This is document "Schedule 4 Part 3" referred to in this Contract

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 4 PART 3

SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 4 PART 3

SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

1 SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

1.1 General

The Scottish Executive Road Information System shall be provided to the Operating Company via a website hosted by the Director.

The Director shall supply the Operating Company with 15 licences to access the website.

The Scottish Executive Road Information System has two principal modules

(i) Pavement Management System including data for

(a) condition

(b) accident and

(c) network

and

(ii) Routine Maintenance and Management System including data for

(a) Network

(b) Inventory

(c) Defect

(d) Inspection

(e) maintenance and

(f) street lighting.

The Operating Company shall be responsible for providing the following to enable its licensed users to access the Scottish Executive Road Information System

(iii) computer terminals running the latest version of Microsoft Internet Explorer

(iv) broadband (with a minimum connection speed of 512 kilobits per second) corporate network or similar internet access

(v) security and firewall setup enabling the following protocols

(a) HyperText Transfer Protocol ("http")

(b) HyperText Transmission Protocol-Secure ("https")

(c) Citrix Internet Connection Sharing ("ICS").

The Director shall supply software for Data Capture Devices for use during inspections as required by Part 1 of Schedule 7.

The Operating Company shall supply all Data Capture Device hardware which shall meet the following minimum specifications

(vi) laptop, tablet personal computer or similar device running Windows XP

(vii) compliance with the specification in paragraph 0 of this Part 3 of this Schedule 4

(viii) minimum 40 gigabyte hard disk

(ix) global positioning system capabilities.

The Scottish Executive Road Information System shall be under continual development by the Director.

The Operating Company shall accommodate all future developments as required by the Director at any time during the Contract Period.

The Operating Company shall appoint a Scottish Executive Road Information System Coordinator who shall be responsible for the implementation and management of Scottish Executive Road Information System by the Operating Company.

The Scottish Executive Road Information System Coordinator shall provide to the Director the names and email addresses of staff whom the Operating Company has authorised to use Scottish Executive Road Information System.

The Company shall notify the Director immediately any of its authorised users leave the organisation. Operating Company staff shall not divulge their usernames or passwords to anybody.

A Scottish Executive Road Information System user group meeting shall be held from time to time to inform the Operating Company of future changes to Scottish Executive Road Information System and discuss potential developments to the Scottish Executive Road Information System.

Any developments to Scottish Executive Road Information System shall be at the sole discretion of the Director.

The Scottish Executive Road Information System Coordinator shall attend the Scottish Executive Road Information System user group at the dates and times notified in writing by the Director.

The Director shall during the Mobilisation Period and from time to time during the Contract Period provide training to the Operating Company in the use of the Scottish Executive Road Information System.

The Operating Company shall procure that all staff who shall be involved in the operation of Scottish Executive Road Information System attend such training at the dates and times notified in writing by the Director.

The Operating Company shall be responsible for providing any additional training and ensuring that the Scottish Executive Road Information System shall be used in accordance with its own procedures.

The majority of the features and functionality of the Scottish Executive Road Information System shall be available through the web site.

Some features may only be available or work better offline (for example video survey data).

During the Mobilisation Period the Operating Company shall supply one personal computer terminal for the use of the Scottish Executive Road Information System with offline data.

The personal computer terminal shall as a minimum

(x) meet the specification as referred to in paragraph 0 of this Part 3 of this Schedule 4

(xi) have a CD-ROM drive

(xii) have a USB 2.0 connection and

(xiii) have a minimum 40 gigabyte hard disk.

Offline data shall be supplied on a USB 2.0 external hard disk and updates may be provided by the Director from time to time on CD-ROM.

The Operating Company shall install the personal computer terminal in the Central Office.

The said personal computer terminal shall only be used for the purposes of the Scottish Executive Road Information System.

1.2 Pavement Management System Features

The Director shall populate the Pavement Management System module with the following

(i) road condition data including

(a) high speed survey data

(b) Sideways Co-efficient Routine Investigation Machine ("SCRIM") survey data and

(c) deflectograph survey data

(ii) traffic flow data

(iii) accident data and

(iv) road construction data.

Survey contractors employed by the Director shall undertake road condition surveys.

The Director shall notify the Operating Company in writing of the programme of routes and types of survey to be undertaken on the Unit each year during the Contract Period.

The Director's survey contractors shall liaise directly with the Operating Company informing it of dates and types of survey being undertaken on the Trunk Road network.

The Operating Company shall liaise with the survey contractors when necessary for traffic management and other safety purposes.

The Operating Company shall be responsible for analysing and interpreting the Pavement Management System data to identify structural pavement maintenance Schemes.

The Operating Company shall be responsible for updating the Scheme management module of the Pavement Management System with details of all structural maintenance Schemes in its draft maintenance programmes as referred to in Part 1 of this Schedule 4.

The status of each Scheme shall be updated by the Operating Company throughout the Contract Period.

A statement of intent as referred to in Part 1 of this Schedule 4 shall be attached to each Scheme record by the Operating Company.

The category of the Scheme shall be entered by the Director.

Whenever a Scheme includes

(v) repair

(vi) replacement or

(vii) change

of an area of carriageway greater than 30 metres in length and of width not less than half of the carriageway width the Operating Company shall produce a maintenance Scheme data sheet for that area.

If more than one specification for repair replacement or change shall be adopted within the area the Operating Company shall produce a structural pavement maintenance Scheme data sheet for the area within which each specification shall be adopted.

Maintenance Scheme data sheets shall be prepared in the form referred to in Annex 4.3/A of this Part 3 of this Schedule 4.

Such Maintenance Scheme data sheets shall contain sufficient data to identify uniquely the location and extent of the area of repair replacement or change with respect to the linear network referencing system.

Structural pavement Maintenance Scheme data sheets shall be submitted to the Director within 28 days of completion of the related repair replacement or change.

The Director shall update the road construction data within the Scottish Executive Road Information System.

1.3 Routine Maintenance and Management Features

Network

1.3.1.1 The Trunk Road network shall be defined by way of a linear network referencing system using a series of links and sections dividing each route into identifiable lengths for management purposes.

Links and sections shall be marked by sets of studs installed on the road.

Road studs shall be maintained by the Operating Company as referred to in Paragraph 3 of this Part 3 of this Schedule 4 and Part 1 of Schedule 7.

Each link and section shall have attributes defining its

(i) location

(ii) road characteristics and

(iii) shape.

1.3.1.2 Road items such as

(i) Defects

(ii) treatments

(iii) inventory

(iv) condition assessment data

(v) accidents and

(vi) the like

shall be located by their link and section number and chainage from the network node points and by Ordnance Survey Grid Reference co-ordinates.

1.3.1.3 The Trunk Road network referencing systems shall be held by the Director and supplied to the Operating Company on the Scottish Executive Road Information System.

The Operating Company shall ensure that the network referencing system shall be used in all of its systems referencing data to the Trunk Road network.

1.3.1.4 The Director shall be responsible for

(i) defining the Trunk Road network and its attributes in the Scottish Executive Road Information System

(ii) assigning link/section numbers and node points to the Trunk Road network and

(iii) updating

(a) the Trunk Road network

(b) attributes and

(c) data

in the Scottish Executive Road Information System when changes occur.

1.3.1.5 The Operating Company's responsibilities shall include but shall not be limited to

(i) notifying the Director of any changes to the Trunk Road network and providing data as referred to in paragraphs 0 to 0 inclusive of this Part 3 of this Schedule 4

(ii) ensuring that any other system used by the Operating Company uses the most up-to-date network referencing system and

(iii) notifying the Director of

(a) any error or discrepancy in Scottish Executive Road Information System

(b) the reason for such error and

(c) the proposed correction for consideration by the Director.

Inventory

1.3.1.6 The Director shall be responsible for

(i) supplying the Operating Company with the existing known inventory in the Scottish Executive Road Information System during the Mobilisation Period and

(ii) defining the inventory items and attributes to be collected within the Scottish Executive Road Information System.

1.3.1.7 The Operating Company's responsibilities shall include but not be limited to

(i) maintaining the accuracy and integrity of the inventory data

(ii) adding new inventory items and end-dating old items as the range of the inventory changes

(iii) adding the following new inventory items during the First Annual Period or during the Mobilisation Period

(a) grassed areas

(b) shrubs

(c) woodland

(d) trees

(e) scrub

(f) bulbs

(g) wetland

(h) detector loops

(i) snow poles and

(j) arrester beds and

(iv) adding new inventory attributes to items marked with a "*" in Annex 4.3/B of this Part 3 of this Schedule 4 during the First Annual Period.

Inspections and maintenance

1.3.1.8 The Director shall be responsible for defining the types of inspections and maintenance to be recorded in the Scottish Executive Road Information System.

1.3.1.9 The Operating Company's responsibilities shall include but shall not be limited to

(i) designing its inspection and cyclic maintenance routes

(ii) creating its routes in the Routine Maintenance and Management System

(iii) carrying out inspections and maintenance

(iv) identifying Category 1 and Category 2 Defects and other Defects and entering all relevant data into the Routine Maintenance and Management System

(v) uploading and downloading inspection data from and to Data Capture Devices and

(vi) recording all required data and attributes in the Routine Maintenance and Management System.

1.4 Scottish Executive Road Information System Features

The Scottish Executive Road Information System data can be accessed interrogated and retrieved using one or more of the following methods

(i) map based presentation of data

(ii) fixed reports

(iii) user defined reports and

(iv) crystal reports.

The Director shall supply the Operating Company with details of

(v) the background table Structures

(vi) relationships and

(vii) fields

used in Scottish Executive Road Information System.

The fixed reports shall include but not be limited to the following

(viii) Category 1 and Category 2 Defects and other Defects listing including

(a) survey date

(b) category

(c) description

(d) repair description and

(e) immediate temporary and permanent repair dates

(ix) Category 1 Defect repair performance

(x) inspection listing including but not limited to

(a) inspection number

(b) link/section

(c) date

(d) time

(e) inspection type

(f) inspection activities

(g) inspector and

(h) inspection method

(xi) Safety Inspection performance

(xii) Safety Patrol performance

(xiii) Rock Patrol performance

(xiv) Detailed Inspection performance and

(xv) maintenance work carried out.

The user defined reports enable users to create queries concerning the Scottish Executive Road Information System data and to save the data in a text format.

A number of crystal reports shall be provided by the Director.

The Director shall at his discretion host further crystal reports developed by the Operating Company.

The Scottish Executive Road Information System has the ability to attach documents photographs and other electronic files to records.

The Operating Company shall make extensive use of this feature to record details and evidence of its activities which may include but shall not be limited to

(xvi) completed inspection checklists

(xvii) evidence of activities being carried out

(xviii) photographic evidence of Defects

(xix) inventory design information and

(xx) photographs of inventory items where appropriate.

2 TRUNK ROAD NETWORK UPDATE

2.1 Schemes requiring network updates

Updates to the Trunk Road network referencing system shall be necessary where the geometric alignment of the road changes.

Examples include but shall not be limited to

(i) major realignments such as

(a) new motorways and

(b) bypasses of communities

and

(ii) less extensive Schemes such as

(a) on-line dualling

(b) new junction layouts

(c) roundabouts and

(d) bend straightening.

Additionally some Schemes (for example the addition of a climbing lane and on line widening) change the characteristics of the road but not necessarily the geometric alignment.

The Trunk Road network referencing system shall be updated to define the extent of such new features.

The Operating Company shall notify the Director in writing of all Trunk Road Schemes where changes of geometric alignment or characteristic necessitate updates to the Trunk Road network referencing system.

This shall be done at least 4 weeks before commencement of the construction of Operations or Works to allow the changes to be implemented.

The Operating Company shall implement processes to ensure that any Scheme likely to change the geometric alignment or characteristic of a Trunk Road shall be identified.

Sources of potential Schemes may include but shall not be limited to

(iii) Schemes promoted by the Operating Company such as minor improvement Schemes

(iv) Schemes promoted by the Scottish Executive such as bypasses and major improvement Schemes and

(v) Schemes promoted by third parties as referred to in Part 2 of Schedule 8.

The Operating Company shall submit the information listed in paragraphs 0 of this Part 3 of this Schedule 4 to enable Schemes to be incorporated into the Trunk Road network referencing system.

2.2 Information required for network reference changes

Subject to the other provisions of this Contract the following information shall be provided by the Operating Company to the Director for each Scheme identified to ensure that the changes

required can be assessed, node markers installed and the Trunk Road network referencing system updated

(i) Scheme layout plans at 1:2500 scale which shall include

(a) the Scheme chainages for each carriageway in the Scheme at the tie-in points to the existing road

(b) general layout Design data showing horizontal alignment details and

(c) for the main carriageway and any associated features (for example slip roads, roundabouts and the like) reference to the Ordinance Survey grid.

This data shall be supplied in DXF format from MX or AutoCAD or ArcView shape file format

(ii) Scheme construction commencement and completion dates.

Where applicable the date when traffic first starts using the road in a temporary traffic management contra-flow or other temporary traffic management situation before Scheme construction has been completed shall also be provided

(iii) Scheme Designer Checker Road Safety Auditor and Works Contractor or authorised contractor

(iv) construction cost and total Scheme cost

(v) the number of lanes for each new section and

(vi) once the network node locations have been consented to in writing by the Director and installed by the Operating Company or the Works Contractor or the authorised contractor details for each Scheme as follows

(a) measured lengths for each new network section including those comprising existing and/or road

(b) measured lengths of the road outwith the limits of the Scheme within sections split by a new Scheme

(c) ordinance survey grid references for each installed network node point which shall be provided as 12 figure references and shall be accurate to plus or minus 1 metre

(d) pavement construction data on forms as referred to in Annex 4.3/A to this Part 3 of this Schedule 4

(e) where construction detail changes the chainages shall be defined in terms of the Trunk Road network referencing system and

(f) a separate form shall be used for each length of new road with like construction and the relevant Scheme chainages inserted.

3 NODE MARKERS

3.1 Node marker installation

The Operating Company shall be responsible for ensuring that all node markers on the Trunk Road network shall be accurately located and visible at all times.

The Operating Company shall ensure where possible that new or replacement node markers shall be installed by the Works Contractor or the authorised contractor during the construction period so as to minimise disruption to traffic.

All other new, missing or defective node marker installations shall be treated as Category 1 Defects as referred to in Part 1 of Schedule 7 and shall be replaced by the Operating Company within 28 days of their identification.

In all cases node studs shall be installed in accordance with the Scottish Executive Advice Note 'Node Marker Standards'.

SCOTTISH MINISTERS' REQUIREMENTS

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SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

ANNEX 4.3/A – Maintenance Scheme Data Sheet

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SCOTTISH EXECUTIVE

MAINTENANCE SCHEME DATA FORM

Date supplied to SE

Unit

Route Work code Scheme number

Scheme Name

Lane Number(s) Start link / section Start chainage

End link / section End chainage

Thickness of material removed (all resurfaced areas)

LAYER	MATERIAL TYPE							MATERIAL THICKNESS	BINDER TYPE			TEXTURE			TYPE OF AGGREGATE		NOMINAL SIZE OF AGGREGATE			
	Anti skid	*Bitumen Macadem*	*Hot Rolled Asphalt*	*Surface Dressing*	*Thin layer surfacing*	*Stone Mastic Asphalt*	*Concrete*	*mm*	*Bituminous*	*Cement*	*None*	*Dense*	*Medium*	*Open*	*Crushed rock*	*Crushed gravel*	*40mm*	*20-28mm*	*10-14mm*	*6mm*
Surface																				
Binder																				
Base																				
Sub base																				

Surface material type

Binder material type

Base material type

Date works complete Design Life

Treatment statistics

Work code	101	102	103	104	105
Lane / kms					
Area sq. m					

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 4 PART 3

SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

ANNEX 4.3/B – Detailed Inventory and Inspection Procedures

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 4 PART 3

SCOTTISH EXECUTIVE ROAD INFORMATION SYSTEM

ANNEX 4.3/B – Detailed Inventory and Inspection Procedures

1 DETAILED INVENTORY AND INSPECTION PROCEDURES

This Annex 4.3/B to this Part 3 of this Schedule 4 details the inventory and inspection procedures which the Operating Company shall follow for the operation of the Routine Management and Maintenance System and describes various conventions which shall be adopted by the Operating Company when undertaking surveys in order to ensure consistency in the database record.

This Annex 4.3/B to this Part 3 of this Schedule 4 revises some of the codes in the previous Scottish Routine Maintenance and Management System Inventory and Inspection Manuals with regard to inventory attributes and inspections.

2 GENERAL SURVEY RULES (INVENTORY AND INSPECTION)

2.1 Trunk Road Network Node Points

Each Trunk Road network node point represents a fixed definable point on the road surface to which chainage can be related.

In the Routine Maintenance and Management System database the start and end nodes define the direction of survey.

The Operating Company shall use the following conventions

(i) for dual carriageways the start and end of a section shall be specified in the direction of traffic flow

(ii) on single carriageway roads the normal survey direction shall be that of increasing section numbers and

(iii) inventory items or Defects lying outside the node positions shall be recorded at the chainage of the node for example at approaches to roundabouts.

2.2 Cross-Sectional Position

The position of an inventory item or Defect within a section shall be recorded by chainage and cross-sectional position.

The longitudinal distance measured to the nearest metre along the left-hand edge of the carriageway forms the chainage and the cross-sectional position shall be defined using a single character code which shall be entered by the Operating Company's survey team at the time of data collection.

The following list of codes shall be used

KEY	POSITION
1	Left Outside Verge (including side slopes)
2	Left Footway
3	Left Verge
4	Lane 1 (hard shoulder on motorway)
5	Lane 2 (left lane on motorway)
6	Lane 3 (middle lane on motorway)
7	Lane 4 (right lane on motorway)
8	Right Verge
9	Right Footway
0	Right Outside Verge (including side slopes)
Q	Acceleration splay
W	*Lane for left turning traffic
E	*Lane for right turning traffic or Lane 5 on motorway
R	*Bus Lane - other traffic prohibited at all times or Lane 6 on motorway and
T	*Crawler Lane
Y	*Other

*To be used where extra width shall be created and not where existing lane use shall be re-designated.

An optional overlay for fitting over the keyboard of some Data Capture Devices shall be available to assist in the recording of the cross-sectional positions.

The details of which keys shall be applicable to various road types as shown in Table 2.2.2.A of this Annex 4.3/B.

	KEY										
ROAD TYPE	1	2	3	4	5	6	7	8	9	0	Others
Motor-way 3 Lane			Verge	Lane 1	Lane 2	Lane 3	Lane 4	Central Reserve			QWERTY
Dual C'way	O/S Verge	Foot-way	Verge	Lane 1	Lane 2	Lane 3		Central Reserve			QWERTY
Single 3 lane	O/S Verge	Foot-way	Verge	Lane 1	Lane 2	Lane 3		Verge	Foot-way	O/S Verge	QWERTY
Single 2 Lane	O/S Verge	Foot-way	Verge	Lane 1	Lane 2			Verge	Foot-way	O/S Verge	QWERTY
Single 1 Lane	O/S Verge	Foot-way	Verge	Lane 1				Verge	Foot-way	O/S Verge	QWERTY

Schedule 4 Part 3 Table 2.2.2.A - Overlay Format

The Operating Company shall take particular care when recording the cross-sectional positions of inventory items and Defects at complex junctions and roundabouts.

2.3 Survey Procedure

The Operating Company shall apply the following rules and conditions when conducting surveys

(i) It shall be required where possible that sections shall be surveyed in the direction of traffic flow but surveys in the reverse direction shall be supported by the system and may be used for example for safety reasons.

If a survey shall be carried out in the reverse direction to that specified by the start and end nodes in the Routine Maintenance and Management System database such as against the traffic on dual carriageways and in the reverse direction on single lane roads the cross-sectional positions shall be entered facing the position at which the survey started.

(ii) The Operating Company's Inspection team shall be informed of the survey direction indicated by the Routine Maintenance and Management System database before starting its measurements.

(iii) In general all chainage measurements shall be made along the left-hand edge of the carriageway or hard shoulder on motorways from start node to end node as referred to in the Routine Maintenance and Management System database in the direction of the traffic flow.

(iv) An item or Defect along the left-hand edge of the carriageway such as a

(a) kerb

(b) channel block

(c) gully or

(d) edge road marking

shall be recorded in the left-hand cross-sectional position 3.

If these items shall occur along the right-hand edge of the carriageway they shall be recorded in cross-sectional position 7 for up to 4 lanes and 'E' or 'R' for 5 and 6 lanes respectively.

(v) If an inventory item or a Defect occurs at the boundary of two cross-sectional positions it shall be recorded in the cross-sectional key position to its left.

This shall be known as 'the left-hand rule'.

(vi) An item or Defect on the left road boundary shall be recorded in the cross-sectional position immediately to its right.

That shall be cross-sectional position 1.

(vii) An item or Defect which occurs in the central reserve of a dual carriageway or motorway and which shall be common to both sections shall only be recorded in the nominated section.

Examples include but shall not be limited to

(a) double guardrail - record in nominated section

(b) double bracket lamp column - record in nominated section

(c) single guardrail - record in relevant section

(d) single bracket lamp column - record in relevant section

(e) uni-directional sign - record in relevant section

(f) bridges - record in nominated section.

(viii) For items which require an identity code an asterisk (*) shall be entered if the identity code shall not be present or illegible.

(ix) A large roundabout but not a mini-roundabout shall be designated as a separate section and its start/end point shall be identified.

Measurements of chainage shall be made around the outside of the roundabout in the direction of the traffic flow.

An item or Defect occurring on the central island shall be recorded in cross-sectional position 8.

(x) Roundabouts shall be defined as separate sections.

(a) Service roads

(b) remote cycle tracks

(c) remote footpaths and

(d) some redundant road laybys

may need to be treated as separate sections.

(xi) Any item outside the Trunk Road boundary but adversely affecting the carriageway for example overhanging trees shall be recorded under cross-sectional position 1 if on the left and cross-sectional position 0 if on the right.

(xii) It shall not be possible to have two identical continuous items running in the same cross-sectional position.

Position Y shall be used for one of them.

In the case of point items it is necessary to ‘move’ one item by 1 metre when recording chainage.

(xiii) Some inventory items have an off-site entry to denote ownership.

This entry may be either Scottish Ministers Local Authority or others.

2.4 Standard Procedures and Consistency

The Operating Company shall record all inventory items in a consistent way and to do this the personnel carrying out the survey shall be instructed clearly about the following

(i) the start and end of the section

(ii) reverse direction

(iii) working systematically from left to right

(iv) following the inventory rules exactly and

(v) the maintenance requirements.

The following points shall be considered when an inspection survey shall be undertaken

(vi) identify the activity first and then select the appropriate Defect code

(vii) record the Defect as seen and not the cause

(viii) when categorising a Defect as either a Category 1 Defect or a Category 2 Defect the Operating Company shall consider cyclists pedestrians and local circumstances and

(ix) record sufficient information for the repair to be carried out.

3 INVENTORY COLLECTION

3.1 Notebook Facility

The notebook facility (NT) shall not be an inventory item but shall be provided to enable the Operating Company's inspector to record notes directly on the Data Capture Device particularly inventory errors and extra inventory codes not defined in the Routine Maintenance and Management System.

The notebook facility shall be used to describe in more detail an inventory item.

For example gabions shall be recorded as "Retaining Wall - Other" and the text "Gabion" shall then be entered into the notebook.

3.2 Sign Dimensions

To simplify the entry of sign sizes a set of default dimensions such as width and height have been specified for

(i) triangular

(ii) rectangular and

(iii) circular signs.

Sign dimensions shall be recorded to the nearest 0.1 metre.

The width and heights listed cover a range of plus or minus 0.05 metre from the value stated.

If a size does not conform to the default values the width and height shall be entered directly into the Data Capture Device.

The mounting height of a sign shall be defined as the height from the bottom of the sign to the ground level.

3.3 Item Length

The inventory items in this section shall be categorised as either 'point' or 'Continuous'.

(i) Point items shall be those that occur at a specific location along the section and have virtually the same start and end chainage.

A point item shall be located by its cross-sectional position with its chainage measured from the start of the section and its section identifier.

(ii) Continuous items shall be those that occur over a particular length and have a start and end chainage.

A continuous item shall be located by its start and end chainage with its section identifier and usually cross-sectional position except where the cross-sectional position shall not be required.

Examples hereof include but are not limited to

(a) transverse culverts

(b) bridges

(c) carriageway and

(d) the like.

3.4 Double Counting

In general when collecting inventory data only the position of the end node shall be recorded in the Data Capture Device to avoid double counting.

It may be necessary to record the position of the start node if it would not otherwise be recorded for example at the Unit boundary or on the exits from roundabouts.

Care shall be taken to avoid double counting of other inventory items at start and end sections.

Examples hereof include but are not limited to

(i) carriageway

(ii) lighting points signs and

(iii) the like.

3.5 Intermediate

The intermediate feature shall be used to amend the details of a particular continuous inventory item whilst the item remains running.

An example hereof is where the carriageway surface type changes but the carriageway continues.

4 INVENTORY ITEMS IN DETAIL

4.1 Introduction

This section of this Annex 4.3/B of this Part 3 of this Schedule 4 refers in detail to those items on the Trunk Road network which shall be recorded as inventory items within the Routine Maintenance and Management System database and subsequently inspected in accordance with the requirements as referred to in this Part 3 of this Schedule 4.

Items identified during the inventory survey shall be entered into the Data Capture Device and then downloaded on to the Routine Maintenance and Management System database.

A detailed description of each inventory item follows together with the information on each item which the Operating Company shall be required to observe and record

(i) a definition or description of each item

(ii) a schedule of details to be entered into the Data Capture Device including but not limited to details of units of measurement and ranges for data input

(iii) details of conventions which shall be adopted in defining the item and

(iv) rules which shall be adhered to in defining the item.

4.2 CW - Carriageway

That part of the road constructed for use by vehicular traffic but excluding hard shoulders laybys and crossovers.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and update the inventory during the First Annual Period to include the additional attributes.

Carriageway Input Details

Item Code {CW}

Geographical Information System	Linear Shape	Recorded along left edge	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5= Grass (*)	6= Gravel (*)
		7=Concrete Flags (*)	8=Block Paving (*)
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	

Convention

4.2.1.1 A carriageway shall be defined as a continuous item with no cross-sectional position.

Rules

(i) Intermediate - use this entry when surface type or width changes but the carriageway continues.

(ii) Widths shall be recorded where changes occur.

(iii) Slip roads entering the main carriageway section shall be separate sections.

Their presence shall be indicated by the crossover (XO) item.

The width of the crossover shall be measured from the intersection of the slip road at a right angle across its lane.

4.3 HS - Hard Shoulder

A surfaced strip usually of one traffic Lane width adjacent to and abutting a carriageway intended for use by vehicles in the event of an emergency or during obstruction of the carriageway.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Hard Shoulder Input Details			
Item Code	{HS}		
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam

		3 = Concrete	4 = Surfaced Dressed
		5= Grass (*)	6= Gravel (*)
		7=Concrete Flags (*)	8=Block Paving (*)
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	

Convention

4.3.1.1 A hard shoulder shall be defined as a continuous item.

Rules

(i) A hard shoulder shall usually be recorded in cross-sectional position 4.

(ii) Intermediate - use this entry when surface type or width changes but the hard shoulder continues.

4.4 LB - Layby

A part of the road set aside for vehicles to draw out of the traffic Lanes and wait for short periods.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Layby Input Details			
Item Code	{LB}		
Geographical Information System	Linear Shape	Recorded along left edge	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
		1 = Hot Rolled Asphalt	2 = Bitumen Macadam
Surface	{--}	3 = Concrete	4 = Surfaced Dressed
		5= Grass (*)	6= Gravel (*)
		7=Concrete Flags (*)	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	

Convention

4.4.1.1 A layby shall be defined as a continuous item.

Rules

(i) A layby on the left shall be recorded in the cross-sectional position of the verge such as 3.

A layby on the right shall be recorded in cross-sectional position 7 for up to 4 lanes.

(ii) Intermediate - use this entry when surface type or width of the layby changes but the layby continues.

(iii) If the verge or footway terminates over the length of the layby these items shall be "clocked off" and re-started on the other side of the layby if they shall be present.

4.5 XO - Crossover

A pedestrian or vehicular crossing of a footway verge or central reserve.

This shall include

(i) minor junctions

(ii) driveways

(iii) field entrances and

(iv) central reserve crossovers.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Crossover Input Details			
Item Code	{XO}		
Geographical Information System	Linear Shape	Recorded along left edge	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5=Grass	6=Gravel
		7=Concrete Flags (*)	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Text	{-----}	A maximum of 20 characters	

Convention

4.5.1.2 A crossover shall be defined as a point item.

Rules

(i) A crossover shall be recorded in the cross-sectional position that is actually crossed such as the verge footway and the like

(ii) A text entry with a maximum of 20 characters to describe the crossover is required for example at a factory entrance and the like

(iii) Central reserve crossovers shall be recorded even when barriers are present to prevent the passage of vehicles and

(iv) A crossover shall be used to indicate slip roads abutting the carriageway as referred to in section 0(iii) of this Annex 4.3/B of this Part 3 of this Schedule 4.

4.6 CI - Central Island

An obstruction in the road to split traffic into Lanes and/or to provide a pedestrian refuge.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Central Island Input Details			
Item Code	{CI}		
Geographical Information System	point	OSGR coordinate of island centre	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5=Grass	6=Gravel
		7=Concrete Flags (*)	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	

Convention

4.6.1.1 A central island shall be defined as a continuous item.

Rules

(i) Intermediate - use this entry only when either the surface type or width of the island changes but the island continues.

(ii) A central island shall be recorded in the cross-sectional key position of the Lane immediately adjacent on its left-hand side.

(iii) The width of a central island shall be the “average” width.

If distinct changes in width occur intermediate measurements shall be recorded.

(iv) Other inventory items situated on a central island shall be allocated the same cross-sectional position as the island.

On single Lane roads the right-hand kerb of the island shall be recorded with cross-sectional position Y if a right-hand carriageway kerb exists.

Hatched road markings associated with a central island shall be a separate inventory item.

(v) Central islands constructed in two parts with a pedestrian refuge shall be treated as a single inventory item.

If information about the pedestrian refuge shall be required for example surface type, use crossover (XO) to record the details.

(vi) A roundabout including a mini roundabout with a raised centre and not defined as a separate section shall be treated as a central island having a width equal to its diameter.

A mini roundabout without a raised centre shall however be regarded as transverse and special road markings.

(vii) The maintainable grass width of a central island (if required) can be recorded using the verge item (VG).

4.7 CR - Central Reserve

An area that separates the carriageways of a dual carriageway road.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Central Reserve Input Details			
Item Code	{CR}		
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5=Grass	6=Gravel
		7=Concrete Flags (*)	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	

Convention

4.7.1.1 A central reserve shall be defined as a continuous item.

Rules

(i) A central reserve shall be recorded in cross-sectional position 8 and in the nominated section.

(ii) Intermediate - use this entry when either the surface type or width of the central reserve changes but the reserve continues.

(iii) The width of a central reserve shall be the “average” width.

If distinct changes in width occur intermediate measurements shall be recorded.

(iv) Other inventory items situated on a central reserve shall be allocated the same cross-sectional position as the reserve.

(v) An item which occurs in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only for example double sided safety fence with a shared post.

An item distinctly associated with both directions for example single sided safety fences with separate posts shall be recorded in the section to which it applies.

(vi) Hatched road markings associated with a central reserve shall be a separate inventory item.

(vii) When the central reserve shall be crossed by a crossover it shall be allowed to continue and not "clocked off" by the inventory program.

Thus crossover shall be used to record a change of surface which avoids termination and re-commencement of the central reserve.

(viii) The maintainable grass width of a central reserve (if required) can be recorded using the verge item (VG).

4.8 FW - Footway

A part of the road exclusively for the use of pedestrians.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

The Footway Category has not previously been added.

During the First Annual Period the Operating Company shall populate this attribute

Footway Input Details			
Item Code	{FW}		
Geographical Information System	Linear Shape	Recorded along right edge	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5=Grass	6=Gravel
		7=Concrete Flags	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Footway Category	{-}	1, 2 or 3 as defined in Schedule 7 Part 2 of this Contract	

Convention

4.8.1.1 A footway shall be defined as a continuous item.

Rules

(i) A footway shall usually be recorded in cross-sectional position 2 when on the left and position 9 when on the right of the carriageway.

(ii) Intermediate - use this entry when surface type width or the sweeping type changes but the footway continues.

(iii) When a footway shall be crossed by a crossover (XO) it shall be allowed to continue and not "clocked off" by the inventory program.

Thus crossover shall be used to record a change of surface which avoids termination and re-commencement of the footway.

(iv) When a footway and cycle facility shall occur together the item which has the principal use shall take priority and no entry shall be required for the other item.

If in doubt the entry for FW shall take priority.

4.9 CT - Cycle Facility

A part of the road normally within the Trunk Road boundary specifically for the use of pedal cycles.

The attributes marked with a (*) have been added since the previous contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

The Cycleway Category has not previously been added.

During the First Annual Period the Operating Company shall populate this attribute.

Cycle facility Input Details			
Item Code	{CT}		
Geographical Information System	Linear Shape	Recorded along right edge	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Surface	{--}	1 = Hot Rolled Asphalt	2 = Bitumen Macadam
		3 = Concrete	4 = Surfaced Dressed
		5=Grass	6=Gravel
		7=Concrete Flags	8=Block Paving
		9=SMA (*)	10 = Other
		11=High Skid Resistant surfacing (*)	12=Coloured surfacing (*)
Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Cycleway Category	{-}	1, 2 or 3	

Convention

4.9.1.1 A cycle facility shall be defined as a continuous item.

Rules

(i) A cycle facility shall be either recorded in the cross-sectional position of the footway or as part of a road Lane.

(ii) Intermediate - use this entry when surface or width changes but the cycle facility continues.

(iii) When a cycle facility shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

Thus crossover shall be used to record a change of surface which avoids termination and re-commencement of the cycle facility.

(iv) When a cycle facility and footway occur together the item which has the principal use takes priority and no entry is required for the other item.

If in doubt the entry for FW takes priority.

4.10 KB - Kerb

A border usually upstanding of natural or man-made material at the edge of a carriageway or hard shoulder.

The Operating Company shall replace the type attribute values 1-3 by attribute values 3-16 during the First Annual Period.

Kerb Input Details			
Item Code	{KB}		
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Geographical Information System	Linear Shape	Recorded along kerb	
Chainage	{----}	To the nearest metre	
Material	{-}	1= Concrete	2= Natural Stone
		3=Extruded Asphalt	4=Other
Type	{--}	1=Normal	2=Safety Kerb
		3=Other	
		10=Half battered	11=Bull nosed
		12=Splayed	13=Offlet
		14=Safety (High deflection)	15=Heel
		16=Transition	

Convention

4.10.1.1 A kerb shall be defined as a continuous item.

Rules

(i) Kerbs located on the left-hand side of the carriageway shall be recorded in cross-sectional position 3.

Those on the right-hand edge of the carriageway shall be recorded in position 7 for up to 4 lanes and position E or R for 5 and 6 lanes respectively.

(ii) Intermediate - use this entry when surface type or width changes but the hard shoulder continues.

(iii) When a kerb is crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(iv) A combined kerb and drainage unit shall not be recorded under this item. It shall be recorded under the inventory item Channel (CH).

4.11 CH - Channel

A narrow longitudinal strip generally near the edge of the carriageway constructed to carry and lead away surface water.

Channel Input Details			
Item Code	{CH}		
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Geographical Information System	Linear Shape	Recorded along centre	
Chainage	{----}	To the nearest metre	
Block type	{-}	1=Continuous Concrete	2=Preformed Concrete
		3= Natural Stone	4 = Metal Grating
		5 = Combined Kerb Blocks &Channel	6 = Other

Convention

4.11.1.1 A channel shall be defined as a continuous item.

Rules

(i) Channels shall always be recorded in cross-sectional position 3 if they are along the left-hand edge of the carriageway and cross-sectional position 7 if they shall be on the right for up to 4 lanes.

Cross-sectional positions E or R shall be used for 5 and 6 lanes respectively.

(ii) Intermediate - use this entry when the channel type changes but the channel continues.

(iii) A lined channel not running parallel to the carriageway shall be recorded under the inventory item Grip (GP).

4.12 GY - Gully

A chamber at the side of the road connected to a drainage system to receive surface water and to trap debris.

The chamber shall usually be surmounted by a grating.

Kerb Input Details			
Item Code	{GY}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{-}	1=Top Entry	2= Side Entry
		3=Other	

Convention

4.12.1.1 A gully shall be defined as a point item.

Rules

(i) Gullies located on the left-hand edge of the carriageway shall be recorded in position 3.

Gullies located on the right-hand edge of the carriageway shall be recorded in position 7 for up to four lanes and position E or R for five lanes and 6 lanes respectively.

(ii) A gully which occurs in a central reserve and collects water from both carriageways for example at a crossover shall be recorded in cross-sectional position 8 but only in the nominated section.

(iii) A gully shall be a chamber which requires to be emptied periodically and shall usually be surmounted by a grating.

A grating and other ironwork which shall not be associated with a gully such as one which shall not require to be emptied shall not be recorded.

(iv) Footway gullies shall be included in this inventory item and shall be recorded in the cross-sectional position of the footway.

(v) Gullies shall be recorded in the cross-sectional position of the grating or entry point even though the gully pot may be located in a different cross-sectional position for example side entry gullies in a central reserve.

4.13 IN - Interceptor

A Structure similar to a catchpit as referred to in section 4.14 of this Annex 4.3/B of this Part 3 of this Schedule 4 at the point where surface water enters a drainage system and designed to prevent unwanted material entering the system.

Interceptor Input Details		
Item Code	{IN}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.13.1.1 An interceptor shall be defined as a point item.

Rules

(i) It may not always be possible to identify an interceptor without prior knowledge.

The presence of an interceptor shall be verified before this inventory item shall be recorded.

4.14 CP - Catchpit

A pit provided in a drainage system to collect silt or solid material and prevent it from blocking inaccessible parts of the drains.

Kerb Input Details		
Item Code	{CP}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.14.1.1 A catchpit shall be defined as a point item.

Rules

(i) Unless it shall be clear that a catchpit exists below a manhole cover, the chamber shall be recorded under the inventory item manhole (MH).

However, if a catchpit is definitely present, the chamber shall be recorded as a catchpit and the cover shall not be recorded separately.

4.15 MH - Manhole

A chamber constructed to give access to a drain sewer or other underground service and the like.

Manhole Input Details				
Item Code	{MH}			
Geographical Information System	Point	OSGR coordinate		
Cross Sectional Position	{-}	See Section 2.2 of this Annex		
Chainage	{----}	To the nearest metre		
Type	{-}	1=Top Entry	2= Side Entry	3=Other

Convention

4.15.1.1 A manhole shall be defined as a point item.

Rules

(i) A manhole shall only be recorded if it shall not occur with a catchpit or interceptor or if it shall not be known what shall be beneath.

If in doubt a note of link identifier section, chainage and cross-sectional position shall be made.

This shall include all Trunk Road manholes plus other indistinguishable sewer authority manholes but not British Telecommunication or other Undertaker's apparatus.

(ii) Manholes which occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

4.16 PG - Piped Grip

A piped conduit across the verge of a road to lead surface water away from the carriageway.

Piped Grip Input Details		
Item Code	{GY}	
Geographical Information System	Point	OSGR coordinate if piped grip entrance
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Length	{----}	To the nearest metre between 1 and 30 inclusive

Convention

4.16.1.1 A piped grip shall be defined as a point item.

Rules

(i) A piped grip shall be recorded in the cross-sectional position of the offlet.

Where the offlet shall be located in the kerb it shall be recorded in the cross-sectional position of the kerb.

(ii) Ironwork associated with a piped grip including gratings not surmounting a gully shall not be recorded as a separate inventory item.

(iii) A kerb offlet or weir associated with a piped grip shall not be a separate inventory item such as a gully inlet with no gully pot.

(iv) A grip shall be no longer than 5 metres.

Pipes longer than 5 metres shall be recorded as piped drainage.

4.17 PD - Piped Drainage

A piped conduit usually

(i) connection manholes

(ii) interceptors

(iii) gullies and

(iv) the like.

The Operating Company shall collect inventory for any new piped drainage systems constructed during the Contract.

Subject to an order by the Director, the Operating Company shall also collect inventory for existing piped drainage when detailed investigations and other investigations are carried out.

Piped Grip Input Details			
Item Code	{PD}		
Geographical Information System	Linear Shape	Recorded along centre of pipe. As a minimum this shall be a straight line between the two end points of the pipe.	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Length	{----}	To the nearest metre between 1 and 30 inclusive	
diameter	{----}	To the nearest 0.1 metre between 0.1 and 99.0	
material	{-}	1=clay	2= concrete
		2=plastic	4=ceramic
		5=steel	10=other

Convention

4.17.1.2 A piped drainage shall be defined as a linear item.

4.18 GP - Grip

A shallow trench across the verge of a road to lead surface water away from the carriageway.

Grip Input Details			
Item Code	{GP}		
Geographical Information System	Point	OSGR coordinate of grip entrance	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Width	{----}	To the nearest 0.1 metre between 0.1 and 5.0	
Length	{----}	nearest 0.1 metre between 0.1 and 9.9	
Type	{-}	1=Lined	2= Unlined

Convention

4.18.1.1 A grip shall be defined as a point item.

Rules

(i) A grip shall be recorded over each cross-sectional position it crosses.

(ii) Both hand-cut unlined grips and pre-formed lined concrete types shall be recorded.

4.19 DI - Ditch

A trench adjacent to a carriageway for drainage generally running parallel to the carriageway.

Ditch Input Details		
Item Code	{DI}	
Geographical	Linear	Recorded along centre of ditch

Information System	Shape		
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{-}	1=Lined	2= Unlined

Convention

4.19.1.1 A ditch shall be defined as a continuous item.

Rules

(i) A ditch on the left road boundary line shall be recorded in cross-sectional position 1 and if on the right road boundary line in position 0.

4.20 FD - Filter Drain

A field drain usually adjacent and running parallel to a carriageway surrounded by granular material such as gravel within which may be laid a porous or perforated pipe.

Filter Drain Input Details		
Item Code	{FD}	
Geographical Information System	Linear Shape	Recorded along centre of filter drain
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.20.1.1 A filter drain shall be defined as a continuous item.

Rules

(i) Filter drains which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

(ii) Counterfort drains shall be recorded as a separate item as referred to in section 4.21 of this Annex 4.3/B of this Part 3 of this Schedule 4.

4.21 CD - Counterfort Drain

A field drain other than a filter drain running parallel to a carriageway surrounded by granular material such as gravel including herringbone and intercepting drains.

Counterfort Drain Input Details		
Item Code	{CD}	
Geographical Information System	Linear Shape	Recorded along centre of Counterfort drain
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.21.1.1 A counterfort drain shall be defined as a continuous item.

Rules

(i) The start chainage of a counterfort drain occurs when the measuring wheel shall be level with the point at which the drain shall be first encountered.

(ii) The end chainage occurs when the measuring wheel shall be level with the point at which the drain shall last be encountered.

4.22 CV - Culvert

An enclosed channel or large pipe for conveying water below ground usually under a road.

Culvert Input Details		
Item Code	{CV}	
Geographical Information System	Linear Shape	Recorded along centre of culvert. As a minimum this shall be a straight line between the two end points of the Culvert.
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Length	{----}	To the nearest 0.5 metre
Diameter	{----}	To the nearest 0.1 metre

Convention

4.22.1.1 A culvert shall be defined as a point item but with no cross-sectional position.

Rules

(i) Culverts parallel to the carriageway shall be recorded at their mid-point.

A written note of the length and diameter shall also be taken.

(ii) Culverts which occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

4.23 BP - Balancing Pond

A catchment area adjacent to a carriageway to collect surface run-off following heavy rain and then discharge it into a road drainage system.

Balancing Pond Input Details			
Item Code	{BP}		
Geographical Information System	Point	OSGR coordinate of balancing pond centre	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Distance From Carriageway	{----}	To the nearest metre between 1 and 9999	
Outflow Control	{-}	1 = No Outflow Control	2 = Outfall Flow Regulating Device

Convention

4.23.1.1 A Balancing Pond shall be defined as a point item.

Rules

(i) Balancing ponds shall not necessarily occur within the trunk road boundary and may be located some distance from the carriageway.

(ii) Where a balancing pond occurs outside the road boundary it shall be recorded as cross-sectional position 1 if it shall be on the left and cross-sectional position 0 if it shall be on the right.

4.24 OF - Outfall, headwall or apron

Outfall, headwall or apron associated with road drainage or culverts.

The Operating Company shall collect all outfall headwall and apron inventory during the First Annual Period.

Outfall Input Details		
Item Code	{OF}	
Geographical Information System	Point	OSGR coordinate of Outfall centre
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.24.1.1 An outfall headwall or apron shall be defined as a point item.

Rules

(i) Outfalls headwall or aprons shall not necessarily occur within the trunk road boundary and may be located some distance from the carriageway.

(ii) Where an outfall headwall or apron shall occur outside the road boundary it shall be recorded as cross-sectional position 1 if it shall be on the left and cross-sectional position 0 if it shall be on the right.

4.25 SV - sluices and valves

Sluices, tidal flaps, penstocks and valves associated with road drainage, culverts or water courses.

The Operating Company shall collect all sluice and valve inventory during the First Annual Period.

Sluice and valve Input Details		
Item Code	{SV}	
Geographical Information System	Point	OSGR coordinate of sluice and valve centre
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.25.1.1 Sluices and valves shall be defined as a point item.

Rules

(i) Sluices and valves shall not necessarily occur within the trunk road boundary and may be located some distance from the carriageway.

(ii) Where Sluices and valves occur outside the road boundary it shall be recorded as cross-sectional position 1 if it shall be on the left and cross-sectional position 0 if it shall be on the right.

4.26 AI - Ancillary Equipment

Ancillary equipment, including pumps, associated with road drainage.

The Operating Company shall collect all ancillary equipment inventory during the First Annual Period.

Ancillary equipment Input Details		
Item Code	{AI}	
Geographical Information System	Point	OSGR coordinate of Ancillary equipment centre
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre

Convention

4.26.1.1 Ancillary equipment shall be defined as a point item.

Rules

(i) Ancillary equipment shall not necessarily occur within the trunk road boundary and may be located some distance from the carriageway.

(ii) Where ancillary equipment shall occur outside the road boundary it shall be recorded as cross-sectional position 1 if it shall be on the left and cross-sectional position 0 if it shall be on the right.

4.27 CC - Communication Cabinet

A cabinet containing electronic equipment associated with communication installations traffic signals and other road features.

Communication Cabinet Input Details		
Item Code	{CC}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Identity Code	{-----}	Optional
Type Code	{----}	Optional

Convention

4.27.1.1 A communication cabinet shall be defined as a point item.

Rules

(i) When the cabinet identity code shall be either not present or illegible an asterisk (*) shall be entered.

4.28 TB - Emergency Telephone Box

A telephone located adjacent to the carriageway solely for use in an emergency.

Emergency Telephone Input Details		
Item Code	{TB}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Identity Code	{-----}	Optional

Convention

4.28.1.1 An emergency telephone box shall be defined as a point item.

Rules

(i) If an identity code shall not be present or shall be illegible an asterisk (*) shall be used.

(ii) Only emergency telephone boxes which shall be the sole responsibility of the Scottish Ministers shall be recorded.

4.29 TV - CCTV and speed cameras

A Closed Circuit Television camera or speed camera.

Closed Circuit Television camera or speed camera inventory has previously been collected under the CC – Communication Cabinet inventory item.

The Operating Company shall extract all Closed Circuit Television camera or speed camera inventory from the Communications Cabinet inventory during the First Annual Period.

Closed Circuit Television and speed camera Input Details		
Item Code	{TV}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Identity Code	{-----}	Optional

Convention

4.29.1.1 A Closed Circuit Television or speed camera shall be defined as a point item.

Rules

(i) If an identity code shall not be present or shall be illegible an asterisk (*) shall be used.

(ii) Only Closed Circuit Television or speed camera which shall be the responsibility of the Scottish Ministers shall be recorded.

4.30 EC - Embankments and Cuttings

An embankment shall be an area where the carriageway has been raised above existing ground level usually using earth or rock construction.

A cutting shall be an area where the carriageway shall be below existing ground level within an excavation.

Embankments and Cuttings Input Details		
Item Code	{EC}	
Geographical Information System	Polygon	Polygon around boundary of embankment or cutting
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Angle	{--}	To the nearest 5 degrees between minus 90 and plus 90
Height	{---}	To the nearest 5 metres between 0 and 100

Convention

4.30.1.1 An embankment or cutting shall be defined as a continuous item.

Rules

(i) Intermediate - use this entry when either the angle or height of the embankment/ or cutting shall change but the embankment or cutting continues.

(ii) When an embankment or cutting shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(iii) To distinguish between an embankment and a cutting the angle shall be recorded as positive for an embankment - for example +30 and negative for a cutting - for example -30.

The actual angle shall be recorded to the nearest 5 degrees where possible.

(iv) Minor occurrences less than 3 metres in height shall be ignored.

(v) Record side slopes between slip road and main carriageway as part of and relative to the main carriageway.

(vi) A central reserve slope shall be recorded as part of and relative to the nominated section except where it comprises two slopes in which case each shall be recorded with adjacent carriageway sections.

(vii) If required the maintainable grass width of an embankment or cutting shall be recorded using the verge item (VG).

4.31 VG - Verge

The part of the road outside the carriageway and generally at substantially the same level.

Verge Input Details			
Item Code	{VG}		
Geographical Information System	Linear Shape	Recorded along carriageway edge of verge	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Actual Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Maintained Width	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Angle	{-}	1 = Level	2 = Inclined
		3 = Steep	

Convention

4.31.1.1 A verge shall be defined as a continuous item.

Rules

(i) The maintained verge width shall be the “maintainable” width including visibility splays and if in doubt shall be regarded as a single swathe width.

(ii) Intermediate - use this entry when the width or angle changes but the verge continues.

(iii) When a verge shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(iv) Left or right verges and left or right outside verges shall be recorded separately so that obstacles to mowing can be counted.

4.32 GA - Grassed Areas

A Grassed Area

The Operating Company shall collect and add grassed area inventory to the Routine Maintenance and Management System during the First Annual Period.

Hedge Input Details			
Item Code	{HG}		
Geographical Information System	Polygon	Polygon denoting the outside of the grassed area	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Cut Frequency	{-}	1= High Frequency	2= Medium Frequency
		3=Low Frequency	4=Minimum Frequency
Plot No.	(----}	Landscape Action Plan plot number	
Boundary	(----}	Relevant info on surrounding borders	
Gradient	(----}	Note of any particular slopes	
Special Considerations	(----}	e.g. obstacles to mowing	

Convention

4.32.1.1 A grassed area shall be defined as an area item.

4.32.1.2 Different areas shall be defined for each cut frequency.

4.32.1.3 High frequency cut area shall be high amenity areas within specified cities towns and villages where grass areas are to appear neatly and close mown all year round.

4.32.1.4 Medium frequency cut areas shall be amenity areas within all cities towns and villages not subject to the high amenity threshold, urban roundabouts, locations where there shall be imposed a speed limit of 40mph or less and adjacent to lay-bys including 50m from end of merge and diverge sections.

4.32.1.5 Low frequency cut areas shall be general road verges (predominantly 1.2m swathe), central reserves and visibility splays.

4.32.1.6 Minimum frequency cut areas shall generally be

(i) embankments

(ii) cuttings

(iii) ditches and

(iv) wild flower areas.

Rules

(v) Each grassed area shall be recorded in the cross-sectional position in which it shall occur.

(vi) Grassed areas which shall occur in the central reserve of dual carriageways and motorways and which are common to both sections shall be recorded in the nominated section only.

(vii) When a grassed area shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(viii) If there shall be any doubt as to the ownership of the grassed area then it shall be recorded within the Trunk Road inventory.

4.33 HG - Hedge

Distinct linear planting strips within the road corridor (usually marking boundary lines) which shall be intended to be formally shaped and maintained.

Hedge Input Details		
Item Code	{HG}	
Geographical Information System	Linear Shape	Recorded along centre of hedge.
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Plot No.	(----}	Landscape Action Plan plot number
Support	(----}	e.g. fence, wall etc
Species	(----}	Text description of species content
Purpose	(----}	Text description of form and purpose of planting
Date of planting	(----}	

Convention

4.33.1.1 A hedge shall be defined as a continuous item.

Rules

(i) A hedge shall be recorded in the cross-sectional position in which it shall occur.

(ii) Hedges which have been laid to provide stockproof barriers and which shall be the responsibility of the Scottish Ministers shall be recorded.

(iii) Only hedges which front on to the road and which shall be the responsibility of the Scottish Ministers or which although the responsibility of others may cause nuisance or obstruction to the road shall be recorded in this inventory item.

(iv) Hedges which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

(v) When a hedge shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(vi) If there shall be any doubt as to the ownership of the hedge then it shall be recorded.

4.34 SR - Shrub

An ornamental or woodland planted area.

The Operating Company shall collect and add shrub inventory to the Routine Maintenance and Management System during the First Annual Period.

Hedge Input Details		
Item Code	{HG}	
Geographical Information System	Linear Shape	Recorded along centre of hedge.
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Plot No.	(----}	Landscape Action Plan plot number
Support	(----}	e.g. fence, wall etc
Species	(----}	Text description of species content
Purpose	(----}	Text description of form and purpose of planting
Date of planting	(----}	

Convention

4.34.1.1 A shrub area shall be defined as an area item.

4.34.1.2 Different areas shall be defined for each type of shrub area.

4.34.1.3 Ornamental shrub areas shall normally be planted as a visual element of the road corridor usually associated with settlements and cities towns and villages and urban roundabouts.

4.34.1.4 Woodland shrub areas shall generally be native major and minor shrub species (excluding gorse and broom) informally planted or developing along road corridor up to a height of approximately 3.5m.

Rules

(i) A shrub area shall be recorded in the cross-sectional position in which it shall occur.

(ii) Shrub areas which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

(iii) When a shrub area shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(iv) If there shall be any doubt as to the ownership of the shrub area then it shall be recorded.

4.35 WD - Woodland

A collection of trees.

The Operating Company shall collect and add woodland inventory to the Routine Maintenance and Management System during First Annual Period.

Woodland Input Details			
Item Code	{WD}		
Geographical Information System	Polygon	Polygon denoting the outside of the shrub area	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{-}	1= New woodland	2= Established woodland
		3= Maturing woodland	
Plot No.	(----}	Landscape Action Plan plot number	
Boundary	(----}	Relevant info on surrounding borders	
Species	(----}	Text description of species content	
Purpose	(----}	Text description of form and purpose of planting	
Date of planting	(----}	Date of planting	

Convention

4.35.1.1 A woodland area shall be defined as an area item.

4.35.1.2 Different areas shall be defined for each type of woodland.

4.35.1.3 New woodland (under 5 years old) shall be newly planted or seeded areas of predominantly tree species with the potential of developing into a mature wooded area.

4.35.1.4 Established woodland (5-10 years old) shall be areas of tree species with or without woodland shrubs and with the potential of developing into a mature wooded area.

4.35.1.5 Maturing woodland (over 10 years old) shall be areas of dense tree cover whether single or mixed species or varieties and with or without a woodland shrub layer.

Rules

(i) A woodland area shall be recorded in the cross-sectional position in which it shall occur.

(ii) When a woodland area shall be crossed by a crossover (XO) it shall be allowed to continue and not “clocked off” by the inventory program.

(iii) If there shall be any doubt as to the ownership of the woodland area then it shall be recorded.

4.36 TR - Tree

A perennial plant with a single woody self-supported trunk and branches including

(i) Lone trees, or where there shall be no interlocking canopy with the nearest neighbour

(ii) Sporadic trees where there shall be a loose arrangement of established trees with occasional interlocking canopies.

Tree Input Details		
Item Code	{TR}	
Geographical Information System	Point	point denoting the centre of the tree
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Plot No.	(----}	Landscape Action Plan plot number
Species	(----}	Text description of species content
Purpose	(----}	Text description of form and purpose of planting
Date of planting	(----}	Date of planting

Convention

4.36.1.2 A tree shall be defined as a point item.

Rules

(i) Only trees with a diameter and height greater than 0.2 metres and 1 metre respectively shall be recorded.

(ii) Each individual lone tree where there shall be no interlocking canopy with the nearest neighbour shall be recorded.

(iii) Each individual sporadic tree where there shall be a loose arrangement of established trees with occasional interlocking canopies shall be recorded.

4.37 SC - Scrub

An area of undesired self seeded vegetation predominantly but not exclusively gorse, broom, birch and/or bramble up to a height of 2.5m.

The Operating Company shall collect and add scrub inventory to the Routine Maintenance and Management System during the First Annual Period.

Hedge Input Details		
Item Code	{SC}	
Geographical Information System	Polygon	Polygon denoting the outside of the scrub area
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Plot No.	(----}	Landscape Action Plan plot number
Boundary	(----}	Relevant info on surrounding borders
Species	(----}	Text description of species content
Impact	(----}	Text description of impact or affect on surrounding environment

Convention

4.37.1.1 A scrub area shall be defined as an area item.

Rules

(i) A scrub area shall be recorded in the cross-sectional position in which it occurs.

(ii) Scrub areas which occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

(iii) When a scrub area shall be crossed by a crossover (XO) it shall be allowed to continue and not "clocked off" by the inventory program.

(iv) If there shall be any doubt as to the ownership of the scrub area then it shall be recorded.

4.38 BB - Bulb

An area of naturalised or planted bulbs.

The Operating Company shall collect and add bulb inventory to the Routine Maintenance and Management System during the First Annual Period.

Bulb Input Details		
Item Code	{BB}	
Geographical Information System	Polygon	Polygon denoting the outside of the scrub area
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Plot No.	(----}	Landscape Action Plan plot number
Species	(----}	Text description of species content

Convention

4.38.1.1 A bulb area shall be defined as an area item.

Rules

(i) A bulb area shall be recorded in the cross-sectional position in which it shall occur.

(ii) Bulb areas which shall occur in the central reserve of dual carriageways and motorways and which are common to both sections shall be recorded in the nominated section only.

(iii) When a bulb area shall be crossed by a crossover (XO) it shall be allowed to continue and not "clocked off" by the inventory bulb area then it shall be recorded.

4.39 WT - Wetland

An area associated with permanent or semi-permanent water from open water bodies to areas of boggy ground.

The Operating Company shall collect and add wetland inventory to the Routine Maintenance and Management System during the First Annual Period.

Bulb Input Details		
Item Code	{WT}	
Geographical Information System	Polygon	Polygon denoting the outside of the scrub area
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Plot No.	(----}	Landscape Action Plan plot number
Boundary	(----}	Relevant info on surrounding borders
Description	(----}	Text description of feature

Convention

4.39.1.1 A wetland area shall be defined as an area item.

Rules

(i) A wetland area shall be recorded in the cross-sectional position in which it shall occur.

(ii) When a wetland area shall be crossed by a crossover (XO) it shall be allowed to continue and not "clocked off" by the inventory wetland area then it shall be recorded.

4.40 SF - Safety Fence

A vehicle restraint system in the form of a continuous barrier erected alongside a carriageway including safety barriers on bridges.

Safety Fences and Barriers Input Details			
Item Code	{SF}		
Geographical Information System	Linear Shape	Recorded along centre of safety fence	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{-}	1 = Tensioned	2 = Untensioned
		3 = Concrete	4 = Wire
Shape	{-}	1 = Single Sided	2 = Double Sided
Post	{-}	1 = Wood	2 = Metal
		3 = Other	
Beam Profile	{-}	1 = Corrugated	2 = Box
		3 = Other	

Convention

4.40.1.1 A safety fence shall be defined as a continuous item.

Rules

(i) Intermediate - use this entry when the type, shape or post type of the fence change but the fence continues.

(ii) Safety fences which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

(iii) A safety fence with separate posts shall be recorded in the section to which it applies.

4.41 PR - Pedestrian Guardrail

A protective fence usually on the edge of a footway intended to restrain pedestrians from stepping on to the carriageway or other area likely to be hazardous.

Pedestrian Guardrail Input Details			
Item Code	{PR}		
Geographical Information System	Linear Shape	Recorded along centre of pedestrian guardrail	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Material	{-}	1 = Steel	2 = Alloy
		3 = Timber	4 = Other

Convention

4.41.1.1 A pedestrian guardrail shall be defined as a continuous item.

Rules

(i) A pedestrian guardrail associated with a footway shall be recorded on the cross-sectional position of the footway left or right.

(ii) Intermediate - use this entry when the material from which the guardrail shall be made changes but the guardrail continues.

4.42 FB - Fences and Barriers

A boundary fence wall or barrier for screening noise, headlight glare or to prevent access.

The attributes marked with a (*) have been added since the previous Contract.

The Operating Company shall review and amend the inventory during the First Annual Period to include the additional attributes.

Fence and barrier Input Details			
Item Code	{FB}		
Geographical Information System	Linear Shape	Recorded along centre of fence or barrier	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Function		1 = Anti-glare	2 = Noise
		3 = Boundary	4 = Other
		5=snow fence(*)	
Material		1 = Timber	2 = Timber Post & Wire

		3 = Metal Post & Wire	4 = Mesh
		5 = Vane	6 = Other
		7=brick(*)	8=stone(*)

Convention

4.42.1.1 A fence or barrier shall be defined as a continuous item.

Rules

(i) A fence along the left-hand Trunk Road boundary shall be recorded in cross-sectional position 1 and in cross-sectional position 0 if it shall be on the right-hand Trunk Road boundary.

(ii) Intermediate - use this entry when the type of fence or barrier changes but the fence or barrier continues.

(iii) All fences and barriers for which the Scottish Ministers shall be responsible shall be recorded.

Private fences and barriers shall not be recorded.

If there is any doubt of the ownership of fences or barriers they shall be recorded.

(iv) Safety barriers shall be recorded under the inventory item of safety fence (SF).

(v) When a fence or barrier shall be crossed by a crossover (XO) it shall be allowed to continue and not "clocked off" by the inventory program.

(vi) Fences and barriers which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

4.43 RW - Retaining Wall

A Structure constructed to resist lateral pressure from the adjoining ground or to maintain a mass of earth in position.

Retaining wall Input Details			
Item Code	{RW}		
Geographical Information System	Linear Shape	Recorded along centre of retaining wall	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{-}	1 = Mass Concrete	2 = Reinforced Concrete
		3 = Reinforced Earth	4 = Stone
		5 = Brick	6 = Gabion
		7 = Sheet Piles	8 = Other
Height	{----}	To the nearest 0.1 metre between 0.0 and 99.9	
Position	{-}	1 = Above Road Level	2 = Below Road Level

Convention

4.43.1.1 A retaining wall shall be defined as a continuous item.

Rules

(i) Intermediate - use this entry when the height of a wall changes but the wall continues.

(ii) A wall along the left-hand Trunk Road boundary shall be recorded in cross-sectional position 1 and in cross-sectional position 0 if it shall be on the right-hand Trunk Road boundary.

4.44 CB - Traffic Control Barrier

A moveable barrier or gate which shall control the flow of traffic or which shall be used to close sections of the road in severe weather conditions.

Traffic Control Barriers Input Details			
Item Code	{CB}		
Geographical Information System	point	Recorded along centre of Counterfort drain	
Chainage	{----}	To the nearest metre	
Location	{-}	1 = Rail Crossing	2 = Canal Crossing
		3 = Toll Barrier	4 = Snow Gate
		5 = Other	
Type	{-}	1 = Barrier	2 = Gate
		3 = Other	
Arrangement		1 = Full Width/Single	2 = Full Width/Double
		3 = Half Width	4 = Other
Control		1 = Automatic/Local	2 = Automatic/Remote
		3 = Manual/Attended	4 = Manual/User Operated
		5 = Other	

Convention

4.44.1.1 A traffic control barrier shall be defined as a point item.

Rules

(i) Traffic signals (wig wags) and road markings at a traffic control barrier shall be separate inventory items.

(ii) Only one barrier shall be recorded at a particular chainage regardless of whether it shall be in two parts or more.

4.45 RS - Road Studs

A stud placed in the carriageway to guide traffic.

Road Stud Input Details			
Item Code	{RS}		
Geographical Information System	Linear Shape	Recorded along centre	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Location	{-}	1 = Rail Crossing	2 = Canal Crossing
		3 = Toll Barrier	4 = Snow Gate
		5 = Other	
Type	{-}	1 = Reflective ("Catseye")	2 = Stick on/Single Sided
		3 = Stick on/Double Sided	4 = Non-reflective
		5 = Other	
Class	{-}	1 = Prohibitory	2 = Warning/ Informatory
		3 = Other	
Spacing	{----}	To the nearest 0.1 metre between 0.1 and 25.0	
Colour	{-}	1 = White	2=
		3 = Red	4 = Amber
		5 = Green	6 = Other

Convention

4.45.1.1 Road studs shall be defined as a continuous item.

Rules

(i) This item shall be for longitudinal road studs only.

(ii) For the purposes of this inventory item, all depressible road studs shall be recorded as reflective.

(iii) Road studs occurring at the boundary between lanes shall be recorded in the cross-sectional position of the lane to their left.

(iv) Intermediate - use this entry when the type, class, spacing or colour of the road studs shall change but the studs shall continue.

(v) Transverse road studs associated with a pedestrian crossing shall not be recorded.

These studs shall be incorporated in the inventory item pedestrian crossing (PX).

(vi) Road studs along the right-hand edge of hatched road markings shall be recorded with a cross-sectional position of Y.

(vii) Use 1 = PROHIBITORY (usually red or amber) for studs which shall occur in continuous single or double lines and 2 = WARNING/INFORMATORY

(usually white or green) for studs which shall occur in dotted lines and where road markings shall be non-prohibitory or advisory.

(viii) White studs may also be prohibitory when employed in a double white line system.

4.46 LH - Road Markings (Hatched)

Road markings on the carriageway with a distinctive hatched design.

Road Markings (hatched) Input Details			
Item Code	{LH}		
Geographical Information System	Linear Shape	Recorded along centre	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Diagram Number	{-----}	Alphanumeric	
Width	{----}	To the nearest 0.1 metre between 0.1 and 99.9	
Material	{-}	1 = Thermoplastic Spray	2 = Thermoplastic Screed
		3=	4 = Other
Pattern		1 = Diagonal	2 = Chevron
		3 = Cross	4 = Solid
		5 = Bars	6 = Other
Type of Edge Line		1 = Prohibitory	2 = Warning/ Informatory
		3 = None	

Convention

4.46.1.1 Hatched road markings shall be defined as a continuous item.

Rules

(i) Intermediate – use this entry when the width, material or pattern changes but the markings shall continue.

(ii) The cross-sectional position OTHER shall be used to indicate that bars (transverse yellow bar markings) or cross hatching (e.g. box junctions) shall extend across the whole of the carriageway.

(iii) Lines around the edge of hatched road markings shall be included as part of the hatching and not recorded as a separate inventory item.

(iv) The width of an area of hatched markings shall be the "average" width.

In the case of a tapered marking this shall occur roughly half way along its length.

(v) Diagonally hatched road markings can occur in a variety of situations.

In the following cases they shall be allocated to the cross-sectional position indicated:

(a) as an extension to a central reserve at the end of a dual carriageway and in the same section.

Record in cross-sectional position 8 in the nominated section.

(b) as an extension to a central reserve at the end of a dual carriageway and in a different section.

Record in the cross-sectional position of the lane immediately adjacent on the left-hand side.

(c) where hatching shall occur between two lanes record it in the cross-sectional position of the lane immediately adjacent on the left-hand side.

(vi) Road studs associated with road markings shall be recorded as a separate inventory item, see Section 4.45 of this Annex 4.3/B to this Part 3 of this Schedule 4.

(vii) If road markings shall occur at the boundary of two cross-sectional positions they shall be recorded in the cross-sectional position to their left.

(viii) For details of the Diagram Number refer to the Traffic Signs Regulations and General Directions.

4.47 LL - Road Markings (Longitudinal)

Road markings which lie along the carriageway or along the edge of the carriageway.

Road Markings (Longitudinal) Input Details			
Item Code	{LL}		
Geographical Information System	Linear Shape	Recorded along centre	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Diagram Number	{-----}	Alphanumeric	
Class	{-}	1 = Double	2 = Single
		3 = Hazard	4 = Other
Colour	{-}	1 = White	2 = Yellow
		3 = Red	7 = Conservation Yellow
Type	{-}	1 = Broken	2 = Unbroken
		3 = Broken & Unbroken	4 = Zig-Zag
		5 = Other	
Material	{-}	1 = Thermoplastic Spray	2 = Thermoplastic Screed
		3=	4 = Other
			7 = Raised Edge Rib
Length	{----}	To the nearest 0.1 metre between 0.0 and 10.0	
Gap	{----}	To the nearest 0.1 metre between 0.0 and 25.0	
Width	{----}	To the nearest 0.01 metre between 0.00 and 9.99	

Convention

4.47.1.1 A longitudinal road marking shall be defined as a continuous item.

Rules

(i) The length and gap entries shall only apply to broken lines and shall be entered as 0 for other types.

(ii) Intermediate – use this entry when the class, colour, type, material, length or gap shall change but the markings continue.

(iii) For the "broken" and "broken and unbroken" type options the length and gap of the broken line shall be recorded.

(iv) The zig-zag lines at zebra crossings shall be an integral part of the crossing and shall not be recorded separately.

(v) Where a road marking lies on the boundary between two lanes, it shall be recorded in the left-hand lane position.

(vi) A left-hand edge line shall be recorded in cross-sectional position 3.

A right-hand edge line shall be recorded in position 7 for up to 4 lanes and position E or R for 5 lanes and 6 lanes respectively.

(vii) Single or double yellow edge markings shall be recorded as single or double, yellow and in the appropriate cross-sectional position.

(viii) A longitudinal solid white line lying one metre from the left-hand edge of the carriageway shall be recorded in cross-sectional position 3.

If it is on the right-hand side it shall be recorded in position 7 for up to 4 lanes and position E or R for 5 and 6 lanes respectively.

(ix) For details of the Diagram Number refer to the Traffic Signs Regulations and General Directions.

4.48 RM - Road Markings (Transverse and Special)

Road markings which shall lie across the carriageway on the kerb at the edge of the carriageway or shall be special markings.

Road Markings (Transverse) Input Details			
Item Code	{RM}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Diagram Number	{-----}	Alphanumeric	
Class	{-}	1 = Stop	2 = Give-way
		3 = Words	4 = Roundabout
		5 = Arrow	6 = Loading
		7 = Other	
Colour	{-}	1 = White	2 = Yellow
		3 = Red	7 = Conservation Yellow
Material	{-}	1 = Thermoplastic Spray	2 = Thermoplastic Screed
		4 = Other	7 = Raised Edge Rib
Width	{----}	To the nearest 0.01 metre between 0.00 and 9.99	

Length	{----}	To the nearest 0.1 metre between 0.0 and 10.0
Gap	{----}	To the nearest 0.1 metre between 0.0 and 25.0

Notes

'1 = STOP' shall be a continuous line.

'2 = GIVE WAY' shall be a broken line.

'3 = WORDS' – for example BUS STOP, STOP, SLOW, TURN LEFT.

Convention

4.48.1.1 Transverse and special road markings shall be defined as point items.

Rules

(i) If a road marking shall occur at the boundary between lanes it shall be recorded in the cross-sectional positional position to its left.

(ii) Road markings shall be recorded for each cross-sectional position in which they shall occur.

(iii) Lines and symbols associated with 3 = WORDS for example the solid line associated with the word STOP shall be recorded separately except in the case of a bus bay within the carriageway whereby the lines defining the bay and the words BUS STOP shall be recorded as one item.

The triangle associated with a give-way line shall be recorded as 2 = GIVE WAY.

(iv) Two or more words which shall be connected shall be recorded as one entry for example BUS STOP.

(v) Double or triple road markings on the kerb shall be recorded as one entry for each occurrence.

(vi) The chainage of a transverse road marking shall be recorded at the point which shall first be encountered.

(vii) A mini roundabout with a raised centre shall not be recorded.

It shall be recorded as a central island.

(viii) VASCAR and other speed enforcement road markings shall be recorded under this inventory item as class = OTHER.

(ix) Width shall be measured transversely across the carriageway.

(x) For details of the Diagram Number which shall be an optional Off-Site Entry refer to the Traffic Signs Regulations and General Directions.

4.49 SG - Road Traffic Signs

A sign, signal or other device for the purpose of regulating, warning, guiding or informing traffic.

Signs Input Details			
Item Code	{SG}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Diagram Number	{-----}	Alphanumeric	
Identity Code	{-----}	Alphanumeric	
Category	{-}	1 = Warning	2 = Regulatory
		3 = Informatory	4 = Bus, Tram & Cycle
		5 = Hazard Warning	6 = Matrix
		7 = VMS	8 = Hidden Message
		9 = Other	
Illuminated	{-}	1 = No	2 = Internal
		3 = External	4 = Remote
		5 = Reflectorised	
Mounting Height	{----}	To the nearest 0.5 metres between 0.1 and 25.0	
Mounting Method		1 = Post	2 = Bridge
		3 = Gantry	4 = Wall
		5 = Lamp Post	6 = Traffic Signal
		7 = Other	
Standard Size Code	{--}	T1	T2
		T3	T4
		R1	R2
		R3	
		C1	C2
		C3	C4
Width	{----}	To the nearest 0.1 metre between 0.1 and 200.0	
Height	{----}	To the nearest 0.1 metre between 0.1 and 10.0	
Ownership	{-}	1 = Scottish Ministers	2 = Local Authority
Installation Date	{dd/mm/yyyy}		
Regional Electricity Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Electricity Billing Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Operating Hours		1 = Continuous	2 = Dusk to Dawn
		5 = Other	

Notes

4.49.1.1 The Operating Company may wish to extend this list of regional electricity company and electricity billing company options.

Convention

4.49.1.2 A sign shall be defined as a point item.

Rules

(i) Only permanent signs shall be recorded.

(ii) If an identity code shall not be present or illegible, an asterisk (*) shall be used.

(iii) For details of the Diagram Number reference shall be made to the Traffic Signs Regulations and General Directions.

(iv) Categories

(a) 1 = Warning (usually triangular diagram numbers 501 to 580)

(b) 2 = Regulatory (usually circular diagram numbers 601 to 662)

(c) 3 = Informatory (usually rectangular diagram numbers 701 to 925).

(v) Care shall be taken when selecting a diagram number.

If the inspector shall be unsure, or an exact match cannot be made, an asterisk (*) shall be entered, and an off-site entry made by the Operating Company.

(vi) The mounting height shall be the distance from the lower edge of the sign to the ground level.

(vii) If two identical signs occur on the same post they shall be recorded as two signs occurring one metre apart.

(viii) Electrical signs and hidden message signs shall be included under this inventory item.

A simple description shall be entered in place of the diagram number with a maximum of 6 characters for example

(a) HAZARD – hazard warning light

(b) MATRIX – matrix sign

(c) CLOSE – ‘Following too close’ message

(d) HEIGHT – low bridge warning sign.

(ix) Where signs share a common lighting arrangement the offsite lighting details shall only be recorded against one of the signs.

Both signs shall be recorded as lit.

(x) The control box (even when not integral) shall be assumed to be included with the sign.

(xi) If the sign dimensions shall not conform to the pre-defined ‘standard’ values, the width and height shall directly be entered.

(xii) Signs which shall occur in the central reserve of dual carriageways and motorways and which shall be common to both sections shall be recorded in the nominated section only.

However, uni-directional signs shall be recorded in the section to which they shall apply.

(xiii) Signs on a gantry shall be recorded in the cross-sectional position to which they shall apply.

(xiv) Black and white edge of carriageway marker posts shall be recorded as a sign with mounting height = 1.0 metres and Diagram No. = 560 if the reflector shall be circular or 561 if the reflector shall be rectangular.

If two identical reflectors shall be present then rule (vii) shall apply.

(xv) Reference shall be made to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

(xvi) Standard sign Dimensions codes

	Horizontal Width (metres)	Vertical Height (metres)	Diameter (metres)
Triangular Signs T1		0.6	
T2		0.75	
T3		0.9	
T4		1.2	
Rectangular Signs R1	0.5	0.5	
R2	0.7	1.2	
R3	1.5	0.7	
Circular Signs C1			0.45
C2			0.6
C3			0.75
C4			0.9

(xvii) Since sign dimensions shall be recorded to the nearest 0.1 metre the width and heights above shall cover a range of plus or minus 0.05 metre from the value stated.

If a size shall not conform to the above values the width and height shall directly be entered.

4.50 SB - Bollards (Safety)

A device placed on a refuge or traffic island to warn drivers of those obstructions or to prevent the passage of vehicles.

Bollard Input Details			
Item Code	{SB}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Diagram Number	{-----}	Alphanumeric	
Identity Code	{-----}	Alphanumeric	
Illuminated	{-}	1 = No	2 = Internal

		3 = Reflectorised	4 = Other
Type	{----}	HALD=Haldo	MORR=Morrison
		CLAU=GEC/Claudgen	BERG=Bergo
		FORC=Forest City	FRAN=Franco
		HALE=Hale and Hale	PGOW=Pearce Gowshal;l
		CONC = Conrete	METL=Metal
		WOOD=Wood	PLAS=Plastic
			OTHR=Other
Installation Date	{dd/mm/yyyy}		
Regional Electricity Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Electricity Billing Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Operating Hours		1 = Continuous	2 = Dusk to Dawn
		5 = Other	

Convention

4.50.1.1 A bollard shall be defined as a point item.

Rules

(i) Bollards shall usually occur in conjunction with a central island or central reserve and care shall be taken to ensure they are given the same cross-sectional position.

(ii) When an identity code shall not be present or illegible an asterisk (*) shall be entered.

(iii) Where no sign shall be present or no sign diagram number can be determined an asterisk (*) shall be entered.

(iv) Where a bollard occurs with no island, it shall be allocated to the lane immediately adjacent on the left-hand side.

(v) For details of the Diagram Number reference shall be made to the Traffic Signs Regulations and General Directions.

(vi) They shall be recorded by entering a 4 character code.

(vii) Where a bollard shall be placed to warn drivers of an obstruction, the type of bollard shall be selected from the following codes

(a) HALD

(b) MORR

(c) CLAU

(d) BERG

(e) FORC

(f) FRAN

(g) HALE

(h) PGOW

(i) OTHR

(viii) Where bollards shall be installed to prevent the passage of vehicles or for any other reason the type of bollard shall be selected from the following codes

(a) CONC

(b) METL

(c) WOOD

(d) PLAS

(e) OTHR

(ix) Either list of codes shall be extended by the Operating Company as required.

(x) Plastic bollards permanently installed on Emergency crossover points shall be recorded under this item using type ECP and Diagram No. 578.

(xi) Reference shall be made to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

4.51 RF - Reference Marker Point

An item specifically placed to indicate the position within the road network.

Reference Marker Point Input Details			
Item Code	{RF}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Type	{----}	1 = Marker Post	2 = Metal Studs (2 nodes)
		3 = Metal Studs (3 nodes)	4 = Thermoplastic Cores (2 nodes)
		5 = Thermoplastic Cores (3 nodes)	6 = Bar Code
		7 = Other	
Identity Code	{-----}	Alphanumeric	

Convention

4.51.1.1 A marker point shall be defined as a point item.

Rules

(i) Only marker points which shall refer to the Scottish Ministers network shall be recorded.

(ii) If an identity code shall not be present or is illegible an asterisk (*) shall be entered.

(iii) In general when collecting inventory data only the position of the end node shall be recorded in the Data Capture Device to avoid double counting.

However, it may be necessary to record the position of the start node if it would not otherwise be recorded for example at the Unit boundary or on the exits from roundabouts.

4.52 TS - Road Traffic Signals

A system of different coloured lights including arrow-shaped lights for stopping streams of traffic and permitting them to move.

Road Traffic Signals Input Details			
Item Code	{TS}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Remotely monitored	{---}	yes	No
Ownership	{-}	1 = Scottish Ministers	2 = Local Authority
Identity Code	{-----}	Alphanumeric	
Manufacturer	{-}	1 = Plessey	2 = GEC
		3=Other	
Number of Lamps	{--}	Whole number between 0 and 25	
Mounting Method	{-}	1 = Post	2 = Arm
		3 = Wall	4 = Other
Type	{-}	1 = Traffic Controlled Junction	2 = Pelican
			7 = Other
Installation Date		{DD/MM/YY}	
Layout	{---}	(See Figures 1 & 2 below)	
Regional Electricity Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Electricity Billing Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Operating Hours	{-}	1 = Continuous	23=Part-time
		5 = Other	

Convention

4.52.1.1 A traffic signal shall be defined as a point item.

Rules

(i) Each post supporting a set of traffic signals shall be included as a separate inventory item.

When there shall be doubt as to which section a post shall be in, it shall be recorded in the section which contains the control box.

(ii) A lamp unit shall be an individual light.

Hence a set of red, amber and green lights counts as 3 lamp units.

The red and green figures and all lamps within a push button box at a pedestrian operated Pelican Crossing shall also be counted.

(iii) If an identity code shall not be present or shall be illegible an asterisk (*) shall be used.

(iv) Wattage shall be recorded as total wattage for all lamps in the traffic signal.

(v) Approved traffic signal layouts shall be provided for guidance in this section.

(vi) Control cabinets associated with a set of traffic signals shall be a separate inventory item.

They shall be recorded as a communication cabinet (CC).

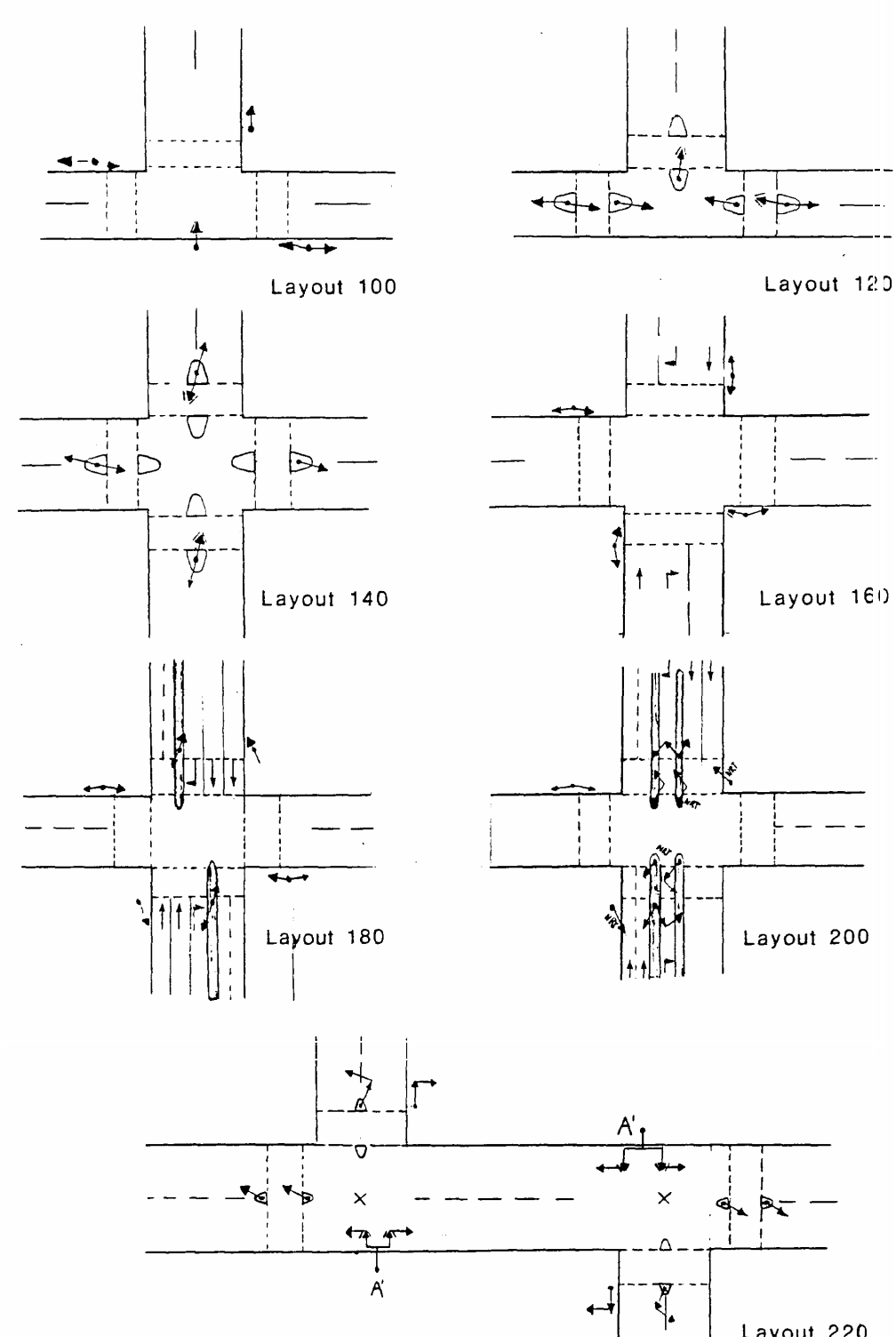
(vii) Detector loops associated with a set of traffic signals shall be a separate inventory item.

They shall be recorded as a Detector loop (DL).

(viii) Lights associated with a pelican crossing shall be recorded under this inventory item.

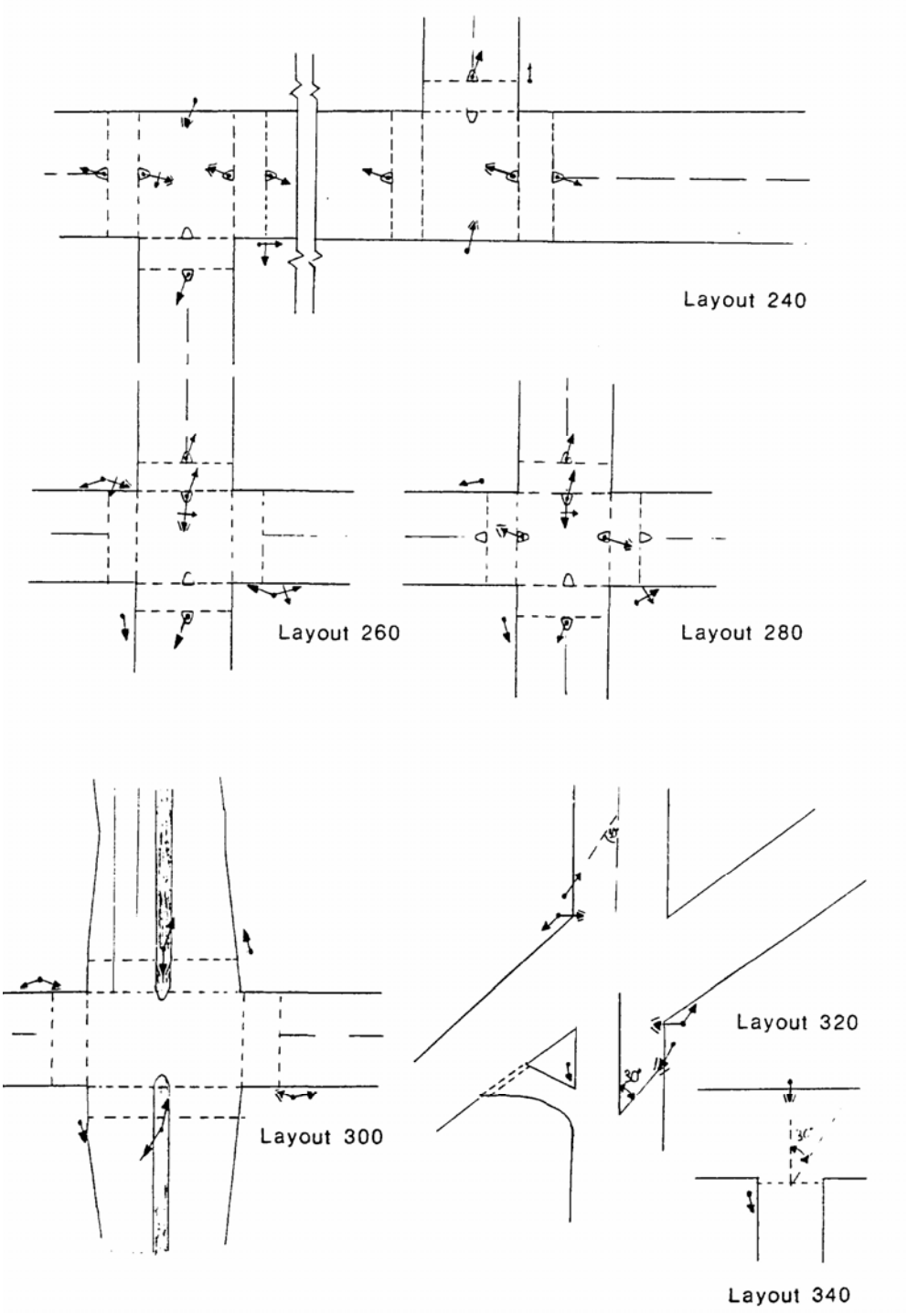
(ix) Reference shall be made to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

Traffic Signal Layout Diagrams



Schedule 4 Part 3 Figure 4.52.3.A – Traffic Signal Layout Diagrams

Traffic Signal Layout Diagrams



Schedule 4 Part 3 Figure 4.52.3.B – Traffic Signal Layout Diagrams

4.53 PX - Pedestrian Crossing

A transverse strip of carriageway marked to indicate where pedestrians shall have priority to cross the road.

Pedestrian Crossing Input Details			
Item Code	{PX}		
Geographical Information System	Point	OSGR coordinate	
Chainage	{----}	To the nearest metre	
Type	{----}	1 = Pelican	2 = Zebra
		3 = Other	
Material		1 = Thermoplastic Spray	2 = Thermoplastic Screed
		4 = Sheet	5 = Studs Only
		6 = Other	

Convention

4.53.1.1 A pedestrian crossing shall be defined as a point item.

Rules

(i) Each individual lighting post associated with a pedestrian crossing shall be a separate inventory item and shall be recorded separately under Traffic Signals (TS).

(ii) All road markings and studs associated with a pedestrian crossing shall be an integral part of the crossing and shall not be recorded separately.

(iii) Beacons associated with a pedestrian crossing (Zebra) shall be recorded separately under lighting point (LP), with identity code = ZEBRA.

(iv) Any associated control boxes shall be recorded separately under communications cabinet (CC).

(v) Refer to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

4.54 DL - Detector Loops

Detector loops are normally associated with traffic signals or automatic traffic counters.

The Operating Company shall collect and update the Routine Maintenance and Management System detector loop inventory during the First Annual Period.

Detector Loop Input Details			
Item Code	{DL}		
Geographical Information System	Point	OSGR coordinate	
Chainage	{----}	To the nearest metre	
Type	{----}	1 = Traffic Signal	2 = traffic counters
		3 = NADICS	4=other

Convention

4.54.1.1 A detector loop shall be defined as a point item.

Rules

(i) An item shall be recorded for each lane in which a detector loop shall be present.

4.55 LP - Road Lighting Point

A lighting installation usually consisting of a column, lantern housing and lamp.

Road Traffic Signals Input Details			
Item Code	{LP}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Identity Code	{----------}	Alphanumeric	
Column Type	{----}	1 = Concrete	2 = Steel
		3 = Aluminium	4 = None
		5 = High mast	6 = Other
Height	{----}	To the nearest 0.1 metre between 0.0 and 50.0	
Mounting Bracket	{-}	1 = Single	2 = Double
		3 = Triple	4 = Catenary
		5 = Post Top	6 = Wall Mounted
		7 = Other	
Supply type	{-}	1 = Underground	2 = Overhead
Position of Column	{-}	1 = On Kerb	2 = Set Back
Installation Type	{-}	1 = Staggered	2 = Single Sided
		3 = Opposite	4 = Central
		5 = Opposite plus Central	6 = Roundabout
		7 = Other	
Installation Date		{DD/MM/YY}	
Layout	{---}	(See Figures 1 & 2 below)	
Regional Electricity Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Electricity Billing Company	{-}	1 = Scottish Power	2 = Scottish & Southern Energy
Operating Hours	{-}	1 = Continuous	2=Dusk to Dawn
		5 = Other	

Convention

4.55.1.1 A lighting point shall be defined as a point item.

Rules

(i) If an identity code shall not be present or shall be illegible an asterisk (*) shall be entered.

(ii) Posts made of more than one material shall be entered as type 6 = OTHER.

(iii) Catenary lighting shall be recorded as follows:

(a) The first lamp unit after a column shall be recorded in conjunction with the column using LP.

(b) The next lamp unit shall be recorded with column type 4 = NONE using LP.

(c) The remaining lamp units up to the next column shall be recorded using the lighting point repeat facility (LR).

(d) The last lamp unit and the last column at the end of the catenary lighting shall be recorded together using LP.

(iv) A lighting point with double bracket or post top and a shared column which shall occur in the central reserve of a dual carriageway or motorway and which shall be common to both sections shall be recorded in the nominated section only.

(v) A lighting point with a single bracket on a separate column shall be recorded in the section to which it shall apply.

(vi) Beacons associated with a pedestrian crossing (Zebra) shall be recorded separately under this item, lighting point, with identity code ZEBRA.

(vii) Reference shall be made to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

4.56 BO - Road Structures - Overbridge

A Structure which spans the road being surveyed and which carries another road railway, pedestrians or other feature.

Overbridge Input Details			
Item Code	{BO}		
Geographical Information System	Point	OSGR coordinate	
Chainage	{----}	To the nearest metre	
Identity Code	{-----}	Alphanumeric	
Type	{-}	1 = Road	2 = Rail
		3 = River	4 = Canal
		5 = Footway	6 = Gantry
		7 = Tunnel	8 = Other

Convention

4.56.1.1 An overbridge shall be defined as a continuous item.

Rules

(i) When the bridge identity code shall be either not present or illegible an asterisk (*) shall be entered.

(ii) The start chainage of an overbridge shall occur when the measuring wheel shall be level with the start of the Structure.

The end chainage shall occur when the measuring wheel shall be level with the end of the Structure.

Hence, an overbridge passing diagonally over the road being surveyed shall have a total recorded width greater than its nominal width.

(iii) On dual carriageways an overbridge shall only be recorded in the nominated section but the start and end chainage shall be assessed in respect of the total length spanning both carriageways.

(iv) If the bridge type shall not be included in the option menu, up to 8 characters may be used as the identity code if one shall not exist to describe it.

(v) Tunnels footbridges and gantries shall be recorded under this inventory item.

4.57 BU - Road Structures - Underbridge

A Structure carrying the road being surveyed over another road railway river ravine or other feature.

Underbridge Input Details			
Item Code	{BU}		
Geographical Information System	Point	OSGR coordinate	
Chainage	{----}	To the nearest metre	
Identity Code	{-----}	Alphanumeric	
Type	{-}	1 = Road	2 = Rail
		3 = River	4 = Canal
		5 = Footway	6 = Gantry
		7 = Ravine	8 = Other

Convention

4.57.1.1 An underbridge shall be defined as a continuous item starting and finishing on some convenient feature such as the expansion joints or the ends of the parapets. It has no cross-sectional position.

Rules

(i) When the bridge identity code shall either not be present or illegible an asterisk (*) shall be entered.

(ii) Whereas parapets shall be part of the bridge and shall not need be recorded separately, a safety fence over a bridge shall be recorded under its own inventory item.

(iii) The start and end of an underbridge shall occur when the measuring wheel shall be level with some feature of the underbridge such as an expansion joint or the end of a parapet.

(iv) On dual carriageways an underbridge shall only be recorded in the nominated section but shall be assessed in respect of the total length spanning both carriageways.

(v) If the bridge type shall not be included in the option menu, up to 8 characters shall be used as the identity code if one shall not exist to describe it.

4.58 IS - Ice Sensors

A remote electronic monitoring device to detect road surface and atmospheric conditions to give early warning of ice and frost.

The Operating company shall collect and add these attributes during the First Annual Period.

Ice Sensor Input Details			
Item Code	{BU}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Identity Code	{-----}	Alphanumeric	
Site Name	{-----}	Alphanumeric	
Site Type	{-}	1=Mark 5	2=Marck 6
		3=ROSA	4=
		5=	6=Other
Manufacturer	{-}	1 = Findlay Irvine	2 = Vaisala
		3 = Other	
Model	{-----}	Alphanumeric	
Power Source	{-}	1 = Mains Electricity	2 = Solar
No. of Road Surface Sensors	{-}	1 = 1 Sensor	2 = 2 Sensors
		3 = 3 Sensors	4 = Other
Deep Sensor	{-}	Y=Yes	N=No
Air Sensor	{-}	Y=Yes	N=No
Dew/RH Sensor	{-}	Y=Yes	N=No
Wind sensor	{-}	Y=Yes	N=No
Precipitation sensor	{-}	Y=Yes	N=No
Year Installed	{----}		

Convention

4.58.1.1 An ice sensor shall be defined as a point item.

Rules

(i) If an identity code shall not be present or illegible an asterisk (*) shall be used.

(ii) The cross-sectional position shall relate only to the cabinet/pole, not the sensors.

(iii) Refer to paragraph 4.61 of this Annex 4.3/B for additional electrical inventory requirements.

4.59 SP - Snow Poles

Poles mounted at the side of the road to aid snow clearing operations.

The Operating company shall collect and add snow pole inventory to the Routine Maintenance and Management System during the First Annual Period.

Snow Pole Input Details			
Item Code	{SP}		
Geographical Information System	Point	OSGR coordinate	
Cross Sectional Position	{-}	See Section 2.2 of this Annex	
Chainage	{----}	To the nearest metre	
Material	{-}	1=Plastic	2=Metal
		3=Other	

Convention

4.59.1.1 Snow Pole shall be defined as a point item.

4.60 AB - Arrester bed

Normally a bed of loose gravel to stop vehicles.

The Operating company shall collect and shall add arrester bed inventory to the Routine Maintenance and Management System during the First Annual Period.

Arrester bed Input Details		
Item Code	{AB}	
Geographical Information System	Point	OSGR coordinate
Cross Sectional Position	{-}	See Section 2.2 of this Annex
Chainage	{----}	To the nearest metre
Length		To the nearest 0.1 metre between 0.1 and 100.0
Width		To the nearest 0.1 metre between 0.1 and 20.0

Convention

4.60.1.1 An arrester bed shall be defined as a point item.

4.61 Electrical Inventory Requirements

Additional attributes listed in Annex E Tables 10 and 11 of TD23 shall be held in the Routine Maintenance and Management System database, or the separate street lighting management system if approved by the Director for those inventory items with electrical details such as

(i) SB - Bollard (Safety)

(ii) LP - Lighting Point

(iii) SG - Sign

(iv) TS - Traffic Signal.

The Operating Company shall also ensure that all relevant data required to be collected under Part 4 of Schedule 4 to the Contract shall be held in the database.