

HERNE HILL JUNCTION IMPROVEMENTS,
LONDON BOROUGH OF LAMBETH

Highway Works Appraisal

September 2008

IMA-08-088

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1 Introduction

1.1 Background

1.1.1 IMA Transport Planning Ltd has been commissioned by the Friends of Brockwell Park to carry out an appraisal of the Herne Hill junction improvements proposed by the London Borough of Lambeth.

1.1.2 The junction improvement scheme involves taking land from the corner of Brockwell Park. The purpose of this report is to investigate the potential to reduce the area of the park that is lost to the road scheme, without compromising the objectives of the scheme.

1.2 Scope of Report

1.2.1 This appraisal has been based on the report Designing the Future: Herne Hill Junction Improvements, produced for the London Borough of Lambeth by MVA Consultancy in May 2007.

1.2.2 The MVA report sets out objectives for the scheme, explains how the junction has been modelled, then describes three variations on the improvement scheme.

1.2.3 This report provides an independent commentary on the stated objectives of the scheme, whether the proposal might achieve those objectives, and the prospect of achieving the same aims with less impact on Brockwell Park.

2 Proposed Improvement Scheme

2.1 Scheme Background and Existing Conditions

2.1.1 The Herne Hill junction is a complex arrangement where the A215 and the A2214 cross one another under a railway bridge, with the B222 and the B223 also joining the junction either side of the railway bridge.

2.1.2 All 6 approaches to this junction are controlled by traffic signals. The MVA report explains that the junction is prone to congestion, which impacts on the reliability of the 7 bus services that are routed through the junction.

2.1.3 Some, but not all, of the junction arms have controlled crossings for pedestrians. MVA describe the junction as intimidating for pedestrians and cyclists.

2.1.4 MVA produced computer models (using software called TRANSYT which is one of two industry-standard software packages for linked signal junctions) for the existing junction, with headline results as follows on each approach:

Norwood Road: Exceeds capacity in the AM peak.

Dulwich Road: Remains within capacity.

Railton Road: Reaches capacity in the PM peak.

Milkwood Road: Approaching capacity in the PM peak.

Herne Hill: Approaching capacity in the PM peak.

Half Moon Lane: Approaching capacity in the AM peak.

2.1.5 MVA validated their models against observations on site, and apart from exaggerated queue lengths where links exceed capacity (a feature of the software), the model appears to be a good reflection of actual conditions.

2.1.6 While several of the approaches are nearing capacity in the PM peak period, the resultant queuing does not appear excessive. The queues on Norwood Road in the AM peak are large, but not sufficient to block the upstream junction with the A2199 Croxted Road.

2.2 Stated Scheme Objectives

2.2.1 The MVA report defines the main objectives of the Herne Hill junction remodelling scheme as follows:

- To improve traffic flows, reducing traffic dominance and congestion.
- To improve pedestrian access to Brockwell Park and to help revitalise the centre of Herne Hill community.
- To increase bus reliability by providing bus priority measures, with associated benefits to pedestrians, cyclists and mobility - impaired persons.

2.3 Proposed Scheme

2.3.1 To achieve the above objectives, MVA have produced an improvement scheme for the junction with key features as follows:

- Removal of the Railton Road signal entry to the junction (through traffic diverts to Dulwich Road via Rymer Street).
- Improved pedestrian facilities on all arms.
- Advance stop lines for cyclists.
- A left-turn slip road from Norwood Road to Dulwich Road.

2.3.2 It is the last item, the left-turn slip road, that raises concerns for the Friends of Brockwell Park. The proposed left-turn lane has been drawn cutting through part of Brockwell Park, moving the highway boundary into this public space by about 20 metres.

2.3.3 MVA considered three variations of their proposed scheme, one of which recognised the concerns regarding unnecessary intrusion into the park by exploring a left-turn lane of reduced scale.

2.3.4 The differences between the three MVA layouts, termed Options 1, 2 & 3 for the purpose of this report, were as follows:

Option 1: The pedestrian crossing over Dulwich Road would run uninterrupted across the whole road to maximise convenience for pedestrians.

Option 2: The pedestrian crossing over Dulwich Road would be staggered, with pedestrians crossing in two stages using a central island.

Option 3: A smaller left-turn lane from Norwood Road to Dulwich Road to reduced land-take from Brockwell Park.

2.4 Traffic Conditions with Option 1

2.4.1 As well as the physical alterations proposed at the junction, MVA have proposed an altered sequence for the signals to maximise capacity. The headline results from their modelling of Option 1 are:

Norwood Road: Remains within capacity.

Dulwich Road: Approaching capacity in AM peak and substantially over capacity in PM peak.

Milkwood Road: Remains within capacity.

Herne Hill: Remains within capacity.

Half Moon Lane: Remains within capacity.

2.4.2 The junction would generally operate much better all round under Option 1, with the exception of Dulwich Road, which in the PM peak would cause blocking of the upstream junction with Rymer Street.

2.5 Traffic Conditions with Option 2

2.5.1 Introducing a staggered crossing across Dulwich Road reduces the amount of green time lost to traffic during the signal cycle, increasing capacity. The headline results from MVA's modelling of Option 2 are:

Norwood Road:	Remains within capacity.
Dulwich Road:	Approaching capacity in AM & PM peaks.
Milkwood Road:	Remains within capacity.
Herne Hill:	Remains within capacity.
Half Moon Lane:	Remains within capacity.

2.5.2 The use of a staggered crossing on Dulwich Road would be less convenient for pedestrians, who would have to wait on a traffic island between signal phases, but the queues on that approach would be much reduced, to a level where there would be no interference with the upstream junction.

2.6 Traffic Conditions with Option 3

2.6.1 The MVA report states that with the left-turn lane reduced in scale, the triangular island between Norwood Road and Dulwich Road would be reduced in scale, necessitating a straight-over crossing on Dulwich Road, as assessed in Option 1. The headline results from the MVA model of Option 3 are:

Norwood Road:	Remains within capacity.
Dulwich Road:	Approaching capacity in AM peak and substantially over capacity in PM peak.
Milkwood Road:	Remains within capacity.
Herne Hill:	Remains within capacity.
Half Moon Lane:	Remains within capacity.

2.6.2 With Option 3 sharing the same uninterrupted crossing over Dulwich Road as Option 1, it is unsurprising that Option 3 suffers the same problem of inadequate capacity on the Dulwich Road approach in the PM peak hour.

2.7 MVA Recommended Scheme

2.7.1 MVA conclude that Option 2 is the most acceptable, as while the Dulwich Road approach is nearing capacity, the queues predicted by their model would not interfere with other junctions.

2.7.2 Improvements to bus reliability would result from the overall improvement in traffic flow rather than any specific bus priority measures (none are proposed). However, while there would be benefits from reduced queuing on the Norwood Road approach, queues on Dulwich Road would increase, probably due to the diversion of traffic from Railton Road onto the Dulwich Road approach.

- 2.7.3 The models show delays reduced by around half a minute per vehicle on the Norwood Road, Half Moon Lane and Milkwood Road approaches in the AM peak, but delays to all vehicles on the Dulwich Road approach, including buses, would increase by 20 seconds.
- 2.7.4 The reduction in delays in the PM peak is generally less significant, 8 seconds on Norwood Road and Half Moon Lane, 12 seconds on Herne Hill, although Milkwood Road, a minor entry to the junction, would receive a substantial reduction in delays of 77 seconds. Delays on Dulwich Road would again increase however, by 23 seconds in the PM peak.
- 2.7.5 The work by MVA shows that overall, Option 2 would allow the junction to operate with more capacity, less queuing and fewer delays. Pedestrian facilities would also be improved in the process, although it appears that the proposals do not include a formal crossing over the left-turn link at the entrance to the park.
- 2.7.6 However, there does not appear to be any reason why the best elements of Options 2 and 3 could not be combined to produce a scheme that meets all of the stated objectives, while minimising unnecessary loss of public space from Brockwell Park. The following section of this report explores that prospect.

3 Alternative Improvement Scheme

3.1 Key Considerations

3.1.1 Consideration of the MVA scheme options has shown that Option 2 has been recommended over the less land-hungry Option 3 for 3 main reasons:

- (i) The desire to maintain a left turn lane from Norwood Road to Dulwich Road that is not obstructed by queues at the Norwood Road stop line.
- (ii) The need to stagger the Dulwich Road crossing to minimise impact on capacity.
- (iii) The need to have adequate space to 'land' pedestrians from the Dulwich Road crossing at the entrance to Brockwell Park.

3.1.2 The combination of the above factors has led MVA to a solution that involves pushing the highway boundary about 20m into the park, as shown in Plan 1. This results in a large triangular traffic island, with approximately 1,000m² of the park lost to highway land.

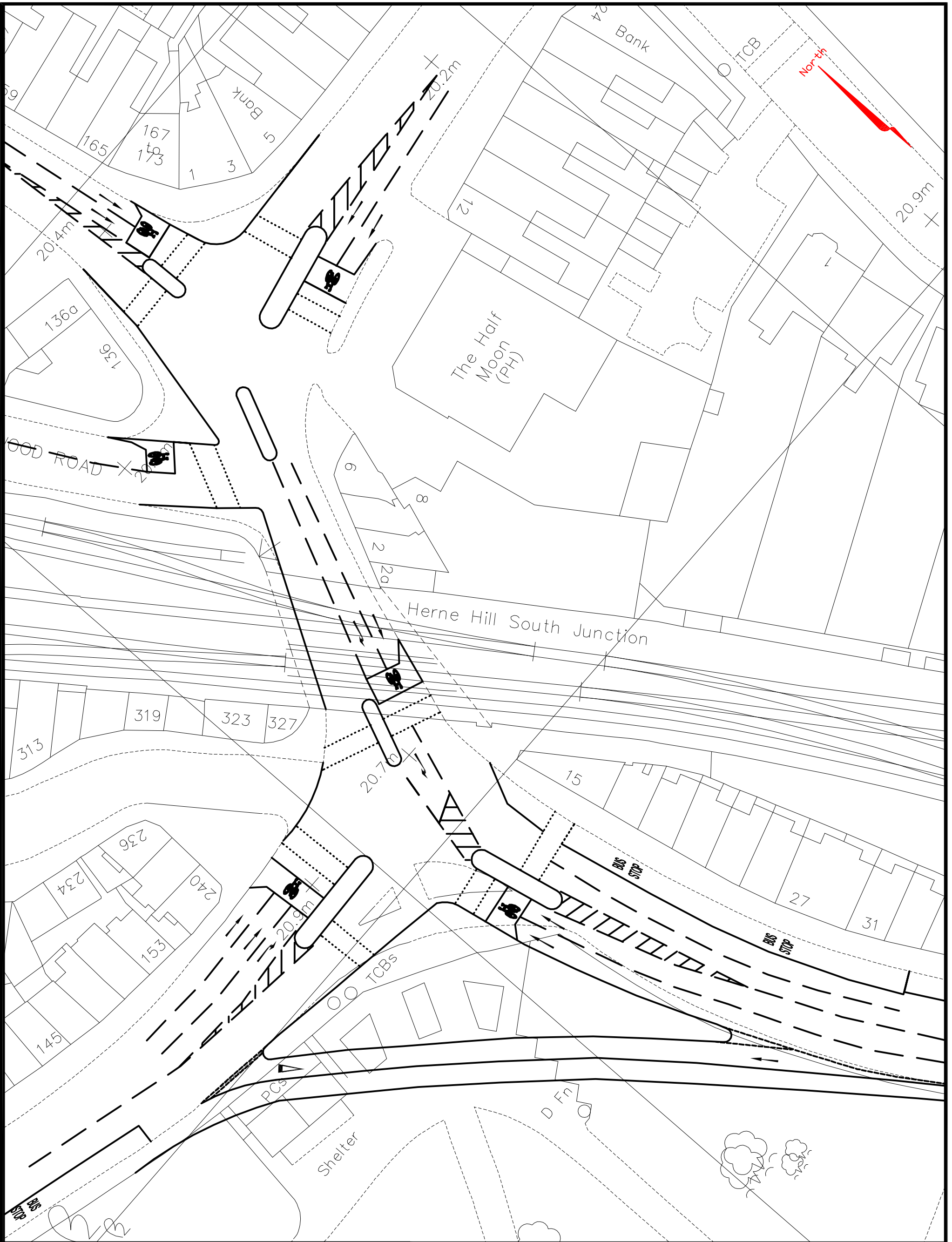
3.2 Alternative Scheme

3.2.1 IMA Transport Planning are firmly of the opinion that Options 2 & 3 from MVA's work can be combined to provide a scheme that meets all of the stated objectives, but with much less land taken from Brockwell Park.

3.2.2 Plan 2 illustrates the alternative arrangement, which uses a much smaller traffic island and reduces land-take from the park by about 9m (the MVA Option 2 line of the slip road is shown in grey). The alternative arrangement meets all of the aims of the MVA scheme in exactly the same manner as their Option 2.

3.2.3 The alternative scheme maintains exactly the same clearance between the left-turn lane and the Norwood Road stop line as the MVA scheme (point (i) in section 3.1 above), retains the staggered crossing on Dulwich Road to maximise capacity (point (ii) above), and provides adequate space for pedestrians at the refuge at the park entrance (point (iii) above).

3.2.4 The alternative scheme effectively halves the impact on Brockwell Park while providing exactly the same benefits as MVA's preferred scheme, and it is recommended that this alternative arrangement is considered by the London Borough of Lambeth as a sensible compromise, derived entirely from Options 2 and 3 proposed by their own consultants, minimising impact on the park yet operating in exactly the same manner as the arrangement adopted by the council.



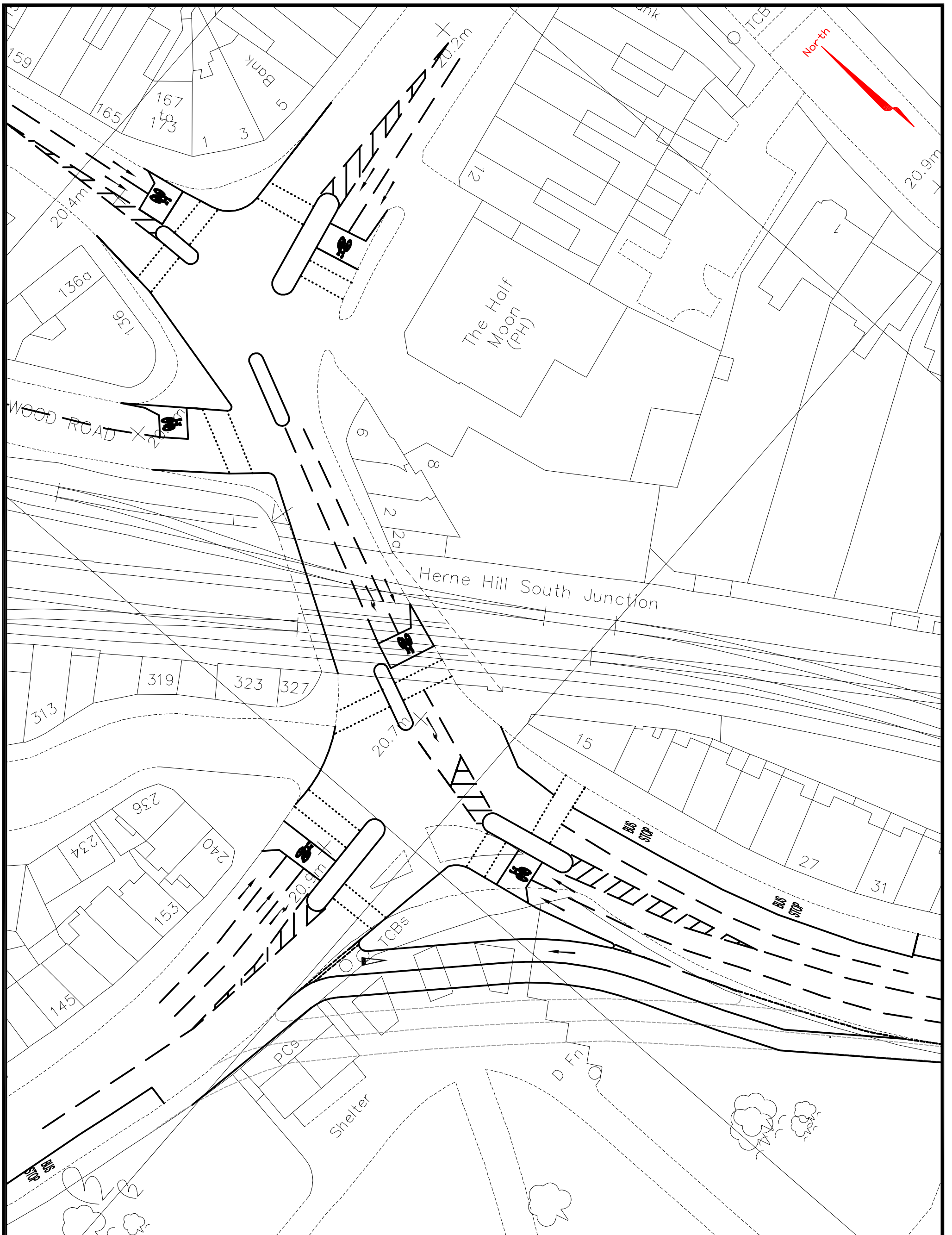
TRANSPORT PLANNING

- PLAN 1 -
MVA Option 2 Layout
Herne Hill Junction Improvement, Lambeth

DATE
Sep-08

SCALE
1:500 @ A3

DWG No.
IMA-08-088-001



TRANSPORT PLANNING

- PLAN 2 -
 IMA Alternative Layout
 Herne Hill Junction Improvement, Lambeth

DATE
 Sep-08

SCALE
 1:500 @ A3

DWG No.
 IMA-08-088-002