

LAND INFILL PROJECT, PARK ROAD, CEFN Y BEDD

DR/14126/TN01 – 16TH MAY 2014

1. We are instructed to provide highway and traffic advice in connection with the proposal to infill land at Park Road, Cefn y Bedd, near Wrexham, to enable it to be returned to agricultural use. The site access on Park Road is indicated on the aerial photograph below:



2. The site was previously used for sand and gravel extraction although the extraction exercise ceased in the 1970's and some limited infilling occurred in the 1990's, although the land is not restored to a level whereby it can be utilised for agricultural purposes.
3. The proposals seek to infill the land with inert material to complete the restoration process. The period for the restoration has been suggested to be 3-5 years and subject to the inert material being sourced at an optimum level, the process could result in a maximum of 30 loads of material being delivered to the site during a working day, with 30 empty outbound vehicles, resulting in a total of 60 HGV movements per day.
4. The operating day for the receipt of infill materials is proposed to be 8½ hours in length and with the aim of distributing traffic movements equally throughout the day, there are anticipated to be an average of 7 movements per hour by HGVs.

5. We have been made aware that the Network and Infrastructure Manager at Wrexham Council has recommended that the application be refused on two grounds; firstly the width of Park Road which does not cater for the passage of two HGVs and a pedestrian passing in the same location, and also the HGV turning movements at the junction of Park Road with Llay Road (B5102) which utilise the opposite carriageway to undertake the turn.
6. We have undertaken site observations and undertaken other investigations to address the concerns raised.
7. Park Road is in the main a single track road with passing places. However, the site access is only some 40m along Park Road, from its junction with Llay Road. The photographs below show the length of road between the site access and Lay Road:



View from Llay Road



View towards Llay Road

8. Over this first 40m of Park Road, it is marked with white lining as a two-lane carriageway and varies in width from 4.75 – 6.0m. The vegetation that forms the carriageway edge is largely overgrown and results in a narrower useable carriageway in practice.
9. Both the vehicle and pedestrian movements along Park Road are very low. A sample 1 hour survey observed 4 vehicle movements and 1 pedestrian movement in the hour 12.00 noon to 1.00pm.
10. It is accepted that the existing carriageway width between the site and Llay Road will not allow for the two-way passage of HGVs but will allow for the passage of a car and an HGV at low speed. Low speed is not an issue on a road carrying very low traffic flows.
11. The applicant proposes to clear all of the vegetation that has reduced the useable carriageway width and has also proposed an extension of the width to 5.5m, which will allow HGVs to pass

in free flow. The Council has expressed concerns that whilst this 5.5m width will allow the passage of HGVs, it will not allow a safe area for pedestrians using the road at the same time.

12. It is our view that the opportunity for conflict arising from 2 HGVs meeting alongside a pedestrian is exceptionally low. During the daytime when there could be up to 3 HGVs in one direction and 4 HGVs in the opposing direction, the pedestrian flows would be very low, as our survey demonstrated. Pedestrian flows are likely to be higher in the evenings and at weekends when there would be no HGV movements associated with the site.
13. When the site is operating to its maximum, there could be 3 occasions per hour when there is an opportunity for 2 HGVs to meet. On the basis that an HGV can travel at 15mph over the 40m length from the site access to Llay Road, this is equivalent to 6.7 metres per second and it would take 6 seconds to pass over the relevant section of Park Road. Even if the HGV travelled at 10mph, this is equivalent to 4.47 metres per second and it would take 8.9 seconds to travel from the site access to Llay Road.
14. As a worst case that it takes 9 seconds to travel between the site and Llay Road, and that there are 3 opportunities per hour when there could be a conflict of HGVs, there are only 27 seconds out of every hour when a conflict could occur, and 3,573 seconds out of every hour when no opposing vehicle would be present. This represents a 0.75% chance of there being an HGV travelling in the opposite direction when any other HGV enters Park Road from Llay Road and the probability of 2 HGVs meeting is 1 in 133 inbound movements. With 30 inbound HGVs per full operating day, the likelihood is that 2 HGVs could meet once in every 4½ days.
15. With the road widened to 5.5m, if these 2 HGVs were to meet, effectively once per week, then these vehicles would be able to pass at low speed in any event, and there would be no safety or convenience problems.
16. The probability of this exceptional event occurring at the same time as a pedestrian is passing the point where the HGVs meet is practically nil. With a leisurely pedestrian walking speed of 1.2m per second, the 40m distance between the site and Llay Road would take around 30 seconds to walk. With a pedestrian being on Park Road for 30 seconds out of every hour and there being 7 HGVs occupying the carriageway for 63 seconds (7 vehicles x 9 seconds per vehicle) out of every hour, there are 3,537 seconds in each hour when no HGV would be present, the probability of a pedestrian and a single HGV passing is therefore 1.8%. When this is multiplied by the probability of 2 HGVs meeting at the same time the probability of the combined event occurring is around 1 in 10,000 pedestrian movements.

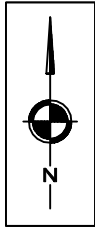
17. During the lifetime of the landfill process, there are unlikely to be 10,000 pedestrians walking along Park Road during the operating times of the site and therefore the conflict cannot reasonably be expected to occur.
18. Notwithstanding all of the above calculations, for there to be a safety issue it would be necessary for there to be a serious conflict between HGV movements and pedestrians. However, visibility is excellent along this straight section of Park Road, and vehicle speeds are very low. A single HGV will be able to pass a pedestrian without difficulty within the 5.5m carriageway, and will undoubtedly provide a wide path around the pedestrian. If for any reason an HGV driver cannot pass the pedestrian then the driver will wait until the opportunity to pass arises. It would be unreasonable to expect that an HGV driver will simply ignore a pedestrian and try to pass them when no room is available. Any pedestrian within a carriageway would have a right of way and the accident record for Park Road confirms that there have been no accidents on Park Road in the last 5 years period.
19. Whilst it is our view that the widening of Park Road to 5.5m would provide a safe and satisfactory solution in all respects, we have recently designed a pedestrian safety scheme in Conwy that has been implemented on a much busier road and with higher numbers of pedestrians. A similar scheme could be implemented on Park Road, if necessary.
20. The improvement scheme involves providing a single track road with priority operation, and a footway on one side of the road. At the mid-point of the narrowing there is a break in the footway for the provision of a passing bay. This system has now been operational for several months and has not led to any safety or convenience problems. Photographs of the scheme are included as Appendix 1 to this Technical Note, and a similar scheme of works could be implemented on Park Road.
21. An alternative improvement scheme is also attached as Appendix 2. This is a scheme that has been approved by Derbyshire County Council and includes a pedestrian priority area within the carriageway. If two vehicles meet and there is no pedestrian present then the area can be used by vehicles to enable them to pass. There is a 40mm upstand on the pedestrian priority area to reinforce the level of protection provided to pedestrians.
22. Overall in relation to the flow of traffic and the safety of pedestrians, we do not expect there to be any problems arising from the use of Park Road to access the site and the probability of 2 HGVs meeting is low. Furthermore, the probability of 2 HGVs meeting adjacent to a pedestrian is most unlikely to happen. However, if justification can be provided to indicate that this

assessment is flawed, then we are satisfied that an even more robust solution can be provided that will allow the safe use of the highway by all vehicles and pedestrians.

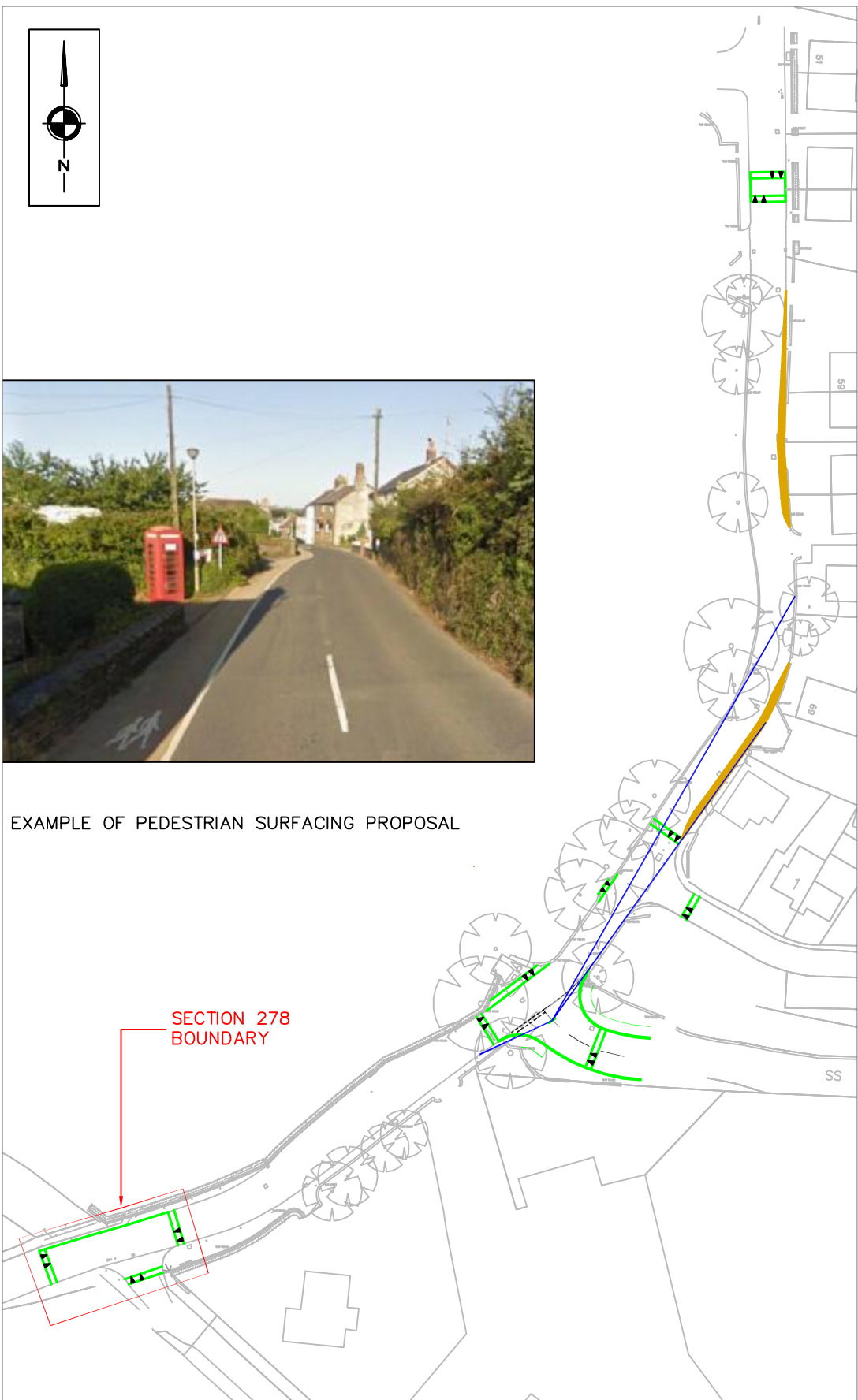
23. On the issue of HGVs turning into and out of Park Road from Llay Road, we have undertaken vehicle swept path analysis of an 8m tipper truck negotiating in and out of the junction. The results of this are attached as Appendix 3.
24. The swept path analysis confirms that a left turning HGV from Llay Road into Park Road would utilise most of the Park Road carriageway, but on a very lightly trafficked road this should not be a problem. There is no requirement for the tipper truck to cross the centre line of Llay Road when undertaking this manoeuvre.
25. All other turning manoeuvres can be undertaken without imposing on the opposite carriageway and the turning manoeuvres are no different to that expected at most junctions. The tipper truck has a similar swept path to a refuse vehicle which can be expected to use almost any junction, but frequently needs to cross the centre line of a road without a problem being identified.
26. From the swept path diagrams attached, there should be no overriding concerns regarding the use of the Park Road/Llay Road junction.



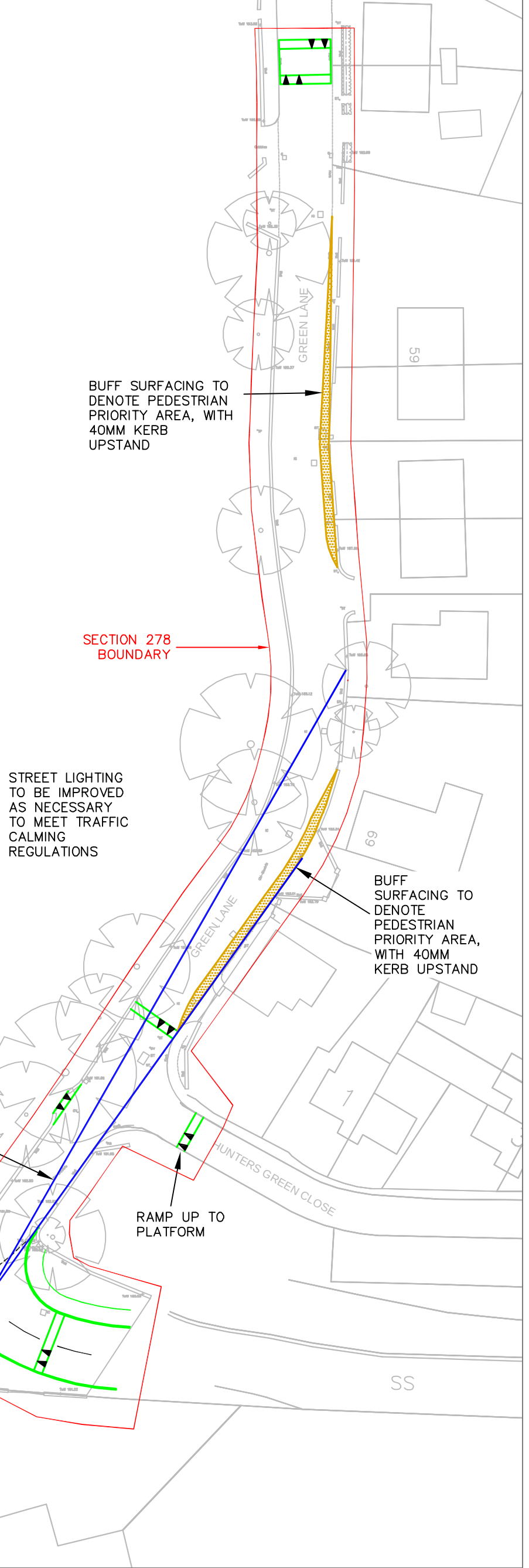




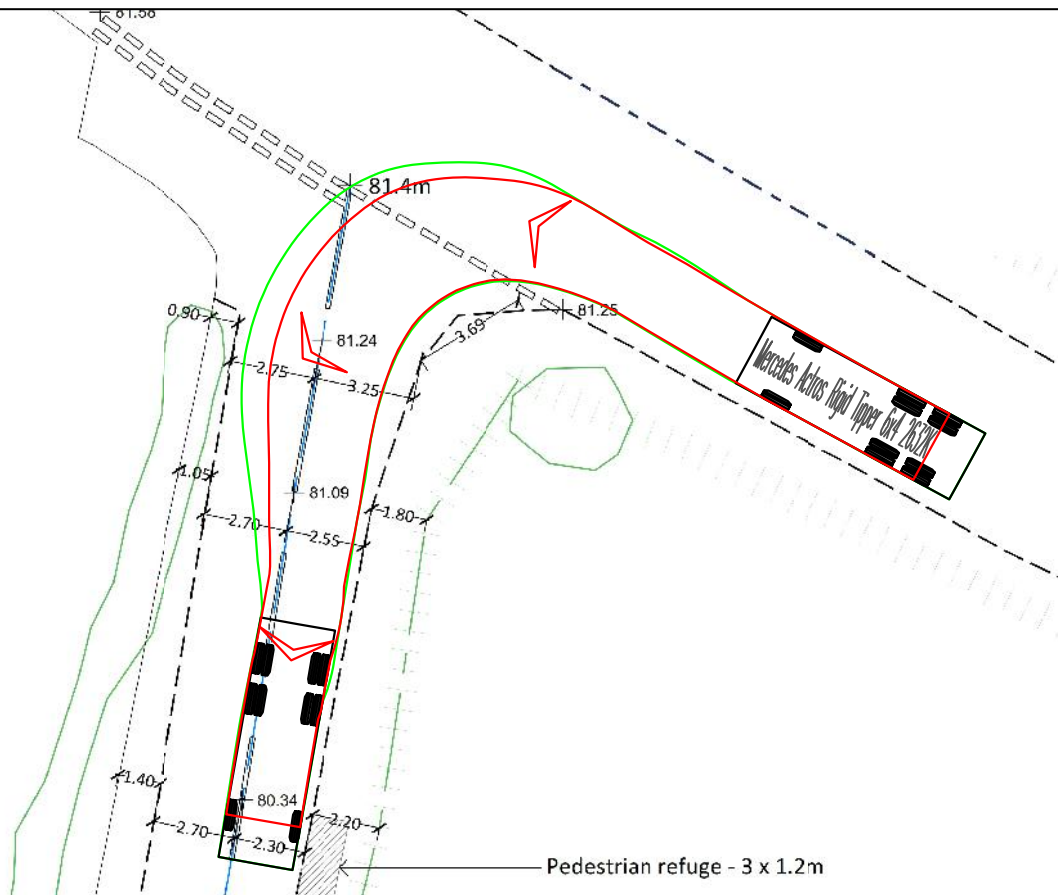
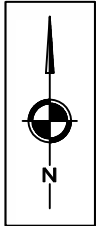
EXAMPLE OF PEDESTRIAN SURFACING PROPOSAL



SCALE @ 1:1000

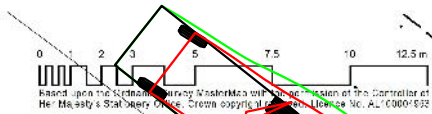


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		Date 30.04.2012	Checked DR	
		Approved/ Unapproved -	Status PLANNING	Revision F



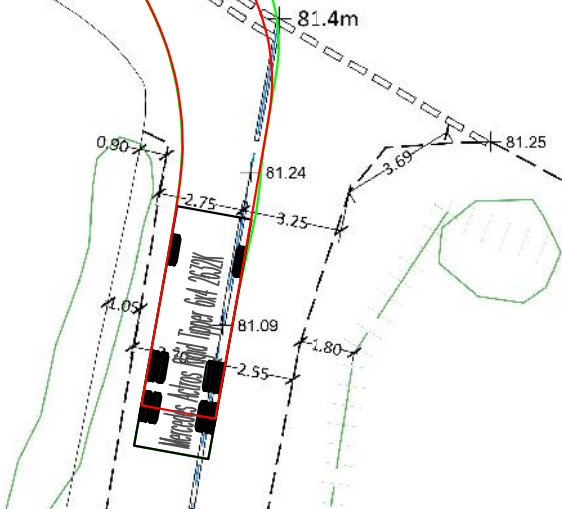
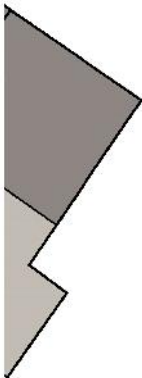
Pedestrian refuge - 3 x 1.2m

Site Access Detail
(Scale 1:250)

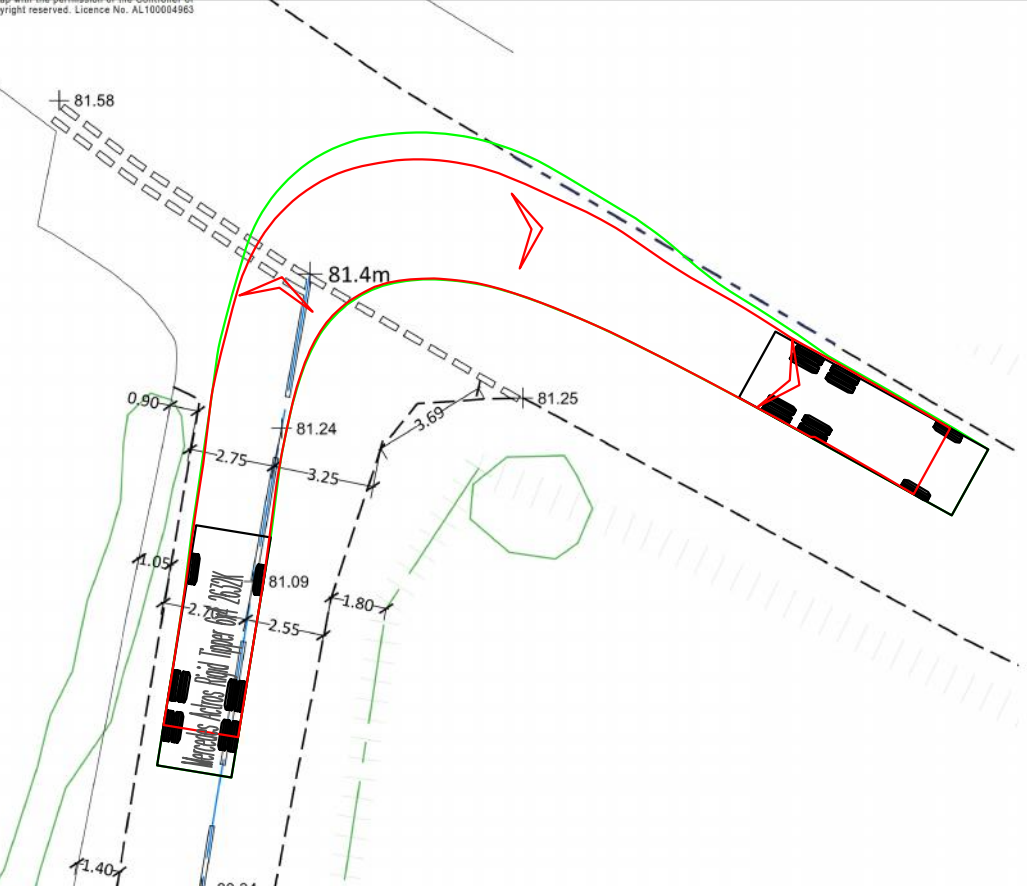


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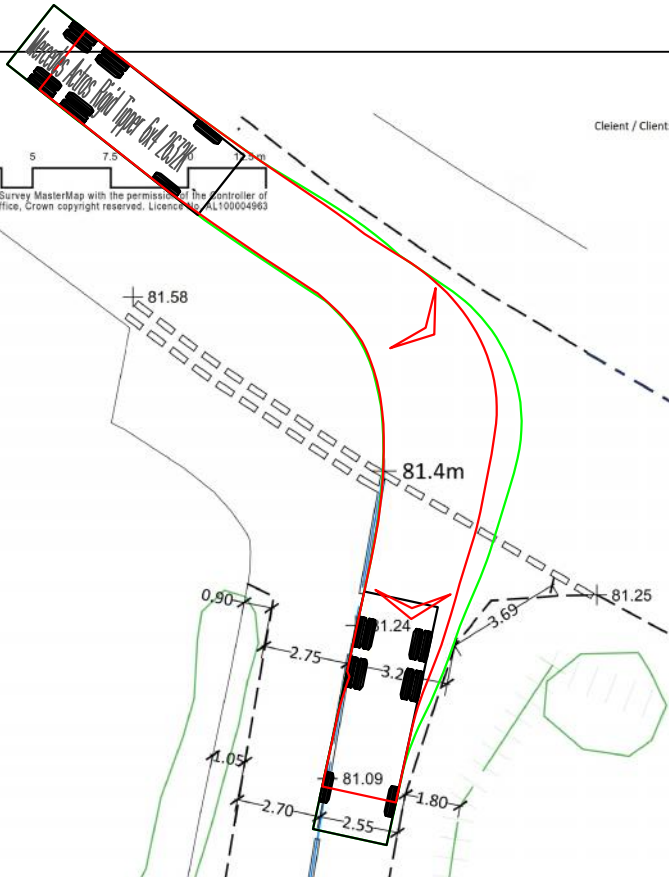
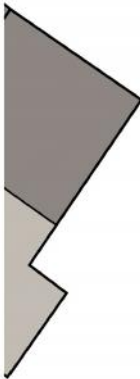
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Site Access Detail
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Project Title

PROJECT TITLE

Drawing Title

TIPPER TRUCK SWEEP PATH INFORMATION

Scale	1:250 @ A3
Date	16.05.2014
Approved/Unapproved	-

By	IW
Checked	DR
Status	PLANNING

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