

Rossett Road (B5102), Wrexham Section 278 Highway Works Review of Eddisons Design Drawings

Introduction

In June 2021 Wrexham County Borough Council (WCBC) requested Mott MacDonald Ltd undertake a desk top review including google street view, of technical aspects of highway engineering design drawings produced by Eddisons, Manchester Office. The proposed residential development site/s on greenfield land is located on the east side of the large village of Rossett, either side of the B5102, near Wrexham. The drawings describe Works proposed for an access/egress to the development/s. Some of the proposals also include minor Works to Rossett Road and links to other existing residential areas of Rossett. The purpose of the review is to inform the Planning Application process.

Revised drawings were submitted 05/07/22 this report considers these revised drawings and is as previous limited to Works that effect the B5012 within the highway boundary.

It is **not** a: -

- Road Safety Audit;
- Traffic Assessment; nor a
- Detailed drawing check or approval.

MM are also not aware of the scope or detail of designer's brief.

The review is also limited in duration and therefore it was not possible to scrutinise every detail or crosscheck these with every standard. Instead, it focuses on matters which might impact on safety in design.

The deliverable is this design review report.

Proposed Development/s

Figure 2 – Extract from Eddison's drawing (3261-D001) showing the proposed residential development/s.



Rossett Road – Location of Site

Rossett Road is aligned approximately west to east from Rossett to Trevalyn with fields on either side. It is approximately 5.5m wide with a speed limit of 40mph. The length of road under consideration is approximately 200m although some of the features proposed are within Rossett.

Figure 3 – Location of Site



List of Drawings Reviewed.

The drawings to be reviewed are as described below. They have been received in pdf format, so it is not possible to measure or scale. No other information has been provided.

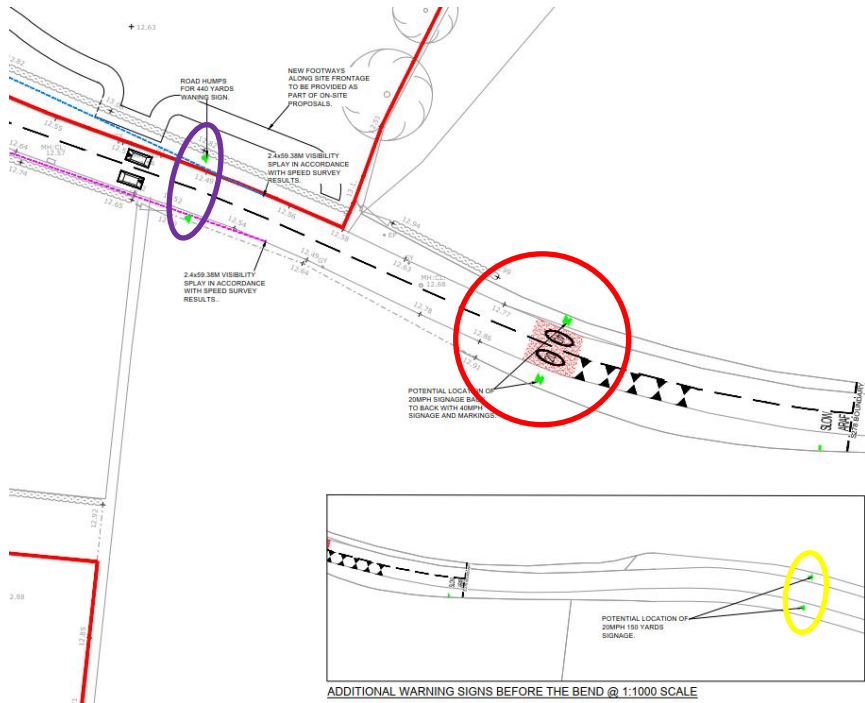
Table1 – List of Drawings

Drawing Reference	Revision	Title
Eddisons		
3261-****		
D001	K (Previously C)	Section 278 General Arrangement
D002	I (Previously C)	S278 Construction Materials
D003	J (Previously C)	S278 Signs and Markings
D004	A (Previously -)	S278 Standard Details
D005	B (Previously -)	S278 Setting Out and Drainage
<i>Hartton Consultation, Design & Installation (None resubmitted)</i>		
22475-D-01	-	<i>Proposed Lighting Layout</i>
22475-A-01&02	-	<i>Outdoor Lighting Reports</i>

Table of Drawings and Review Comments

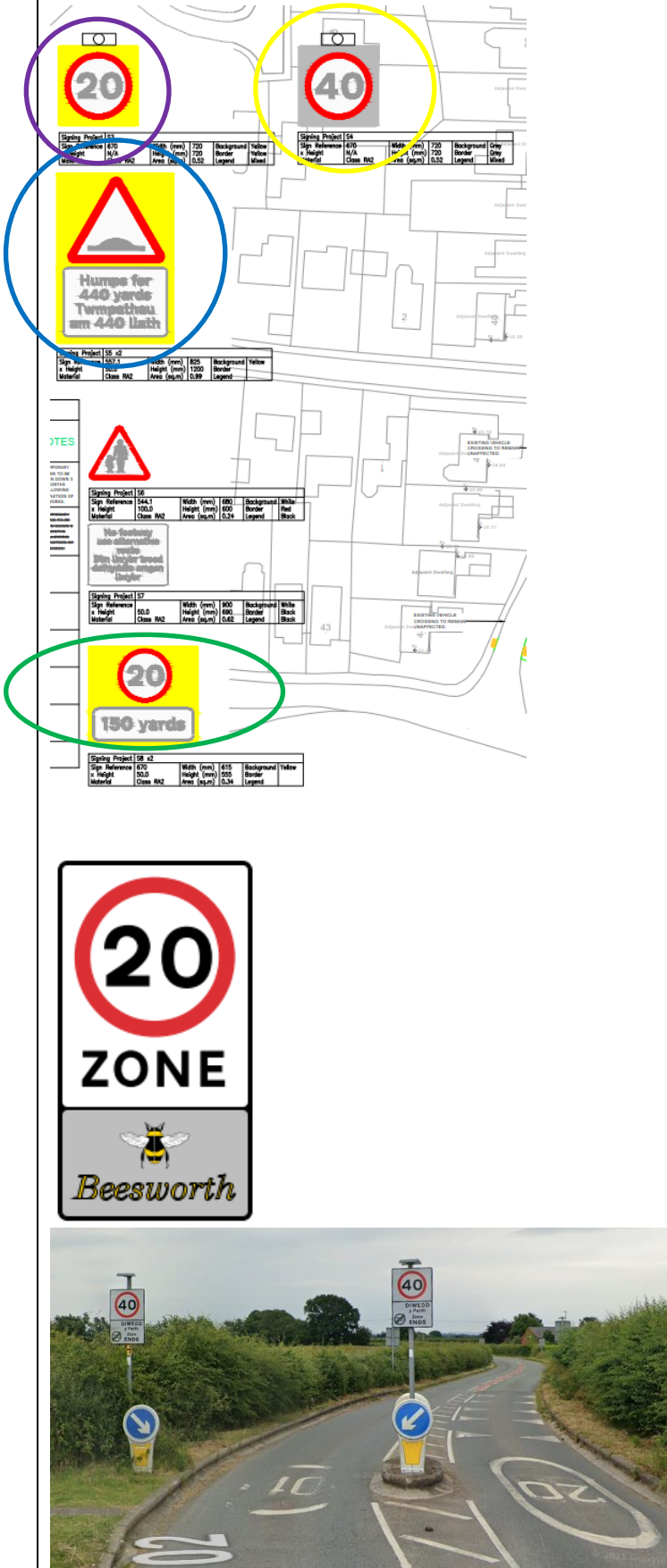
The list of comments below, only represents those comments which could be made within a limited time allowed. It should not be considered a tick list, which if addressed, mean that the drawings are satisfactory but more advise to consider a part of the planning process.

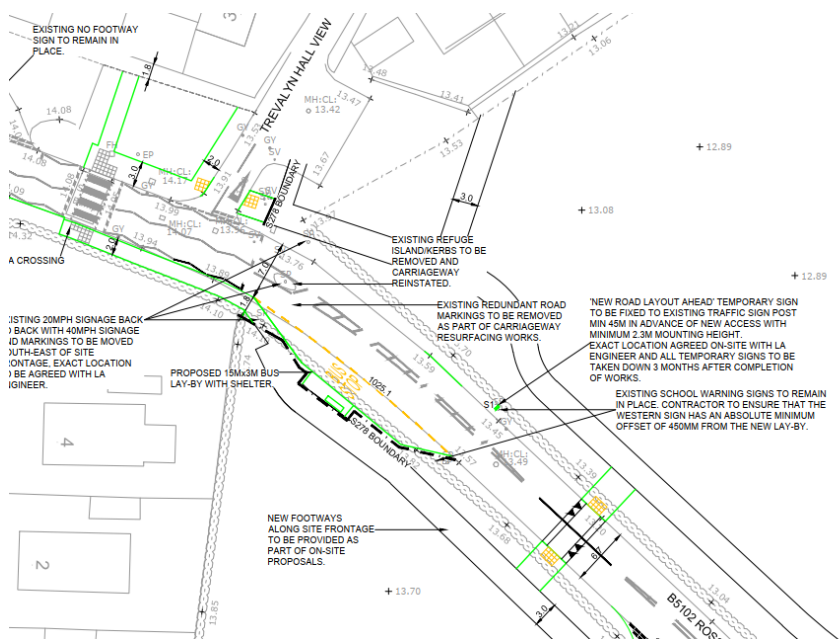
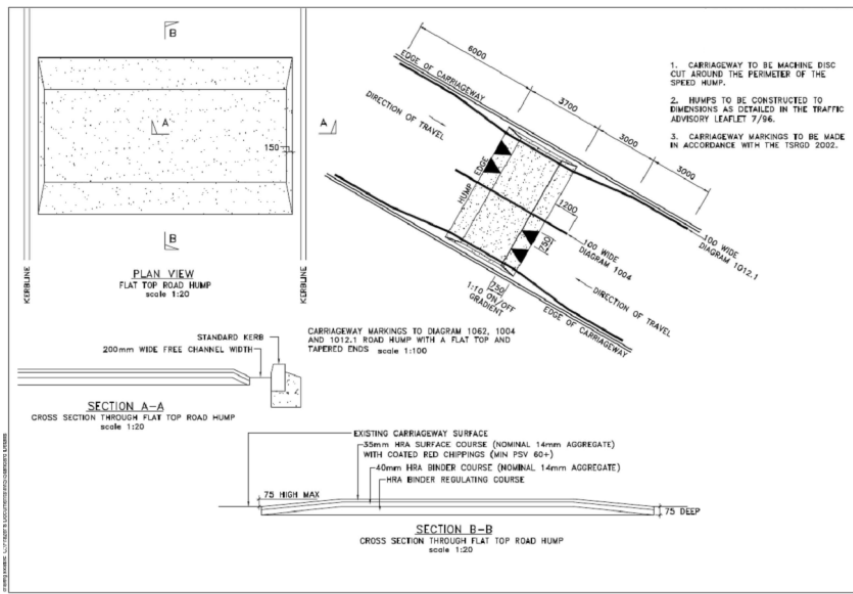
Table2 – List of Comments on Drawings

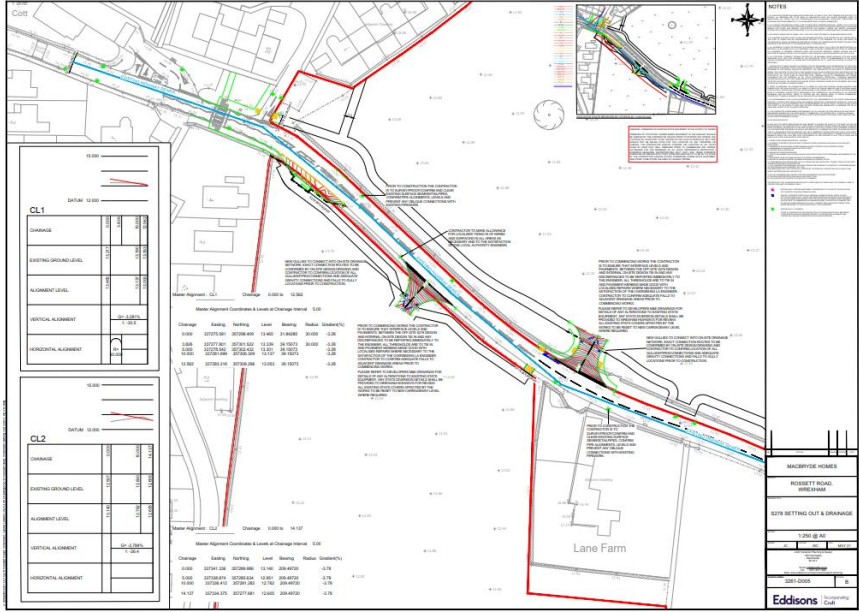
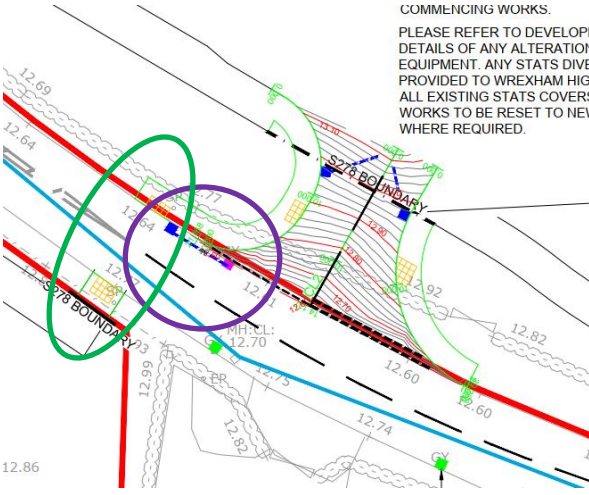
Ref	Dwg Ref. 3261-****	Extract from Dwg and Google Street View	Comment	Suggestion	Designers Response
1	D001 revK	 Views on approach to site from Trevalyn (2011) View approx. 500m from site  View approx. 80m from site 	Speeding / Gateway Feature (circled red) The introduction of traffic calming speed cushions is welcome. The gateway feature shown which comprises speed limit warning sign and roadmarkings could and should be more robust and therefore more effective in our view. This could take the form of a double speed cushion or priority gateway feature. However we understand from discussions / meetings with CCBC/MM/Eddisons/CastleGreenHomes that WCBC are willing to accept a design without gateway humps or priority traffic calming feature. Location of Road Hump Warning Sign (circled purple) The sign is current estimated to be between 5 to 10m in advance of the first pair of cushions, circled in purple opposite. The traffic signs manual (TSM) Chapter 4 Appendix A advises a “minimum clear visibility distance” to the sign of 60m and “a distance (of sign) from hazard” of 45-110m. Also noting dwg D003, the sign and plate including bilingual text have been placed on one sign face and yellow backed on both sides of the road. This creates a high-profile feature which we would argue risks detracting from the actual gateway feature and change in speed limit. We would likely prefer the emphasis given to the actual gateway feature and change of speed limit and place one standard road hump warning sign in advance of the gateway feature which is also more in line with the TSM advice. Speed Limit Advanced Warning Sign (circled yellow) See comment Dwg D003	Locate the sign/s in accordance with the TSM including practical consideration of the bend. Typically we have placed the highway features in the following order “ARAF/SLOW” roadmarking, road hump warning sign, gateway feature including speed limit signs then hazard (cushions).	Comments noted. Signs now relocated in accordance with TSM and highway features now proposed in the preferred order.

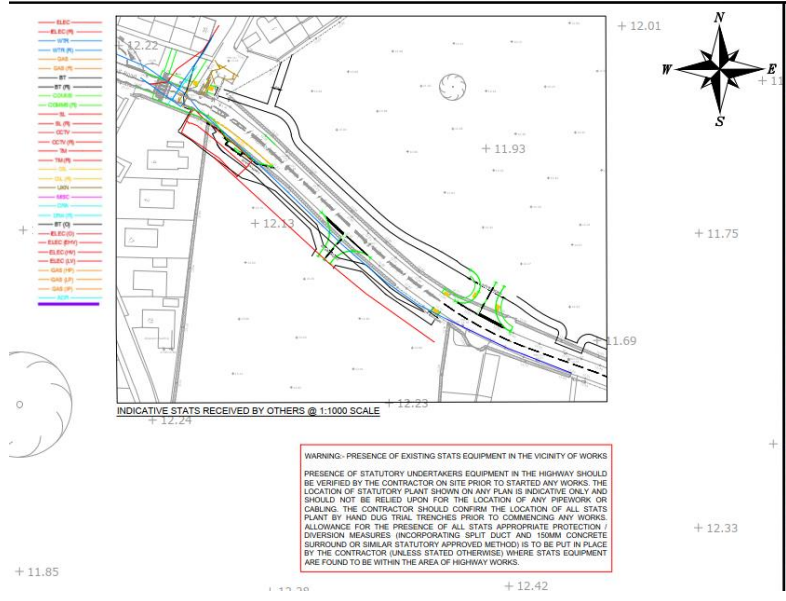
2	D001 revK		Wheelchair Users accessing Holt Road (circled red) Even with the proposed traffic calming the risks of anticipating that wheelchair users will travel on a live road for even approximately 20m is not acceptable. We do not believe this arrangement will pass a Road Safety Audit assessment. If it is the ambition of WCBC to provide access for users along this section of Holt Road we recommend alternative layouts are considered.	Consider alternative layouts to facilitate as safe a use as is reasonably possible of this section of the road. This might be by replacing the proposed speed cushion with an elongated build-out as part of a Priority Give-Way. However we understand from discussions / meetings with WCBC/Eddisons/CastleGreenHomes that WCBC are willing to accept the current proposal.	As stated, WCBC accept the current proposal following previous discussions.	
3	D001 revK	No revised lighting layout available	Lighting There are no proposed lighting columns shown on the drawings. This does not allow MM to make even a qualitative assessment of, for example, of whether there is adequate illumination at the proposed crossing, how columns will impact or assist signage and whether illuminated signs or required.	The drawing must show the proposed lighting.	The S278 GA now shows the proposed street lighting.	
4	D001 revK		Pedestrian Crossing (circled blue) Visibility The extent of hedge removal and replacement with “new tree/landscaping in line with on-site drawings” is not clear. The extent of removal should be sufficient to allow adequate visibility for users of the crossing. Detail See comments on dwg D004 but essentially there are no details for this feature	Confirm extent of removal of hedge on drawing. Provide specific detail for this feature.	The visibility splays to the new crossing point are now illustrated on the plan with notes referring to extents of hedge removal/trimming back. A detail for this feature is now included on the latest revision of D004.	

5	D002 rev I				

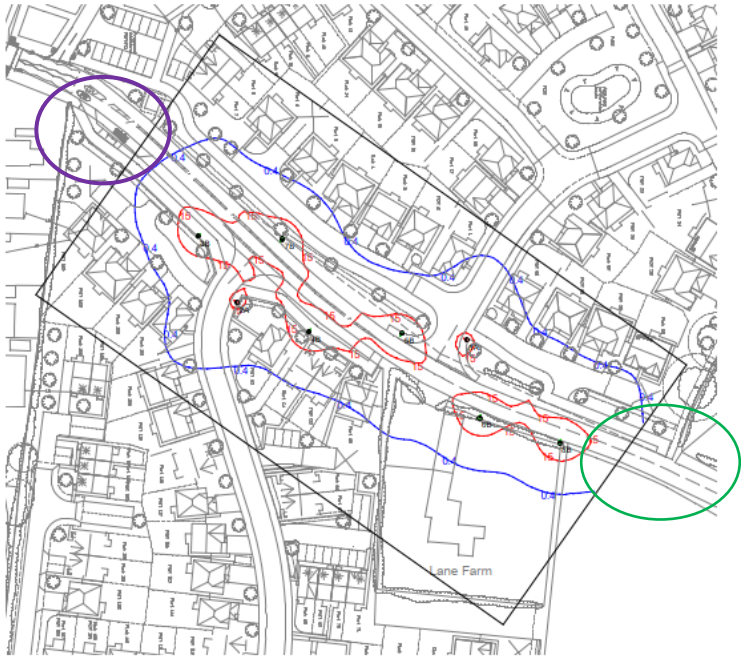
6	D003 revJ		Signage Advance Warning Sign 20mph (circled green) The width and height of the sign face would lead us to understand that the 20mph part of the sign is 300dia. - typically used for repeater signs. If this sign is necessary at all, the speed limit should be 600dia. Yellow backing Yellow backing to three signs is proposed. Our view is that, if yellow backing is to be used, it should be restricted to the gateway feature to highlight its presence. Using it at three locations will diminish the prominence of the terminal speed limit sign at the gateway. Road hump sign (circled blue) For comments on location see ref 1 above. 20mph terminal sign (circled purple) The proposal is for a standard sign whereas it could be made as noticeable but in a more unique and noticeable way, see example opposite. 40mph sign (circled yellow) Consider reuse of existing signs from existing gateway feature. Because there are no lighting columns shown on the drawings it is not possible to comment on whether signs should be illuminated or not.	Consider if sign is necessary. If required increase size to 600dia. Restrict the use of yellow backing to signage in gateway. Relocate sign Consider making sign more unique and thereby noticeable Consider reuse of existing sign Show lighting column locations.	Upon further review, the advance warning 20mph signs have been removed from the scheme as they are not a standard traffic sign. Yellow backing board now removed from other signs and gateway signage updated to match the existing gateway signage and propose a 20mph zone rather than just 20mph terminal speed limit signs. Road hump sign relocated. 20mph zone signs now proposed to match existing with additional text to make the sign unique to the location. 40mph signs now match the existing with notes on the plan to state that existing signs to potentially be re-used in new location. Lighting column locations now shown.	

7	D003 revJ		Existing Central Ghost Island With the removal of the refuge the ghost island leading to it is not relevant but there are no notes to suggest they will be removed.	Remove the central ghost island and reinstate a centre mark as shown in the eastern half of this proposed design	Previous road markings removed and centre-line marking proposed.
8	D004 revA		Road Hump / Speed Cushion Detail The title for this detail “Typical Speed Cushion Construction Detail” is incorrect. As per the text within the detail it is for a “Flat Top Road Hump” of which there are none proposed in the scheme. Elements of this detail may well be like those in the required i.e. speed cushion detail and pedestrian crossing raised table.	Provide details for speed cushion/s and pedestrian crossing.	Now included on the latest revision of D004.

9	D005 revB		Drawing does not show important elements of proposed scheme The drawing does not show any of the traffic calming features this is particularly important for drainage and the pedestrian crossing. The table crossing will prevent surface water flowing down the existing road from west to east. Additional gullies will be required.	Include the full extent of proposed features onto the drawing and assess how this affects drainage.	All features now included on this plan and proposed drainage illustrated.	
10	D005 revB		Proposed gully connected to infilled existing gully (circled purple) A proposed gully is shown connected to an existing gully which is to be infilled with concrete Tactile paving / crossing? Drawings show crossing point not shown on other drawings We note that D002revI S278 Construction Materials does in fact show drainage pipework at the pedestrian crossing but nothing on the Drainage drawing.	Show a proposed gully connected to a credible outfall probably in this case it might involve chasing down the existing gully connection. Update drawing	Proposed gully now shown to connect into existing gully tailpipe. Drawing updated to include all features and drainage.	

11	D005 revB	 INDICATIVE STATS RECEIVED BY OTHERS @ 1:1000 SCALE WARNING: PRESENCE OF EXISTING STATS EQUIPMENT IN THE VICINITY OF WORKS PRESENCE OF STATUTORY UNDERSTAKERS EQUIPMENT IN THE HIGHWAY SHOULD BE VERIFIED BY THE CONTRACTOR ON SITE PRIOR TO STARTING ANY WORKS. THE LOCATION OF STATUTORY PLANT SHOWN ON ANY PLAN IS INDICATIVE ONLY AND SHOULD NOT BE RELIED UPON FOR THE LOCATION OF ANY PIPEWORK OR CABLEING. THE CONTRACTOR SHOULD CONFIRM THE LOCATION OF ALL STATS PLANT BY HAND DUG TRIAL TRENCHES PRIOR TO COMMENCING ANY WORKS. ALLOWANCE FOR THE PRESENCE OF ALL STATS APPROPRIATE PROTECTION / DIVERSION MEASURES (INCORPORATING SPLIT DUCT AND 150MM CONCRETE SURROUND OR SIMILAR STATUTORY APPROVED METHOD) IS TO BE PUT IN PLACE BY THE CONTRACTOR (UNLESS STATED OTHERWISE) WHERE STATS EQUIPMENT ARE FOUND TO BE WITHIN THE AREA OF HIGHWAY WORKS. 	Existing Utilities The presence of existing utilities, an important aspect of any project with particular implications for H&S has been placed as an insert box at 1:1000 scale removed from this drawing (image opposite is from previous version) July 2016 image from google showing existing overhead cables which cannot be easily identified on dwg. July 2016 image from google showing existing electrical overhead cables which are not shown on the dwg.	Provide a separate dwg for utilities draughted to allow the reader to properly identify the different types. Also enquire and show required diversion and/or protection works in WCBC highway. Show and/or more clearly identify o/h cable on dwgs. Typically, this may include a warning symbol on the GA dwg. Show and/or more clearly identify o/h cable on dwgs. Typically, this may include a warning symbol on the GA dwg.	Separate stats plan now provided. Now shown on the stats plan with a warning symbol/note in a red box in the drawing notes. Now shown on the stats plan with a warning symbol/note in a red box in the drawing notes.	

		Comments below are from previously submitted drawings and included for completeness			
12	22475-D-01rev-		Conventionally a lighting column is located opposite a minor road junction. No plan of lighting analysis showing lux levels was found in the information provided. Columns shown on the south side of the road Columns shown near to o/h elec cables	Although there is the access to Lane Farm opposite the proposed access it does seem that there is the opportunity to place a column opposite the proposed junction. This is also likely to improve the illumination of occasional vehicles exiting from Lane Farm. Typically, columns are staggered but if it has been decided to locate on one side then consider placing 3 of the 4 circled onto the north side where there is more space because of the development, and which will therefore make access for maintenance easier/safer. It would mirror the approach taken for columns 1.8-1.10 near the lay-by and better illuminate the footway. Also, whether on south or north sides proximity to o/h cable to be check with power company.	Harttron's street lighting design updated accordingly.

13	22475-A-01 Lighting calcs	Horizontal Illuminance (lux) Grid 1  Horizontal Illuminance (lux) Large Overview 	Gaps in luminance assessment images Proposed lighting column calcs provided in two parts main body of site (extract left) and existing zebra crossing (left bottom). An area between the two parts is not shown, see purple circle. Probably levels are ok because of the effect of column ref 1.9 adjacent to the bus shelter but not shown. An illustration of the lighting assessment at the entrance to the 20mph zone is not available.	Clarify lighting levels between two areas already shown – ideally show one image for the whole site. Clarify lighting levels at the entrance to the 20mph Zone, see green circle opposite – ideally show one image for the whole site.	Harttron’s street lighting design updated accordingly.
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