Standards and Guidance Documents

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Reference	ADMM - Part 3

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The small print:

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HIGHWAYS ENGLAND

Asset Management Development Group

ASSET DATA MANAGEMENT MANUAL

Part 4 – Asset Reference Catalogue

October 2020

Version: *12.0*

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Revision Sheet

For revisions across all ADMM documents see the Revision Log available on Standards for Highways:
http://www.standardsforhighways.co.uk/ha/standards/admm/index.htm

Version	Date Issued
3.0	April 2016
4.0	September 2016
5.0	March 2017
6.0	September 2017
7.0	March 2018
8.0	October 2018
9.0	April 2019
10.0	October 2019
11.0	April 2020
12.0	October 2020

Contents

Foreword

The Asset Data Management Manual (ADMM) sets out Highways England's (the Company's) asset data requirements to achieve both its corporate objectives as well as its asset management objectives. It brings clarity and consistency to reflect Highways England's asset data needs and is revised every six months to accommodate changes and expansion to the business needs.

The ADMM contains the company's asset data requirements to ensure the company collects and maintains the asset data it needs to operate safely and efficiently. It is for use by anyone creating, maintaining or using data on behalf of or within Highways England.

What are its components?

- **Part 1 – Data Principles and Governance**, which introduces the asset data management concept and defines how this is structured and governed within Highways England. Additionally, further guidance surrounding the purpose of the ADMM is provided.
- **Part 2 – Requirements and Additional Information**, which includes Highways England's requirements for asset data management and provides supporting guidance for each asset class.
- **Part 3 – Data Dictionary,** which defines the asset data requirements, hierarchy, and rules for individual assets and attributes.
- **Part 4 – Asset Reference Catalogue**, which includes a tool to assist in identifying and recording specific assets.

Additionally, a Revision Log and Change Request Submission Form are provided with each iteration of the ADMM:

- **Revision Log:** provides a full listing of all changes made between versions.
- **Change Request Submission Form**: provides instructions for submitting a change request. An overview of the change process is detailed in Part 1 – Data Principles and Governance document under Section 3.3 "Change Management".

How is it structured?

The ADMM is structured into core requirements and local requirements. The core requirements, which are mandatory under any type of contract, provide the asset data requirements and are described in a way which is independent of any organisational relationship or systems within which work is undertaken. The local requirements provide additional requirements linked to particular organisational contexts. This may be a contract, a system, or an organisational structure.

Differing operational models are employed by Operations Directorate's regions and areas. The table below lists the current operating models are the regions or areas where they are in operation and is correct at the time of issue.

Operating Model	Area	Region (if applicable)
Asset Support Contract (ASC)	4 and 12	
Asset Delivery (AD)	1, 2	South West
	6, 8	East
	7	Midlands
	10, 13	North West
	14	North East
Progressive Asset Delivery (PAD)	3 and 9	

Within this document, local requirements are included in text boxes, as shown below.

LOCAL REQUIREMENTS: Asset Delivery (AD)

For Asset Delivery contracts the term:

- Employer shall mean *Employer* or *Client* as defined under the contract,
- Contractor shall mean the *Contractor* as defined under the contract

LOCAL REQUIREMENTS: Asset Support Contract (ASC) and Progressive Asset Delivery (PAD)

For the purposes of Progressive Asset Delivery Areas, the ASC Local Requirements will generally prevail. Any variation in the role of the *Provider* will be agreed on an Area by Area basis.

For Asset Support Contracts and Progressive Asset Delivery contracts, the term:

- Employer shall mean *Employer* as defined under the contract
- Provider shall mean the *Provider* as defined under the contract

LOCAL REQUIREMENTS: Major Projects

For Major Projects, where specific roles and responsibilities are referred to, these shall be as defined within the prevailing contract.

Part 4 – Asset Reference Catalogue

The Asset Reference Catalogue provides supporting guidance to Part 3 - Data Dictionary, and assists in identifying and recording specific assets and provides details regarding the surfacing materials available for a range of highway inventory.

1 Introduction

Part 3 - Data Dictionary holds primacy over asset data specification; and much of the information given within this document is a direct reflection of the Data Dictionary (e.g. descriptions, asset codes, and attribute field domains).

Structurally, the Asset Reference Catalogue is broken down by the major asset classes, with the entries following in alphabetical order by asset name:

- Ancillary
- Carriageway Control
- Drainage
- Environmental
- Geotechnical
- Lighting
- Pavements
- Road Restraint

For each asset entry there is:

- Description – a textual description detailing the asset, matching the description found in the Data Dictionary.
- An example image – a generic example image demonstrating the asset (this may be further highlighted to specify the asset in context).
- Asset Code – the four-digit code, referencing the asset within the Data Dictionary.
- Asset Class/Sub-class –the class and subclass the asset belongs to, indicative of its relationship to a group of other assets as set out in the Data Dictionary; and the relevant procedures, rules, and personnel.
- Asset Geometry – i.e. Point, Line, or Polygon: this corresponds to the geospatial reference data for the asset and gives an idea of the space it occupies in the real world.
    - Assets that occupy a single location are considered **Point** (e.g. Sign Posts, Reference Marker Locations, Bollards, etc.)
    - Assets that are continuous are considered **Linear** (e.g. Vehicle Restraint Systems, Kerbs, Drainage Channels, etc.)
    - Assets that occupy substantial ground space are considered **Polygon** (e.g. Drainage Ponds, Woodland).
- Visual examples table – an additional table of less-generic examples for the asset; giving demonstration of a variety of attributes.
- Note: these examples are not exhaustive, they simply demonstrate several distinct attribute examples for guidance purposes. A full specification of data and attributes for each asset is found within the Data Dictionary.

2 Ancillary

2.1 Bridleway

Description	A right of way over privately-owned land, allowing the public to travel on horseback (or to lead a horse). Many public bridleways are also suitable for pedestrian and cycle traffic.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMBW
UniClass	En_80_40_08
Geometry	Linear
Example	

Attribute Examples:

Surface Material	Asphalt, Bare Earth, Grass, Gravel, Other
Note	For detailed information on network-wide surface materials refer to Section 10.

Edging Type	None
Description	No edging type, the bridleway is generally separated by the beginning of vegetation patches.
Example	

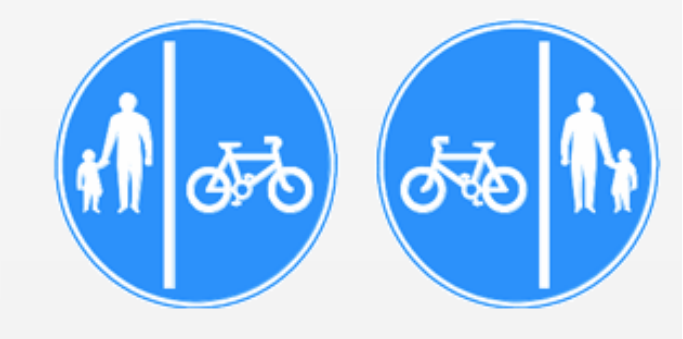
2.2 Combined Cycle Track and Footway

Description	A part of a footway normally within the trunk road boundary, specifically designed for the shared use of pedestrians and bicycles.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMCF
UniClass	En_80_40
Geometry	Linear
Example	

Attribute Examples:

Surface Material	Asphalt, Block Paving, Coloured Surfacing, Concrete, Concrete Flags, Grass, Gravel, High Skid Resistant Surfacing, Other, Surface Dressed, Tactile, TSCS
Note	For detailed information on network-wide surface materials refer to Section 10.

Surface Material	Asphalt
Description	Combined cycle track on footway, surfaced in asphalt, adjacent to the carriageway. Note: the combined surface type, with usage only divided by a white surface marking. Additionally: sign faces denoting combined usage: • TSRGD No. 956 • TSRGD No. 957
Example	

Surface Material	Asphalt
Description	Combined cycle track on footway adjacent to the carriageway. • Note: the white ‘bike’ and ‘person’ markings, TSRGD No.1057.
Example	

Surface Material	Tactile
Description	Area of combined cycle track and footway featuring tactile surfacing, designed to aid visually impaired users.
Example	

Note	Two images giving counter-examples of separate cycle track and footway assets, running in parallel. Note: the rules regarding classification: • If there is a change in surface material and/or physical delineation between the two (e.g. a dropped kerb) they are considered separate assets. • Assets delineated by a surface marking, possessing the same surface material are classified as a Combined Cycle Track and Footway.
Example	

Edging Type	None
Description	The combnied cycle track and footway has no edging, and is instead seperated by the kerb and the end of the pavement.

Example	

Edging Type	Concrete
Description	Concrete edging is used to separate the combined cycle track and footway from the edge of track/footway.
Example	

2.3 Crisis Signage

Description	Used throughout the SRN with the aim of encouraging people who are considering taking their own lives to seek help.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	ANCS
UniClass	-
Geometry	Point

2.4 Crossover

Description	A location for pedestrian or vehicular users to transversely cross non-network linear assets, including; footway/cycleway, verge, or central reserve. For example, locations such as; minor junctions, driveways, field entrances, and central reserve locations.
Class	Ancillary
Subclass	Hard Surfaces
Asset Code	MLOX
UniClass	SL_80_35_18
Geometry	Point
Example	

Attribute Examples:

Surface Material	Asphalt, Block Paving, Concrete, Concrete Flags, Grass, Gravel, Other, Surface Dressed, TSCS.
Note	For detailed information on network-wide surface materials refer to Section 10.

Reason for Crossover	Vehicular access to residence
Description	Asphalt crossover, giving access to a private residence.
Example	

Reason for Crossover	Other
Description	Crossover constructed from a single concrete block, providing access to an Emergency Roadside Telephone.

Example	

Reason for Crossover	Access to farm
Description	Gravel crossover, providing access to a private lane/drive.
Example	

Reason for Crossover	Access to field
Description	Grass crossover, providing access to a field. Note: the dropped kerb, and road markings indicating the entrance. As per Rule MLOX_3, a change in surface is not mandatory for a Crossover to occur.
Example	

2.5 Cycle Track

Description	A part of a road or footway, normally within the trunk road boundary, specifically for the use of bicycles.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMCT
UniClass	En_80_40_20
Geometry	Linear
Example	

Attribute Examples:

Surface Material	Asphalt, Block Paving, Coloured Surfacing, Concrete, Concrete Flags, Grass, Gravel, High Skid Resistant Surface, Other, Surface Dressed, Tactile, TSCS
Note	For detailed information on network-wide surface materials refer to Section 10.

Surface Material	Asphalt
Description	Asphalt cycle track at the left-hand margin of the main carriageway – defined by a longitudinal edge line, and a transverse/special cycle marking TSRGD No. 1057.
Example	

Surface Material	Coloured Surfacing
Description	Cycle track surfaced in red Coloured Surfacing. This is a separate asset from the adjacent footway, and not considered a combined cycle track and footway. Note: the rules regarding classification: • If there is a change in surface material and/or physical delineation between the two (e.g. a dropped kerb) they are considered separate assets.

	• Assets delineated by a surface marking, possessing the same surface material are classified as a Combined Cycle Track and Footway.
Example	

Surface Material	Concrete
Description	Concrete cycle track separated from the main carriageway by a narrow verge. Note: the kerb dividing the cycle track from the footway beyond, despite them running in parallel – e.g. not classed as Combined Cycle and Footway.

Example	

Edging Type	None
Description	There is no edging type on this cycle track. Instead the track is separated by either the pavement or kerb.
Example	

Edging Type	Concrete
Description	The sides of the cycle track are seperated by concrete edging.
Example	

2.6 Depot

Description	A Highways England owned maintenance facility; typically encompassing salt barns, storage/maintenance facilities, offices, and vehicle storage.
Class	Ancillary
Subclass	-
Asset Code	GNDP
UniClass	En_80_35_35
Geometry	Point
Example	

Attribute Examples:

None.

2.7 Equipment Store

Description	A container, typically coloured plastic, storing materials for use during incidents on the network relating to the containment of hazardous materials entering the watercourse.
Class	Ancillary
Subclass	-
Asset Code	GNEQ
UniClass	SL_90_50_27
Geometry	Point
Example	

2.8 Footway

Description	A footway is a constructed off-carriageway area exclusively for the use of pedestrians.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMFW
UniClass	En_80_40_30
Geometry	Linear
Example	

Attribute Examples:

Surface Material	Asphalt, Block Paving, Coloured Surfacing, Concrete, Concrete Flags, Grass, Gravel, High Skid Resistant Surface, Other, Surface Dressed, Tactile, TSCS
Note	For detailed information on network-wide surface materials refer to Section 10.

Surface Material	Asphalt
Description	Footway surfaced in asphalt.
Example	

Surface Material	Block Paving
Description	Footway surfaced in block paving – in this example manmade material (composite blocks/bricks).

Example	

Surface Material	Coloured Surfacing
Description	Footway with a strip of blue coloured surfacing along the kerb edge.
Example	

Surface Material	Concrete
Description	Footway surfaced in concrete. Note: the cast in-situ concrete with regular joints.
Example	

Surface Material	Concrete Flags
Description	Footway surfaced in concrete flags, note the regular longitudinal and transverse joints.

Example	

Surface Material	Other
Description	Footway surfaced in this example are natural stone sets, typically granite, chosen for its high skid resistance properties.
Example	

Access	Public right of way
Description	Generic public footway found adjacent to the carriageway (non-motorway routes).
Example	

Edging Type	**Maintenance**
Description	Maintenance footway, to provide access to other network assets (e.g. technology, communications cabinets, gantries etc.) These footways can often be situated behind VRS barriers, or run non-parrallel to the carriageway. 1. Maintenance footway providing access to structure. 2. Maintenance footway leading from the hardstanding towards the overhead message sign in the distance; allowing maintenance personel to safely park and access the assets. 3. Maintenance footway just visible behind the VRS barrier, providing access to assets along the carriagway edge (in front of the piling retaining wall).

Example (1)	
Example (2)	

Example (3)	

Edging Type	None
Description	There is no edging type for this form of footway. Instead the side is generally indicated by the presence of vegetation.
Example	

Edging Type	Concrete
Description	Concrete edging in the form of a narrow, linear block seperates the edge of the footway.
Example	

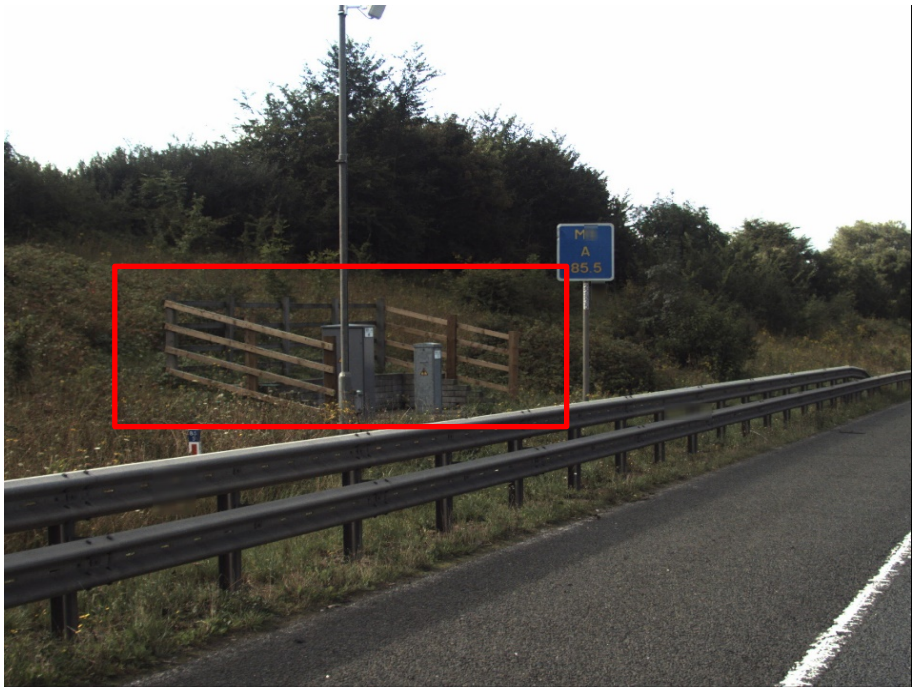
2.9 Handrail

Description	Provides support when traversing steep gradients.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	FEHR
UniClass	Pr_25_30_36
Geometry	Point
Example	

Attribute Examples:

Material	Metal
Description	Metal handrail protecting access to a feeder pillar from the steep drop beyond.
Example	

Material	Wood
Description	Wooden handrail stairway from steep embankment.

Example	

2.10 NMU Crossing

Description	A location for cyclists, pedestrian, or equestrian users to transversely cross the network; that is not a structure, or formal constructed crossing of any type i.e. not Pedestrian Crossing with associated infrastructure.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMNC
UniClass	SL_80_35_57
Geometry	Point
Example	

Attribute Examples:

NMU Cross Type	Pedestrian
Tactile Paving	Yes
Description	A pedestrian NMU Crossing, showing other assets commonly associated with this feature; dropped kerb, Tactile surfacing, and occasionally a central island. Note: type is determined by the user, inferred from the surrounding non-motorised routes (e.g. a Cycle Track leading to an NMU would define it as Type: Cycle Crossing).
Example	

NMU Cross Type	Cycle
Description	NMU Crossings, where a cycle track crosses the road.

Example	

NMU Cross Type	Equestrian
Description	NMU crossings, where equestrian riders cross the road.
Example	

NMU Cross Type	Pedestrian
Description	An NMU crossing for pedestrians, with dropped a kerb and textured surfacing.
Example	

2.11 Non-Carriageway Surface

Description	A hard-surfaced section of the network that is not part of the carriageway (i.e. Central Island, Central Reserve).
Class	Ancillary
Subclass	Hard Surfaces
Asset Code	ANNS
UniClass	-
Geometry	Linear
Example	See below.

Attribute Examples:

Type	Central Island
Description	An obstruction built in the road to split traffic into lands and/or to provide a pedestrian refuge.
Example	

Material	Asphalt, Block Paving, Concrete, Gravel, Other
Note	For detailed information on network-wide surface materials refer to Section 10.

Material	Asphalt
Description	Asphalt island, featuring an island which is split into two parts (by a crossover) – this is still considered to be one asset. Only assets that have a definitive boundary kerb and terminate allowing continuation of the carriageway are considered separate.
Example	

Material	Block paving
Description	Central island surfaced in set blocks.
Example	

Material	Concrete
Description	Large central island surfaced in concrete.

Example	

Material	Gravel
Description	Large central island surfaced in gravel.
Example	

Material	Other
Description	Central island surfaced in set stone cobbles.
Example	

Type	Central Reserve
Description	An area that separates the opposing carriageways of a dual carriageway or motorway.

Example	

Material	Asphalt, Block Paving, Concrete, Gravel, Other
Note	For detailed information on network-wide surface materials refer to Section 10.

Material	Asphalt
Description	Central reserve surfaced in asphalt.
Example	

Material	Block Paving
Description	Central reserve surfaced in blocks (i.e. manmade material).

Example	

Material	Concrete
Description	Central reserve surfaced in concrete.
Example	

Material	Gravel
Description	Central reserve surfaced in gravel. Note: avoid confusion with filter drains, which appear as narrow gravel strips adjacent to the carriageway or in the central reserve (counter-example below).
Example	 

Type	Hard Standing
Description	An area adjacent to the edge of the carriageway that is usually utilised in an emergency or by maintenance vehicles and is not specifically signed for; parking (layby), as a refuge, rest area, or for police vehicles.
Example	

Material	Asphalt, Block Paving, Coloured Surfacing, Concrete, Concrete Flags, Grasscrete, Gravel, High Skid Resistant Surface, Other, Surface dressed, Tactile, TSCS
Note	For detailed information on network-wide surface materials refer to Section 10.

Material	Asphalt
Description	Asphalt hard standing next to the carriageway, though similar to a layby note the blue sign reading “authorised vehicles only” indicating its purpose, TSRGD No. 829.6.

Example	 

Material	Concrete
Description	Concrete hard standing, positioned behind the VRS (access at the far right).

Example	

Type	Rest Area
Description	Rest areas may be provided on rural roads as a safe place for motorists to pull off the highway and leave the vehicle.
Example	

Material	Asphalt, Block Paving, Coloured Surfacing, Concrete, Concrete Flags, Gravel, High Skid Resistant Surface, Other, Surface dressed, Tactile, TSCS
Note	For detailed information on network-wide surface materials refer to Section 10.

2.12 Pedestrian Crossing

Description	A transverse strip of carriageway marked to indicated where pedestrians have priority to cross the road.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMPX
UniClass	SL_80_35_62
Geometry	Point
Example	

Attribute Examples:

Type	Pelican
Description	Pelican crossing, with tactile surfacing. Note: the defining characteristic (below): the pair of lighted crossing indicators (red man/green man) mounted facing the opposite kerb, for the benefit of waiting pedestrians.
Example	 

Type	Puffin
Description	Puffin crossing, with Central Island. Note: the defining characteristic (below): lack of mounted crossing indicators facing the opposing kerb (Pelican). In the case of Puffins; the yellow control box mounted on the post, also provides lighted crossing indicators (red man/green man) to pedestrians on the kerb.
Example	 

Type	Toucan
Description	The defining characteristic is subtle. Toucan crossings are specifically suitable for use by pedestrians and cyclists, their classification may be shown by the surrounding Non-Motorised Routes, and the lighted control box showing both cyclists and pedestrians (below).
Example	 

Type	Zebra
Description	Defined by white bar markings crossing the carriageway, and yellow “Belisha” beacon posts on each side of the carriageway.
Example	

2.13 Salt Bins

Description	Predominantly yellow box which holds a mixture of salt and grit to spread over roads if they have snow or ice on them.
Class	Ancillary
Subclass	-
Asset Code	GNGB
UniClass	Pr_40_50_07_35
Geometry	Point
Example	

Attribute Examples:

Only generic examples exist.

2.14 Spill Kit

Description	A container, typically coloured plastic, storing materials for use during incidents on the network relating to the containment of hazardous materials entering the watercourse.
Class	Ancillary
Subclass	-
Asset Code	LSSK
UniClass	Pr_40_70_75_81
Geometry	Point
Example	
Note	Not to be confused with Salt Bins (Section 2.12).

Attribute Examples:

Only generic examples exist.

2.15 Steps

Description	Designed for access to equipment not at carriageway level e.g. Communication Cabinets.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	NMST
UniClass	Ss_35_10_25
Geometry	Point
Example	

Attribute Examples:

Material	Brick
Description	Set of brick steps, with a Handrail. Note: the material refers to the overall construction not just the “riser” i.e. vertical face or the step itself.
Example	

Material	Concrete
Description	Set of concrete steps.

Example	

Material	Steel
Description	1. Steps made from steel, providing access to distribution cabinets and a large message sign. 2. Ladder-like steps made from steel, providing access to the top of a retaining wall.

Example	 

Material	Wood
Description	These can exist as wooden post/plank construction, or as ground-embedded wooden slats retaining an earth/gravel stepway.

Example	

2.16 Stile

Description	A stile provides passage through or over a fence or boundary via steps or narrow gaps.
Class	Ancillary
Subclass	Non-Motorised User
Asset Code	FESI
UniClass	Ss_25_32_35_85
Geometry	Point
Example	

Attribute Examples:

Material	Wood
Description	Generic example of a wooden stile next to a Fence Gate, providing pedestrian access to the field without opening the gate.
Example	

Material	Other
Description	Stone ‘squeeze’ stile, providing a gap in a dry-stone wall; narrow enough to ensure the containment of livestock, but large enough to allow the passage of pedestrians.

Example	

2.17 Street Furniture

Description	Street furniture and amenities.
Class	Ancillary
Subclass	-
Asset Code	TSSF
UniClass	-
Geometry	Point
Example	

Attribute Examples:

Type	Bench
Description	Benches are commonly found in laybys and rest areas.
Example	

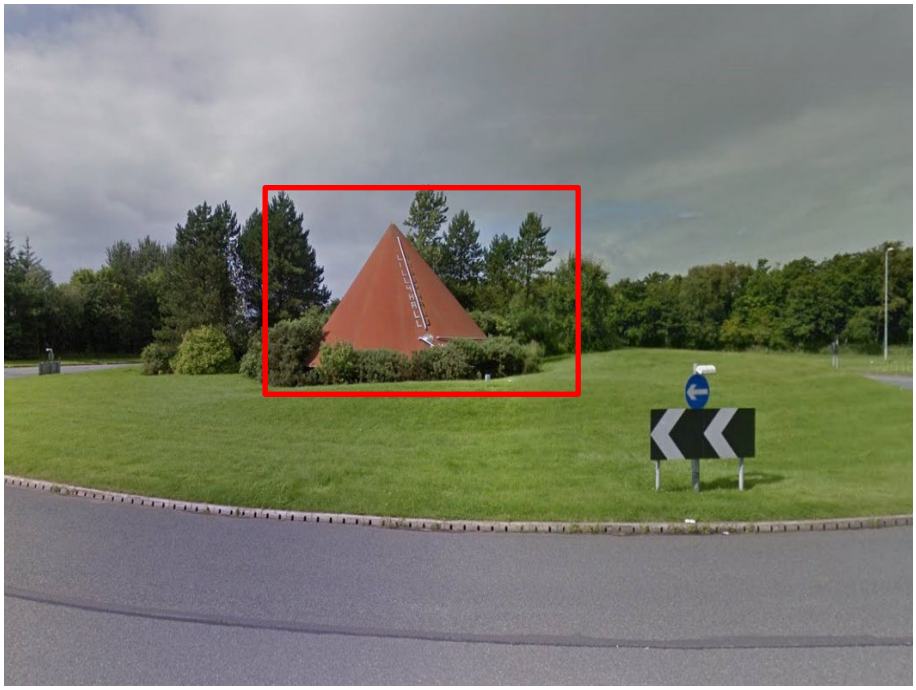
Type	Litter Bin
Description	Litter bin.

Example	

Type	Picnic Tables
Description	Picnic tables are commonly found in laybys and rest areas.
Example	

Type	Bus Shelter
Description	A roofed structure for people to wait under at a bus stop.

Example	

Type	Art
Description	Features which have a visual value distinct from their function.
Example	

Type	Interpretation Panels
Description	Provide information to educate and inform visitors about the environment around them.
Example	

2.18 Switch Room

Description	A Switch Room is a small building that houses equipment for a nearby electronic installation.
Class	Ancillary
Subclass	-
Asset Code	GNSR
UniClass	SL_90_90_85
Geometry	Point
Example	
Note	Switch rooms can appear in either brick, or pre-fabricated small buildings typically painted green or grey. Avoid confusion with Communications Cabinets/Distribution Points; which lack the size and access for personnel to physically enter them.

Attribute Examples:

Only generic examples exist.

2.19 Toilet Block

Description	Toilet buildings/block.
Class	Ancillary
Subclass	-
Asset Code	GNTB
UniClass	EN_35_80_90
Geometry	Point
Example	

Attribute Examples:

Only generic examples exist.

3 Carriageway Control

3.1 Anti-Glare Barrier

Description	A barrier designed to prevent glare from headlights crossing onto other areas of carriageway, or neighbouring property. Not considered to offer protection against the passage of large animals.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	CCAG
UniClass	Pr_30_59_07_03
Geometry	Linear
Example	

3.2 Block Wall

Description	Free standing or retaining walls that have an important visual or screening objective
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	CCBW
UniClass	Ss_25_13_35
Geometry	Linear

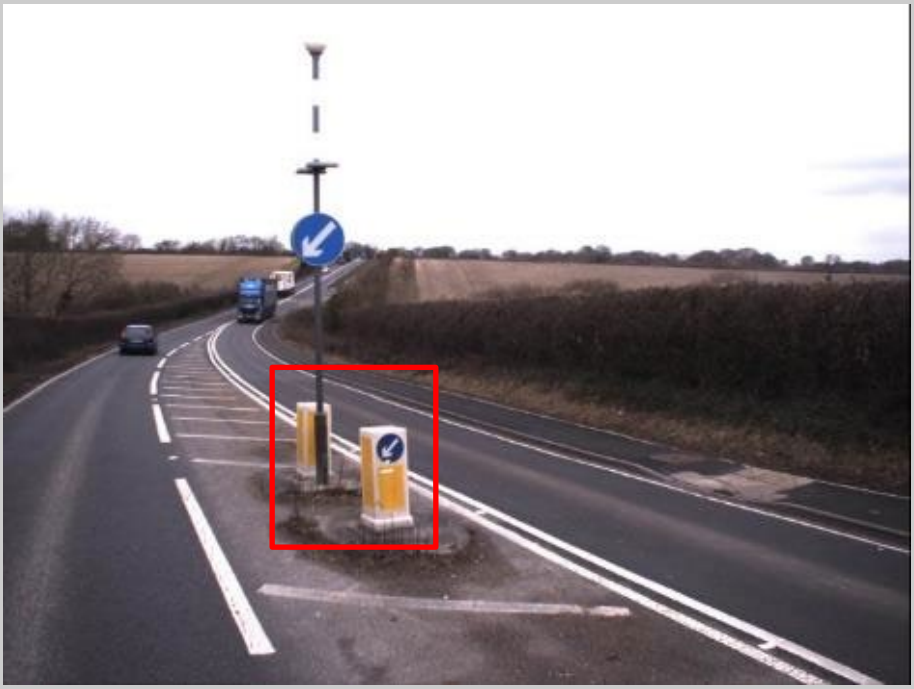
3.3 Bollard

Description	A device placed on a refuge, traffic island, or verge to warn drivers of those obstructions or to prevent the passage of vehicles.
Class	Carriageway Control
Subclass	Road Traffic Sign & Signal
Asset Code	RRSB
UniClass	Ss_25_16_94_10
Geometry	Point
Example	

Attribute Examples:

Type	Flexible
Reflectorised	Yes
Description	Flexible plastic Bollards typically found near junctions/roundabouts.
Example	

Type	Flexible
Illuminated	Internal
Description	Hollow plastic ‘box’ bollard found at junctions and central islands, illuminated from within by an electrical light source.

Example	

Type	Flexible
Reflectorised	Yes
Description	Black and white bollards, featuring reflectors on two sides; denoting edge of carriageway or obstruction near that edge. Note: the reflector on these bollards has a TSRGD Diagram Number = 560 or 561 however, the elements are **not** recorded separately as a Sign Face • Red coloured variant on the leading face, e.g. the left side of the carriageway. White coloured variant on the leave face, e.g. the right side of the carriageway.

Example	

Type	Rigid
Reflectorised	Yes
Description	Rigid bollards designed to stop the passage of vehicles: 1: Top - tall metal bollards (4 No.) with coloured reflectorised tops. 2: Bottom - pair of concrete rigid bollards.

Example	 

Type	Self-Righting
Reflectorised	Yes
Description	Self-righting bollards (2 No.) with a sprung base typically found on central islands.

Example	

3.4 Brick Wall

Description	Free standing or retaining walls that have an important visual or screening objective
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	CCBR
UniClass	Ss_25_12_10
Geometry	Linear

3.5 Carriageway Gate

Description	A barrier across the carriageway to stop traffic proceeding.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	FEGA
UniClass	Ss_25_32_35
Geometry	Point
Example	

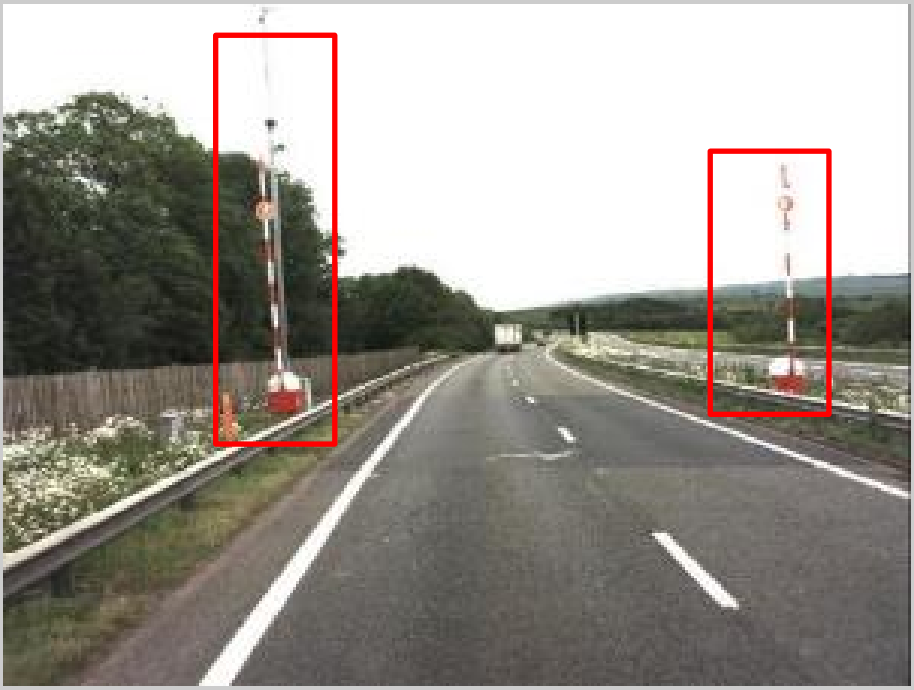
Attribute Examples:

Type	Full width double
Material	Metal
Description	Gates with two parts (double) that close to block the entire carriageway.
Example	

Type	Full width double
Material	Metal
Description	A pair of light metal swing gates.

Example	

Type	Full width single
Material	Metal
Description	Single drop-down barrier to obstruct the footway when the route is closed.
Example	

Type	Half width
Material	Metal
Description	Pair of drop-down barriers to obstruct a **single** carriageway direction (half width) of the dual carriageway pictured.
Example	

3.6 Cattle Grid

Description	A device designed to prevent passage of animals, or animals of any description, but allow the passage of vehicles and includes fencing or other works necessary to secure its efficient operation.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	FECG
UniClass	Ss_30_34_03_11
Geometry	Point
Example	

Attribute Examples:

Type	Cattle
Material	Metal
Description	Metal cattle grid designed to prevent movement of cattle (depth, span, and bar design suitable for cattle).
Example	

Type	Sheep or Deer
Material	Metal
Description	Metal cattle grid designed to prevent movement of sheep or deer (depth span and bar design suitable for sheep or deer).

Example	

3.7 Fence

Description	Free standing fences of timber or other materials.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	CCFE
UniClass	Ss_25_14
Geometry	Linear
Example	

Attribute Examples:

Stockproof	Mesh
Description	Metal fence with a mesh design suitable for stopping the passage of large animals (and people), without restricting visibility.
Example	

Stockproof	Wire Stand
Description	Metal fence with a wire strand design, suitable for stopping the passage of large animals.

Example	

3.8 Fence Gate

Description	A gate in a fence, wall, or barrier which allows access across the fence, wall, or barrier.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	FEFG
UniClass	Pr_30_59_34
Geometry	Point
Example	

Attribute Examples:

Primary Material	Timber
Secondary Material	Metal
Description	Metal gates with timber posts securing a field.
Example	

Primary Material	Concrete
Secondary Material	Metal
Description	Metal, gate with concrete posts securing a field.

Example	

3.9 Hatched Road Marking

Description	Road markings on the carriageway with a distinctive hatched design.
Class	Carriageway Control
Subclass	Road Marking & Stud
Asset Code	MKHM
UniClass	Ss_40_10_90_36
Geometry	Linear
Example	

Attribute Examples:

Pattern	Bars
Type of Edge Line	None
TSRGD Diagram Number	1067
Description	Transverse yellow bar markings used to indicate approaches to roundabouts typically on dual and single carriageways.
Example	

Pattern	Bars
Description	Horizontal marker bars on the carriageway associated with traffic monitoring cameras.

Example	

Pattern	Chevron
Type of Edge Line	Warning/Information
TSRGD Diagram Number	1041
Description	V-shaped chevrons, bounded by broken edge-lines, typically separating the entrance/exit of slip roads to provide a non-obstructive definition for two separate lanes merging.

Example	

Pattern	Cross
TSRGD Diagram Number	1043
Description	Hatched, yellow markings denoting an area of the carriageway where traffic are not authorised to stop (typically at a junction/roundabout to allow the flow of traffic through intersecting lanes).

Example	

Pattern	Diagonal
Type of Edge Line	Prohibitory
TSRGD Diagram Number	1013.5
Description	Diagonal road markings, bounded by solid lines, denoting segmentation of the carriageway where it is not permissible to cross lanes (e.g. leading to an upcoming central island).

Example	

3.10 Kerb

Description	A border, usually upstanding at the edge of carriageways, hard shoulders, and around central islands/traffic islands.
Class	Carriageway Control
Subclass	Edging
Asset Code	KFKB
UniClass	Ss_30_75_45_85
Geometry	Linear
Example	

Attribute Examples:

Material	Concrete
Type	Normal
Description	Example of a normal kerb, made from pre cast concrete blocks.
Example	

Material	Concrete
Type	Dropped
Description	Example of a dropped kerb, made from pre cast concrete blocks, providing division between the carriageway and an area of hard standing.

Example	

Material	Concrete
Type	Safety Kerb
Description	Two examples of safety kerb, made from pre cast concerete blocks. Note: the high profile and deep concave shape, designed to prevent vehicles mounting the kerb.

Example	 

Material	Extruded Asphalt
Type	Other
Description	Example of a normal kerb, constructed from extruded asphalt. Note: this is a continuous extruded kerb, with very few joints (close-up below).

Example	 

Material	Natural Stone
Type	Dropped
Description	Example of a dropped kerb, constructed from natural stone sets.

Example	

Material	Other
Type	Dropped
Description	Example of a dropped kerb, constructed from brick or block sets (i.e. manmade material).
Example	

3.11 Longitudinal Road Marking

Description	Continuous road markings which lie along the carriageway or carriageway edge.
Class	Carriageway Control
Subclass	Road Marking & Stud
Asset Code	MKLR
UniClass	Ss_40_10_90_18
Geometry	Linear
Example	

Attribute Examples:

Class	Double
Type	Unbroken
Colour	Yellow
TSRGD Diagram Number:	1018.1
Description	Double yellow lines at the carriageway edge to indicate prohibition of vehicles waiting always, or vehicles stopping at a layby except in case of emergency.
Example	

Class	Edge
Type	Unbroken
Colour	White
TSRGD Diagram Number:	1012
Description	Continuous solid line to indicate the carriageway edge. Note: these may also be embossed with raised ribs (8-11mm) designed to provide vibration (i.e. TSRGD Diagram Number 1012.2 & 1012.3).

Example	

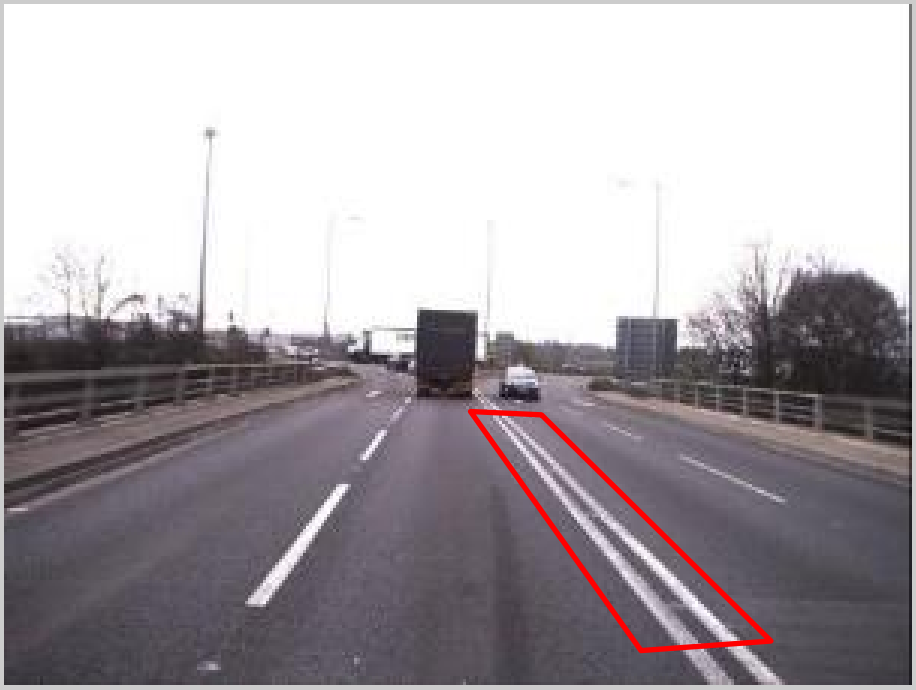
Class	Other
Type	Broken
Colour	Yellow
TSRGD Diagram Number:	1025.1
Description	Yellow broken line and text, indicating clearway for a bus stop – where vehicles must not stop. Note: the text in this instance is part of the marking as a whole.

Example	

Class	Single
Type	Broken
Colour	White
TSRGD Diagram Number:	1004.1
Description	Single broken lines, indicating lane division for motorways and dual carriageways, and/or the centreline of single carriageways.

Example	

Class	Warning
Type	Unbroken
Colour	White
TSRGD Diagram Number:	1013.1A
Description	Carriageway lane warning; visually indicating a legal requirement to avoid crossing the solid white line into the other carriageway (without exceptional cause).

Example	

Class	Warning
Type	Broken and unbroken
Colour	White
TSRGD Diagram Number:	1013.1D
Description	Carriageway lane warning; visually indicating a requirement to avoid crossing the solid white line into the other carriageway (without exceptional cause).

Example	

3.12 Node Stud

Description	Physical markers, typically located on the carriageway surface, denoting the following: • Twin circular markers, known as Nodes, denoting start and end of physical maintenance sections on the network. • Paint pads, typically circular or square, denoting VASCAR locations used by enforcement officers.
Class	Carriageway Control
Subclass	Reference Marker Point
Asset Code	MKNS
UniClass	Pr_40_10_77_86
Geometry	Point
Example	

Attribute Examples:

Type	Node
Description	Pair of circular, solid white, thermoplastic cores on the centre of the lane – denoting the start/end of maintenance sections. Note: these section reference markers are part of the approved network model, for further detail on placement and construction refer to “Approved Network Model” section.
Example	

Type	Paint pad
Description	Rectangular, solid white, marking on the centre of the lane – for use with the VASCAR (Visual Average Speed Computer And Recorder) system.

Example	

3.13 Post (Signs)

Description	An item for signs to be located on.
Class	Carriageway Control
Subclass	Road Traffic Sign & Signal
Asset Code	SNPS
UniClass	Pr_20_76_64
Geometry	Point
Example	

Attribute Examples:

Material	Aluminium
Number of Posts	2
Description	Lattix Sign Post with two posts, supporting a large sign. Note: Lattix is a proprietary brand product.
Example	

Material	Concrete
Number of Posts	3
Description	Concrete sign post with three posts.

Example	

Material	Galvanised steel
Number of Posts	3
Description	Galvanised steel sign post with three posts. Note: the pale grey, bare metal surface – indicating that it has been galvanised. Close up shows crystalline 'spangle' surface features, characteristic of galvanised steel.

Example	 

Material	Other
Number of Posts	1
Description	Black plastic sign post; modern post composed of vertical plastic tubes, occassionally seen suspporting smaller signs.
Example	

Material	Steel
Number of Posts	2
Description	Steel sign post with two posts. Note: the I-beam profile, definitive of cast steel beams.

Example	

Material	Steel
Number of Posts	3
Description	A steel sign post with three posts – this style of cylindrical, coated steel post is the most common on the network.
Example	

3.14 Post (Traffic Signal)

Description	A post to support the mounting of Traffic Signals.
Class	Carriageway Control
Subclass	Road Traffic Sign & Signal
Asset Code	SNTS
UniClass	Pr_20_85_50_90
Geometry	Point
Example	

Attribute Examples:

Material	Aluminium
Description	Aluminium post supporting traffic signals, at a junction.
Example	

Material	Steel
Description	Steel post with grey protective coating, common design for traffic signal posts.

Example	

Material	Steel
Description	Steel post with black protective coating, common design for traffic signal posts.
Example	

Note	Rule SNTS_4; Posts which only support the mounting of a traffic signal control box are still to be recorded.
Example	

3.15 Reference Marker

Description	Physical markers, typically located on the hard shoulder or central reserve, showing the direction to the nearest ERT approximately every 100m on motorways sections.
Class	Carriageway Control
Subclass	Reference Marker Point
Asset Code	MKRF
UniClass	Pr_40_10_77_37
Geometry	Point
Example	

3.16 Road Stud

Description	Colourised, lit or reflective, studs placed on or into the carriageway to assist the user with lane guidance and delineation.
Class	Carriageway Control
Subclass	Road Markings & Studs
Asset Code	MKRS
UniClass	Pr_35_90_60
Geometry	Linear
Example	

Attribute Examples:

Type	Embedded depressible
Description	Depressible road stud embedded in the road surface. The depressible element i.e. the white centre part is self-cleaning – when a vehicle passes over it the lenses are depressed and wiped.
Example	

Type	Embedded non-depressible
Description	Non-depressible road stud embedded in the road surface.

Example	

Type	Glass
Description	Glass road stud embedded in the road surface.
Example	

Type	Mains powered
Description	Mains powered road stud. Note: this type of stud is only usually found in tunnels.
Example	

Type	Solar powered
Description	Road stud with solar energy cell, to provide power.

Example	

Type	Stick on/double sided
Description	Double sided reflective road stud which is adhered to the road surface.
Example	

Type	Stick on/single sided
Description	Single sided reflective road stud which is adhered to the road surface. As above, except with a reflective surface only on one side – typically found on single-direction carriageways i.e. Motorways and Dual carriageways.

3.17 Sign Face

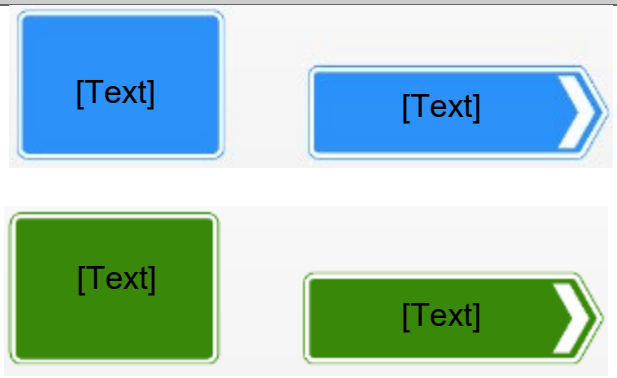
Description	Any object or device (whether fixed or portable) for conveying to traffic on roads or any specified class of traffic; warnings, information, requirements, restrictions, or prohibitions of any description.
Class	Carriageway Control
Subclass	Road Traffic Sign & Signal
Asset Code	SNSF
UniClass	Pr_40_10_77_72
Geometry	Point
Example	

Attribute Examples:

Category	Bus, tram & cycle
Description	Round blue signs pertaining to buses, trams, and bicycles.
Example	

Category	Driver location
Description	Unique Driver Location sign placed at 500m intervals on all motorway routes – predominately as a safety feature, to allow motorists and operational personel to specify their location to incident response teams.

Example	

Category	**Informatory**
Description	Typical informatory signs, which will exhibit information text. Note: The background colour refers to the content or the class of road. Blue corresponds to motorways, green corresponds to dual and single carriageways.
Example	

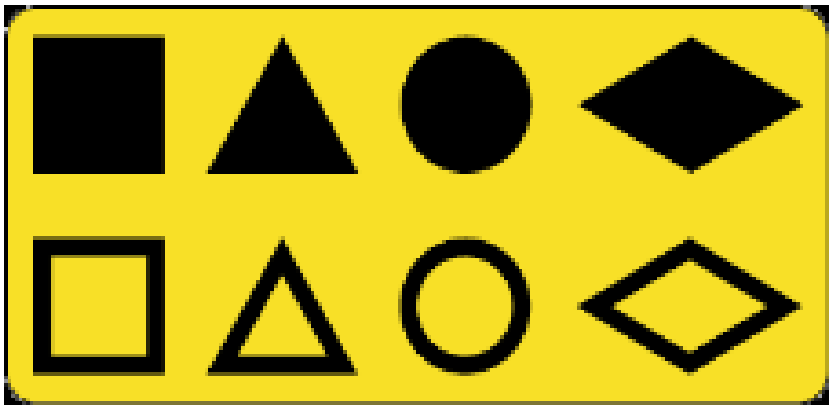
Category	Other
Description	Example of a 'flip-sign' which has a hidden face under normal circumstances. Should the need arise (e.g. an incident) an operative will manually reveal the sign, directing traffic off the next exit slip

	road, onto local authority routes to circumvent the incident i.e. diversionary routes.
Example	

Category	Regulatory
Description	Typical regulatory sign (i.e. dictating a vehicle speed limit) – the red border and circular shape illustrate its category.
Example	

Category	Warning

Description	Typical warning sign (i.e. indicating an upcoming roundabout) – the red border and triangular shape illustrate its category.
Example	

ADR Patches	Yes/No
Description	Examples of Agreed Diversionary Routes (ADR) patches which appear on a variety of informatory signs. These are designed to assist road users in following agreed diversion routes on to other SRN or local authority routes, in event of an incident which prevents direct use of the SRN to reach their destination.
Example	

Type	Fixed
Description	Stationary sign face, commonly found on posts.
Example	

Type	Rotating
Description	A rotating sign, also known as a prism sign can revolve to reveal road information and is typically used for diversion routes, road closure warnings or pedestrian zones.

Example	

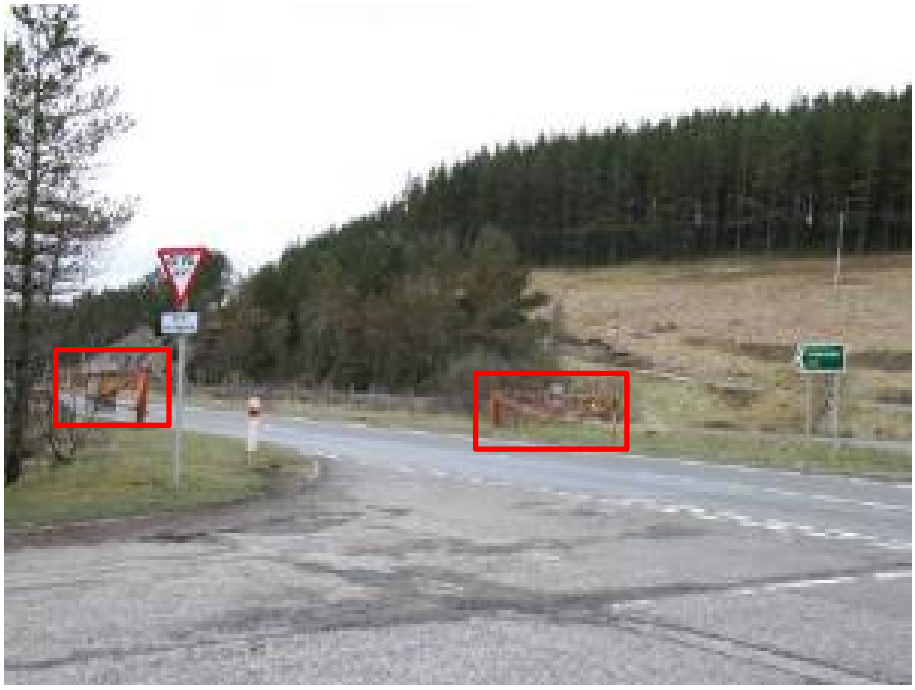
Type	Flip
Description	A ‘flip-sign’ which has a hidden face under normal circumstances. Should the need arise (e.g. an incident) an operative will manually reveal the sign, directing traffic.
Example	

Type	Mutliple
Description	A ‘multiple-sign’ has many sign face panels. These are generally found at a roundabout to denote the direction of travel.
Example	

3.18 Snow Gate

Description	A barrier across the carriageway to stop traffic proceeding due to heavy or potentially heavy snowfall.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	FESG
UniClass	Pr_30_59_59_39
Geometry	Point
Example	

Attribute Examples:

Type	Full width double
Description	Example of a pair of full-width double gates.
Example	

Type	Full width single
Description	Example of a single full-width gate.

Example	

Type	Half width
Description	Example of a snow gate. Note: the grey ‘flip’ signs showing no face while the gate is not in use, these will show appropriate warning notices when the gates are closed.

Example	

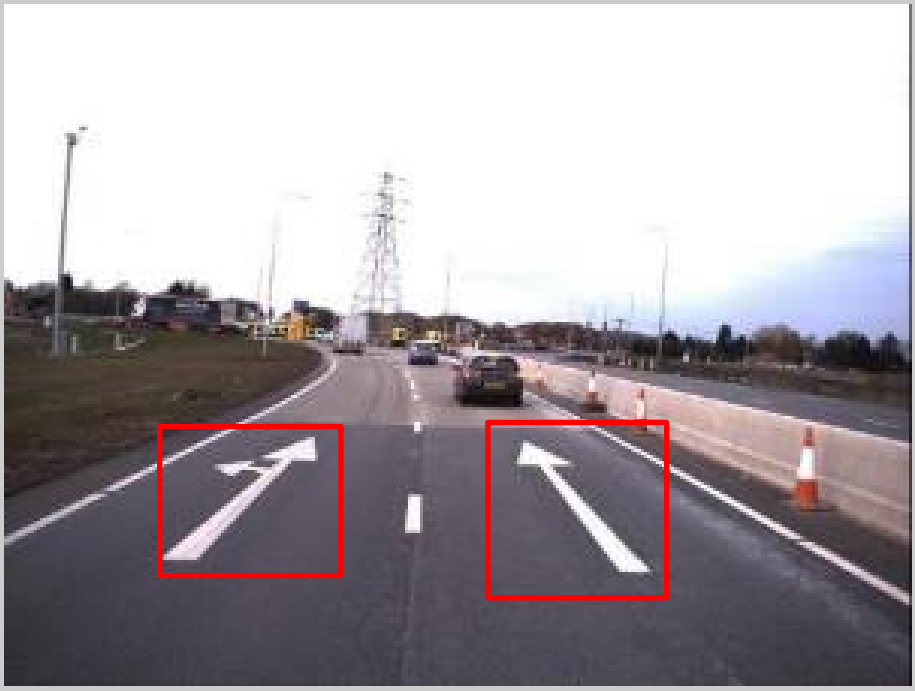
3.19 Stone Wall

Description	Free standing or retaining walls that have an important visual or screening objective.
Class	Carriageway Control
Subclass	Gates/Barriers
Asset Code	CCSW
UniClass	Ss_25_13_24
Geometry	Linear
Example	

3.20 Transverse and Special Road Marking

Description	A standard-length Road Marking positioned on the carriageway, kerb, or footway.
Class	Carriageway Control
Subclass	Road Marking & Stud
Asset Code	MKTS
UniClass	Ss_40_10_90_23
Geometry	Point
Example	

Attribute Examples:

Class	Arrow
TSRGD Diagram Number:	1038
Description	White arrow markings (2 No.) on the carriageway.
Example	

Class	Give way
TSRGD Diagram Number:	1023A
Description	White give-way triangle on the carriageway, indicating to vehicles they must yield and give priority at the upcoming junction to prevailing traffic.

Example	

Class	Loading
TSRGD Diagram Number:	1019 1020.1
Description	Single or double yellow marking on the carriageway or kerb, perpendicular to the direction of travel, denoting an are where loading is prohibited: • A single mark is uncontinuous throughout the year. A double mark is continuous throughout the year.
Example	

Class	Other
TSRGD Diagram Number:	1064
Description	White chevrons (3 No.), at set intervals along the carriageway designed to advise vehicle spacing, used in conjunction with TSRGD No. 2933 (below)
Example	 

Class	Roundabout
TSRGD Diagram Number:	1003.4
Description	White thermoplastic forming a mini-roundabout in the centre of a junction, used in conjunction with TSRGD No. 611.1 (below).

	Note: the arrows are considered part of this marking (not similar CLASS = Arrow markings).
Example	 

Class	Stop
TSRGD Diagram Number:	1002.1
Description	Solid white lines across the carriageway, showing vehicles where they must stop (when stipulated by give-way and stop signs, traffic signals, or junctions).

Example	

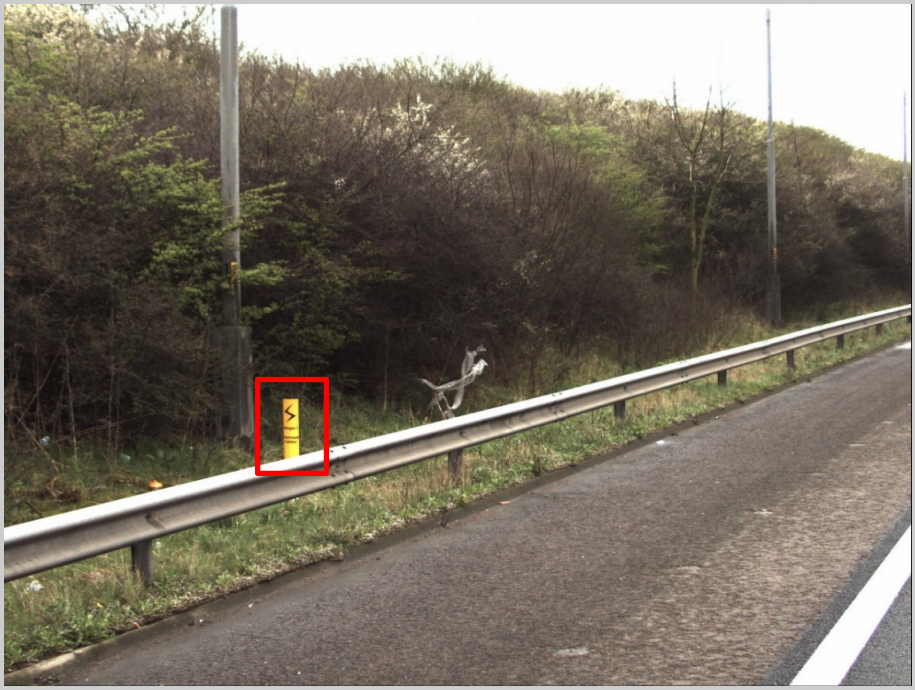
Class	Words
TSRGD Diagram Number:	1024
Description	White words on the carriageway to give warning or instruction to drivers. In this example: warning that vehicular traffic should proceed with caution because of a potential hazard ahead.

Example	

3.21 Utility Marker Post

Description	Physical markers, typically located on the hard shoulder or central reserve, denoting physical features above or beneath the carriageway (e.g. Oil/Gas pipeline, overhead power cables).
Class	Carriageway Control
Subclass	-
Asset Code	GNUM
UniClass	Pr_40_10_57_50
Geometry	Point
Example	

Attribute Examples:

Type	Overhead Power
Colour	Yellow
Description	Yellow and black marker post indicating the presence of overhead power cables crossing the carriageway at the location, typically found in pairs either side of the overhead hazard and on both side of the carriageway it crosses.
Example	

Type	Gas/oil pipeline
Colour	Other
Description	Typically red and white banded marker post indicating the presence of a burried oil or gas pipeline crossing under the road at the location.

Example	

4 Drainage

See Appendix A of CD 535 for example photographs of assets where appropriate.

5 Environmental

5.1 Amenity Grassland

Description	Grass species appropriate to the location and intensive maintenance regime. Likely to contain a maximum of 10% herb species, and no scrub.
Class	Environmental
Subclass	Grassland
Asset Code	ENAG
UniClass	SL_32_80_03
LD 117 Reference	LE1.1
Geometry	Polygon

5.2 Climbers or Trailers

Description	Climbing plants appropriate to the location or as exists on site.
Class	Environmental
Subclass	Vegetation
Asset Code	ENCY
UniClass	Pr_45_30_80
LD 117 Reference	LE3.4
Geometry	Polygon

5.3 Ecological/Wildlife Ponds

Description	Open water areas, wetland species appropriate to the location or as already exists within the highway estate. Water features that have been designed entirely to promote environmental interests.
Class	Environmental
Subclass	Water Bodies
Asset Code	ENWP
UniClass	Co_32_65_64
LD 117 Reference	LE6.1
Geometry	Polygon
Example	

5.4 Grass Reinforced Walls

Description	Reinforced, vegetated earth structures, commonly used for improvements where land take is limited.
Class	Environmental
Subclass	Grassland
Asset Code	ENGR
UniClass	Ss_45_35_45_70
Geometry	Polygon
Example	

5.5 Grassland with Bulbs

Description	Grassland with bulbs dispersed around the area covering 30-50%, with grass and herb species covering the remaining area.
Class	Environmental
Subclass	Grassland
Asset Code	ENGB
UniClass	Ss_45_35_05_35
LD 117 Reference	LE1.2
Geometry	Polygon

5.6 Groundcover

Description	May include shrubs and/or herbaceous plants, normally maximum 600mm in height, for visibility or safety/personal security.
Class	Environmental
Subclass	Vegetation
Asset Code	ENGC
UniClass	
LD 117 Reference	LE3.3
Geometry	Polygon

5.7 Heath and Moorland

Description	Grass, herb and scrub species appropriate to the heath or moorland location or as exists already on-site with species composition and diversity.
Class	Environmental
Subclass	Grassland
Asset Code	ENHM
UniClass	SL_32_65_53
LD 117 Reference	LE1.5
Geometry	Polygon
Example	

5.8 Hedgerow

Description	A boundary line of shrubs, provided that at one time the shrubs were stock proof and more or less continuous.
Class	Environmental
Subclass	Vegetation
Asset Code	ENNH
UniClass	En_32_10_37
LD 117 Reference	LE4.1, LE4.2, LE4.3, LE4.4
UK Habitat Classification Reference	h2 - Hedgerows
Geometry	Linear
Example	

5.9 Individual Trees

Description	Tree species appropriate to the location or as exists on site, identifiable as individual trees.
Class	Environmental
Subclass	Vegetation
Asset Code	ENIT
UniClass	Pr_45_30_90
LD 117 Reference	LE5.1
Geometry	Point
Example	

5.10 Linear Woodland Belt

Description	Linear belt of tree and shrub species appropriate to the location or as exists already on site. Too narrow to be considered woodland and more substantial than a hedgerow.
Class	Environmental
Subclass	Vegetation
Asset Code	ENTS
UniClass	Co_32_65_96
LD 117 Reference	LE5.1
Geometry	Polygon
Example	

5.11 Marsh and Wet Grassland

Description	Inundated or waterlogged lowland habitats differing from bogs in that, water is supplied by ground water or slow-moving rainwater and this flows through them and peat does not form.
Class	Environmental
Subclass	Grassland
Asset Code	ENWP
UniClass	SL_32_65_50
LD 117 Reference	LE6.4
UK Habitat Classification Reference	f2 – Fen marsh and swamp
Geometry	Polygon

5.12 Open Grassland

Description	Vegetation, not on waterlogged soils, with more than 75% cover of herbaceous species (grasses, rushes, herbs).
Class	Environmental
Subclass	Grassland
Asset Code	ENOG
UniClass	SL_32_65_59
LD 117 Reference	LE1.6
UK Habitat Classification Reference	g - Grassland
Geometry	Polygon
Example	

5.13 Rock and Scree

Description	Natural and artificial exposed rock surfaces which are mappable, such as inland cliffs, caves, and screes and limestone pavements, as well as various forms of excavations and waste tips such as quarries and quarry waste.
Class	Environmental
Subclass	Grassland
Asset Code	ENRS
UniClass	SL_32_65_73
LD 117 Reference	LE1.4
UK Habitat Reference	s1 – Inland Rock
Geometry	Polygon
Example	

5.14 Scrub

Description	Patches of shrubs less than 5 metres tall with continuous (>90%) cover.
Class	Environmental
Subclass	Vegetation
Asset Code	ENSC
UniClass	SL_32_65_76
LD 117 Reference	LE2.8
UK Habitat Classification Reference	h3 – Dense Scrub
Geometry	Polygon

5.15 Shrubs

Description	Individual shrub species (i.e. Dwarf Shrub or woody species) less than 5 metres tall.
Class	Environmental
Subclass	Native Vegetation
Asset Code	ENSH
UniClass	Pr_45_30_80
LD 117 Reference	LE2.6, LE3.2
Geometry	Polygon
Example	

5.16 Species Rich Grassland

Description	The sward is species-rich (as determined by the area/region Environmental team) or there is high cover of wildflowers and sedges (more than 30%, excluding white clover, creeping buttercup and injurious weeds) or the grassland is a priority habitat/targeted as part of a local plan/NIA/LNP.
Class	Environmental
Subclass	Grassland
Asset Code	ENSR
UniClass	SL_32_65_82
LD 117 Reference	LE1.3
Geometry	Polygon
Example	

5.17 Splay/Swath

Description	Area of grass and herb species appropriate to the location, subject to an intensive management regime (in accordance with operational and safety needs).
Class	Environmental
Subclass	Grassland
Asset Code	ENSS
UniClass	-
Geometry	Polygon
Example	

5.18 Wildlife Housing

Description	Purpose built feature to accommodate wildlife. Often such measures are used to mitigate for the loss of breeding or rest sites used by wildlife, or to enhance the value of an area for a particular species.
Class	Environmental
Subclass	Wildlife Structures
Asset Code	ENWO
UniClass	Pr_40_30_04
Geometry	Point
Example	

5.19 Wildlife Underpass

Description	Structure designed to facilitate the safe movement of species between habitats. Examples of underpasses include Badger Tunnels, Amphibian Tunnels, Otter Ledges and Combined Tunnel (e.g. badger/otter or deer/cattle).
Class	Environmental
Subclass	Wildlife Structures
Asset Code	ENWU
UniClass	Ss_45_55_27
Geometry	Linear
Example	

Attribute Examples:

Type	Otter Ledge
Example	

6 Geotechnical

6.1 At Grade

Description	An earthwork that may be level with, extend above, or extend below the road formation and complies with Section 4 of CS 641.
Class	Geotechnical
Subclass	Earthwork
Asset Code	GTAG
UniClass	-
Geometry	Linear
Example	

Attribute Examples:

None

6.2 Bund Front

Description	The carriageway-side of an earthwork that is not a cutting, embankment, or at-grade earthwork.
Class	Geotechnical
Subclass	Earthwork
Asset Code	GTBF
UniClass	En_32_40_30
Geometry	Linear
Example	

Attribute Examples:

None

6.3 Bund Back

Description	The non-carriageway-side of an earthwork that is not a cutting, embankment, or at-grade earthwork.
Class	Geotechnical
Subclass	Earthwork
Asset Code	GTBB
UniClass	En_32_40_30
Geometry	Linear

Attribute Examples:

None

6.4 Cutting

Description	An earthwork that extends above the road formation and complies with Section 4 of CS 641.
Class	Geotechnical
Subclass	Earthwork
Asset Code	GTCU
UniClass	En_32_40_20
Geometry	Linear
Example	

Attribute Examples:

None

6.5 Embankment

Description	An earthwork that extends below the road formation and complies with Section 4 of CS 641.
Class	Geotechnical
Subclass	Earthwork
Asset Code	GTEM
UniClass	En_32_40_26
Geometry	Linear
Example	

Attribute Examples:

None

7 Lighting

7.1 Bracket

Description	The supporting structure for the Light unit when not attached to a Lighting Column (LGLC).
Class	Lighting
Subclass	Supporting Structure
Asset Code	LGBR
UniClass	Pr_80_77_48
Geometry	Point
Example	

Attribute Examples:

Mounting Bracket	Catenary
Description	Catenary light mounting – evenly spaced lighting suspended from a supported wire. Note: rules regarding recording of columns with respect to catenary lighting.
Example	 

Mounting Bracket	Gantry mounted
Description	Example of a typical gantry bracket lighting point.
Example	

Mounting Bracket	Post (Sign)
Description	Example of a typical post bracket lighting point.

Example	

Mounting Bracket	Soffit
Description	Example of a typical single soffit mounted lighting. These lights are embedded into the mounting surface (generally found in tunnels). Note: Rule LGLU_8 – this example shows multiple Soffit lighting points.

Example	

Mounting Bracket	Wall mounted
Description	Example of a wall mounted lighting point.
Example	

7.2 Cables

Description	Carries electricity from the Interface Cabinet/Feeder Pillar/Lighting Column to the Feeder Pillar/Lighting Column/Lighting Unit.
Class	Lighting
Subclass	Electrical
Asset Code	LGCA
UniClass	Pr_65_70_48
Geometry	Linear

7.3 Chambers

Description	A chamber associated with a Lighting asset. Specifically Cables and Ducts.
Class	Lighting
Subclass	Electrical
Asset Code	LGCH
UniClass	Pr_65_70_11_12
Geometry	Point

7.4 Ducts

Description	Underground Duct system to carry electrical Cables to Lighting equipment.
Class	Lighting
Subclass	Electrical
Asset Code	LGDU
UniClass	Pr_65_52_61_65
Geometry	Linear

7.5 Earthing Point

Description	The reference point in an electrical circuit for which voltages are measured, a common return path for electric current, or a direct physical connection to the earth.
Class	Lighting
Subclass	Electrical
Asset Code	LGEP
UniClass	Pr_65_70_46_27
Geometry	Point

7.6 Feeder Pillar

Description	Supplies electricity to lighting installations.
Class	Lighting
Subclass	Electrical
Asset Code	LGFP
UniClass	Pr_60_70_22_11
Geometry	Point
Example	

Attribute Examples:

Only generic examples exist.

7.7 Interface Cabinet

Description	Supplies electricity to the Feeder Pillar
Class	Lighting
Subclass	Electrical
Asset Code	LGIC
UniClass	Co_70_30
Geometry	Point

7.8 Joint

Description	Acts a connector between a cable/circuit.
Class	Lighting
Subclass	Electrical
Asset Code	LGJO
UniClass	-
Geometry	Linear

7.9 Lighting Column

Description	A supporting structure for a lighting unit.
Class	Lighting
Subclass	Supporting Structure
Asset Code	LGLC
UniClass	Pr_80_77_48
Geometry	Point
Example	

Attribute Examples:

Material	Aluminium
Description	Typical aluminium lighting columns, with a cylindrical shape.
Example	

Material	Concrete
Description	Concrete lighting column.

Example	

Material	Steel
Description	Steel (galvanised) lighting column. Note: the pale grey, bare metal surface – indicating that it has been galvanised. Close up shows crystalline 'spangle' surface features, characteristic of galvanised steel.

Example	 

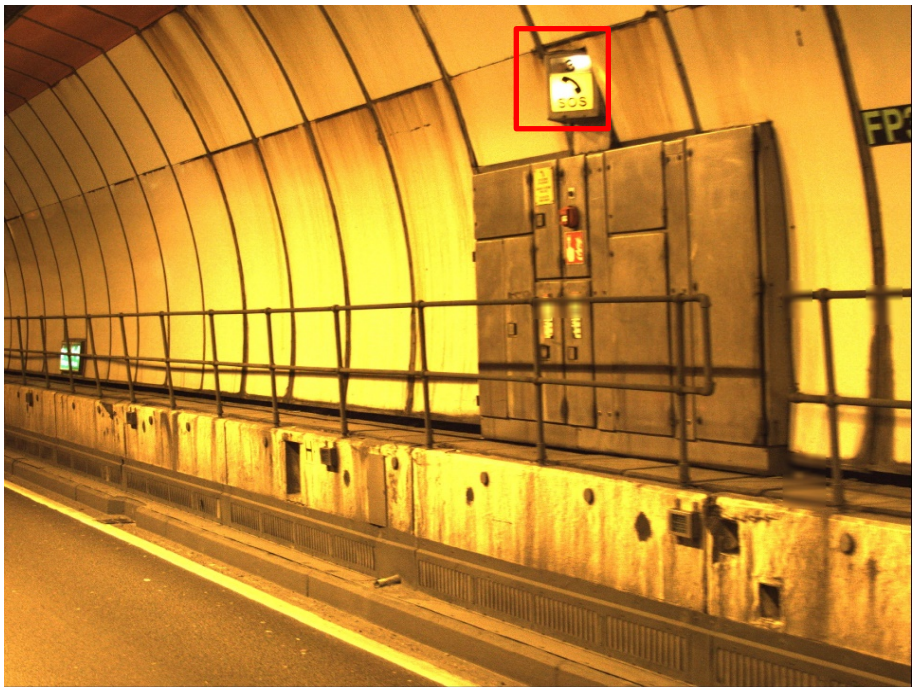
Mounting Bracket	Double
Description	Two examples of double bracket column lighting points.
Example	 

Mounting Bracket	Single
Description	Example of a typical single bracket lighting point.
Example	

7.10 Lighting Unit

Description	A lighting installation usually consisting of a column, lantern housing, and lamp.
Class	Lighting
Subclass	Electrical
Asset Code	LGLU
UniClass	Pr_70_70_49_73
Geometry	Point
Example	

Attribute Examples:

Type	Emergency Lighting
Description	Example of Emergency Lighting.
Example	

Type	High Mast Lighting
Description	Example of High Mast Lighting. Mounted on top of high mast columns (20m+).

Example	

Type	Illuminated Bollard
Description	Example of an Illuminated Bollard.
Example	

Type	Pedestrian Warning Beacon
Description	Example of a Pedestrian Warning Beacon.
Example	

Type	Road Lighting
Description	Example of Road Lighting.

Example	

Type	Sign Lighting
Description	Example of Sign Lighting
Example	

Type	Warning Lighting
Description	Example of Warning Lighting
Example	

Supporting Structure Type	Structure
Description	Examples of a structure. High mast columns (20m+), mounted with post top brackets containing multiple lights.
Example	

Supporting Structure Type	Structure
Description	Examples of a Sign Gantry with Lighting.

Example	

Supporting Structure Type	Column
Description	Example of a standard lighting column (10m).
Example	

7.11 Photo Cell

Description	A standalone Photo-Electric Cell Unit (PECU). Should be recorded when not attached to a Lighting Unit.
Class	Lighting
Subclass	Electrical
Asset Code	LGPC
UniClass	-
Geometry	Point
Example	

Attribute Examples:

Only generic examples exist.

8 Pavements

Due to the continuous, constructed nature of the Pavements asset class; appropriate visual examples do not exist for the Asset Reference Catalogue. Refer to Section 10 for guidance on surface materials which may be relevant to the Pavement surface.

9 Road Restraint

9.1 Arrester Bed

Description	Area of land adjacent to the road filled with a particular material to decelerate and arrest errant vehicles.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRAB
UniClass	SL_80_35_04
Geometry	Polygon
Example	

Attribute Examples:

Only generic examples exist.

Note	1. Close up of the start of an arrester bed. Note: the soft ground overgrown with dead grasses. This ground will impede the progress of an out of control vehicle – bringing it to a controlled stop. 2. Close up of the main length of the arrester bed. Note: soft material better visible here, with less grasses (as per maintenance requirement). 3. Example of a sign indicating an upcoming arrester bed. TSRGD No. 817.2.

Example	 


Soft escape
bed
100 yds


Escape lane
ahead

9.2 Crash Cushion

Description	A crash cushion (vehicle attenuator) is a device that absorbs energy at a controlled rate; found installed in front of a structure or mounted on the end of a safety barrier, facing oncoming traffic.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRCC
UniClass	Ss_25_16_94_95
Geometry	Polygon
Example	

Attribute Examples:

Only generic examples exist.

Note	1. Crash cushion protecting road users from an overhead sign post at an exit slip road. 2. Crash cushion protecting road users from the ends of the VRS at an exit slip road.
Example	 

9.3 End Terminal

Description	Specialised treatment mounted at the beginning or end of a safety barrier; where there is no connection to a parapet/transition to another barrier. Designed to mitigate the effects of an impact from an errant vehicle. May also provide an anchorage for the barrier system.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRET
UniClass	Ss_25_16_94
Geometry	Linear
Example	

Attribute Examples:

Type	P4
Description	P4 end terminals.
Example	

Type	P1
Description	Where the VRS descends into the ground. Above shows a departure end P1 terminal, and below shows an approach end P1 terminal. Note: lack of a concrete 'nose' found in TYPE = Pre TD19/06.

Example	

Type	Pre TD19/06
Description	Note: the concrete 'nose' at the end of the steel VRS barrier (differentiating it from P1 end terminals). This type of end terminal was common before the publication of TD19/06 (hence its name). It has now been replaced in many instances, in line with new requirements.

Example	

9.4 Inspection Cover

Description	The removable section of safety barrier for inspection purposes only.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRIC
UniClass	-
Geometry	Point
Example	

9.5 Pedestrian Guardrail

Description	A restraint system along the edge of a footway or footpath intended to restraint pedestrians and other users from stepping onto or crossing a road, or entering other areas likely to be hazardous. Note: these railings are not designed to act as road restraint for vehicles (i.e. they are NOT a Vehicle Restraint System).
Class	Road Restraint
Subclass	Pedestrian Restraint
Asset Code	RRPG
UniClass	Ss_25_15_60
Geometry	Linear
Example	

Attribute Examples:

Material	Metal
Description	Visi-rail pedestrian guard rail made from steel. Note: the high visibility grouped spacing of the vertical bars (Visi-rail is a brand product).
Example	

Material	Metal
Description	Plain pedestrian guard rail made from steel. Note: the even spacing and simple construction.

Example	

9.6 Safety Barrier (Concrete)

Description	Safety Barriers appear on the road network in several forms; creating an upstanding barrier running parallel to the carriageway (adjacent or within the central reservation). The main purpose of Safety Barriers is to contain and redirect errant road vehicles to reduce the risk of them crossing central reservations or leaving the carriageway.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRVC
UniClass	Ss_25_16_94_16
Geometry	Linear

Example	

Attribute Examples:

Only generic examples exist.

9.7 Safety Barrier (Steel)

Description	Safety Barriers appear on the road network in several forms; creating an upstanding barrier running parallel to the carriageway (adjacent to or within the central reservation). The main purpose of Safety Barriers is to contain and redirect errant road vehicles to reduce the risk of them crossing central reservations or leaving the carriageway.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRVS
UniClass	Ss_25_16_94_50
Geometry	Linear
Example	

Attribute Examples:

Only generic examples exist.

9.8 Safety Barrier Gate (Concrete)

Description	Part of a barrier which allows for quick removal and reinstallation for emergency and/or maintenance reasons.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRSC
UniClass	-
Geometry	Linear
Example	

9.9 Safety Barrier Gate (Steel)

Description	Part of a barrier which allows for quick removal and reinstallation for emergency and/or maintenance reasons.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRSS
UniClass	-
Geometry	Linear

9.10 Transition (Concrete)

Description	Provides a gradual change in performance from one road restraint system to another, and to prevent the hazards of abrupt variations.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRTC
UniClass	-
Geometry	Linear

9.11 Transition (Steel)

Description	Provides a gradual change in performance from one road restraint system to another, and to prevent the hazards of abrupt variations.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRTS
UniClass	-
Geometry	Linear

9.12 VRS Add On Motorcycle Protection

Description	A system attached to a vehicle restraint system to improve safety performance when impacted by motorcyclists; the systems typically prevent errant motorcyclists from passing under the safety barrier.
Class	Road Restraint
Subclass	Vehicle Restraint
Asset Code	RRVA
UniClass	Ss_25_16_94_65
Geometry	Linear
Example	

Attribute Examples:

Manufacturer **Product Name/ID**	Bike Guard
Description	Bike Guard motorcycle protection add on. The system functions by preventing motorcyclists from sliding under (and subsequently beyond) the barrier in a dangerous manner, should they collide with it. Note: while visually and functionally like other types, this is a specific product from Highway Care Ltd. The obviously visible rivets (in single and cross shaped [5x] configurations) differentiate it from “TYPE = Flex Guard”.
Example	

Manufacturer **Product Name/ID**	Flex Guard
Description	Flex Guard motorcycle protection add on. The system functions by preventing motorcyclists from sliding under (and subsequently beyond) the barrier in a dangerous manner, should they collide with it. Note: while visually and functionally similar to other types, this is a specific product from Hill & Smith – for use with their VRS products. The frequent evenly spaced holes, and lack of rivets in the beam face are the easiest way to differentiate it from “TYPE = Bike Guard”.

Example	

10 Network Asset Surface Materials

10.1 Introduction

This appendix gives description, example, and details regarding the surfacing materials available for a range of highway inventory assets. Primarily this information applies to:

Crossover	(MLOX)
Combined Cycle Track and Footway	(NMCF)
Cycle Track	(NMCT)
Footway	(NMFW)
Non-Carriageway Surface	(ANNS)

Note: the information on surface materials listed here is intended for visual identification of the Ancillary asset class, and not suitable for use with the Pavement asset class (i.e. carriageways), which require engineering documentation to detail their surfacing and construction.

10.2 Asphalt

The term 'Asphalt' is used in the Part 3 - Data Dictionary to refer to an asset surface that is composed of either of two similar, yet distinct, materials: **Hot-rolled Asphalt** and **Bitumen Macadam**. The reasoning for this being considerable specialist expertise is required to differentiate the surfacing materials.

Type	Hot-rolled Asphalt (HRA)
Description	Hot rolled asphalt is a bituminous material that contains large proportions of fine (small) aggregate, filler and bitumen (binder) and hardly any coarse aggregate. HRA as laid therefore has a very smooth, closed surface. In order to provide surface texture (which is needed to aid skid resistance), bitumen coated chippings are spread onto the surface and are rolled into the HRA mat immediately after it is placed. Hence the material's full name is "chipped" HRA but the term "chipped" is dropped. Identifying Hot-Rolled Asphalt can be done effectively via two visible features of its construction: • When applied the material is usually laid in lanes, leaving a visible joint between them. • It is also common practice not to lay stone chippings into the mastic mixture in the channel area along the kerb line – leaving a smoother and darker surface (highlighted in the bottom image). The most common problem associated with HRA is rutting. However much of this was down to poor mix design and the use of inappropriate aggregate. Most of the material that remains on the SRN is more than 15 years old and if it has not rutted yet then it is most unlikely to suddenly start rutting. Instead the majority of HRA failures now seen on the SRN are chip loss and fretting linked to the ageing of the bitumen.

Example	 

Type	Bitumen Macadam
Description	Bituminous macadam, also known as asphaltic concrete, provides a resilient surface suitable for minor carriageways, and non-motorised routes. It is a well-graded aggregate material, formed from stone chips with a bituminous binder. The surface provides moderate structural strength.
Example	

10.3 Block Paving

Description	Block paving is typically used in non-carriageway areas of hard surface. It is constructed from set blocks, either of cut natural stone, or manmade material. This sort of paving comes in a variety of forms and colours, however is always distinct due to its surface texture, and obvious definition between individual blocks.
Example	

10.4 Coloured Surfacing

Description	Coloured surfacing is a brightly coloured area of material, designed to provide signal or warning to users – it is typically applied in; bus lanes, cycle lanes, to highlight other hatched road markings, or as a band on the carriageway to indicate of upcoming hazard. The surface is made from coloured (natural and/or dyed) polished stone aggregate, with a binder. Typically, it is laid as a veneer over existing asphalt surfacing.
Example	 

10.5 Concrete

Description	Concrete is a common material for both carriageways and other asset surfaces. It is extremely durable, with a lifespan of >40 years, however it generates more traffic noise than Asphalt pavements. Concrete surfacing can be formed from reinforced, or unreinforced concrete. They both feature regular bays with transverse joints (25-30m spacing for reinforced, 4-6m spacing for unreinforced). The surface may also contain dowel bars, to bridge between the bays, and offer improved surface resilience and load bearing. In the simplest sense, it is constructed by pouring and levelling concrete, to make a solid surface.
Example	 

10.6 Concrete Flags

Description	Concrete flags are a common material for footways and other non-carriageway areas, as an effective alternative to block paving (typically being cheaper, easier to construct, and more durable). The surface is made from pre-cast concrete slabs; which are set on a layer of mortar or sand, with or without a mortar binding between them.
Example	

10.7 Grass

Description	Grass is a basic and inexpensive natural surfacing, suitable for non-carriageway areas that do not require a resilient hard surface. It offers a permeable surface, with a naturally bonded structure. However, this only represents low structural strength compared to manmade materials. Application is done by preparing bare soil and seeding with grass, or by laying pre-grown turf which is rolled and allowed to take hold.
Example	

10.8 Grasscrete

Description	Grasscrete is a surfacing material suitable for non-carriageway areas, where a combination of permeability and resilience is required. It is formed from pre-cast shaped settings (concrete, or other composite materials), with regular spaces designed to provide purchase for natural grass to grow. Application is done by laying the pre-cast shapes then filling the intended spaces with soil and seed, or turf.
Example	

10.9 Gravel

Description	Gravel is a basic and inexpensive surfacing material for non-carriageway areas. The surface is loose, unbonded, material providing a permeable surface with some grip. However, it provides no structural strength, and has low resilience (requiring replacement over time). Application is done by clearing the relevant area and spreading and compacting sufficient gravel to cover it.
Example	

10.10 High Skid Resistant Surfacing

Description	This is an additional surface treatment used at locations where resistance to skidding is required, more sufficiently than normal surfacing will provide – such as the approach to; traffic signals, crossings, roundabouts, or tight radii in the highway. The surface is a composite veneer, which is applied on top of the existing carriageway at the desired location. It is typically composed from a resin binder and a fine calcined bauxite aggregate, giving a very hard surface with a high Polished Stone Value (PSV) e.g. high toughness, resistance to wear, and retention of grip. The application can be done in two ways: • A sprayed hot-film resin followed by aggregate spread and embedded within it. • A pre-mixed aggregate, which is screened directly onto the carriageway. The surface is typically coloured in brown or grey, using natural colour from the aggregate. However, it may be deliberately coloured in more overt colours (e.g. red, blue) through pigmentation. Note: not to be confused with Coloured Surfacing.
Example	

10.11 Surface Dressed

Description	Surface Dressing is an economical treatment to seal the surface against water ingress and restore skid resistance. The surfacing is typically used on minor rural roads, as it is less resilient than other asphalt materials – prone to fretting (visible in both images as loose gravel-like material). The surface has a positive texture composed of bitumen with embedded stone chips but is only a laminate; providing no improvement in structural strength. Application is done by spraying a bitumen emulsion or tar onto the surface, then stone chips are immediately spread across the surface, to set into the binder.
Example	

10.12 Tactile Surfacing

Description	Tactile surfacing is used in specific locations, typically; crossovers, pedestrian crossings, and NMU crossings, to provide tactile indication to pedestrians. It is a major part of the Highways England initiative to provide increased usability features for disabled persons, under the Disabled Persons Act 1981: • Addressing a conflict between the necessity of ramped kerbs (for wheelchair users) and the danger of no discernible kerb edge at these locations (for the visually impaired). • Allowing visually impaired pedestrians to identify the safe right-of-way where a footway and cycle track run in parallel. They are composed from pre-cast slabs with studs or ridges on the upward face. These physical details can be felt underfoot by visually impaired pedestrians, warning them of the related hazard. Image 3 shows a particular type specific to cycle tracks and footways running in parallel: where perpendicular grooves indicate pedestrian right of way, and parallel grooves indicate cycle lane; allowing a visually impaired user to discern the difference but providing no tactile interruption to cyclists. Slabs are laid similarly to concrete flags, on a bed of mortar or sand with or without mortar between them. Where necessary the existing surface of the footway is cut out in the required area, to allow level placement.
Example	

10.13 Thin Surface Course Systems (TSCS)

Description	Thin surface course system (TSCS) is a generic term covering proprietary surface course materials that are laid at a thickness of less than 50mm. There are a large number of different thin surfacing's available that are classed as TSCS and they are normally classified by their thickness as follows: • Type A <18mm • Type B 18-25mm • Type C >25 to <50mm TSCS are specified as a "system" which covers their design, manufacture and installation. These materials are regulated and certified by third parties and their specification is covered by Clause 942 of the Specification for Highway Works. Most TSCS are based on materials developed originally in France and Germany and generally contain an interlocking mix of coarse aggregate held together by a "mastic" of bitumen, filler and sand. They include stone mastic asphalts (SMA) and thin asphalt concrete materials. Polymers and/or cellulose fibres are often used to modify the mastic and improve the performance of the material.
Example