

A66 Northern Trans-Pennine Project

TR010062

7.42 Departures from Standard Limits of Deviation (LoDs)

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**The Infrastructure Planning
(Examination Procedure)
Rules 2010**

A66 Northern Trans-Pennine Project
Development Consent Order 202x

**7.42 DEPARTURES FROM
STANDARD LIMITS OF DEVIATION
(LODS)**

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1. INTRODUCTION

- 1.1.1 National Highways (the Applicant) is seeking consent to upgrade the A66 road, improving the east-west connection between Penrith and Scotch Corner. The A66 Northern Trans-Pennine Project (the Project) aims to reduce congestion by improving and dualling sections of single carriageway road, improving junctions along the route, and improving safety by reducing right-hand turns across busy lanes of traffic. In June 2022 the Applicant submitted an application for development consent for the Project ('DCO application'). The DCO application was accepted for examination by the Planning Inspectorate, on behalf of the Secretary of State and is currently being examined by a Panel of Inspectors appointed by the Planning Inspectorate ('Examining Authority').
- 1.1.2 Following Compulsory Acquisition Hearing 1 ('CAH1'), and in response to a request from the Examining Authority arising in connection with CAH1, the Applicant provided an explanation of all proposed departures from its 'standard' Limits of Deviation ('LoDs'). This explanation was provided as Appendix 2 to the Applicant's CAH1 Post Hearing Submissions (including written submissions of oral case) submitted at Deadline 1 [REP1-007].
- 1.1.3 On 16 December 2022, the Applicant submitted to the Examining Authority a notification of proposed Project changes. This was followed by the submission by the Applicant of a formal change request ('Change Application') to the Examining Authority on 24 March 2023 (CR-001 to CR-018). A Procedural Decision (PD-014) was made on 18 April 2023 by the Examining Authority, accepting a total of 22 Project changes into the Examination of the Applicant's DCO application.
- 1.1.4 The purpose of this report is to provide an updated summary and explanation of the Departures from Standard LoDs following the acceptance of the 22 changes.

2. DEPARTURES FROM STANDARD LODS

- 2.1.1 Standard LoDs are provided for in article 7 of the draft Development Consent Order ('dDCO') [Document Reference 5.1, APP-285] and are also set out in Chapter 2 of the Environmental Statement [Document Reference 3.2, APP-045] in Table 2-2, as shown below. The standard LoDs for the Project are unchanged by the accepted changes.

Table 1 Standard Limits of Deviation across the Project

Upwards vertical LoD	Downwards vertical LoD	Lateral LoD for linear works	Linear work commencement / termination points
Levels may deviate by up to 1 metre (from the levels shown on the engineering section drawings)	Levels may deviate by up to 1 metre	Centreline of linear work (as shown on the works plans) may deviate by up to 3 metres in either direction	Points of commencement / termination (as shown on the works plans) may deviate by up to 3 metres in either direction

2.1.2 There are some exceptions to the standard LoDs on schemes 0102, 03, 0405, 06, 07, 08 and 09. Standard LoDs only are utilised on S11. Those exceptions, and the reasons why non-standard LoDs are required, are set out in the tables below. The tables present all exceptions from Standard LoDs inclusive of any amendments that have been made as a result of the accepted 22 Project changes. The tables below are also included in the Environmental Statement Addendum Volume 3 [Document Reference 8.3].

2.2 Scheme 0102

Table 2 Exceptions to standard LoDs on M6 J40 to Kemplay Bank (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
0102-1D	3m	3m	Centreline of linear work (shown on sheet 2 of the works plans) may deviate by up to 10 metres northwards, and by 10 metres southwards	To allow development of detailed design of proposed A66 mainline to improve buildability, reduce the traffic management phases and shorten the overall construction period at Kemplay Bank.

2.2.1 **Work No. 0102-1D** – This numbered works forms part of the A66 mainline underpass at Kemplay Bank. The non-standard lateral LoDs are required to enable greater flexibility in the design of the alignment of the mainline in order to improve buildability and minimise disturbance and traffic management impacts during construction of the underpass beneath the circulatory carriageway comprising Work No. 0102-7B.

Table 3 Exceptions to standard LoDs on M6 J40 to Kemplay Bank (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
0102-7A	2m	2m	Standard	New Work Nos. introduced (by splitting Work No. 0102-7 into 7A, 7B and 7C) to separate the A6 north of Kemplay Bank. Increase in vertical LoDs, upwards and downwards, in order to provide greater flexibility to tie-in side roads to the reorientated roundabout (circulatory carriageway Work No. 07-2B).
0102-7B	2m	2m	To the extent of the corresponding fine dashed green line shown on the works plans	
0102-7C	2m	2m	Standard	

2.2.2 **Work No. 0102-7A, 0102-7B and Work No. 07-7C** – these numbered works form the approaches and circulatory carriageway of the Kemplay Bank junction. The non-standard upwards and downwards vertical LoDs applying to these Work Nos are required to ensure that there is adequate flexibility in the geometry of the road to improve buildability and minimise disturbance. The non-standard lateral LoDs of Work No. 0102-7B are required to enable reorientation of the junction to further improve buildability.

Table 4 Exceptions to standard LoDs on M6 J40 to Kemplay Bank (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0102-8	2m	2m	To the extent of the corresponding fine dashed green line shown on the works plans northwards. Standard LoDs to the south	Increase in vertical LoDs, upwards and downwards in order to provide greater flexibility to tie-in to the reorientated roundabout. Increase in horizontal LoDs northwards only to allow greater flexibility to tie-in to the reorientated roundabout

2.2.3 **Work No. 0102-8** – This numbered works forms part of the A686 and the non-standard lateral LoD is required to allow flexibility to tie into the circulatory carriageway (i.e. Work No. 0102-7B).

2.3 Scheme 03

2.3.1 For **Work Nos. 03-1A and 03-1B**, the standard upwards and downwards vertical limits will apply other than where their application would preclude the undertaker from retaining the existing levels of the A66 carriageway along the lengths of those numbered works.

Table 5 Exceptions to standard LoDs on Penrith to Temple Sowerby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
03-1AA	1.5m	0m	Standard	To provide additional cover to minimise risk of damage to Shell ethylene pipeline and to facilitate construction of protection slab. To protect and minimise impact on potential archaeology associated with Brougham Roman Camp (as agreed with Historic England).

2.3.2 **Work Nos 03-1AA** – This numbered work forms part of the A66 mainline directly above the existing underground high-pressure Shell Oil North West Ethylene Pipeline (NWEPE). This pipeline is classed, by the Health & Safety Executive ('HSE') as a "major accident hazard" risk. Non-standard vertical LoDs of 0m downwards are required to help to minimise any risk of interference/disruption to the pipeline and to minimise risk of damage to Brougham Scheduled Monument Site; and non-standard vertical LoDs of 1.5m upwards are required facilitate the construction of a protection slab for the pipeline.

Table 6 Exceptions to standard LoDs on Penrith to Temple Sowerby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
03-6	To any extent the undertaker considers to be necessary	To any extent the undertaker considers to be necessary	Northwards, to the outer extent of the earthworks on the south side of Work No. 03-1B (being the A66 mainline). Standard LoDs to the south.	To provide greater flexibility to enable the PROW's to move to the other side of the ponds (where possible) to suit landowner specific needs and address any construction issues arising from changes to drainage and/or pond locations.

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
03-7B	To any extent the undertaker considers to be necessary	To any extent the undertaker considers to be necessary	To the extent of the Order limits on the north side. On the south side, to the outer extent of the earthworks on the north side of Work No 03-1B (being the A66 mainline).	
03-8	To any extent the undertaker considers to be necessary	To any extent the undertaker considers to be necessary	To the extent of the Order limits on the north side On the south side, to the outer extent of the earthworks on the north side of Work No 03-1B (being the A66 mainline).	

2.3.3 **Work Nos 03-6, 03-7B and 03-8** - these numbered works form the east/west PROW and access tracks along the length of Scheme 03. The non-standard LoDs (both laterally and vertically) are required to provide greater flexibility during detailed design to enable the PROWs to be moved to the other side of the ponds (where possible) to suit landowner specific needs and address any construction issues. If the PROW moves laterally, corresponding flexibility in the vertical LoDs is also required to allow the vertical alignment to adapt to follow as closely as possible the existing topography of the land.

2.4 Scheme 0405

Table 7 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-1A	3m	3m	Standard	To minimise environmental impact and cross-fall on bridge whilst enabling cut and fill balance to be achieved.
0405-2A	3m	3m	Standard	

2.4.1 **Work Nos. 0405-1A & 0405-2A** – These works comprise part of the A66 mainline dual carriageway on Scheme 0405. Non-standard vertical LoDs of 3m upwards and 3m downwards are required because the Beck Structure requires a 1% fall on the bridge deck to comply with the Design Manual for Roads and Bridges (“DMRB”) requirements. While 1% crossfall can be achieved with the current design it would require pipework to be suspended below the structure which is sub-optimal for the aesthetics of the structure and for maintenance of the sub-surface drainage system. An alternative solution is to create a 1% longfall on the structure (currently 0.65%). However, to do this, the vertical alignment over the structure would need to be adjusted for a relatively short distance either side of the structure. The non-standard LoD allows for this potential improvement whilst ensuring the requirements of the accommodation track, footway, structure aesthetics and earthwork balance are not adversely affected.

Table 8 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-4B	Standard	Standard	To the extent of the Order limits (on either side of the centreline) (Sheets 1, 2 and 4 of 7)	To ensure that new cycle track is delivered on the alignment of and within the boundaries of the de-trunked A66.
0405-19	Standard	Standard	To the extent of the Order limits (on either side of the centreline) (Sheets 5, 6 and 7 of 7)	To ensure that new cycle track is delivered on the alignment of and within the boundaries of the de-trunked A66.

2.4.2 **Work Nos. 0405-4B & 0405-19** – These numbered works form part of the existing A66 to which there is proposed to be added a combined footway / cycleway to link Temple Sowerby to Appleby. Based on the LiDAR survey information and site observation, there is insufficient verge/carriageway width available to install this facility within the existing highway corridor

for the whole length, hence some sections have been designed offline. However, there may be an opportunity for the off-line sections to be moved on-line should more detailed surveys show that sufficient space is available to accommodate the proposed facility. A non-standard LoD laterally to the Order Limits allows for flexibility in the positioning of the combined footway / cycleway in the vicinity of the existing highway corridor.

Table 9 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
0405-5	Standard	2m	Standard	To increase / ensure sufficiency of headroom in underpass.

2.4.3 **Work No.0405-5** – The proposed underpass has been designed with a headroom of 4.65m. There is no prescribed headroom requirement for accommodation structures within the DMRB, so the provision must be agreed with the affected landowners. Should ongoing negotiations conclude that additional headroom is required, non-standard vertical LoDs of 2m vertically downwards allows for this underpass and associated tracks to be lowered.

Table 10 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
0405-6B	2 metres	To any extent the undertaker considers to be necessary	Standard	Increased flexibility in the vertical LoDs to allow the design of Priest Lane to rise and fall to tie-in to the realigned Cross Street. Previously this work number was part of Work No. 0406-6.
0405-6C	2 metres	To any extent the undertaker considers to be necessary to tie into Work No. 0405-7	On the north side, to the extent of the corresponding fine dashed green line shown on the works plans (Sheet 2 of 7). Standard LoDs on the south side	Increased flexibility in the vertical LoDs to enable the design of Priest Lane to rise or fall to tie-in to the realigned Cross Street. Increased horizontal flexibility to enable Priest Lane to tie-in to the realigned Cross Street. Previously this work number was part of 0406-6.

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-7	Standard	To any extent the undertaker considers to be necessary	Westwards to the extent of the corresponding fine dashed green line shown on the works plans (Sheet 2 of 7). Standard LoDs to the east side	<p>Increased flexibility in the vertical LoDs to enable the design of Cross Street to tie-in sooner to the existing road.</p> <p>Increased horizontal flexibility to enable the design of Cross Street to tie-in sooner to the existing road.</p>
0405-8	To any extent the undertaker considers to be necessary to tie in with Work No. 0405-7	To any extent the undertaker considers to be necessary to tie in with Work No. 0405-7	<p>Standard LoDs to the north side</p> <p>Southwards to the extent of the corresponding fine dashed green line shown on the works plans (Sheet 2 of 7).</p>	<p>Increased flexibility in the vertical LoDs to enable the design of the access track/PRoW to rise and fall to tie-in to the realigned Cross Street.</p> <p>Increased horizontal flexibility to enable the access track/PRoW to move further south and minimise land take.</p>

2.4.4 **Work No. 0405-6B, 0405-6C, 0405-7 & 0405-8** – These numbered works form part of change DC-11 – Earlier tie-in of Cross Street to the existing road. The re-aligned Cross Street shown in the DCO application documents is for a 60mph rural road to current DMRB design standards for the horizontal and vertical geometry. Based on a realistic worst case design principle, the road alignment was extended northwards to ensure a suitable transition of comparable geometrical standards could be achieved. This removed the existing below standard bends of Cross Street, particularly to the north of the A66 mainline. The non-standard LoDs for the corridor allow for changes to the alignment of Cross Street so that it is more in keeping with the local rural road network. This change will also allow the realigned length of Cross Street to tie in with its existing alignment at a point up to 195m closer to the new A66 and will reduce the height of the structure above existing ground, while keeping the same road width of 3.5m (with passing places) as proposed in the current DCO design.

Table 11 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-12A	Standard	To any extent the undertaker considers to be necessary to use existing ground levels	Standard	Increased flexibility in the vertical LoDs to allow the design of Main Street to follow the existing ground levels more closely and tie-in to Fell Lane. Previously this work number was part of 0406-12.
0405-12B	Standard	To any extent the undertaker considers to be necessary to use existing ground levels	Standard LoDs to the north side Southwards to the extent of the corresponding fine dashed green line shown on the works plans (Sheet 3 of 7)	Increased flexibility in the vertical LoDs to allow the design of Main Street to follow the existing ground levels more closely and tie-in to the existing Main Street. Increased horizontal flexibility to enable the design of Main Street to reduce the impact on agricultural buildings and minimise land take. Previously this work number was part of 0406-12.

2.4.5 **Work No. 0405-12A & 0405-12B** – These numbered works form part of change DC-13 – Realignment of Main Street. The diverted Main Street shown in the DCO application documents is for a 60mph rural road to current DMRB design standards for the horizontal and vertical geometry. Based on a realistic worst case design principle this results in a wide verge on an embankment to provide the required visibility for the tight bend at the eastern tie-in to the existing Main Street north of the dual carriageway. As a result of the widened verge, an existing agricultural building would need to be acquired and demolished. The non-standard LoDs for the corridor allow for changes to the alignment of the diverted Main Street which would permit it to be designed in a way that reduces the impact on local business and makes it more in keeping with the local rural road network.

Table 12 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-13	3 metres	To any extent the undertaker considers to be necessary to use existing ground levels	To the extent of the corresponding fine dashed green line shown on the works plans (Sheets 3 & 4 of 7) or, where there is no fine dashed green line, 3 metres.	<p>Increased vertical flexibility to enable the design of Sleastonhow Lane to tie-in sooner to the existing road. The increase in the Upwards vertical LoD is to allow the high point in the alignment to move and is relative to the alignment shown on Engineering Section Drawings (Plan & Profiles) (Sheet 21 of 24).</p> <p>Increased horizontal flexibility to change the alignment of Sleastonhow Lane so that it is more in keeping with the local rural road network and to enable a squarer bridge crossing of the A66 mainline while minimising impact on veteran trees.</p>

2.4.6 **Work No. 0405-13** – This numbered work forms part of change DC-14 – Realignment of Sleastonhow Lane. The re-aligned Sleastonhow Lane shown in the DCO application documents is for a 60mph rural road to current DMRB design standards for the horizontal and vertical geometry. To avoid tying into the existing below standard existing bends the alignment was extended to ensure a suitable transition of comparable geometrical standards could be achieved based on a realistic worst case design principle. The non-standard LoDs for the corridor allow for changes to the alignment of Sleastonhow Lane to enable it to be more in keeping with the local rural road network.

Table 13 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
0405-20B	Standard	To any extent the undertaker considers to be necessary to pass beneath Work Nos.	Westwards - Lateral LoD shown by fine green dashed line on Works Plans (Sheet 6 of 7)	Increased vertical flexibility to lower the underpass as required to facilitate the horizontal alignment changes and provide suitable clearance below the mainline.

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
		0405- 1B and 0405-2B	Standard LoDs eastwards	Increased horizontal flexibility to realign the underpass near perpendicular to the mainline. Previously this work number was part of 0406-20.
0405-20C	Standard	To any extent the undertaker considers to be necessary to tie in with Work No. 0405-20B	Standard	Increased vertical flexibility to tie the realigned underpass into existing bridleway 341/001. Previously this work number was part of 0406-20.

2.4.7 **Work No. 0405-20B & 0405-20C** – These numbered works form part of DC-15 – Realignment of Crackenthorpe underpass. The current DCO application proposes an underpass at Crackenthorpe for use by a landowner to access their land and also to accommodate a diverted footpath and bridleway. The underpass was aligned with a natural valley to cross below the proposed dual carriageway at an angle that created a v-shaped route. The non-standard LoDs for the corridor enables the underpass to be aligned to reduce the skew, thereby shortening the underpass, footway and bridleway.

Table 14 Exceptions to standard LoDs Temple Sowerby to Appleby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
0405-18	Standard	0m	To the extent of the Order limits (on either side of the centreline) (Sheet 5 of 7)	To protect potential archaeology associated with Roman Camp Scheduled Monument (as agreed with Historic England)

2.4.8 **Work No. 0405-18** – This numbered work forms part of the existing A66 to which there is proposed to be added a combined footway / cycleway. While the preliminary design is within the existing highway boundary it also crosses the Roman Camp Scheduled Monument (as agreed with Historic England). A non-standard lateral LoD to the Order Limits allows for the alignment to be adjusted horizontally within the existing highway corridor to reduce the risk of impacting any archaeology. In addition, non-standard LoDs of 0m vertically downwards removes the downward flexibility of the alignment to reduce the risk of disturbing deeper archaeology.

2.5 Scheme 06

Table 15 Exceptions to standard LoD for Appleby to Brough (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
06-1B	Standard	0m	Standard	To protect potential archaeology associated with Roman Camp Scheduled Monument (as agreed with Historic England)

2.5.1 **Work No. 06-1B** – This numbered work forms part of the new A66 mainline dual carriageway to the east of Sandford and west of Warcop. Non-standard LoDs of 0m vertically downwards removes the downward flexibility of the alignment to reduce the risk of disturbing deeper archaeology associated with the Warcop Roman Camp Scheduled Monument.

Table 16 Exceptions to standard LoD for Appleby to Brough (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
06-1C	0m	No downwards LoD (i.e. 'to any extent downwards as may be necessary')	Standard	To enable the provision of appropriate mitigation for authorised development within flood plain.
06-3	0m	No downwards LoD (i.e. 'to any extent downwards as may be necessary')	Standard	Amend the vertical downwards LoD to ensure that it can move vertically with mainline Work No. 06-1C (which already has no downward limit of deviation in the submitted draft DCO) to enable the provision of appropriate mitigation for authorised development within the flood plain.

2.5.2 **Work No. 06-1C** – This numbered work forms part of the new A66 mainline dual carriageway to the west of Warcop and east of Warcop. Non-standard LoDs of 0m vertically upwards removes the upward flexibility of the alignment as it is considered that the realistic worst-case design has been accounted for. Whereas non-standard LoDs with no downward limit provide the opportunity, subject to detailed flood modelling and detailed design work, to lower the vertical alignment of the A66 mainline dual carriageway over the key structures at Cringle Beck and Moor Beck closer to existing ground levels.

2.5.3 **Work No. 06-3** – This numbered work ties into the A66 mainline (Work No 06-1C). Non-standard LoDs have been included to ensure that it can move vertically with mainline Work No. 06-1C (which already has no downward limit of deviation).

Table 17 Exceptions to standard LoD for Appleby to Brough (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
06-2A	2m	2m	Standard	To accommodate detailed design of the junction in a way that will minimise impacts on adjacent fen landscape.
06-2B	2m	2m	Westwards to the extent of the corresponding fine dashed green line shown on the works plans (Sheet 2 of 6) Standard LoDs to the east side	

2.5.4 **Work No. 06-2A and Work No. 06-2B** – These numbered works form part of the underpass at Sandford Junction. The non-standard lateral LoDs applying to Work No. 06-2B are required to enable the loop of the junction (on the northern side of the new A66 mainline dual carriageway) to be mirrored westwards (within a lateral LoD denoted by a fine dashed green line on Sheet 2 of 6 of the Works Plans for Scheme 06 Appleby to Brough thereby providing greater flexibility in the design of the junction in order to minimise the impact of the junction on fen landscape to the north and east of Sandford Junction. The non-standard upwards and downwards vertical LoDs applying to both Work No. 06-2A and Work No. 06-2B are required to ensure that there is adequate flexibility in the geometry of the road to tie-in to the Work No. 06-1A as a consequence of the implementation of the non-standard lateral LoDs associated with Work No. 06-2B.

Table 18 Exceptions to standard LoD for Appleby to Brough (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
06-7A	To any extent the undertaker considers to be necessary as a consequence of any horizontal	2m	Northwards, to the outer extent of the earthworks on the south side of Work No. 06-1D (A66 mainline).	The principles of the original LoD are retained to enable the horizontal LoD for Work No 06-7A to allow this link to move northwards as close as possible to the new A66 and therefore minimise the impact on land.

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
	movement northwards		Standard LoDs to the south.	

2.5.5 **Work No. 06-7A** – This numbered work is associated with the connector road from Langrigg Lane to Flitholme Road. Non-standard LoDs northwards are necessary to allow the link road to move northwards as much as possible (to minimise land take). Greater flexibility in the upwards vertical LoD is also proposed to allow for the rising ground in this area as well as flexibility downwards to enable greater flexibility in the level of the underpass that connects to the de-trunked A66.

Table 19 Exceptions to standard LoD for Appleby to Brough (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
06-4B	Standard	To any extent the undertaker considers to be necessary	To the extent of the corresponding fine dashed green line shown on the works plans. Standard LoDs to the north side	Flexibility to realign the underpass and utilise more of the de-trunked A66 for local access. This will avoid the removal of a band of mature trees that line the northern side of the existing A66.

2.5.6 **Work No. 06-4B** –Numbered Work 0405-4 is split to facilitate the introduction of horizontal LoD changes to a short length of the de-trunked A66, in order to provide greater flexibility and minimise the gap between this carriageway and the new A66 mainline. The non-standard lateral LoD for Work No 06-4B would allow lateral movement southwards to the extent of the green dashed line.

2.6 Scheme 07

Table 20 Exceptions to standard LoDs for Bowes Bypass (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
07-1B	Standard	1.5m	Standard	To allow for: potential widening of accommodation bridge structure to enable mitigation of impacts on bat foraging habitat; and management of consequential effects on the alignment of the mainline A66 beneath widened accommodation bridge.
07-2B	Standard	1.5m	Standard	
07-7B	2m	2m	Standard	Increase in vertical LoDs to allow flexibility to amend gradients and shorten bridge length

- 2.6.1 **Work No. 07-1B** – This non-standard vertical LoD of 1.5m downwards allows the eastbound mainline carriageway to be lowered at the location of the East Bowes Accommodation bridge to allow for any widening of the overbridge structure for a potential green corridor for bat migration. Should there be a need to increase the clearance of the overbridge, there is flexibility to provide this additional clearance by lowering the mainline instead of lifting the overbridge alignment and increasing ramp lengths either side to get back to ground level.
- 2.6.2 **Work No. 07-2B** – This non-standard vertical LoD of 1.5m downwards is required for the same reason as is explained above in relation to Work No. 07-1B and applies to the westbound carriageway at the location of the East Bowes Accommodation bridge. Separate centrelines and works numbers were applied to the eastbound and westbound carriageways of this length of the A66 mainline to accommodate level changes in both carriageways at the A67 Bowes Junction Overbridges.
- 2.6.3 **Work No. 07-7B** - This non-standard vertical LoD of 2m upwards and 2m downwards is required to allow flexibility in the vertical alignment of the overbridge. By combining the realignment of the Private Means of Access on the north side of the A66 with amendments to the of vertical curvature and approach gradients, the overall length of the East Bowes Accommodation Overbridge can be shortened by approximately 20m.
- 2.6.4 For **Work No. 07-8**, the standard upwards and downwards vertical limits will not apply to the levels eastwards of chainage reference point 650.000 (as shown on Sheet 9 of the Engineering Section Drawings: Plan and Profiles for Scheme 07) where their application would preclude the undertaker from tying the eastern end of Work No. 07-8 into the existing ground levels at Bowes Cross Farm.

2.7 Scheme 08

Table 21 Exception to standard LoDs for Cross Lanes to Rokeby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
08-1B	Standard	2m	Standard	To allow for: potential widening of accommodation bridge structure to enable mitigation of impacts on bat foraging habitat; and management of consequential effects on the alignment of the mainline A66 beneath widened accommodation bridge (Work Nos 08-4A and 08-4B: see below).

2.7.1 **Work No. 08-1B** – This non-standard vertical LoD of 2m downwards allows the eastbound mainline carriageway to be lowered at the location of the Clint Lane Overbridge to allow for any widening of the overbridge structure for a potential green corridor for bat migration. Should there be a need to increase the clearance of the overbridge, this non-standard vertical LoD allows flexibility to provide this additional clearance by lowering the mainline instead of lifting the overbridge alignment and increasing embankment heights next to Cross Lanes Farm Shop and Café and Cross Lanes Farmhouse.

Table 22 Exception to standard LoDs for Cross Lanes to Rokeby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
08-4A	Standard	2m	Standard	To accommodate related non-standard LoD applying to the A66 mainline (Work No. 08-1B) to enable provision of mitigation for impacts on bat habitat (e.g. bat bridge).

2.7.2 **Work No. 08-4A** – This non-standard vertical LoD of 2m downwards is included so that if the LoD for Work No. 08-1B (see above) is applied then the eastbound diverge slip road and the eastbound merge slip road associated with the Cross Lanes junction can be altered to tie in with any potential lowering of the mainline.

Table 23 Exception to standard LoDs for Cross Lanes to Rokeby (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
08-4B	Standard	2m	Standard	To accommodate related non-standard LoD applying to the A66 mainline (Work No. 08-1B) to enable provision of mitigation for impacts on bat habitat (e.g. bat bridge).

2.7.3 **Work No. 08-4B** – This non-standard vertical LoD of 2m downwards is included so that if the LoD for Work No. 08-1B (see above) is applied then the westbound diverge slip road and the westbound merge slip road associated with the Cross Lanes junction can be altered to tie in with any potential lowering of the mainline.

2.8 Scheme 09

Table 24 Exceptions to standard LoDs for Stephen Bank to Carkin Moor (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs – north of centreline	Reason
09-1B	Standard	3m	5m to the north. 5m to the south	To allow flexibility to facilitate potential realignment of A66 mainline to accommodate potential adjustments to alignment of new local access road Work No. 09-3B (alongside new and improved A66 mainline, Work No. 09-1B).

2.8.1 **Work No. 09-1B** – This downwards vertical LoD of 3m, and horizontal LoD of 5m to either side of the centreline, provides flexibility for the A66 mainline, in the vicinity of Collier Lane Overbridge, to be lowered or move horizontally in conjunction with steepening earthworks batters and/ or integrating a retention solution. This would work in conjunction with the lateral LoDs shown on Sheet 2 of 4 of the Works Plans for Scheme 09 [APP-324] for Work No. 09-3B (moving the realigned A66 back onto to its original line) and Work No. 09-05 (lowering the vertical alignment of Collier Lane Overbridge back to its current levels to allow a tie into the Work No. 09-3B).

Table 25 Exceptions to standard LoDs for Stephen Bank to Carkin Moor (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/ horizontal LoDs	Reason
09-3B	Standard	No downwards LoD (i.e. 'to any extent downwards as may be necessary')	Northwards - to the extent of the corresponding fine green dashed line on Works Plans (Sheet 2 of 6). Standards LoDs to the south	To allow flexibility to facilitate potential realignment of new local access road, Work No. 09-3B, to include re-use of existing A66 mainline carriageway post de-trunking

2.8.2 **Work No. 09-3B** – The non-standard LoDs applying to this numbered work are required to provide flexibility for the re-aligned section of the de-trunked A66 to be retained on its current line (within a lateral LoD denoted by a fine dashed green line on Sheet 2 of 4 of the Works Plans for Scheme 09 Stephen Bank to Carkin Moor Sheet 2 of 4 [Document Reference 5.16, APP-324] on the north side of the existing A66, thereby potentially reducing landtake. It is grouped with Work Nos. 09-1B and 09-05.

Table 26 Exceptions to standard LoDs for Stephen Bank to Carkin Moor (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
09-1D	Standard	4m	Northwards to the extent of the Order Limits. Standards LoDs to the south	To facilitate appropriate vertical alignment through setting of Scheduled Monument (objective of flexibility is to retain height of monument relative to road).

2.8.3 **Work No. 09-1D** – The proposed alignment passes through the existing cutting of the scheduled monument at a level approx. 3-4m above the existing road level. This is to make use of the existing cutting, whilst minimising retaining wall height. The flexibility of a downwards vertical LoD of 4m is sought to allow the vertical alignment of the A66 mainline to be lowered in the vicinity of the scheduled monument with the introduction of higher retaining walls. This would allow a reduction in earthworks either side of the scheduled monument and allow the new alignment to follow that of the existing road more closely, aiding buildability.

Table 27 Exceptions to standard LoDs for Stephen Bank to Carkin Moor (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
09-3E	Standard	Standard	Northwards to the extent of the corresponding fine dashed green line shown on the Works Plans (Sheets 3 & 4 of 4). Standard LoDs to the south	To allow flexibility for this section of Warrener Lane to move closer to A66
09-3F	Standard	Standard	0m to the north. 5m to the south	To minimise impact on the Carkin Moor Scheduled Monument

2.8.4 **Work No. 09-3E**– The non-standard LoDs applying to this numbered work are required to provide an opportunity to move Warrener Lane northwards closer to the proposed A66, to allow for a reduction in the construction footprint and for a reduction in the construction period and therefore less disruption during the works.

2.8.5 **Work No. 09-3F**– The non-standard LoDs applying to this numbered work are required to minimise any encroachment of the Warrener Lane realignment northwards into the Carkin Moor Scheduled Monument designation.

Table 28 Exceptions to standard LoDs for Stephen Bank to Carkin Moor (Extract)

Work No.	Upwards vertical LoD	Downwards vertical LoD	Lateral/horizontal LoDs	Reason
09-5	Standard	3m	Standard	Linked to LoDs for Work Nos. 09-1B and 09-3B – i.e. to allow flexibility for potential realignment of new local access road (on route of de-trunked A66) and new/improved A66.

2.8.6 **Work No. 09-5** – This non-standard vertical LoD of 3m downwards provides flexibility to lower the level of Collier Lane Overbridge back to its current levels, should the lowering of the A66 mainline occur under the LoDs for Work No. 09-1B above. This would also allow Work No. 09-3B to be lowered back to existing ground levels and enable more of the existing A66 to be retained, potentially reducing landtake.