sanderson associates (consulting engineers) ltd

Highways | Traffic | Transportation | Water

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Technical Note

Project:	**Holt Road, Wrexham**	Project No:	**10104**
Subject:	**Proposed Roadside Services**		
Prepared by:	**Ashley Armitage AMIHE**	Date:	**31.10.2018**
Checked by:	**Karen Smith MIHE**	Date:	**31.10.2018**

Following a telephone conversation between David Colley (Sanderson Associates) and Peter Douthwaite (Wrexham Highways) a proposed lining drawing 10104-003 and signage drawing 10104-004 have been produced and these are attached at **Appendix A**. These detail potential highway works in relation to vehicles approaching the A5156 / A534 roundabout southbound from the A5156.

Drawing 10104-003 illustrate proposed carriageway markings in the form of 'SLOW / ARAF' markings in both lanes at each countdown marker sign. Drawings 10104-004 illustrate the proposed signage which could potentially be provided in both English and Welsh on the A5156 on approached to the roundabout and at the exit arm.

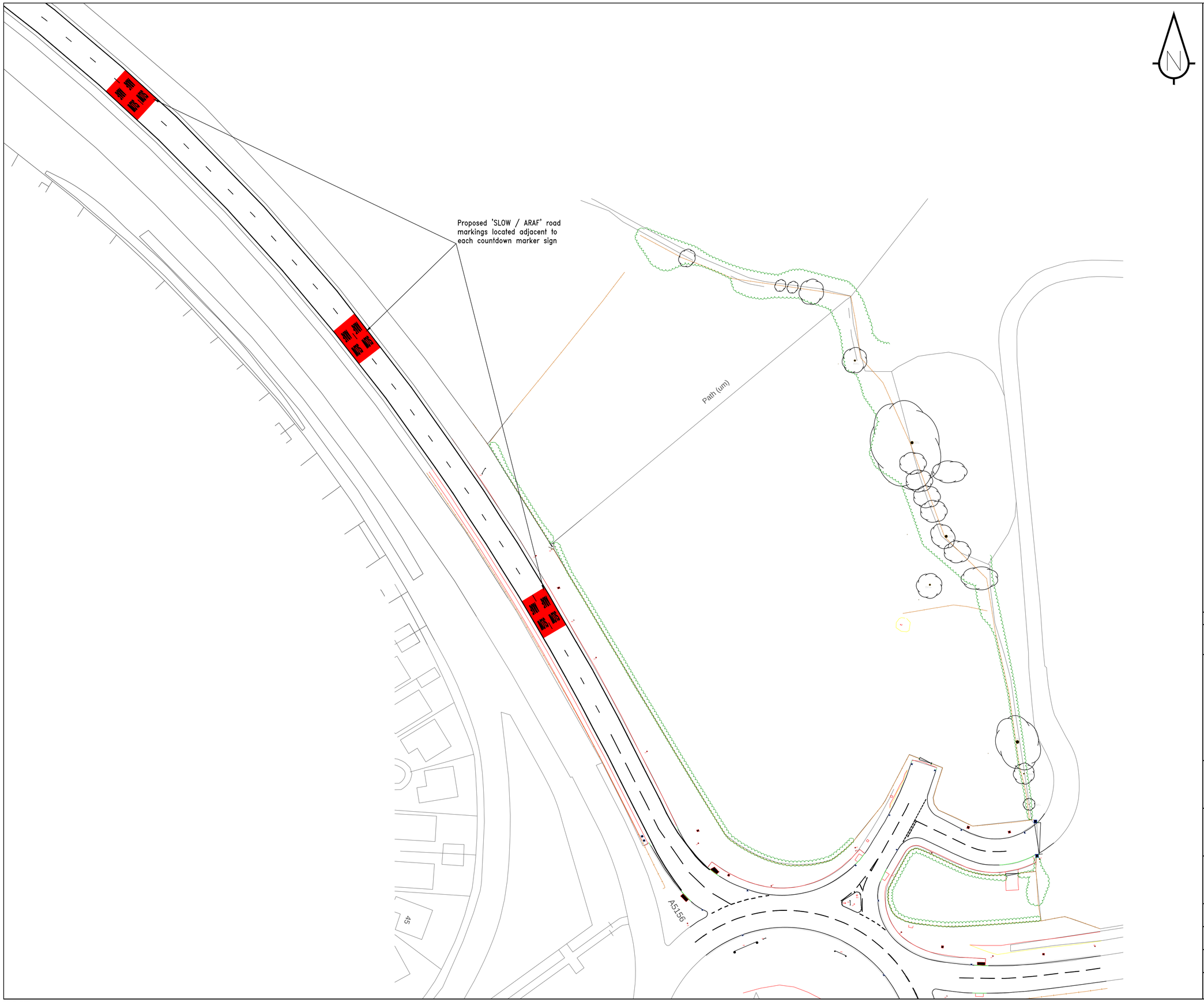
Information has also previously been summited to Wrexham Council in the form of a letter prepared by Sanderson Associates dated 7th September 2018, a copy of this letter is attached at **Appendix B**. This letter provided details of vehicles speed on the A5156 / A534 roundabout as well as vehicles travelling southbound on the A5156 on approach to the roundabout. The letter also provided an analysis of the Personal Injury Accident history within the vicinity of the site using the Crashmap website for the most recently available 5 year period (up to September 2017).

Following the analysis of the speed data and the accident history the potential to provide yellow transverse bar markings on the A5156 was considered as an option. However, concerns were raised about the potential for noise and disturbance for residential properties nearby and these were not supported.

Another option was to introduce concentric-spiral markings on the circulatory carriageway but this option could not be supported in highway terms.

Therefore based on the foregoing the proposals shown on drawings 10104-003 and 10104-004 have been provided to alert drivers of their approaching to the A5156 / A534 roundabout and that roadside services are provided.

APPENDIX A



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- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
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Rev	Amendment	Drawn	Date	Checked

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Client
Euro Garages Ltd

Project Title
Land at Holt Road, Wrexham

Drawing Title
Proposed Road Markings

Scale	Drawn By
1:500	AA
Drawing Size	**Checked By**
A1	PJM
Date	**Approved By**
30.10.2018	PJM

Drawing Number	Rev
10104–003	

FILE REF:

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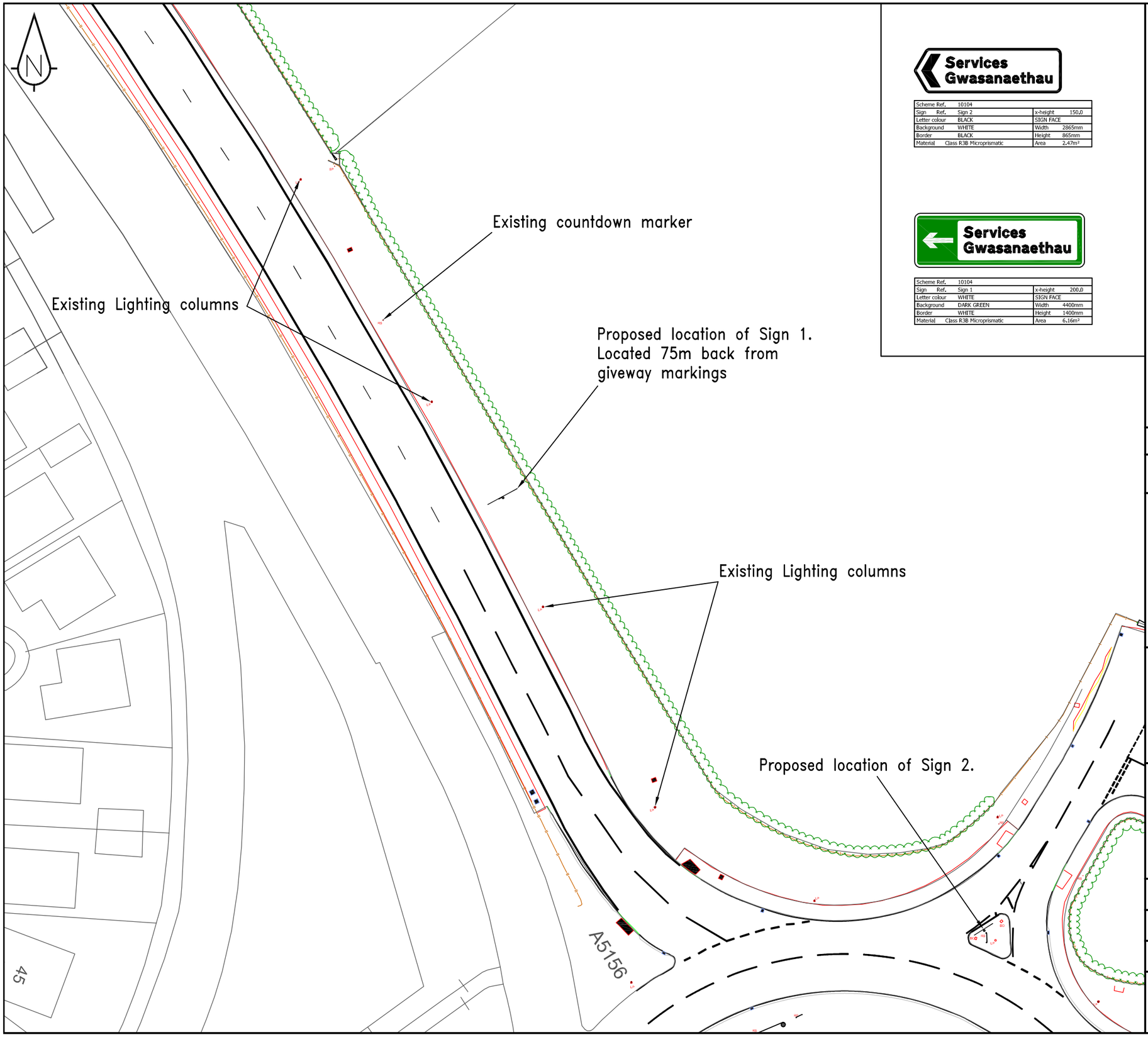

Scheme Ref.	10104		
Sign Ref.	Sign 2	x-height	150,0
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	2865mm
Border	BLACK	Height	865mm
Material	Class R3B Microprismatic	Area	2.47m²

Scheme Ref.	10104		
Sign Ref.	Sign 1	x-height	200,0
Letter colour	WHITE	SIGN FACE	
Background	DARK GREEN	Width	4400mm
Border	WHITE	Height	1400mm
Material	Class R3B Microprismatic	Area	6.16m²

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- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
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Rev	Amendment	Drawn	Date	Checked

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Project Name

Land at Holt Road, Wrexham

Drawing Title

Proposed Signage

Scale	1:500	Drawn By	AA
Drawing Size	A3	Checked By	PJM
Date	30.10.2018	Approved By	PJM
Drawing Number	10104-004	Rev	

FILE REF:

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APPENDIX B

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Sharon Holman
Wrexham Council
Environment & Planning
16 Lord Street
Wrexham
LL11 1LG

7 September 2018

ashley.armitage@sandersonassociates.co.uk
By Email only

Our ref : 10104-006

Dear Sharon

Outline Planning Application P/2017/0527 for Roadside Services Land West of Wrexham Golf Club, Holt Road, Llanpwll, Wrexham

I write regarding the proposed development at the above site and wish to provide our views on the comments made by Wrexham Council's Highways Officer regarding vehicles speeds and manoeuvres at the A5156 / A534 roundabout.

The Highway Officer has advised about concerns with vehicles exiting the roundabout onto the A534 (eastern arm) as there been incidents at this location.

Therefore, a site visit was undertaken on Wednesday 30th August 2018 to review the prevailing highway conditions and vehicle speeds. Whilst on site traffic conditions appeared regular with no extensive queues or delays. Throughout the site visit the weather was sunny/fine and the road surface was dry.

Radar speed surveys were also undertaken on this date, recording vehicle speeds approaching the giveaway line, vehicles on the circulatory (adjacent to the golf club arm) and on the A5156 at the 200 yard maker sign. The speed surveys were carried out in both lanes and in free flowing conditions. The table below provides a summary of the speeds recorded and the attached plan (Sketch-001) shows the location of where the readings took place.

Location	No. reading	85th %ile wet weather speed	Average speed
1. A5156 Giveway approach inside lane	104	23.3 mph	21.9 mph
2. A5156 Giveway approach outside lane	32	20.8 mph	19.7 mph
3. A5156 / A534 circulatory inside lane	100	26.8 mph	23.3 mph
4. A5156 / A534 circulatory outside lane	100	27.8 mph	26.0 mph
5. A5156 at 200 yard marker inside lane	100	55.9 mph	51.3 mph
6. A5156 at 200 yard marker outside lane	37	61.2 mph	56.2 mph

As can been seen from the speeds recorded these do not seem excessive based on the nature of the roundabout and the connection it provides between two strategic routes (the A5156 and the A534).

The Personal Injury Accident history within the vicinity of the site has been considered using the Crashmap website. This online tool identifies all recorded incidents which have occurred in the most recently available 5 year period (up to September 2017). From reviewing the data four

collisions have occurred at the A5156 / A534 roundabout. There have been 3 slight severity incidents and 1 serious incident. One incident occurred in 2013, one in 2014 (serious) and two in 2015. None have been recorded for 2016 and part (9 months) of 2017. No accidents are recorded involving pedestrians. The serious incident on the 31 October 2014 (ref R171927) involved a car and pedal cyclist and occurred on the A534, at its junction with the A5156 roundabout in daylight and dry road surface. The accident description indicated that a car was approaching the roundabout and clipped the rear wheel of the cyclist who fell off the cycle and broke his ankle. A summary of the slight severity incidents is given below:-

A5156 / A534 / Holt Road roundabout junction

- Poor manoeuvre on roundabout, vehicle using lane 1 to perform a U-turn (ref P064123, 2013)
- Failure to give way on Holt Road approach to roundabout (ref S094581, 2015).
- Poor manoeuvre on roundabout after both vehicles enter roundabout, vehicle using lane 1 performs a U-turn returning to Holt Road (ref S192530, 2015) colliding with second vehicle.

The accident analysis has not identified any material personal injury accident problems on the highway network at the roundabout. However, the highway officer has indicated that other incidents (damage only) have occurred at the roundabout exit on to the A534 which is a pre-existing issue after the roundabout was improved to its present layout. No specific information about these incidents is available to us. The A534 exit is after the arm that is already provided to access the Golf Club and application site. The Highway Authority could investigate and undertake highway works to mitigate the issue now, independently of the development proposals.

The A5156 / A534 / Holt Road Roundabout has been enlarged in recent years and would have been designed to conform with the latest design standards that applied. The A5156 arm is provided with a roundabout ahead warning sign to reduce speed, a large roundabout map sign and 3 count down marker signs (100, 200 and 300 yd). The roundabout circulatory carriageway is provided with a central concentric lane marking.

We have discussed with highway officers whether the introduction of yellow transverse bar markings on the A5156 would be considered as an option, but concern has been raised about the potential for noise and disturbance for residential properties nearby and would not be supported.

A further option is to introduce concentric-spiral markings on the circulatory carriageway since the damage only incidents relate to exiting from the circulatory carriageway to the A534 arm. The markings in this case are designed to lead the outermost lane off at the desired exit.

Reference to the Welsh Government Circular 'The Use of Planning Conditions for Development Management' dated October 2014 (ref WGC 016/2014) indicates that when drafting conditions, the six tests in chapter 3 should be applied. This chapter stresses that conditions should only be imposed where they are both necessary and reasonable, as well as enforceable, precise and relevant both to planning and to the development to be permitted. Conditions should be effective and not make unjustifiable demands of applicants bearing in mind that the Highway Authority

could investigate and undertake highway works to mitigate the issue separate to the planning application.

With reference to Figure 9 of the Transport Assessment and considering the composition of the traffic accessing the development proposals, only 7 new trips are added to the A5156 arm of the roundabout. The largest proportion of trips accessing the development are considered to already be using the junction given the nature of the proposed use catering for motorists passing on the main A5156 / A534 route. It is considered that the proposed development traffic flows are at such a level that they would not result in a material change to the operational characteristics of the roundabout junction. However, the applicant is prepared to make a contribution to the introduction of concentric-spiral markings on the roundabout circulatory carriageway as outlined in the foregoing.

If you wish to discuss any of the information indicated in the foregoing, please do not hesitate to contact me to discuss any queries.

Yours sincerely

D.J. Colley

David Colley BEng MCIHT
Associate Director

Enc Speed Survey Summary Results

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Speed Meter Reading - Results

Location Holt Road Roundabout - Give Way Approach - Inside lane
Direction of Travel South Eastbound

Job Number 10104
Date of Survey 30/08/18
Start Time 13:25
Finish Time 13:55

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	4	51		76	
2		27	4	52		77	
3		28	1	53		78	
4		29	2	54		79	
5		30	3	55		80	
6		31		56		81	
7		32	3	57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14	2	39		64		89	
15	2	40		65		90	
16	1	41		66		91	
17	6	42		67		92	
18	5	43		68		93	
19	10	44		69		94	
20	13	45		70		95	
21	16	46		71		96	
22	9	47		72		97	
23	10	48		73		98	
24	9	49		74		99	
25	4	50		75		100	

Number of Readings = 104

Mean Speed = 21.923077

Standard Deviation = 3.84327

85 Percentile Speed = 25.766347

85 Percentile Wet Weather Speed = 23.281347 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

Speed Form Issue 2 09/10/02

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Speed Meter Reading - Results

Location Holt Road Roundabout - Give Way Approach - Outside lane
Direction of Travel South Eastbound

Job Number 10104
Date of Survey 30/08/18
Start Time 13:25
Finish Time 13:55

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	1	51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12	1	37		62		87	
13	2	38		63		88	
14		39		64		89	
15	1	40		65		90	
16	2	41		66		91	
17	3	42		67		92	
18	1	43		68		93	
19	5	44		69		94	
20	4	45		70		95	
21	2	46		71		96	
22	3	47		72		97	
23	3	48		73		98	
24	3	49		74		99	
25	1	50		75		100	

Number of Readings = 32

Mean Speed = 19.65625

Standard Deviation = 3.5975742

85 Percentile Speed = 23.253824

85 Percentile Wet Weather Speed = 20.768824 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

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Speed Meter Reading - Results

Location Holt Road Roundabout - Circulatory - Inside lane
Direction of Travel South Eastbound

Job Number 10104
Date of Survey 30/08/18
Start Time 14:00
Finish Time 14:28

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	6	51		76	
2		27	6	52		77	
3		28	7	53		78	
4		29		54		79	
5		30	2	55		80	
6		31		56		81	
7		32	1	57		82	
8		33		58		83	
9		34	1	59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16	3	41		66		91	
17	3	42		67		92	
18	3	43		68		93	
19	3	44		69		94	
20	8	45		70		95	
21	9	46		71		96	
22	10	47		72		97	
23	11	48		73		98	
24	14	49		74		99	
25	13	50		75		100	

Number of Readings = 100

Mean Speed = 23.33

Standard Deviation = 3.4467229

85 Percentile Speed = 26.776723

85 Percentile Wet Weather Speed = 24.291723 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

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Speed Meter Reading - Results

Location Holt Road Roundabout - Circulatory - Outside lane
Direction of Travel South Eastbound

Job Number 10104
Date of Survey 30/08/18
Start Time 14:00
Finish Time 14:39

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26	12	51		76	
2		27	15	52		77	
3		28	5	53		78	
4		29	1	54		79	
5		30	2	55		80	
6		31	3	56		81	
7		32	6	57		82	
8		33	2	58		83	
9		34	2	59		84	
10		35	1	60		85	
11		36		61		86	
12		37		62		87	
13		38	1	63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18	2	43		68		93	
19	1	44	1	69		94	
20	3	45		70		95	
21	5	46		71		96	
22	8	47		72		97	
23	10	48		73		98	
24	9	49		74		99	
25	11	50		75		100	

Number of Readings = 100

Mean Speed = 25.99

Standard Deviation = 4.2840908

85 Percentile Speed = 30.274091

85 Percentile Wet Weather Speed = 27.789091 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

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Speed Meter Reading - Results

Location Holt Road Roundabout - A5156 Approach 200 yard marker - Inside lane
Direction of Travel Southbound

Job Number 10104
Date of Survey 30/08/18
Start Time 14:40
Finish Time 15:07

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26		51	5	76	
2		27		52	9	77	
3		28		53	8	78	
4		29		54	3	79	
5		30		55	4	80	
6		31		56	3	81	
7		32		57	3	82	
8		33		58	3	83	
9		34		59	8	84	
10		35		60	2	85	
11		36	1	61	3	86	
12		37	1	62	3	87	
13		38		63		88	
14		39	1	64	1	89	
15		40	1	65	1	90	
16		41	3	66	1	91	
17		42	5	67	1	92	
18		43	8	68		93	
19		44	3	69		94	
20		45	3	70		95	
21		46	4	71		96	
22		47	3	72		97	
23		48	1	73		98	
24		49	6	74		99	
25		50	2	75		100	

Number of Readings = 100

Mean Speed = 51.28

Standard Deviation = 7.0911525

85 Percentile Speed = 58.371153

85 Percentile Wet Weather Speed = 55.886153 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

Speed Form Issue 2 09/10/02

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Speed Meter Reading - Results

Location Holt Road Roundabout - A5156 Approach 200 yard marker - Outisde lane
Direction of Travel Southbound

Job Number 10104
Date of Survey 30/08/18
Start Time 14:40
Finish Time 15:07

Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings	Speed	No. of Readings
1		26		51	2	76	
2		27		52	4	77	1
3		28		53	5	78	
4		29		54	4	79	
5		30		55	3	80	
6		31		56	1	81	
7		32		57	2	82	
8		33		58		83	
9		34		59	2	84	
10		35		60		85	
11		36		61	1	86	
12		37		62	3	87	
13		38		63	1	88	
14		39		64	2	89	
15		40		65		90	
16		41	1	66		91	
17		42		67		92	
18		43	1	68		93	
19		44		69	1	94	
20		45		70		95	
21		46	1	71		96	
22		47		72		97	
23		48		73		98	
24		49	1	74	1	99	
25		50		75		100	

Number of Readings = 37

Mean Speed = 56.243243

Standard Deviation = 7.4214606

85 Percentile Speed = 63.664704

85 Percentile Wet Weather Speed = 61.179704 **<<<<**

Dual C'way Y/N? n

Single C'way Y/N? y

Wet Road Surface Y/N? n

Note: Insert Y or N in boxes against carriageway type and road surface condition and then use 85 percentile speed as marked with **<<<<**.

Speed Form Issue 2 09/10/02