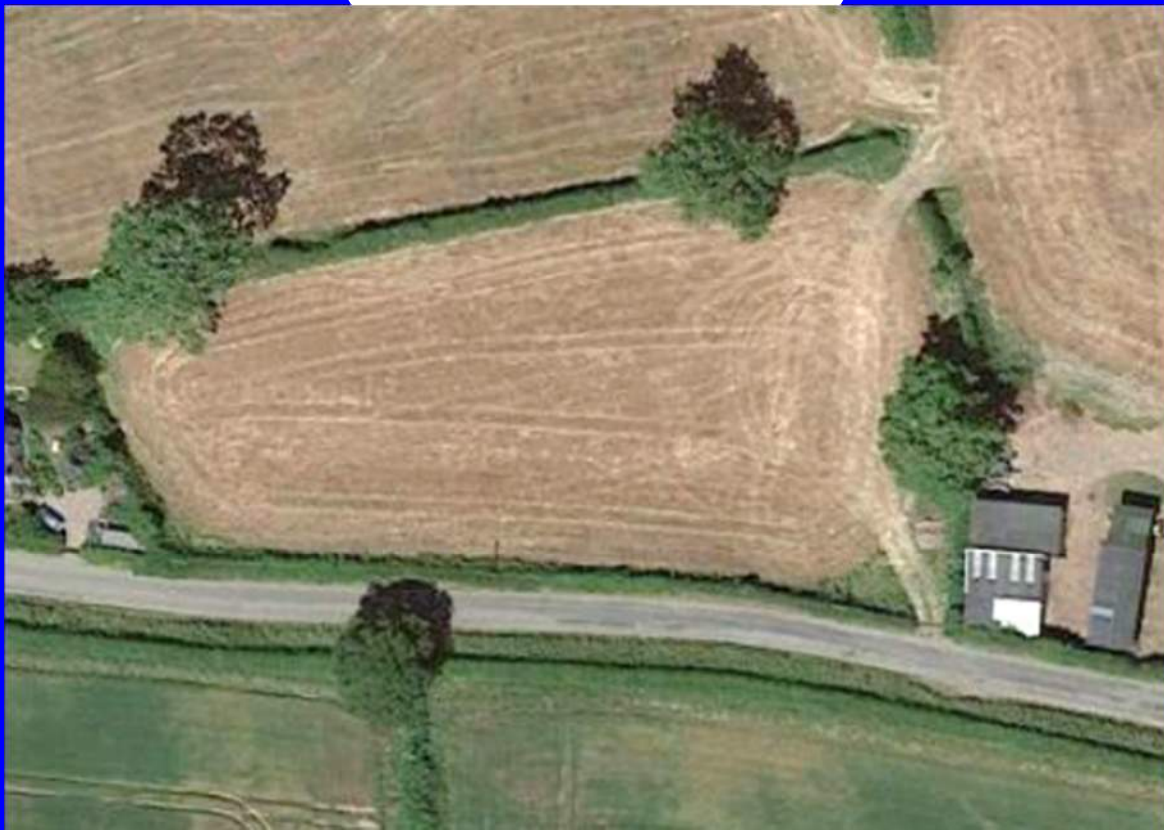


ACCESS ASSESSMENT

**FOR A PROPOSED TOURING CARAVAN SITE
FOR 8 PITCHES
AT
CHAPEL FARM WHITEWELL
WHITCHURCH**



**FOR
MR GERALD CARTWRIGHT**

REPORT VERIFICATION

SITE ADDRESS	Chapel Farm Whitewell Whitchurch
REPORT TITLE	Access Assessment
JOB NUMBER	719-21
PREPARED BY	JRS

ISSUE NO.	DATE	STATUS	REPORT VERSION	ISSUED BY
1	11-10-21	for Planning	01	JRS

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1. BRIEF

- 1.1. Sumner Consultancy has been appointed by Mr Gerald Cartwright to provide an Access Assessment in connection with his proposed construction of a touring caravan site adjoining Whitewell Road.

2. SITE INFORMATION

- 2.1. The Site is located on the northern side of the Whitewell Road, 3 miles to the west of Whitchurch at Grid Reference X349400 Y341177 with the nearest post code of SY13 3AL. The Site Location Plan is in Appendix 1.
- 2.2. The Site is an existing field on the western side of Chapel Farm, and the proposal is to construct 8 touring caravan pitches and the provision of a small shower/toilet block. The Site proposals are shown on Green Planning Studio's Proposed Site drawing 20_1124_003b in Appendix 2.
- 2.3. In the south eastern corner of the Site is an existing field access gate 5.0m wide, and the proposal is to widen the access to 5.5m.
- 2.4. Adjoining the access Whitewell Road is 4.6m wide with a 4.3 wide verge on the southern side of the road.
- 2.5. There are no streetlights or road markings along Whitewell Road.
- 2.6. Whitewell Road is subject to the national speed limit of 60mph.

3. VISIBILITY SPLAYS

- 3.1. Measurement of visibility splays:
- 3.1.1. Measurements for visibility splays are generally taken from a point where the centreline of the minor road meets the channel of the major road, Point W. This is normally at the 'give way' line (or an imaginary 'give way' line if no such markings are provided). The distance back along the minor arm to Point X, from which visibility is measured is known as the X distance. This distance is normally measured along the centreline of the minor arm for simplicity, but in some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.
- 3.1.2. The Y distance represents the distance that a driver who is about to exit from the minor arm can see to their left and right along the main alignment. For simplicity it is measured along the nearside kerb line of the main arm to Point Y, although vehicles will normally be travelling a distance from the kerb line. Therefore a more accurate assessment of visibility splays is made by measuring to the nearside edge of the vehicle track. The measurement is taken from the point where this line intersects the centreline of the minor arm, Point X, (unless, as above, there is a splitter island in the minor arm).
- 3.2. Currently the standards for determining visibility splays, are defined in Manual for Streets (MfS), CD 123 – Geometric Design of At-Grade Priority and Signal-Controlled Junctions and TAN 18 Transport.
- 3.3. MfS focuses on lightly trafficked residential streets, but many of its key principles may be applicable to other types of street, for example high streets and lightly-trafficked lanes in rural areas. Generally this is limited to locations with traffic speeds less than 40mph. MfS does not apply to the Trunk Road Network.
- 3.4. CD 123 & TAN 18 is generally applicable to trunk roads where traffic speeds are 40mph and above.
- 3.5. However there are some Highway Authorities, one of which is Shropshire who are prepared to consider visibility splays derived by Dorset County Council for speeds in excess of 40mph. These visibility splays are based on the formula outlined in MfS.

- 3.6. It's understood that the Planning Inspectorate is also allowing appeals for visibility splays for speeds in excess of 40mph based on the formula outlined in MfS.
- 3.7. For the appropriate X distance MfS states that:
- a) An X distance of 2.4m should normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of a car and the driver's eye.
 - b) Longer X distances enable drivers to look for gaps as they approach the junction. This increases junction capacity for the minor arm, and so may be justified in some circumstances, but it also increases the possibility that drivers on the minor approach will fail to take account of other road users, particularly pedestrians and cyclists.
 - c) Longer X distances may also result in more shunt collisions on the minor arm. TRL Report No. 18468 found that collision risk increased with greater minor-road sight distance.
 - d) A minimum X distance of 2m may be considered in some slow-speed situations when flows on the minor arm are low, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm, and many drivers will tend to cautiously nose out into traffic.
- 3.8. For an access from this Site an X distance of 2.4m is considered appropriate.
- 3.9. The determination of the Y distance for the visibility splays is based on the actual speed of vehicles along the road and not the speed limit.
- 3.10. The assessment of Vehicle speeds is generally done by an Automatic Traffic Count (ATC). An ATC speed survey is normally carried out by fixing rubber tubes to the road surface which are connected to a road side recorder box. These tubes can measure both speed and number of vehicle movements and in some cases the weight of vehicles passing over, e.g. cars or HGV's.
- 3.11. An ATC is generally done over the period of a week. They are therefore inconspicuous to drivers of vehicles, and provide more detailed information than a manual survey, which is generally only over a number of hours or at most a day and involves the survey being carried out by someone on the side of the road with a radar gun, sometimes in a high visibility jacket.
- 3.12. When the results of a speed reading either by an ATC or manually are obtained the vehicle speeds along the road are defined by the 85th Percentile. Basically as an example, if 100 readings are taken the top 15 are discounted and the next reading is the 85th Percentile. The speed is adjusted if the readings were taken in wet weather or when the road is wet.
- 3.13. As well as the horizontal visibility splays (Y distance) the vertical visibility is taken into account. In MfS the vertical requirement is from an eye height of between 1.05m & 2.0m to a point 0.6m above carriageway.
- 3.14. During the site inspection it was noted Whitewell Road has very low traffic volumes due to its rural nature, therefore no speed reading were able to be taken. However an estimation of the traffic speeds was done by driving along the road, westbound speeds were estimated to be 35mph, and eastbound 40mph.
- 3.15. Based on the formula in MfS, for a westbound speed of 35mph, the required visibility splay to the east is 53.5m, and for an eastbound speed of 40mph, it is 81.6m to the west. The Speed & Visibility Splay Calculations are in Appendix 3.
- 3.16. MfS states that in determining the Y distance a more accurate assessment of visibility splays is made by measuring to the nearside edge of the vehicle track. This has normally been taken to be 1.0m from the road channel.

- 3.17. The potential Y distance visibility splays which can be achieved from the proposed access as measured on site within the highway boundary or within land owned or controlled by Mr Cartwright are shown on the Access Proposals drawing 791-21-05 in Appendix 4. The distances are 90.0m to the west and 60.0m to the east. Photographs 1 & 2 show the location of the existing access, Photographs 3 & 4 are taken at the road channel, Photographs 5 & 6 from 2.4m. The Photographs are in Appendix 5.
- 3.18. Since the visibility splays from 2.4m are initially obstructed by the adjoining gate posts/fence and hedge a red & white ranging pole was positioned at 2.4m from the road channel and photographs were taken at a point 90.0m from the access in a westerly direction and 60.0m in an easterly direction.
- 3.19. Photograph 7 is at 90m from the access in a westerly direction looking towards the access and Photograph 8 is zoomed in towards the access and shows the red & white ranging pole marking 2.4m. To achieve the 2.4 x 90.0m visibility splays an 8.0m section of the hedge up to the electric pole in a westerly direction needs to be taken down or set back.
- 3.20. Photograph 9 is at 60m from the access in an easterly direction looking towards the access and Photograph 10 is zoomed in towards the access and shows the red & white ranging pole marking 2.4m. To achieve the 2.4 x 60.0m visibility splays a 2.0m section of the close boarded fence needs to be set back along the splay line in an easterly direction and the existing hedge maintained to its current state.
- 3.21. Visibility for right turning vehicles is in excess of 100m.
- 3.22. As well as the horizontal visibility splays (Y distance) the vertical visibility is taken into account. In MfS the vertical requirement is from an eye height of between 1.05m & 2.0m to a point 0.6m above carriageway. There are no issues with this along Whitewell Road.

4. PROPOSED ACCESS

- 4.1. The existing field access is 5.0m and needs to be widened in a westerly direction to 5.5m with 45 degree splays onto the highway.
- 4.2. The access needs to be surfaced in a hardbound material for a distance of 10.0m from the highway.
- 4.3. Since the site falls away from the highway, no drainage provision is necessary to prevent water draining onto the highway. However to prevent water draining off the highway into the site it is recommended that a dropped kerb is constructed across the access.
- 4.4. The swept path of the largest car and caravan that is allowable on the highway is shown on the Car & Caravan Swept Path Analysis drawing 719-21-70 in Appendix 6. This shows that a car a caravan can enter the site and pass a car exiting the Site.
- 4.5. A refuse collection point will be provided adjoining the access, as indicated on the Access Proposals drawing 791-21-05 in Appendix 4, so it will not be necessary for the refuse vehicle to enter the Site.

5. CONCLUSION

- 5.1. For an access from this Site an X distance of 2.4m is considered appropriate.
- 5.2. During the site inspection it was noted Whitewell Road has very low traffic volumes due to its rural nature, therefore no speed reading were able to be taken. However an estimation of the traffic speeds was done by driving along the road, westbound speeds were estimated to be 35mph, and eastbound 40mph.
- 5.3. Based on the formula in MfS, for a westbound speed of 35mph, the required visibility splay to the east is 53.5m, and for an eastbound speed of 40mph, it is 81.6m to the west.
- 5.4. The potential Y distance visibility splays which can be achieved from the access within the highway boundary or within land owned or controlled by Mr Cartwright are 90.0m to the west and 60.0m to the east.
- 5.5. The potential visibility splays are therefore in excess of the distances determined from the estimated vehicle speeds.
- 5.6. Visibility for right turning vehicles is in excess of 100m.
- 5.7. The existing field access is 5.0m and needs to be widened in a westerly direction to 5.5m with 45 degree splays onto the highway.
- 5.8. The access needs to be surfaced in a hardbound material for a distance of 10.0m from the highway.
- 5.9. Since the site falls away from the highway, no drainage provision is necessary to prevent water draining onto the highway. However to prevent water draining off the highway into the site it is recommended that a dropped kerb is constructed across the access.
- 5.10. The swept path of the largest car and caravan that is allowable on the highway shows that a car a caravan can enter the site and pass a car exiting the Site.
- 5.11. A refuse collection point will be provided adjoining the access, so it will not be necessary for the refuse vehicle to enter the Site.
- 5.12. It is considered that the proposed caravan site and access will not be detrimental to the safety and free flow of traffic along Whitewell Road.

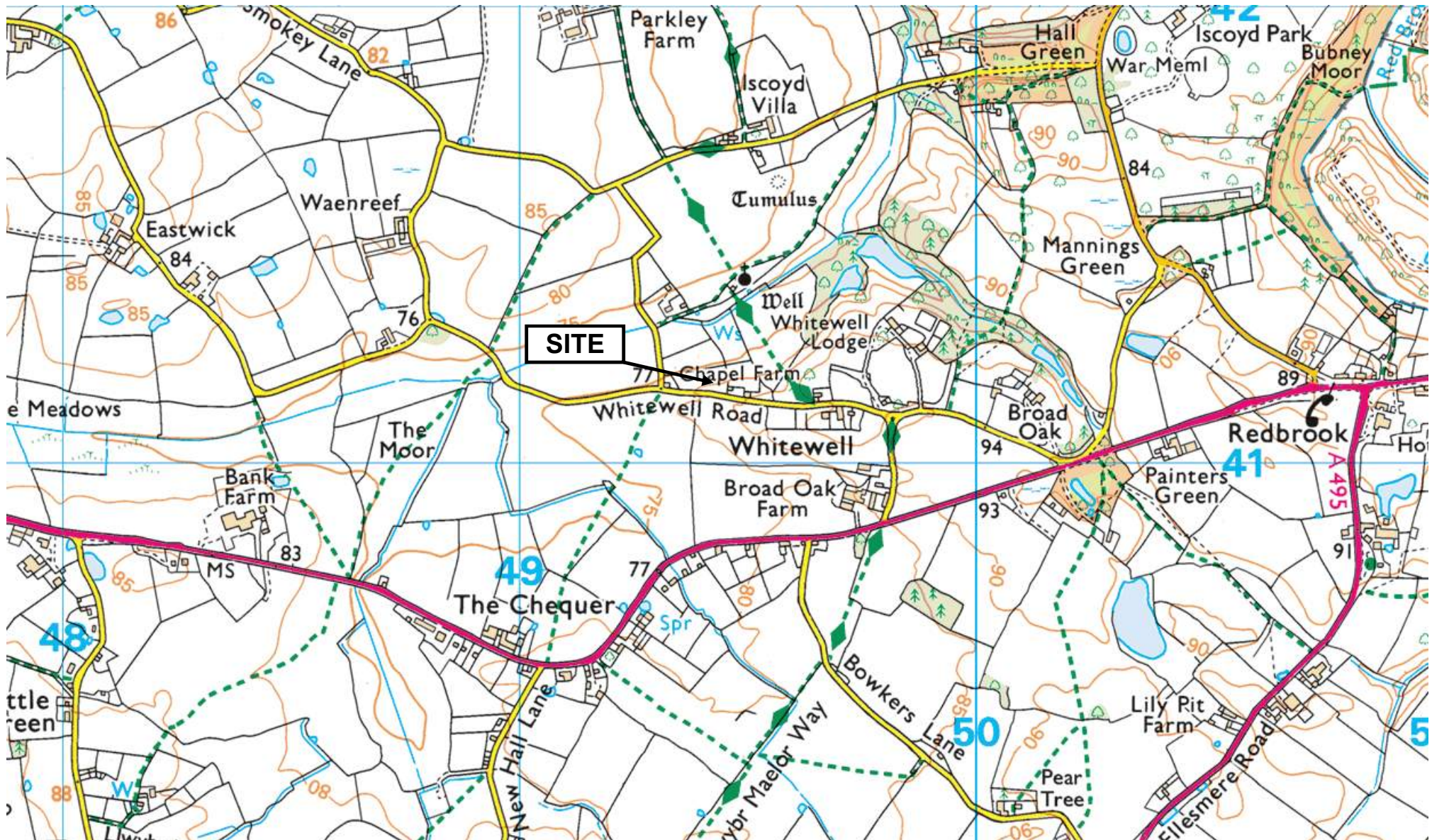
John Sumner IEng MICE
Director
Sumner Consultancy Ltd
October 2021

APPENDIX 1

SITE LOCATION PLAN

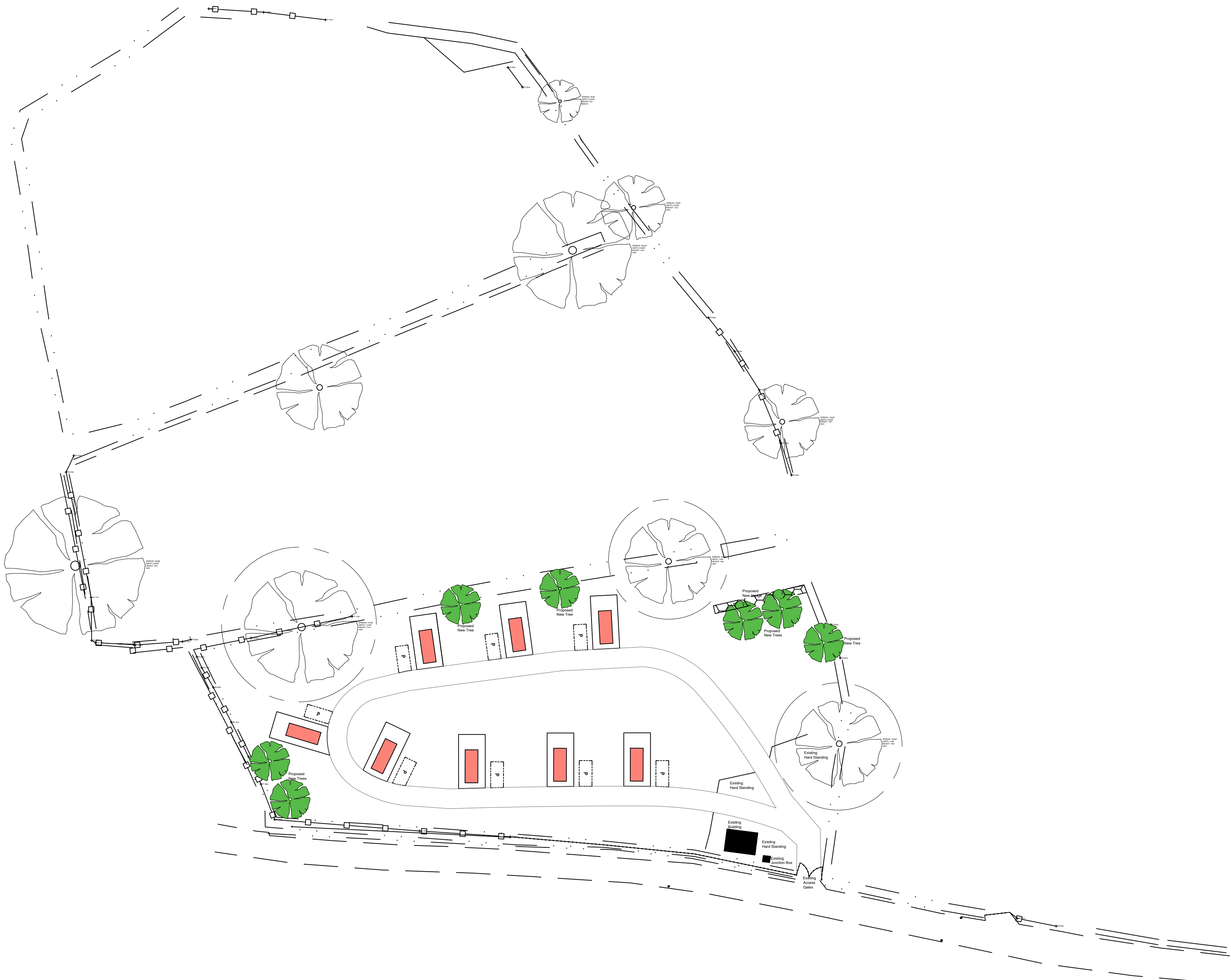
SITE LOCATION PLAN

Nearest Post Code SY13 3AL
Grid Reference X349400 Y341177



APPENDIX 2

GREEN PLANNING STUDIO'S PROPOSED SITE DRAWING 20_1124_003



NOTES
Do not scale from this drawing except for planning application purposes.
The contractor is to check all site dimensions, levels and sewer inverts before works commence.
This drawing must be checked and read against any structural or specialist consultant drawings.
The contractor is to comply in all respects with the current Building Regulations and BS Codes of Practice whether or not specifically stated on these drawings.
This drawing is not intended to show details of foundations, ground conditions or ground contaminants and confirmation and/or investigation is to be carried out by suitable experts.
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LANDSCAPING KEY:	
	PROPOSED NEW TREES
	EXISTING TREES
	ROOT PROTECTION AREA
	NEW HEDGE PLANTING
	Touring Caravan Base
	Towing Vehicle Hardstanding

B.	30/06/2021	Drawing number corrected	CH
A.	23/06/2021	Tree root protection area revise	CH
Rev.	Date	Amendments	Author



Client:
Mr Gerald Cartwright

Project title:
**Touring Caravan Site For 8 Pitches
Chapel Farm
Whitewell
Nr Whitchurch
Wrexham, SY13 3AL**

Drawing title:
Proposed Site

Scale @ A2: 1:500	Date of first issue: March 2021	Drawn: CH
Project No. 20_1124	Issue Status Planning	
Drawing No. 20_1124_003	Revision:	

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APPENDIX 3

SPEED & VISIBILITY CALCULATIONS

SPEED & VISIBILITY SPLAY CALCULATIONS

Manual for Streets (MfS)



Site Location **CHAPEL FARM WHITEWELL ROAD WHITCHURCH**

Grid Reference **X349400 Y341177**

Nearest Post Code **SY13 3AL**

Speed Limit **60**

Speed assessment was done on 26/08/2021 by driving along the road

Traffic Direction Westbound mph
85th Percentile 35.0

Traffic Direction Eastbound mph
85th Percentile 40.0

Speed in wet weather

CA 185 Vehicle Speed Measurement

Speed increase for wet weather 0 mph (4 kph for AP Single Carriageways)

Traffic Direction Westbound mph
85th Percentile 35.0

Traffic Direction Eastbound mph
85th Percentile 40.0

Speed is >60kph. For desirable SSD use t=2 & d=0.25

Speed is >60kph. For absolute min. SSD use t=2 & d=0.375

Visibility Distances From Manual for Streets

SPEED	Km/h	16	20	24	25	30	32	40	45	48	50	60
	mph	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length		11	14	17	18	23	25	33	39	43	45	59

Traffic Direction Westbound

85th Percentile Visibility Splay 53.5 m

Traffic Direction Eastbound

85th Percentile Visibility Splay 81.6 m

Where:

Stopping Sight Distance = $vt + \frac{v^2}{2(d+0.1a)}$

v = Speed (m/s)

t = Reaction Time (s) =

d = Deceleration Time (g) =

g = Gravity (m/s²) =

Bonnet Length (m) =

a = Longitudinal Gradient (%)

Westbound Gradient (%) =

Eastbound Gradient (%) =

Westbound Eastbound

1.5 2

0.450 0.375

9.81 9.81

2.4 2.4

5.3%

3.4%

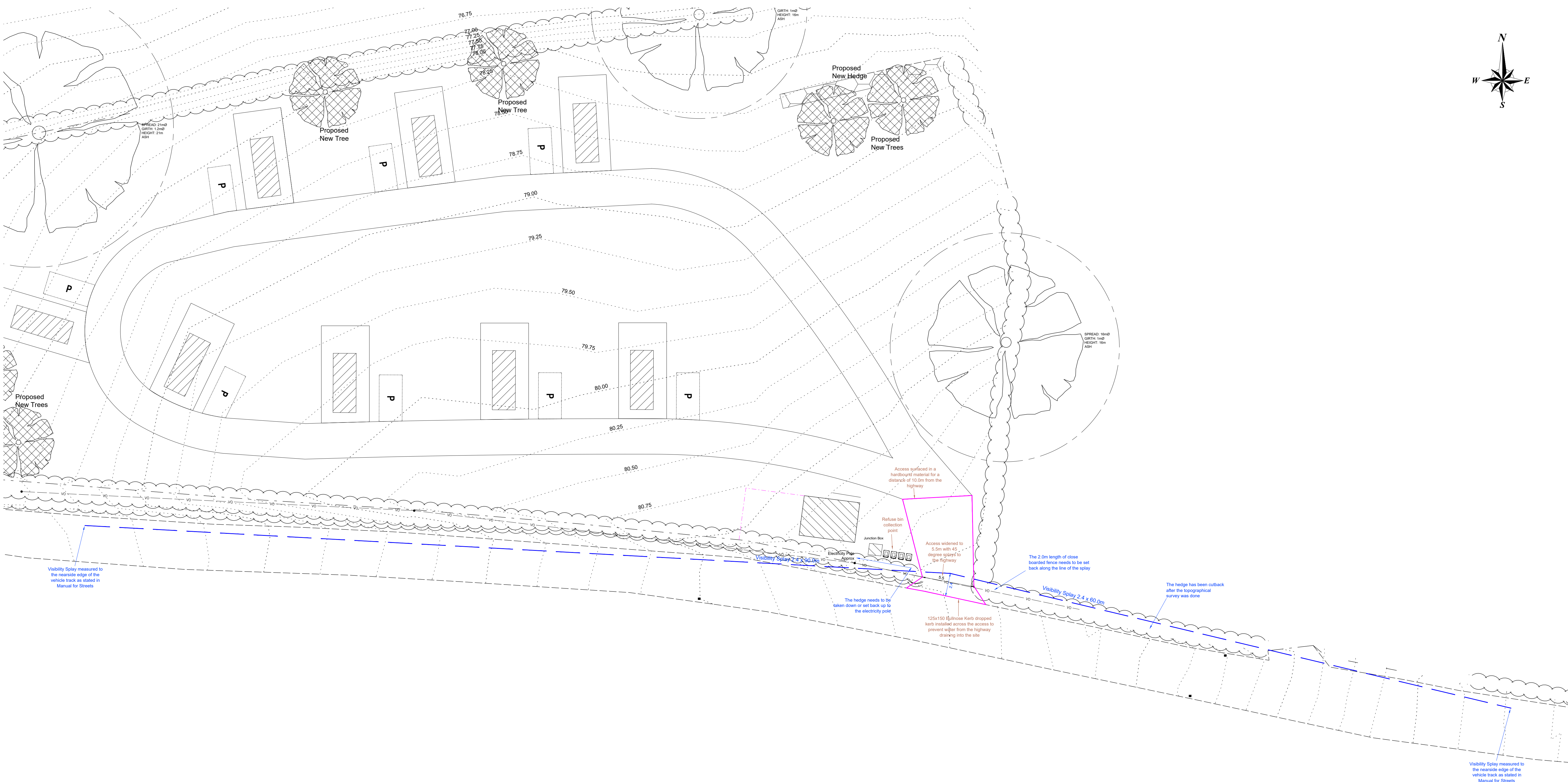
Note: The calculations above are based on the formula in Manual for Streets 2 for determining the Stopping Sight Distance

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APPENDIX 4

ACCESS PROPOSALS DRAWING 719-21-05



Drawing Size: A1

APPENDIX 5

PHOTOGRAPHS



PHOTOGRAPH 1
Existing field access



PHOTOGRAPH 2
Existing field access looking in a westerly direction



PHOTOGRAPH 3
Road channel in a westerly direction from the existing access



PHOTOGRAPH 4
Road channel in an easterly direction from the existing access



PHOTOGRAPH 5
At 2.4m from the road channel in a westerly direction



PHOTOGRAPH 6
At 2.4m from the road channel in a easterly direction



PHOTOGRAPH 7
Visibility from 90m in a westerly direction looking towards the access



PHOTOGRAPH 8
Visibility from 90m in a westerly direction looking towards the access
The photograph is zoomed in towards the access and shows a red & white ranging pole marking 2.4m



PHOTOGRAPH 9
Visibility from 60m in a easterly direction looking towards the access



PHOTOGRAPH 10
Visibility from 60m in a easterly direction looking towards the access
The photograph is zoomed in towards the access and shows a red & white ranging pole marking 2.4m

APPENDIX 6

CAR & CARAVAN SWEPT PATH ANALYSIS DRAWING 719-21-70

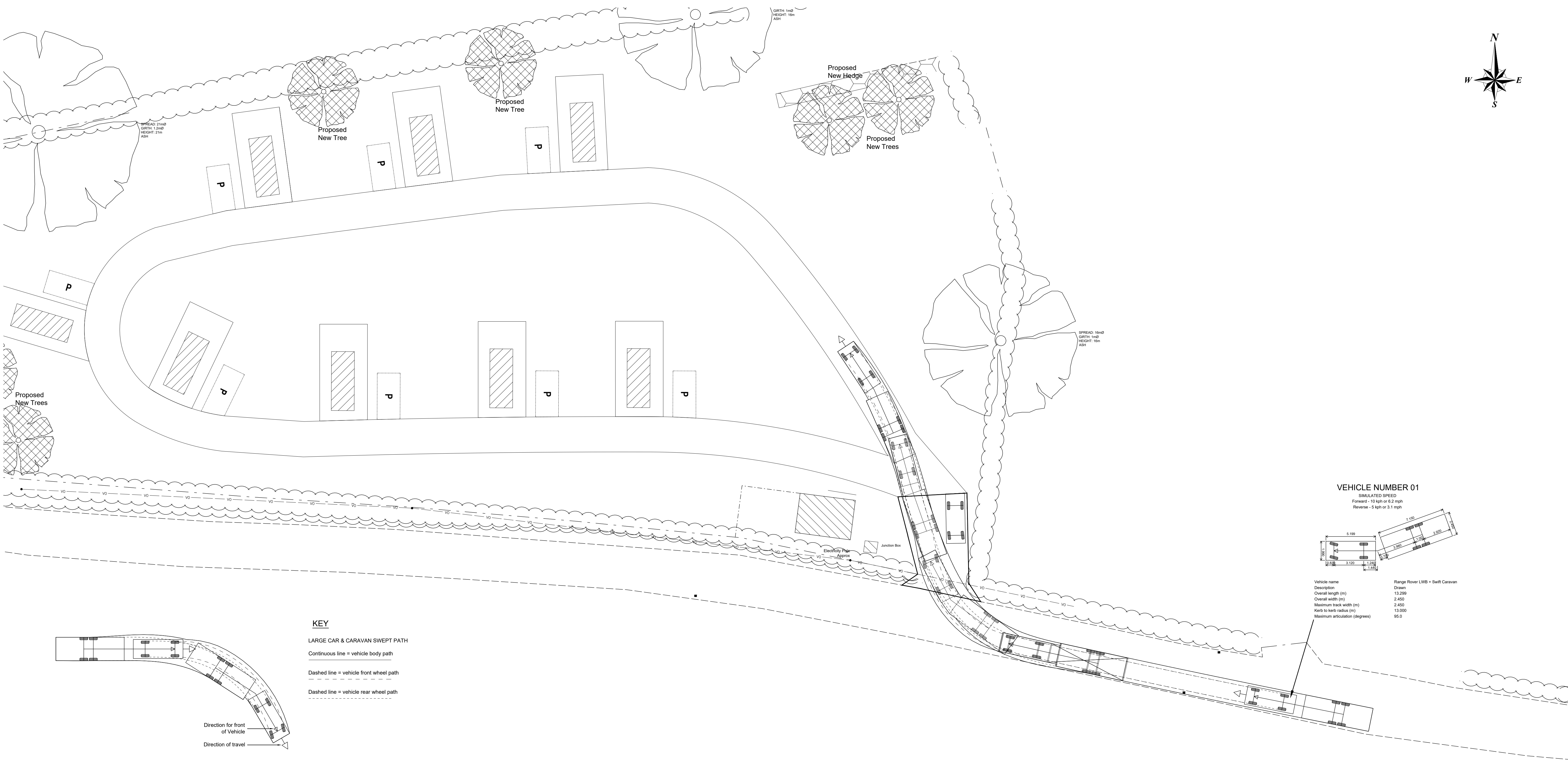


Diagram illustrating the effect of vehicle yaw on the lateral position of the vehicle's path. The diagram shows a vehicle's trajectory curving to the right. A dashed line represents the intended path, while a solid line shows the actual path shifted to the left due to yaw. Labels indicate 'Direction for front of Vehicle' and 'Direction of travel'.

Reverse - 5 kph or 3.1 mph

Top view dimensions: 5199, 6061, 2830, 3120, 1240, 1440.

Side view dimensions: 7150, 2970, 1500, 1360, 750.

Vehicle name	Range Rover LWB + Swift Caravan
Description	Drawn
Overall length (m)	13.299
Overall width (m)	2.450
Maximum track width (m)	2.450
Kerb to kerb radius (m)	13.000
Maximum articulation (degrees)	95.0

Revisions		
Rev	Date	Description

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Drawing Size: A1

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Client:		GERALD CARTWRIGHT	
Project:		CHAPEL FARM WHITEWELL WHITCHURCH	
Drawing Title:		CAR & CARAVAN SWEPT PATH ANALYSIS	
Scale:	1:200	Drawn by:	JRS
Date:	September 2021		
Drawing Number:	719-21-70		Revision: