

TECHNICAL NOTE

Date: 7th December 2018

Project: Cinders Farm – Traffic and Transport Matters

1. INTRODUCTION

- 1.1 This Technical Note (TN) has been produced by SK Transport Planning Limited in response to Wrexham Council's traffic and transport comments on Planning Application P/2018/0577 relating to the erection of four agricultural buildings and plant, associated infrastructure, landscape and access arrangements. The development proposes to deliver a new poultry farm scheme at the farm, as part of a farm diversification programme.
- 1.2 The Council's formal traffic and transport comments issued on the 28th August 2018 are appended to this letter for information in **appendix a**. In addition, a site visit with the Council's Highways Officer took place on the 8th October 2018.
- 1.3 The development proposals were also subject to pre-application discussions, and at the time the Council's Highways Officer commented as follows:

"The Council's Highways section was broadly supportive of the proposed development but sought clarification on likely vehicle movements. In experience, such poultry rearing operations generally operate on a cyclical basis and see vehicle movements peak at the transition phases between flocks. I understand that clarification has been sought on the possibility of visibility improvements at the junction of Cinders Lane and the A539 as well as improving or adding to existing passing places along cinders Lane. This would result in significant highway safety improvements but will ultimately need to be balanced against the level of proposed traffic movements. I envisage traffic movements to be relatively low relative to the scale of development and would not be considered inappropriate subject to localised improvements."

- 1.4 This TN responds to the points made in the Council's written response, the site visit and pre-application discussions. Each matter has been considered in turn.
- 1.5 Before commenting on technical matters raised by the Council it is important to consider the development proposals against the guidance on farm diversification schemes laid out in Welsh Government's Technical Advice Note (TAN) 18. Paragraph 3.14 of this document states:

"Local authorities should adopt a positive approach to development associated with farm diversification in rural areas, irrespective of whether farms are served by public transport (PPW paragraph 7.3.3). This type of small-scale economic development is attached to existing farm businesses that are often situated in relative rural isolation. It is important that a realistic assessment of the transport impacts is made, with a view to reconciling traffic issues with the benefits of encouraging diversification. In the majority of cases, it is expected that any transport problems should be capable of being resolved by appropriate minor junction or other highway modifications (our emphasis). Exceptionally, there may be cases where the anticipated increase in traffic cannot be reasonably accommodated. Such developments are more appropriately located on allocated industrial/ commercial sites, if available in the locality, or in or adjoining local service centres where the highway network is more robust."

- 1.6 The advice in TAN18 is exceptionally clear in that Local Authorities should adopt a positive and realistic assessment of transport impacts to encourage farm diversification. As laid out in the supporting documentation with the planning application all development related traffic will use the existing highway network along Cinders Lane to access the A539, which forms part of the classified highway network. The assessment we have prepared and submitted with the planning application

clearly shows that the additional traffic generated by the poultry operational will be minimal during normal working hours.

- 1.7 On the depopulation days at the end of the crop cycle the HGV movements to and from the site will take place as part of a carefully managed operation, ensuring that these vehicles will not meet on Cinders Lane between the site and the A539. In addition, the scheme proposes two new passing places in the very rare and unlikely event that two vehicles meet on this short section of lane.
- 1.8 Having set out the position regarding the previously submitted information and the guidance in TAN18 we have turned to the comments made by the Council at the site meeting on the 8th October 2018 and in their formal written response.

1.9 **A539 Junction and Visibility Splays**

- 1.10 The Council's formal response has indicated that with the A539 having a speed limit of 50mph they expect visibility splays at the simple priority junction where Cinders Lane meets the A539 to be 2.4m x 160m in both the leading and trailing traffic directions. We note that the Council's response highlights that these visibility splays should be delivered as part of "any proposed access/junction", but of course the development proposals are utilising an existing simple priority junction and lane that forms part of the publicly adopted highway to access the farm. Both the junction and Cinders Lane have been shown to have no adverse personal injury collision record over the last five years.
- 1.11 Notwithstanding the above position opportunities to enhance the visibility splays at the simple priority junction onto the A539 have been recommended by the Council and considered in this response. To inform the assessment the Council has provided directional traffic flow and speed survey data for the A539, which has confirmed the 85th percentile speeds on this route are:

- Westbound – 44.3 mph
- Eastbound – 53.3 mph

- 1.12 Note that no adjustment has been made to this speed survey data to reflect wet weather speeds on this route.
- 1.13 Using this directional speed survey data and the guidance contained in Manual for Streets the appropriate "Y" distance visibility splay dimensions have been calculated. The visibility splay calculations are presented in **appendix b**, and are based on the following assessment parameters:

- a driver reaction time of 1.5 seconds
- a deceleration rate of 2.45 metres/second

- 1.14 The calculations presented in **appendix b** confirm that based on the Council's own speed survey data the following visibility splays should be provided at the Cinders Lane/A539 junction:

- in the leading (western) traffic direction, visibility splays of 2.4m x 147.1m
- in the trailing (eastern) traffic direction, visibility splays of 2.4m x 106.6m

- 1.15 These visibility splays have been overlaid onto a topographical survey, as suggested by the Council's Highways Officer at the site meeting. The splays have been drawn with a 2.4m "X" distance setback and the "Y" distances as presented above. The splays have been drawn with a 1m offset from the nearside kerb, to deliver appropriate intervisibility between a vehicle waiting on the minor junction arm and a vehicle approaching from the eastern and western traffic direction. The drawings are presented in **appendix c**.
- 1.16 The drawings confirm that with management of the hedges on either side of the minor junction arm it is possible to deliver these visibility splays in perpetuity. The splays are confirmed to cross land the applicant controls or the publicly adopted highway, and offer a material betterment for all

highway users travelling through this junction, not just traffic generated by the proposed development. The hedge management strategy is presented in **appendix d**.

- 1.17 The Council has also requested an assessment of the achievable forward visibility for vehicular traffic turning right from the A539 into the existing rural lane that is used to access Cinders Farm. The drawings presented in **appendix c** confirm that using a 1m offset from the carriageway centreline to reflect the position of a motorist in a vehicle turning right into the minor junction arm it is possible to achieve 160m forward visibility.
- 1.18 The combination of recorded vehicle speeds provided by the Council and this achievable forward visibility for turning traffic is reflected in the lack of personal injury collisions at this junction over the last five years.
- 1.19 Based on this review the development proposals can deliver a material betterment with the visibility splays in the leading and trailing traffic directions. The splay dimensions meet industry standard design requirements and the existing forward visibility has been shown to accord with the Council's requirements in this location.

Swept Path Analysis and Passing Places

- 1.20 The Council has requested that a review of the access arrangements from the A539 for HGV traffic is undertaken, and if possible ensure that the junction can simultaneously accommodate an articulated vehicle waiting on the minor junction arm and a second HGV entering the minor arm from the A539.
- 1.21 At the site meeting the Council's Highway Officer indicated that consideration should be given to widening the junction on the inbound approach lane to allow an articulated vehicle. As shown in **appendix e** with some minor widening of the kerb on the western side of the minor junction arm it is possible for two maximum legal articulated vehicles to pass and wait clear of the A539. This was a key requirement of the Council's Highway Officer, and the applicant is prepared to make the improvements to this junction as part of any planning approval.
- 1.22 Turning to the access to the development, the proposed site access has been tracked to demonstrate that it can accommodate a 16.5m maximum legal articulated vehicle without overrunning verges. The swept path analysis is provided in **appendix f**. The design team has noted the Council's comments that as part of these access works there will be a need to culvert the existing open ditch to form the new access.
- 1.23 With respect to passing places the scheme proposes two passing bays on Cinders Lane which will benefit all highway users using this route. The Council's Highways Officer has indicated that the bays should be positioned so that they are intervisible, but this statement fails to acknowledge that the vehicles associated with the proposed development are predominantly large in nature and will be easily seen along the lane from any point.
- 1.24 By providing a widened junction to the south, coupled with the two passing bays, will ensure that there is minimal opportunity for vehicles meeting each other on this lightly trafficked section of the adopted highway. The improvements to the junction and the passing bays are considered to be appropriate mitigation for the proposed development and expected vehicle movements associated with the development.

Summary and Conclusions

- 1.25 This TN provides a concise summary to the key points raised by the Council's Highways Officers as part of the assessment of the planning application. The review confirms that enhanced visibility splays at the Cinders Lane/A539 simple priority junction can be delivered across land the applicant controls and the publicly adopted highway. A hedgerow management plan will also be delivered to ensure these enhanced splays will be delivered in perpetuity.
- 1.26 In addition the review of achievable visibility splays has confirmed that from an appropriate position for right turning traffic from the A539 to Cinders Lane forward visibility of 160m is already achievable in this location. The scheme proposals make no change to this forward visibility, and all highway users will continue to benefit from this existing configuration.

- 1.27 With regard to access enhancements for HGV traffic the attached scheme drawings show modifications to the minor junction arm on the A539 to allow a 16.5m maximum legal articulated vehicle to wait at the stop line whilst another HGV enters from the A539. This will ensure that no HGV's will need to wait on the carriageway of the A539 on the very rare occasion that two HGV's might be using Cinders Lane at the same time.
- 1.28 The swept path analysis for the site access onto Cinders Lane also confirms that maximum legal articulated vehicles can enter and exit the site through the proposed access without overrunning verges. The access works will be delivered as part of any planning approval for the scheme.
- 1.29 To conclude this review confirms that the key matters that the Council's Highways Officer have been addressed, and that the traffic generated by the proposed development can be appropriately mitigated through the improved junction visibility splays and widening at the A539 access. In addition the highways improvements presented in this TS clearly go over and above the planning policy requirement of TAN18.
- 1.30 We look forward to discussing the technical matters in this TN with the Council at an appropriate time.

APPENDIX A

MEMORANDUM

From: Planning Control Manager **To:** Head of Environment and Planning
Our Ref: EP/DC/P/2018/0577 **Your Ref:** PF/P/2018/0577
Date: 28th August 2018

TOWN AND COUNTRY PLANNING ACT 1990

TOWN AND COUNTRY (GENERAL DEVELOPMENT PROCEDURE) ORDER 1995

Location: O. S Grid Ref: 325 437 Cinders Farm, Cinders, Ruabon, Wrexham.

Development: Erection of four agricultural buildings and plant, associated infrastructure, landscaping and access arrangements.

I refer to your consultation dated 13/07/2018 in respect of the above.

Access (off A539 Overton Road)

The proposed development site is located on Cinders Lane (Classified Road) off the A539 Overton Road (Classified). The main route to the site is via the A539 / Overton Road / Cinders Lane junction.

The A539 Overton Road is a rural, classified road subject to a 50mph speed limit. Based on speeds of 50mph, any proposed access / junction in this location would normally be required to provide visibility splays of 2.4 x 160m measured to the nearside edge of the adjoining highway in accordance with TAN 18.

Visibility from the existing junction onto the A539 is currently inadequate in both directions. Visibility in the westerly direction is approximately 2.4 x 120m measured to the nearside edge of the adjoining highway. Visibility is impeded by the existing hedgerow and I assume any improvements would require work on 3rd party land. Visibility in the easterly direction is inadequate providing a splay of approximately 2.4 x 30m measured to the nearside edge of the adjoining highway. Visibility is impeded by the existing hedgerow along this section. I understand that the applicant is offering to improve visibility in this direction and provide a splay of 2.4 x 120m measured to the nearside edge of the adjoining highway. I assume that the applicant has control of this land in order to deliver this improvement.

Any proposed junction in this location would also normally be required to provide adequate forward visibility between vehicles waiting to turn into Cinders Lane and vehicles approaching from the west providing a stopping sight distance (SSD) of 160m. Forward visibility in this location is approximately 90m being impeded by the existing building on the bend belonging to Wynnstay Stables.

Forward visibility splays have not been indicated on the submitted layout plan. **I would recommend that the applicant provides this information on a revised layout plan.**

I would be unable to support any proposed development that is likely to result in an increase in vehicle movements through a sub-standard junction.

I understand that the proposed development will be serviced by 16.5m long HGVs. No details of the swept path movements of such vehicles have been provided entering / exiting this junction from either direction. I assume that no improvements in respect of junction widening / layout are being proposed. **I would recommend that the applicant provides the above information.**

Access (via Cinders Lane)

Cinders Lane is a narrow, rural, classified road subject to a 60mph speed limit. However, a recently conducted speed survey determined 85th percentile speeds at the existing access of 28.1mph for vehicles travelling northbound and 26.6mph for vehicles travelling southbound. Submitted plan (Drg. No. SK21685-05 indicates the provision of 2.4 x 43m visibility splays measured to the nearside edge in both directions from the proposed site access. These splays exceed the requirements of Manual for Streets and are considered acceptable.

The proposed access serving the site is 5.5m wide for at least 20m behind the adjoining highway with a splayed entrance on the southerly side. The submitted layout plan (Drg. No. SK21685-05) indicates the culverting of an open ditch to construct the new access. **I would recommend that the applicant contacts our Flood Management Officer – Neil Taunt (Tel: 01978 729734) to discuss / agree any proposed culverting of ditches.**

Cinders Lane is typically narrow being less than 4.1m wide for the majority of its length up to the development site. The proposed access to the development site is located approximately 750m away from the junction with the A539. The narrow nature of the lane does not allow for the simultaneous passage of 2 vehicles.

The applicant has offered to construct 2 no. passing places along Cinders Lane which would obviously benefit all users of this section of road. The proposed passing places would provide a 7.5m carriageway width each over a length of 25m. However, these passing places do not appear to be intervisible and it is considered that larger HGVs would find it difficult to reverse back along Cinders Lane should two vehicles meet. Forward visibility along Cinders Lane is typically poor given the geometry of the road and would not benefit from any significant increase in vehicle movements (particularly HGVs) along this section. The potential for highway conflict, possible hazard and damage to the roadside verges is likely to be significant and unacceptable.

Parking and Turning Provision

Adequate parking and turning provision would need to be provided within the curtilage of the development site. This detail does not appear to have been provided.

However, I would recommend the submission of a suitable layout plan indicating specific parking and turning arrangements of cars / HGVs within the curtilage of the site. Appropriate swept path details will need to be submitted demonstrating how HGVs (16.5m long) will enter / park / turn / exit the site. Details of maximum number of vehicles likely to be on site at any one time and where they will park will need to be provided.

Swept Paths

Swept path details will need to be provided at the A539 / Cinders Lane junction (all directions) and at the proposed access to the site (in and out) off Cinders Lane.

Public Footpaths

Public footpath No. 91 Rubaon may well be affected by the proposed development. I would strongly recommend that the applicant liaises with our Public Rights of Way Section to discuss the proposed development. Please contact Mr. Sean Hanratty on Tel: 01978 729761.

Traffic Movements

The site is located approximately 750m north of the A539 and is accessed via a narrow, rural lane (Cinders Lane) with a priority junction onto the A539. The applicant has indicated that they will operate a HGV Routing Plan to avoid any conflict between poultry traffic using local routes and other vehicles. The proposed HGV route is the shortest route to the A539 and wider highway network.

A recently conducted traffic count indicated an average daily two-way traffic flow of 61 vehicles on the lane from the A539 north towards the proposed poultry farm. I understand that an average of 1.4 HGVs used this route on each of the 7 survey days.

I understand that there will be 7.6 crop cycles per year, each cycle lasting 48 days. Movements are as follows:-

Day	No. of Movements	Type of vehicle
1	6	HGV
2	6	HGV
4	2	HGV
8	4	HGV
12	2	HGV
16	4	HGV
20	2	HGV
23	4	HGV
25	2	HGV
28	2	HGV
31	2	HGV
33	4	HGV
35	2	HGV
36	12	HGV
37	8	HGV
38	2	HGV
40	2	HGV
42	16	HGV
43	16	HGV
44	30	Tractor & Trailer
48	2	HGV

I understand that bird removal (known as depopulation) at the close of the crop cycle is the most significant traffic event in terms of HGV movements. It is anticipated that there will be a maximum of 10 HGV movements between 02:00 and 07:00 during the night for a maximum of 30 days during the year. This would typically equate to a maximum of 2 HGV bird removal movements to / from the site per hour.

On 27 days out of the crop cycle there will be no HGV movements to / from the site. On a further 10 days of the crop cycle there will be an average of only 1 HGV visiting the site each day. On 4 days of the crop cycle there will be 2 HGVs visiting the site each day. On a further 7 days of the whole crop cycle there will be 2 HGV visits or more per day. In summary, for 86% of the crop cycle there will be two vehicles or less visiting the site each day.

The Environmental Statement suggests that a number of the HGV vehicle movements will take place between 02:00 – 07:00 in the morning and will be staggered which would potentially have a reduced impact given that fewer existing vehicles would be on the roads leading to the site. However, I assume that the Planning Department may well have objections to these delivery times given the noise impact in respect of existing properties. This may result in deliveries having to take place during the day when there are more vehicles on the highway network. This would increase the likelihood of vehicle conflict along this section of Cinders Lane.

Construction Traffic Management Plan - CTMP (including provision for contractor parking)

If the application is supported, I would recommend the submission of a Construction Traffic Management Plan - CTMP (including provision for contractor parking) to be submitted / approved prior to commencement.

Such a plan will need to include details of the proposed daily construction related vehicle movements (ie/ both cars & HGVs) anticipated as a result of the development over the suggested 6 month construction period.

Details of wheel washing facilities, construction signage and any traffic management measures will need to be included.

Could you please ask the applicant to address the issues raised in the above response.

Peter O'Sullivan

pu Planning Control Manager

APPENDIX B

Cinders Farm Visibility Splay Calculations 01/12/2018

Westbound SSD Calculation

$$vt + v^2 / 2(d + 0.1a)$$

v	19.80	m/s Speed
t	1.5	second Reaction Time
d	2.45	m/s Deceleration Rate

106.6

vt	29.705808
v ²	392.193346
2(d+0.1a)	5.1

check

106.6	Visibility Splay Requirement
--------------	------------------------------

To calculate d (in m/s) the following conversions apply

Deceleration Rate	
0.45	4.41
0.375	3.68
0.25	2.45

To calculate speed in m/s input 85th percentile figure
85th %ile

mph	m/s
44.3	19.80

Eastbound SSD Calculation

$$vt + v^2 / 2(d + 0.1a)$$

v	23.83	m/s Speed
t	1.5	second Reaction Time
d	2.45	m/s Deceleration Rate

147.1

vt	35.740848
v ²	567.736985
2(d+0.1a)	5.1

check

147.1	Visibility Splay Requirement
--------------	------------------------------

To calculate d (in m/s) the following conversions apply

Deceleration Rate	
0.45	4.41
0.375	3.68
0.25	2.45

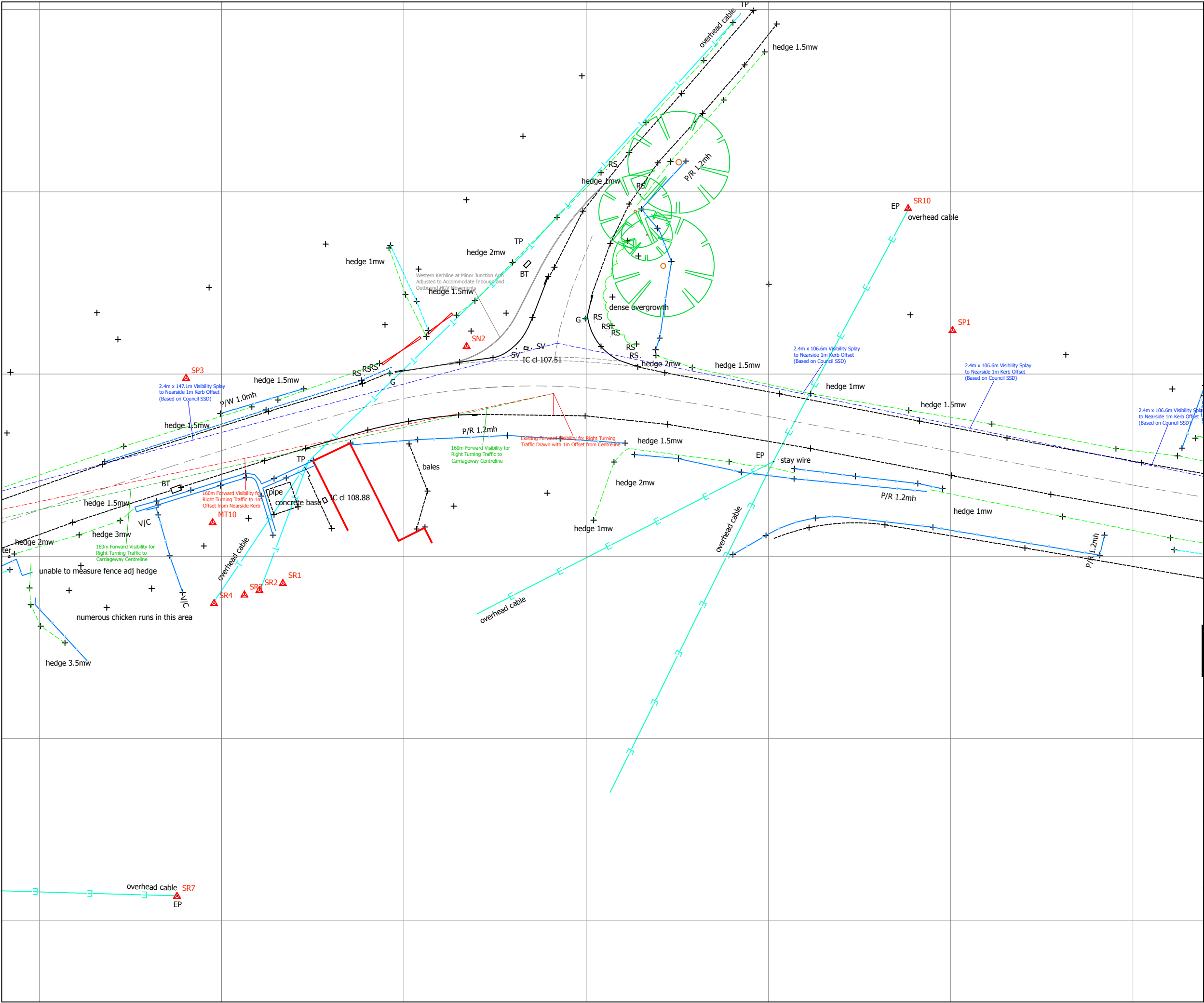
To calculate speed in m/s input 85th percentile figure
85th %ile

mph	m/s
53.3	23.83

APPENDIX C

Plot Date :Thursday, December 06, 2018 11:34:59 am

AutoCAD File Name :/Users/Michael/Dropbox/Promo/Cinders Farm/SK21685-10 REV A.dwg



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Revision	Details	By	Date	Suffix
		Check		

Drawing Number

SK21685-08 REV A

Cinders Farm, Nr Ruabon

Drawing Title

Priority Junction
Achievable Visibility Splays
Topo Base

Scale at A3

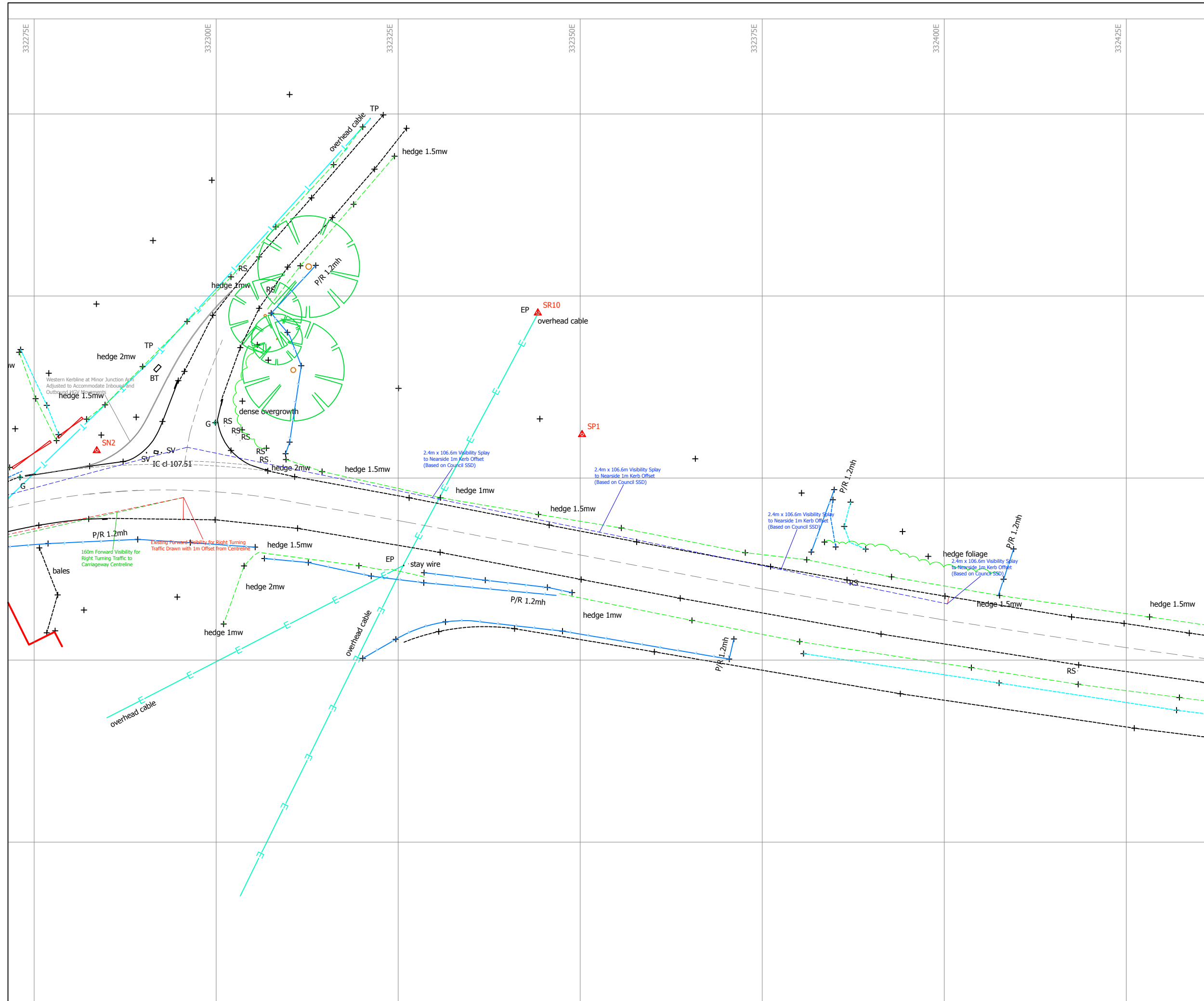
1:500

Drawn	KAT	Approved	MAK
Check	KAT	Date	01/12/18

SK Transport Planning Ltd
Albion Wharf, 19 Albion Street
Manchester M1 5LN
Telephone (0161) 234 6509
Fax (0161) 236 7959

Plot Date :Thursday, December 06, 2018 11:35:55 am

AutoCAD File Name : /Users/Michael/Dropbox/Promo/Cinders Farm/SK21685-10 REV A.dwg



THIS DRAWING MAY BE USED ONLY FOR
THE PURPOSE INTENDED AND ONLY
WRITTEN DIMENSIONS SHALL BE USED

NOTES

Revision Details	By Check	Date	Suffix

Drawing Number

SK21685-09 REV A

Cinders Farm, Nr Ruabon

Drawing	Title
	Priority Junction Achievable Visibility Splays Topo Base

Scale at A3	1:500
-------------	-------

Drawn KAT	Approved MAK
--------------	-----------------

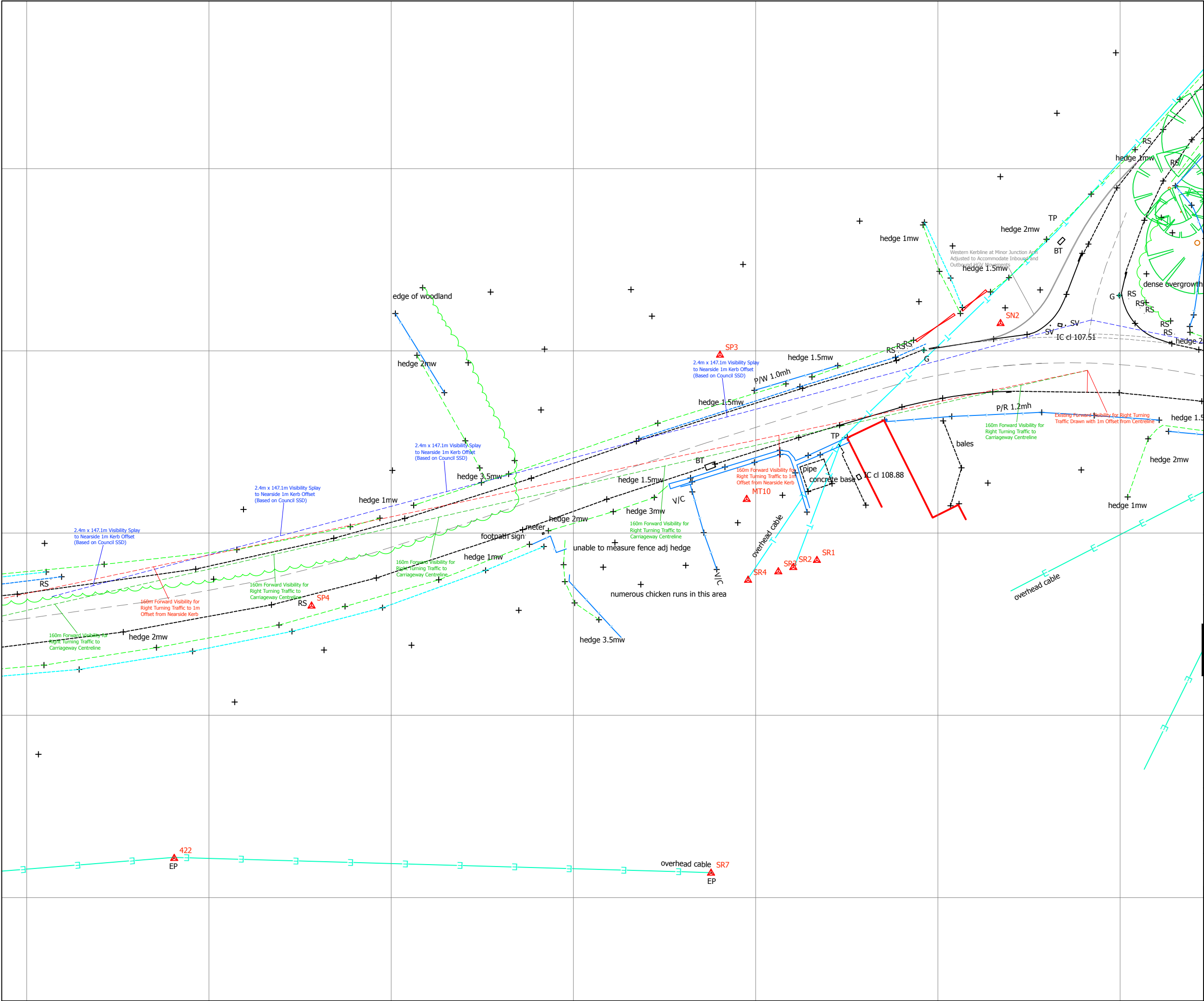
Check	Date
KAT	01/12/18

SK Transport Planning Ltd
Albion Wharf, 19 Albion Street
Manchester M1 5LN
Telephone (0161) 234 6509
Fax (0161) 236 7959



Plot Date :Thursday, December 06, 2018 11:36:47 am

AutoCAD File Name :/Users/Michael/Dropbox/Promo/Cinders Farm/SK21685-10 REV A.dwg



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Revision	Details	By	Date	Suffix
		Check		

Drawing Number

SK21685-10 REV A

Cinders Farm, Nr Ruabon

Drawing Title

Priority Junction
Achievable Visibility Splays
Topo Base

Scale at A3

1:500

Drawn	KAT	Approved	MAK
Check	KAT	Date	01/12/18

SK Transport Planning Ltd
Albion Wharf, 19 Albion Street
Manchester M1 5LN
Telephone (0161) 234 6509
Fax (0161) 236 7959

SK TP

APPENDIX D

HEDGEROW TRANSLOCATION SPECIFICATION

1. Hedgerow translocation operations are to be carried out in the dormant season (November to March) in order to minimise impact on the hedge; and outside the bird nesting season (early March to late July) in order to avoid disturbance to nesting birds.
2. Those sections of hedgerow to be translocated are to be coppiced to a height of approximately 150mm prior to movement to compensate for root damage. Longer stumps can be retained to assist handling if required, but these will need to be cut back to 150mm after movement.
3. The receptor location is to be ploughed to loosen the soil and a trench prepared in advance to receive the hedge. The trench shall be wide enough and deep enough to accommodate the full root spread.
4. The hedge is to be undercut to sever the roots and free it from its surroundings. It is then to be gradually pulled into place by an excavator with railway sleepers attached to the bucket to maintain the integrity of the hedge.
5. Backfill with the excavated topsoil and thoroughly water in, immediately on completion. Additional watering is to be carried out as necessary until the hedge is properly established.
6. Any gaps are to be filled with new native hedging transplants.
7. For the first 3 years following translocation the hedge will need to be regularly checked and thoroughly watered if it shows any signs of drought stress. Weekly inspections are recommended during the first 12 months. Monthly inspections should suffice thereafter.
8. Any plant failures will need to be replaced with new planting.



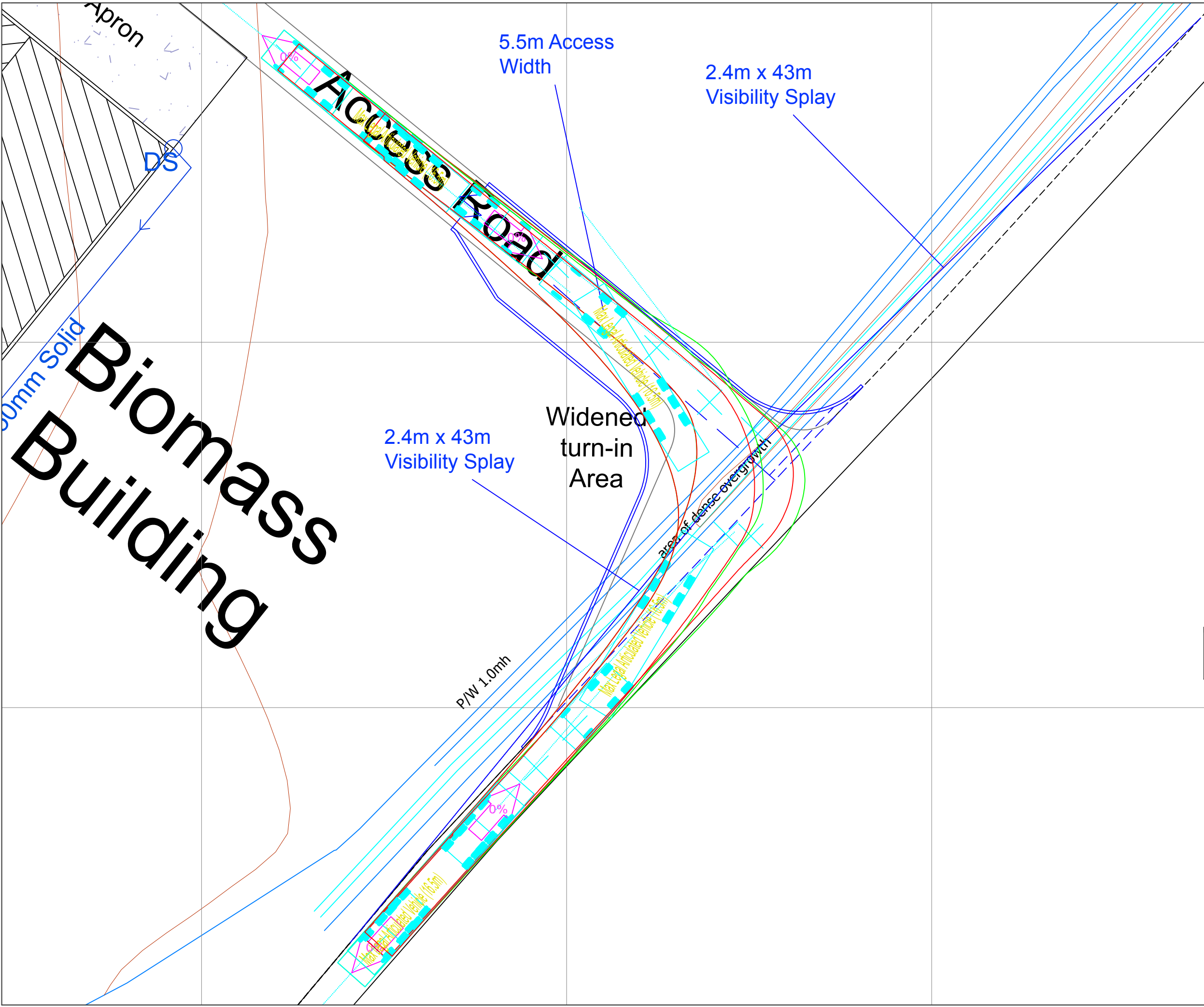
Getmapping aerial photograph dated 25/07/2014
Rev A: Adjustments to accommodate improved visibility splays



ALLAN MOSS ASSOCIATES LTD
Environmental Planning and Landscape Design
Culmehre House, 33 Holmer Lane, Telford, TF3 1QJ
Telephone: 01952 660422. Fax: 01952 660423

Description Proposed Poultry Unit Cinders Farm Ruabon, Wrexham Drawn by AM	Drawing Name Off-site Hedgerows	
	Dwg number 1484.06	Rev A
	Scale(s) 1:1000 @ A1 size	Date 04/12/18

APPENDIX E



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.632m
Min Body Ground Clearance	0.396m
Max Track Width	2.500m
Lock to Lock Time	6.00 sec
Kerb to Kerb Turning Radius	6.870m

Revision	Details	By	Date	Suffix
		Check		

Drawing Number

SK21685-05 REV A

Cinders Poultry Farm

Drawing Title

Poultry Farm Site Access onto Rural Lane - Max Legal Artic Swept Path Analysis

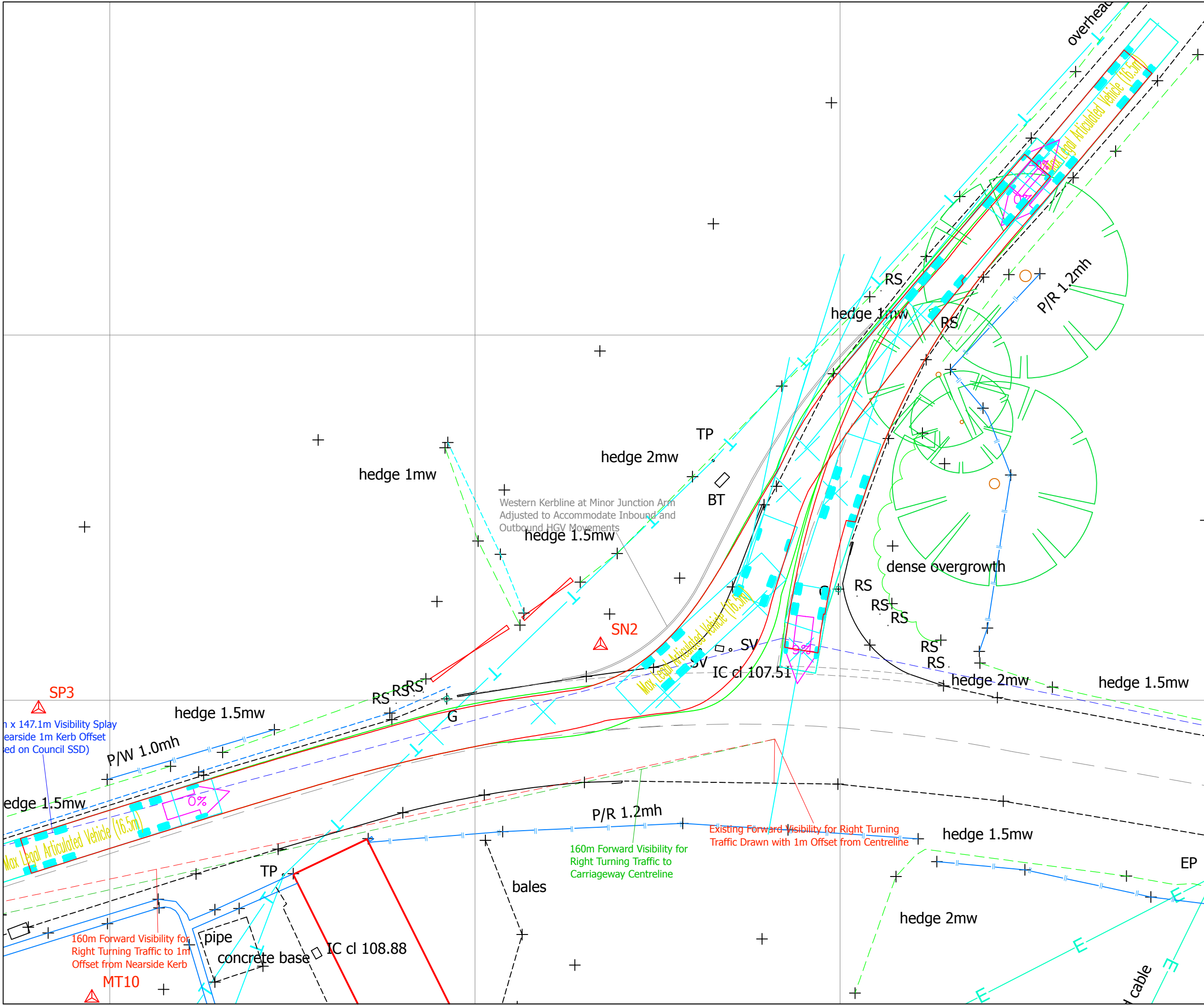
Scale at A3

1:500

Drawn	KAT	Approved	MAK
Check	KAT	Date	01/12/18

SK Transport Planning Ltd
Albion Wharf, 19 Albion Street
Manchester M1 5LN
Telephone (0161) 234 6509
Fax (0161) 236 7959

APPENDIX F



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Max Legal Articulated Vehicle (16.5m)
Overall Length 16.500m
Overall Width 2.500m
Overall Body Height 4.500m
Min Body Ground Clearance 0.392m
Max Track Width 2.500m
Lock to Lock Time 8.00 sec
Kerb to Kerb Turning Radius 6.670m

Revision	Details	By	Date	Suffix
		Check		

Drawing Number

SK21685-11 REV A

Cinders Farm, Nr Ruabon

Drawing Title

Priority Junction
Max Legal Artic Swept Path Analysis

Scale at A3

1:250

Drawn	KAT	Approved	MAK
Check	KAT	Date	01/12/18

SK Transport Planning Ltd
Albion Wharf, 19 Albion Street
Manchester M1 5LN
Telephone (0161) 234 6509
Fax (0161) 236 7959