

A428 Black Cat to Caxton Gibbet improvements

TR010044

Volume 9

9.85 Departures from Standard for the A428 Black Cat to Caxton
Gibbet Scheme

Planning Act 2008

Rule 8(1)(k)

Infrastructure Planning (Examination Procedure) Rules
2010

December 2021

Infrastructure Planning

Planning Act 2008

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

**A428 Black Cat to Caxton Gibbet
improvements
Development Consent Order 202[]**

**9.85 Departures from Standard for the
A428 Black Cat to Caxton Gibbet Scheme**

Regulation Reference:	Rule 5(2)(k)
Planning Inspectorate Scheme Reference	TR010044
Application Document Reference	TR010044/EXAM/9.85
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Version	Date	Status of Version
Rev 1	14 December 2021	Deadline 6

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1 Introduction

- 1.1.1 This document is the applicant's response to Issue Specific Hearing 4 Action 15 Departures from Standard.
- 1.1.2 This document sets out in Section 2 what a Departure from Standard is, why one may be required, and the typical information required to complete a Departure from Standard submission. Section 3 sets out the Departures from Standard required for the scheme.
- 1.1.3 A list of all the approved Scheme Departures from Standard that were sought prior to the DCO submission and their locations is included in this document.
- 1.1.4 Appendix A provides a list of the Departures from Standard that have been approved for the A428 Black Cat to Caxton Gibbet Improvement Scheme (Scheme) including description and comments.
- 1.1.5 Appendix B comprises two drawings that show the locations of the approved Scheme departures.

2 Departure from Standards requirements

- 2.1.1 All roads and bridges constructed by National Highways must be designed in accordance with the standards set out in the Design Manual for Roads and Bridges unless a departure from that standard has been identified. This process is known as a Departure from Standard.
- 2.1.2 The need for Departures from Standard arises as there are some situations where it is not always possible, or appropriate, to fully comply with design standards. An example would be when designing a new junction to fit in with a section of existing road, as is the case with the Black Cat junction. The A1 is an old road that was designed to older and now superseded geometric design standards. At locations along the section of the A1 affected by the new junction, particularly where the new slip roads join the A1 it has been necessary to use Departures from Standard.
- 2.1.3 The purpose of the Departures from Standards procedure is to ensure that formal sign off is achieved for every Departure from Standard, in accordance with the requirements of DMRB General Guidance (GG) 101 (Introduction to the Design Manual for Roads and Bridges).
- 2.1.4 The Departure from Standards procedure ensures consistency between all schemes and provides a mechanism for optimising objectives such as safety, value for money and mitigating the effects on the environment. GG101 clause 2.4.1 states the following:
- “Where requirements of the Overseeing Organisation are not met, departures should be submitted where:*
- i. it can be justified that a requirement is inappropriate in a particular situation;*
 - ii. the application of a requirement would have unintended adverse consequences;*
 - iii. innovative methods or materials are to be proposed;*
 - iv. a requirement not in the DMRB, NAA or MCHW is adopted as more appropriate in a particular situation; or,*
 - v. an aspect not covered by requirements is identified.”*

2.2 Details of the Departure from Standard submission details

- 2.2.1 The criteria that are required for a Departure from Standard submission are given below. The Departure from Standard submission will then be reviewed, considered and then approved or otherwise by National Highways Safety, Engineering and Standards department:
- a. Full details of proposed departure.
 - b. Existing departures at the site (if any).

- c. Options rejected (e.g. better than proposed but still not designed fully in accordance with Standards).
- d. Technical information (design speed, measured speed, NMU considerations, street lighting provision).
- e. Other (relevant scheme-specific information such as provision of vehicle restraint system, overtaking opportunities, exposure to severe weather and proximity to features such as junctions, structures or lay-bys).
- f. Location plans.
- g. Layout plans.
- h. Accident summary with commentary.
- i. Traffic data, to include %HGV as well as NMU and powered two wheeled device flows.
- j. Junction capacity checks where relevant.
- k. Photographs/video footage (except new build).
- l. Visibility graphs for stopping sight distance Departures.
- m. Swept path plots.
- n. Other modelling (*3-D 'drive throughs' and microsimulation*).
- o. Consultations (include a list of any National Highways staff consulted prior to submission).
- p. Research (research to support the case for the departure if available).
- q. Specialist Information.
- r. Secondary standard (e.g. other related standards).
- s. Associated departures.
- t. Additional scheme details (type of scheme, extent, scheme program, context within adjacent highway network, long-term route management strategy).
- u. What are the safety implications/risks of implementing the design solution with the proposed departure when compared to a fully compliant design? Set out in detail, including a full risk assessment.
- v. What cost savings would result from the implementation of the design solution with the proposed departure when compared to a fully compliant design? Set out in detail.
- w. What environmental benefits would result from the implementation of the design solution with the proposed departure when compared to a fully compliant design? Set out in detail.
- x. Set out any other considerations that are relevant to the assessment of the design solution with the proposed departure when compared to a fully compliant design.

- y. Set out any elements of your proposed departure that you consider to be innovative (if any) and list any associated risks.
- z. What mitigation measures are proposed to be implemented as part of the design solution incorporating the departures? Set out the effects of these measures in detail.
 - aa. Referring to the responses to item 16 above, explain why the design with the departure has a net benefit when compared to a fully compliant design.
 - bb. Reasons why the risks after mitigation are as low as reasonably practicable.

3 Scheme Departures from Standard

- 3.1.1 The geometrical standards referred to in the Appendix A Departure from Standards list relate to the Design Manual for Roads and Bridges (DMRB) contents, which were published up to and including October 2019, which correlate to the programmed date for the Design Fix, prior to the DCO submission for the Scheme.
- 3.1.2 Each Departure from Standard within the Appendix A Departure from Standards list has been assigned a unique reference number, which is explained in the key at the start of Appendix A. These references include information about the organisation primarily responsible for approving the departure, where it is not National Highways. When these departures have been approved by the relevant local authorities, they must then be submitted to Departure Approval System (DAS) for confirmation by National Highways that the Departure from Standard has no impact on the operation of the trunk road.
- 3.1.3 The focus has been on those Departures from Standard that are essential for the delivery of the scheme, which if not approved, could require mitigation measures that would affect the required land-take or order limits, which could have resulted in the need for further consultation. . It is likely that as the Scheme design progresses through the detailed design stage other Departures from Standard will be identified and applied for. These Departures from Standard will not affect the approved Order limits.

Appendix A – Approved Departure from Standards list

DEPARTURES FROM STANDARD CHECKLIST

BLACK CAT JUNCTION AND ASSOCIATED MAINLINE AND SIDE ROAD GEOMETRY

Key

DFS - Departure from Standards BCJC - Black Cat Junction MD - Merge or Diverge
 A1ML - A1 Mainline at Black Cat Junction SSR - Service Road for BP Garage and Services
 A42*ML - A421/A428 Mainline at Black Cat Junction
 DAS Reference number The unique reference number given by the Highways England DAS system, which is given upon entry of the departure in the system. Departures which have been submitted or are in preparation will display this number.

A1 Mainline (11 No. Departures)

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
DFS-A1ML-04 DAS Reference: 101310	Highways	CD 122	4.1	A1 Southbound, North of Black Cat Junction	There is a residential access which will be retained. It is located 692m upstream of the of the Black Cat Junction A1 southbound diverge, measured in accordance with CD122, fig 4.4f. This is less than the 1km desirable minimum weaving length required for rural A-P roads in accordance with CD122, clause 4.1.	<p>2 vehicles were observed using the private access on a single day count taken on 29 June 2018 over a 24 hour period. This is very low in risk by comparison with the BP Garage and Services merge, which is closer to the Black Cat Junction A1 S/B diverge, and during a 12 hour count taken on 14 Sept 2017, 1766 vehicles were observed exiting to the garage.</p> <p>The weaving distance of the access is 692m from the A1 S/B diverge, which is greater than that of 389m for the existing BP Garage Merge. Therefore, the concentration of traffic in the left lane to use the Black cat Junction S/B exit is likely to be less pronounced.</p> <p>This access is therefore in a lower risk category than the existing BP Garage and services merge access.</p> <p>This access is currently from the bus stop. The bus stop is proposed to be moved onto the Great North Road (North), which will make the future layout of the residential access less complex.</p> <p>The feasibility of options to rationalise or remove the access in order to reduce or remove weaving conflict are not considered to be practicable on cost and environmental grounds.</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.</p>	20/03/2020	Approved on 29/04/2020
DFS-A1ML-05 DAS Reference: 101312	Highways	CD 122	4.1	A1 Southbound, North of Black Cat Junction	The southbound merge from the northern section of the Great North Road will remain open. The nose of the merge is located 845m upstream of the Black Cat Junction A1 southbound diverge, measured in accordance with CD122, fig 4.4f. This is less than the 1km desirable minimum weaving length required for rural A-P roads in accordance with CD122, clause 4.1.	<p>Vehicle counts were not taken for this access, but based on the low number of residences on this isolated section of road, the access is considered to be low use.</p> <p>The feasibility of options to rationalise or remove the access in order to reduce or remove weaving conflict are not considered to be practicable on cost and environmental grounds.</p> <p>[Note: It is proposed to relocate the bus stop, which is currently located on the A1 S/B carriageway, off the mainline to the Great North Road (North). The bus stop must be retained as it serves the community. The visibility to the existing bus stop (which is a request stop) is poor (approximately 70m). By moving it to the proposed location, the visibility to the bus stop will improve, and the existing merge taper will help busses re-join the A1. However, passengers will need to walk further to the bus stop.]</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km weaving section north of Black Cat Roundabout.</p>	02/04/2020	Approved on 12/05/2020
DFS-A1ML-06 DAS Reference: 100746	Highways	CD 122	4.1	A1 Southbound, South of Black Cat Junction	The Barford Road junction, which is restricted to left-out into the minor road, will remain open. The nose of the diverge is 527m downstream of the Black Cat Junction A1 southbound notional merge taper, measured in accordance with CD122, figure 4.4a. This is less than the 1km desirable minimum weaving length required for rural A-P roads in accordance with CD 122, clause 4.1.	<p>This exit into Barford Road is quite highly used, with single day traffic counts indicating that 797 vehicles used this junction on 14th September 2017 between 07:00 and 19:00.</p> <p>Traffic modelling was therefore undertaken to establish whether the traffic from the Barford Road junction will queue back onto the A1 southbound carriageway.</p> <p>This departure is in combination with departure reference DFS-A1ML-13.</p> <p>One of 4 No. associated departures on the A1 S/B within the 1km weaving section north of Black Cat Roundabout.</p>	17/01/2020	Approved on 24/03/2020

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
DFS-A1ML-13 DAS Reference: 100674	Highways	TD 9/93	1.26c	A1 Southbound, on the approach to Barford Road Junction off-slip	The stopping sight distance (SSD) to Barford Road Junction is approximately 155m for Lane 1 and 96m for Lane 2, to the low object (0.26m), which is 1.12 steps and 2.79 steps below the 215m desirable minimum standard for a 60mph (100kph) design speed, respectively. In accordance with TD 9/93, clause 1.26c, the desirable minimum SSD is required on the main road for a distance of 1.5*SSD (322.5m), on the approach to major/minor junctions.	<p>The SSD is reduced by the existing bridge parapets in the central reserve on the existing right hand bend. Increasing the visibility would require widening the bridges, and the central reserve would need to be widened by realigning the A1 N/B carriageway.</p> <p>Visibility to the high object (1.05m) improves to 179m from Lane 1 and 127m from Lane 2, which is 0.66 steps and 1.82 steps respectively below the 215m desirable minimum for a 60mph (100kph) design speed. These envelopes are created under the condition that there is no vegetation or traffic signs present in the central reserve. However, existing vegetation currently further limits SSD.</p> <p>It is possible to improve visibility to the high object by comparison with that which currently exists by clearing vegetation in the Central Reserve.</p> <p>This departure is in combination with departure reference DFS-A1ML-06.</p> <p>One of 4 No. associated departures on the A1 S/B within the 1km weaving section north of Black Cat Roundabout.</p>	17/01/2020	Approved on 14/02/2020
DFS-A1ML-18 DAS Reference: 101126	Highways	CD 169	7.6	A1 Southbound on the approach to the maintenance hardstanding south of Barford Road Junction.	The visibility from the A1 mainline to the maintenance hardstanding should be the Desirable Minimum Stopping Sight Distance (215m). However, the available SSD is only 194m from Lane 1 and 106m from Lane 2, which is 0.4 and 2.5 steps below desirable minimum respectively.	<p>The visibility is restricted by the central reserve barrier on the existing right hand bend, which could be improved to the high object, if some of the vegetation were to be cleared within the central reserve.</p> <p>Since there are some cabinets that need to be maintained next to the existing lay-by, Highways England OD have agreed that the existing parking lay-by can be removed and replaced with a maintenance hardstanding to be used only by maintenance vehicles operating to safe methods of working, with the required vehicle livery and flashing lights.</p> <p>The visibility for users exiting the lay-by is in compliance with the requirements of CD 169, clause 7.2.</p> <p>Consideration was given to locating the proposed maintenance hardstanding on the adjacent Barford Road northbound verge, since the cabinets can be maintained from there. However, Highways England OD do not want this owing to concerns regarding manual handling, slips, trips and falls, and the security of their worker's.</p> <p>This departure is in combination with departure reference DFS-A1ML-07</p> <p>One of 4 No. associated departures on the A1 N/B within the 1km weaving section north of Black Cat Roundabout.</p>	17/01/2020	Approved on 24/03/2020
DFS-A1ML-23 DAS Reference: 101298	Highways	TD 9/93	1.26c	A1 Southbound, on the approach to the BP Garage off-slip.	The Stopping Sight Distance to the BP Garage should be 215m, for the 60mph (100kph) design speed. The visibility in this region reduces to approximately 115m from Lane 2, which is 2.17-steps below desirable minimum and 173m from Lane 1, which is a 0.76-steps below desirable minimum. In accordance with TD 9/93, clause 1.26c, the desirable minimum SSD is required on the main road for a distance of 1.5*SSD (322.5m), on the approach to major/minor junction diverges.	<p>The visibility is restricted by the central reserve barrier and anti-dazzle fencing on the existing right hand bend, which has a relaxation of 1 design speed step in horizontal curvature, of approximately 510m radius.</p> <p>The existing 122m available SSD will reduce slightly to 115m due to the realignment of the A1, which is necessary to accommodate the BP Garage Service Road.</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.</p>	04/03/2020	Approved on 14/04/2020
DFS-A1ML-24 DAS Reference: 101202	Highways	TD 9/93	1.24	A1 Northbound, North of Black Cat Junction	<p>The existing left hand bend on the A1, north of the Black Cat Junction A1 N/B merge, has a radius of approximately 510m, which is a 1 step relaxation below desirable minimum. The visibility in this region reduces to approximately 156m from Lane 1, which is 1.1 steps below desirable minimum and 209m from Lane 2, which is 0.11 steps below desirable minimum.</p> <p>TD 9/93 clause 1.24 requires that for SSD relaxations of greater than 1 step (160m for the 60mph [100kph] speed limit) coincident with horizontal curvature relaxations of greater than 1 design speed step below desirable are not permitted.</p>	<p>The visibility is restricted by the highway boundary, at a pinch point between the properties on both sides of the A1.</p> <p>Currently the restriction to SSD is on the approach to an existing parking lay-by and bus stop. However, the parking lay-by has been converted to a maintenance lay-by, and this and the bus stop have been relocated northwards where the 215m desirable minimum SSD for the 60mph speed limit is available.</p> <p>The existing 156m available SSD will reduce slightly to 141m due to the realignment of the A1, which is necessary to accommodate the BP Garage Service Road. The existing technology cabinets and lighting feeder pillar units are not currently protected by a VRS, however following a RRRAP assessment, it indicates that a VRS is required to protect the cabinets. The visibility to the low object (0.26m) would therefore have been further restricted by the VRS, resulting in a reduced available SSD of 122m. However, VRS will not be required, as the cabinets will be moved northwards to the location of the proposed maintenance hardstanding as described in departure reference DFS-A1ML-01.</p> <p>This departure is associated with departure reference DFS-A1ML-01 & DFS-A1ML-26.</p> <p>One of 4 No. associated departures on the A1 N/B within the 1km weaving section north of Black Cat Roundabout.</p>	05/02/2020	Approved on 24/06/2020

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
DFS-A1ML-25 DAS Reference: 100767	Highways	CD 169	3.7	A1 Northbound, North of The Lane	The proposed bus stop is within 310m of an access at the start of the existing Wyboston Junction A1 northbound diverge. This is less than what is allowed by CD 169 clause 3.7, which requires that a lay-by must be at least 3.75V (375m) from a junction or access, for the 60mph (100kph) design speed.	The bus stop must be retained as it serves the community. In its current location, there is restricted visibility to the bus stop. This reduces the available SSD due to the realignment of the A1, which is necessary to accommodate the BP Garage Service Road, and would further reduce owing to the need to protect the existing technology cabinets (which are currently unprotected), in accordance with the RRRAP assessment. This departure is in combination with departure reference DFS-A1ML-26 & DFS-A1ML-28. One of 4 No. associated departures on the A1 N/B within the 1km weaving section north of Black Cat Roundabout.	05/02/2020	Approved on 13/03/2020
DFS-A1ML-26 DAS Reference: 101201	Highways	CD 122	4.1	A1 Northbound, North of The Lane	The proposed bus stop is within 656m downstream of the Black Cat Junction N/B merge, measured in accordance with CD122, fig 4.4b. This is less than the 1km desirable minimum weaving length required for rural A-P roads in accordance with CD122, clause 4.1	The bus stop must be retained as it serves the community, but it is not possible to comply with the standards for weaving distance from the Black Cat and Wyboston junctions, as they are approximately 1km apart. This departure is in combination with departure reference DFS-A1ML-25 & DFS-A1ML-28. One of 4 No. associated departures on the A1 N/B within the 1km weaving section north of Black Cat Roundabout.	05/02/2020	Approved on 14/07/2020
DFS-A1ML-27 PW Departure name 1 (HE): HE551495-ACM-HAC-ZN1_ML_Z_ZZ-DF-CH-1082 PW Risk Assessment Name: HE551495-ACM-HAC-ZN1_ML_Z_ZZ-RA-CH-1082 DAS Reference: 101313	Highways	CD 123	3.4	A1 Southbound, existing access from the bus stop North of the existing footbridge	The visibility splay to the right from the existing access is restricted. For the minimum x distance of 2m, the y distance is approximately 140m to 150m. This is less than the desirable minimum y distance of 215m for the 60mph (100kph) A1 mainline design speed, as required by CD 123, clause 3.4.	2 vehicles were observed using the private access on a single day count taken on 29 June 2018 over a 24 hour period. This is very low in risk by comparison with the BP Garage and Services merge, which is closer to the Black Cat Junction A1 S/B diverge, and during a 12 hour count taken on 14 Sept 2017, 1766 vehicles were observed exiting the garage. The weaving distance of the access is 690m from the A1 S/B diverge, which is greater than that of 389m for the existing BP Garage Merge. Therefore, the concentration of traffic in the left lane to use the Black cat Junction S/B exit is likely to be less pronounced. The required 215m SSD is available on the A1 mainline on the approach to the access, whereas the SSD to the BP access is restricted by an existing right hand bend. This access is therefore in a lower risk category than the existing BP Garage and services merge access. This access is currently from the bus stop, which is proposed to be moved onto the Great North Road (North), which will make the future layout less complex. The feasibility of options to rationalise or remove the access in order to reduce or remove weaving conflict are not considered to be practicable on cost and environmental grounds. This departure is in combination with departure reference DFS-A1ML-04. One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.	06/04/2020	Approved on 12/05/2020
DFS-A1ML-28 DAS Reference: 101605	Highways	CD 122	4.1	A1 Northbound, North of Black Cat Junction	There is a proposed bus stop lay-by 310m upstream of the Wyboston A1 northbound diverge taper, measured in accordance with CD122, figure 4.4b. This is less than the 1km desirable minimum weaving length required for rural A-P roads in accordance with CD122, clause 4.1.	The bus stop must be retained as it serves the community, but it is not possible to comply with the standards for weaving distance from the Black Cat and Wyboston junctions, as they are approximately 1km apart. This departure is in combination with departure reference DFS-A1ML-25 & DFS-A1ML-26. Additional departure submitted as requested by Highways England during their determination of DFS-A1ML-26.	19/06/2020	Approved on 17/07/2020

A421/A428 Mainline (4 No. Departures)

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
DFS-A42*ML-01 DAS Reference: 101801	Highways	TD 9/93	1.24	A421/A428 W/B Mainline Chainage 1852 to 1502 through Black Cat Junction.	The vertical crest K value is 115 and the stopping sight distance reduces to a minimum of 217m, which are both up to 1 step below desirable minimum. TD 9/93, para. 1.24 only allows stopping sight distance relaxations of up to 1 design speed step to be coincident with horizontal curvature relaxations of up to 1 design step below desirable minimum. All other combinations must be treated as departures.	<p>This departure is outside the region which is defined by TD 9/93, para. 1.26d as being on the approach to the Black Cat Junction A421 W/B merge.</p> <p>Primarily, the vertical crest curve is being relaxed owing to the constraint to the vertical alignment caused by the Roxton Road overbridge.</p> <p>The relaxation in the SSD was also requested by the structures team, in order to avoid excessively wide verges for the bridge decks over Black Cat Roundabout.</p> <p>It is noted that IAN 198/17 para 2.2.1 does permit combinations of relaxations in the vertical crest curve and the stopping sight distance.</p> <p>This departure is a combination of REL-A42*ML-01, for mainline chainage 2000 to 1502 and relaxation REL-A42*ML-02, for mainline chainage 1213 to 1852.</p>	03/08/2020	Approved on 09/09/2020
DFS-A42*ML-02 DAS Reference: 101802	Highways	TD 9/93	1.24	A421/A428 E/B Mainline Chainage 1213 to 1675 through Black Cat Junction.	The vertical crest K value is 115 and the stopping sight distance reduces to a minimum of 222m, which are both up to 1 step below desirable minimum. TD 9/93, para. 1.24 only allows stopping sight distance relaxations of up to 1 design speed step to be coincident with horizontal curvature relaxations of up to 1 design step below desirable minimum. All other combinations must be treated as departures.	<p>This departure is outside the region which is defined by TD 9/93, para. 1.26d as being on the approach to the Black Cat Junction A421 E/B merge.</p> <p>Primarily, the vertical crest curve is being relaxed owing to the constraint to the vertical alignment caused by the Roxton Road overbridge.</p> <p>The relaxation in the SSD was also requested by the structures team, in order to avoid an excessively wide central reserve for the bridge decks over Black Cat Roundabout.</p> <p>It is noted that IAN 198/17 para 2.2.1 does permit combinations of relaxations in the vertical crest curve and the stopping sight distance.</p> <p>This departure is a combination of REL-A42*ML-02, for mainline chainage 1213 to 1852 and relaxation REL-A42*ML-03, for mainline chainage 1040 to 1675.</p>	19/08/2020	Approved on 21/09/2020
DFS-A42*ML-03 DAS Reference: 101800	Highways	TD 9/93	1.26	A421/A428 Mainline Chainage 1213 to 1493 through Black Cat Junction on the approach to the W/B merge.	The vertical crest curvature for the mainline carriageway is relaxed to K=115 which is 0.82 steps below desirable minimum for a 120kph design speed. This occurs within the region which is defined by TD 9/93, para. 1.26d as being on the approach to the Black Cat Junction A421 W/B merge, where relaxations to the vertical crest and sag radius, or stopping sight distance are not permitted, i.e. between chainage 510 and 1493. The relaxation occurs between chainage 1213 and 1852, which encroaches by 280m into this region, which is therefore a departure.	<p>Primarily, the vertical crest curve is being relaxed owing to the constraint to the vertical alignment caused by the Roxton Road overbridge.</p> <p>As there is a direct relationship between the vertical crest curve radius and the stopping sight distance, for a straight carriageway alignment, a relaxation in the vertical radius would normally automatically result in a reduction in the stopping sight distance. However, 3D analysis undertaken on the proposed design, which takes into account the combined effects of the relaxed vertical crest curve, the adjacent sag curve, the horizontal radius, the super-elevation, and verge widening, demonstrates that the desirable minimum stopping sight distance is available on the approach to the merge as defined by TD 9/93 paragraph 1.26d.</p> <p>This departure is related to departure ref. DFS-A42*ML-01 .</p>	24/07/2020	Approved on 28/08/2020
DFS-A42*ML-04 DAS Reference: 101803	Highways	TD 9/93	1.26	A421/A428 Mainline Chainage 1682.5 to 1852 through Black Cat Junction on the approach to the E/B merge.	The vertical crest curvature for the mainline carriageway is relaxed to K=115 which is 0.82 steps below desirable minimum for a 120kph design speed. This occurs within the region which is defined by TD 9/93, para. 1.26d as being on the approach to the Black Cat Junction A421 E/B merge, where relaxations to the vertical crest and sag radius, or stopping sight distance are not permitted, i.e. between chainage 1682.5 and 2360. The relaxation occurs between chainage 1213 and 1852, which encroaches by 169.5m into this region, which is therefore a departure.	<p>Primarily, the vertical crest curve is being relaxed owing to the constraint to the vertical alignment caused by the Roxton Road overbridge.</p> <p>A reduction in the vertical radius can automatically result in a reduction in the stopping sight distance. Therefore, checks have been undertaken to ensure that the desirable minimum stopping sight distance is available within the region on the approach to the A421 eastbound merge where a relaxation is not permitted in accordance with TD 9/93, para. 1.26d. This takes account of the relieving effect of the adjacent element of the vertical alignment, which is a straight gradient.</p> <p>This departure is related to departure ref. DFS-A42*ML-02</p>	14/08/2020	Approved on 09/09/2020

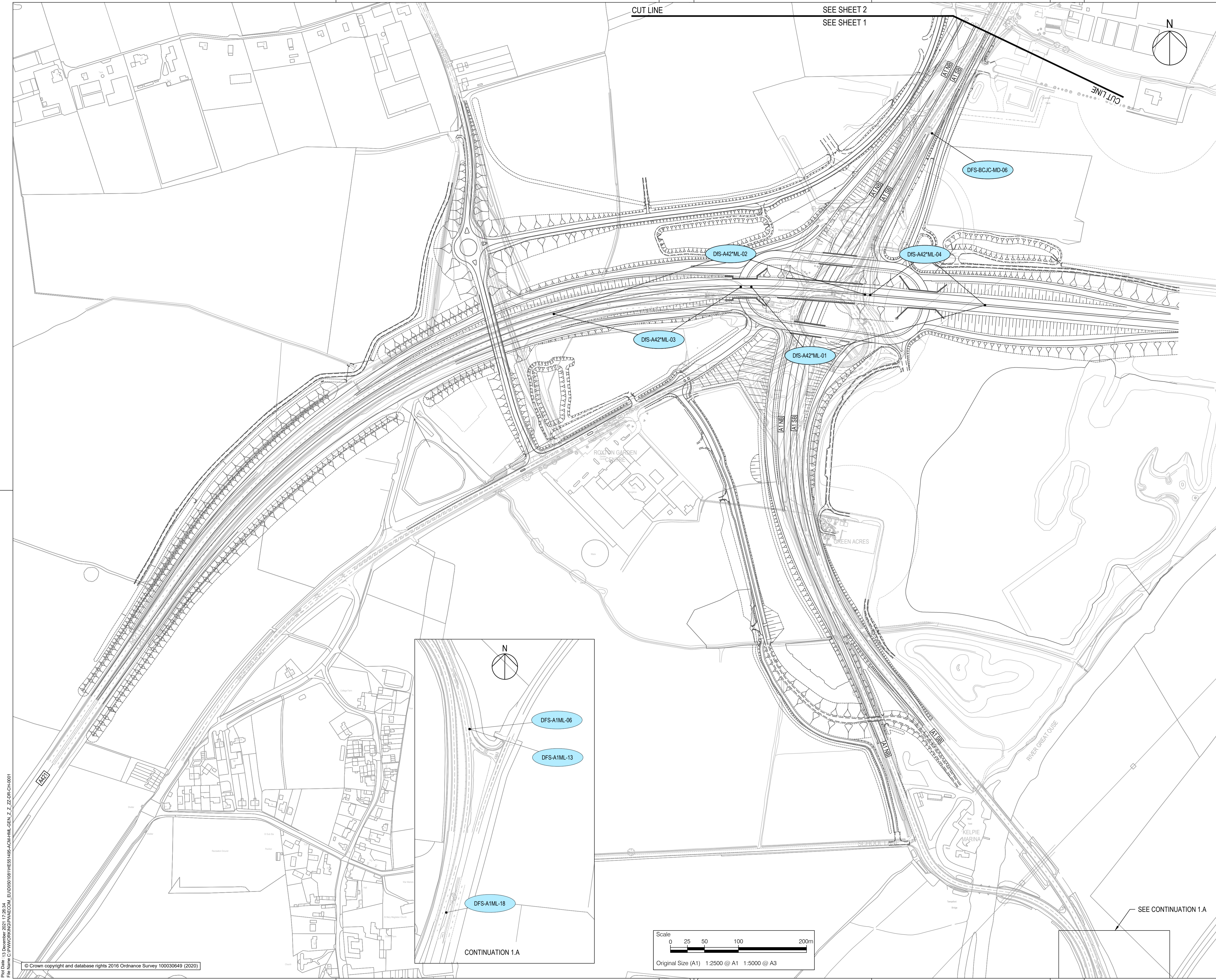
Merge/ Diverge Layouts (1 No. Departure)

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
Dfs-BCJC-MD-06 DAS Reference: 101294	Highways	CD 122	3.29	A1 Southbound Diverge to Black Cat Junction Circulatory (Diverge I)	<p>The critical design flows, which occur in the PM Peak, are 1285 on the off-slip and 1443 on the mainline. CD 122 para. 3.26.2 permits a diverge layout that offers a higher level of capacity. In accordance with CD 122 Figure 3.26a, a Layout B diverge will, for example, accommodate off-slip flows of up-to 1600 vph for mainline flows of up to 1600 vph, which is compliant.</p> <p>However, Layout B Option 2 - Two lane auxiliary diverge is proposed for the reasons explained to the right.</p> <p>This is a departure from standards, as CD 122 requires that this type of diverge shall only be used when modifying an existing junction.</p>	<p>The Layout B Ghost Island Diverge is not proposed, as the requirement for desirable minimum SSD for 1.5x the SSD on the approach to the junction is compromised by the right hand bend on the A1 adjacent to the BP garage. However, this does not affect the shorter Layout B Option 2 - Two lane auxiliary diverge.</p> <p>Another reason for adopting the Layout B Option 2 - Two lane auxiliary diverge is the constraint imposed by the back gardens for the properties on the Great North Road.</p> <p>This is based on the PCF Stage 3 traffic flows. VISSIM Modelling was undertaken to check that the diverge operates appropriately.</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.</p>	04/03/2020	Approved on 14/04/2020

Service Road for BP Garage and Services (One-way section to be retained in the ownership of Highways England. Two-way section to be adopted by Bedford Borough Council)

Departure Reference	Discipline	DMRB Standard	Clause	Location	Description	Comments	Submission Date	Approval Date
DFS-BCJC-SSR-02 DAS Reference: 101315	Highways	TD 27/05	4.2.1	Lower one-way section of service road for BP Garage and Services.	Rather than having an MG1C, Slip Road Carriageway cross-section in accordance with TD 27/05, Figure 4-3c, the lower one-way section of the service road, which is approximately 250m in length, has a 6.0m wide cross-section,	<p>Highways England OD have been consulted, and have raised concerns about parking, antisocial behaviour, and how the speed limit would be enforced.</p> <p>Following these discussions, the proposed mitigation is to install ANPR enforcement cameras for the one-way section, and double red lines, in order to provide an enforced red route clearway.</p> <p>In addition, it is proposed to provide vehicle containment kerbs on the nearside, to physically discourage parking.</p> <p>It is proposed for this section of carriageway to have a 4.0m wide through lane with 1.0m hard strips. This is considered to be preferable to including a hard shoulder, which could encourage unofficial parking for HGVs, which would be viewed as being a potential security risk for the adjacent properties.</p> <p>The proposed 6m cross-section is based on the cross-section for single lane dualling in accordance with CD123, Clause 6.15, which will allow traffic to pass a stopped vehicle without leaving the paved width.</p> <p>This section of the service road will remain in the ownership of Highways England, but arrangements will be made for the enforcement of the traffic orders to be undertaken by others.</p> <p>This relates to departure ref. DFS-BCJC-SSR-03.</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.</p>	25/03/2020	Approved on 29/04/2020
DFS-BCJC-SSR-03 DAS Reference: 101314	Highways	TD 27/05	4.2.1	Upper one-way section of service road for BP Garage and Services	Rather than having a MG1C, Slip Road Carriageway cross-section in accordance with TD 27/05, Figure 4-3c, the upper one-way section of the service road has a 3.5m wide cross-section for approximately 130m from the BP Garage exit, and then transitions to the 6m width of the lower one-way section, over a distance of approximately 60m.	<p>Highways England OD have been consulted, and have raised concerns about parking, antisocial behaviour, and how the speed limit would be enforced.</p> <p>Following these discussions, the proposed mitigation is to install ANPR cameras for the one-way section, and double red lines, in order to provide an enforced red route clearway.</p> <p>The available width for this section is restricted by the pinch point between the properties on both sides of the A1, so it is proposed to provide a 3.5m wide carriageway.</p> <p>The proposed carriageway width is not sufficient to allow traffic to pass a stopped vehicle. Therefore it is proposed to provide a 3.0m strengthened verge, capable of withstanding very occasional heavy vehicle over-run.</p> <p>On the rare occasion of a breakdown, vehicles could temporarily use the verge as an emergency route to pass the broken down vehicle.</p> <p>It is proposed to provide splay kerbs with a 75mm upstand, with drop kerbs at either end to enable the verge to be mounted.</p> <p>The verge would include a 1m grass cell margin with bollards positioned centrally within it, which would physically discourage parking in normal circumstances, but could be removed in the event of a breakdown.</p> <p>This section of the service road will remain in the ownership of Highways England, but arrangements will be made for the enforcement of the traffic orders to be undertaken by others.</p> <p>This relates to departure ref. DFS-BCJC-SSR-02.</p> <p>One of 7 No. associated departures for the Black Cat Junction A1 S/B diverge, the BP service road, and within the 1km A1 weaving section north of Black Cat Roundabout.</p>	12/03/2020	Approved on 21/04/2020

Appendix B – Approved Departures from Standard location drawings



- NOTES
- DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
 - ALL DIMENSIONS, CHAINAGES, LEVELS AND COORDINATES ARE IN METRES UNLESS DEFINED OTHERWISE.
 - THIS DRAWING AND DRAWING HE51495-ACM-HML-GEN-Z_Z_ZZ-DR-CH0002 SHOWS THE DEPARTURES FROM STANDARD APPROVED BY NATIONAL HIGHWAYS SAFETY, ENGINEERING AND STANDARDS.
 - A UNIQUE CODE HAS BEEN ADOPTED FOR EACH OF THE DEPARTURES FROM STANDARD. THIS IS INCLUDED IN THE LIST OF THE APPROVED DEPARTURES FROM STANDARDS IN THE APPLICANTS RESPONSE TO ISSUE SPECIFIC HEARING 4 ITEM 15 DEPARTURES FROM STANDARD (TR010044/EXAM/9.85)

KEY

DFS-XXXX LOCATION OF A APPROVED DEPARTURE FROM STANDARD WITH UNIQUE REFERENCE CODE.



Revision Details	By	Check	Date	Suffix
First Issue	JT	PS	13/12/21	P01

Purpose of issue
DCO EXAMINATION

Client
National Highways
Woodlands
Manton Industrial Estate
Bedford
MK41 7LW

Working on behalf of
national highways

Development Consent Order Number
TR010044

Project Title
A428 BLACK CAT TO CAXTON GIBBET IMPROVEMENTS

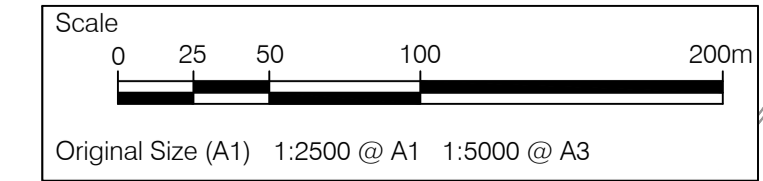
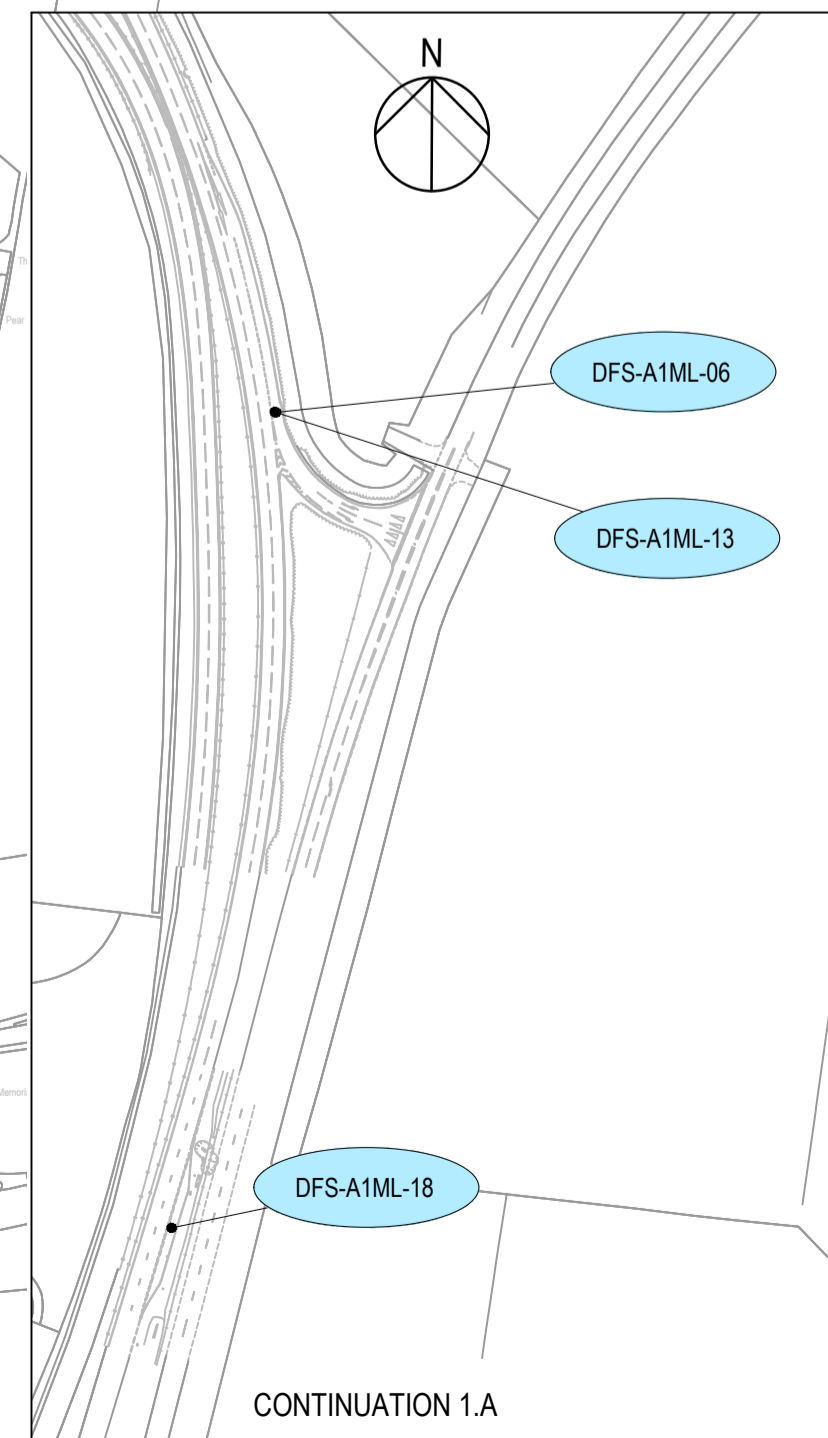
Drawing Title
APPROVED DEPARTURES FROM STANDARD SHEET 1 OF 2

Designed	Drawn	Checked	Approved	Date
KBP	JT	JW	PS	13/12/21

Internal Project No. 60541541
Scale @ A1 ---
Suitability D9
Zone General

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Drawing Number
National Highways PIN HE551495 -ACM -HML - GEN_Z_Z_ZZ -DR-CH-0001
I Originator I Volume
I Type I Role I Number
P01



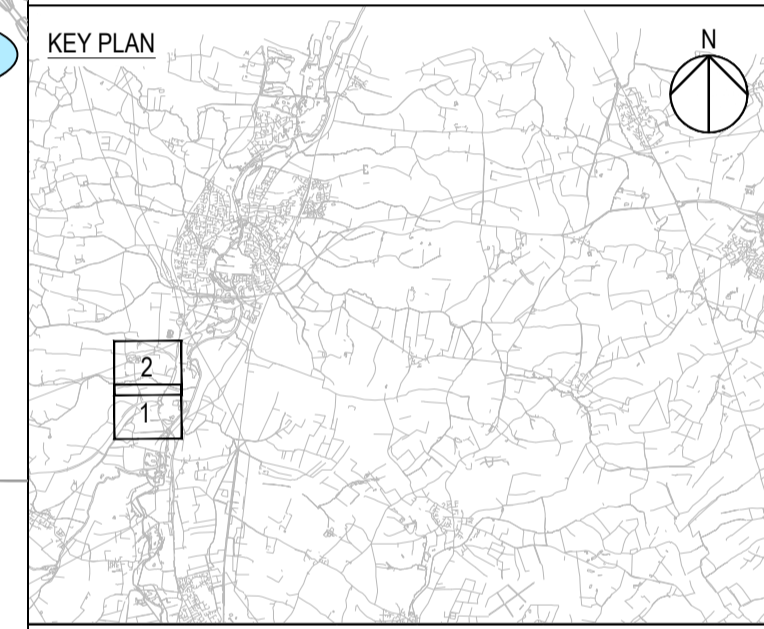
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- NOTES**
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 - THIS DRAWING AND DRAWING HE51495-ACM-HML-GEN-Z_Z_ZZ-DR-CH001 SHOWS THE DEPARTURES FROM STANDARD APPROVED BY NATIONAL HIGHWAYS SAFETY, ENGINEERING AND STANDARDS.
 - A UNIQUE CODE HAS BEEN ADOPTED FOR EACH OF THE DEPARTURES FROM STANDARD. THIS IS INCLUDED IN THE LIST OF APPROVED DEPARTURES FROM STANDARDS IN THE APPLICANTS RESPONSE TO ISSUE SPECIFIC HEARING 4 ITEM 15 DEPARTURES FROM STANDARD [TR010044/EXAM9.85]

KEY

DFS-XXXX LOCATION OF A APPROVED DEPARTURE FROM STANDARD WITH UNIQUE REFERENCE CODE.



Revision Details	By	Check	Date	Suffix
First Issue	JT	PS	13/12/21	P01

DCO EXAMINATION

Client: National Highways
 Woodlands
 Manton Lane
 Manton Industrial Estate
 Bedford
 MK41 7LW

Working on behalf of

Development Consent Order Number
TR010044

Project Title
A428 BLACK CAT TO CAXTON GIBBET IMPROVEMENTS

Drawing Title
APPROVED DEPARTURES FROM STANDARD SHEET 2 OF 2

Designed	Drawn	Checked	Approved	Date
KBP	JT	JW	PS	13/12/21

Internal Project No. 60541541
 Scale @ A1 ---
 Suitability D9
 Zone General

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Drawing Number: HE551495 - ACM - HML - GEN_Z_Z_ZZ - DR - CH-0002
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 Originator: 1
 Volume: 1
 Location: 1
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 Number: P01

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