ARDENT
CONSULTING ENGINEERS

WOODLAND ENVIRONMENTAL

11/02499

CHERRY LODGE GOLF CLUB, BIGGIN HILL

CONSTRUCTION TRAFFIC MANAGEMENT STATEMENT

REPORT REF. F990-02
PROJECT NO. F990
JULY 2011

CHERRY LODGE GOLF CLUB, BIGGIN HILL

CONSTRUCTION TRAFFIC MANAGEMENT STATEMENT

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REPORT REF. F990-02
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DOCUMENT CONTROL SHEET

REV	ISSUE PURPOSE	AUTHOR	CHECKED	REVIEWED	APPROVED	DATE
-	1st Draft Client Issue	SAF	CMB	ML	DJR	11/03/11
-	Final	SAF	CMB	ML	DJR	14/07/11

1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Woodland Environmental (WE) to advise on construction traffic management for the upgrading and modernisation of the Cherry Lodge Golf Club, Biggin Hill.

1.2 This Construction Traffic Management Statement (CTMS) has been prepared in support of the planning application for submission to the local planning and highway authority, the London Borough of Bromley (LBB).

1.3 The planning application is also support by a Transport Statement, also prepared by ACE.

1.4 Following this introduction, the remainder of this report is structured as follows:

- **Section 2** describes the existing situation;
- **Section 3** outlines the proposed management of construction traffic and;
- **Section 4** provides a summary and sets out the conclusions.

2.0 EXISTING SITUATION

Site Location

2.1 The site which forms the subject of this planning application is located on the eastern fringe of Biggin Hill, as shown at **Plate 1**.

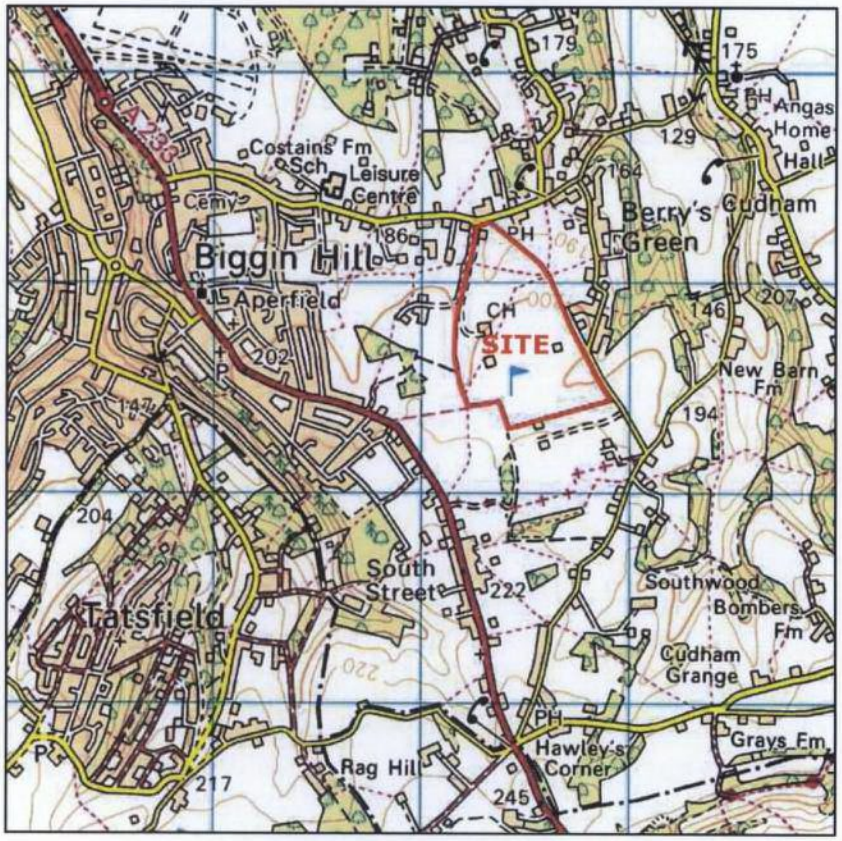


Plate 1: Site Location

Site Access

2.2 The site is accessed from Jail Lane, which runs on an east-west alignment to the immediate north of the site. Jail Lane varies in character along its length, it being a circa 7m wide urban single carriageway road with footways as it passes through residential development immediately east of the A233, and narrowing to a circa 4.3m wide semi-rural lane beyond this. The site access is taken from the semi-rural lane section, the width of which allows two cars to pass only.

Local Highway Network

2.3 The A223 Main Road is a circa 7.3m wide single carriageway road that is subject to a 30mph speed limit. It also has a local weight restriction, with access restricted to sub 5-tonne vehicles only in the hours 6:30pm – 8:00am. In addition, LBB is part of the Transport for London (TfL) Low Emission Zone (LEZ).

Strategic Highway Network

2.4 The A223 connects to the A1 at Bromley Common to the north and the A25 at Westerham to the south, both via priority 'T' junctions. The A25 connects to Junction 5 of the M25 near Sundridge. The M26 and A21 also connect with the M25 at this junction. There is no exit from the M26 to the M25 and all traffic must join the clockwise (westbound) M25. **Plate 2** illustrates the strategic highway network.

Plate 2: Strategic Highway Network

3.0 CONSTRUCTION TRAFFIC MANAGEMENT

Site Access

3.1 Jail Lane is considered unsuitable for frequent HGV use given that its narrow width in the vicinity of the site access does not allow for a HGV to pass a car. Therefore, it is not intended to use the existing site access for construction access.

3.2 It is proposed to provide temporary construction access to the site from the A223 Main Road in proximity to an existing farm access on Main Road (see **Plate 3**). WE has agreed a haul road route that borders agricultural land with the landowner, as shown on **Drawing no. F990-002C**. The haul road would be at least 6m wide along its initial section to allow for two-way HGV movements and would route alongside and segregated from an existing byway.

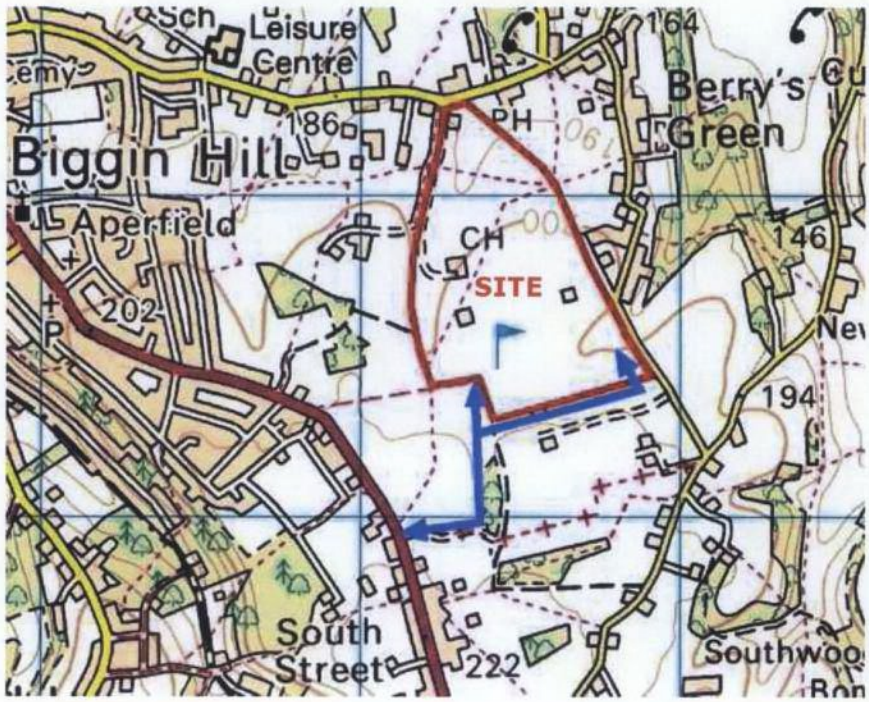


Plate 3: Site Access Location

3.3 The temporary haul road is proposed to connect to Main Road via a new priority 'T' junction arrangement. Proposed radii between Main

Road and the haul road are 10m to ensure that vehicles turning left-in or out do not conflict with traffic travelling northbound on Main Road, and this is demonstrated in the swept path assessment shown on **Drawing no. F990-003A**.

3.4 The proposed temporary junction arrangement is located close to the points at which Byway 283 and Bridleway 275B (upgraded from Footpath status in 2010) connect to Main Road. The junction design includes footways around its radii to provide alternative connections to these Public Rights of Way (PRoW) for walkers, whilst the Byway/Bridleway connection to Main Road is retained as a vehicular crossover.

3.5 Main Road is subject to a 30mph speed limit in the vicinity of the proposed access. In pre-application discussions, LBB requested that a speed survey be undertaken to verify 85th percentile traffic speeds to inform junction visibility splay requirements.

3.6 A traffic speed survey on a sample of 100 vehicles in each direction was undertaken at Main Road in dry weather on two days in June 2009 in accordance with guidance set out in *TA 22/81 Vehicle Speed Measurement on All Purpose Roads*. This showed 85th percentile northbound and southbound dry weather speeds of 37mph (60kph) and 39mph (63kph) respectively. The speed survey results are included at **Appendix A**.

3.7 The required 'y' distances for visibility splays at junctions on an existing road are based on the stopping site distance (SSD) of vehicles travelling on the major road at the observed 85th percentile speed in wet weather conditions. Subtracting 4kph from the dry weather speeds (as stipulated in *TA 22/81*) gives 85th percentile wet weather speeds of 35mph (56kph) northbound and 37mph (59kph) southbound.

3.8 In pre-application discussions with LBB, it was established that the use of the parameters recommended in the *Manual for Streets* (*MfS*) may be acceptable to derive the SSD on Main Road. In this respect, *MfS* states that its guidance on SSDs is for streets where 85th percentile speeds do not exceed 37mph (60kph), as is the case at Main Road.

3.9 The visibility requirements in the *MfS* are based on a driver perception/reaction time of 1.5 seconds, and a deceleration rate of 0.45g. Applying these constants to the 85th percentile wet weather speeds gives SSDs (adjusted for bonnet length) of 53m for northbound vehicles and 57m for southbound vehicles.

3.10 Given the nature of the use of the temporary construction access, and as agreed with LBB, an 'x' distance of 2.4m is considered appropriate. Pending the cutting back of hedgerow, visibility splays of 2.4m x 53m and 57m are achievable looking left (south) and right (north), respectively, along Main Road for drivers egressing the site, as shown on **Drawing no. F990-003A**. It is relevant to note that the hedgerow located within the visibility splay to the right is maintained at a low level to allow for greater visibility for vehicles egressing the Byway.

3.11 In terms of visibility in the vertical plane, *TD 9/93 Highway Link Design* identifies that SSD should be measured from a driver's eye height of between 1.05m and 2.00m, to an object height of between 0.26m and 2.00m above the road surface. These eye height dimensions are relevant to a car driver and HGV driver respectively. Given that the access will be used exclusively by HGVs, it is anticipated that the hedgerow would be cut back to allow visibility from a 2.00m driver eye height.

Vehicle Routing

3.12 Construction vehicles could route to the site via either: the A1 and then south on the A223; or the A25 and then north on the A223.

Wash-down Facilities

3.13 The A223 will be kept free of soils resulting from the movement of tipper wagons on the site. This will be achieved with a wheel cleaning spinner on egress from the site compound and road sweeper(s) at the site access when required.

3.14 In addition, a mobile water bowser will be available on site and will be used to suppress dust arising during dry periods. The regular washing of vehicles and dampening of surfaces and materials in dry conditions, will ensure that dust does not have any significant impact beyond the application site boundaries.

Construction Vehicle Sizes

3.15 The recovered inert soils would be brought to the site by Woodland Environmental using 4-axle tipper spoil wagons.

3.16 A variety of plant may be needed during the course of operations, although it is unlikely that all of the plant will be required at the same time. It is proposed that a tracked bulldozer and/or excavator suitable for grading of inert spoils will remain on site for the duration of the tipping operations. At other times a dumper truck and a 360 degree excavator will be required and these would be brought in or hired as appropriate.

Construction Schedule

3.17 The duration of the construction phase is anticipated to be in the order of 12 months, depending on the availability of suitable inert soils, and also restricted hours of operation due to adverse weather conditions.

3.18 Normal operating hours for the fill importation will be 0930 – 1630 Mondays to Fridays, outside of the busiest highway network morning and evening periods. These restrictions on operating times seek to negate the need for a right-turn lane at the site access.

3.19 In terms of construction vehicle movements, it is anticipated that the site will receive 70 deliveries per weekday, which equates to a total of 350 deliveries per week and 10 an hour on average.

On-Site Management Strategy

3.20 Between 4 and 8 WE employees would be on-site every day of construction. An employee would be present at all times when the site is open to accept imported soils.

3.21 Site control during the landscape works will be undertaken by an experienced member of WE and all vehicles delivering fill to the site would report to him. Records would be kept of all loads deposited at the site and this would be retained by the site supervisor. Records would be available for inspection by officers of the appropriate regulatory authority as necessary.

3.22 A representative of WE will be available for liaison with LBB should issues arise during the works.

3.23 In order to limit congestion on-site, deliveries of materials will be co-ordinated to ensure that vehicle arrive on a staggered basis.

Overhang of the Public Highway

3.24 There would be no overhang of the public highway by cranes etc as part of the construction works.

Proposed Hoarding

3.25 Hoarding is proposed around the works to limit any instances of dust entering the public highway.

Pedestrian Safety

3.26 As identified earlier, the proposed temporary junction arrangement at Main Road includes footways around its radii to provide safe connections to the PRoW for pedestrians.

3.27 The PRoW routes would be retained as existing and there would be a suitable buffer between these and the haul road, with protective fencing provided as necessary to ensure safety to the public.

3.28 On occasion when the haul road crosses a PRoW, a safe crossing area with good visibility will be provided, as well as warning signs to the public and lorry drivers. Speed restrictions and speed reducing ramps for lorries will also be introduced at crossing points.

3.29 The golf course will remain open to the public for the duration of the construction works. During the operations all necessary steps would be taken to ensure that the public using the golf course are fully aware of the operations and are safe from manoeuvring vehicles. This will take the form of protective fencing around the works and appropriately located warning signs to the public and lorry drivers.

3.30 Possible conflicts between construction traffic and pedestrians will be minimised through on-site management. If required, trained banksmen would supervise reversing vehicles.

4.0 SUMMARY AND CONCLUSIONS

4.1 This Construction Traffic Management Statement has been prepared for submission to LBB in support of the planning application for the upgrading and modernisation of the Cherry Lodge Golf Club, Biggin Hill.

4.2 The works will comprise the importation of recovered inert soils brought to the site by WE using 4-axle tipper spoil wagons. The duration of the construction phase is anticipated to be in the order of 12 months, depending on the availability of suitable inert soils and weather conditions. Normal operating hours for the fill importation will be 0930 – 1630 Mondays to Fridays, outside of the busiest highway network morning and evening periods.

4.3 The temporary haul road is proposed to connect to Main Road via a new priority 'T' junction arrangement. The proposed junction arrangement respects the PRoWs and includes footways around its radii to provide alternative connections to these for walkers, whilst the Byway/Bridleway connection to Main Road is retained as a vehicular crossover.

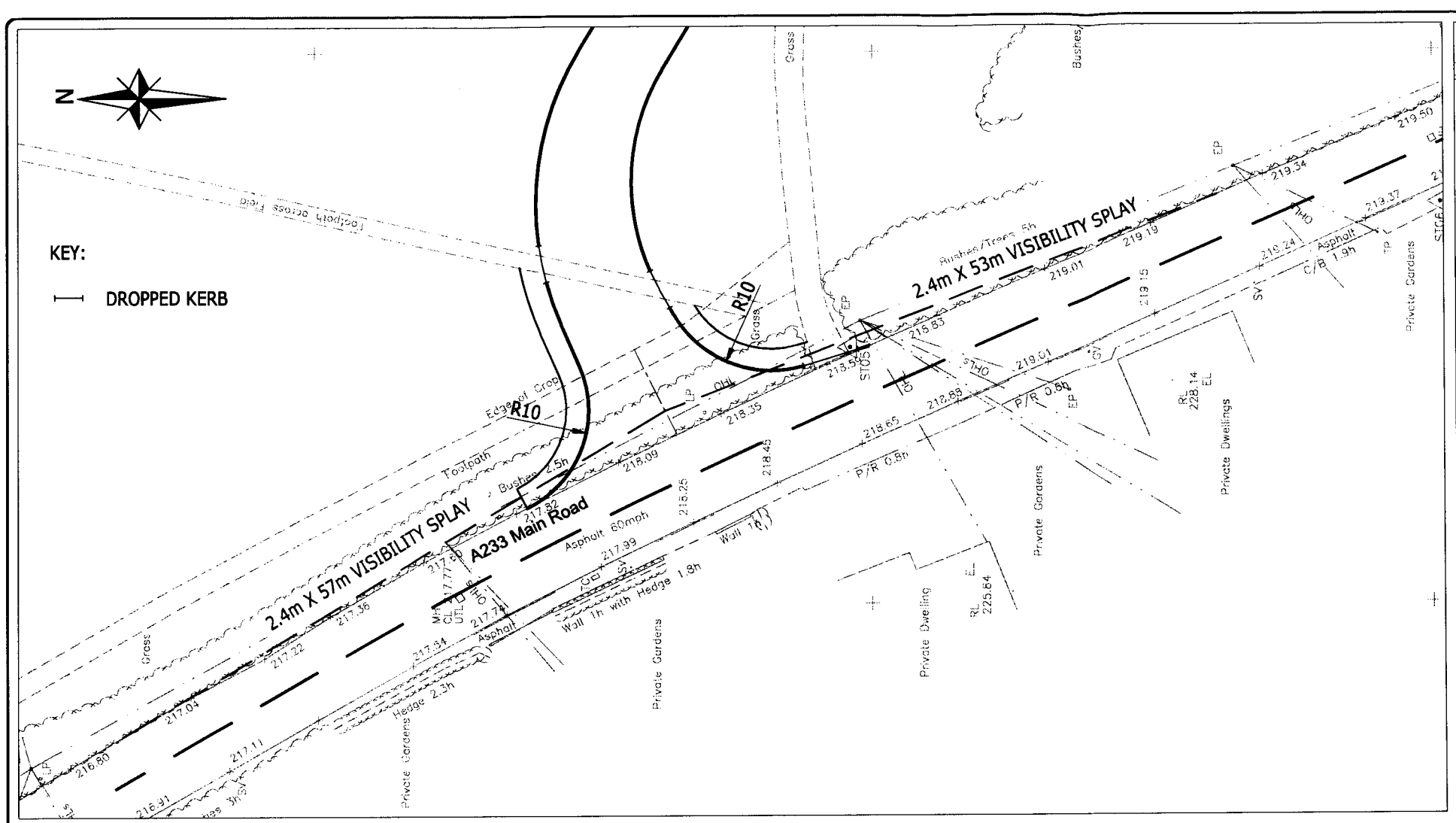
4.4 Vehicle speed surveys have been undertaken on Main Road to inform junction visibility splay requirements, which are 2.4m x 53m and 57m looking left (south) and right (north), respectively. The restrictions on operating times seek to negate the need for a right-turn lane at the site access.

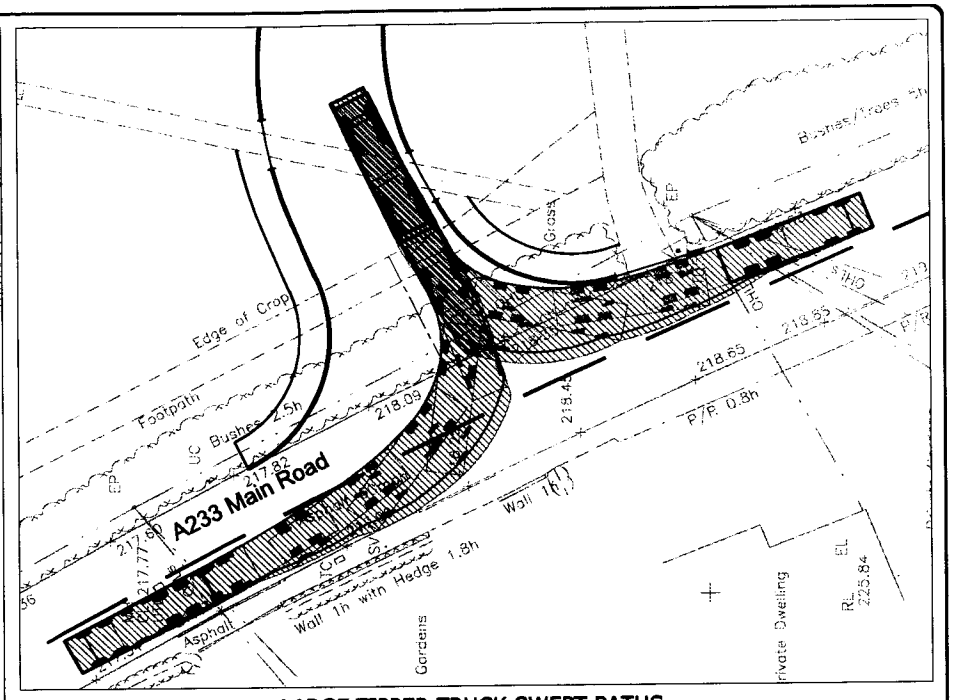
4.5 The PRoW routes would be retained as existing and there would be a suitable buffer between these and the haul road, with protective fencing provided to ensure safety to the public. On occasion when the haul road crosses a PRoW, a safe crossing area with good visibility will be provided, as well as warning signs to the public and lorry drivers.

Speed restrictions and speed reducing ramps for lorries will also be introduced at crossing points.

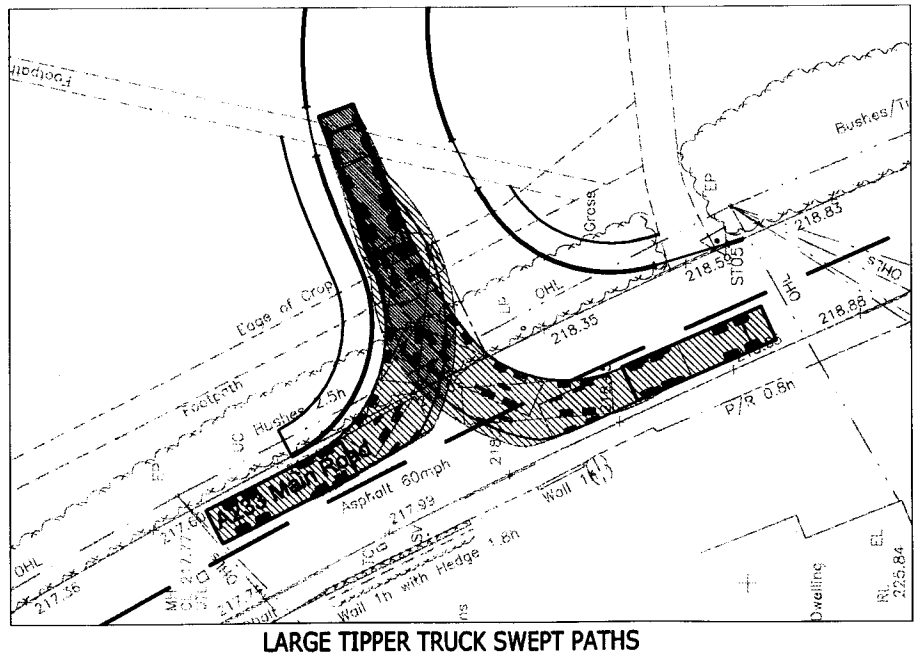
4.6 The golf course will remain open to the public for the duration of the construction works. During the operations all necessary steps would be taken to ensure that the public using the golf course are fully aware of the operations and are safe from manoeuvring vehicles.

Drawings

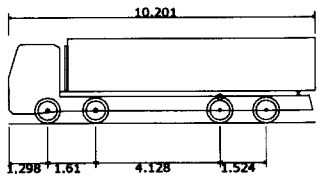




LARGE TIPPER TRUCK SWEPT PATHS
EGRESSING TEMPORARY SITE ACCESS



LARGE TIPPER TRUCK SWEPT PATHS
ENTERING TEMPORARY SITE ACCESS



Large Tipper	
Overall Length	10.201m
Overall Width	2.500m
Overall Body Height	2.893m
Min Body Ground Clearance	0.343m
Max Track Width	2.500m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	11.550m

REV.	AMENDMENTS	DRN	CHK	APP	DATE
A	FOOTWAYS AND ACCESS EXTENDED	RMA	SAF	ML	23-02-11

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PROJECT TITLE: CHERRY LODGE GOLF CLUB, BIGGIN HILL

DRAWING TITLE: PROPOSED TEMPORARY ACCESS

CLIENT: WOODLAND ENVIRONMENTAL

SCALE:	DATE:	DESIGNED:
1:500 @ A3	JUNE 2009	RMA
DRAWN: RMA	CHECKED: SAF	APPROVED: DJR
DRAWING NO. F990-003		REV: A

Appendices

Appendix A

Traffic Speed Survey Results

Countsequential
SURVEYS

Speed Surveys at

Main Road, Biggin Hill

Tuesday 02nd & Friday 05th June 2009

for:

Ardent Consulting Engineers

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

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F 020 8819 5617
M 07973 280966
E info@countsequential.co.uk

REF: ARD/286


point of survey

Main Road, Biggin Hill - Point of survey photos

Countsequential
SURVEYS

SPEED SURVEY RESULTS:

MAIN ROAD, BIGGIN HILL

TUESDAY 02nd JUNE 2009

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

T 020 8819 5809
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E info@countsequential.co.uk

Countsequential SURVEYS

DATE : 02nd JUNE 2009 DAY: TUESDAY

LOCATION : MAIN ROAD, BIGGIN HILL (OPPOSITE NO. 344)

WEATHER : DRY

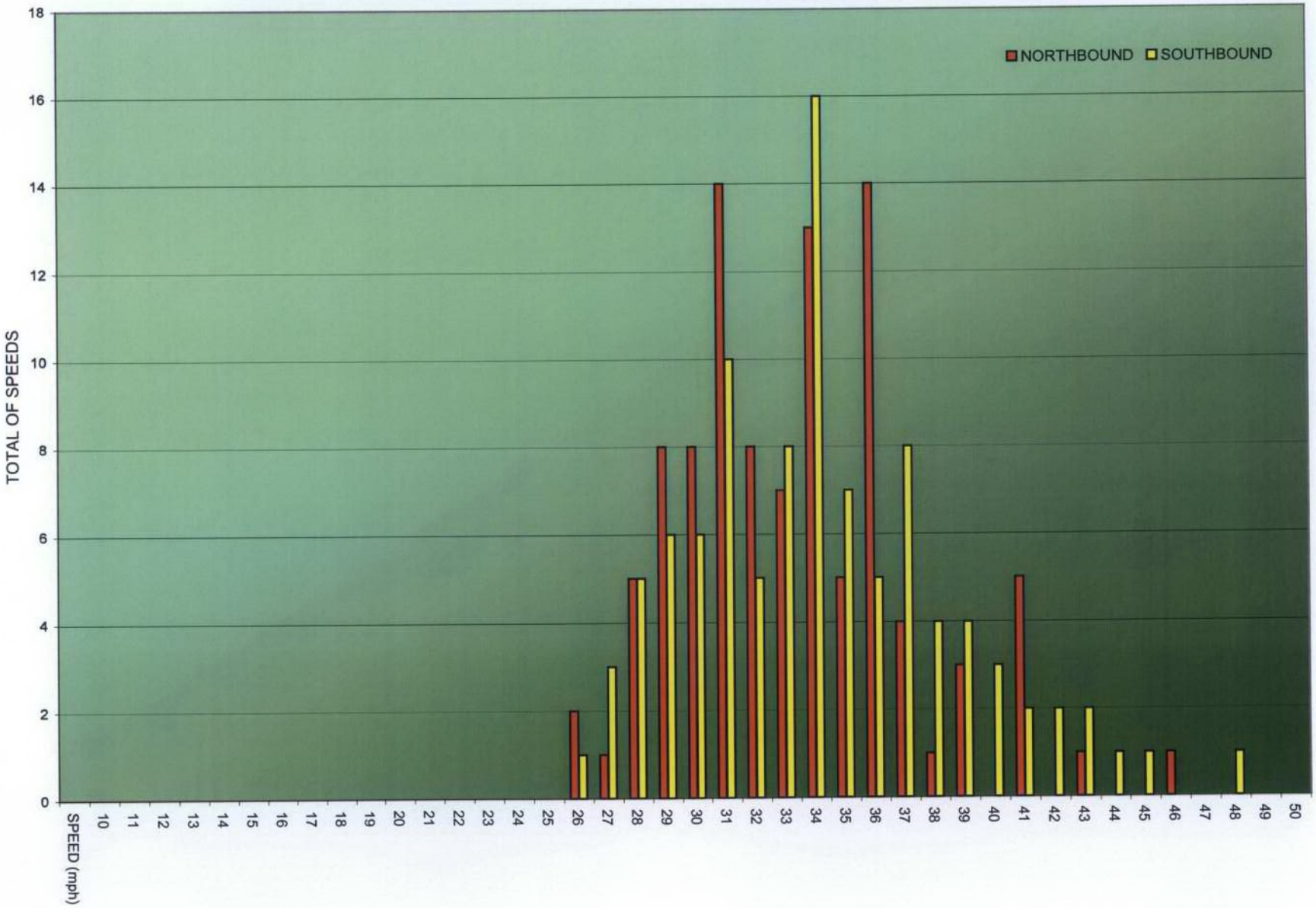
CARRIAGEWAY : SINGLE ROADWORKS : NONE

MAIN ROAD, BIGGIN HILL TIME : 1030 - 1130			
	NORTHBOUND	SOUTHBOUND	
SPEED (mph)	NUMBER OF VEHICLES	NUMBER OF VEHICLES	SPEED (kph)
10			16
11			18
12			19
13			21
14			23
15			24
16			26
17			27
18			29
19			31
20			32
21			34
22			35
23			37
24			39
25			40
26	2	1	42
27	1	3	43
28	5	5	45
29	8	6	47
30	8	6	48
31	14	10	50
32	8	5	51
33	7	8	53
34	13	16	55
35	5	7	56
36	14	5	58
37	4	8	60
38	1	4	61
39	3	4	63
40		3	64
41	5	2	66
42		2	68
43	1	2	69
44		1	71
45		1	72
46	1		74
47			76
48		1	77
49			79
50			80
TOTAL	100	100	
85th%ile -dry	37	39	mph
	60	63	kph
85th%ile - wet	56	59	kph
SSD (DMRB*)	81	89	m
SSD (MfS**)	53	57	m

LOWEST SPEED	26 mph	26 mph
MEAN SPEED	33 mph	34 mph
MEDIAN SPEED	33 mph	34 mph
HIGHEST SPEED	46 mph	48 mph

* SSD based on Design Manual for Roads and Bridges
** SSD based on Manual for Streets

MAIN ROAD, BIGGIN HILL (Tuesday 02nd June 2009)



Countsequential
SURVEYS

SPEED SURVEY RESULTS:

MAIN ROAD, BIGGIN HILL

FRIDAY 05th JUNE 2009

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

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Countsequential SURVEYS

DATE : 05th JUNE 2009 DAY: FRIDAY

LOCATION : MAIN ROAD, BIGGIN HILL (OPPOSITE NO. 344)

WEATHER : DRY

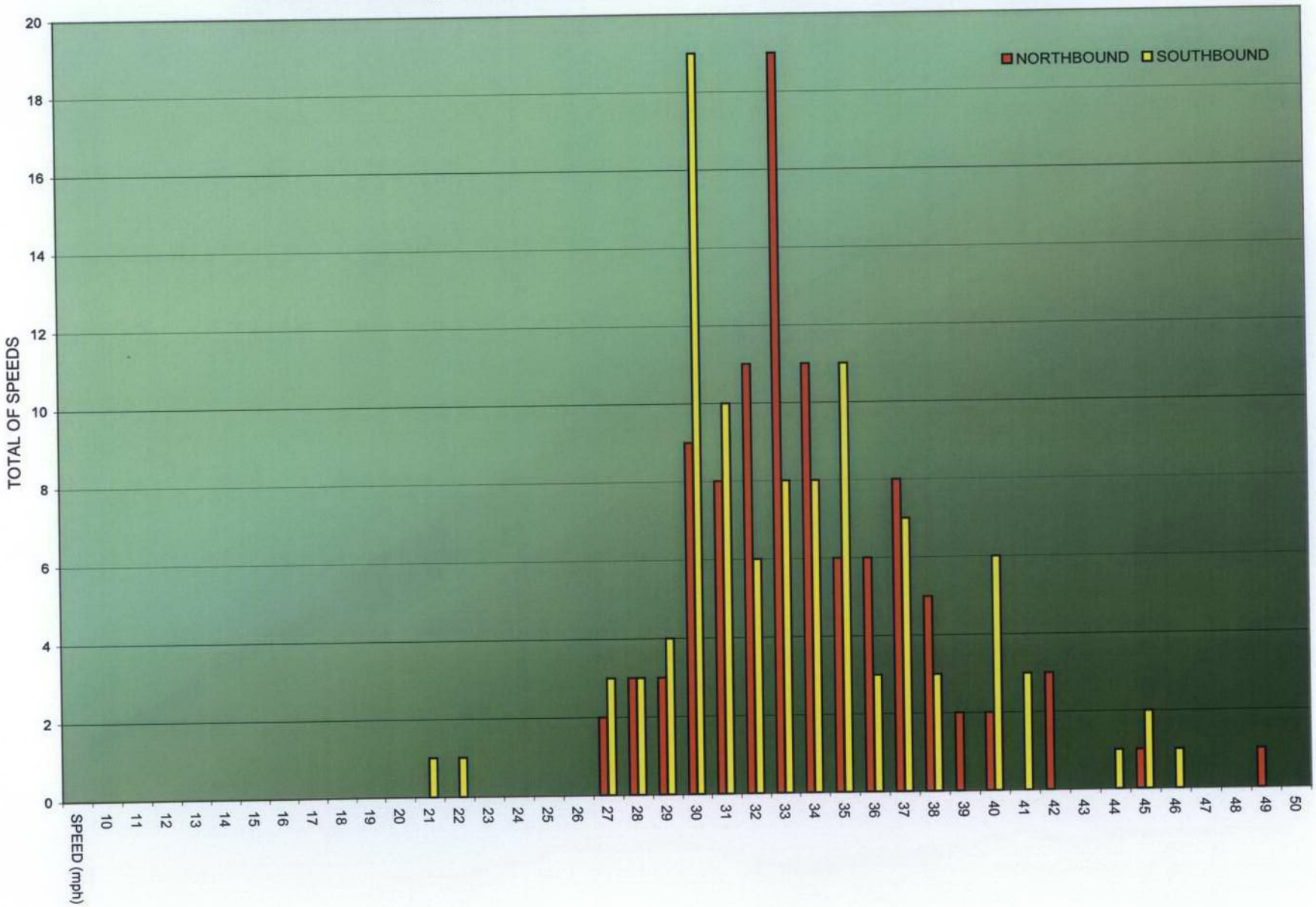
CARRIAGEWAY : SINGLE ROADWORKS : NONE

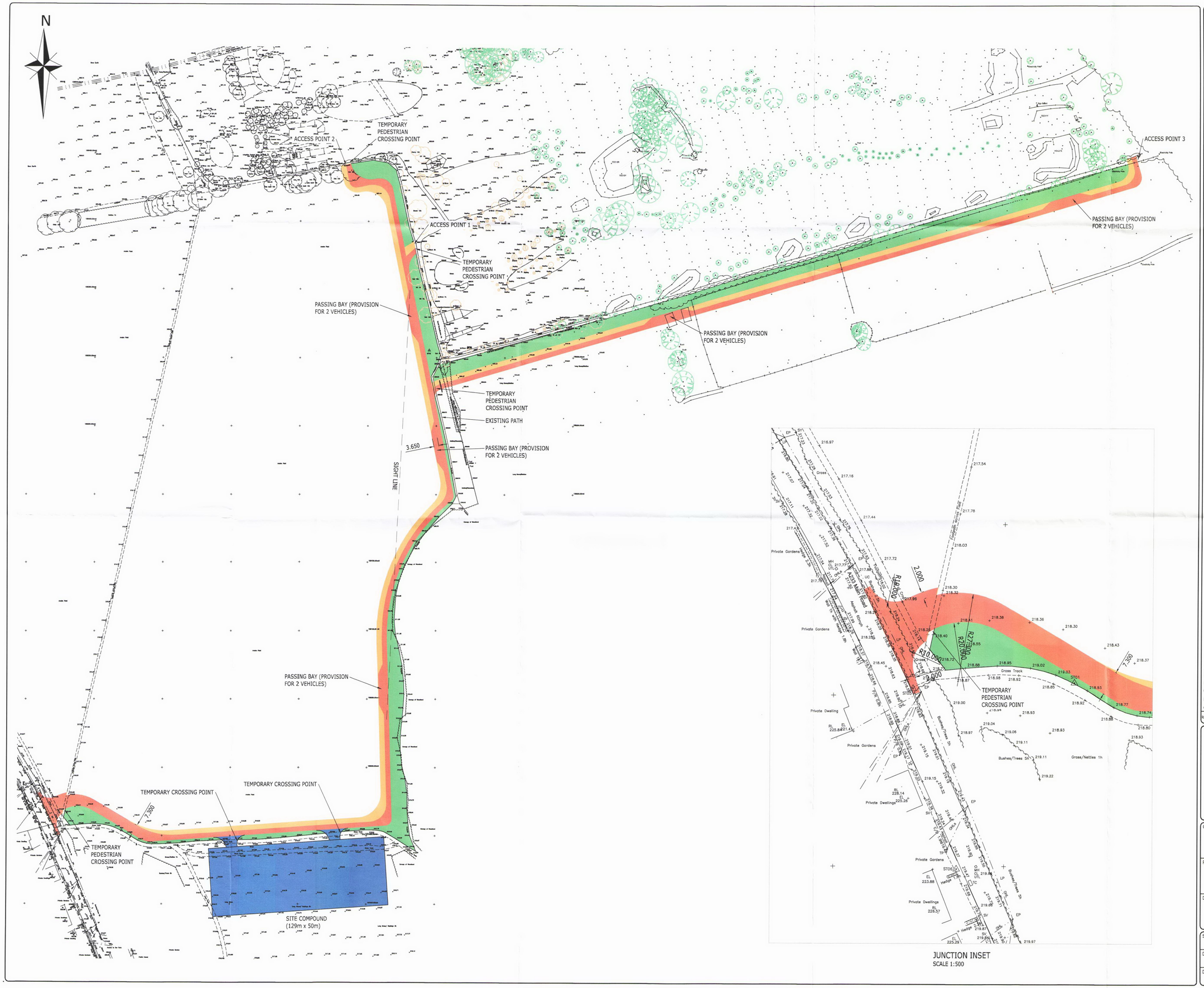
MAIN ROAD, BIGGIN HILL TIME : 1415 - 1525			
	NORTHBOUND	SOUTHBOUND	
SPEED (mph)	NUMBER OF VEHICLES	NUMBER OF VEHICLES	SPEED (kph)
10			16
11			18
12			19
13			21
14			23
15			24
16			26
17			27
18			29
19			31
20			32
21		1	34
22		1	35
23			37
24			39
25			40
26			42
27	2	3	43
28	3	3	45
29	3	4	47
30	9	19	48
31	8	10	50
32	11	6	51
33	19	8	53
34	11	8	55
35	6	11	56
36	6	3	58
37	8	7	60
38	5	3	61
39	2		63
40	2	6	64
41		3	66
42	3		68
43			69
44		1	71
45	1	2	72
46		1	74
47			76
48			77
49	1		79
50			80
TOTAL	100	100	
85th%ile -dry	37	38	mph
	60	61	kph
85th%ile - wet	56	57	kph
SSD (DMRB*)	81	85	m
SSD (MfS**)	53	55	m

LOWEST SPEED	27 mph	21 mph
MEAN SPEED	34 mph	33 mph
MEDIAN SPEED	33 mph	33 mph
HIGHEST SPEED	49 mph	46 mph

* SSD based on Design Manual for Roads and Bridges
** SSD based on Manual for Streets

MAIN ROAD, BIGGIN HILL (Friday 05th June 2009)





JUNCTION INSET
SCALE 1:500

NOTES:

1. HAUL ROUTE GEOMETRY BASED UPON A LARGE TIPPER WITH A SINGLE CARRIAGEWAY WIDTH OF 3.65m.

2. JUNCTION DESIGN BASED UPON THE DESIGN MANUAL FOR ROADS AND BRIDGES, TD 42/95, RURAL JUNCTIONS.

3. HAUL ROUTES INDICATIVE AND SUBJECT TO AGREEMENT.

- PERIMETER ROAD TO MINIMISE DISTURBANCE WITH FIELD (0.6159Ha)
- ADDITIONAL AREA FOR BUFFER STRIP TO PERMIT 2 WAY FLOW OF TRAFFIC (0.4191Ha)
- AREA BETWEEN PATHS AND HAUL ROUTE (0.9275Ha)
- SITE COMPOUND AREA (0.6616Ha)

DRAFT - FOR COMMENT

REV	AMENDMENTS	DRN	CHK	APP	DATE
F	AREAS UPDATED	NJT	SAF	DJR	09.05.11
F	1ST ACCESS POINT RELOCATED	NJT	SAF	DJR	18.3.11
E	1ST ACCESS POINT RELOCATED	NJT	SAF	DJR	17.3.11
D	3RD ACCESS POINT ADDED, AREAS AMENDED	KGS	SAF	DJR	3.3.11
C	2ND ACCESS POINT MOVED, AREAS AMENDED	JRM	SAF	DJR	25.11.09
B	2ND ACCESS POINT ADDED	JRM	SAF	DJR	28.9.09
A	ACCESS AMENDED. SITE COMPOUND ADDED	JRM	SAF	DJR	9.9.09

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CLIENT: WOODLAND ENVIRONMENTAL

PROJECT TITLE: CHERRY LODGE GOLF CLUB BIGGIN HILL

DRAWING TITLE: HAUL ROAD OPTIONS

SCALE:	DATE:	DESIGNED:
1:1250	25/06/09	JRM
DRAWN: JRM	CHECKED: DJR	APPROVED: DJR
DRAWING NO. F990-002		REV: G