M25 JUNCTION 28 IMPROVEMENTS

Series 300 Fencing Specification - Appendix 3/1: Fencing, Gates and Stiles

PCF STAGE 5
SUITABLE FOR REVIEW & COMMENT | S3
HE551519-SWE-HFE-ZZ-SP-CH-50001 | P03
07/04/22

Notice

Highways England Programme Leader:	[redacted]
Highways England Project Manager:	[redacted]
Graham Sweco Delivery Integration Partner, Project Manager:	[redacted]
PCF STAGE 5 Supplier:	SWECO

Document control

Client	JOHN GRAHAM CONSTRUCTION LIMITED
Project	M25 JUNCTION 28 IMPROVEMENTS
Document title	Series 300 Fencing Specification - Appendix 3/1:Fencing, Gates and Stiles
Document reference	HE551519-SWE-HFE-ZZ-SP-CH-50001

Revision history

Revision	Purpose description	Originator	Checked	Approved	Authorised	Date
P03	ADDITIONAL DETAILS INCLUDED	[redacted]	[redacted]	[redacted]	---	07/04/22
P02	UPDATED FOLLOWING GRAHAMS COMMENTS	[redacted]	[redacted]	[redacted]	---	02/02/22
P01	FIRST ISSUE	[redacted]	[redacted]	[redacted]	---	04/11/21

Prepared for:

Graham
Ballygowan Road
Hillsborough
Co Down
BT26 6HX

Prepared by:

Sweco UK Ltd
Grove House
Mansion Gate Dr
Leeds
LS7 4DN

Table of contents

Tables

301. Appendix 3/1: Fencing, Gates and Stiles

301.1. Temporary Fencing

301.1.1. There is no temporary fencing to be included as part of this design.

301.1.2. Any temporary fencing erected for tree protection shall be removed on completion of all of construction works. Refer to Series 200 site clearance for details.

301.2. Timber Quality

301.2.1. Timber quality to conform to the requirements of Clause 304.

301.3. Fittings

301.3.1. Fittings to conform to the requirements of Clause 305 and shall comply with Manual for Contract Documents for Highway Works (MCHW) Volume 3, Series H drawings.

301.4. Permanent Fencing: Wooden Fencing, Gates, and Stiles

301.4.1. All works in relation to permanent fencing, gates, and stiles shall be carried out in accordance with Series 300 of the Specification for Highway Works (SHW).

301.4.2. For typical fence and gate, details refer to the MCHW Volume 3, Section 1 Series H. Refer to Specification Appendices 0/4 for reference for Highway Construction Details (HCD).

301.4.3. All permanent fencing shall be erected to present a flowing alignment both in plan and elevation following approximately the level of the ground and the Contractor shall trim the ground along the line of the fence where required.

301.4.4. The fencing shall be neatly and effectively joined to the existing fence/hedge/boundary; details to be agreed on Site with the Overseeing Organisation.

301.4.5. Where fence line ties into existing, terminate or change type a double post arrangement may be required.

301.4.6. Timber post and 4 rail fences to be erected in accordance with HCD Drawing Number H3, BS 1722:5:2006 and the following additional requirements:

- Fence rails shall be fixed to the roadside of the fence post.

- For lengths of post in 'normal' ground conditions refer to the requirements in BS 1722:5. This does not cover situations where the ground is soft or firm, or close to the top of an embankment, when it may be necessary to modify the specified lengths or foundations sizes. The method used to set timber posts in the ground is also determined by the local ground conditions.

301.4.7. Close Boarded fences to be erected in accordance with BS 1722:5:2006 at a height of 3.0m above finished ground level.

Refer to structure's drawing: HE551519-SWE-SSP-ZZ-DR-CB-50100 & HE551519-SWE-SSP-ZZ-DR-CB-50101 for post and foundation details.

301.4.8. Deer fencing to be erected in accordance with HCD Drawing Number H40, Type 5, BS 1722:2:2020

301.4.9. All gates shall be in accordance with requirements of Clause 308.

301.4.10. Gates to be provided where shown on drawings HE551519-SWE-HFE-ZZ-DR-CH-50001 to HE551519-SWE-HFE-ZZ-DR-CH-50006.

301.4.11. Where deer and or otter provision is proposed. Maintenance access via gates; shall be required to maintain a level of deer and or otter provision with the following additional requirements:

- Where deer and or otter provision is required. Gates to be retrofitted with suitable otter cranks. 50 x 4 galvanised mild steel flat cranked extensions (or similar). as detailed in HCD Drawing Number H48.
- Brackets to be either be welded or bolted to the gate and steel wire chain link mesh conforming to HCD Drawing Number H48 (Type 7) to be attached by use of suitable hog rings.
- Steel wire chain link mesh conforming to HCD Drawing Number H48 (Type 7) to be attached by use of suitable hog rings, where mesh is required to prevent otter burrowing beneath the gate a reasonable overhang is require. Suitable clearance of <100mm is to be maintained to ensure the gate swings freely without obstruction.
- To prevent otter burrowing beneath gates to contain otters, the centre line of the gate position and span between gate posts is a 300mm wide by 500mm deep trench filled with ST1 concrete.

301.5. Permanent Fencing: Wire Dropper Fencing

301.5.1. The following stock proofing shall be provided to permanent fencing where shown on the drawings.

- Deer fencing to be erected in accordance with HCD Drawing Number H5 and with
- Deer and Otter fencing to be erected in accordance with HCD Drawing Number H48 (Type 7). Wire dropper fences shall be in accordance with requirements of Clause 306.
- For connections to reinforced soil walls and structures straining posts shall be positioned a minimum of 2m, maximum 2.5m from the respective structure face and a no-load otter mesh infill panel prescribed between the straining post and the structure. The no-load infill panel shall include provision for continuation of the otter mesh below ground to ensure the fence remains effective up to the structure face, unless grasscrete is present below the infill panel in which case a maximum 50mm gap is permitted between the panel and the top surface of the grasscrete. Refer to the individual Structures GA drawings referenced below for details including infill panel connection details:

HE551519-SWE-SBR-B01-DR-CB-50100 & 50101
HE551519-SWE-SBR-B02-DR-CB-50100
HE551519-SWE-SBR-B03-DR-CB-50110 & 50111
HE551519-SWE-SBR-B04-DR-CB-50110 & 50111
HE551519-SWE-SBR-B05-DR-CB-50110 & 50111

HE551519-SWE-SBR-C01-DR-CB-50100
HE551519-SWE-SBR-C02-DR-CB-50100

HE551519-SWE-SMN-C03-DR-CB-50001
HE551519-SWE-SMN-C04-DR-CB-50001 to 50003
HE551519-SWE-SMN-C05-DR-CB-50001
HE551519-SWE-SMN-C06-DR-CB-50001

HE551519-SWE-SRW-R04-DR-CB-50100 to 50105
HE551519-SWE-SRW-R05-DR-CB-50100
HE551519-SWE-SRW-R06-DR-CB-50100
HE551519-SWE-SRW-R07-DR-CB-50100
HE551519-SWE-SRW-R09-DR-CB-50001
HE551519-SWE-SRW-R10-DR-CB-50001

HE551519-SWE-SSP-ZZ-DR-CB-50020 to 50029

301.6. Wire Mesh to Permanent or Existing Fencing

301.6.1. All wire mesh attachments shall be in accordance with requirements of Clause 306.

301.7. Galvanised steel tubular guardrail

301.7.1. Where edge protection is required. Galvanised steel tubular guardrails shall be installed as detailed within MCX0138 sheet 2/2.

301.7.2. Where no base type for fixing of stanchion is detailed. In soft ground the stanchion can be supported by ST2 concrete (400mm) and rammed back filled (200mm), 600mm overall maintaining the above ground dimension of 1100mm as per MCX 0138 sheet 2/2.

301.8. Badger Gates

301.8.1. Non proposed

301.9. Fenced Tree Guards

301.9.1. Non proposed

301.10. Preservation of Timber

301.10.1. Timber Preservative used must conform to Clause 311.

301.11. Other - Removing and Re-erecting Existing Fences and Gates.

301.11.1. Where required, to assist construction, existing fences shall be removed in accordance with Clause 309. Should existing fencing become damaged and unfit for purpose, new like for like fencing and gates shall be installed.

301.11.2. Table 301-1 schedules the lineal length of all fence types and gate quantities.

Table 301-1: Fence and Gates Quantity Table

Description	Total Length (Metres)	Total Quantity (No.)	Comments
Timber Post and 4 Rail (H3)	2304		Min 3m High
Close board Fencing	159		
Deer and Otter (H48 – type 7)	2055		
High tensile strained wire deer fence 180 (H5)	2433		

Description	Total Length (Metres)	Total Quantity (No.)	Comments
Deer mesh (H40- type 5)	1272		
SS1 - Steel Single field gate (H17, 3685mm)		3	
SS2 - Steel Single field gate (H17, 4585mm)		1	
SS1-OD - Steel Single field gate (H17, 3685mm)		1	
SS2-D - Steel Single field gate (H17, 4585mm)		2	
SS2-OD - Steel Single field gate (H17, 4585mm)		2	
SD 1 - Steel Double field gate (H20, 5020mm)		4	
SD 3 - Steel Double field gate (2 x H17, 3685 mm)		1	Non-standard arrangement - 2 x H17 (3685mm) gates and associated fittings, H29 tubular steel gate latch and H33 gate stops.
SD3-D - Steel Double field gate (2 x H17, 3685 mm)		2	Non-standard arrangement - 2 x H17 (3685mm) gates and associated fittings, H29 tubular steel gate latch and H33 gate stops.
TWG - Timber Wicket Gate (H23)		4	Edge protection guard rail.
TWG-D - Timber Wicket Gate (H23)		4	
TWG-OD - Timber Wicket Gate (H23)		3	
Galvanised steel tubular guardrail (MCX0138)	535		Edge protection guard rail.

Note: All fittings to conform to the requirements of Clause 305 and shall comply with MCHW, Volume 3, Section 1 Series H drawings.

301.12. Other – Deer grids

301.12.1. NOTE ALL DEER GRID PROVISION IS CURRENTLY HELD IN ABEYANCE Deer grids shall be constructed, (supplied) and installed in accordance with BS 4008:2006 to a minimum vehicular load requirement of 50,000 Kilograms (50 tonnes).

301.12.2. There is no requirement to provide livestock, ridden / driven horses and or vehicular bypass.

301.12.1. Pedestrian / maintenance via gated access shall be provided as per the arrangements detailed on drawings HE551519-SWE-HFE-ZZ-DR-CH-50001 to HE551519-SWE-HFE-ZZ-DR-CH-50006. Gates should be of similar height to the guard fencing.

301.12.2. The depth of a grid should be a minimum of 250mm and not greater than 450mm.

301.12.3. Deer grids should allow for small animals (hedgehogs) to escape in the form of an internal ramp as per BS 4008:2006.

301.12.4. Table 301-2 schedules the deer grid locations and dimensions.

Table 301-2: Deer grid size and locations

Description	Total Length (Metres)	Total Width (Metres)	Loading (Kilograms)	Comments
Maylands Golf Course Access	4.0	5.69	50,000 (min)	Located off A12 Eastbound
Grove Farm Egress (outbound)	4.0	4.53	50,000 (min)	Located off A12 Diverge s ip road
Grove Farm Access (inbound)	4.0	3.25	50,000 (min)	Located off M25 Northbound Merge slip road