0	0	0	0.00			
0730-0830	0	0	11	1	0	0	0	12	12.00	0	0	1	0	0	0	0	1	1.00	0	0	120	8	1	0	0	0	129	129.50	0	0	1	0	0	0	0	1	1.00			
0745-0845	0	0	9	1	1	0	0	11	11.50	0	0	1	0	0	0	0	1	1.00	0	0	109	11	1	1	0	0	122	123.80	0	0	1	0	0	0	0	1	1.00			
0800-0900	0	0	7	1	1	0	0	9	9.50	0	0	1	0	0	0	0	1	1.00	0	0	105	12	1	1	0	0	119	120.80	0	0	1	0	0	0	0	1	1.00			
0815-0915	0	0	7	0	1	0	0	8	8.50	0	0	1	0	0	0	0	1	1.00	0	0	94	15	1	1	0	0	111	112.80	0	0	1	0	0	0	0	1	1.00			
0830-0930	0	0	3	2	1	0	0	6	6.50	0	0	0	0	0	0	0	0	0.00	1	0	80	16	1	1	0	0	99	100.00	0	0	0	0	0	0	0	0	0.00			
0845-0945	0	0	3	3	0	0	0	6	6.00	0	0	0	0	0	0	0	0	0.00	1	0	77	15	1	0	0	0	94	93.70	0	0	0	0	0	0	0	0	0.00			
0900-1000	0	0	6	3	0	0	0	9	9.00	0	0	0	0	0	0	0	0	0.00	1	0	71	12	2	1	0	0	87	88.50	0	0	0	0	0	0	0	0	0.00			

Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (16:00-19:00) PM Peak

	MOVEMENT 1										MOVEMENT 2										MOVEMENT 3										MOVEMENT 4									
	FROM HOWLAND ROAD LEFT TURN TO ALBION ROAD										FROM HOWLAND ROAD LEFT TURN TO SUTTON FORGE										FROM HOWLAND ROAD STRAIGHT AHEAD TO HIGH STREET										FROM HOWLAND ROAD U-TURN BACK TO HOWLAND ROAD									
	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL				
1600-1615	0	0	1	2	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	14	1	0	1	1	17	19.30	0	0	0	0	0	0	0	0	0.00				
1615-1630	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	19	5	0	0	0	24	24.00	0	0	0	0	0	0	0	0	0.00				
1630-1645	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	19	3	0	0	0	22	22.00	0	0	0	0	0	0	0	0	0.00				
1645-1700	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	1	0	14	2	0	0	0	17	16.20	0	0	0	0	0	0	0	0	0.00				
1700-1715	0	1	2	0	0	0	0	3	2.40	0	0	0	0	0	0	0	0	0.00	0	0	14	1	0	0	0	15	15.00	0	0	0	0	0	0	0	0	0.00				
1715-1730	0	0	2	1	0	0	0	3	3.00	0	0	1	0	0	0	0	1	1.00	0	0	13	0	0	0	0	13	13.00	0	0	0	0	0	0	0	0	0.00				
1730-1745	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	18	1	0	0	0	19	19.00	0	0	0	0	0	0	0	0	0.00				
1745-1800	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	28	1	0	0	0	29	29.00	0	0	0	0	0	0	0	0	0.00				
1800-1815	0	0	2	1	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	13	1	0	0	1	15	16.00	0	0	0	0	0	0	0	0	0.00				
1815-1830	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	13	1	0	0	0	14	14.00	0	0	0	0	0	0	0	0	0.00				
1830-1845	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0	0.00	0	0	11	2	0	0	0	13	13.00	0	0	0	0	0	0	0	0	0.00				
1845-1900	0	0	1	1	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	1	11	4	0	0	0	16	15.40	0	0	0	0	0	0	0	0	0.00				
1600-1900	0	1	18	5	0	0	0	24	23.40	0	0	1	0	0	0	0	1	1.00	1	1	187	22	0	1	2	214	215.90	0	0	0	0	0	0	0	0	0.00				
HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										
1600-1700	0	0	3	2	0	0	0	5	5.00	0	0	0	0	0	0	0	0	0.00	1	0	66	11	0	1	1	80	81.50	0	0	0	0	0	0	0	0	0.00				
1615-1715	0	1	4	0	0	0	0	5	4.40	0	0	0	0	0	0	0	0	0.00	1	0	66	11	0	0	0	78	77.20	0	0	0	0	0	0	0	0	0.00				
1630-1730	0	1	6	1	0	0	0	8	7.40	0	0	1	0	0	0	0	1	1.00	1	0	60	6	0	0	0	67	66.20	0	0	0	0	0	0	0	0	0.00				
1645-1745	0	1	8	1	0	0	0	10	9.40	0	0	1	0	0	0	0	1	1.00	1	0	59	4	0	0	0	64	63.20	0	0	0	0	0	0	0	0	0.00				
1700-1800	0	1	7	1	0	0	0	9	8.40	0	0	1	0	0	0	0	1	1.00	0	0	73	3	0	0	0	76	76.00	0	0	0	0	0	0	0	0	0.00				
1715-1815	0	0	7	2	0	0	0	9	9.00	0	0	1	0	0	0	0	1	1.00	0	0	72	3	0	0	1	76	77.00	0	0	0	0	0	0	0	0	0.00				
1730-1830	0	0	7	1	0	0	0	8	8.00	0	0	0	0	0	0	0	0	0.00	0	0	72	4	0	0	1	77	78.00	0	0	0	0	0	0	0	0	0.00				
1745-1845	0	0	8	1	0	0	0	9	9.00	0	0	0	0	0	0	0	0	0.00	0	0	65	5	0	0	1	71	72.00	0	0	0	0	0	0	0	0	0.00				
1800-1900	0	0	8	2	0	0	0	10	10.00	0	0	0	0	0	0	0	0	0.00	0	1	48	8	0	0	1	58	58.40	0	0	0	0	0	0	0	0	0.00				

[illegible][illegible]

Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (07:00-10:00) AM Peak

MOVEMENT 9										MOVEMENT 10										MOVEMENT 11										MOVEMENT 12									
FROM SUTTON FORGE LEFT TURN TO HIGH STREET										FROM SUTTON FORGE RIGHT TURN TO HOWLAND ROAD										FROM SUTTON FORGE RIGHT TURN TO ALBION ROAD										FROM SUTTON FORGE U-TURN BACK TO SUTTON FORGE									
PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL				
0700-0715	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0715-0730	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0730-0745	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0745-0800	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0800-0815	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0815-0830	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0830-0845	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0845-0900	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0900-0915	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0915-0930	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0930-0945	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0945-1000	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0700-1000	0	0	8	0	0	0	0	8	8.00	0	0	0	0	0	0	0	0.00	0	0	3	0	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0.00				
HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS									
0700-0800	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0715-0815	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0730-0830	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0745-0845	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00				
0800-0900	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0815-0915	0	0	4	0	0	0	0	4	4.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0830-0930	0	0	4	0	0	0	0	4	4.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				
0845-0945	0	0	4	0	0	0	0	4	4.00	0	0	0	0	0	0	0	0.00	0	0	2	0	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0.00				
0900-1000	0	0	3	0	0	0	0	3	3.00	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00				

Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (16:00-19:00) PM Peak

	MOVEMENT 9									MOVEMENT 10									MOVEMENT 11									MOVEMENT 12								
	FROM SUTTON FORGE LEFT TURN TO HIGH STREET									FROM SUTTON FORGE RIGHT TURN TO HOWLAND ROAD									FROM SUTTON FORGE RIGHT TURN TO ALBION ROAD									FROM SUTTON FORGE U-TURN BACK TO SUTTON FORGE								
	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL
1600-1615	0	0	2	0	0	0	0	2	2.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
1615-1630	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	
1630-1645	0	0	0	0	0	0	0	0	0.00	0	0	3	0	0	0	0	3	3.00	0	0	4	1	0	0	0	5	5.00	0	0	0	0	0	0	0	0.00	
1645-1700	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	
1700-1715	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1715-1730	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1730-1745	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1745-1800	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1800-1815	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1815-1830	0	0	0	1	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1830-1845	0	0	1	0	0	0	0	1	1.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1845-1900	0	0	1	1	0	0	0	2	2.00	0	0	1	0	0	0	0	1	1.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	
1600-1900	0	0	5	2	0	0	0	7	7.00	0	0	5	0	0	0	0	5	5.00	0	0	7	1	0	0	0	8	8.00	0	0	0	0	0	0	0	0.00	
HOURLY TOTALS									HOURLY TOTALS									HOURLY TOTALS									HOURLY TOTALS									
1600-1700	0	0	3	0	0	0	0	3	3.00	0	0	3	0	0	0	0	3	3.00	0	0	6	1	0	0	0	7	7.00	0	0	0	0	0	0	0	0.00	
1615-1715	0	0	1	0	0	0	0	1	1.00	0	0	3	0	0	0	0	3	3.00	0	0	6	1	0	0	0	7	7.00	0	0	0	0	0	0	0	0.00	
1630-1730	0	0	1	0	0	0	0	1	1.00	0	0	3	0	0	0	0	3	3.00	0	0	5	1	0	0	0	6	6.00	0	0	0	0	0	0	0	0.00	
1645-1745	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	
1700-1800	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1715-1815	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1730-1830	0	0	0	1	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1745-1845	0	0	1	1	0	0	0	2	2.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0.00	
1800-1900	0	0	2	2	0	0	0	4	4.00	0	0	2	0	0	0	0	2	2.00	0	0	1	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0.00	

Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (07:00-10:00) AM Peak

	MOVEMENT 13									MOVEMENT 14									MOVEMENT 15									MOVEMENT 16									
	FROM HIGH STREET STRAIGHT AHEAD TO HOWLAND ROAD									FROM HIGH STREET RIGHT TURN TO ALBION ROAD									FROM HIGH STREET RIGHT TURN TO SUTTON FORGE									FROM HIGH STREET U-TURN BACK TO HIGH STREET									
	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	
0700-0715	0	0	7	1	1	0	0	9	9.50	0	0	7	3	1	0	2	13	15.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0715-0730	0	0	7	2	0	0	0	9	9.00	0	0	8	0	0	0	0	8	8.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0730-0745	0	0	11	2	2	0	0	15	16.00	0	0	12	4	0	0	0	16	16.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0745-0800	0	0	9	3	0	0	0	12	12.00	0	0	19	6	2	0	1	28	30.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0800-0815	0	0	11	2	1	0	0	14	14.50	0	0	19	6	0	0	0	25	25.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0815-0830	0	0	12	2	0	0	1	15	16.00	0	0	19	6	2	0	0	27	28.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0830-0845	0	0	22	3	0	0	0	25	25.00	1	0	25	4	0	0	1	31	31.20	0	0	2	0	0	0	0	0	2	2.00	0	0	3	0	0	0	0	3	3.00
0845-0900	0	1	11	2	1	0	0	15	14.90	1	0	23	9	0	0	0	33	32.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0900-0915	0	1	8	3	0	0	0	12	11.40	0	1	30	2	0	0	0	33	32.40	0	0	2	0	0	0	0	0	2	2.00	0	0	4	0	0	0	0	4	4.00
0915-0930	0	0	12	2	0	0	0	14	14.00	0	1	18	1	1	0	0	21	20.90	0	0	1	0	0	0	0	0	1	1.00	0	0	3	0	0	0	0	3	3.00
0930-0945	0	0	19	2	0	0	0	21	21.00	0	1	0	20	5	0	0	0	26	25.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0945-1000	0	0	7	3	0	0	0	10	10.00	1	0	19	4	2	0	0	26	26.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
0700-1000	0	2	136	27	5	0	1	171	173.30	4	2	219	50	8	0	4	287	290.60	0	0	5	0	0	0	0	0	5	5.00	0	0	20	2	0	0	0	22	22.00

	HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS									
0700-0800	0	0	34	8	3	0	0	45	46.50	0	0	46	13	3	0	3	65	69.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.00				
0715-0815	0	0	38	9	3	0	0	50	51.50	0	0	58	16	2	0	1	77	79.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2.00					
0730-0830	0	0	43	9	3	0	1	56	58.50	0	0	69	22	4	0	1	96	99.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4.00					
0745-0845	0	0	54	10	1	0	1	66	67.50	1	0	82	22	4	0	2	111	114.20	0	0	2	0	0	0	0	0	2	2.00	0	0	4	0	0	0	7	7.00				
0800-0900	0	1	56	9	2	0	1	69	70.40	2	0	86	25	2	0	1	116	116.40	0	0	2	0	0	0	0	0	2	2.00	0	0	7	0	0	0	7	7.00				
0815-0915	0	2	53	10	1	0	1	67	67.30	2	1	97	21	2	0	1	124	123.80	0	0	4	0	0	0	0	0	4	4.00	0	0	10	0	0	0	10	10.00				
0830-0930	0	2	53	10	1	0	0	66	65.30	2	2	96	16	1	0	1	118	116.70	0	0	5	0	0	0	0	0	5	5.00	0	0	11	0	0	0	11	11.00				
0845-0945	0	2	50	9	1	0	0	62	61.30	2	2	91	17	1	0	0	113	110.70	0	0	3	0	0	0	0	0	3	3.00	0	0	11	1	0	0	12	12.00				
0900-1000	0	1	46	10	0	0	0	57	56.40	2	2	87	12	3	0	0	106	104.70	0	0	3	0	0	0	0	0	3	3.00	0	0	12	2	0	0	14	14.00				

Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction (16:00-19:00) PM Peak

	MOVEMENT 13									MOVEMENT 14									MOVEMENT 15									MOVEMENT 16									
	FROM HIGH STREET STRAIGHT AHEAD TO HOWLAND ROAD									FROM HIGH STREET RIGHT TURN TO ALBION ROAD									FROM HIGH STREET RIGHT TURN TO SUTTON FORGE									FROM HIGH STREET U-TURN BACK TO HIGH STREET									
	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	
1600-1615	0	0	21	5	0	0	0	26	26.00	0	0	28	3	0	0	0	31	31.00	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3.00	
1615-1630	0	0	22	2	0	0	0	24	24.00	0	0	34	5	0	0	1	40	41.00	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4.00	
1630-1645	1	0	21	1	0	0	1	24	24.20	0	0	40	2	0	1	0	43	44.30	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	1.00	
1645-1700	0	0	28	2	0	0	0	30	30.00	0	0	27	2	1	0	0	30	30.50	0	0	1	0	0	0	0	0	1	1.00	0	0	0	1	0	0	1	2	3.00
1700-1715	0	0	37	2	0	0	0	39	39.00	0	0	37	0	0	0	0	37	37.00	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00
1715-1730	0	1	24	3	0	0	0	28	27.40	0	0	21	7	0	0	0	28	28.00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1.00	
1730-1745	0	0	27	2	0	0	0	29	29.00	1	1	25	3	0	0	0	30	28.60	0	0	1	0	0	0	0	0	1	1.00	0	0	0	0	0	0	0	0	0.00
1745-1800	0	0	23	1	0	0	0	24	24.00	0	0	27	3	2	0	0	32	33.00	0	0	2	0	0	0	0	0	2	2.00	0	0	3	0	0	0	0	3	3.00
1800-1815	0	0	23	0	0	0	0	23	23.00	0	0	22	1	0	0	0	23	23.00	0	0	2	0	0	0	0	0	2	2.00	0	0	1	0	0	0	0	1	1.00
1815-1830	0	1	23	1	0	0	0	25	24.40	0	0	24	3	0	0	0	27	27.00	0	0	2	1	0	0	0	0	3	3.00	0	0	3	1	0	0	0	4	4.00
1830-1845	0	0	10	0	1	0	0	11	11.50	0	0	29	3	0	0	0	32	32.00	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3.00	
1845-1900	0	0	15	1	1	0	0	17	17.50	0	0	21	1	0	0	0	22	22.00	0	0	1	1	0	0	0	0	2	2.00	0	0	2	1	0	0	0	3	3.00
1600-1900	1	2	274	20	2	0	1	300	300.00	1	1	335	33	3	1	1	375	377.40	0	0	10	2	0	0	0	0	12	12.00	0	0	21	3	0	0	1	25	26.00



AM QUEUES - Site 1 - Howland Road / Albion Road / Sutton Forge / High Street Junction
Queue Length Survey

Junction 1 of 4

- Lane 1 - Howland Road (westbound internal arm)
- Lane 2 - Albion Road (at the give-way with Howland Road)
- Lane 3 - Albion Road (right-turn into internal arm)
- Lane 4 - Albion Road (eastbound internal arm)
- Lane 5 - Sutton Forge
- Lane 6 - High Street

Date

Thursday 26th September 2024

**Lane 1 - Howland Road
(westbound internal arm)**

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	1
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	1
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	1
07:43	0
07:44	0
07:45	0
07:46	0
07:47	1
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	1
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

Lane 2 - Albion Road (at the give-way with Howland Road)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	2
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	1
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

Lane 3 - Albion Road (right-turn into internal arm)

07:00 - 10:00 (Weekday AM Peak)

TIME	RIGHT-TURN LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

Lane 4 - Albion Road (eastbound internal arm)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	1
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

Lane 5 - Sutton Forge

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	1
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

Lane 6 - High Street

07:00 - 10:00 (Weekday AM Peak)

TIME	RIGHT-TURN LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	1
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	1
09:58	0
09:59	0
10:00	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0

09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0



PM QUEUES - Site 1 - Howland Road / Albion Road / Sutton Forae / Hiah Street Junction
Queue Length Survey

Junction 1 of 4

- Lane 1 - Howland Road (westbound internal arm)
- Lane 2 - Albion Road (at the give-way with Howland Road)
- Lane 3 - Albion Road (right-turn into internal arm)
- Lane 4 - Albion Road (eastbound internal arm)
- Lane 5 - Sutton Forge
- Lane 6 - High Street

Date

Thursday 26th September 2024

**Lane 1 - Howland Road
(westbound internal arm)**

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	1
16:06	2
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	1
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0

**Lane 2 - Albion Road (at the give-
way with Howland Road)**

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	1
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0

**Lane 3 - Albion Road (right-turn
into internal arm)**

16:00 - 19:00 (Weekday PM Peak)

TIME	RIGHT-TURN LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0

**Lane 4 - Albion Road (eastbound
internal arm)**

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	1
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	1
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	1

Lane 5 - Sutton Forge

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0

Lane 6 - High Street

16:00 - 19:00 (Weekday PM Peak)

TIME	RIGHT-TURN LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	1
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	3
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0
16:57	0
16:58	0
16:59	0
17:00	1
17:01	0
17:02	0

18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	1
18:49	0
18:50	1
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	1
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:39	1
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS																				
1680-1700	0	0	0	12	1	0	0	0	13	13.00	0	0	0	95	11	2	1	2	111	115.30	0	0	0	3	4	0	0	0	7	7.00	0	0	5	0	0	0	0	5	5.00	1	1	1	67	14	1	2	2	88	91.70	0	0	0	2	1	0	0	0	3	3.00	
1615-1715	0	0	0	16	2	0	0	0	18	18.00	0	0	1	104	8	2	1	1	111	119.70	0	0	0	3	3	0	0	0	6	6.00	0	0	5	0	0	0	0	5	5.00	1	1	1	66	21	1	2	2	94	97.70	0	0	0	1	1	0	0	0	2	2.00	
1630-1730	0	0	11	2	0	0	0	0	13	13.00	0	0	1	102	11	0	0	0	116	117.20	0	0	1	102	11	0	0	0	6	5.00	0	1	5	0	0	0	0	5	5.40	2	1	5	67	18	2	2	2	93	97.20	0	0	0	3	3	0	0	0	1	4.00	
1645-1745	0	0	0	9	1	0	0	0	10	10.00	1	2	80	11	1	0	0	0	95	93.50	0	0	1	2	4	0	0	0	3	3.00	0	0	1	4	0	0	0	0	5	4.40	1	1	77	15	2	2	2	100	104.20	0	0	0	3	0	0	0	0	4	3.00	
1700-1800	1	0	0	7	2	0	0	0	10	9.20	1	2	79	13	1	0	0	0	96	94.50	0	0	0	3	1	0	0	0	4	4.00	0	1	4	0	0	0	0	0	5	4.40	1	1	79	12	1	1	0	0	95	95.40	0	0	0	4	0	0	0	0	4	4.00
1715-1815	1	0	0	5	1	0	0	0	7	6.20	1	1	62	13	2	0	0	0	79	78.60	0	0	0	3	1	0	0	0	4	4.00	0	1	4	1	0	0	0	0	6	5.40	1	1	84	6	1	1	0	0	94	94.40	0	0	0	7	0	0	0	0	7	7.00
1730-1830	1	0	0	3	1	0	0	0	5	4.20	1	1	58	10	2	0	0	0	72	71.60	0	0	0	3	0	0	0	0	3	3.00	0	0	5	1	0	0	0	0	6	6.00	2	1	80	4	0	0	0	0	87	84.80	0	0	0	6	0	0	0	0	6	6.00
1745-1845	1	0	0	4	1	0	0	0	6	5.20	0	0	64	8	2	0	0	0	74	75.00	0	0	0	2	0	0	0	0	2	2.00	0	0	5	1	0	0	0	0	6	6.00	1	0	68	3	0	0	0	0	72	71.20	0	0	0	6	0	0	0	0	6	6.00
1800-1900	0	0	0	4	0	0	0	0	4	4.00	0	0	63	7	1	0	0	0	71	71.50	0	0	0	4	0	0	0	0	4	4.00	0	0	4	1	0	0	0	0	5	5.00	1	0	68	3	0	0	0	0	72	71.20	0	0	0	5	0	0	0	0	5	5.00



AM QUEUES - Site 2 - Albion Road / Stanley Road Junction
Queue Length Survey

Junction 2 of 4
Lane 7 - Stanley Road
Lane 8 - Albion Road (South)

Date
Thursday 26th September 2024

Lane 7 - Stanley Road

Lane 8 - Albion Road (South)

07:00 - 10:00 (Weekday AM Peak)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	1
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0

TIME	RIGHT-TURN LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0

07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
08:05	0
08:06	0
08:07	0
08:08	0
08:09	0
08:10	0
08:11	0
08:12	1
08:13	0
08:14	0
08:15	0
08:16	0
08:17	0
08:18	0
08:19	0
08:20	0
08:21	0
08:22	0
08:23	0
08:24	0
08:25	0
08:26	0
08:27	0
08:28	0
08:29	0
08:30	0
08:31	0
08:32	0
08:33	0
08:34	0
08:35	0
08:36	0
08:37	0
08:38	0
08:39	0
08:40	0
08:41	0
08:42	0
08:43	0
08:44	0
08:45	0
08:46	0
08:47	0
08:48	0
08:49	0
08:50	0
08:51	0
08:52	0
08:53	0
08:54	0
08:55	0
08:56	0
08:57	0
08:58	0
08:59	0
09:00	0
09:01	0
09:02	0
09:03	0
09:04	0
09:05	0
09:06	0
09:07	0
09:08	0
09:09	0
09:10	0
09:11	0
09:12	0
09:13	0
09:14	0
09:15	0
09:16	0
09:17	0
09:18	0
09:19	0
09:20	0

07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
08:05	0
08:06	0
08:07	0
08:08	0
08:09	0
08:10	0
08:11	0
08:12	0
08:13	0
08:14	0
08:15	0
08:16	0
08:17	0
08:18	0
08:19	0
08:20	0
08:21	0
08:22	0
08:23	0
08:24	0
08:25	0
08:26	0
08:27	0
08:28	0
08:29	0
08:30	0
08:31	0
08:32	0
08:33	0
08:34	0
08:35	0
08:36	0
08:37	0
08:38	0
08:39	0
08:40	0
08:41	0
08:42	0
08:43	0
08:44	0
08:45	0
08:46	0
08:47	0
08:48	0
08:49	0
08:50	0
08:51	0
08:52	0
08:53	0
08:54	0
08:55	0
08:56	0
08:57	0
08:58	0
08:59	0
09:00	0
09:01	0
09:02	0
09:03	0
09:04	0
09:05	0
09:06	0
09:07	0
09:08	0
09:09	0
09:10	0
09:11	0
09:12	0
09:13	0
09:14	0
09:15	0
09:16	0
09:17	0
09:18	0
09:19	0
09:20	0

09:21	0
09:22	0
09:23	0
09:24	0
09:25	0
09:26	0
09:27	0
09:28	0
09:29	0
09:30	0
09:31	0
09:32	0
09:33	0
09:34	0
09:35	0
09:36	0
09:37	0
09:38	0
09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0

09:21	0
09:22	0
09:23	0
09:24	0
09:25	0
09:26	0
09:27	0
09:28	0
09:29	0
09:30	0
09:31	0
09:32	0
09:33	0
09:34	0
09:35	0
09:36	0
09:37	0
09:38	0
09:39	0
09:40	0
09:41	0
09:42	0
09:43	0
09:44	0
09:45	0
09:46	0
09:47	0
09:48	0
09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0



PM QUEUES - Site 2 - Albion Road / Stanley Road Junction
Queue Length Survey

Junction 2 of 4
Lane 7 - Stanley Road
Lane 8 - Albion Road (South)

Date
Thursday 26th September 2024

Lane 7 - Stanley Road

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	1
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0

Lane 8 - Albion Road (South)

16:00 - 19:00 (Weekday PM Peak)

TIME	RIGHT-TURN LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
16:21	0
16:22	0
16:23	0
16:24	0
16:25	0
16:26	0
16:27	0
16:28	0
16:29	0
16:30	0
16:31	0
16:32	0
16:33	0
16:34	0
16:35	0
16:36	0
16:37	0
16:38	0
16:39	0
16:40	0
16:41	0
16:42	0
16:43	0
16:44	0
16:45	0
16:46	0
16:47	0
16:48	0
16:49	0
16:50	0
16:51	0
16:52	0
16:53	0
16:54	0
16:55	0
16:56	0

16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0
17:03	0
17:04	0
17:05	0
17:06	0
17:07	0
17:08	0
17:09	0
17:10	0
17:11	0
17:12	0
17:13	0
17:14	0
17:15	0
17:16	0
17:17	0
17:18	0
17:19	0
17:20	0
17:21	0
17:22	0
17:23	0
17:24	0
17:25	0
17:26	0
17:27	0
17:28	0
17:29	0
17:30	0
17:31	0
17:32	0
17:33	0
17:34	0
17:35	0
17:36	0
17:37	0
17:38	0
17:39	0
17:40	0
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17:42	0
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17:46	0
17:47	0
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17:50	0
17:51	0
17:52	0
17:53	0
17:54	0
17:55	0
17:56	0
17:57	1
17:58	0
17:59	0
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18:02	0
18:03	0
18:04	0
18:05	0
18:06	0
18:07	0
18:08	0
18:09	0
18:10	0
18:11	0
18:12	0
18:13	0
18:14	0
18:15	0
18:16	0
18:17	0
18:18	0
18:19	0
18:20	0

16:57	0
16:58	0
16:59	0
17:00	0
17:01	0
17:02	0
17:03	0
17:04	0
17:05	0
17:06	0
17:07	0
17:08	0
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17:40	0
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18:02	0
18:03	0
18:04	0
18:05	0
18:06	0
18:07	0
18:08	0
18:09	0
18:10	0
18:11	0
18:12	0
18:13	0
18:14	0
18:15	0
18:16	0
18:17	0
18:18	0
18:19	0
18:20	0

18:21	0
18:22	0
18:23	0
18:24	0
18:25	0
18:26	0
18:27	0
18:28	0
18:29	0
18:30	0
18:31	0
18:32	0
18:33	0
18:34	0
18:35	0
18:36	0
18:37	0
18:38	0
18:39	0
18:40	0
18:41	0
18:42	0
18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

18:21	0
18:22	0
18:23	0
18:24	0
18:25	0
18:26	0
18:27	0
18:28	0
18:29	0
18:30	0
18:31	0
18:32	0
18:33	0
18:34	0
18:35	0
18:36	0
18:37	0
18:38	0
18:39	0
18:40	0
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18:43	0
18:44	0
18:45	0
18:46	0
18:47	0
18:48	0
18:49	0
18:50	0
18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

Site 3 - Albion Road / Seymour Drive Junction (07:00-10:00) AM Peak																																																											
MOVEMENT 23										MOVEMENT 24										MOVEMENT 25					MOVEMENT 26					MOVEMENT 27					MOVEMENT 28																								
FROM ALBION ROAD (NORTH) LEFT TURN TO SEYMOUR DRIVE										FROM ALBION ROAD (NORTH) STRAIGHT AHEAD TO ALBION ROAD (SOUTH)										FROM SEYMOUR DRIVE LEFT TURN TO ALBION ROAD (SOUTH)					FROM SEYMOUR DRIVE RIGHT TURN TO ALBION ROAD (NORTH)					FROM ALBION ROAD (SOUTH) STRAIGHT AHEAD TO ALBION ROAD (NORTH)					FROM ALBION ROAD (SOUTH) RIGHT TURN TO SEYMOUR DRIVE																								
PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL	PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL													
0700-0715	0	0	1	0	0	0	0	1	1.00	0	0	5	2	1	0	0	2	10	12.50	0	0	1	1	0	0	0	0	2	2.00	0	0	2	0	0	0	0	2	2.00	0	0	10	0	0	0	0	0	0	0	0	0.00									
0715-0730	0	0	0	0	0	0	0	0	0.00	0	0	8	0	0	0	0	8	8.00	0	0	2	0	0	0	0	0	0	2	2.00	0	0	1	1	0	0	0	2	2.00	0	0	14	2	0	0	0	0	1	11	12.00										
0730-0745	0	0	0	0	0	0	0	0	0.00	0	0	17	2	0	0	0	19	19.00	0	0	0	0	0	0	0	0	0	0	0.00	0	0	5	0	0	0	0	5	5.00	0	0	19	1	0	0	0	0	20	20.00											
0745-0800	1	0	0	1	0	0	0	2	1.20	0	0	17	3	1	0	1	23	24.50	0	0	3	0	0	0	0	0	0	3	3.00	0	1	5	1	0	0	0	7	6.40	0	1	16	3	0	0	0	0	20	19.40											
0800-0815	0	0	3	1	0	0	0	4	4.00	0	0	17	4	1	0	0	20	20.00	0	0	4	0	0	0	0	0	0	4	4.00	0	0	7	1	0	0	0	8	8.00	0	0	18	3	0	0	0	0	0	21	21.00										
0815-0830	0	0	3	2	0	0	0	5	5.00	0	0	21	5	1	0	0	27	27.50	0	0	7	0	0	0	0	0	0	7	7.00	0	0	6	1	0	0	0	7	7.00	0	0	18	6	0	0	0	0	24	24.00											
0830-0845	0	0	1	0	0	0	0	1	1.00	1	0	18	2	1	0	0	1	22	22.20	0	0	2	1	0	0	0	0	3	3.00	0	0	5	0	0	0	0	5	5.00	0	0	25	4	1	0	0	0	30	30.50											
0845-0900	0	0	5	1	0	0	0	6	6.00	2	0	17	4	0	0	0	23	21.40	0	0	0	1	0	0	0	0	0	1	1.00	0	0	1	0	0	0	0	1	1.00	0	0	23	1	0	0	0	0	24	24.00											
0900-0915	0	0	4	0	0	0	0	4	4.00	0	1	18	1	0	0	0	20	19.40	0	0	0	1	0	0	0	0	0	0	0.00	0	0	1	0	0	0	0	1	1.00	0	0	16	2	1	1	0	0	20	21.80											
0915-0930	0	0	2	1	0	0	0	3	3.00	0	0	15	1	0	0	0	16	16.00	0	0	0	3	0	0	0	0	0	3	3.00	0	0	4	0	1	0	0	5	5.50	0	0	14	0	0	0	0	0	14	14.00											
0930-0945	0	0	1	0	0	0	0	1	1.00	1	0	13	3	1	0	0	18	17.70	0	0	0	0	0	0	0	0	0	0.00	0	0	3	0	0	0	0	3	3.00	1	0	11	2	0	0	0	0	14	13.20												
0945-1000	0	0	2	0	0	0	0	2	2.00	1	1	13	3	1	0	0	18	17.70	0	0	0	1	0	0	0	0	0	1	1.00	0	0	4	0	0	0	0	4	4.00	0	0	4	3	0	1	0	0	8	9.30											
0700-1000	1	0	22	6	0	0	0	29	28.20	5	1	179	30	5	0	4	224	225.90	0	0	20	6	0	0	0	0	0	26	26.00	0	0	1	42	4	1	0	0	48	47.90	1	1	188	27	2	2	1	1	222	225.20	0	0	14	0	1	0	0	0	15	15.50



AM QUEUES - Site 3 - Albion Road / Seymour Drive Junction
Queue Length Survey

Junction 3 of 4
Lane 9 - Seymour Drive
Lane 10 - Albion Road (South)

Date
Thursday 26th September 2024

Lane 9 - Seymour Drive

Lane 10 - Albion Road (South)

07:00 - 10:00 (Weekday AM Peak)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
07:48	0
07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0

TIME	RIGHT-TURN LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
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07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	0
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07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
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07:46	0
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07:49	0
07:50	0
07:51	0
07:52	0
07:53	0
07:54	0
07:55	0
07:56	0

07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
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08:06	0
08:07	0
08:08	0
08:09	0
08:10	0
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08:12	0
08:13	0
08:14	0
08:15	0
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09:07	0
09:08	0
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09:11	0
09:12	0
09:13	0
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09:16	0
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09:18	0
09:19	0
09:20	0

07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
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08:07	0
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08:09	0
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08:12	0
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09:31	0
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09:53	0
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09:56	0
09:57	0
09:58	0
09:59	0
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09:49	0
09:50	0
09:51	0
09:52	0
09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0



PM QUEUES - Site 3 - Albion Road / Seymour Drive Junction
Queue Length Survey

Junction 3 of 4
Lane 9 - Seymour Drive
Lane 10 - Albion Road (South)

Date
Thursday 26th September 2024

Lane 9 - Seymour Drive

Lane 10 - Albion Road (South)

16:00 - 19:00 (Weekday PM Peak)

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
16:11	0
16:12	0
16:13	0
16:14	0
16:15	0
16:16	0
16:17	0
16:18	0
16:19	0
16:20	0
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16:51	0
16:52	0
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TIME	RIGHT-TURN LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
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17:07	0
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18:53	0
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18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

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18:30	0
18:31	0
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18:49	0
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18:51	0
18:52	0
18:53	0
18:54	0
18:55	0
18:56	0
18:57	0
18:58	0
18:59	0
19:00	0

Site 4 - Albion Road / Plain Road Junction (07:00-10:00) AM Peak

MOVEMENT 29 FROM THORN ROAD LEFT TURN TO PLAIN ROAD										MOVEMENT 30 FROM THORN ROAD STRAIGHT AHEAD TO ALBION ROAD										MOVEMENT 31 FROM PLAIN ROAD LEFT TURN TO ALBION ROAD										MOVEMENT 32 FROM PLAIN ROAD RIGHT TURN TO THORN ROAD										MOVEMENT 33 FROM ALBION ROAD STRAIGHT AHEAD TO THORN ROAD										MOVEMENT 34 FROM ALBION ROAD RIGHT TURN TO PLAIN ROAD										
PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL		PCY	P2W	CAR	LGV	OGV1	OGV2	PSV	TOTAL	PCU TOTAL												
0700-0715	0	0	9	2	0	0	0	11	11.00	0	0	6	0	0	0	1	7	8.00		0	0	3	0	0	0	0	0	3	3.00		0	0	0	0	0	0	0	0	0.00		0	0	5	2	0	0	0	7	7.00		0	0	2	0	1	0	2	5	7.50	
0715-0730	0	0	6	1	0	0	0	7	7.00	0	0	13	1	0	0	0	14	14.00		0	0	2	1	0	0	0	0	3	3.00		0	0	2	0	0	0	0	2	2.00		0	0	2	0	0	0	0	2	2.00		0	0	7	0	0	0	0	7	7.00	
0730-0745	0	1	9	2	0	0	0	12	11.40	0	1	16	1	0	0	0	18	17.40		0	0	3	0	0	0	0	0	3	3.00		0	0	2	0	0	0	0	2	2.00		0	0	13	2	0	0	0	15	15.00		0	0	5	0	0	0	0	5	5.00	
0745-0800	0	0	14	2	3	0	0	19	20.50	0	0	12	2	0	0	0	14	14.00		0	0	4	1	0	0	0	0	5	5.00		0	0	4	1	0	0	0	5	5.00		0	0	16	4	1	0	1	22	23.50		0	0	4	0	0	0	0	4	4.00	
0800-0815	0	0	14	3	1	1	0	19	20.80	0	0	12	4	0	0	0	16	16.00		0	0	6	1	0	0	0	0	7	7.00		0	0	4	1	0	0	0	5	5.00		0	0	13	1	0	0	0	14	14.00		0	0	8	2	0	0	0	10	10.00	
0815-0830	0	0	7	0	0	0	0	7	7.00	0	0	14	3	0	0	0	17	17.00		0	0	3	2	0	0	0	0	5	5.00		0	0	9	1	1	1	0	12	13.80		0	0	10	3	1	0	0	14	14.50		0	0	16	1	0	0	0	17	17.00	
0830-0845	0	0	9	1	0	0	0	10	10.00	0	0	15	2	0	0	0	17	17.00		0	0	13	2	1	0	0	0	16	16.50		0	0	7	1	0	0	0	8	8.00		1	0	14	2	0	0	0	17	16.20		0	0	6	2	0	0	1	9	10.00	
0845-0900	0	0	5	2	0	0	0	7	7.00	0	0	14	0	0	0	0	14	14.00		0	0	12	1	0	0	0	0	13	13.00		0	0	8	2	1	0	0	11	11.50		2	0	9	4	0	0	0	15	13.40		0	0	8	1	0	0	0	9	9.00	
0900-0915	0	0	4	0	0	0	0	4	4.00	0	0	10	2	1	1	0	14	15.80		0	0	8	0	0	0	0	0	8	8.00		0	0	5	1	0	0	0	6	6.00		0	0	10	0	0	0	0	10	10.00		0	0	1	8	1	0	0	0	10	9.40
0915-0930	0	0	3	0	1	0	0	4	4.50	0	0	13	0	0	0	0	13	13.00		0	0	5	0	1	0	0	0	6	6.50		0	0	6	2	0	0	0	8	8.00		0	0	10	3	0	0	0	13	13.00		0	0	4	1	0	0	0	5	5.00	
0930-0945	0	0	6	1	0	0	0	7	7.00	1	0	10	0	0	0	0	11	10.20		0	0	1	2	0	0	0	0	3	3.00		0	0	4	0	0	0	0	4	4.00		1	0	9	3	1	0	0	14	13.70		0	0	5	0	0	0	0	5	5.00	
0945-1000	0	0	4	1	0	0	0	5	5.00	0	0	3	1	0	1	0	5	6.30		0	0	2	2	0	0	0	0	4	4.00		1	0	3	2	0	0	0	6	5.20		1	0	11	1	1	0	0	14	13.70		0	0	3	2	0	0	0	5	5.00	
0700-1000	0	1	90	15	5	1	0	112	115.20	1	1	138	16	1	2	1	160	162.70		0	0	62	12	2	0	0	0	76	77.00		1	0	54	11	2	1	0	69	70.50		5	0	122	25	4	0	1	157	156.00		0	1	76	10	1	0	3	91	93.90	

HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS										HOURLY TOTALS														
0700-0800	0	1	38	7	3	0	0	49	49.90	0	1	47	4	0	0	1	53	53.40	0	0	12	2	0	0	0	14	14.00	0	0	8	1	0	0	0	9	9.00	0	0	36	8	1	0	1	46	47.50	0	0	18	0	1	0	2	21	23.50
0715-0815	0	1	43	8	4	1	0	57	59.70	0	1	53	8	0	0	1	62	61.40	0	0	15	3	0	0	0	18	18.00	0	0	12	2	0	0	0	14	14.00	0	0	44	7	1	0	1	53	54.50	0	0	24	2	0	0	0	26	26.00
0730-0830	0	1	44	7	4	1	0	57	59.70	0	1	54	10	0	0	0	65	64.40	0	0	16	4	0	0	0	20	20.00	0	0	19	3	1	1	0	24	25.80	0	0	52	10	2	0	1	65	67.00	0	0	33	3	0	0	0	36	36.00
0745-0845	0	0	44	6	4	1	0	55	58.30	0	0	53	11	0	0	0	64	64.00	0	0	26	6	1	0	0	33	33.50	0	0	24	4	1	1	0	30	31.80	1	0	53	10	2	0	1	67	68.20	0	0	34	5	0	0	1	40	41.00
0800-0900	0	0	35	6	1	1	0	43	44.80	0	0	55	9	0	0	0	64	64.00	0	0	34	6	1	0	0	41	41.50	0	0	28	5	2	1	0	36	38.30	3	0	46	10	1	0	0	60	58.10	0	0	38	6	0	0	1	45	46.00
0815-0915	0	0	25	3	0	0	0	28	28.00	0	0	53	7	1	1	0	62	63.80	0	0	36	5	1	0	0	42	42.50	0	0	29	5	2	1	0	37	39.30	3	0	43	9	1	0	0	56	54.10	0	1	38	5	0	0	1	45	45.40
0830-0930	0	0	21	3	1	0	0	25	25.50	0	0	52	4	1	1	0	58	59.80	0	0	38	3	2	0	0	43	44.00	0	0	26	6	1	0	0	33	33.50	3	0	43	9	0	0	0	55	52.60	0	1	26	5	0	0	1	33	33.40
0845-0945	0	0	18	3	1	0	0	22	22.50	1	0	47	2	1	1	0	52	53.00	0	0	26	3	1	0	0	30	30.50	0	0	23	5	1	0	0	29	29.50	3	0	38	10	1	0	0	52	50.10	0	1	25	3	0	0	0	29	28.40
0900-1000	0	0	17	2	1	0	0	20	20.50	1	0	36	3	1	2	0	43	45.30	0	0	16	4	1	0	0	21	21.50	1	0	18	5	0	0	0	24	23.20	2	0	40	7	2	0	0	51	50.40	0	1	20	4	0	0	0	25	24.40

Site 4 - Albion Road / Plain Road Junction (16:00-19:00) PM Peak

MOVEMENT 29 FROM THORN ROAD LEFT TURN TO PLAIN ROAD										MOVEMENT 30 FROM THORN ROAD STRAIGHT AHEAD TO ALBION ROAD										MOVEMENT 31 FROM PLAIN ROAD LEFT TURN TO ALBION ROAD										MOVEMENT 32 FROM PLAIN ROAD RIGHT TURN TO THORN ROAD										MOVEMENT 33 FROM ALBION ROAD STRAIGHT AHEAD TO THORN ROAD										MOVEMENT 34 FROM ALBION ROAD RIGHT TURN TO PLAIN ROAD									
PCY P2W CAR LGV OGV1 OGV2 PSV TOTAL PCU TOTAL										PCY P2W CAR LGV OGV1 OGV2 PSV TOTAL PCU TOTAL										PCY P2W CAR LGV OGV1 OGV2 PSV TOTAL PCU TOTAL										PCY P2W CAR LGV OGV1 OGV2 PSV TOTAL PCU TOTAL										PCY P2W CAR LGV OGV1 OGV2 PSV TOTAL PCU TOTAL																			
1600-1615	0	0	8	1	0	0	0	9	9.00	0	0	13	0	0	0	0	13	13.00	0	0	10	2	0	0	0	12	12.00	0	0	3	1	0	0	0	4	4.00	0	0	11	4	0	0	0	15	15.00	0	0	5	2	0	0	1	8	9.00					
1615-1630	0	0	5	0	0	0	0	5	5.00	0	0	3	4	0	1	0	8	9.30	0	0	11	2	0	0	0	13	13.00	0	0	11	7	0	0	0	18	18.00	0	0	13	2	1	0	0	16	16.50	0	0	5	1	0	0	1	7	8.00					
1630-1645	0	0	5	1	0	0	0	6	6.00	1	1	9	3	0	0	0	14	12.60	0	0	3	2	0	0	0	5	5.00	0	0	8	3	0	0	0	11	11.00	0	0	13	2	0	1	0	25	26.30	0	0	10	1	0	0	0	11	11.00					
1645-1700	0	0	5	0	0	0	0	5	5.00	0	0	9	0	1	0	0	10	10.50	0	0	3	0	0	1	2	6	9.30	0	0	6	0	1	0	0	7	7.50	0	0	10	1	1	0	0	12	12.50	0	0	3	0	0	0	0	3	3.00					
1700-1715	0	0	6	6	0	0	0	6	6.00	0	0	10	5	0	0	0	15	15.00	0	0	7	4	0	0	0	11	11.00	0	0	8	4	0	0	0	12	12.00	0	0	24	1	0	0	0	25	25.00	0	0	4	4	0	0	0	4	4.00					
1715-1730	0	0	8	1	0	0	0	9	9.00	0	0	10	1	1	1	0	13	14.80	0	0	9	0	0	0	0	9	9.00	0	0	8	0	0	0	0	8	8.00	0	0	12	4	0	0	0	16	16.00	0	0	5	3	0	0	0	8	8.00					
1730-1745	0	0	3	1	0	0	0	4	4.00	1	1	16	0	0	0	0	18	16.60	0	0	11	1	0	0	0	12	12.00	0	0	7	0	0	0	0	7	7.00	0	0	6	3	0	0	0	9	9.00	0	0	7	0	0	0	0	7	7.00					
1745-1800	0	0	4	0	0	0	0	4	4.00	0	0	9	0	0	0	0	9	9.00	0	0	8	0	0	0	0	8	8.00	0	0	5	2	0	0	0	7	7.00	0	0	11	1	1	0	0	13	13.50	0	0	7	0	0	0	0	7	7.00					
1800-1815	0	0	3	1	0	0	0	4	4.00	0	0	18	3	0	0	0	21	21.00	0	0	7	0	0	0	0	7	7.00	0	0	8	0	0	0	0	8	8.00	0	0	7	2	1	0	0	10	10.50	0	0	5	0	0	0	0	5	5.00					
1815-1830	0	0	4	0	0	0	0	4	4.00	1	0	8	0	0	0	0	9	8.20	0	0	6	1	0	0	0	7	7.00	0	0	2	1	0	0	0	3	3.00	0	0	5	1	0	0	0	6	6.00	0	0	6	1	0	0	0	7	7.00					
1830-1845	0	0	3	1	0	0	0	4	4.00	0	0	10	0	0	0	0	10	10.00	0	0	2	0	0	0	0	2	2.00	0	0	4	0	0	0	0	4	4.00	0	0	12	1	0	0	0	13	13.00	0	0	3	0	0	0	0	3	3.00					
1845-1900	0	0	3	0	0	0	0	3	3.00	0	0	12	0	0	0	0	12	12.00	0	0	4	0	0	0	0	4	4.00	0	1	9	0	0	0	0	10	10.90	0	0	9	1	0	0	0	10	10.00	0	0	4	0	0	0	0	4	4.00					
1600-1900	0	0	57	6	0	0	0	63	63.00	3	2	127	16	2	2	0	152	152.00	0	0	81	12	0	1	2	96	99.30	0	1	79	18	1	0	0	99	98.90	0	0	141	24	4	1	0	170	173.30	0	0	64	8	0	0	2	74	76.00					



AM QUEUES - Site 4 - Albion Road / Plain Road Junction
Queue Length Survey

Junction 4 of 4

Lane 11 - Plain Road (westbound give-way)
Lane 12 - Plain Road (eastbound give-way)
Lane 13 - Albion Road (North)

Date

Thursday 26th September 2024

Lane 11 - Plain Road (westbound give-way)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
07:14	0
07:15	0
07:16	0
07:17	0
07:18	0
07:19	0
07:20	0
07:21	0
07:22	0
07:23	0
07:24	0
07:25	0
07:26	0
07:27	0
07:28	0
07:29	0
07:30	0
07:31	0
07:32	0
07:33	0
07:34	1
07:35	0
07:36	0
07:37	0
07:38	0
07:39	0
07:40	0
07:41	0
07:42	0
07:43	0
07:44	0
07:45	0
07:46	0
07:47	0
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07:50	0
07:51	1
07:52	0
07:53	0
07:54	1
07:55	0
07:56	0
07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
08:05	0
08:06	0
08:07	0
08:08	0

Lane 12 - Plain Road (eastbound give-way)

07:00 - 10:00 (Weekday AM Peak)

TIME	SINGLE LANE
07:01	0
07:02	0
07:03	0
07:04	0
07:05	0
07:06	0
07:07	0
07:08	0
07:09	0
07:10	0
07:11	0
07:12	0
07:13	0
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07:57	0
07:58	0
07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
08:05	0
08:06	0
08:07	0
08:08	0

Lane 13 - Albion Road (North)

07:00 - 10:00 (Weekday AM Peak)

TIME	RIGHT-TURN LANE
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07:06	0
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07:11	0
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07:13	0
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07:59	0
08:00	0
08:01	0
08:02	0
08:03	0
08:04	0
08:05	0
08:06	0
08:07	0
08:08	0

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08:11	0
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09:53	0
09:54	0
09:55	0
09:56	0
09:57	0
09:58	0
09:59	0
10:00	0



PM QUEUES - Site 4 - Albion Road / Plain Road Junction
Queue Length Survey

Junction 4 of 4
Lane 11 - Plain Road (westbound give-way)
Lane 12 - Plain Road (eastbound give-way)
Lane 13 - Albion Road (North)

Date
Thursday 26th September 2024

Lane 11 - Plain Road (westbound give-way)

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
16:08	0
16:09	0
16:10	0
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16:12	0
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17:00	0
17:01	0
17:02	0
17:03	0
17:04	0
17:05	0
17:06	0
17:07	0
17:08	0

Lane 12 - Plain Road (eastbound give-way)

16:00 - 19:00 (Weekday PM Peak)

TIME	SINGLE LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
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17:00	0
17:01	0
17:02	0
17:03	0
17:04	0
17:05	0
17:06	0
17:07	0
17:08	0

Lane 13 - Albion Road (North)

16:00 - 19:00 (Weekday PM Peak)

TIME	RIGHT-TURN LANE
16:01	0
16:02	0
16:03	0
16:04	0
16:05	0
16:06	0
16:07	0
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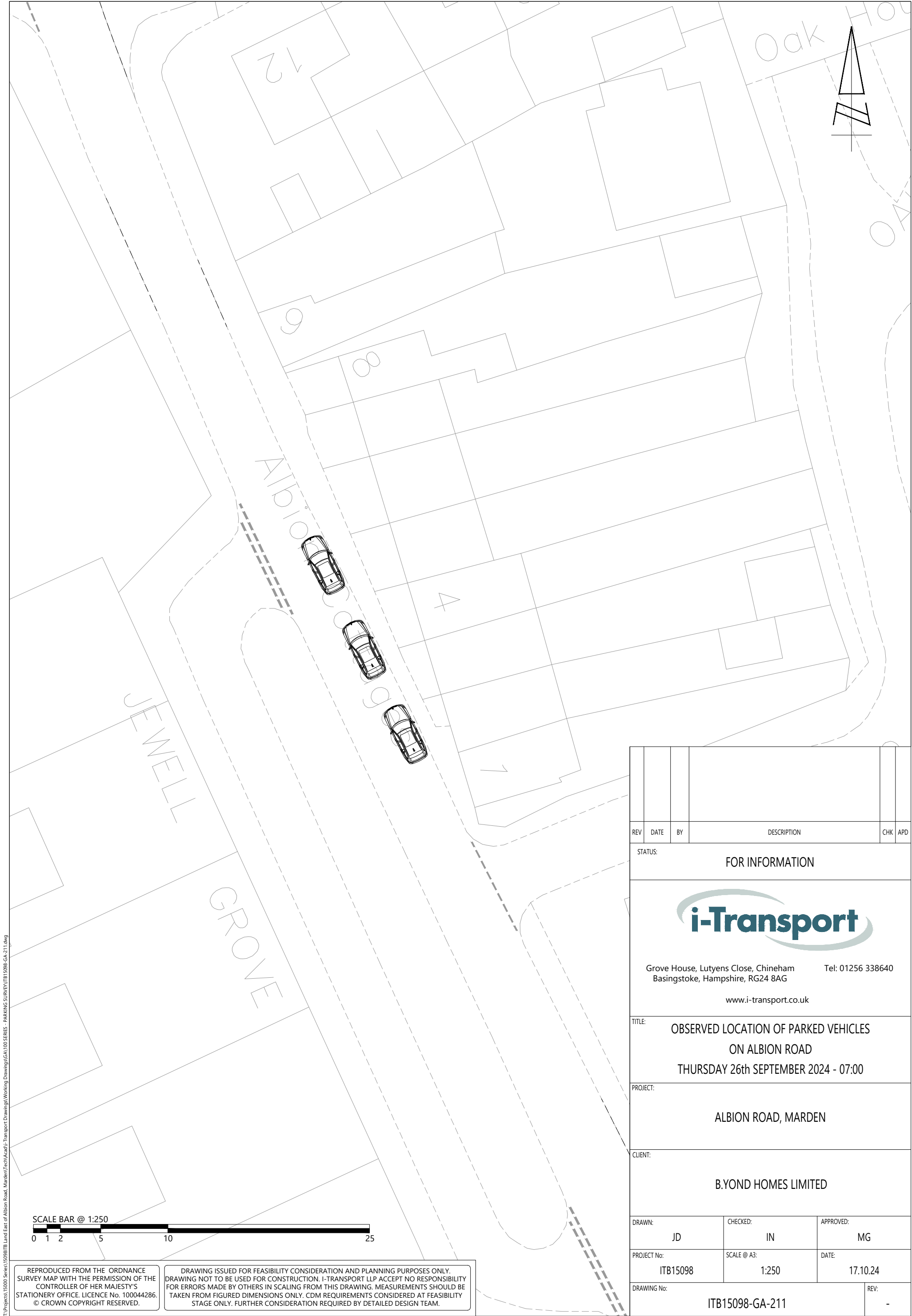
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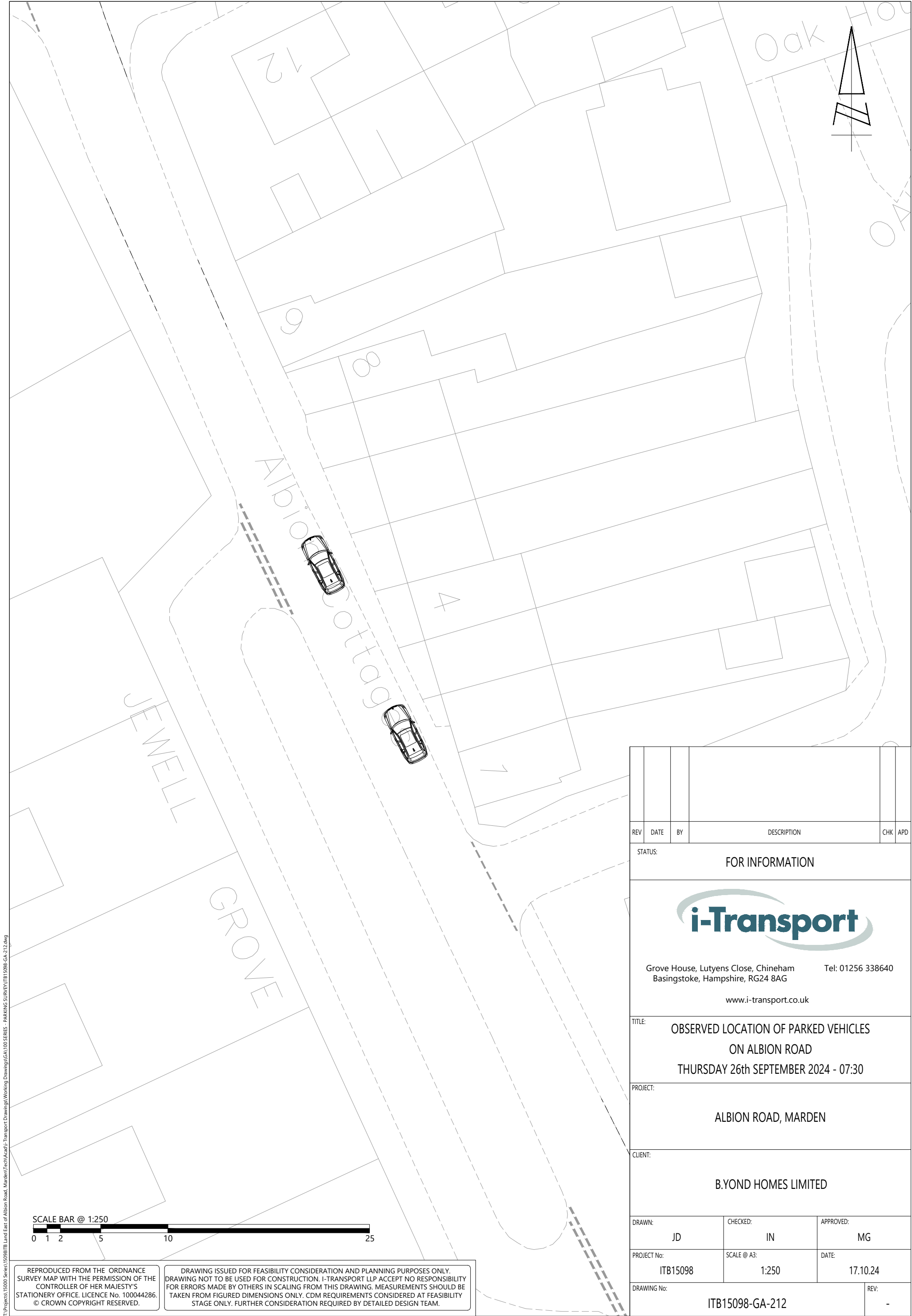


REV	DATE	BY	DESCRIPTION		CHK APD
STATUS: FOR INFORMATION					
<div><div><div></div><div>Grove House, Lutyens Close, Chineham Basingstoke, Hampshire, RG24 8AG</div><div>www.i-transport.co.uk</div></div><div>Tel: 01256 338640</div></div>					
TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 07:00					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
DRAWING No: ITB15098-GA-211					REV: -

T:\Project\15000 Series\15981TB Land East of Albion Road - Marden\TechAcad\Transport Drawings\Working Drawings\GA\100 SERIES - PARKING SURVEY\ITB15098-GA-211.dwg

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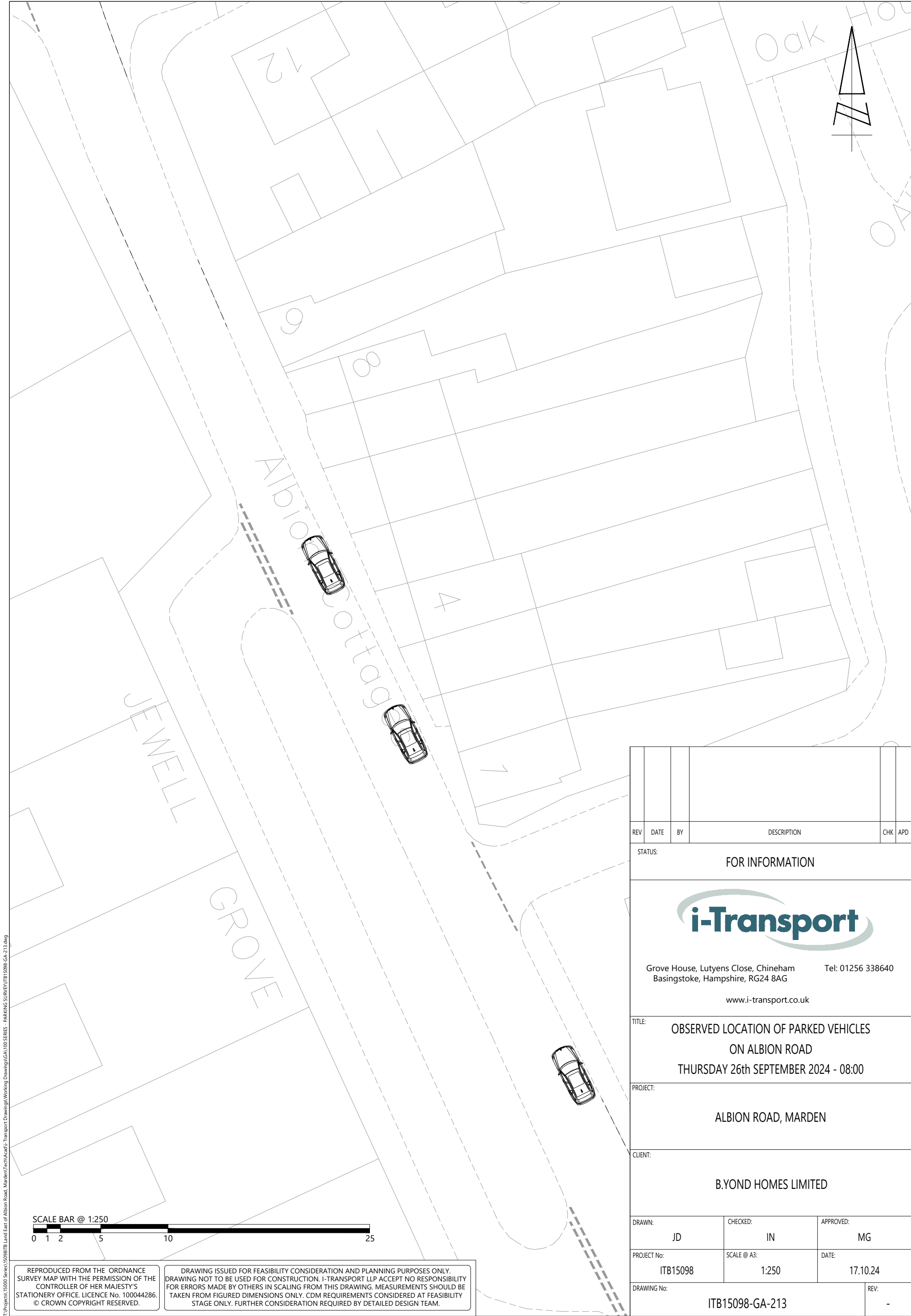


T:\Project\15000 Series\15981TB Land East of Albion Road, Marden\TechAcad\Transport Drawings\Working Drawings\GA\100 SERIES - PARKING SURVEY\ITB15098-GA-212.dwg

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REV	DATE	BY	DESCRIPTION	CHK	APD
STATUS: FOR INFORMATION					
<div></div> <div>Grove House, Lutyens Close, Chineham Basingstoke, Hampshire, RG24 8AG</div> <div>Tel: 01256 338640</div> <div>www.i-transport.co.uk</div>					
TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 07:30					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
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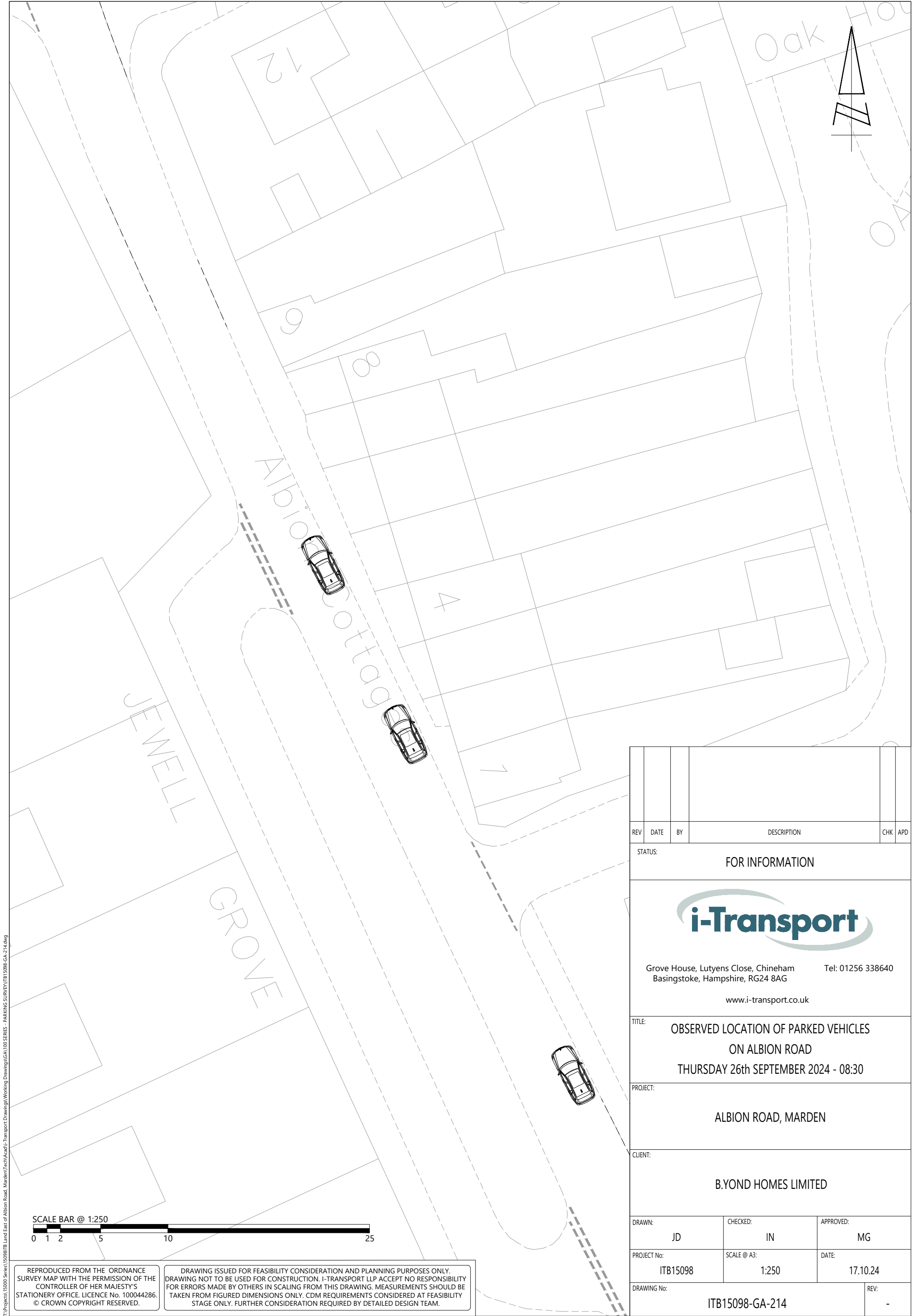


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TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 08:00					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
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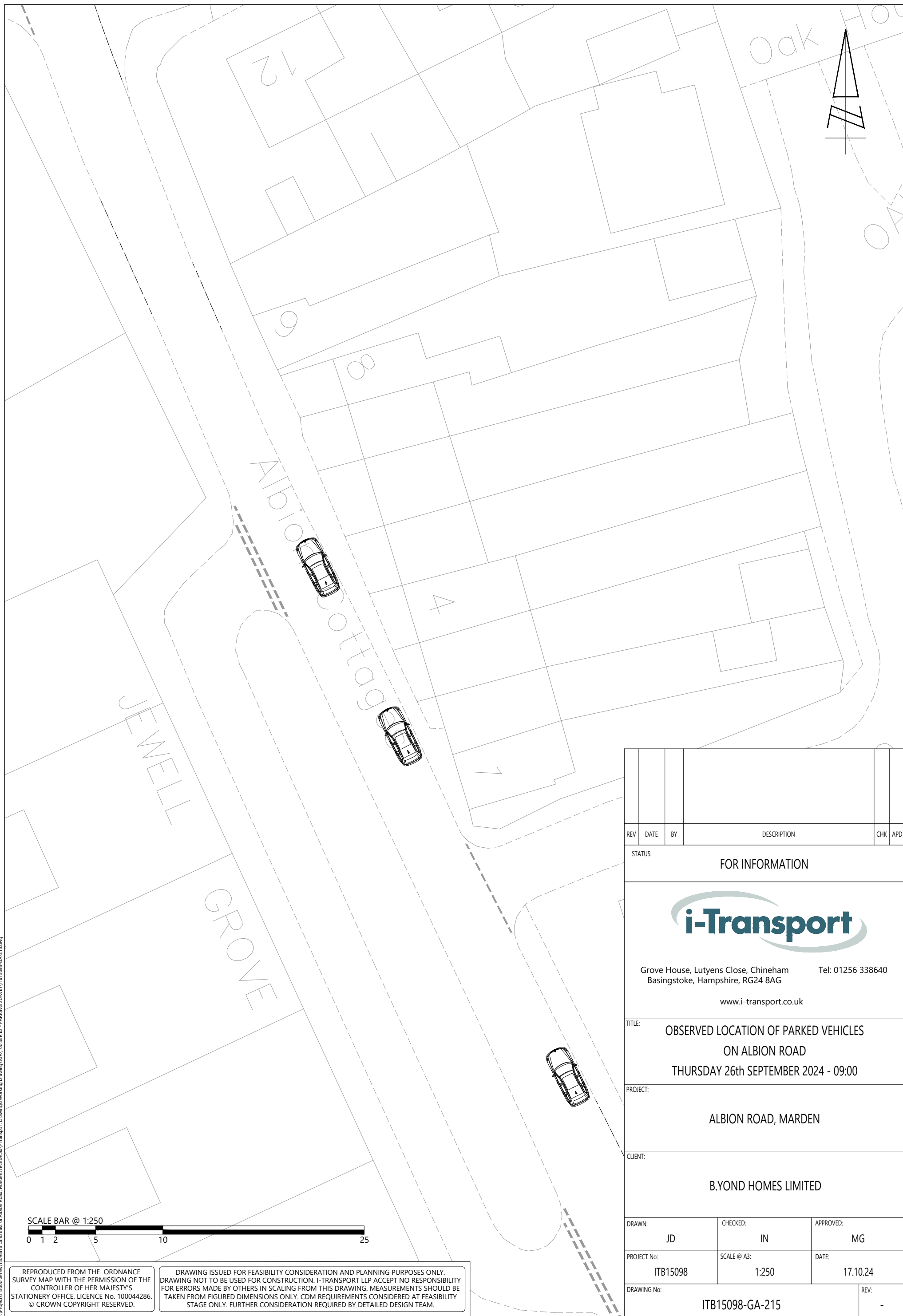



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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
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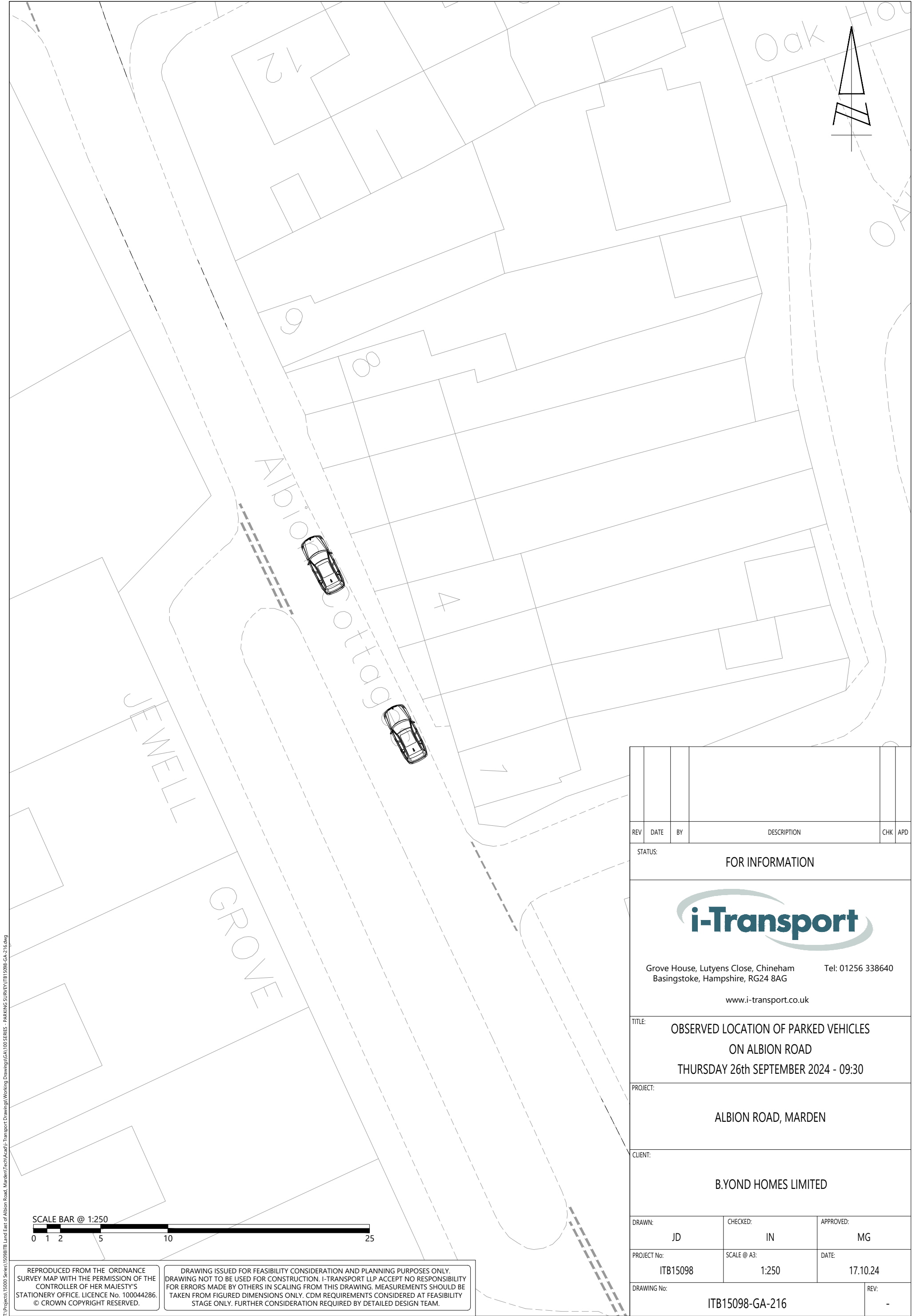
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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
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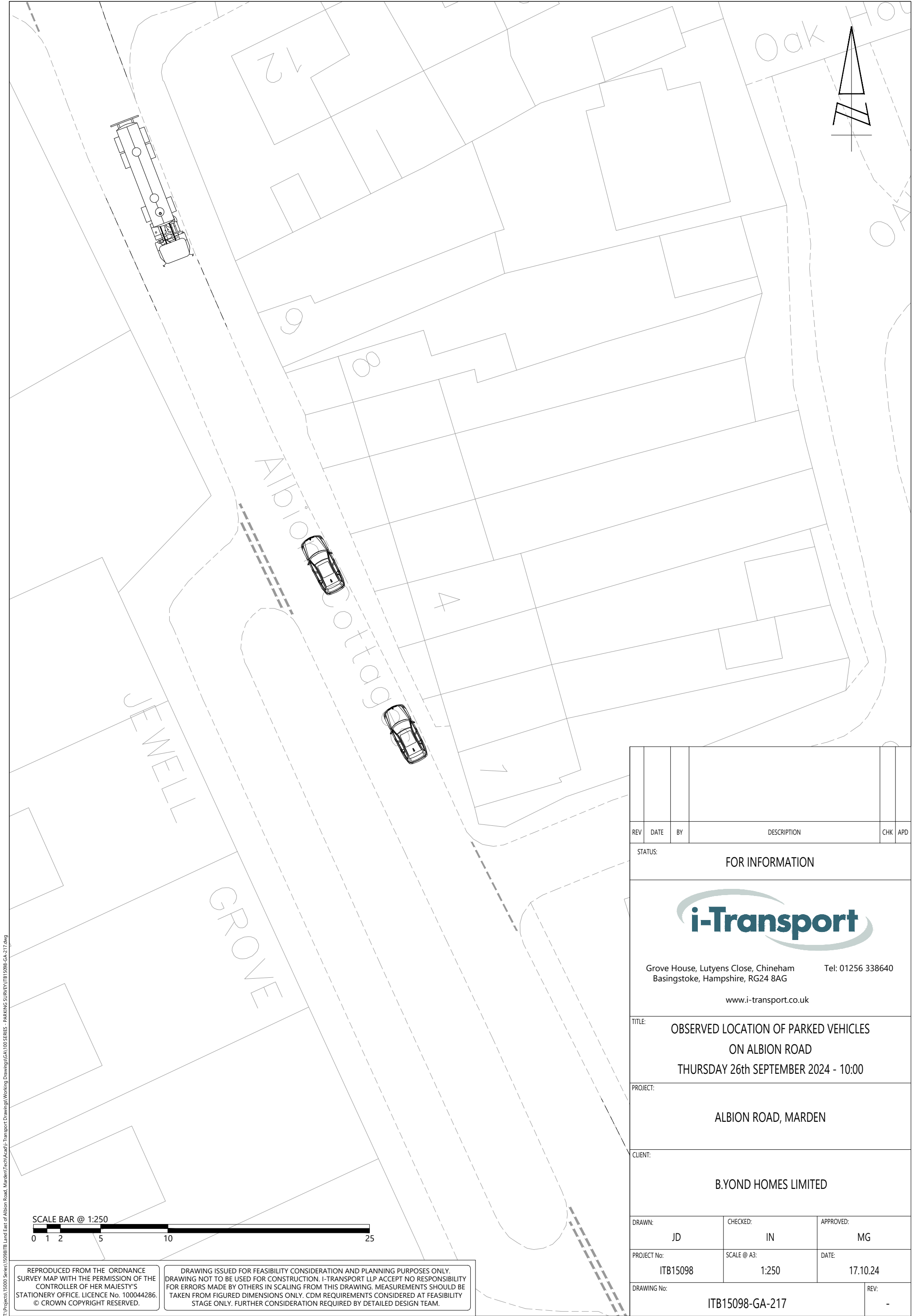


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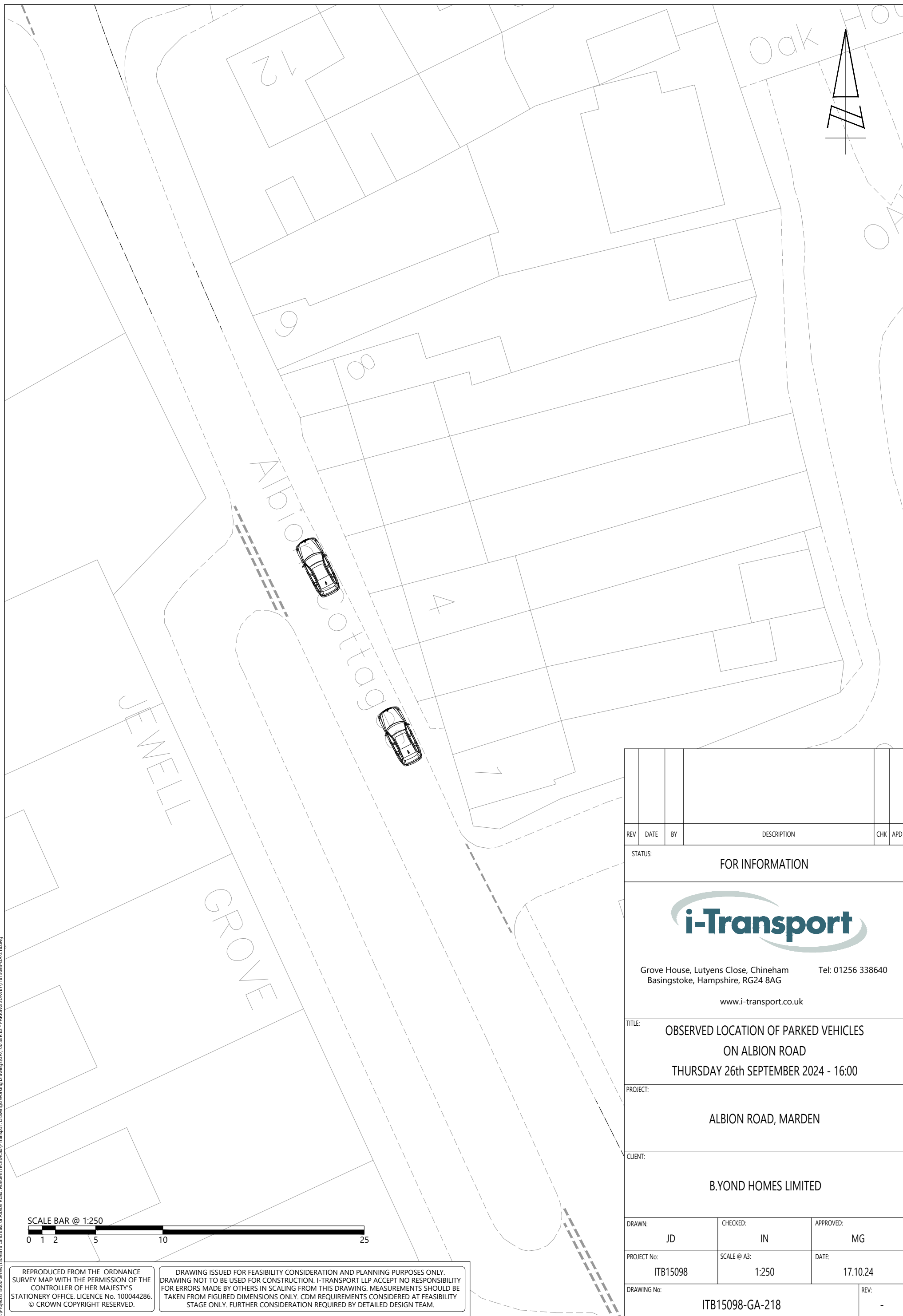
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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
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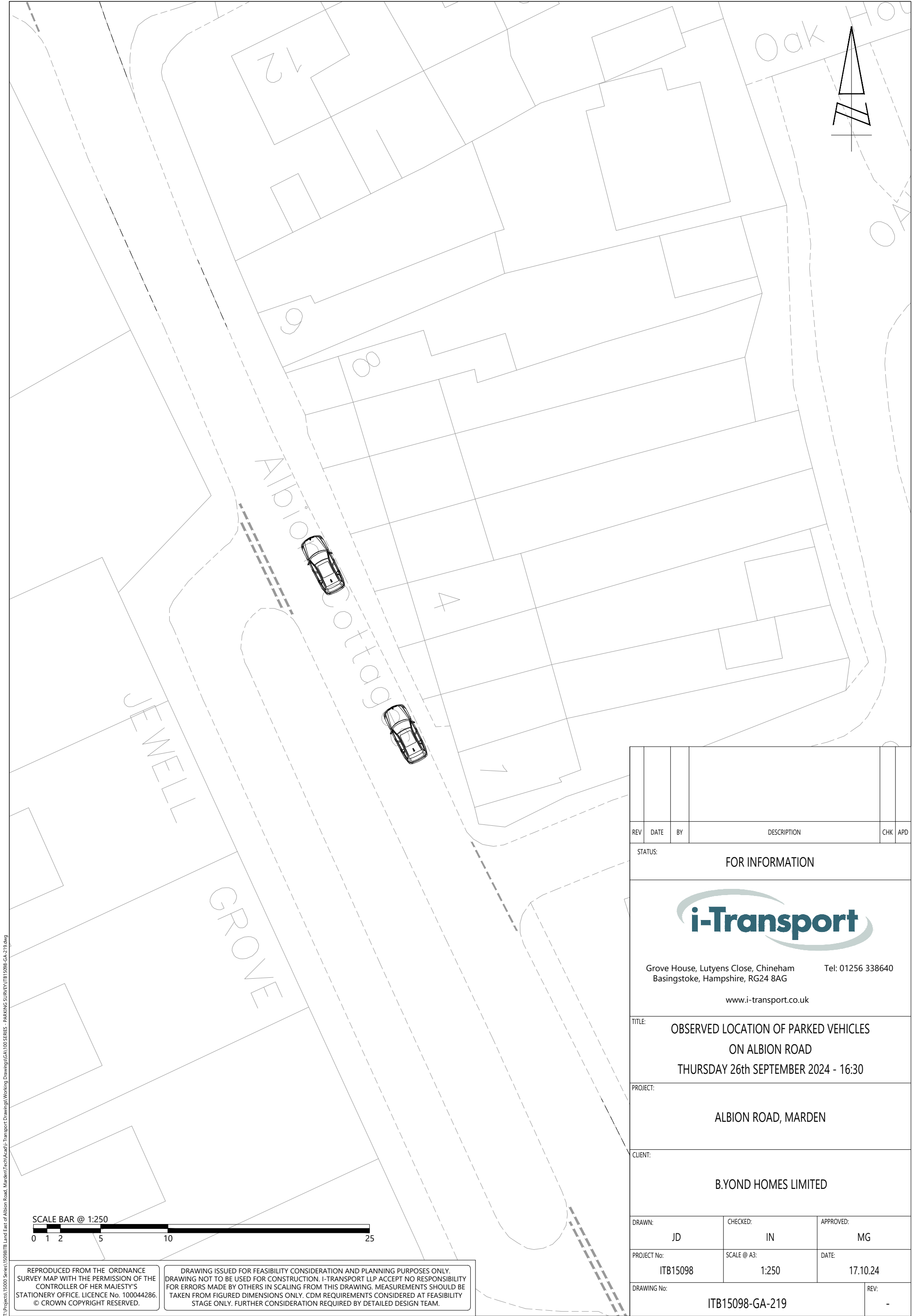
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TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 16:00					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
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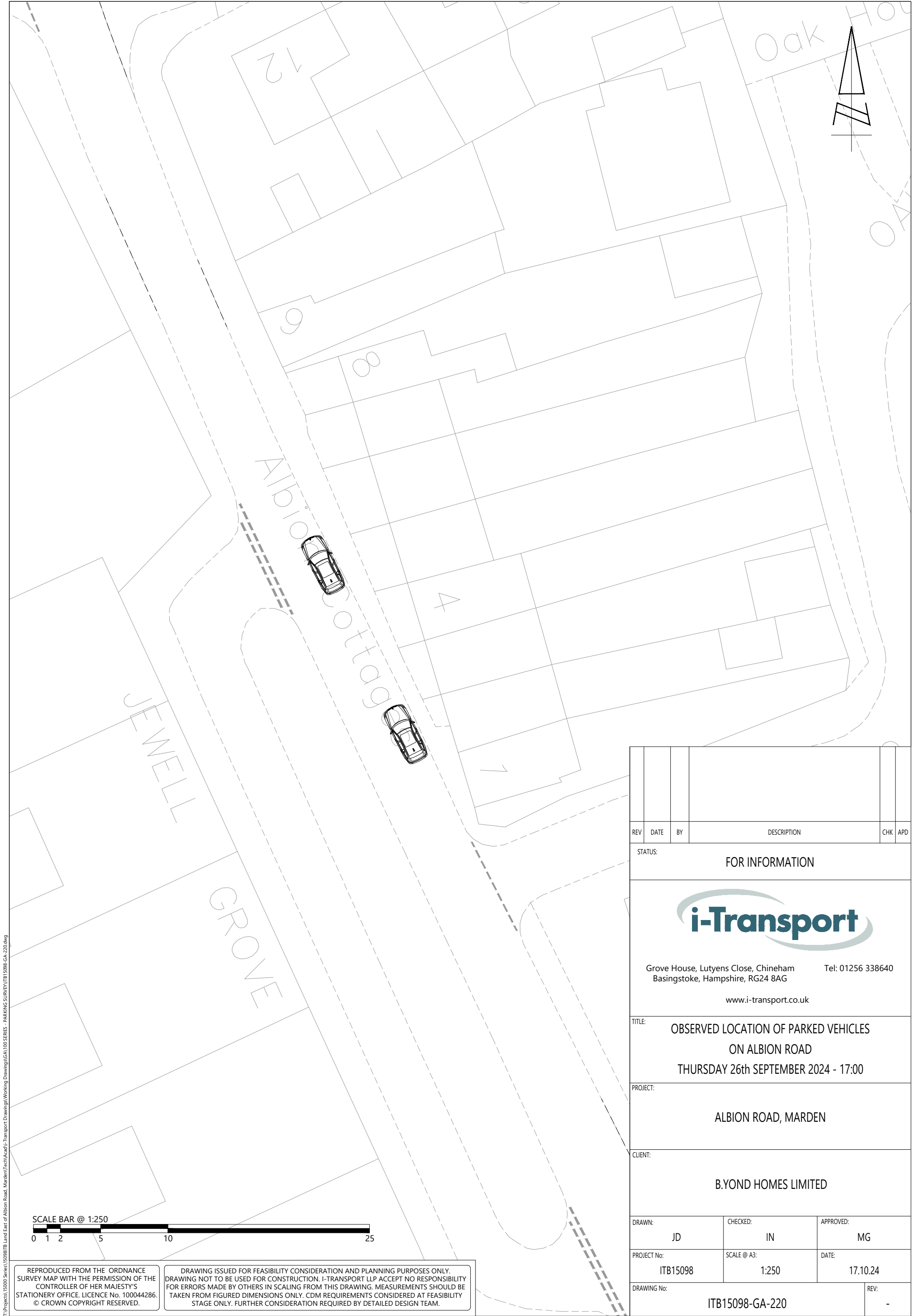


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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
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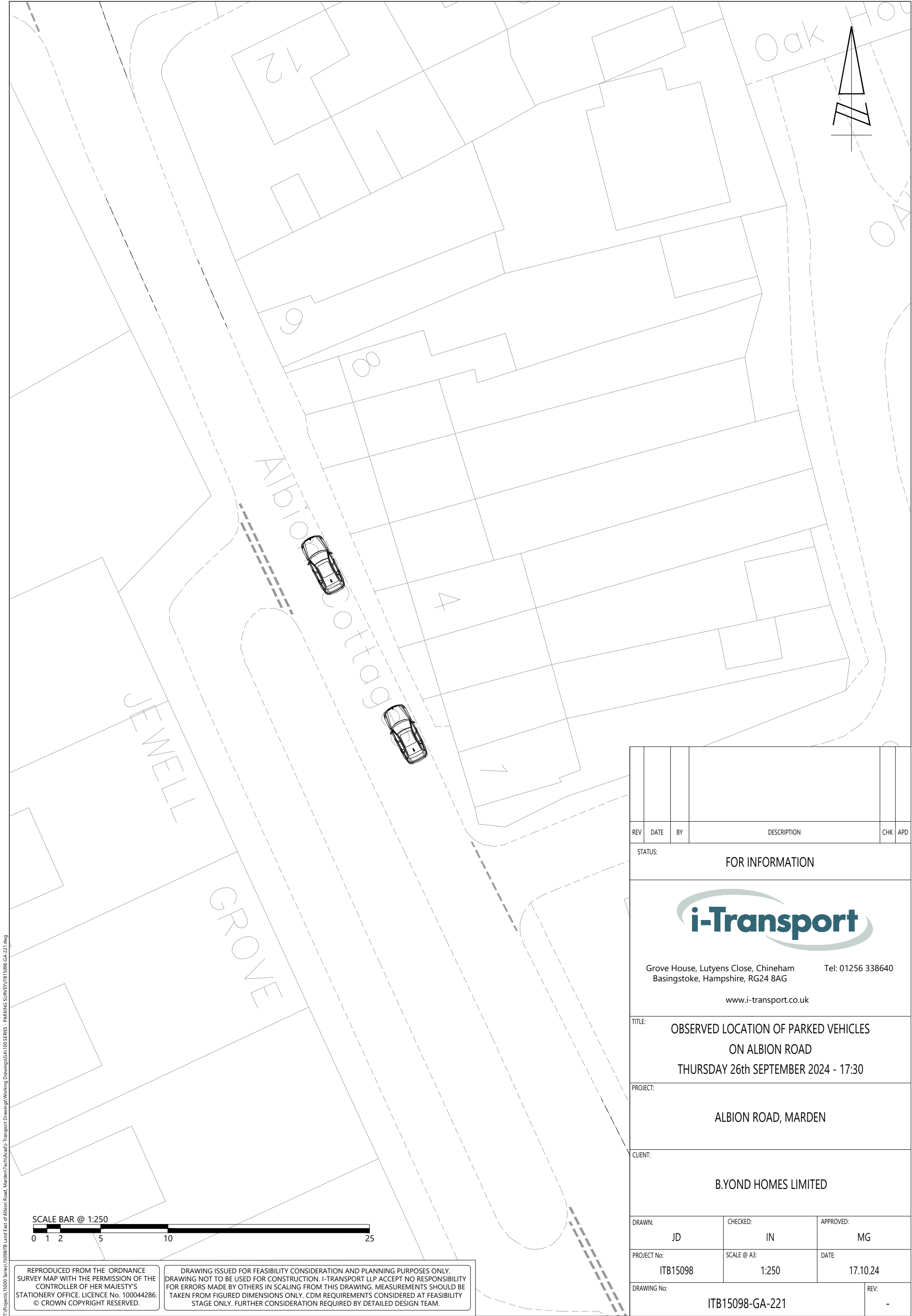


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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
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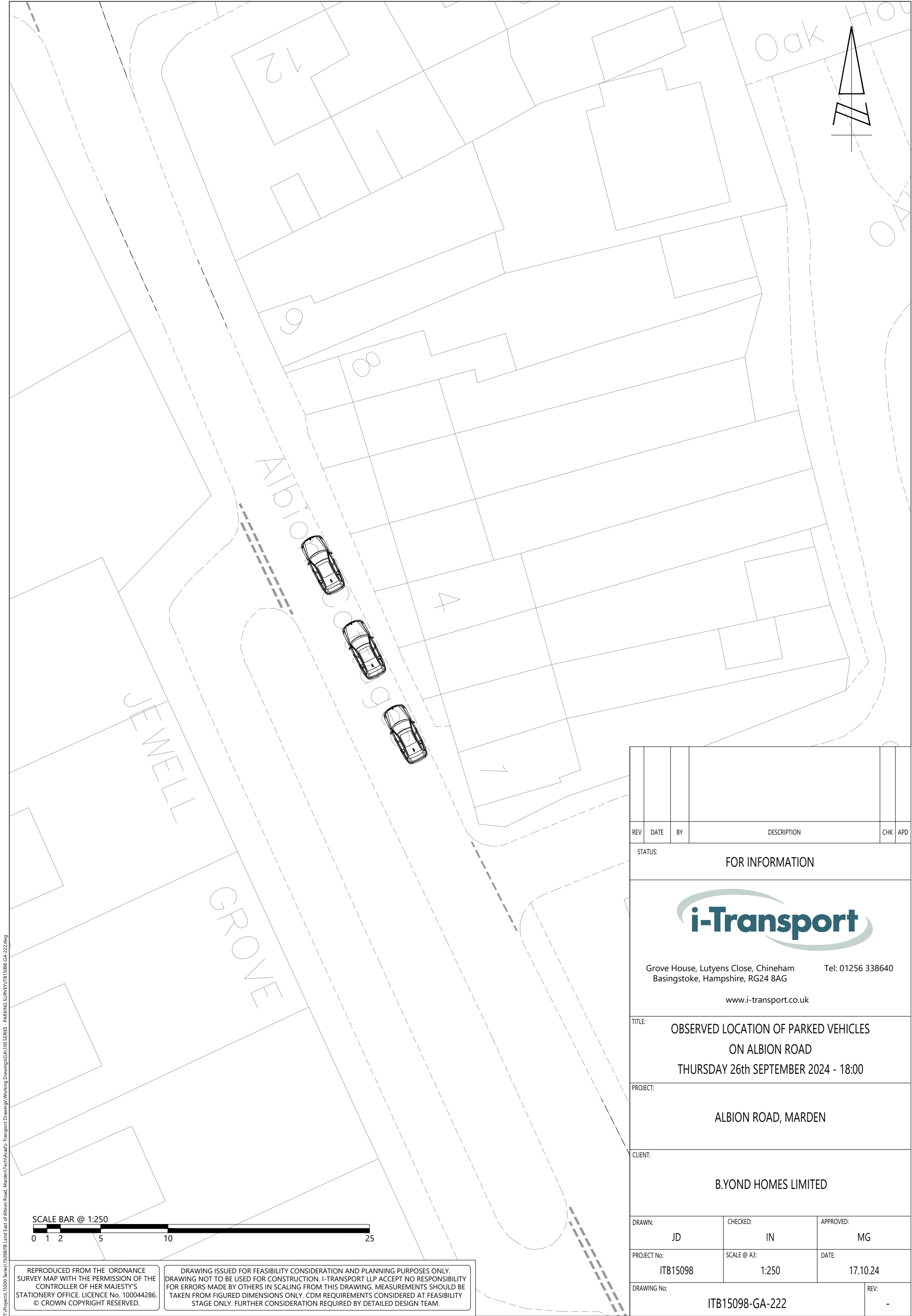


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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
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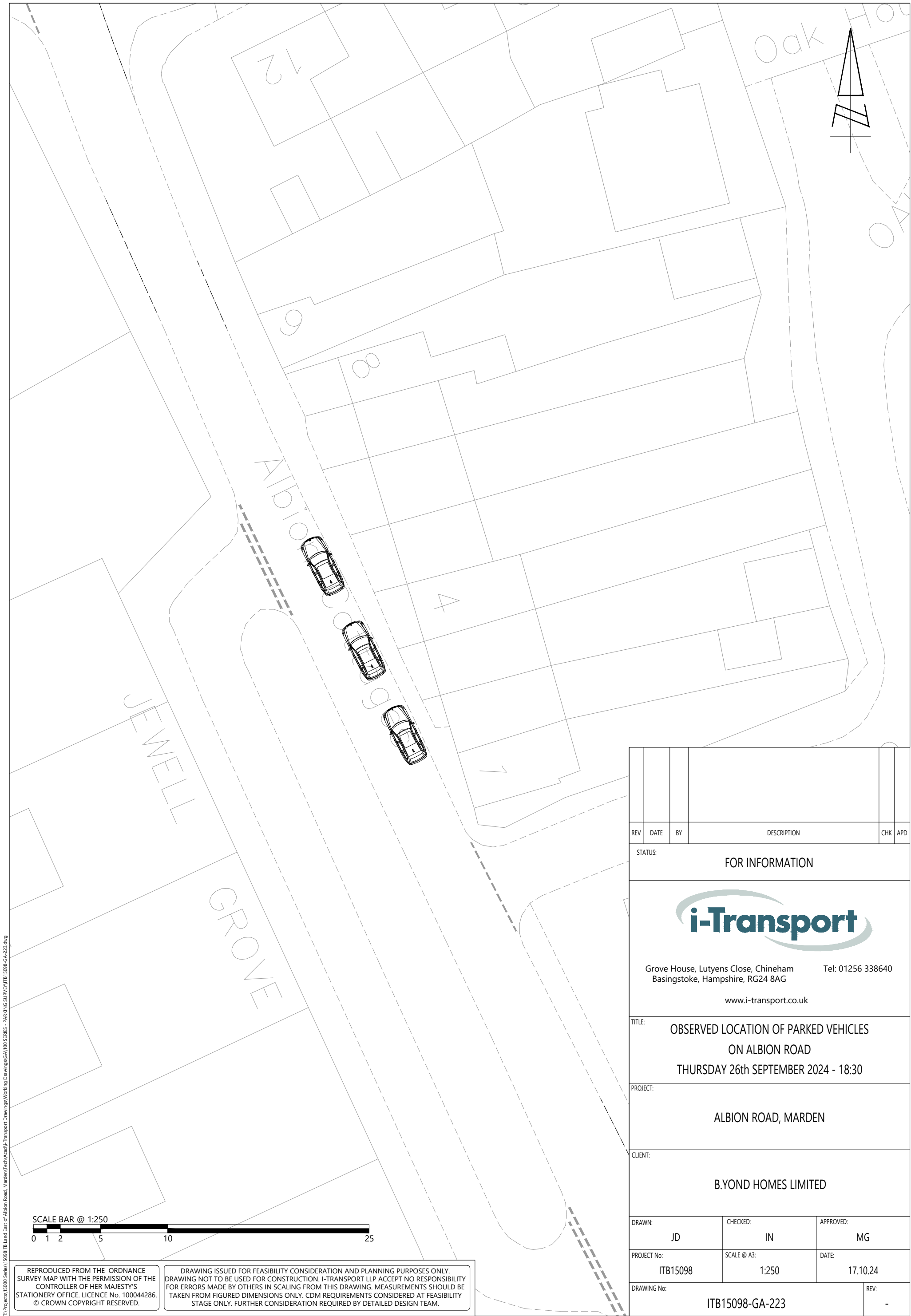


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TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 18:00					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
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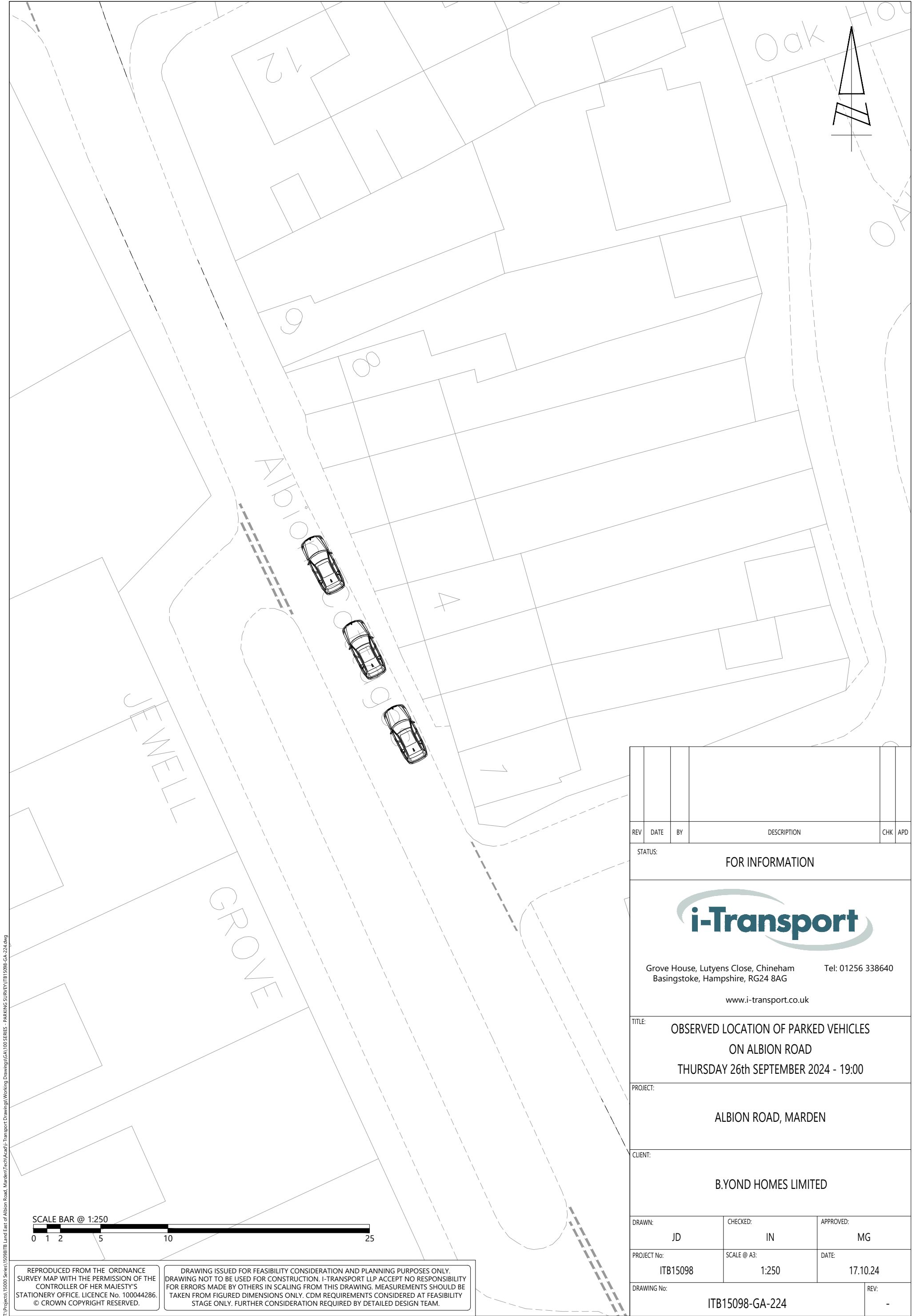


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TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 18:30					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
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TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD THURSDAY 26th SEPTEMBER 2024 - 19:00					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:250		DATE: 17.10.24	
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NOTES:

SINGLE YELLOW LINE WAITING RESTRICTIONS:
MONDAY - FRIDAY 11:00am - 11:30am

Mon - Fri

11am - 11.30am

REV	DATE	BY	DESCRIPTION	CHK	APD
STATUS: FOR INFORMATION					
<div><div><div>i-Transport</div><div>Grove House, Lutyens Close, Chineham Basingstoke, Hampshire, RG24 8AG www.i-transport.co.uk</div><div>Tel: 01256 338640</div></div></div>					
TITLE: OBSERVED LOCATION OF PARKED VEHICLES ON ALBION ROAD TUESDAY 1st OCTOBER 2024 - 07:50					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:1000		DATE: 04.10.24	
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Mon - Fri
11am - 11.30am

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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: IN		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A3: 1:1000		DATE: 04.10.24	
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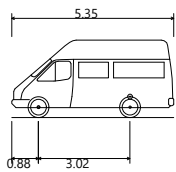
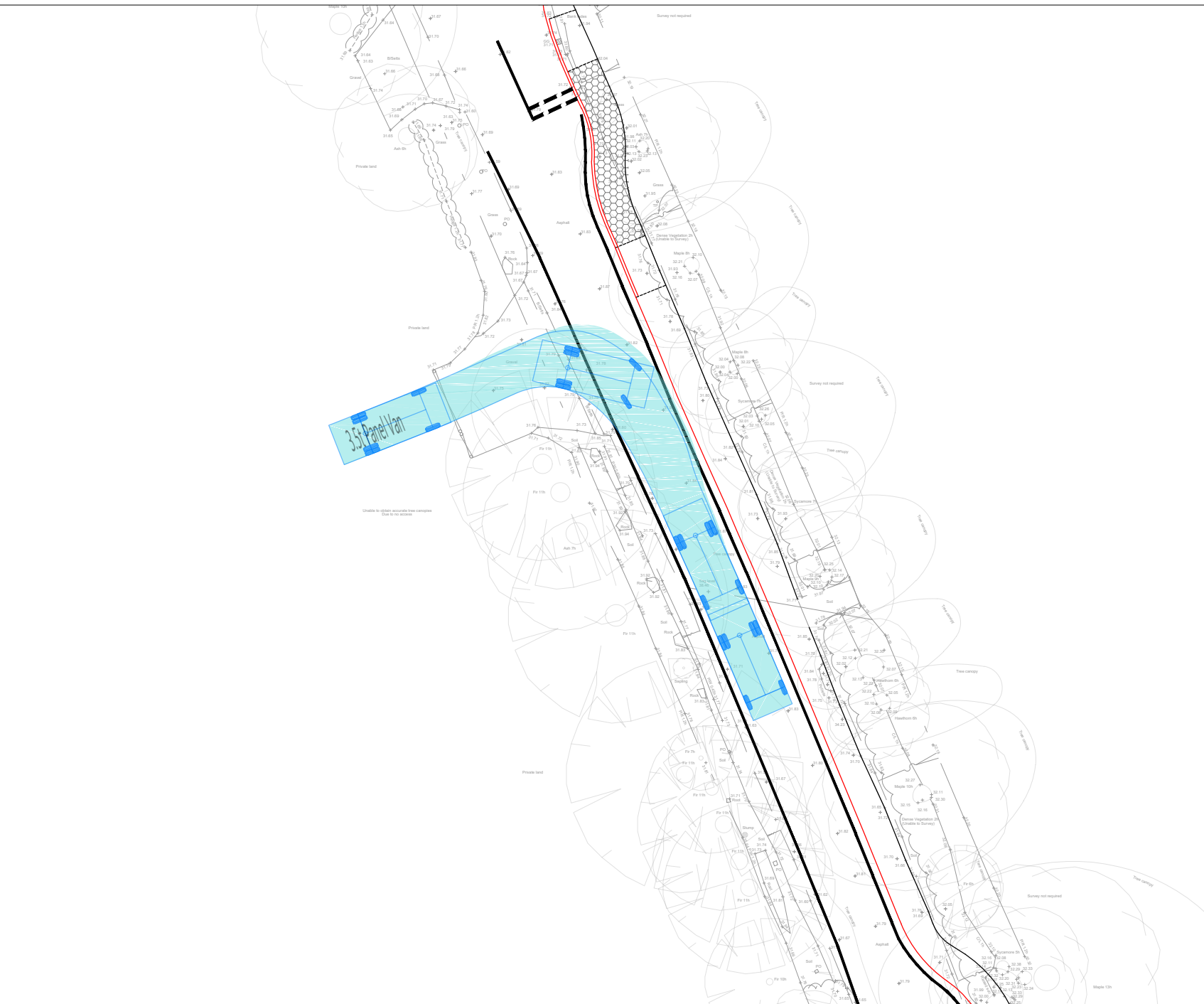
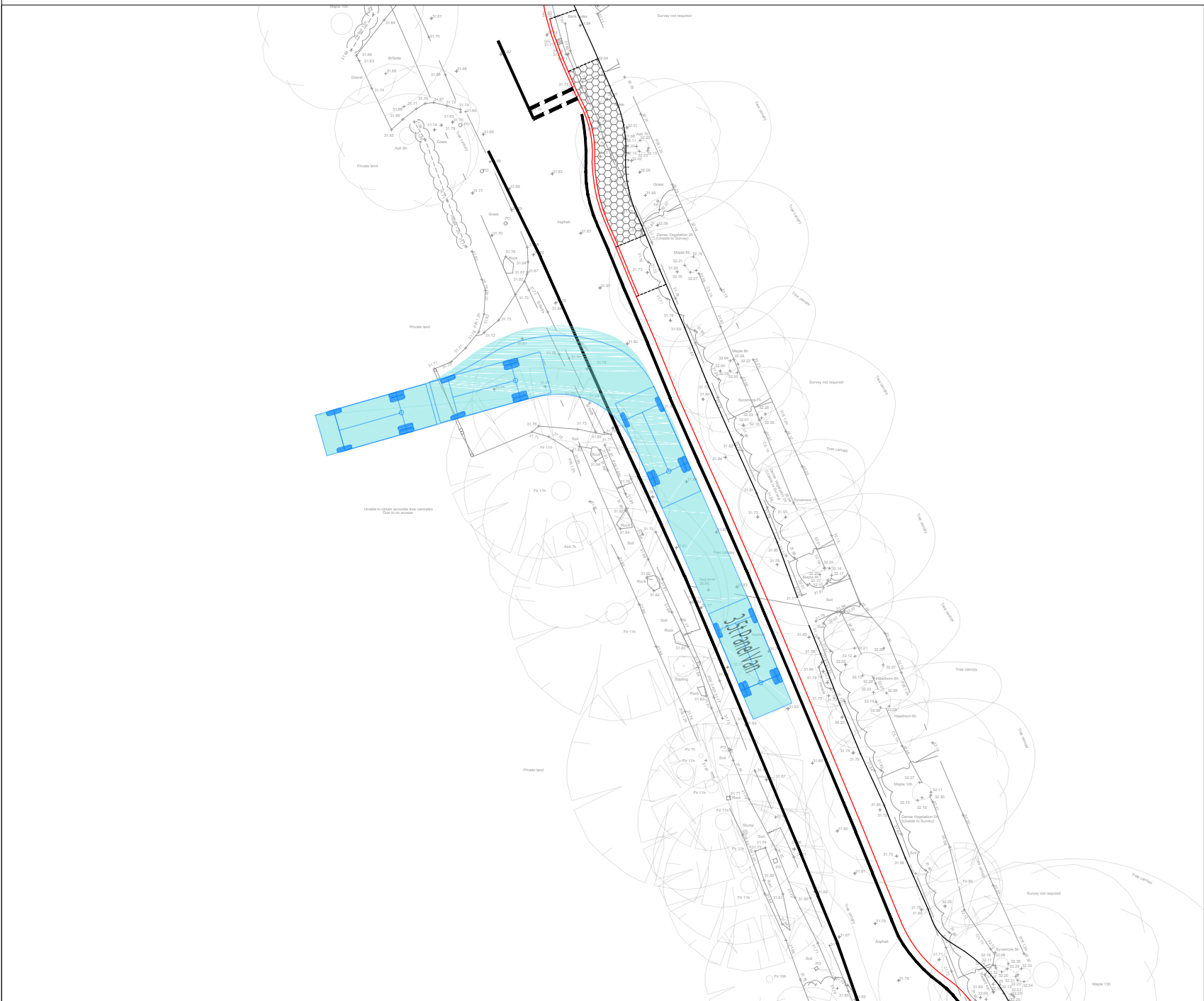
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APPENDIX MCG8. Highway Boundary Plan


APPENDIX MCG9. Vehicle Swept Path Analysis

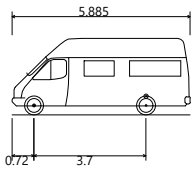
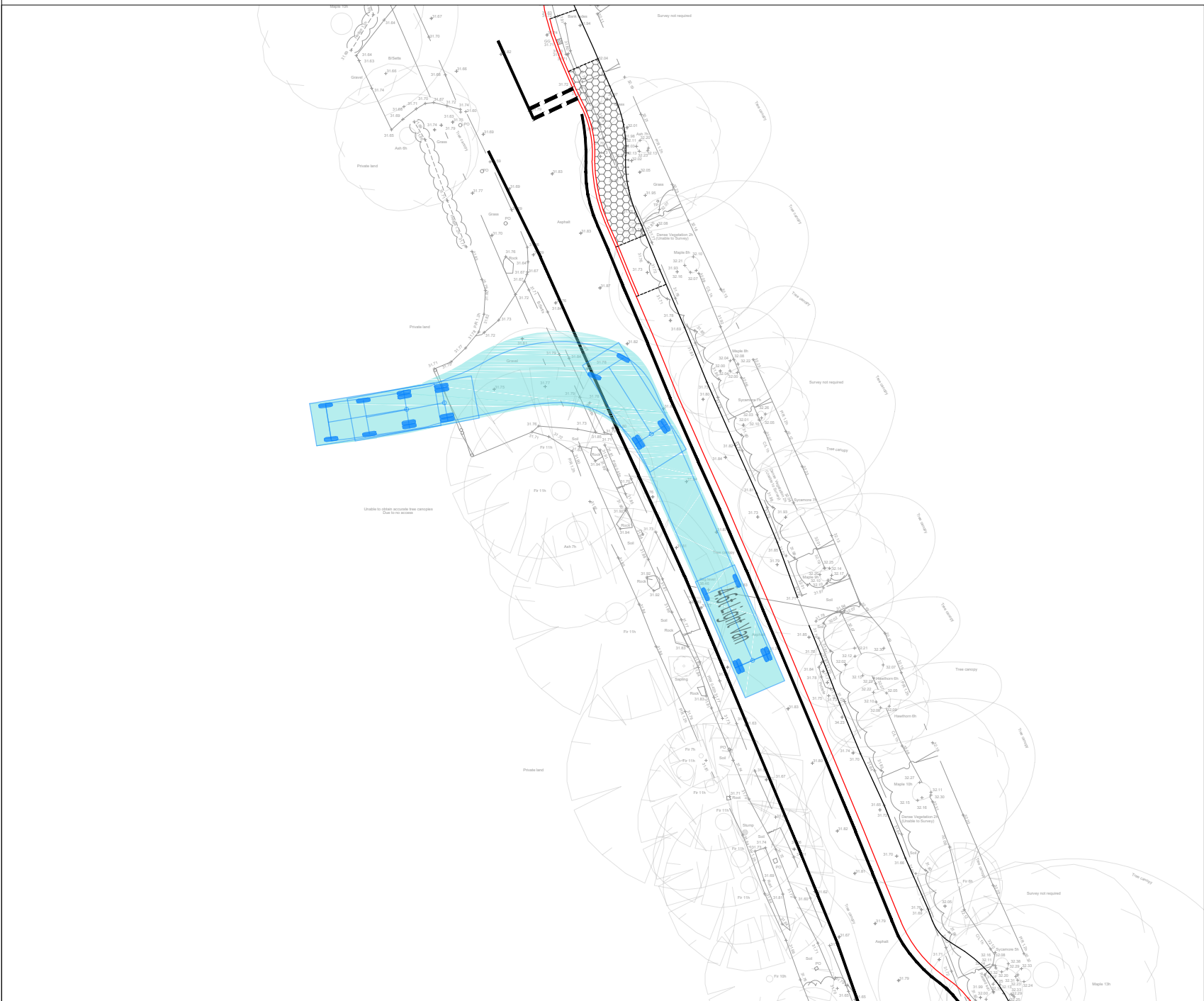


3.5t Panel Van
Overall Length 5.350m
Overall Width 1.970m
Overall Body Height 2.562m
Min Body Ground Clearance 0.335m
Track Width 1.970m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 5.850m

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TITLE: PROPOSED ALBION ROAD ALL PURPOSE ACCESS AND FOOTWAY SWEEP PATH ANALYSIS - 3.5T PANEL VAN					
PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: MG		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A2: 1:250		DATE: 15.10.24	
DRAWING No: ITB15098-GA-080					REV: -

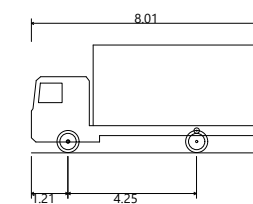
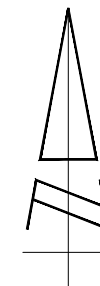
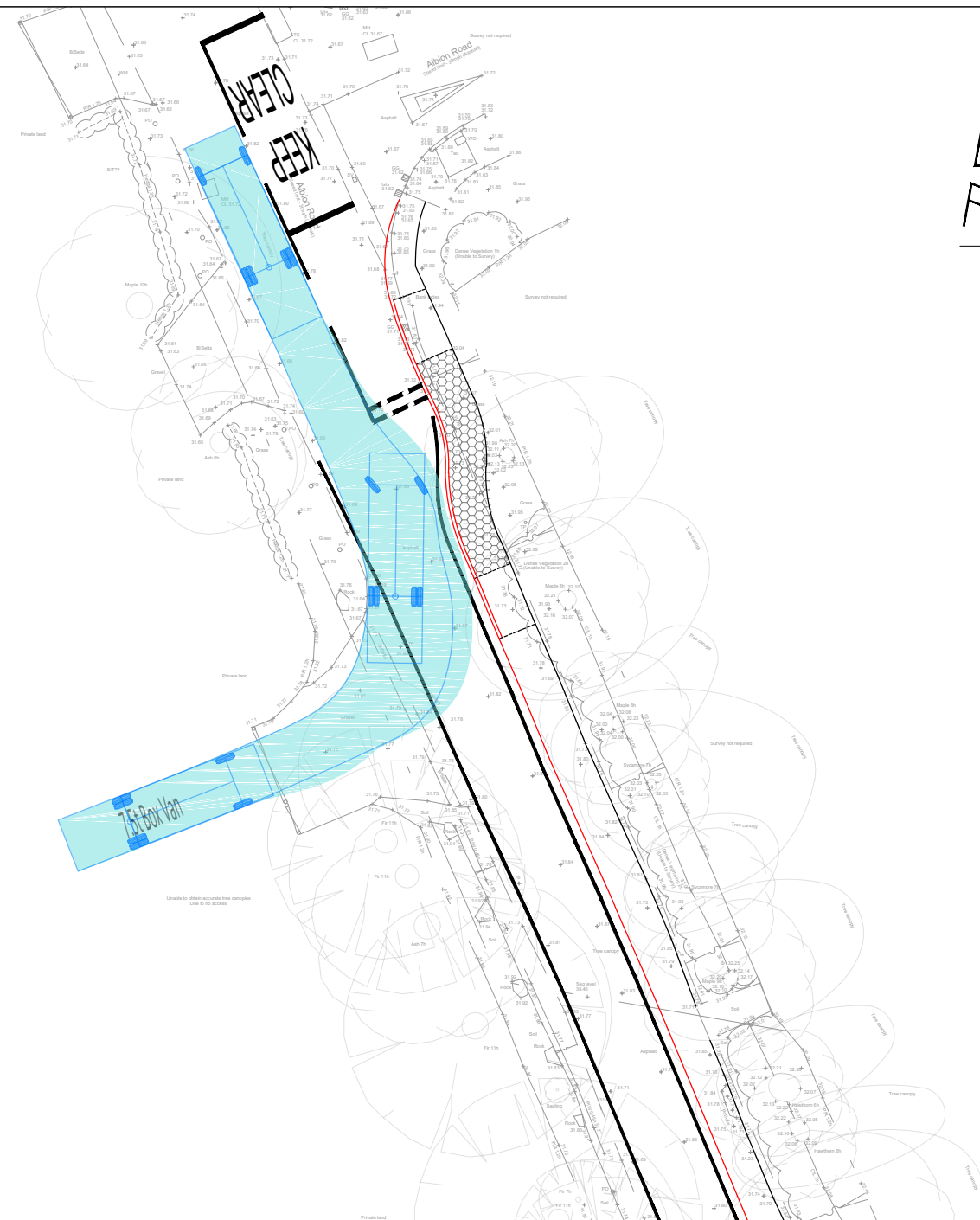


4.6t Light Van
Overall Length 5.885m
Overall Width 2.000m
Overall Body Height 2.526m
Min Body Ground Clearance 0.299m
Track Width 1.765m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 6.000m

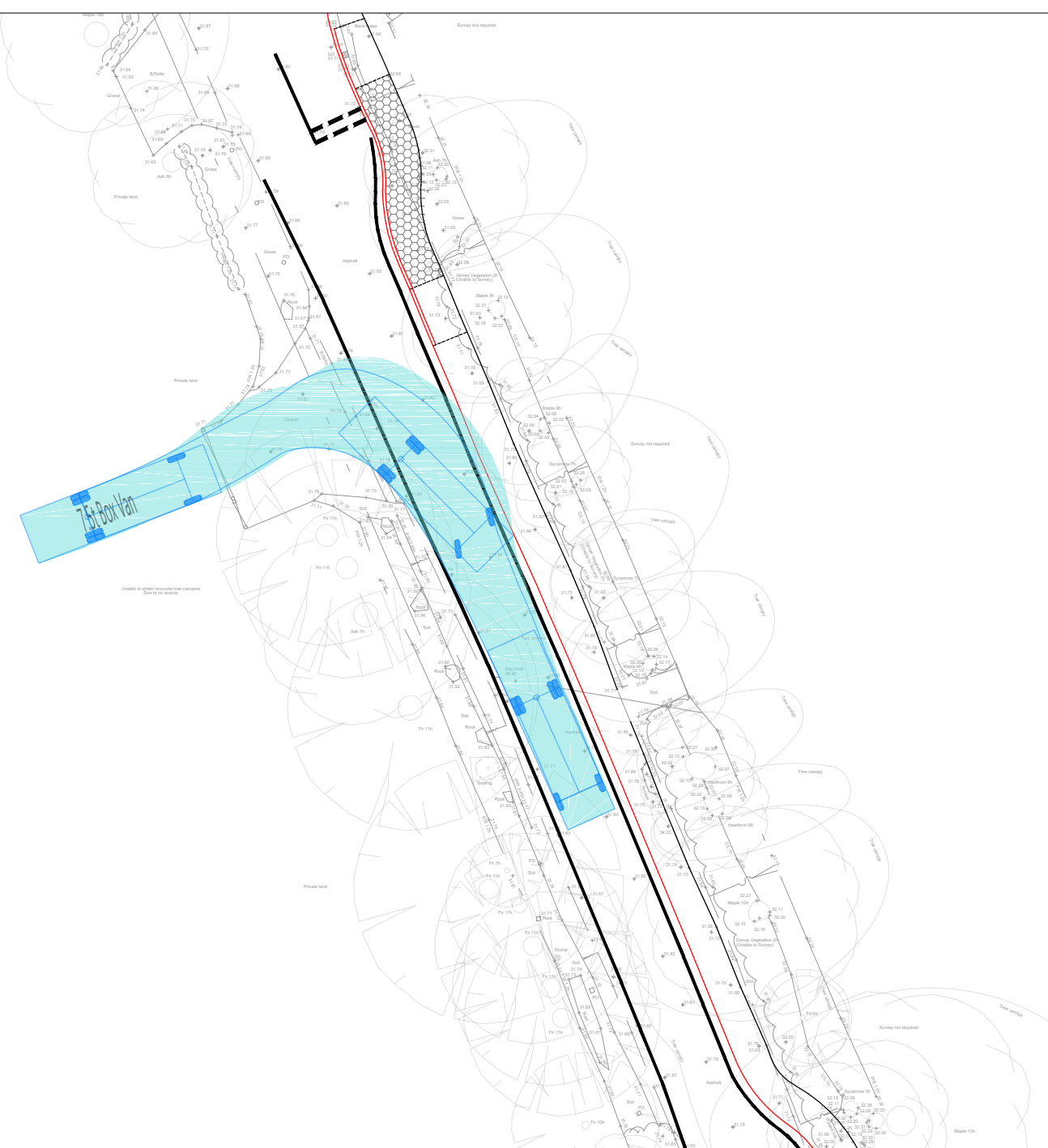
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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: MG		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A2: 1:250		DATE: 15.10.24	
DRAWING No: ITB15098-GA-079					REV: -



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



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PROJECT: ALBION ROAD, MARDEN					
CLIENT: B.YOND HOMES LIMITED					
DRAWN: JD		CHECKED: MG		APPROVED: MG	
PROJECT No: ITB15098		SCALE @ A2: 1:250		DATE: 15.10.24	
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APPENDIX MCG10. Traffic Modelling Note



Local Model Validation Report & Scheme Testing Results

Albion Road Marden VISSIM

Prepared by:

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SLR Project No.: 431.000338.00001

23 October 2024

Revision: 03

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
01	15 October 2024	EK	AH	AH
02	22 October 2024	EK	AH	AH
03	23 October 2024	EK	AH	AH

Basis of Report

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Acronyms and Abbreviations

TC	Turn Counts
MCC	Manual Classified Counts
GEH	Geoffrey E. Havers
DfT	Department for Transport
LOS	Level of Service
HCM	Highway Capacity Manual



1.0 Introduction

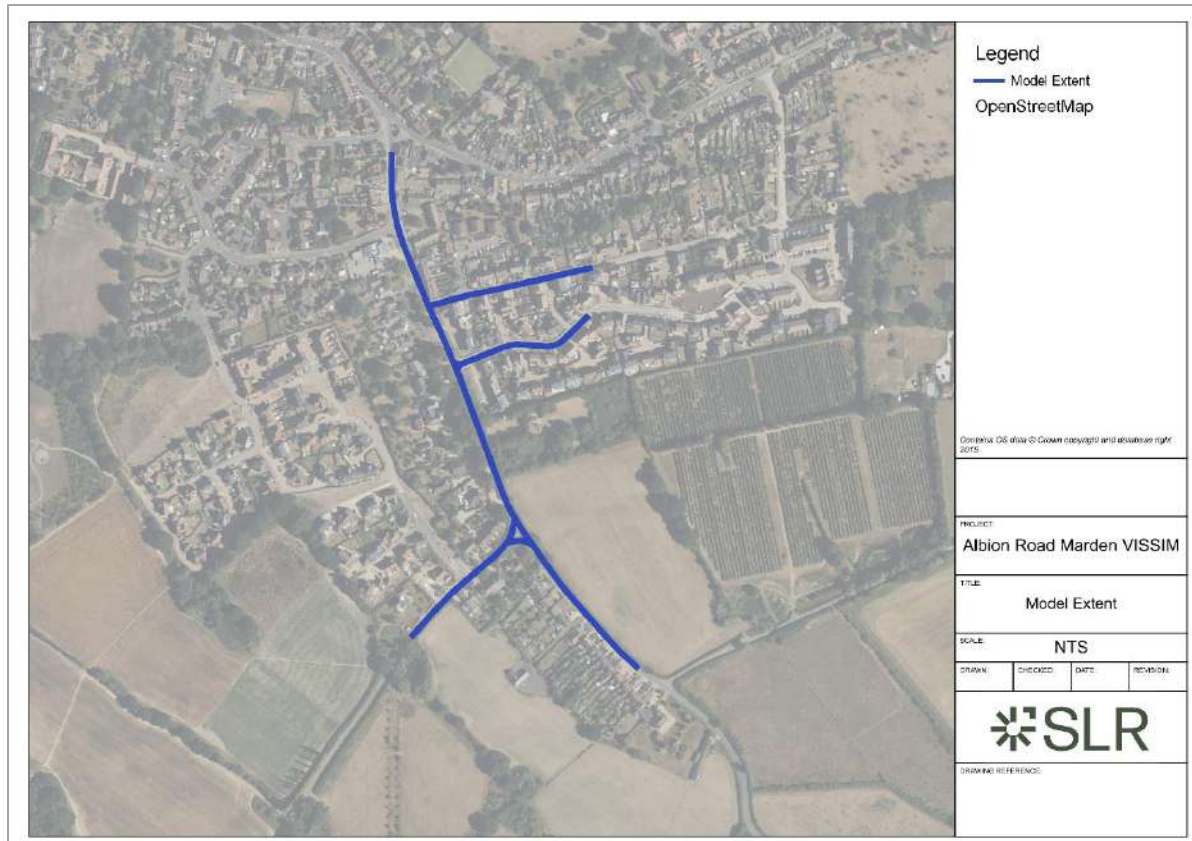
- 1.1 SLR Consulting Ltd (SLR) has been appointed by i-Transport to develop a VISSIM microsimulation model in support of a proposed development comprising up to 117 dwellings and associated infrastructure along Albion Road in Marden, Kent. The proposal includes the partial removal of one lane to accommodate a new footway along Albion Road, connecting the new site access to the southeast with the existing footway network that ends at Seymour Drive to the north.
- 1.2 The primary objective of the microsimulation model is to provide a tool to assess (a) the impact of the partial removal of one lane along Albion Road, where vehicles pass through a priority give-way arrangement, requiring drivers in one direction to yield to oncoming traffic due to the lane reduction, and (b) the impact of the development-related traffic flows.
- 1.3 This Technical Note outlines the scope, methodology, and the outputs for the Base year model, which will serve as the foundation for evaluating infrastructure arrangements and assessing the impacts of the proposed development.



2.0 Model Scope

- 2.1 The study area covers approximately 500 meters of Albion Road, including the Albion Road & Stanley Road junction at the northern edge of the model, as well as the Albion Road & Seymour Drive junction and Albion Road & Plain Road junction at the southern edge of the model.
- 2.2 Figure A below provides an overview of the study area.

Figure A: Model Extent of the Study Area



3.0 Model Specification & Parameters

3.1 The Base model has been developed and validated with the following specifications:

VISSIM Version:

- 2024-06

Base Year:

- 2024

Simulation Periods (Evaluation Periods):

- *Morning (AM) Peak: 07:30 – 09:00 (07:45 – 08:45)*
- *Evening (PM) Peak: 16:00 – 17:30 (16:15 – 17:15)*

Assignment Method:

- *Dynamic Assignment (although no route choice is available within the modelled network).*

Assessment Criteria:

- *Network calibration assessed against observed 2024 Manual Classified Turn Counts (MCCs).*
- *Model validation was performed using average journey times obtained from TomTom data.*

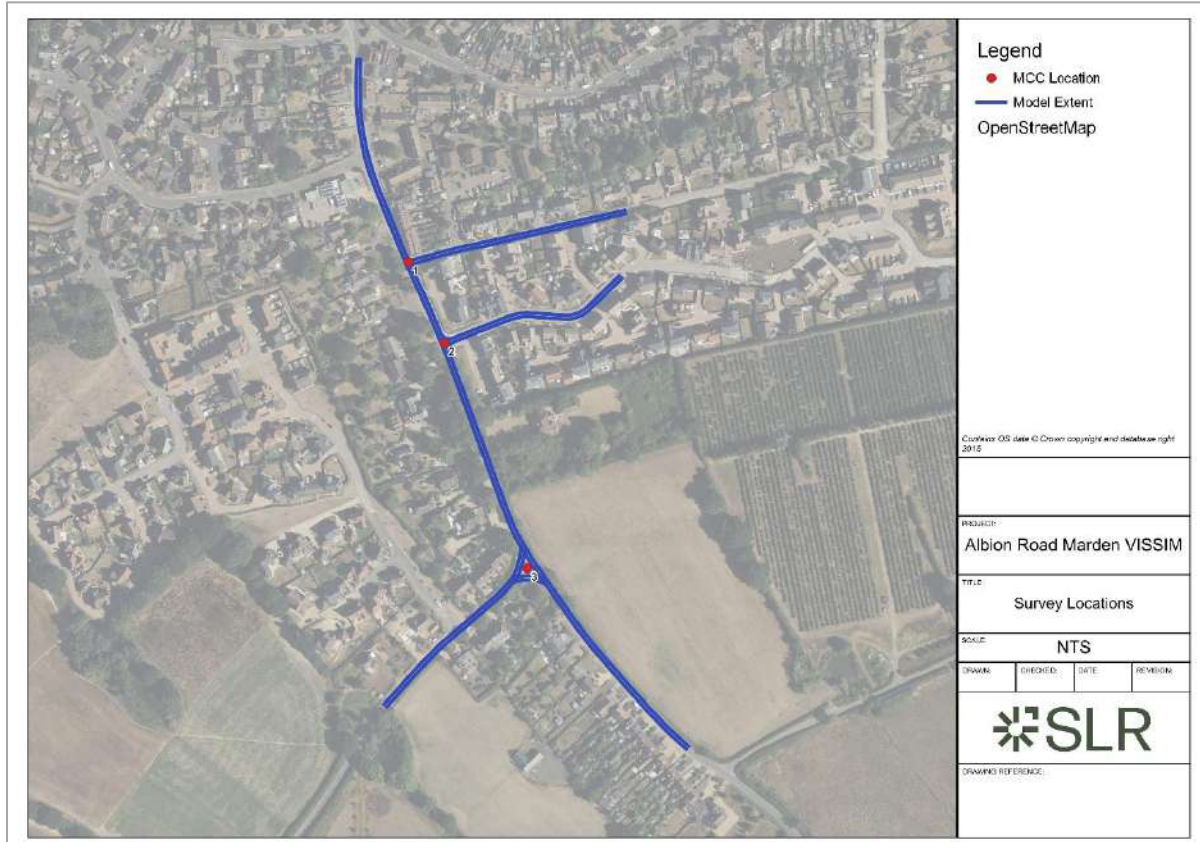


4.0 Survey Data

MCCs

4.1 The locations of the MCC survey are shown in Figure B below.

Figure B: MCC Locations



4.2 The model is built upon Manual Classified Count (MCC) traffic surveys which were carried out on Thursday 26th of September 2024, covering the main junctions along Albion Road.

- MCC 1 – Albion Road / Stanley Road
- MCC 2 – Albion Road / Seymour Drive
- MCC 3 – Albion Road / Plain Road

4.3 The MCC surveys captured traffic data during the morning period from 07:00 to 10:00 and the evening period from 16:00 to 19:00.

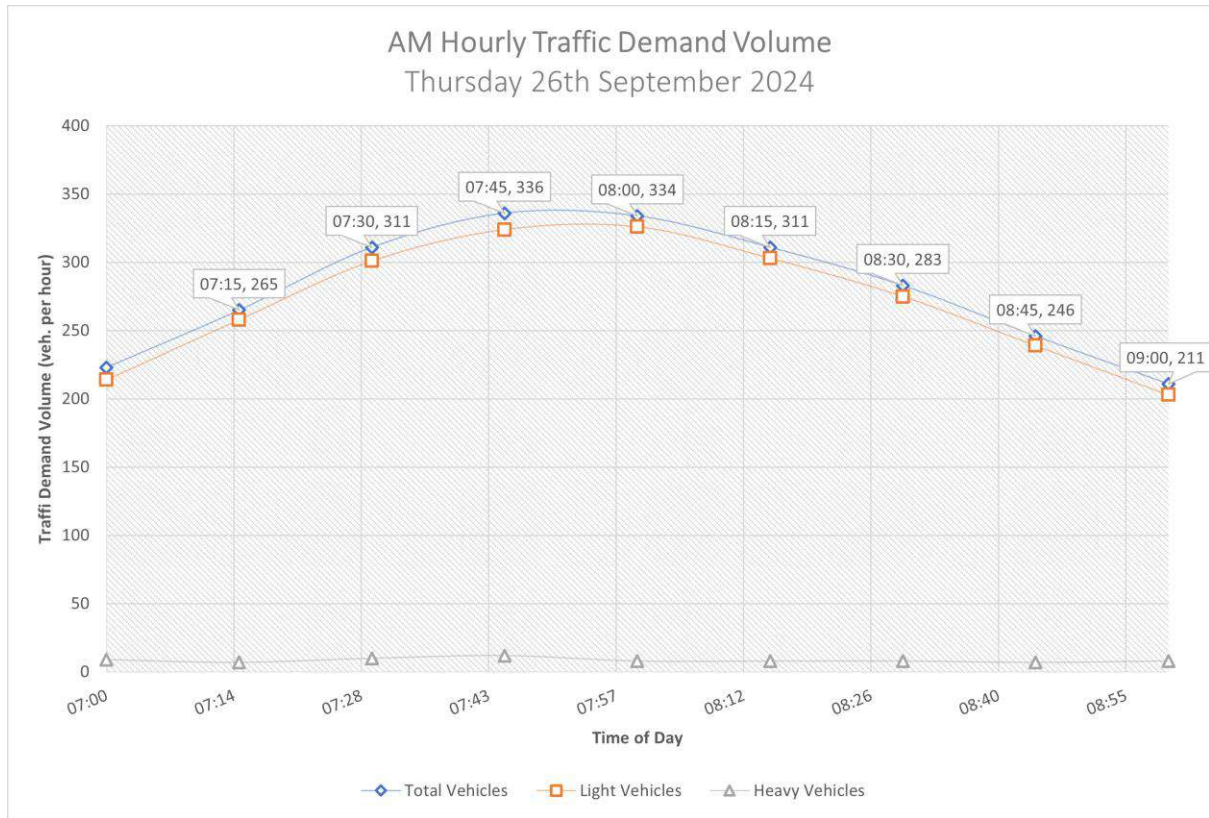
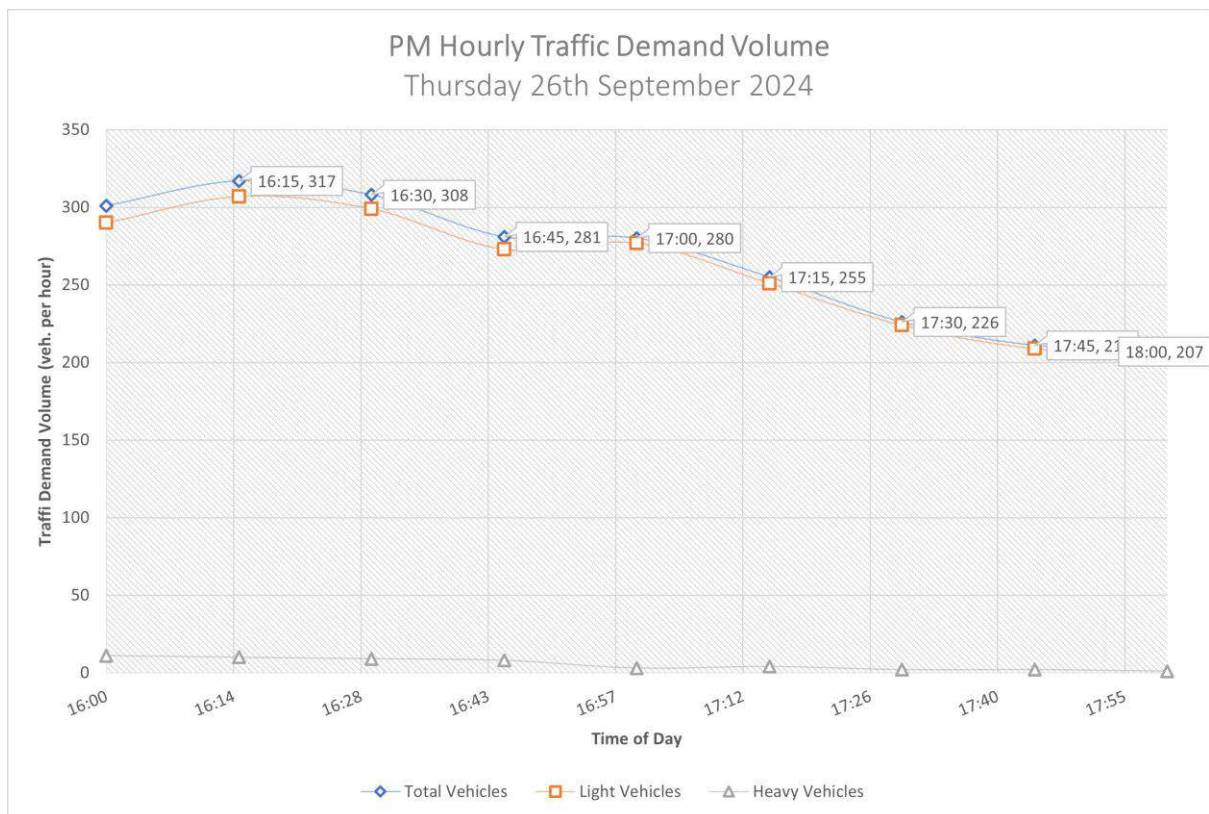
4.4 The data obtained from the manual classified counts is in 15-minute periods.



Demand Flows & Profiling

- 4.5 The methodology that was used to convert the observed data into model inputs is based on the following steps:
- Manual Classified Counts (MCC), broken down in 15-minute time intervals, were used to identify the morning and evening peak hours. MCCs covered the periods from 07:00 to 10:00 in the morning and 16:00 to 19:00 in the evening. The analysis revealed that the morning peak hour occurred between 07:45 and 08:45, while the evening peak hour was between 16:15 and 17:15. Figure C and D, overleaf, illustrate the hourly traffic demand volume for both periods, clearly indicating the peak hours.
 - Once the peak hours were identified, the vehicle demand profile for both Light and Heavy vehicles was established, using the 15-minute traffic volume data to show how traffic changes during each time interval throughout the peak hour.
 - Using the MCC data for these 15-minute time intervals within the peak hour, traffic flow diagrams were developed to depict the distribution of Light and Heavy vehicles across the road network.
 - Finally, these 15-minute traffic flow diagrams were used to create Origin-Destination (OD) matrices for both Light and Heavy vehicles. These matrices were then input into the VISSIM microsimulation model.
 - The warm-up and cool-down periods for both morning (AM) and evening (PM) peak hours were similarly analysed, established and incorporated into VISSIM as Origin-Destination (OD) matrices. For the morning (AM) peak, the warm-up period is 07:30 – 07:45, and the cool-down period is 08:45 – 09:00. For the evening (PM) peak, the warm-up period is 16:00 – 16:15, and the cool-down period is 17:15 – 17:30. Due to the small size of the network and relatively low traffic volumes, a 15-minute warm up and cool down was considered of sufficient length.

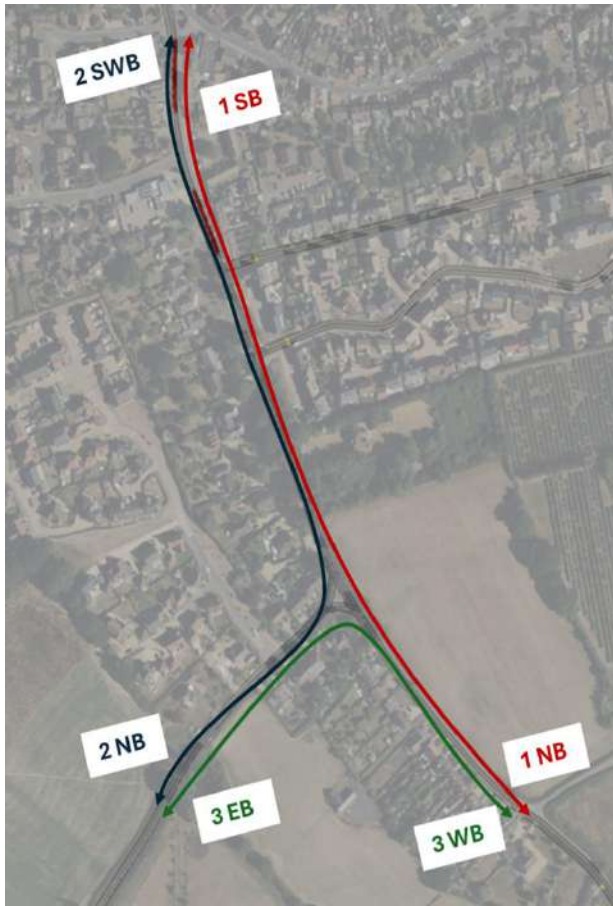


Figure C: AM Hourly Traffic Demand Volume**Figure D: PM Hourly Traffic Demand Volume**

Journey Time Data

- 4.6 Journey time data was obtained from the TomTom database from 10th September 2024 to 3rd October 2024. Data has been exported in 15-minute periods for 3 AM and 3 PM assessment hours; 07:00 – 10:00 and 16:00 – 19:00. The range selected was to allow for as high a sample size as possible without including data during school holidays.
- 4.7 Only TomTom data from Tuesday to Thursday has been included in the journey time analysis. Monday, Friday, Saturday and Sunday have been excluded. The TomTom database covers all links within the modelled network.
- 4.8 Taking this into account, journey time validation has been conducted along the Albion Road, Thorn Rd, and Plain Rd, covering the study area in both directions.
- 4.9 The Figure E below provides details of the journey time routes that have been included in the validation process.

Figure E: Journey Time Routes



Network Coding & Structure

- 4.10 The links and connectors that make up the skeleton of the network have been coded using the Bing Map feature within VISSIM as the model overlay.
- 4.11 A desktop study has been carried out to identify speed limits and these are included in VISSIM in line with the speed restrictions on street.
- 4.12 Reduced Speed Areas have not been included in the model to temporarily control speeds owing to changes in road geometry. Instead, a “speed limitation in curves” factor has been applied. This method ensures vehicles approaching curves automatically reduce speed based on the brake radius reaction and the desired curve speed function for their vehicle type. VISSIM calculates the curve’s radius using several successive link intermediate points, which can include the start and end points of the link as well as connectors between links. The radius is calculated from the centreline of the link, regardless of the number of lanes. As vehicles approach a curve, they brake to ensure their speed does not exceed the acceptable limit based on the curve’s radius and the vehicle’s type. This dynamic approach offers more realistic speed regulation compared to static reduced speed areas, as it adjusts vehicle behaviour according to the road’s actual curvature.
- 4.13 Although reduced speed areas have not been introduced in the model to control changes in road geometry, they have been introduced at the north exit link at Albion Road to replicate delays caused by the give-way junction, where vehicles must yield and give priority to Howland Road.
- 4.14 Additionally, a stop sign marker with a 5-second dwell time distribution has been introduced to replicate delays as vehicles pause to check for oncoming traffic before continuing.
- 4.15 One driving behaviour have been included in the model:
- Urban (motorised) – assigned to vehicular links where co-operative merging between vehicles is not observed.
- 4.16 Conflicting movements between vehicles are primarily controlled by Conflict areas which prevent vehicles colliding or overlapping with each other. Priority rules are also included at some locations where additional conflict management was considered necessary.
- 4.17 A desired speed of 30 mph was initially introduced into the model, reflecting the results of the traffic field studies conducted in the area. However, the corresponding desired speed decision in VISSIM ranged from 15 mph to 55 mph, which did not align with the observed speeds from the TomTom data. TomTom data indicated that average speeds across most of the study area ranged between 5 mph and 28 mph for both morning (AM) and evening (PM) peak hour.
- 4.18 To better match the observed TomTom data, the desired speed decision in the model was adjusted to 20 mph, which corresponds to a speed range of 13 mph to 33 mph and more closely matches the observed speeds.
- 4.19 The only section where the original 30 mph desired speed was retained is south of the Plain Road junction, where Albion Road turns into Thorn Road, as TomTom data recorded speeds over 30 mph along that section.



On-street Parking

- 4.20 Due to the presence of on-street parked vehicles, video footage was recorded at various sections along Albion Road to observe driver behaviour and interactions with parked vehicles.
- 4.21 The analysis of the video footage revealed specific sections of the network that required attention in the traffic modelling within VISSIM. These sections have been explicitly incorporated into the model, allowing for a more accurate representation of traffic conditions.
- 4.22 In response to these findings, priority rules have been implemented at these sections in the model to manage potential conflicts. For instance, these priority rules require traffic to yield when oncoming vehicles are present in sections where the road is narrowed due to on-street parked vehicles.

Public Transport

- 4.23 Two bus stops are located within the study area. One is situated on Plain Road near the Albion Road junction, and the other one on Albion Road just north of the Stanley Road junction.
- 4.24 These bus stops are served by bus services 22, 23, and 527.
- 4.25 Detailed bus schedules for these routes were sourced from “BusTime UK” website which can be found on the following reference link ([527 - Oakwood Park - Maidstone - Linton - Marden – Nu-Venture – Bus Times](#)), ensuring accurate representation of public transport availability within the study area.
- 4.26 All the above public transport data have been coded and included within VISSIM model.



5.0 Calibration & Validation Results

Overview

- 5.1 The AM and PM Base VISSIM models were run for 15 individual seed runs, starting at number 42 and increasing in increments of 1. A “seed” refers to a single simulation run, where each individual seed run will result in slightly different model conditions and result outputs due to variations in the demand release profiles from each of the modelled zones. Multiple seed runs are used in microsimulation to simulate day-to-day variation that may be present on street. Results from the average of all 15 runs are presented within this Report.
- 5.2 Calibration and Validation results are summarised in the following paragraphs.

Flow Calibration

- 5.3 Flow calibration refers to the process of comparing modelled flow outputs with their observed equivalents across the network.
- 5.4 The Geoffrey E. Havers (GEH) statistic is a standard way of evaluating flow calibration, as defined in DMRB, Volume 12, Chapter 4. The GEH value is akin to a chi-squared test and also incorporates both relative and absolute errors in order to give an overall measure of the accuracy of the modelled flow.
- 5.5 The GEH statistic removes the bias involved in comparing flows of different magnitudes using percentages. For instance, a difference of 10 in a flow of 100 vehicles per hour (vph) is less significant (GEH = 1) than a difference of 100 in a flow of 1000 vph (GEH = 3.2).
- 5.6 The GEH statistic has the following formula:

$$GEH = \sqrt{\frac{(M - C)^2}{(M + C)/2}}$$

where:

GEH	= GEH statistic
M	= Modelled flow
C	= Observed flow



5.7 An extract of the calibration guideline criteria is shown in Table A below.

Table A: WebTAG Turn and Link Flow Criteria¹

Criteria	Description of Criteria	Acceptability Guideline
1	Individual flows within 100 veh/h of counts for flows less than 700 veh/hr	> 85% of Cases
	Individual flows within 15% of counts from 700 to 2700 veh/hr	> 85% of Cases
	Individual flows within 400 veh/hr of counts for flows more than 2700 veh/hr	> 85% of Cases
2	GEH <5 for individual flows	> 85% of Cases

5.8 Turn Count calibration results demonstrate that both Morning (AM) and Evening (PM) peak hours base models surpass the guideline GEH pass-rate of 85%. Both AM and PM Base models achieve 100%. A summary of the results can be seen in the following table.

Table B: Turn Count Calibration (GEH) – Summary Results

Morning (AM) Peak Hour		
	07:45 – 08:45	
Counts	18	
GEH	Pass	%
< 1	18	100%
Evening (PM) Peak Hour		
	16:15 – 17:15	
Counts	18	
GEH	Pass	%
< 1	18	100%

5.9 It can be seen from the Table above that all 18 of the movements achieve a GEH of less than one, indicating an excellent correlation between observed and modelled flows.

5.10 Full Turn Counts results for both Morning (AM) and Evening (PM) peak hours can be found in the following tables.

¹ TAG Unit M3.1, Para. 3.3.11 Table 2, Department for Transport January 2024



5.11 Tables C and D compare the observed and modelled turn counts in the two peak periods.

Table C: Morning (AM) Peak (07:45 – 08:45) - Observed and Modelled Turn Counts

Junction	Movement	Observed	Modelled	GEH
		ALL	ALL	ALL
Albion Rd / Stanley Rd	Albion Rd (N) - Stanley Rd (E)	3	3	0.00
	Albion Rd (N) - Albion Rd (S)	96	96	0.00
	Stanley Rd (E) - Albion Rd (N)	5	5	0.00
	Stanley Rd (E) - Albion Rd (S)	5	5	0.00
	Albion Rd (S) - Stanley Rd (E)	6	6	0.00
	Albion Rd (S) - Albion Rd (N)	114	114	0.00
Albion Rd / Seymour Dr	Albion Rd (N) - Seymour Dr (E)	11	11	0.00
	Albion Rd (N) - Albion Rd (S)	89	90	0.11
	Seymour Dr (E) - Albion Rd (N)	26	27	0.19
	Seymour Dr (E) - Albion Rd (S)	17	17	0.00
	Albion Rd (S) - Seymour Dr (E)	4	4	0.00
	Albion Rd (S) - Albion Rd (N)	94	93	0.10
Albion Rd / Thorn Rd / Plain Rd	Albion Rd (N) - Thorn Rd (S)	65	67	0.25
	Albion Rd (N) - Plain Rd (W)	39	41	0.32
	Thorn Rd (S) - Plain Rd (W)	55	55	0.00
	Thorn Rd (S) - Albion Rd (N)	64	65	0.12
	Plain Rd (W) - Albion Rd (N)	33	32	0.18
	Plain Rd (W) - Thorn Rd (S)	30	30	0.00



Table D: Evening (PM) Peak (16:15 – 17:15) - Observed and Modelled Turn Counts

Junction	Movement	Observed	Modelled	GEH
		ALL	ALL	ALL
Albion Rd / Stanley Rd	Albion Rd (N) - Stanley Rd (E)	18	18	0.00
	Albion Rd (N) - Albion Rd (S)	115	114	0.09
	Stanley Rd (E) - Albion Rd (N)	5	5	0.00
	Stanley Rd (E) - Albion Rd (S)	6	6	0.00
	Albion Rd (S) - Stanley Rd (E)	2	2	0.00
	Albion Rd (S) - Albion Rd (N)	90	88	0.21
Albion Rd / Seymour Dr	Albion Rd (N) - Seymour Dr (E)	25	25	0.00
	Albion Rd (N) - Albion Rd (S)	96	95	0.10
	Seymour Dr (E) - Albion Rd (N)	16	16	0.00
	Seymour Dr (E) - Albion Rd (S)	6	6	0.00
	Albion Rd (S) - Seymour Dr (E)	4	5	0.47
	Albion Rd (S) - Albion Rd (N)	75	74	0.12
Albion Rd / Thorn Rd / Plain Rd	Albion Rd (N) - Thorn Rd (S)	78	77	0.11
	Albion Rd (N) - Plain Rd (W)	24	24	0.00
	Thorn Rd (S) - Plain Rd (W)	22	22	0.00
	Thorn Rd (S) - Albion Rd (N)	45	46	0.15
	Plain Rd (W) - Albion Rd (N)	33	33	0.00
	Plain Rd (W) - Thorn Rd (S)	48	47	0.15

5.12 Overall, results demonstrate that 100% of modelled turn counts achieve a GEH of less than 4, thereby exceeding DMRB guidance for turn count calibration in a microsimulation model.



Travel Time Validation

5.13 The model was validated to 6 journey time routes covering Albion Rd, Thorn Rd and Plain Rd in both directions.

5.14 The following extract has been used to evaluate the model's journey time validation:

Table E: Web TAG Journey Time Validation Criteria²

Criteria	Description of Criteria	Acceptability Guideline
1	Modelled times along routes should be within 15% of surveyed time (or 1 minute, if higher than 15%)	>85% of Cases

5.15 Tables F and Table G show that the journey time validation results for the two modelled peak periods surpass the acceptable guideline of 85%.

Table F: Travel Time Validation Results for Morning (AM) Peak Hour

Morning (AM) Peak Hour					
Route Name	11:00 – 12:00				
	Obs.	Mod.	Diff.	% Diff.	Pass 15%?
1 SB	62	69	7	11%	Pass
1 NB	60	69	9	15%	Pass
2 SWB	67	74	7	10%	Pass
2 NB	69	76	8	11%	Pass
3 WB	36	38	3	8%	Pass
3 EB	41	42	1	4%	Pass

Table G: Travel Time Validation Results for Evening (PM) Peak Hour

Evening (PM) Peak Hour					
Route Name	16:00 – 17:00				
	Obs.	Mod.	Diff.	% Diff.	Pass 15%?
1 SB	62	70	8	13%	Pass
1 NB	74	73	-1	-1%	Pass
2 SWB	67	74	7	10%	Pass
2 NB	79	81	2	3%	Pass
3 WB	36	38	2	7%	Pass
3 EB	38	44	6	15%	Pass

5.16 The base model was successfully validated based on the observed traffic volumes and the TomTom journey times.

² TAG Unit M3.1, Para. 3.3.15 Table 3, Department for Transport January 2024



6.0 Base Model Summary

- 6.1 SLR Consulting Ltd (SLR) has been commissioned by i-Transport to develop a VISSIM microsimulation model for a proposed development of up to 117 dwellings and associated infrastructure along Albion Road in Marden, Kent. The proposal includes (a) a new site access for the development and (b) the partial removal of one lane to accommodate a new footway, which will connect the new site access in the southeast to the existing footway network, currently ending at Seymour Drive to the north.
- 6.2 This Technical Note serves as the Local Model Validation Report (LMVR) which outlines the methodology for developing the Base model and presents the results from its calibration and validation.
- 6.3 Results show that the model achieves a pass rate of 100% for MCC turn count calibration for both scenarios; Morning (AM) and Evening (PM), and journey times demonstrate a very close correlation to the observed which exceeds the requisite industry standards for calibration and validation as defined in the WebTAG. Hence, this suggests that the model matches observed data and observed on-street traffic behaviour and is a suitable and robust Baseline upon which to confidently begin development testing.



7.0 Future Year Traffic Flows

Growth Rates

- 7.1 In the 2029 Reference scenario, growth has been applied using growth rates provided by i-Transport.
- 7.2 In particular, TEMPRO growth rates have been obtained to factor traffic from the 2024 traffic surveys data to the 2029 future year.
- 7.3 The Table H summarises the growth factors to derive the 2029 peak hour traffic flows.

Table H: Revised Travel Time Results for Outbound Peak

Growth Period	Time Period	Growth Rate
2024 – 2029	Morning Peak Hour	1.0410
	Evening Peak Hour	1.0460

Source: TEMPRO Growth rates for Maidstone 018 MSOA – Minor Road Types

Future Year Traffic Flows

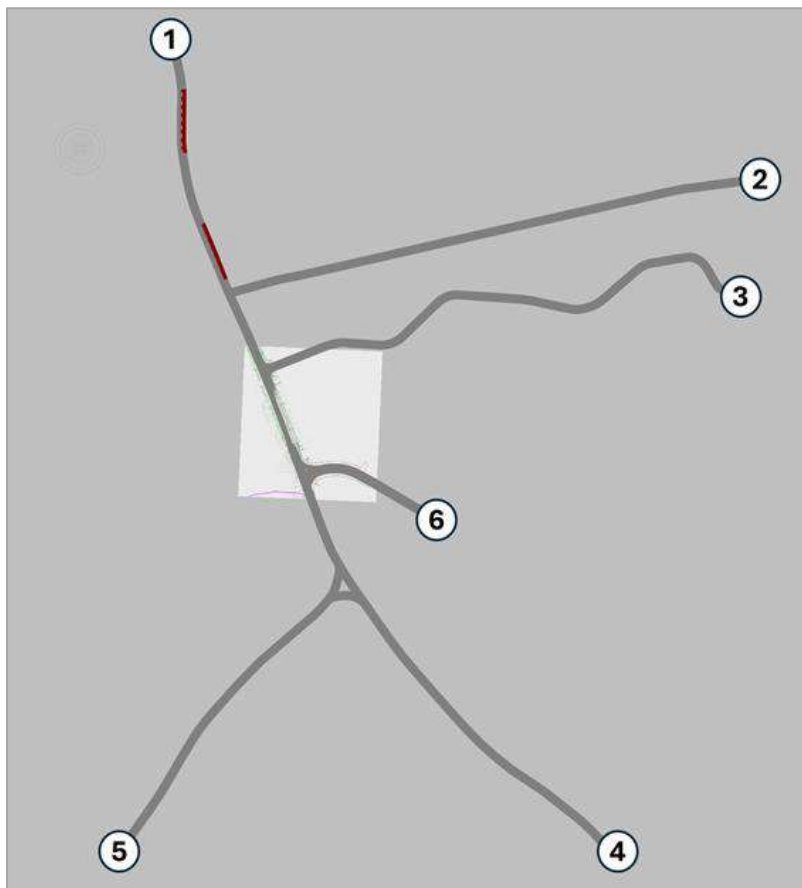
- 7.4 The above growth rates were applied to the 2024 Base matrices across the entire peak hour, for both morning (AM) and evening (PM), and additionally the warm-up and cool-down periods.



8.0 Development Traffic

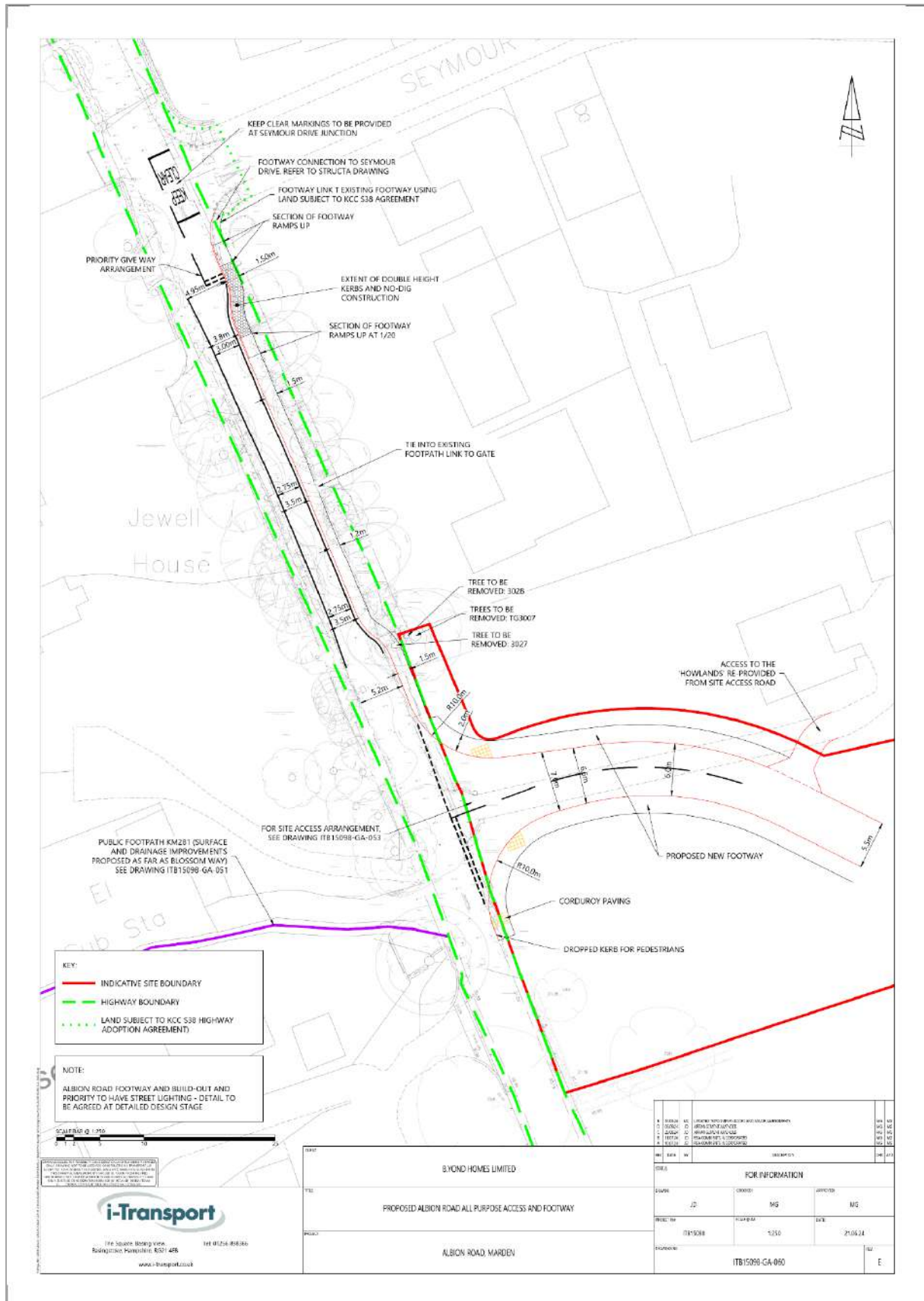
- 8.1 i-Transport provided SLR Consulting with development trips in the form of flow diagram split between Lights and Heavies for both morning (AM) and evening (PM) peak hour to be included in the 2029 development scenario.
- 8.2 The provided flow diagrams were used to create hourly Lights and Heavies matrices for input into VISSIM model.
- 8.3 Figure F below shows the updated model network in VISSIM to include the development site access on Albion Road as well as the zone layout.

Figure F: VISSIM With Development Model Extent & Zone Layout



- 8.4 As it can be seen from the Figure F above, Zone 6 represents the new development site with a proposed access from Albion Road.
- 8.5 Details of the proposed infrastructure arrangement that has been applied in the VISSIM model, including the new junction and the one lane partial removal on Albion Road, are shown in Figure G below.



Figure G: Proposed infrastructure arrangements

9.0 VISSIM Scenarios

9.1 In total, three scenarios have been created and tested. These are as follows:

- 2024 Base, AM and PM
- 2029 Reference Case (2029 Ref), AM and PM
- 2029 Development Case (2029 Dev), AM and PM

9.2 Traffic demands in the 2024 Base scenario consist of the 2024 observed traffic data. In the 2029 Ref scenario, traffic demands consist of the uplifted 2024 observed traffic flows using the provided TEMPro growth factors. While, in the 2029 Dev scenario, traffic demands consist of the uplifted 2024 observed traffic flows plus the 2029 development flows as well as the proposed infrastructure arrangements on Albion Road.



10.0 Modelling Results

2024 Base vs 2029 Reference (2029 Ref)

- 10.1 The projected traffic growth for the 2029 Reference Case, based on the TEMPRO growth rate, adds 14 vehicles (including both Light and Heavy vehicles) during the morning (AM) peak period and 13 vehicles during the evening (PM) peak hour. Traffic modelling results indicate that this increase is not expected to affect the overall network performance. Specifically, the predicted Level of Service (LOS) values at all junctions, maximum queue lengths, and journey times remain unchanged.

2029 Reference (2029 Ref) vs 2029 Development (2029 Dev) – Network Statistics

- 10.2 Overall network performance reveals that the average delay per vehicle across the network is projected to increase slightly by approximately 5 seconds, rising from 14 seconds to 19 seconds in the morning (AM) peak hour.
- 10.3 In the evening (PM) peak hour, overall network performance indicates that average delay per vehicle across the network is expected to increase slightly by approximately 4 seconds, rising from 15 seconds to 19 seconds.
- 10.4 Tables I and J present the VISSIM Network Statistics results.

Table I: Morning (AM) - Network Statistics Results

Network Statistics	07:45 - 08:45		
	2024 Base	2029 Ref	2029 Dev
Average Delay per Vehicle in the Network (s)	14	14	19
Overall Delay per Vehicle (including time off network) (s)	14	14	19
Average Speed per Vehicle (mph)	17	17	15
Vehicles Active in the Network	9	9	11
Vehicle Trips Completed	333	346	406
Latent Demand at End of Peak Hour	0	0	0
Total Peak Hour Input Vehicle Numbers	342	355	417
Total Delay (hrs)	1.3	1.4	2.2
Latent Delay (hrs)	0.00	0.00	0.01



Table J: Evening (PM) - Network Statistics Results







Network Statistics	16:15 - 17:15		
	2024 Base	2029 Ref	2029 Dev
Average Delay per Vehicle in the Network (s)	15	15	19
Overall Delay per Vehicle (including time off network) (s)	15	15	19
Average Speed per Vehicle (mph)	16	16	15
Vehicles Active in the Network	9	9	11
Vehicle Trips Completed	315	330	391
Latent Demand at End of Peak Hour	0	0	0
Total Peak Hour Input Vehicle Numbers	324	339	402
Total Delay (hrs)	1.3	1.4	2.1
Latent Delay (hrs)	0.01	0.01	0.01



2029 Reference (2029 Ref) vs 2029 Development (2029 Dev) – Level of Service (LOS)

- 10.5 Level of Service is a key indicator of operational performance for signal and priority-controlled junctions. It is similar to both Degree of Saturation (DoS), used in traditional signal capacity analysis in the UK, and Ratio of Flow to Capacity (RFC) used in traditional priority junction analysis in the UK.
- 10.6 Level of Service within VISSIM is aligned to the standards set out in the US Highway Capacity Manual and an illustration of those values is provided in the following table.

Table K: Highway Capacity Manual (HCM) – Level of Services (LOS) Standards

LOS	Definition	Typ. Illustration
Acceptable	A Represents a free-flow operation. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	
	B Represents reasonably free-flow operation. The ability to maneuver within the traffic stream is slightly restricted.	
	C Represents a traffic flow with speeds near or at free-flow speed of the freeway. Ability to maneuver within the traffic stream is noticeably restricted.	
	D Represents speeds that begin to decline with increased density. Ability to maneuver within the traffic stream is noticeably limited.	
Unacceptable	E Represents operation at its capacity. Vehicles are closely spaced within the traffic stream and there are virtually no useable gaps to maneuver.	
	F Represents a breakdown of vehicle flow. This condition exists within queues forming behind the breakdown points.	



10.7 The table below presents the Level of Service (LOS) thresholds according to VISSIM.

Table L: Level of Service (LOS) thresholds

Level of Service (LOS)	Thresholds	
	Signalised Junction	Non-signalised Junction
LOS A	Delay < 10 s or no volume, as no vehicle is moving, also due to traffic jam	
LOS B	> 10 s to 20 s	> 10 s to 15 s
LOS C	> 20 s to 35 s	> 15 s to 25 s
LOS D	> 35 s to 55 s	> 25 s to 35 s
LOS E	> 55 s to 80 s	> 35 s to 50 s
LOS F	>80 s	>50 s

- 10.8 Tables M and N below show that the predicted LOS across all junctions, including the new junction at the proposed site access, remains at LOS A. This suggests that the proposed site access, the inclusion of the development traffic flow, and the one-lane partial removal on Albion Road are not expected to affect the junctions' performance during both morning (AM) and evening (PM) peak hours.
- 10.9 During the morning (AM) peak hour, LOS remains unchanged for all junctions, although minor increases in predicted LOS values are observed. The most significant change occurs on the north approach of the Albion Rd/Seymour Dr. junction, where the approach delay is expected to rise from 0.24 seconds to 4.47 seconds. This increase in delay is attributed to two factors: (a) the inclusion of the development traffic flow coming from the north and (b) the introduction of the one-lane priority section just south of this junction where southbound traffic must yield to northbound traffic.
- 10.10 Similarly, during the evening (PM) peak hour, approach delay also increases on the north approach of the Albion Rd/Seymour Rd junction, with delay expected to rise from 0.30 seconds to 3.66 seconds.



Table M: Morning (AM) – Level of Services (LOS)

Junction	Description	Approach	07:45 - 08:45					
			2024 Base		2029 Ref		2029 Dev	
			Appr. Delay	Appr. LOS	Appr. Delay	Appr. LOS	Appr. Delay	Appr. LOS
1	Albion Rd / Stanley Rd	Albion Rd North	0.09	A	0.09	A	0.12	A
		Stanley Rd East	5.19	A	5.06	A	5.64	A
		Albion Rd South	1.34	A	1.58	A	2.26	A
2	Albion Rd / Seymour Dr	Albion Rd North	0.23	A	0.24	A	4.47	A
		Seymour Dr East	4.94	A	4.99	A	6.50	A
		Albion Rd South	0.45	A	0.40	A	1.00	A
3	Albion Rd / Thorn Rd / Plain Rd	Albion Rd North	0.50	A	0.56	A	0.28	A
		Thorn Rd South	1.05	A	1.07	A	1.09	A
		Plain Rd West	4.60	A	4.61	A	4.69	A
4	Site Access	Albion Rd North					4.98	A
		Site Access East					6.83	A
		Albion Rd South					0.67	A

Table N: Evening (PM) – Level of Services (LOS)

Junction	Description	Approach	16:15 - 17:15					
			2024 Base		2029 Ref		2029 Dev	
			Appr. Delay	Appr. LOS	Appr. Delay	Appr. LOS	Appr. Delay	Appr. LOS
1	Albion Rd / Stanley Rd	Albion Rd North	0.10	A	0.11	A	0.13	A
		Stanley Rd East	4.79	A	5.15	A	5.67	A
		Albion Rd South	1.95	A	1.91	A	3.28	A
2	Albion Rd / Seymour Dr	Albion Rd North	0.25	A	0.30	A	3.66	A
		Seymour Dr East	4.68	A	4.81	A	5.61	A
		Albion Rd South	0.33	A	0.36	A	1.01	A
3	Albion Rd / Thorn Rd / Plain Rd	Albion Rd North	0.50	A	0.60	A	0.27	A
		Thorn Rd South	0.78	A	0.77	A	0.78	A
		Plain Rd West	5.10	A	5.20	A	5.24	A
4	Site Access	Albion Rd North					3.63	A
		Site Access East					6.54	A
		Albion Rd South					0.70	A



2029 Reference (2029 Ref) vs 2029 Development (2029 Dev) – Journey Times

- 10.11 Results indicate that during the morning (AM) peak hour, the only expected impact on journey times is a slight increase in the section where the one-lane partial removal occurs. Specifically, journey times in this section are anticipated to slightly rise by 13 seconds and 3 seconds for the SB and NB direction respectively. These increases are attributed to the proposed one-lane priority section, which requires vehicles to yield to oncoming traffic from the opposite direction.
- 10.12 Similarly, in the evening (PM) peak hour, the only anticipated impact on journey times is observed in the same section, where journey times are expected to increase by 11 seconds and 5 seconds for the SB and NB direction respectively.
- 10.13 Figure H below shows journey time segments and routes covering the study area.

Figure H: Journey Time Segments & Routes



10.14 Tables O and P below show average journey time results for both morning (AM) and evening (PM) peak hour.

Table O: Morning (AM) – Average Journey Times (in seconds) for Segments & Routes

Morning (AM) Peak Hour			
JT Segments / Route	07:45 – 08:45		
	2024 Base	2029 Ref	2029 Dev
Albion Rd 1 SB	27	27	27
Albion Rd 2 SB	7	7	11
Albion Rd 3 SB	10	10	19
Albion Rd 4 SB	8	8	8
Albion Rd 5 SB	2	2	2
Albion Rd 6 SB	15	15	15
Albion Rd 1 NB	15	15	15
Albion Rd 2 NB	2	2	2
Albion Rd 3 NB	7	7	7
Albion Rd 4 NB	10	10	11
Albion Rd 5 NB	7	8	8
Albion Rd 6 NB	28	28	30
Plain Rd EB	19	19	19
Plain Rd WB	19	19	19
Plain Rd 1 EB	5	5	5
Plain Rd 1 WB	2	2	2
Plain Rd 2 EB	8	8	8
Plain Rd 2 WB	4	4	4
1 SB	69	70	83
1 NB	69	70	73
2 SWB	74	74	87
2 NB	76	77	80
3 WB	38	38	38
3 EB	42	42	42



Table P: Evening (PM) – Average Journey Times (in seconds) for Segments & Routes

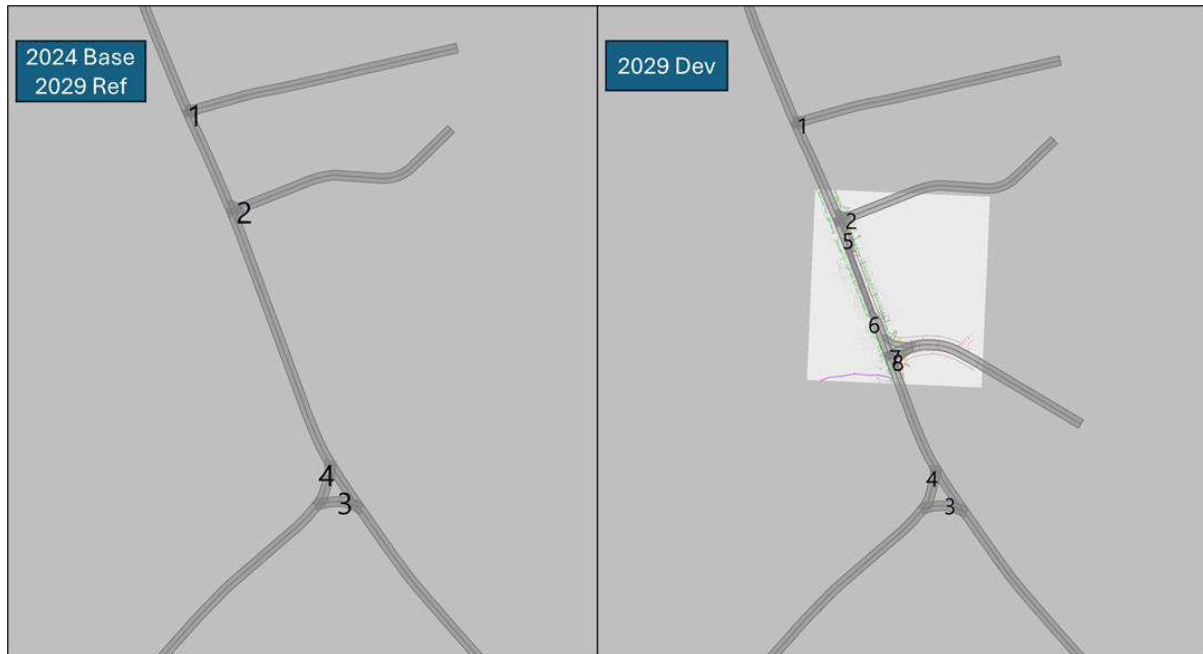
Evening (PM) Peak Hour			
JT Segments / Route	16:15 – 17:15		
	2024 Base	2029 Ref	2029 Dev
Albion Rd 1 SB	27	27	28
Albion Rd 2 SB	7	7	11
Albion Rd 3 SB	10	10	17
Albion Rd 4 SB	8	8	8
Albion Rd 5 SB	2	2	2
Albion Rd 6 SB	15	16	16
Albion Rd 1 NB	15	15	15
Albion Rd 2 NB	2	2	2
Albion Rd 3 NB	7	7	7
Albion Rd 4 NB	10	10	11
Albion Rd 5 NB	8	8	8
Albion Rd 6 NB	31	31	34
Plain Rd EB	20	20	19
Plain Rd WB	19	19	18
Plain Rd 1 EB	6	6	6
Plain Rd 1 WB	2	2	2
Plain Rd 2 EB	8	8	8
Plain Rd 2 WB	4	4	4
1 SB	70	71	81
1 NB	73	72	77
2 SWB	74	74	85
2 NB	81	81	85
3 WB	38	38	38
3 EB	44	44	43



2029 Reference (2029 Ref) vs 2029 Development (2029 Dev) – Queues

- 10.15 Queue locations within the VISSIM model are illustrated in Figure I below. The left image displays queue locations for both 2024 Base and 2029 Reference scenarios, while the right image presents queue locations for the 2029 Development scenario.

Figure I: Location of Queue markers within VISSIM model



- 10.16 During the morning (AM) peak hour, results indicate that no queues are expected at any stop line at the junctions. However, some queues are anticipated in both directions of the proposed one-lane priority section on Albion Road, with maximum queue lengths across the peak hour projected to be around 5 vehicles for the southbound direction and 3 vehicles for the northbound direction (average queue lengths of 1 vehicle southbound and 0 vehicles northbound).
- 10.17 Similarly, in the evening (PM) peak hour, queues are expected to increase only in both directions of the proposed one-lane priority section, with maximum queue lengths across the peak hour again estimated to be around 6 vehicles and 2 vehicles for the southbound and northbound direction respectively (average queue lengths of 1 vehicle southbound and 0 vehicles northbound).
- 10.18 In both cases, morning (AM) and evening (PM) peak hour, southbound direction experiences longer queues than the northbound direction. This is due to the one-lane reduction on the east side of the road, which requires southbound vehicles to yield to northbound traffic.
- 10.19 Queues are not forecast to build up on the Seymour Drive exit to Albion Road.



11.0 Summary & Conclusion

- 11.1 SLR Consulting Ltd (SLR) has been commissioned by i-Transport to develop a VISSIM microsimulation model for a proposed development of up to 117 dwellings and associated infrastructure along Albion Road in Marden, Kent. The proposal includes (a) a new site access for the development and (b) the partial removal of one lane, on Albion Road, to accommodate a new footway, which will connect the new site access in the southeast to the existing footway network, currently ending at Seymour Drive to the north.
- 11.2 The first part of this Technical Note sets out the approach taken to develop, calibrate and validate the Base model.
- 11.3 Results of the validation and calibration process show that the model achieves a pass rate of 100% for MCC turn count calibration for both scenarios; Morning (AM) and Evening (PM), and journey times demonstrate a very close correlation to the observed which exceeds the requisite industry standards for calibration and validation as defined in the WebTAG. Hence, this suggests that the model accurately reflects observed data and observed on-street traffic behaviour, making it a reliable and robust baseline for development testing.
- 11.4 SLR Consulting has included the following scenarios in the assessment:
- 2024 Base
 - 2029 Reference
 - 2029 Development
- 11.5 Overall, the assessment indicates that the inclusion of development flows, the new site access, and the partial lane removal on Albion Road will result in:
- A slight increase in average delay per vehicle in the network by 4 – 5 seconds.
 - An increase in journey times for southbound traffic on Albion Road by 13 seconds and 10 seconds for morning (AM) and evening (PM) peak hour respectively.
 - Queue length for Albion Road on the southbound traffic at the priority marking give way – morning (AM) peak hour maximum queue of 5 vehicles (average queue of 1 vehicle) and evening (PM) peak hour maximum queue of 6 vehicles (average queue of 1 vehicle).
- 11.6 These impacts are minimal and raise no operational concerns.



