

Highways England Company Limited

**Concrete Roads Framework –
Reconstruction Works
Schedule of Rates
Method of Measurement**

CONTENTS AMENDMENT SHEET

Amendment No	Revision No	Amendments	Initials	Date
0	0	Tender Issue	SOS	07/08/20
1	1	Removed Asphalt overlay from Series 700 paragraph 18	SOS	08/09/20
2	1	Added amendments to series 700 paragraphs 6,7 and 8 to include PSV adjustments and Haulage of materials	SOS	08/09/20
3	1	Added new paragraph 9A for haulage of materials. Amended paragraph 9 accordingly.	SOS	08/09/20
4	1	Amended paragraph 2, sub bullet point (I) of Preambles to Schedule of Rates, to clarify how it is applied.	SOS	08/09/20
5	1	Amended paragraph 2, sub bullet point (viii) of Preambles to Schedule of Rates, to clarify how it is applied.	SOS	08/09/20
6	1	Amended paragraph 2, sub bullet point (xx) of Preambles to Schedule of Rates, to clarify how it is applied.	SOS	08/09/20
7	2	Added group V and VI to series 700 paragraph 47	SOS	29/09/20
8	2	Added new bullet (g) to Series 700 paragraph 44	SOS	29/09/20
9	2	Added new bullets (ii) and (iii) to series 100 para 56	SOS	29/09/20
10	2	Amended wording in series 100 para 57 and 58	SOS	29/09/20
11	2	Added Feature 2 to group 1 in series 100 para 58	SOS	29/09/20
12	2	Amended wording in series 100 para 59 and bullets (h)	SOS	29/09/20

13	2	Added bullets (j), (k) and (l) to series 100 para 59	SOS	29/09/20
14	2	Added new section 59A to series 100	SOS	29/09/20
15	2	Removed bullet (iii) from series 700 para 6	SOS	29/09/20
16	2	Amended series 700 para 7	SOS	29/09/20
17	2	Removed Group IX Feature 1 from series 700 paragraph 8	SOS	29/09/20
18	2	Added amendment to series 700 para 5 bullet (c)	SOS	29/09/20
19	2	Deleted amendment 9A from series 700	SOS	29/09/20
20	2	Added new sections to series 700. Para 9A to 12A for Haulage for Materials	SOS	29/09/20
21	2	Amended bullet point (dd) of Series 700 paragraph 9.	SOS	29/09/20
22	2	Amended point 21 of Preambles to Schedule of Rates. Combined point 22 and 23 under point 21.	SOS	29/09/20
23	2	Amended point 15 of Preambles to Schedule of Rates to clarify how costs associated with Design is treated.	SOS	29/09/20
24	2	Deleted amendment made to Series 700, paragraph 18	SOS	29/09/20
25	2	Under Series 700, amended wording in paragraph 83 Measurement for slab levelling with pressure grouting and vacuum grouting.	SOS	29/09/20
26	2	Under Series 700, deleted amendment section for 'Full depth reconstruction existing concrete pavement with flexible composite pavement'.	SOS	29/09/20
27	2	Under Series 700, added new section 'Saw	SOS	29/09/20

		cutting and sealing bituminous overlays'		
28	2	Under Series 100, amended paragraph 2 for the changed requirements for mobile welfare facilities	SOS	29/09/20
29	2	Under Series 700, amended paragraphs added for 'Remedial treatment for heaves' to 'Not Used'	SOS	29/09/20
30	2	Under Series 700, amended paragraph added for 'remedial treatment for surface depression' to 'Not Used'.	SOS	29/09/20

CONCRETE ROADS FRAMEWORK RECONSTRUCTION WORKS CONTRACT – SCHEDULE OF RATES

METHOD OF MEASUREMENT

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Definitions

Additional Definitions

After (1) add the following

- (a) Where item descriptions are designated as ‘not exceeding’ or ‘exceeding’ then the following definitions shall apply:
 - (i) ‘not exceeding’ means up to and including the stated dimension or quantity;
 - (ii) ‘Exceeding’ means in excess of the stated dimension or quantity.
- (b) Unless otherwise stated in the Preambles of the Method of Measurement:
 - (i) ‘Day’ shall mean Monday to Friday from 07:00 to 19:00 hours: Summer season (from 1st April to 31st October).
 - (ii) adjustments shall apply to the rates in the Schedule of Rates as below: -
 - (a) the adjustments for priced items are for works to be undertaken during out of hours working for the period;
Night Working - Monday to Friday 19:00-0700,
Weekend Working 07:00 Saturday to 07:00 Monday
 - (b) winter season (From 1st November to 31st March)

Preambles to Schedule of Rates

General Directions

- 1 This Schedule of Rates has been prepared in accordance with the Method of Measurement for Highway Works published by The Stationery Office as Section 1 of Volume 4 of the Manual of Contract Documents for Highway Works. The relevant publication date of each page of the Method of Measurement for Highway Works that is incorporated into this contract is given in the Schedule of Pages and Relevant Publication Dates.
- 2 (05/01) In the Schedule of Rates the sub-headings and item descriptions identify the work covered by the respective items, read in conjunction with the matters listed against the relevant marginal headings “Item coverage” in Chapter IV of the Method of Measurement for Highway Works, these Preambles and the amendments to the Method of Measurement immediately following these Preambles. The nature and extent of the work is to be ascertained by reference to the Drawings, Specification and Contract documents. The rates and prices entered in the Schedule of Rates shall be deemed to be the full inclusive value of the work covered by the several items including the following, unless expressly stated otherwise:
 - (i) people not limited to employed and hired-in staff, labour and consultants and costs in connection therewith; In the case of the

Schedule of Rates, the rate for each item is to exclude the forecast defined cost for people in the staff roles as identified in the Quotation Information.

- (ii) The manufacture, fabrication and supply of Plant and Materials, goods, storage and costs in connection therewith including delivery to Site. Taking delivery of Materials and goods supplied by others, unloading, storage, and costs in connection therewith;
- (iii) Equipment and costs in connection therewith;
- (iv) fixing, erecting and installing or placing of Plant and Materials and goods in position;
- (v) temporary works;
- (vi) the effect on the phasing of the Works or any element of the Works to the extent set forth or reasonably implied in the Contract Documents;
- (vii) general obligations, liabilities and risks involved in the execution of the Works set forth or reasonably implied in the Contract Documents including repair or replacement that arises from a fault of the *Contractor*;
- (viii) establishment and other charges not limited to insurances, overheads, profit and Fee; In case of the Schedule of Rates, the Schedule of Rates is to exclude Overhead, Profit and insurance element which are recovered through the *Supplier's Fee*.
- (ix) waste;
- (x) testing carried out by the *Contractor* in accordance with the particular requirements of Appendix 1/5 including supplying results of tests, reports and certificates;
- (xi) supply and delivery of samples to the Overseeing Organisation in accordance with the particular requirements of Appendix 1/6;
- (xii) checking, inspecting, examining, measuring and verifying goods, Plant and Materials and workmanship including supplying results, reports and certificates;
- (xiii) attendance and transport for sampling and testing carried out by the Overseeing Organisation;
- (xiv) complying with quality assurance requirements of the contract and providing certificates of conformity;
- (xv) preparation and supply of detailed working drawings;
- (xvi) awaiting approvals and consent;

		(xvii)	where stipulated complying with the particular requirements of Appendix 1/24;
		(xviii)	travelling to, between and from different locations within the Site;
		(xix)	updating information and inventory data to the information database or system;
		(xx)	supervision, management, programming and the like to provide the Works; ; In the case of the Schedule of Rates, the rate for each item is to exclude the forecast defined cost of supervision, management, programming and the like for people in the staff roles as identified in the Quotation Information.
		(xxi)	the use of Subcontractors;
		(xxii)	landfill costs and taxes;
Measurement	3	(i)	The measurement of work shall be computed net from the Dimensions stated in the Contract Documents unless otherwise stated in the Method of Measurement.
		(ii)	(11/06) Where the Contract Documents specify the Type of Pavement to be constructed then the measurement of work shall be based upon the thinnest pavement construction and surfacing over structures permitted by the Contract for that Type of Pavement. Where the Contract Documents provide for the Contractor to select the type of safety barrier, pavement or buried structure (where the structure is not within Designated Outlines) to be constructed then the measurement of all work in each area so affected shall be based upon the thinnest pavement construction and surfacing over structures permitted by the Contract in that area for the particular type of safety barrier, pavement or buried structure the Contractor Has elected to construct.
Pricing of Items	4		Each individual item in the Schedule of Rates shall have a rate or price entered against it. Rates and prices shall be expressed to two decimal places which shall be informed by entries inputted by the Contractor in the additional columns provided for each cost component and/or cost of Subcontractors and the corresponding fees. The entries in the additional columns shall be to three decimal places.
Alternative Specified Materials, Designs and Options Within Types of Pavement	5		Where in the Contract a choice of alternatives is permitted:
		(i)	the description billed and the rates and prices inserted shall be deemed to cover any of the permitted alternative materials or designs the Contractor may elect to use;
		(ii)	and where separate Schedule of Rates are provided within Series 600: Earthworks for each Type of Pavement permitted by the Contract the rates and prices inserted in respect of the earthworks

for the particular Type of Pavement shall be deemed to cover the earthworks for any inherent permitted option within the Type of Pavement elected to be constructed by the Contractor;

- (iii) and where separate Schedule of Rates are provided within Series 700: Pavements for each Type of Pavement permitted by the Contract the rates and prices inserted in respect of the particular Type of Pavement shall also be deemed to cover any inherent permitted option within the Type of Pavement elected to be constructed by the Contractor.

In all cases the rates and prices inserted in all Series of the Schedule of Rates shall be deemed to include for any adjustments of work content, rates, costs and the like occasioned by the choice of alternatives elected to be used or constructed by the Contractor.

Privately and Publicly Owned Services or Supplies

- 6 The information in the Contract as to the whereabouts of existing services and mains is believed to be correct but the Contractor shall not be relieved thereby of his obligations under the Contract. The Contractor shall include in his rates and prices for locating and taking measures for the support and full protection of pipes, cables and other apparatus during the progress of the Works, obtaining the written consent of the appropriate authority to interrupt the service or supply and for keeping the Overseeing Organisation informed of all arrangements he makes with the owners of privately owned services or supplies, Statutory Undertakers and Public Authorities as appropriate.

Labours

- 7 Labours in connection with Nominated Sub-contractors shall include:
- (i) in the case of work or services executed - for affording the use of existing working space, access, temporary roads, erected scaffolding, working shelters, staging, ladders, hoists, storage, latrines, messing, welfare and other facilities existing on Site and the provision of protection, water, electricity for lighting and clearing away rubbish and debris arising from the work;
- (ii) in the case of goods, Plant & Material or services supplied - for taking delivery, unloading, storing, protecting and returning crates, cartons and packing materials.

Roadworks Overall Requirements

- 8 The Contractor shall allow in his rates and prices for complying with requirements in respect of pavement construction, horizontal alignments, surface levels and surface regularity of pavement courses, dealing with changes in weather conditions, use of surfaces by traffic and construction equipment, and general requirements for sub-bases and road bases.

Work Within and Below Non-tidal Open Water or Tidal Water

- 9 The Contractor shall allow in his rates and prices for taking measures required to execute work within and below non-tidal open water or tidal water. The Contractor shall include in his rates and prices for any investigations to ascertain actual boundaries, surface levels and ranges affected by non-tidal open water or tidal water.

Dealing with Flow	10	The Contractor shall allow in his rates and prices for taking measures to deal with the existing flow of water, sewage and the like.
	11	Not Used
Site Limitations and Constraints	12	The Contractor shall allow in his rates and prices for complying with any limitations and constraints on the use of the Site.
Hard Material	13	For the purposes of the Contract the following are designated as Hard Material in accordance with Chapter 1 Definitions, paragraph 1 (h)(i):
	(a)	Not used;
	(b)	those deposits designated by limits shown on the Drawings;
	(c)	existing pavements, footways, paved areas (but excluding unbound materials) and foundations in masses in excess of 0.20 cubic metres.
Equivalent Products and Materials	14	Where the Contractor offers an equivalent product or Plant and Materials in place of the one identified or specified, then the rates and prices in the Schedule of Rates shall be deemed to include for all the obligations and costs associated with the incorporation of the equivalent into the Works, including design, provision of data and drawings, certificates, awaiting acceptance, resubmissions and modifications and amendments to the Works.
		Unless specifically stated to the contrary in the Contract Documents the measurement of the Works affected by the incorporation of the equivalent products and materials shall be based on the Contract Documents and not on the Works as amended and completed to incorporate the equivalent products and Plant and Materials.
Permanent Works Designed by the Contractor	15	(05/01) Where the Contract requires part(s) of the Permanent Works to be designed by the Contractor, the rates and prices in the Schedule of Rates shall include for all the obligations and costs associated with the incorporation of the Contractor's design into the Works. Where costs associated with Design for a Scheme, including design, provision of data and drawings, certificates, awaiting approvals, resubmissions and modifications and amendments to the Works are to be included in the base percentage for each 3D Stage.
		Additionally, the rates and prices in the Schedule of Rates shall include for the costs of all testing and sampling to be carried out by the Contractor in respect of workmanship, goods and Plant and Materials incorporated into the Works or to prove the Contractor's design.
Structures Designed by the Contractor	16	In respect of each priced Schedule of Rates comprising a single item for a structure designed by the Contractor, the Contractor shall prepare a priced schedule of quantities. This priced schedule shall be prepared in accordance with the relevant Chapters and Series of the Method of Measurement and submitted to the Overseeing Organisation.
		The quantities, rates and prices in the priced schedule of quantities shall in each

case, when extended and totalled, give the amount entered in the priced Bill of Quantities against the item for the relevant structure designed by the Contractor.

The priced schedule of quantities shall only be used for Payment Applications and for the valuation of variations ordered under the Contract in connection with structures designed by the Contractor.

Unless specifically stated to the contrary in the Contract the measurement of the Works affected by the incorporation of the Contractor's design shall be based on the Contract Documents and not on the Works as amended and completed to incorporate the Contractor's design.

The parts of the Works included by the Contractor in the priced schedule of quantities shall include all the parts of the Works within the Designated Outline except those designed and scheduled by the Overseeing Organisation as not to be included.

National Alterations for The Overseeing Organisations of Scotland, Wales and Northern Ireland

- 17** Where a paragraph in Chapter IV of the Method of Measurement for Highway Works (Units and Methods of Measurement) or in the Notes for Guidance on the Method of Measurement for Highway Works or in the Library of Standard Item Descriptions for Highway Works is prefixed by # this indicates that this particular paragraph has a National Alteration for one or more of the Overseeing Organisations of Scotland, Wales or Northern Ireland. The use of national paragraphs is permitted only within the countries to which they specifically apply and they are deemed to replace corresponding paragraphs in the main body of Chapter IV of the Method of Measurement for Highway Works (Units and Methods of Measurement) or in the Notes for Guidance on the Method of Measurement for Highway Works or in the Library of Standard Item Descriptions for Highway Works as appropriate. The National paragraphs correspond to the particular requirements of the National Alterations for the Overseeing Organisations of Scotland, Wales or Northern Ireland contained in Volume 1 of the Manual of Contract Documents for Highway Works. The substitute or additional paragraphs are located at the end of the relevant Series.

Testing

- 18** (05/01) Testing as paragraph 2(x) above, is in respect of tests to be carried out by the Contractor to verify workmanship, goods and Plant and Materials incorporated into the permanent works and testing of the permanent works in order to prove the Overseeing Organisation's design as set out in Appendix 1/5.

Checking, inspecting, examining, measuring and verifying goods, materials and workmanship incorporated in the permanent works, as paragraph 2(xii) above, is in respect of other operations set forth or reasonably implied in the Contract to be carried out by the Contractor to demonstrate compliance with the particular requirements of the Contract, or to prove the Overseeing Organisation's design where not separately listed in Appendix 1/5, but excluding trial erection of structural steelwork which shall be measured separately in accordance with Series 1800.

Procedural trials, trial panels and trial areas required to be carried out or constructed as separate operations in advance of the permanent works in order to verify goods, materials and workmanship shall not be measured separately but are included within the item coverage for the relevant Series.

Testing of existing structures and other investigative works shall be individually measured within the relevant Series.

- Landscape and Ecology** **19** (05/01) The rates and prices inserted in the Schedule of Rates for new Planting, Seeding and Turfing measured in accordance with Volume 4 – Series 3000 include for all post-planting maintenance work required to be carried out in accordance with the Contract Documents.
In order to properly reflect the scope and duration of the planting and post- planting requirements a series of staged payments for the various items of planting, seeding and turfing will be made in accordance with the Staged Payments Schedule.
The Staged Payments Schedule is to be inserted in the Schedule of Rates immediately preceding the collection page for Landscape and Ecology and shall be used for assessing payments due to the Contractor in accordance with this contract.
- Adjustment to Schedule of Rates** **20** The Schedule of Rates to be applied to a Scheme may be subject to adjustment in accordance with the Framework Information
- Amendments to the Method of Measurement** **21** (05/01) For the purposes of the Contract the Method of Measurement for Highway Works is amended in accordance with the pages immediately following.
Amended by replacing the words “Bill of Quantities” with “Schedule of Rates”.
- (i)
- (ii) Quantities shall be expressed in whole numbers except for units of measurement of tonnes, hectares and structural concrete removal and reinstatement in which case the quantities shall be to three decimal places.
- The following additional abbreviation shall be used for the units of measurement
- | | |
|--------|--------------|
| Unit | Abbreviation |
| litres | lt |
- Note that references to:
- (iii) Overseeing Organisation shall have the meaning as defined by the Preamble to the Specification for Highway Works contained within the contract documentation,
- Contractor shall have the same meaning as Provider as defined within the contact documentation.
- The division of the Schedule of Rates into Level 1 and 2 as set down in Table 1, Chapter III, Preparation of the Schedule of Rates and the associated terminology shall be not be used.

**Method of Measurement for Highway Works
Schedule of Pages and Relevant Publication Dates**

Chapter/Series	Page Number	Publication Date
Contents	1	Nov 2004
	2	May 2005
	3	Nov 2004
	4 to 7	May 2005
Chapter I	1 to 3 inclusive	March 1998
Chapter II	1	March 1998
	2	May 2001
Chapter III	1	March 1998
	2	May 2001
	3 to 12 inclusive	May 2004
	13	Nov 2006
	14 to 16 inclusive	May 2005
	15 to 19 inclusive	Nov 2006
Chapter IV	1	March 1998
100	1 to 2 inclusive	March 1998
	3 to 7 inclusive	May 2001
	8	Nov 2004
	9 to 11 inclusive	May 2001
	12	Nov 2004
	13 to 15 inclusive	May 2001
200	1	May 2001
	2 to 3 inclusive	May 2004
	4	May 2001
300	1 to 5 inclusive	May 2001
400	1 to 2 and 4 to 8 inclusive	Nov 2004
	3	Nov 2006
500	1 to 5 inclusive	May 2001
	6	Nov 2004
	7 to 13 inclusive	May 2001
	14	May 2005
	15	May 2001
	16 to 17 inclusive	May 2005
	18	May 2001
	19	Nov 2003
600	1	May 2002
	2	May 2001
	3	March 1998
	4 to 11 inclusive	Nov 2004
	12	May 2002
	13 to 14 inclusive	Nov 2004
	15 to 38 inclusive	May 2001
	N1 to N3 inclusive	May 2002
700	1	May 2001
	2	May 2002

Chapter/Series	Page Number	Publication Date
	3	May 2001
	4 to 5 inclusive	May 2002
	6	May 2001
	7 to 9 inclusive	May 2002
	10	May 2001
	11	May 2002
	12 to 13 inclusive	May 2001
	14	May 2002
	15 to 18 inclusive	May 2001
800)	
900) Not taken up	
1000)	
1100	1	May 2001
	2	Nov 2004
	3	May 2001
	4 to 5 inclusive	May 2002
	6	May 2001
	7 to 8 inclusive	May 2005
1200	1 to 2 inclusive	May 2001
	3 to 5 inclusive	March 1998
	6 to 11 inclusive	May 2001
1300	1 to 3 inclusive	Nov 2003
1400	1 to 2 inclusive	May 2001
	3	May 2005
	4 to 8 inclusive	May 2001
	9	May 2005
1500	1 to 2 inclusive	May 2001
	3	May 2005
	4 to 7 inclusive	Feb 2003
	8 to 12 inclusive	May 2001
1600	1 to 2 inclusive	March 1998
	3 to 6 inclusive	May 2001
	7	March 1998
	8 to 19 inclusive	May 2001
1700	1	May 2004
	2	May 2001
	3	May 2004
	4 to 11 inclusive	May 2001
1800	1	March 1998
	2 to 5 inclusive	May 2001
1900	1	May 2003
2000	1	May 2002
	2 to 3 inclusive	May 2001
2100	1	March 1998
2200	Not taken up	
2300	1 to 3 inclusive	March 1998
2400	1 to 3 inclusive	May 2001
	4	March 1998
2500	1 to 2 inclusive	May 2001
2600	Not taken up	

Chapter/Series	Page Number	Publication Date
2700	1	May 2001
3000	1 to 15 inclusive	May 2001
5000	1 to 2 inclusive	May 2003

Amendments to Chapter IV of the Method of Measurement

Series 100: Preliminaries

Temporary Accommodation

Units	2	The unit of measurement shall be:
	(i)	Erection and dismantling of temporary accommodation.....Item.
	(ii)	Servicing temporary accommodation.....Week.
	(iii)	Establish mobile welfare facilitiesNumber.
	(iv)	De-mobilise mobile welfare facilitiesNumber.
	(v)	Servicing mobile welfare facilitiesWeek.

Group	Feature
I	<ol style="list-style-type: none"> 1 Erection of temporary accommodation. 2 Servicing temporary accommodation. 3 Dismantling temporary accommodation. 4 Establish mobile welfare facilities. 5 De-mobilise mobile welfare facilities. 6 Servicing mobile welfare facilities.
II	<ol style="list-style-type: none"> 1 For schemes with a Scheme Budget value exceeding £150,000.
III	<ol style="list-style-type: none"> 1 For the Contractor. 2 For the Contractor and use of Overseeing Organisation and other organisations.
IV	<ol style="list-style-type: none"> 1 Offices and equipment to accommodate not exceeding 10 people. 2 Offices and equipment to accommodate exceeding 10 but not exceeding 20 people and so on in steps of 10 people. 3 Welfare facilities to accommodate not exceeding 10 people. 4 Welfare facilities to accommodate exceeding 10 but not exceeding 20 people and so on in steps of 10 people.

Add the following to Paragraph 4

**Erection of Temporary
Accommodation**

Item coverage

- (ii) (k) security

Add the following to Paragraph 5

**Servicing of Temporary
Accommodation**

Item coverage

- (ii) (j) security

Delete paragraphs 21 to 27 inclusive & replace with the following paragraphs 21 to 27j inclusive.

Establish, Switch, Maintain and Remove of Traffic Management

Units

21 The unit of measurement shall be:

- (i) Establish, maintain and remove relaxed Traffic Management.....Item.
- (ii) Establish, maintain and remove relaxed Traffic Management including switching between layoutsItem.
- (iii) Establish, maintain and remove relaxed Traffic Management including AirLock systemItem.
- (iv) Establish standard Traffic ManagementItem.
- (v) Maintain standard Traffic Management for partial shifthr.
- (vi) Maintain standard Traffic Management for complete shiftshift.
- (vii) Remove Traffic Management and fully open carriageway (fence to fence) to live traffic no restrictionsItem.
- (viii) Establish, maintain and remove of medium duration inspections stops.....No.

Measurement

22. The measurement of Establish, maintain and remove relaxed Traffic Management shall be measured once only for each separate layout during the course of the works.

23. The measurement of Establish, maintain and remove relaxed Traffic Management including switching between layouts shall be measured once only for all required layouts, switching between layouts during the course of the works.

24. The measurement of Establish, maintain and remove relaxed Traffic Management including AirLock system shall be measured once only for each separate layout during the course of the works.

25. The measurement of Establish standard Traffic Management shall be measured once only for each separate layout during the course of the works.

26. The measurement of Maintain standard Traffic Management for partial shift shall be measured by each hour for part of each complete shift after Establish to the end of first shift or during the final shift prior to Remove.

27. The measurement of Maintain standard Traffic Management for complete shift shall be measured once only for each 12 hour period either between 0700 and 1859 or between 1900 and 0659.

27a. The measurement of Remove Traffic Management and fully open carriageway (fence to fence) to live traffic no restrictions shall be measured once only for each separate layout during the course of the works.

27b. The measurement of establish, maintain and remove traffic management for a total closure shall be as defined in Chapter 8 of the "Traffic Signs Manual" Part 1 Section D6.20.

27c. The measurement of establish, maintain and remove for a medium duration inspection stop shall be number. The term "medium duration inspection stop" shall be as defined in Chapter 8 of the "Traffic Signs Manual" Part 1 Section D3.31.

27d. Unless expressly stated otherwise in the Contract, taking measures for or construction, maintenance, removal of contraflow arrangements shall be measured once only to include for all contraflow arrangements specified in Appendix 1/17 and all contraflow arrangements proposed by the Contractor.

Itemisation

27e Separate items shall be provided for establish, switch, maintain and remove traffic management in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Establish, maintain and remove

	2	Establish
	3	Maintain
	4	Remove
II	1	Relaxed Traffic Management
	2	Standard Traffic Management
	3	Medium Duration Inspection Stops
	4	Diversion Routes
III	1	Different layouts / configurations
IV	1	Not exceeding 1000m in length
	2	Exceeding 1000m but not exceeding 4000m in length
	3	Not exceeding 4000m in length
	4	Not exceeding 400m in length
	5	Not exceeding 600m in length
	6	Not exceeding 20 signs
	7	Exceeding 20 signs but not exceeding 50 signs
	8	Exceeding 50 signs but not exceeding 100 signs
	9	Exceeding 100 signs
V	1	Within a single shift
	2	Beyond a single shift
	3	For partial shift
	4	for complete shift

Note: Group III, IV and V Features shall not apply to Group II Feature 3 items.

Group IV Features 1 to 5 shall be defined as the length of the works area as described in Chapter 8 of the "Traffic Signs Manual" Part 1 Appendix A2.

Group IV Feature 6, 7, 8 and 9 shall be applied only to Group II Feature 4 items.

Group V Feature 1 and 2 shall be applied only to Group II Feature 1 items.

Group V Feature 3 and 4 shall be applied only to Group II Feature 2 items.

Establish, maintain and remove relaxed Traffic Management, Establish, maintain and remove standard Traffic Management and Establish, maintain and remove of medium duration inspections stops

27f. The items for the establish, maintain and remove relaxed traffic management, establish, maintain and remove standard traffic management and establish, maintain and remove medium duration inspections stops shall in accordance with the Preambles to Schedule of Rates General Directions include for:

Item coverage

- (a) complying with the recommendations contained in Chapter 8 of the "Traffic Signs Manual" published by The Stationery Office and any amendment thereto or where the circumstances of any particular case are not covered submitting proposals for dealing with such situations to the Overseeing Organisation for its consent;

- (b) complying with particular requirements of the Contract;
- (c) initiating or continuing consultation with statutory, police or other authorities concerned, proposing or developing and submitting to the Overseeing Organisation, proposals based on such consultation showing a scheme of traffic safety and management measures including details of safety zones and emergency routes and furnishing such details as necessitated by the works or as the Overseeing Organisation may require;
- (d) design of traffic safety and management measures specified by the Overseeing Organisation;
- (e) narrow lanes closures (including all associated works – including the removal of roadmarkings and studs, installation of temporary roadmarkings and studs and permanent reinstatement)
- (f) modification and resubmission of proposals and designs;
- (g) traffic signs, driver information signs, traffic signs provided by the Overseeing Organisation, road markings, lamps, cons, and traffic control signals and the like including maintaining, cleaning, repositioning, covering, uncovering and removing;
- (h) complying with the requirements for labour and plant working on or adjacent to a highway and at entry and exit points to the Site including signing;
- (i) road lighting, modification, and removal;
- (j) emergency telephones, modification, and removal;
- (k) giving of notice to the Overseeing Organisation;
- (l) collecting and returning traffic signs provided by the Overseeing Organisation;
- (m) surveillance and maintenance stocks;
- (n) immediate reinstatement and replacement of defective or damaged items;
- (o) maintenance of highways;
- (p) traffic safety and control personnel.

Extra Over Establish, Maintain and Remove Relaxed Traffic Management

Units

27g. The unit of measurement shall be:

	(i)	Extra over establish, maintain and remove relaxed Traffic Management..... shift.	
Measurement	27h.	The measurement of Extra over establish, maintain and remove relaxed traffic management shall be measured once only for each 12 hour period either between 0700 and 1859 or between 1900 and 0659.	
Itemisation	27i.	Separate items shall be provided for extra over establish, maintain and remove relaxed traffic management in accordance with Chapter II paragraphs 3 and 4 and the following:	
		Group	Feature
		I	1 Extra over establish, maintain and remove relaxed Traffic Management.
		II	1 Different layouts / configurations.
Extra Over Establish, Maintain and Remove Relaxed Traffic Management	27j.	The items for provision of vehicles and operatives shall in accordance with the Preambles to Schedule of Rates General Directions include for:	
Item coverage	(a)	As this Series 27f;	
		Amend paragraph 46, add the following	
		Group	Feature
		II	Different locations
		III	Different length

**Maintenance of
Temporary Closed
Circuit Television
(CCTV) System for
the Monitoring of
Traffic**

Amend paragraph 48 as follows:

Paragraph 48(h) Delete full stop and add semi-colon and add the following:

- (i) accommodation for monitoring equipment and staff;
- (j) staff for monitoring of the works area.

Amend paragraph 52, add the following

Group	Feature
III	1 Different length

Vehicles and Operatives

Add new paragraphs 56 to 59 inclusive

Units

56. The unit of measurement shall be:

- (i) provision of operative(s), vehicle and equipment..... shift
- (ii) provision of additional Haulage Vehicles..... shift
- (iii) distance travelled for additional Haulage Vehicles..... km

57 The measurement of provision of vehicles and operatives, provision of additional Haulage Vehicles shall be measured once only for each 12 hour period either between 0700 and 1859 or between 1900 and 0659 during which the vehicle and operatives are provided. The commencement of a shift shall be measured from the arrival and commencement of the work on site or if the work is not commenced from site, the commencement of a shift will be agreed between the Project Manager and the Supplier.

Itemisation

58 Separate items shall be provided for provision of vehicles and operatives, provision of additional Haulage Vehicles, and distance travelled for additional Haulage Vehicles in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Different operative(s) / vehicle combinations
	2 Different haulage vehicles

Provision of Vehicles and Operatives and provision of additional Haulage Vehicles

Item coverage

59. The items for provision of vehicles and operatives, provision of additional Haulage Vehicles shall in accordance with the Preambles to Schedule of Rates General Directions include for:

- (a) the wages and other emoluments paid including payment for overtime;
- (b) working outside the Contractor's normal working hours if so required;
- (c) costs and expenses incurred consequent upon the employment or hiring;
- (d) all necessary vehicles and equipment;
- (e) all necessary tax and insurance costs;
- (f) provision of suitable replacement including any equipment;
- (g) maintaining vehicles and equipment in a serviceable condition and in conformity with the manufacturer's recommendations;
- (h) fuel, oil and other consumable items; (except for providing additional Haulage Vehicles items where the fuel, oil and other consumable items are measured separately)
- (i) delivery to and collection from site of vehicles and equipment;
- (j) depreciation
- (k) qualified driver and operatives
- (l) completion and submission of information log sheets and record sheets

Distance travelled for additional Haulage Vehicles

Item coverage

59A. The items for distance travelled for additional Haulage Vehicles shall in accordance with the Preambles to Schedule of Rates General Directions include for:

- (a) fuel, oil and other consumable items;

Temporary Safety Barriers and Temporary Crash Cushions

Add new paragraphs 60 to 67 inclusive:

Units	<p>60. The unit of measurement shall be:</p> <ul style="list-style-type: none"> (i) install temporary safety barrier m. (ii) maintain temporary safety barrier..... m/day (iii) remove temporary safety barrier..... m. (iv) install temporary crash cushion no. (v) maintain temporary crash cushion..... day (vi) remove temporary crash cushion..... no.
Measurement	<p>61. The measurement of install and remove temporary safety barrier shall be the developed length along the center line of the barrier.</p> <p>62. The measurement of maintain temporary safety barrier shall be meter per day for each complete day during which the temporary safety barriers are supplied.</p> <p>63. The measurement of install and remove temporary crash cushion shall be each number of the crash cushion supplied.</p> <p>64. The measure of maintain temporary crash cushion shall be each complete day during which the temporary crash cushion supplied.</p> <p>65. Works shall be as defined in Chapter 8 of the "Traffic Signs Manual" Part 1 Section D3.10.</p>
Itemisation	<p>66. Separate items shall be provided for temporary safety barriers and temporary crash cushions in accordance with Chapter II paragraphs 3 and 4 and the following:</p>

Group	Feature
I	<ul style="list-style-type: none"> 1. Install, 2. Maintain 3. Remove.
II	<ul style="list-style-type: none"> 1. Different types of temporary safety barrier. 2. Different types of temporary crash cushion.
III	<ul style="list-style-type: none"> 1. Up to 1000m 2. 1000m to 2000m 3. 2000m to 3000m

-
4. 3000m to 4000m
 5. exceeding 4000m
 6. 1 number
 7. Exceeding 1 number
-

Note: Group III Feature 1, 2, 3, 4 and 5 shall be applied only to Group II Feature 1 items.

Group III Features 6 and 7 shall be applied only to Group II Feature 2 items.

**Temporary
Barriers
temporary
cushions**

**Safety
and
crash**

67. The items for temporary vehicle restraint safety barrier shall be in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) Everything necessary for the installation, maintenance and removal of the Works including design and testing as required by the Contractor.

Establishment, Removal and Maintenance of Lane Closures and Total Carriageway Closures

add new paragraph 68 to 71 inclusive:

Units

68 The units of measurement shall be:

- (i) establishment of lane closuresnumber.
- (ii) removal of lane closures.....number
- (iii) establishment of total carriageway closuresnumber.
- (iv) removal of total carriageway closures.....number
- (v) maintenance of lane closuresday.
- (vi) maintenance of total carriageway closureshour.
- (vii)maintenance of total carriageway closures day

Measurement

69 The measurement of establishment and removal of lane closures and total carriageway closures shall be the complete installation.

The length of a closure shall be the distance between the position of the widest end of the taper at the start of the closure and the position of the last cone that is necessary to carry out the task.

The measurement of maintenance of lane closures shall be the total number of days between the time that the closure is in full operation and the time that the *Service Manager* confirms that removal of the closure can commence. Days shall be rounded up to the nearest whole day.

‘Day’ shall mean Monday to Friday from 07:00 to 19:00 hours.

The measurement of maintenance of total carriageway closures in hours shall be the total number of hours between the time that the closure is in full operation and the time that the *Project Manager* confirms that removal of the closure can commence. Hours shall be rounded up to the nearest whole hour.

The measurement of maintenance of total carriageway closures in days shall be the total number of days between the time that the closure is in full operation and the time that the *Project Manager* confirms that removal of the closure can commence. Days shall be rounded up to the nearest whole day.

Establishment and removal of lane closures, establishment and removal of total carriageway closures, maintenance of lane closures and maintenance of total carriageway closures shall not be measured where this item or items of work is or are being provided by the *Contractor* for delivering other part of the Scheme or being provided by the *Client* or Others.

Itemisation

- 70** Separate items shall be provided for establishment, removal and maintenance of lane closures and total carriageway closures in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Establishment of lane closures.
	22 Removal of lane closures.
	3 Establishment of total carriageway closures.
	4 Removal of total carriageway closures
	5 Maintenance of lane closures.
	6 Maintenance of total carriageway closures.
II	1 Motorways excluding All Lane Running type.
	2 Motorways – All Lane Running type (4-lane).
	3 Dual Carriageway not exceeding 40mph limit.

	4	Dual carriageway exceeding 40mph speed limit.
III	1	Specified lanes or carriageways to be closed.
IV	1	Closure at at-grade interchange.
	2	Closure at grade-separated interchange.
V	1	Length not exceeding 2500 metres.
	2	Length exceeding 2500 metres but not exceeding 5000 metres.

Note 1: Group IV shall not be applied to Group 1 Features 1 and 3.

Note 2: Group V shall not be applied to Group 1 Features 3, 4 and 6.

Establishment, Removal and Maintenance of Lane Closures and Total Carriageway Closures 71

The items for establishment, removal and maintenance of lane closures and total carriageway closures shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) complying with the recommendations contained in Chapter 8 of the "Traffic Signs Manual" published by The Stationery Office and any amendments thereto or where the circumstances of any particular case are not covered submitting proposals for dealing with such situations to the *Service Manager*;
- (b) complying with particular requirements of this contract in respect of traffic safety and management and not limited to specification appendix 1/17;
- (c) initiating or continuing consultation with statutory, police or other authorities concerned, proposing or developing and submitting to the *Project Manager*, proposals based on such consultation showing a scheme of traffic safety and management measures including details of safety zones and emergency routes and furnishing such details as necessitated by the works or as the *Project Manager* may require;
- (d) design of traffic safety and management measures specified in this contract;
- (e) traffic safety and control personnel;
- (f) modification and resubmission of proposals and designs;
- (g) equipment, traffic signs, driver information signs, traffic signs (whether or not) provided by the Client and Others, cones, lamps, barriers including maintaining,

cleaning, repositioning, covering, uncovering and removing;

- (h) complying with the requirements for people and Equipment working on or adjacent to a highway and at entry and exit points to the Affected Property including signing;
- (i) giving of notice to the Client or Project Manager;
- (j) collecting and returning signs provided by the Client or Others;
- (k) surveillance and maintaining stocks;
- (l) immediate reinstatement and replacement of defective or damaged items;
- (m) road lighting, modification, and removal;
- (n) emergency telephones, modification, and removal;
- (o) maintenance of highways;
- (p) removal and reinstatement on completion;

Establishment, Removal and Maintenance of Diversion Routes

Add new paragraphs 72 to 75 inclusive:

Units

72 The units of measurement shall be:

- (i) establishment and removal of diversion routes
.....number.
- (ii) maintenance of diversion routes.....hour.

Measurement

73 The measurement of establishment and removal of diversion routes shall be the complete installation.

The measurement of maintenance of diversion routes shall be the total number of hours between the time that the closure is in full operation and the time that the *Project Manager* confirms that removal of the diversion route can commence. Hours shall be rounded up to the nearest whole hour.

Establishment and removal of diversion routes and maintenance of diversion routes shall not be measured where this item or items of work is or are being provided by the *Contractor* for delivering other part of the Scheme or being provided by the *Client* or Others.

Itemisation

74 Separate items shall be provided for establishment, removal

and maintenance of diversion routes in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Establishment of diversion route.
	2 Removal of diversion route.
	3 Maintenance of diversion route.
II	1 Not exceeding 20 number diversion signs.
	2 Exceeding 20 but not exceeding 50 number diversion signs.
	3 Exceeding 50 but not exceeding 100 number diversion signs.
	4 Exceeding 100 number diversion signs.

Establishment, Removal and Maintenance of Diversion Routes

75 The items for establishment, removal and maintenance of diversion routes closures shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

(i) all matters listed in Series 100 paragraph 31 and 83.

Establish, Maintain and Remove Pedestrian Traffic Management

Add new paragraphs 76 to 79 inclusive:

Units

76. The unit of measurement shall be:

- (i) Establish and remove pedestrian traffic managementitem
- (ii) Maintain pedestrian traffic management.....shift

Measurement

77. The measurement for establish and remove of pedestrian safety and management shall be measured once only for each separate layout during the course of the works.

The measurement for maintain pedestrian traffic management shall be measured once only for each 12 hour period either between 0700 and 1859 or between 1900 and 0659.

Itemisation

78. Separate items shall be provided for pedestrian traffic management in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Establish and remove pedestrian traffic management.
	2 Maintain pedestrian traffic management.

II	1	Specific road layout / configuration
III	1	Not exceeding 500m in length
	2	Exceeding 500m in length in increments of 250m

Pedestrian Safety and management

Item coverage

79. The items for pedestrian safety and management shall be in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) Signs
- (b) Pedestrian barriers
- (c) Operatives
- (d) Cones
- (e) Ramps
- (f) Obtaining licences and agreements
- (g) Preparing, amending and submitting to the highway authority and other interested bodies, proposals and programme
- (h) Consulting with police and other authorities
- (i) Preparation of site
- (j) Complying with the recommendations contained in Chapter 8 of the "Traffic Signs Manual" published by The Stationery Office and any amendment thereto or where the circumstances of any particular case are not covered submitting proposals for dealing with such situations to the Overseeing Organisation for its consent

Series 200: Site Clearance

Amend paragraph 1, add the following:

General Site Clearance shall not be measured for Road Renewals, Structure Renewals, LNMS and Technology schemes. When the Contract requires Take Up or Down and Set Aside for Re-use or Remove to Store or Tip off Site, these shall be measured within paragraphs 8-11 Take Up or Down and Set Aside for Re-use or Remove to Store or Tip off Site of this Series and as amended below.

Amend paragraph 8 as follows:

Take Up or Down and Set Aside for Re-use or Remove to Store or Tip off Site

Units

8 The units of measurement shall be:

Take up or down and set aside for re-use or remove to store or tip off Site the following:

- (i) brickwork, blockwork and stonework..... cubic metre
- (ii) paved areas and the like.....square metre
- (iii) to (vii) not amended

Amend paragraph 10, add the following

Group	Feature
V	1 in concrete carriageway

studs.

Note: Group V Feature 1 shall only apply to Group II Feature 7 road

Break and remove existing concrete pavement

Units

12 The units of measurement shall be:

- (i) break and remove existing concrete pavement and recycled for re-use.....cubic metre.

- (ii) Break and remove existing concrete pavement and deposited off sitecubic metre.

Measurement

- 13** The measurement for break and remove existing concrete pavement and recycled for re-use; break and remove existing concrete pavement and deposited off site shall be in cubic metre and in accordance to areas stated in the Contract.

Itemisation

- 14** Separate items shall be provided for break and remove existing concrete pavement and recycled for re-use; break and remove existing concrete pavement and deposited off site in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 break and remove existing concrete pavement and recycled for re-use.
	2 break and remove existing concrete pavement and deposited off site
II	1 Reinforced concrete
	2 Unreinforced concrete
III	1 Different depth
IV	1 Different size

Break and remove existing concrete pavement and recycled for re-use

- 15** The items for break and remove existing concrete pavement and recycled for re-use shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) excavation of acceptable material (as Series 600 paragraph 17 and 18);
- (b) excavation of unacceptable material (as Series 600 paragraph 19);
- (c) excavation in Hard Material (as Series 600 paragraph 23);
- (d) (11/04) taking precautions to avoid damage to property, structures, drains, services, instrumentation and the like;
- (e) selection and separation of materials;
- (f) cleaning, stacking, protecting and labelling;
- (g) loading into transport;
- (h) transport and handling;
- (i) haulage, deposition and compaction in temporary stockpiles including provision of sites for stockpiles;
- (j) disconnecting, removing, disposing of and sealing of services and supplies;
- (k) storage facilities;

- (l) replacing items damaged during the foregoing operations;
- (m) credit value of materials;
- (n) multiple handling of materials;
- (o) treatment of hazardous materials;
- (p) processing and recycling of materials;
- (q) crushing, screening, mixing, grading, drying, wetting and sieving;
- (r) mechanical, chemical, hydraulic and other methods;
- (s) producing the required classification of material from site-won materials;

break and remove existing concrete pavement and deposited off site

The items for break and remove existing concrete pavement and deposited off site shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) excavation of acceptable material (as Series 600 paragraph 17 and 18);
- (b) excavation of unacceptable material (as Series 600 paragraph 19);
- (c) excavation in Hard Material (as Series 600 paragraph 23);
- (d) stacking;
- (e) transport and handling;
- (f) disconnecting, removing, disposing of and sealing of services and supplies;
- (g) storage facilities;
- (h) replacing items damaged during the foregoing operations;
- (i) credit value of materials;
- (j) multiple handling of materials;
- (k) treatment of hazardous materials;

Series 400: Road Restraint Systems

Amend paragraph 4, add the following

Group	Feature
VI	1 Length not exceeding 250m
	2 Length exceeding 250m

Itemisation

29 Separate items shall be provided for anti-glare screens in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Anti-glare screen.
II	1 Each type of anti-glare screen.
III	1 Straight or curved at any radius

Amend paragraph 31, add the following:

(iv) Remove from store and re-erect existing barrier, extra over for new posts.....number.

Insert paragraphs 48 to 65

Rigid Safety Barrier

Units

48 The unit of measurement shall be:

Units

- (i) establishment of plant for rigid safety barrier..... item.
- (ii) rigid safety barrier linear metre.
- (iii) bifurcation linear metre.
- (iv) connection to existing number.
- (v) Rigid safety barrier transition to bridge pier number.
- (vi) Emergency crossing point number.
- (vii) Maintenance crossing point.....linear metre
- (viii) Cast in-situ Wide sections.....linear metre.
- (ix) Cast in-situ Variable height sections.....linear metre.
- (x) Deformable safety barrier.....linear metre
- (xi) Steel step barrier to span a manhole cover.....number
- (xii) Extra over weep holes in dual rigid safety barrier.....number
- (xiii) Extra over for slip membrane.....linear metre
- (xiv) Extra over for embedment.....linear metre.

Measurement

- 49** The measurement of establishment of plant for rigid safety barrier shall be measured only once to each location. Any additional establishment to suit the Contractor's method of working shall not be measured.
- 50** The measurement of rigid safety barrier shall be the developed length along the centre line of the barrier, or barriers where dual rigid barrier is installed, between the interface with connections, transitions and bifurcations.
- 51** The measurement of bifurcation shall be the developed length of the bifurcation along the centre line of the barrier.
- 52** The measurement of connections to open box beam shall be the complete installation.
- 53** The measurement of rigid safety barrier transition to bridge pier shall be the complete installation.
- 54** The measurement of emergency crossing point shall be the complete installation.
- 55** The measurement of maintenance crossing point shall be the developed length of installation along the centre line of the barrier.
- 56** The measurement of cast in-situ wide sections shall be the developed length of installation along the centre line of the barrier.
- 57** The measurement of cast in-situ variable height sections shall be the developed length of installation along the centre line of the barrier.
- 58** The measurement of deformable safety barrier shall be the developed length of installation along the centre line of the barrier.
- 59** The measurement of steel step barrier to span a manhole cover shall be the complete installation.
- 60** The measurement of extra over weep holes in dual rigid safety barrier shall be the complete installation.
- 61** The measurement of extra over for slip membrane shall be the length of the complete installation.
- 62** The measurement of extra over for embedment shall be the length of the complete installation.

Itemisation

- 63** Separate items shall be provided for rigid safety barrier in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Establishment of plant for rigid safety barrier.

	2 Rigid safety barrier. 3 Bifurcation. 4 Connections to existing systems. 5 Rigid safety barrier transition to bridge pier. 6 Crossing point. 7 Cast in-situ barrier. 8 Deformable safety barrier. 9 Steel step barrier. 10 Extra weep holes. 11 Slip membrane. 12 Embedment.
II	1 Each containment performance class.
III	1 Each working width class.
IV	1 Each type of bifurcation.
V	1 Each type of connection.
VI	1 Each type of transition.
VII	1 Each type of crossing point.
VIII	1 Each type of cast in-situ section.
IX	1 Each type of embedment.

Establishment of Plant for Rigid Safety Barrier

64 The items for establishment of plant for rigid safety barrier shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) bringing plant and equipment to the site;
- (b) erecting and setting up plant and equipment including site preparation, levelling and access ramps;
- (c) dismantling and removing plant and equipment from Site on completion.
- (d) safety barriers and transitions (as this Series paragraph 5).

Rigid Safety Barrier

65 The items for rigid safety barrier shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) in situ concrete (as Series 1700 paragraph 5);

(b) formwork (as Series 1700 paragraph 15);

(c) reinforcement (as Series 1700 paragraph 26);

Bifurcation

66 The items for bifurcation shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) rigid safety barrier (as this Series 400 paragraph 57).

Connection to Open Box Beam

67 The items for connection to existing shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) rigid safety barrier (as this Series 400 paragraph 57).

Rigid Safety Barrier Transition to Bridge Pier

68 The items for CSB transition to bridge pier shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) rigid safety barrier (as this Series 400 paragraph 57).

Crossing Point

69 The items for crossing point shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) rigid safety barrier (as this Series 400 paragraph 57);

Cast in-situ wide sections and Cast in-situ variable height sections

70 The items for cast in-situ wide sections and cast in-situ variable sections shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) rigid safety barrier (as this Series 400 paragraph 57).

Deformable safety barrier

71 The items for deformable safety barrier shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) safety barrier (as this Series 400 paragraph 5).

Steel step barrier

72 The items for bifurcation shall in accordance with the Preambles to Bill of Quantities General Directions include for:

(a) safety barrier (as this Series 400 paragraph 5).

Extra weep hole

73 The items for extra weep hole shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) design;
- (b) protection;
- (c) formwork;

- (d) falls and shaped profiles;
- (e) holes;
- (f) wee pipes, pipe sleeves and the like;

Slip membrane

74 The items for slip membrane shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) cleaning;
- (b) preparation and protection;
- (c) complete installation of membrane

Extra over embedment

for 75 The items for embedment shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- (a) rigid safety barrier (as this Series 400 paragraph 57).

Minimum Visit Charges

Add new paragraph 76 to 79 inclusive:

Units

76 The unit of measurement shall be:

- (i) Minimum visit charge.....Sum

Measurement

77 Minimum visit charges shall be measured once only for each day where the cumulative value of all works to be undertaken by a subcontractor during that period are less than the minimum visit charge for that subcontractor. Where minimum visit charge is measured, all other works to be undertaken during that day shall not be measured.

Itemisation

78 Separate items shall be provided for minimum visit charges in accordance with Chapter II paragraphs 3 and 4 and the following:

Group**Feature****I****1** Different types of work

**Minimum
Charges**

Item coverage

Visit

- 79 The items for minimum visit charge shall be in accordance with the Preambles to Schedule of Rates General Directions include for:
- (a) Subcontractor minimum visit charges.

Series 500: Drainage and Service Ducts

Delete the Note at the end of paragraph 15.

Amend Paragraph 15, add the following:

Group	Feature	
I	3	Piped counterfort drain.
	4	Unpipied counterfort drain.
III	3	Depths to bottom of trench not exceeding 2 metres.
	4	Depths to bottom of trench exceeding 2 metres but not exceeding 4 metres.

Note: Group III Features 3 and 4 shall only be applied to Group I Feature 4

Add the following to Paragraph 16

Drains and Service Ducts

Item coverage

(v) geotextiles.

Delete the Note at the end of paragraph 21.

Amend Paragraph 21, add the following:

Group	Feature	
I	6	Piped counterfort drain.

After paragraph 84 add the following paragraphs 85 to 91 inclusive:

Protection of Existing Drains, Sewers, Piped Culverts, Service Mains and Service Ducts

Units	85	The units of measurement of protection of existing drains, sewers, piped culverts, service mains and service ducts shall be:
-------	----	--

- (i) protection of existing drains, sewers, piped culverts, service mains and service ducts
.....linear metre.

Measurement 86 The measurement of protection of existing drains, sewers, piped culverts, service mains and service ducts shall be the summation of their individual lengths measured along the centre line between any of the following:

- (a) the external face of chambers;
- (b) the rear faces of headwalls and outfalls;
- (c) the intersections of the centre lines at pipe junctions;
- (d) the external faces at gullies;
- (e) the positions of terminations shown in the Contract;
- (f) the point of change of stage depth.

The protection of existing drains, sewers, piped culverts, service mains and service ducts shall only be measured where specifically stated in the Contract or ordered by the Overseeing Organisation.

87 The depth of existing drains, sewers, piped culverts, service mains and service ducts to be protected shall be the vertical measurement between the invert and the existing ground level.

88 The average depth to invert shall be the calculated arithmetical mean of the depths taken at intervals of 10 metres along the lengths measured. For lengths less than 10 metres the measurement of depths shall be taken at the ends.

89 The measurement of protection of existing drains, sewers, piped culverts, service mains and service ducts shall be the complete protection irrespective of the number uncovered in any one trench.

Where more than one drain, sewer, piped culvert, service main or service duct exists in any one trench then the number shall be that stated in the item description. The invert used to measure the depth of a configuration of ducts to be protected shall be the lowest duct invert in that configuration.

Itemisation 90 Separate items shall be provided for protection of existing drains, sewers, piped culverts, service mains and service ducts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Existing drains or sewers.
	2 Existing piped culverts.
	3 Existing service mains.
	4 Existing service ducts.

II	1	Different internal diameters.
III	1	Depths to invert not exceeding 1 metre.
	2	Depths to invert exceeding 1 metre but not exceeding 2 metres and so on in steps of 1 metre.

Protection of Existing Drains, Sewers, Piped Culverts, Service Mains And Service Ducts

91 The items for protection of existing drains, sewers, piped culverts, service mains and service ducts shall in accordance with the Preambles to Schedule of Rates General Directions include for:

Item coverage

- (a) locating existing services, pipes and ducts
- (b) trial pits (as Series 600 paragraph 166);
- (c) excavation of acceptable material (as Series 600 paragraph 17 and 18);
- (d) excavation of unacceptable material (as Series 600 paragraph 19);
- (e) hangers, stools and discrete supports;
- (f) formwork (as Series 1700 paragraph 14);
- (g) reinstatement of unpaved areas;
- (h) movement joints to beds, surrounds and the like;
- (i) bedding, hunching and surrounding;
- (j) replacement of identification tapes, tiles, etc.,
- (k) backfilling and compaction;
- (l) disposal of material (as Series 600 paragraph 39);
- (m) surveys and recordings.

CCTV Survey of Existing Drains, Sewers, Piped Culverts, Service Mains and Service Ducts

Units 92 The units of measurement of CCTV survey of existing drains, sewers, piped culverts, service mains and service ducts shall be:

- (i) CCTV surveys of existing drains, sewers, piped culverts, service mains and service ducts.....linear metre.

Measurement 93 The measurement of CCTV survey of existing drains, sewers, piped culverts, service mains and service ducts shall be the summation of their individual lengths measured along the centre line between any of the following:

Item coverage

- (a) the external face of chambers;
- (b) the rear faces of headwalls and outfalls;
- (c) the intersections of the centre lines at pipe junctions;
- (d) the external faces at gullies;
- (e) the positions of terminations shown in the Contract;

The CCTV survey of existing drains, sewers, piped culverts, service mains and service ducts shall only be measured where specifically stated in the Contract or ordered by the Overseeing Organisation.

Itemisation 94 Separate items shall be provided for CCTV surveys of existing drains, sewers, piped culverts, service mains and service ducts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Not exceeding 150mm diameter. 2 Exceeding 150mm but not exceeding 300mm diameter. 3 Exceeding 300mm but not exceeding 600mm diameter. 4 Exceeding 600mm but not exceeding 900mm diameter.

CCTV Survey of Existing Drains, Sewers, Piped Culverts, Service Mains And Service Ducts

95 The items for CCTV survey of existing drains, sewers, piped culverts, service mains and service ducts shall in accordance with the Preambles to Schedule of Rates General Directions include for:

Item coverage

- (a) marking;
- (b) lifting chamber covers, replacement and bedding;
- (c) rodding;

- (d) mandrel
- (e) disposal of material (as Series 600 paragraph 39);
- (f) recording and reporting;
- (g) locating obstructions and the like;
- (h) contamination prevention measures;
- (i) locating chambers and gullies;
- (j) electrical equipment, wiring and connections;
- (k) cameras and associated equipment;
- (l) provision of electrical power feeds by mains connection or generators;
- (m) electrical power,

Amend paragraph 81, add the following:

- (iv) cleaning of catchpits, manholes.....number

Amend paragraph 83, add the following:

Group	Feature
II	8 Catchpits. 9 Manholes.

Amend paragraph 84, in matters (b) and (q) of paragraph 84 after “chamber” insert “, catchpit and manhole”.

Series 600: Earthworks

Amend paragraph 16, add the following:

Group			Feature		
III			12	existing	sub base

Series 700: Pavements

Amend Paragraph 5, amend the following:

- (c) protection of material in transit and while awaiting tipping; (Excluded to be measured separately)

Amend Paragraph 6 and 7, add the following:

Units	6	The unit of measurement shall be:
	(ii)	Adjustment for change in PSV.....cubic metre
Measurement	7	Where an adjustment is required in excess, or reduction, of the PSV stated within the Schedule of Rate item description, the adjustment rate is to be applied by multiplying the surface area by the required thickness to obtain a cubic metre quantity and shall be measured for Thin Surface Course System materials only.

Amend Paragraph 8, add the following:

Group	Feature
VIII	1 Adjustment to Thin Surface Course Materials for different PSV's

Note: For each item which includes Group VIII Feature 1 an item shall be provided for adjustment of the rate for each PSV difference where the measurement varies from that stated in the Schedule of Rates

Amend Paragraph 9, amend the following:

- (c) protection of material in transit and while awaiting tipping; (Excluded to be measured separately)
- (dd) saw cutting and sealing bituminous overlays (excluded for overlaying on existing concrete pavements, saw cutting and sealing bituminous overlays on existing concrete pavements is to be measured separately)

Add new Paragraph 9A to 12A:

Haulage for Materials

Units

- 9A** The units of measurement shall be:
- (i) Extra over for transportation of sub-base materials to site.....km tonne
 - (ii) Extra over for transportation of base, lower base, upper base, binder course, surface course materials to site.....km tonne.

Measurement

- 10A** The measurement for Haulage for Materials shall be per kilometre tonnage

Itemisation

- 11A** Separate items shall be provided for Haulage for Materials in accordance with Chapter II Paragraph 3 and 4 and the following:

Group	Feature
I	1 Different materials

Haulage for Materials

- 12A** The items for Haulage for Materials shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) Qualified driver and operatives;
- (b) the wages and other emoluments paid including payment for overtime;
- (c) working outside the Contractor's normal working hours if so required;
- (d) costs and expenses incurred consequent upon the employment or hiring;
- (e) all necessary vehicles and equipment;
- (f) all necessary tax and insurance costs;
- (g) Loading into transport;
- (h) transportation from batching, production plant or depot to Site;
- (i) protection of material in transit and while awaiting tipping;
- (j) standing time;
- (k) unloading;
- (l) unloading to multiple locations within a Site
- (m) cleaning of transport vehicles;
- (n) Weighing, tickets and copies;
- (o) Taxing and insurance;
- (p) Suitable replacement including any equipment;
- (q) Maintaining in a roadworthy condition and in conformity with the vehicle manufacturer's recommendations;
- (r) Fuel, oil and other consumable items
- (s) depreciation

- (t) completion and submission of information log sheets and record sheets

Amend paragraph 25, add the following:

- (ii) fine milling.....square metre.

Amend paragraph 44, add the following:

- (g) Applying sealant in accordance with manufacturer's recommendations

Amend paragraph 57, add the following:

- (l) FWD measurements.

Amend paragraph 59, add the following:

- (j) FWD measurements.

Amend paragraph 68, add the following:

- (b) FWD measurements.

Amend paragraph 69, add the following:

- (b) FWD measurements.

Amend paragraph 47

Group	Feature
IV	1 Different sizes
V	1 Different concrete types
VI	1 Different reinforcement requirements

Note: Group VI shall not be applied to Group II Feature 1.

Amend paragraph 53

Group	Feature
IV	Different sizes

Amend paragraph 64

Group	Feature
V	Different sizes

Add the following:

Slab levelling with pressure grouting or vacuum grouting

Units

82 The units of measurement shall be:

- (i) Slab levelling with pressure grouting.....cubic metre.
- (ii) Slab levelling with vacuum groutingcubic metre.

Measurement

83 The measurement for slab levelling with pressure grouting; slab levelling with vacuum grouting shall be in cubic metre and measured by the volume of the void to be repaired and in accordance to areas stated in the Contract.

Itemisation

84 Separate items shall be provided for slab levelling with pressure grouting; slab levelling with vacuum grouting in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Pressure grouting
	2 Vacuum grouting
II	1 Different volume

Slab levelling with pressure grouting

85 The items for slab levelling with pressure grouting shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) all equipment required;
- (b) cutting back, saw cutting, cleaning, preparing and working on or up to existing surfaces and features;
- (c) hydraulic jacking
- (d) raising slab
- (e) taking measures
- (f) protection
- (g) create voids
- (h) create holes

		<ul style="list-style-type: none"> (i) grout (j) dry mix mortar (k) making good (l) measures required for aftercare and opening the road to traffic;
slab levelling with vacuum grouting	86	The items for slab levelling with vacuum grouting shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		<ul style="list-style-type: none"> (a) all equipment required; (b) cutting back, saw cutting, cleaning, preparing and working on or up to existing surfaces and features; (c) hydraulic jacking (d) raising slab (e) taking measures (f) protection (g) create void (h) create holes (i) stitch tie bars (j) isolate section of pavements as required (k) grout (l) making good (m) measures required for aftercare and opening the road to traffic;

Remedial treatment for heaves

Units 87 Not Used

Measurement 88 Not Used

Itemisation 89 Not Used

Remedial treatment for heaves 90 Not Used

Remedial treatment for surface depression

Units 91 Not Used

Measurement 92 Not Used

Itemisation **93** Not Used

Remedial treatment for surface depression **94** Not Used

Stitched crack repairs

Units **95** The units of measurement shall be:

(i) stitched crack repair.....linear metre.

Measurement **96** The measurement for stitched crack repairs shall be the summation of the lengths stated in the Contract.

Itemisation **97** Separate items shall be provided for stitched crack repair in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Different type
II	1 Different length

Stitched crack repairs **98** The items for stitched crack repairs shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) determination of the extent of the repairs and agreement with the Overseeing Organisation;
- (b) tie bar;
- (c) drilling holes;
- (d) cleaning;
- (e) priming;
- (f) epoxy resin mortar
- (g) cleaned of loose material
- (h) compacted resin;
- (i) cementitious mortar
- (j) saw cutting;
- (k) forming transverse grooves
- (l) sealing grooves;
- (m) twisting;
- (n) protection.

Saw cutting and sealing bituminous overlays

Units

- 99** The units of measurement shall be:
- (i) Saw cutting and sealing bituminous overlays to existing jointed concrete pavement.....linear metre.

Measurement

- 100** The measurement for saw cutting and sealing bituminous overlays to existing jointed concrete pavement shall be the summation of the lengths stated in the Contract.

Itemisation

- 101** Separate items shall be provided for saw cutting and sealing bituminous overlays to existing jointed concrete pavement in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Saw cutting and sealing bituminous overlays to existing jointed concrete pavement

Saw cutting and sealing bituminous overlays to existing jointed concrete pavement

- 102** The items for saw cutting and sealing bituminous overlays to existing jointed concrete pavement shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage

- (a) Marking the locations of all existing transverse pavement joints or saw-cuts;
- (b) Saw-cutting of grooves at each of the pre-marked locations;
- (c) Cleaning;
- (d) Application of bond-breaker tape;
- (e) Sealing of grooves.

Series 1200: Traffic Signs and Road Markings

Amend paragraph 9, add following new item

(iv) extra over preparation of concrete carriageway prior to the application of road marking.....square metre

After paragraph 15, add the following paragraph 15a

15a The measurement of extra over preparation of concrete carriageway prior to the application of road marking shall be the plan area of the size of the road markings to be applied

Amend paragraph 16, add the following

Group	Feature
I	3 Extra over preparation of concrete carriageway

Amend paragraph 18, amend the following

(c) thinners, primers and tack coats (except on concrete carriageway where surface preparation including tack coats are to be separately measured);

After paragraph 18, add the following paragraph 18a

Extra over preparation of concrete carriageway 18a The items for extra over preparation of concrete carriageway shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage (a) thinners, Primers and tack coats;

Amend paragraph 21, add the following

Group	Feature
V	1 in concrete carriageway

Amend paragraph 24, add the following

Group	Feature
IV	1 in concrete carriageway

After paragraph 45 add the following paragraphs 46-67 inclusive

Sign Faces

Units 46 The units of measurement shall be:

- (i) sign faces number.

Measurement 47 The measurement of sign faces shall be number.

Itemisation 48 Separate items shall be provided for sign faces in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Sign faces.
II	1 Retroreflective. 2 Non-retroreflective. 3 Enhanced retro reflective.
III	1 Different types.
IV	1 Lit Sign Units. 2 Non Lit Sign Units.
V	1 Different sizes.
VI	1 Fixed to existing posts or lighting columns. 2 Fixed to existing signs. 3 Fixed to existing gantries.

Sign Faces

Item coverage

- 49 The items for sign faces shall in accordance with the Preambles to Schedule of Rates General Directions include for:
- (a) temporary covering of signs;
 - (b) supply of drawings and details;

- (c) location lettering and marking;
- (d) protective system (as Series 1900 paragraph 4);
- (e) rivets, bolts, nuts and the like;
- (f) Purlins and fixings;
- (g) additional materials for hinges

**Remove from Store and
Re-erect Traffic Signs**

Amend paragraph 8 as follows

Add the following

- (f) Cutting off existing post at ground level
- (g) Filling remaining embedded end of post with rapid setting mortar

Minimum Visit Charges

Units

68. The unit of measurement shall be:

(ii) Minimum visit charge.....Sum

Measurement

69. Minimum visit charges shall be measured once only for each day where the cumulative value of all works to be undertaken by a subcontractor during that period are less than the minimum visit charge for that subcontractor. Where minimum visit charge is measured, all other works to be undertaken during that day shall not be measured.

Itemisation

70. Separate items shall be provided for minimum visit charges in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	2 Different types of work

**Minimum
Charges**

Visit

Item coverage

70a. The items for minimum visit charge shall be in accordance with the Preambles to Schedule of Rates General Directions include for:
(b) Subcontractor minimum visit charges.

Series 1300: Road Lighting Columns and Brackets, CCTV Masts and Cantilever Masts

After paragraph 7 add the following paragraph 8

Replace existing Luminaires with New LED Luminaires

Units 8 The unit of measurement shall be:

- (i) Replace existing Luminaires with new LED Luminaires.....Number

Itemisation 9 Separate item shall be replace existing luminaires with new LED luminaires in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Different Luminaires
II	1 Different types

Replace existing Luminaires with new LED Luminaires

Item coverage

10 The items for replace existing Luminaires with new LED Luminaires accordance with the Preambles to Schedule of Rates General Directions include for:

- (a) design;
- (b) certificates;
- (c) provision of data and drawings;
- (d) resubmissions and modifications;
- (e) amendments to the Works;
- (f) obtaining aesthetic approval
- (g) Rivets, nuts bolts, shims washers welds, clamps and the like.
- (h) loading, transporting from store, unloading and positioning for changing;
- (i) Protective system (as Series 1900 paragraph 4)
- (j) Marking and lettering
- (k) electrical equipment, wiring and making connections, excluding supply and control cabling

- (l) Plugging of cable slots
- (m) modification and new materials;
- (n) painting existing painted items;
- (o) ducts in bases;
- (p) conduit including screwed and threaded connections, bends, tees and the like and draw wires;
- (q) threading cable through ducts, sleeves, conduit and the like;
- (r) backboards, fixings, protective caps, sealing, grommets, spacers, mounting plates and strips;
- (s) complying with wiring regulations and earthing (other than earth electrodes);
- (t) protective treatment;
- (u) notices, recording and preparation and supply of record drawings;
- (v) fixing to lighting column including attachment systems.
- (w) removal and disposal of existing luminaires.

Series 1500: Motorway Communications

Any reference in paragraphs 5 to 15 inclusive to “duct” is to be deemed to include for concrete troughs.