

Horsmonden Village, Traffic Calming Appraisal Tech Note for Horsmonden Parish Council's traffic concerns and recommended solutions

30th August 2016 – 617508.910

A site visit was undertaken on Wednesday 20th July before, during and after the highway network AM peak period to observe highway conditions on the approach roads to the Village Centre and activity around the Maidstone Rd/Goudhurst Rd/Lamberhurst Rd/ Brenchley Rd village crossroads junction. A meeting on Site was held with Parish Councillors (Stuart Davis and Colin Russell) after the peak hour who gave further explanation to some of the highway issues and the requirements of the Council.

Unfortunately on the day of the visit the Lamberhurst Road arm of the crossroads was closed due to surface dressing works about to start south of the Horsmonden Village boundary. This restricted vehicle movements in and out of this crossroads junction arm with only local traffic from/to local properties in the village along Lamberhurst Road being able to use it. Irrespective of this closure it was observed that the crossroads is a busy junction/area with relatively high through traffic, vehicles parking on both sides of the carriageway for the adjacent post office/convenience store/café and pupils being picked up for school bus services. Traffic data taken from ATCs in 2012 and 2013 on each approach arm to the crossroads junction indicates there would be a high proportion of turning manoeuvres at this junction.

A review of this traffic data also confirmed that there no anomalies within the traffic flows or speeds for the four approach local roads and are fairly consistent with typical speed and flow ranges of 'B' and 'C' class highways in the area.

Refer to **Appendix 1** for the Existing Wider Highway Layout and **Appendix 2** for the crossroads junction. The crossroads junction is complicated by the lay-by adjacent to the shops which has a dedicated bus-stop cage. This lay-by is also used by vehicles stopping for the shops with some vehicles parking perpendicular to the main carriageway resulting in the rear of some vehicles encroaching into the running carriageway width.

The dropped kerb crossing of Goudhurst Road adjacent to the shops is marked with single white lines to indicate to drivers that these areas should be kept clear of waiting vehicles. Unfortunately it was observed that some drivers ignored these markings making use of the crossing points impossible.

Discussions with the Councillors established that there have been a low number of personal injury accidents in the area although a number of vehicle damage accidents have occurred at the crossroads junction.

The Parish Council highlighted two main concerns:-

- i) The speeds within the village on the approach roads to the village crossroad (in particular the Brenchley Road approach)
- ii) The Village Crossroad Junction

Item i) - Speeds within the Village

A reduced speed limit through the village from the 30mph speed limit is not likely to be promoted by Kent Highways unless speed reducing features are implemented to self-enforce such a limit. This would require extensive traffic calming features which the Parish Council are reluctant to see implemented because of urbanisation and costs.

Common speed reducing features below indicate the approximate level of speed reduction and costs. Speed reductions can vary markedly depending on geometry of feature and spacing intervals.

- Round Top Speed Hump – At 100m intervals, speed reduction from 35mph to 24mph between features. ~£3,000 per feature including associated works such as street lighting, signing & lining
- Double Pair Speed Cushions - At 100m intervals, speed reduction from 35mph to 25mph between features. ~£5,000 per feature including associated works such as street lighting, signing & lining.
- Raised Table Platform - At 100m intervals, speed reduction from 35mph to 24mph between features. ~£10,000 per feature including associated works such as street lighting, signing & lining.
- Chicane/Narrowing - Restricts flow to one-way. Unopposed speed reduction varies considerably. Costs up to £20,000 per feature including associated works such as street lighting, signing & lining.

Kent Police have also stated that they will not support the introduction of 20mph zones without self-enforcing measures. Kent Police policy is not to routinely enforce them as they should be self-enforcing by design. Kent Highways current policy on 20mph speed limits state that 20mph speed limit schemes will only be implemented where there is a clear justification in terms of achieving casualty reduction. As stated above there has been a low number of personal injury accidents in the area which does not give this justification. With regards to the '20 is plenty' campaign many 20mph speed limits have been implemented around the country but mainly within towns and residential developments where there is a high proportion of pedestrian and cycle movements to vehicular traffic. Unfortunately within the village with the current 30mph speed limit of the main through routes this is not the case.

It was noted that parked cars on Maidstone Road that are left on street during the day reduce this carriageway to one-way working in some areas and this reduces vehicle speeds on this link in line with the speed limit. The other approach roads have very limited on-street parking although some was noted on the north side of the Brenchley Road section between the Furnace Lane and the crossroads junctions.

Therefore in order to reinforce the 30mph speed limit through the village the following low-key recommendations are proposed with budget sums given.

Village Gateway Features

In order to reduce speeds coming into the village it is recommended that the existing speed limit boundary changes coming into the village are converted into a more prominent village gateway feature. See existing speed limit boundary locations and Photos on the plan attached at **Appendix 1**. The existing speed limit change points all have a 25m length of buff ant-skid surfacing but all speed features were showing signs of deterioration with many of the speed signs being dirty or obscured by overgrown vegetation. Photo 1 below shows a village gateway feature at nearby Matfield and it is recommended that this or something similar is provided at the existing speed limit boundary points on all 4 approach roads to the village. A budget cost of £2,500 for each approach location assuming that the existing surfacing and road markings at these locations would be remarked as part of cyclic maintenance.

Village gateway features can reduce speeds by 3 to 4mph over standard speed limit boundaries. As noted above the current features may have lost their effectiveness over time but more prominent features are more effective for the motorists who do not travel regularly through the area.

Photo 1: Example of Village Gateway Feature at nearby Matfield



Additional 30mph roundels

Some of the 30mph surface roundel markings were noted to have faded badly especially along the Maidstone Road link. See photos on the plan attached at **Appendix 1**. To add to the conspicuity of the speed limit additional roundels could be added to the existing single roundels to make pairs for both directions (as above in Photo 1). This would result in 3 additional roundels on Maidstone Road, Goudhurst Road and Lamberhurst Road individually although the roundels on Maidstone Road may not be deemed necessary with the parked cars prevalent on this link physically reducing speeds. A budget cost for the 9 additional roundels would be about £2,000.

It has been noted that all the village approach roads except for Brenchley Road have an interactive speed sign and these have been in place for several years. From the ATC speeds surveys the Brenchley Road approach has the highest average and 85th percentile vehicle speeds coming into the village. It was noted that there is no 'Bend Ahead' warning sign heading east for the chevron marked bend adjacent to the Furnace Lane junction although there is a signless post located just east of the speed limit boundary change point. It would appear that this previously had such a sign and should be replaced. To be consistent with the other approach roads into the village it is recommend that an interactive sign is installed on the Brenchley Road approach but rather than install another 30mph interactive sign (as per the other village approach roads) an interactive 'Bend Ahead' warning sign could be used as a more effective speed reduction. Refer to Photo 2 below. Irrespective of the interactive sign type the installation of such a sign would be about £5,000 but could double depending on the proximity of electrical supply. Such a sign would be subject to siting and placement design criteria. The suggestion of an interactive sign at the Speed Limit boundary would not meet the criteria. It must be noted that interactive signs are not a substitute for standard signage and are only generally considered when there is an accident problem associated with inappropriate speed that has not been remedied by standard signing. However, for consistency in Horsmonden the use of an interactive sign on the Brenchley Road approach is considered appropriate.

Interactive signs showing actual speeds of vehicles only tend to be installed on a temporary basis and also have been known to encourage unruly drivers to try and register high speeds. They are not recommended for this location.

Photo 2: Example of Vehicle Activated Sign – ‘Bend Ahead’ Warning Sign



The Parish Council have also commented on traffic exceeding the 30mph speed limit when the leaving the village particularly on Brenchley Road where the driver perceives a straight fast road ahead. It is noted that there are no speed roundels on the Brenchley Road arm to the crossroads although there was previously one at the eastbound bus stop cage position. It is recommended that a repeater sign and speed roundel could be added on Brenchley Road west of the bend at the Furnace Lane junction for westbound traffic. Another measure to persuade motorists leaving the village to think about their driving behaviour is the installation of ‘Thank you for driving carefully’ signs at the village gateways.

The possible use of speed cameras would obviously deter speeding and the use of average speed cameras has been much more effective of keeping speeds continually within limits over a longer stretch of highway. However, cameras are only installed along highways where there is an accident issue or on high classification highways which is not applicable for Horsmonden. The use of vehicle activated traffic lights to slow speeding traffic in other countries is noted but there would be a requirement for a signalised pedestrian crossing or junction to be in place to warrant signals being put in place as they cannot stand in isolation just to stop traffic. A signalised pedestrian crossing costs about £50K to install with a signalised junction considerably more.

Item ii) - the Village Crossroads

The busy nature of the crossroads and the presence of parked vehicles on both sides of the main carriageway during the peak period effectively narrows the through carriageway width which reduces vehicle speeds. With vehicles having to give-way whilst passing stationary vehicles and vehicles waiting to turn in and out of the minor side roads, vehicle speeds are relatively low although there are periods where vehicles can pass through the area relatively unhindered and in excess of the speed limit. In general driving behaviour was observed to be fairly considerate although with limited junction visibility at some junctions in the area this can cause motorists to gradually encroach into the main carriageway to get a better view.

As discussed with the Parish Council the implementation of parking restrictions in this area, which are likely to be opposed by the adjacent shops and others, would open up the carriageway width and encourage faster speeds through the area.

The village crossroads configuration complicated with bus-stops, the lay-by, adjacent shops and limited pedestrian crossings cannot be changed without significant reconstruction works and use of additional land from the village green. Notwithstanding this the existing junction operates reasonably well given the constraints but one of the key safety issues is the visibility splay from the Lamberhurst Road arm which due to poor visibility is governed by a stop line rather than a give-way line. Refer to **Appendix 2** which shows the existing layout of crossroads junction and the poor junction visibility splay to the west.

With the current highway boundary, adjacent properties and relative tightness of the junction (except for the village green quadrant) only a mini-roundabout type roundabout could feasibly be implemented at the crossroads junction. The current design standards state that four arm mini-roundabouts introduce additional conflicts and can create difficulty for drivers' perceptions of the layout and turning flows. They are not recommended where the sum of the maximum hour entry flows for all arms exceeds 500 vehicles/hour which is the case for this specific junction.

The suggestion of a 4-way stop at the junction would not be accepted by the highway authority as this is a non-standard junction in the UK for classified roads.

Visibility splays for major/minor road priority junctions and accesses comprise two elements, the major road distance ('y' distance) and the minor road distance ('x' distance). In terms of the major road distance, this is based on the speed of the traffic on the major road, and may be based on either the speed limit or known vehicle speeds. The minor road distance is the point along the centreline of the side road onto the major road, measured from its intersection with the channel line of the major road, from which a driver can see the required major road distance in either direction. In some circumstances the visibility splay can be measured to the centre line of the major road. Visibility criteria for junctions and accesses can be measured against The Department for Transport's 'Manual for Streets' (MfS) document or the more onerous Design Manual for Roads and Bridges standards (DMRB) depending on speed, character, primary uses and route status. In this case the MfS standards should apply and the visibility splay has been measured to the centreline as the adjacent property and boundary hedge would result in a visibility splay measured to the nearside channel of less than 10m. The MfS visibility splay standard for a main carriageway 30mph speed is 2.4 x 43m.

A possible proposal has also been shown on the **Appendix 2** plan that shows the give-way lines advanced into the main carriageway by making use of the wider main carriageway width here by realigning the main carriageway centreline. This improves the junction visibility splay to 2.4 x 39m which nearly accords with the MfS standard. It is still debatable whether this improvement would warrant the stop line to be retained with the conventional give-way markings and sign but this could be taken forward to KCC Highways as a possible improvement. Refer to Photo 3 below which shows a vehicle waiting to exit Lamberhurst Road which has encroached into the main carriageway while a vehicle passes. With the suggested improvement the new give-way markings would be at the front of the vehicle exiting.

Photo 3: Brenchley Rd looking east to crossroads junction with exiting car at position of possible advanced give-way/stop lines



The added benefit of the lining proposals is that the lay-by adjacent to the shops is deepened which would allow vehicles that park here without encroaching into the main carriageway area as existing. The budget sum of these white lining proposals which would also require road studs to be relocated is about £3,000.

Summary

The recommended improvements above are summarised below. Please note that these costs could vary significantly but should give an idea to take forward to the highway authority.

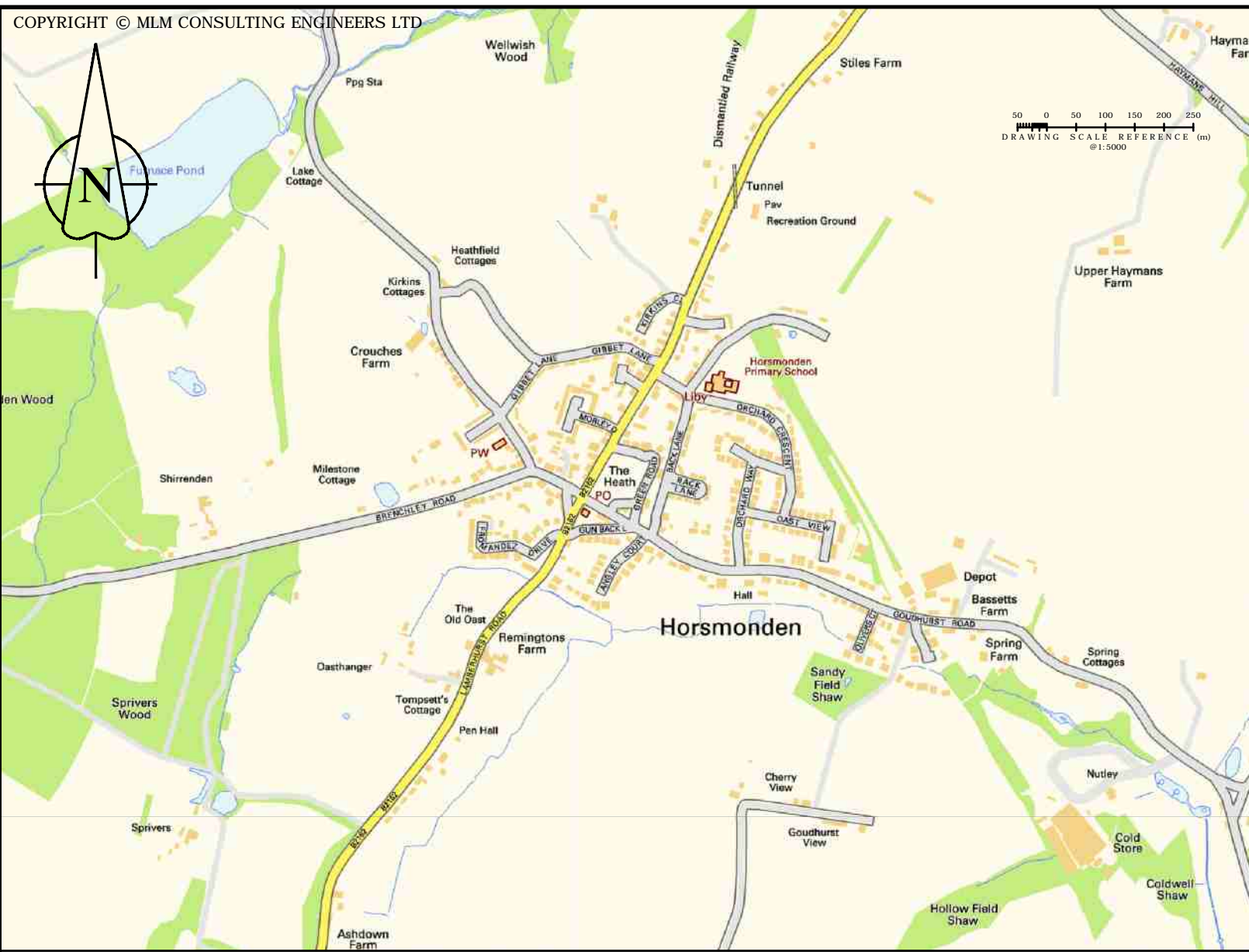
Introduction of more prominent Gateway Features – 4No	=	£10K
Interactive Sign to Brenchley Road approach	=	£5K
Additional 30mph Surface Roundels	=	£2K
White lining Improvements at Village Crossroads Junction	=	£3K
	=	£20K

Appendix 1 – Existing Highway Layout (A1 size plan)

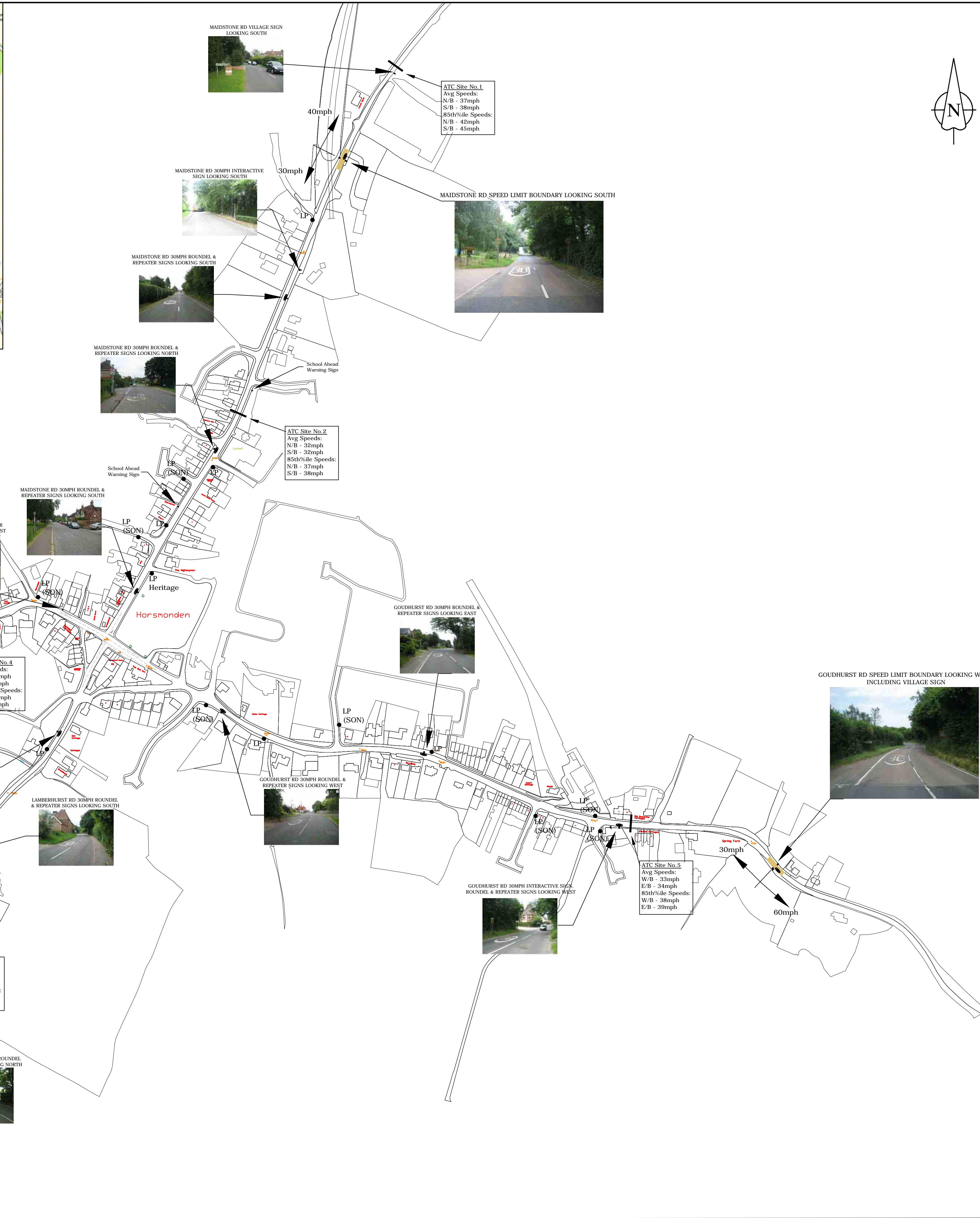
Appendix 2 – Maidstone Rd/Lamberhurst Rd/Brenchley Rd/Goudhurst Rd Crossroads (A2 size plan)

Appendix 1

Appendix 1 – Existing Highway Layout (A1 size plan)



HORSMONDEN STREET MAP
1:10000



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEER'S, ARCHITECT'S AND SPECIALIST'S DRAWINGS AND THE SPECIFICATION.
2. **DO NOT SCALE** FROM THIS DRAWING MANUALLY OR ELECTRONICALLY. WRITTEN PERMISSION MUST BE OBTAINED FROM MLM PRIOR TO SCALING ELECTRONICALLY OR USING THIS ELECTRONIC FILE.

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1. IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH & SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.

THE ABOVE NOTES REFER SPECIFICALLY TO THE INFORMATION SHOWN ON THIS DRAWING.
REFER TO THE HEALTH AND SAFETY PLAN FOR FURTHER INFORMATION.

Issue	Date	Description	Made	Checked

Drawing Status: **INFORMATION**

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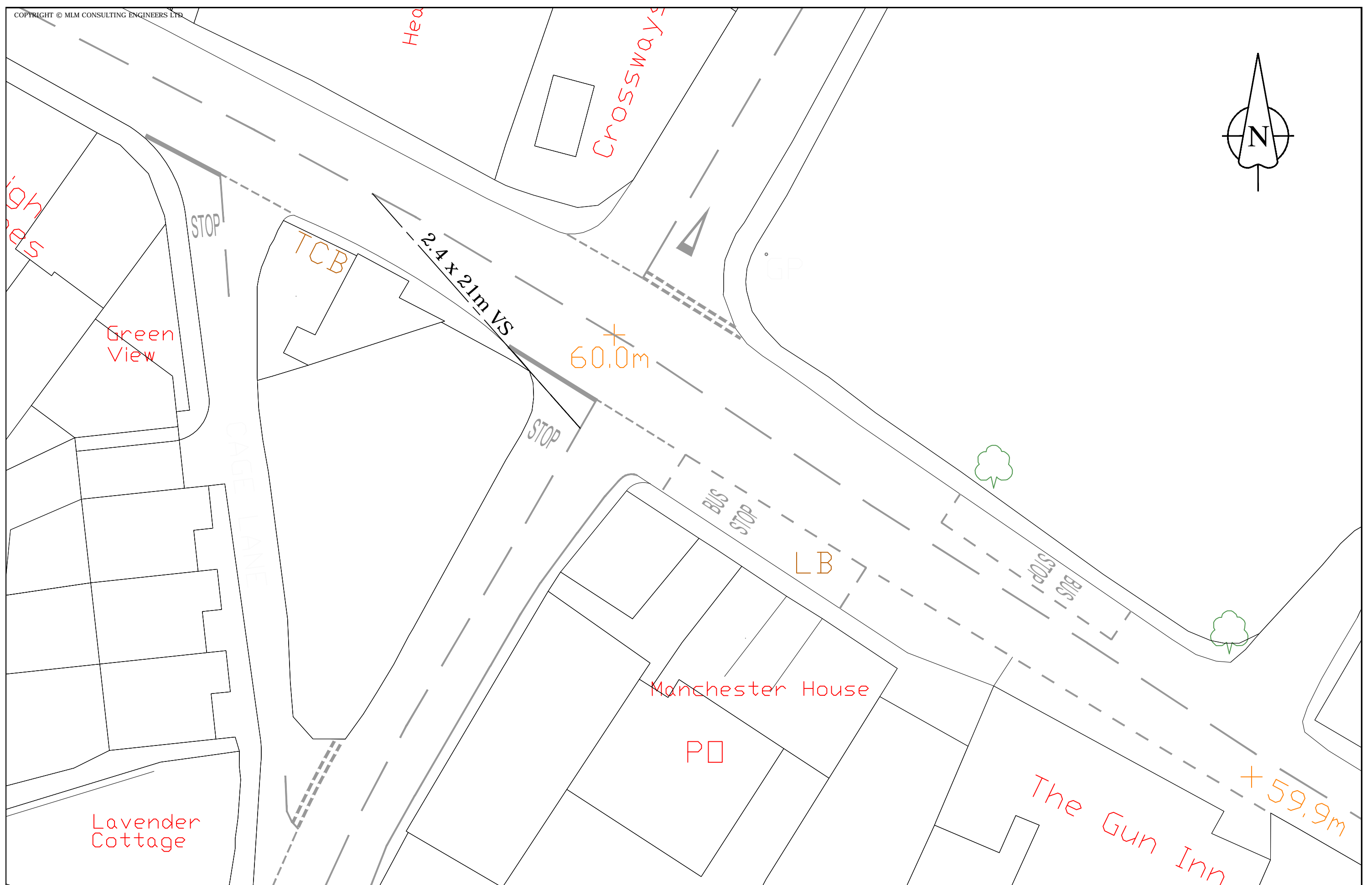
Project
TRAFFIC CALMING APPRAISAL

Drawing Title
EXISTING HIGHWAY LAYOUT

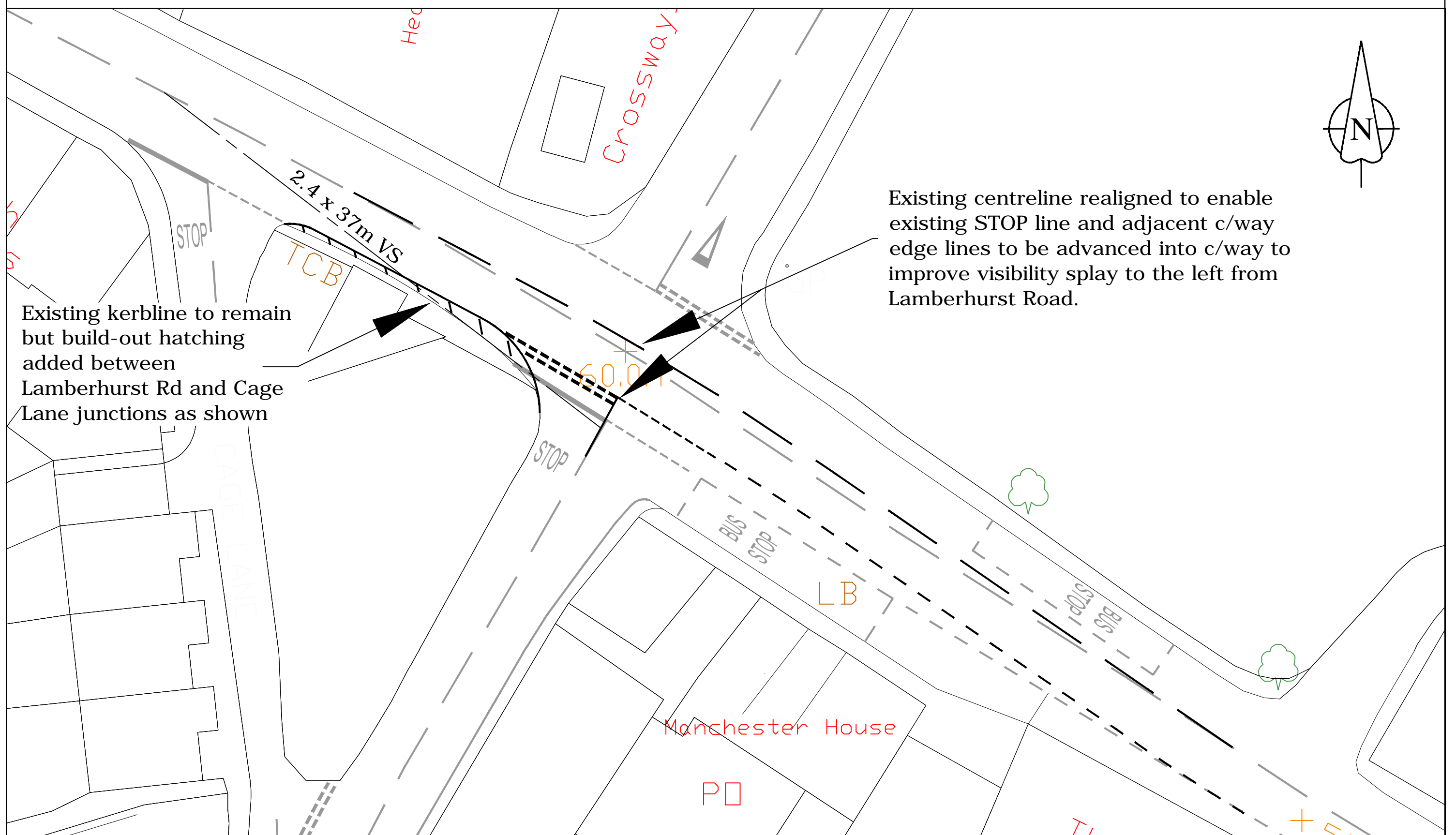
Drawn/Design	MS	Date	25.07.16	Scales	1:2500 @ A1	
Checked	LB	Approved	LB		1:1250 @ A3	
Drawing No.	617508/001				Rev	.

Appendix 2


Maidstone Rd/Lamberhurst Rd/Brenchley Rd/Goudhurst Rd Crossroads (A2 size plan)



**EXISTING CROSSROADS LAYOUT WITH RESTRICTED VISIBILITY
SPRAY FROM LAMBERHURST ROAD ARM TO LEFT**



POSSIBLE WHITELINING IMPROVEMENTS TO CROSSROAD JUNCTION

 Multidisciplinary Consulting 190 Eureka Park, Upper Pemberton, Ashford, Kent TN25 4AZ Tel: 01233 610530 Fax: 01233 618299 Website: www.mlm.uk.com		Drawing Status: PRELIMINARY		Drawing Title MAIDSTONE RD/LAMBERHURST RD/BRENCHLEY RD/GOUDHURST RD CROSSROADS	
		Client HORSMONDEN PARISH COUNCIL		Drawing/Design MS Date 28.07.16 Scales 1:500 @ A2 Checked LB Approved LB 1:250 @ A4	
Project TRAFFIC CALMING APPRAISAL		Drawing No. 617508 / 002		Rev	
Rev	Date	Description	Made	Ckd	