Highways England Company Limited

Area 9

Maintenance and Response Contract

Schedule of Rates

Method of Measurement for Schedule C

CONTENTS AMENDMENT SHEET

Amend. No.	Revision No.	Amendments	Initials	Date
0	0	Tender Issue	AJP	30/06/2021

		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 relevant 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 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; (ii) the manufacture, fabrication and supply of Plant and Materials, goods, storage and costs in connection therewith including delivery to the Affected Property. Taking delivery of Plant and 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 *service* or any element of the *service* to the extent set forth or reasonably implied in the Contract Documents; (vii) general obligations, liabilities and risks involved in Providing the Service 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; (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 *Service Manager* 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 *Client* of *Service Manager*; (xiv) complying with quality assurance requirements of this 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 Affected Property; (xix) updating information and inventory data to the information database or system; (xx) supervision, management, programming and the like to Provide the Service; (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 this 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 this contract in that area for the particular type of safety barrier, pavement or buried structure the *Contractor* has elected to construct.
Pricing of Items – Working Hours (Mon-Fri 07:00-19:00) (May-October)	**4**	Each individual item in the Schedule of Rates under this heading 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 two decimal places.

Extra Over Rates and Prices	**4A**	Additional columns are included in the Schedule of Rates to provide for Extra Over rates to the flat rates against items referred to in paragraph 4 of these preambles. These Extra Over rates shall apply where the *Service Manager* instructs the *Contractor* to undertake the same work as the work covered by the flat rates against those items but at nights and at weekends and also during November to and including April. The Extra Over rates entered in these columns shall be applied in addition to the flat rate subject to one Extra Over rate only being applied in the case of Night Working and Weekend Working when instructed by the *Service Manager*. Additionally where the *Contractor* is instructed to Provide the Service during November to and including April or at any time within this period then that Extra Over rate shall be applied in addition to the flat rate and where applicable in addition to the flat rate and one of the Extra Over rates applied to Night Working or Weekend Working. In this case Night Working and Weekend Working are those times and days stated in the Schedule of Rates and Seasonal Adjustment relates to months on and from November to and including April.
Alternative Specified Materials, Designs and Options Within Types of Pavement	**5**	Where in the Contract Documents a choice of alternatives is permitted the description scheduled and the rates and prices inserted shall be deemed to cover any of the permitted alternative Plant and Materials or designs the *Contractor* may elect to use. In all cases the rates and prices inserted in the Schedule of Rates shall be deemed to include for any adjustments of work content, rates, costs, taxes and the like occasioned by the choice of alternatives elected to be used by the *Contractor*.
Privately and Publicly Owned Services or Supplies	**6**	The information in the Contract Documents 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 this 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 *service*, obtaining the written consent of the appropriate authority to interrupt the service or supply and for keeping the *Service Manager* informed of all arrangements he makes with the owners of privately owned services or supplies, Statutory Undertakers and Public Authorities as appropriate.
Labours	**7**	NOT USED.

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 flow of water, sewage and the like.
Reimbursement of Fees, Rates, Taxes and Overseeing Organisation's Telephone Calls	**11**	NOT USED.
Affected Property 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 Affected Property.
Hard Material	**13**	For the purposes of this 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 in the Scope;
		(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 *service*, including design, provision of data and drawings, certificates, awaiting acceptance, resubmissions and modifications and amendments to the *service*.

		Unless specifically stated to the contrary in the Contract Documents the measurement of the *service* affected by the incorporation of the equivalent products and Plant and Materials shall be based on the Contract Documents and not on the s*ervice* as amended and completed to incorporate the equivalent products and Plant and Materials.
Permanent Works Designed by the *Contractor*	**15**	(05/01) Where this contract requires part(s) of the *service* 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 *service*, including design, provision of data and drawings, certificates, awaiting approvals, resubmissions and modifications and amendments to the *services*.
		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 *service* or to prove the *Contractor*'s design.
Structures Designed by the *Contractor*	**16**	NOT USED.
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 *service* and testing of the *service* in order to prove the Overseeing Organisation's design as set out in Appendix 1/5.

		Checking, inspecting, examining, measuring and verifying goods, Plant and Materials and workmanship incorporated in the *service*, as paragraph 2(xii) above, is in respect of other operations set forth or reasonably implied in the Contract Documents to be carried out by the *Contractor* to demonstrate compliance with the particular requirements of this 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 *service* in order to verify goods, Plant and 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.
Amendments to the Method of Measurement (05/01)	**20**	(05/01) For the purposes of this contract the Method of Measurement for Highway Works is amended in accordance with the paragraphs below and pages immediately following.
Notes for Guidance	**21**	The Notes for Guidance on the Method of Measurement published by The Stationery Office as Section 2 of Volume 4 of the Manual of Contract Documents for Highway Works is incorporated into this contract. The relevant publication date of each page of the Notes for Guidance on the Method of Measurement for Highway Works is given in the relevant Schedule of Pages and Relevant Publication Dates.
Terms	**22**	Terms identified in table 1 below that are included within the Method of Measurement for Highway Works (and the amendments to that method of measurement that follow these Preambles herein) should be replaced with the revised terms listed in table 1 also; <u>Table 1:</u>

		<table><tr><td>Terms</td><td>Revised terms</td></tr><tr><td>…Site</td><td>…Affected Property</td></tr><tr><td>…Bill of Quantities</td><td>…Schedule of Rates</td></tr><tr><td>…Contractor</td><td>…*Contractor*</td></tr><tr><td>…Works</td><td>…*service*</td></tr><tr><td>…Employer</td><td>…*Client*</td></tr><tr><td>…Engineer</td><td>…*Service Manager*</td></tr><tr><td>…Engineer's Representative</td><td>…*Service Manager*</td></tr><tr><td>…Contract</td><td>…Form of Agreement</td></tr><tr><td>…Specification</td><td>…Scope</td></tr><tr><td>…Drawings</td><td>…Scope</td></tr><tr><td>…Tender Total</td><td>…tendered total of the Prices</td></tr><tr><td>…Contract Price</td><td>…amount due</td></tr><tr><td>…Permanent Works</td><td>…*service*</td></tr><tr><td>…Temporary Works</td><td>…temporary works</td></tr><tr><td>…Section</td><td>…section</td></tr><tr><td>…Constructional Plant</td><td>…Equipment</td></tr></table>
		Words expressed in masculine or feminine nouns and pronouns shall be considered to be gender neutral under this Contract.
Definitions – "Conditions of Contract"	**23**	In Chapter I replace all wording in paragraph 1(a) with "Not used."
Definitions – "Provisional"	**24**	In Chapter I replace all wording in paragraph 1(d) with "Not used."

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

Chapter/Series	Page Number	Publication Date
Contents	1 2 3 4 to 7	November 2004 May 2005 November 2004 May 2005
Chapter I	1 to 3 inclusive	March 1998
Chapter II	1 2	March 1998 May 2001
Chapter III	1 2 3 to 11 inclusive	March 1998 May 2001 May 2004
Chapter IV	1	March 1998
100	1 to 2 inclusive 3 to 7 inclusive 8 9 to 11 inclusive 12 13 to15 inclusive	March 1998 May 2001 November 2004 May 2001 November 2004 May 2001
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700	1 2 3 4 to 5 inclusive 6 7 to 9 inclusive	May 2001 May 2002 May 2001 May 2002 May 2001 May 2002

Chapter/Series	Page Number	Publication Date
	10 11 12 to 13 inclusive 14 15 to 18 inclusive	May 2001 May 2002 May 2001 May 2002 May 2001
800 900 1000	)) Not taken up)	
1100	1 2 3 4 to 5 inclusive 6 7 to 8 inclusive	May 2001 November 2004 May 2001 May 2002 May 2001 May 2005
1200	1 to 2 inclusive 3 to 5 inclusive 6 to 11 inclusive	May 2001 March 1998 May 2001
1300	1 to 3 inclusive	November 2003
1400	1 to 2 inclusive 3 4 to 8 inclusive 9	May 2001 May 2005 May 2001 May 2005
1500	1 to 2 inclusive 3 4 to 7 inclusive 8 to 12 inclusive	May 2001 May 2005 Feb 2003 May 2001
1600	1 to 2 inclusive 3 to 6 inclusive 7 8 to 19 inclusive	March 1998 May 2001 March 1998 May 2001
1700	1 2 3 4 to 11 inclusive	May 2004 May 2001 May 2004 May 2001
1800	1 2 to 5 inclusive	March 1998 May 2001
1900	1	May 2003
2000	1 2 to 3 inclusive	May 2002 May 2001
2100	1	March 1998
2200	Not taken up	
2300	1 to 3 inclusive	March 1998
2400	1 to 3 inclusive 4	May 2001 March 1998
2500	1 to 2 inclusive	May 2001
2600	Not taken up	
2700	1	May 2001
3000	1 to 15 inclusive	May 2001
5000	1 to 2 inclusive	May 2003

Notes for Guidance on the Method of Measurement for Highway Works
Schedule of Pages and Relevant Publication Dates

Chapter/Series	Page Number	Publication Date
Contents	1	May 2004
	2	May 2001
	3	May 2004
Introduction	1	March 1998
Chapters I,II and III	1	November 2004
	2	November 2006
	3	May 2001
Chapter IV 100	1	March 1998
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	2	May 2001
600	1 to 2 inclusive	November 2004
	3	March 1998
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	9 to 10 inclusive	November 2004
700	1	May 2004
	2	March 1998
800	)	
900	) Not taken up	
1000	)	
1100	1	May 2004
1200	1	May 2001
1300	(No guidance on this Series)	
1400	1	March 1998
1500	1	May 2001
1600	1 to 2 inclusive	March 1998
1700	1	March 1998
1800	1	March 1998
1900	(No guidance on this Series)	
2000	1	March 1998
2100	(No guidance on this Series)	
2200	Not taken up	May 2004
2300	(No guidance on this Series)	
2400	1	March 1998
2500	1	November 2004
	2	May 2001
2600	Not taken up	
2700	1	May 2001
3000	1	May 2001
	2	May 2004
	3	May 2001
5000	1	May 2003

Amendments to Chapter IV of the Method of Measurement for Highway Works

Series 100 : Preliminaries

Delete paragraphs 21 to 33 inclusive.

Insert new paragraphs 56 to 71.

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

Units

56 The units of measurement shall be:

(i) establishment and removal of lane closures …….number.

(ii) establishment and removal of total carriageway closures …….number.

(iii) maintenance of lane closures …….hour.

(iv) maintenance of total carriageway closures …….hour.

(v) maintenance of lane closures …….day.

(vi) maintenance of total carriageway closures …….day.

Measurement

57 The measurement of establishment and removal of lane closures and total carriageway closures shall be the complete installation. Establishment shall constitute a quantity of 0.66 number and removal shall constitute 0.34 number.

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 and total carriageway closures shall be:

- For durations of up to 12 hours - the total number of hours 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. Hours shall be rounded up to the nearest whole hour. OR

- For durations of 12 hours or over - the total number of days between the time that the closure is in full operation and the time that the *Service Manager* confirms that the removal of the closure can commence. Days shall be rounded up to the nearest whole day.

'Day' shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday 07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

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* as part of the Lump Sum Duties or by the *Client* or Others.

Itemisation **58** 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 and removal of lane closures.
	2	Establishment and removal of total carriageway closures.
	3	Maintenance of lane closures.
	4	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.
	5	Single tunnel; bore
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 250 metres.
	2	Length exceeding 250 metres but not exceeding 500 metres.
	3	Length exceeding 500 metres but not exceeding 750 metres.
	4	Length exceeding 750 metres but not exceeding 1000 metres.
	5	Length exceeding 1000 metres but not exceeding 2500 metres.

6	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 2 and 4.

Establishment, Removal and Maintenance of Lane Closures and Total Carriageway Closures **59**

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 *Service 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 *Service 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 *Service 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

Units

60 The units of measurement shall be:

(i) establishment and removal of diversion routes …….number.

(ii) maintenance of diversion routes…….hour.

(iii) maintenance of diversion routes…….day.

Measurement

61 The measurement of establishment and removal of diversion routes shall be the complete installation. Establishment shall constitute a quantity of 0.66 number and removal shall constitute 0.34 number.

The measurement of maintenance of diversion routes shall be:

- For durations of up to 12 hours - the total number of hours between the time that the diversion route is in full operation and the time that the *Service Manager* confirms that removal of the diversion route can commence. Hours shall be rounded up to the nearest whole hour. OR

- For durations of 12 hours or over – the total number of days between the time that the diversion route is in full operation and the time that the *Service Manager* confirms that the removal of the diversion route can commence. Days shall be rounded up to the nearest whole day.

'Day' shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday

07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

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* as part of the Lump Sum Duties or by the *Client* or Others.

Itemisation

62 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 and removal of diversion route.
	2	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

63 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 59.

Establishment, Removal and Maintenance of Temporary Traffic Control

Units

64 The units of measurement shall be:

(i) establishment and removal of temporary traffic control …….number.

(ii) maintenance of temporary traffic control…….hour.

(iii) maintenance of temporary traffic control…….day.

Measurement

65 The measurement of establishment and removal of temporary traffic control shall be the complete installation. Establishment shall constitute a quantity of 0.66 number and removal shall constitute 0.34 number.

The measurement of maintenance of temporary traffic control shall be:

- For durations of up to 12 hours - the total number of hours between the time that the temporary traffic signals are in full operation and the time that the *Service Manager* confirms that removal of the temporary traffic control can commence. Hours shall be rounded up to the nearest whole hour. OR

- For durations of 12 hours or over – the total number of days between the time that the temporary traffic signals are in full operation and the time that the *Service Manager* confirms that the removal of the temporary traffic control can commence. Days shall be rounded up to the nearest whole day.

'Day' shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday 07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

Establishment and removal of temporary traffic control and maintenance of temporary traffic control shall not be measured where this item or items of work is or are being provided by the *Contractor* as part of the Lump Sum Duties or by the *Client* or Others.

Itemisation **66** Separate items shall be provided for establishment, removal and maintenance of temporary control in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Establishment and removal of temporary traffic control.
	2	Maintenance of temporary traffic control.
II	1	2-way signals.
	2	3-way signals.
	3	4-way signals.
	4	Stop/Go board.
III	1	Controlled by 1 operative.
	2	Controlled by 2 operatives.

Note 1: Group III shall not be applied to Group II Features 1, 2 and 3.

Establishment, Removal and Maintenance of Temporary Traffic Control **67** The items for establishment, removal and maintenance of temporary control shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage (i) all matters listed in Series 100 paragraph 59;

Installation, Removal and Maintenance of Temporary Vehicle Safety Barrier and Crash Cushions

Units

68 The units of measurement shall be:

(i) installation and removal of temporary vehicle safety barrier ….linear metres.

(ii) installation and removal of temporary vehicle crash cushion ….number.

(iii) maintenance of temporary vehicle safety barrier…….linear metre day

(iv) maintenance of temporary vehicle crash cushions……number day.

Measurement

69 The measurement of installation and removal of temporary vehicle safety barrier shall be the total length of the barrier units measured along the centre line of the units that the Scope specifies for the purposes of the Task. Installation shall constitute a quantity which shall be the product of 0.66 and the length of temporary vehicle safety barrier and removal shall constitute a quantity which shall be the product of 0.34 and the length of temporary vehicle safety barrier.

The measurement of installation and removal of temporary vehicle crash cushions shall be the complete installation. Installation shall constitute a quantity which shall be the product of 0.66 and the number of temporary vehicle crash cushions and removal shall constitute a quantity which shall be the product of 0.34 and the number of temporary vehicle crash cushions.

The measurement of maintenance of temporary vehicle safety barrier shall be each day during which the barrier is provided. Part days shall be rounded up to the nearest full day. The length shall be the total length of the barrier units measured along the centre line of the units that the Scope specifies for the purpose of the Task.

The measurement of maintenance of temporary vehicle crash cushions shall be each day during which the crash cushions are provided. Part days shall be rounded up to the nearest full day. The number shall be the complete number of installations.

‘Day’ shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in

addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday 07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

Installation and removal of temporary vehicle safety barrier, installation and removal of temporary vehicle crash cushions and maintenance of temporary vehicle safety barrier and crash cushions shall not be measured where this item or items of work is or are being provided by the *Contractor* as part of the Lump Sum Duties or by the *Client* or Others.

Itemisation

70 Separate items shall be provided for establishment, removal and maintenance of temporary vehicle safety barrier in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Installation and removal of temporary vehicle safety barrier.
	2	Installation and removal of temporary vehicle crash cushions.
	3	Maintenance of temporary vehicle safety barrier.
	4	Maintenance of temporary vehicle crash cushions.
II	1	Lengths not exceeding 1 kilometre.
	2	Lengths exceeding 1 kilometre but not exceeding 2 kilometres.

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

Installation, Removal and Maintenance of Temporary Vehicle Safety Barrier and Crash Cushions

71 The items for establishment, removal and maintenance of temporary vehicle safety barrier and crash cushions 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 *Service 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 *Service Manager* may require;

(d) design of traffic safety and management measures specified in this contract;

(e) modification and resubmission of proposals and designs;

(f) temporary vehicle safety barrier and crash cushion units including inspecting; maintaining, cleaning, repositioning, interlocking and removing;

(g) 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;

(h) surveillance and maintaining stocks;

(i) immediate reinstatement and replacement of defective or damaged items.

(j) traffic safety and control personnel;
(k) Equipment, traffic signs, driver information signs, traffic signs (whether or not) provided by the Overseeing Organisation, road markings, lamps, barriers, and traffic control signals including maintaining, cleaning, repositioning, covering, uncovering and removing;
(l) road lighting, modification, and removal;
(m) emergency telephones, modification, and removal;
(n) giving of notice to the Overseeing Organisation;
(o) collecting and returning traffic signs provided by the Overseeing Organisation;
(p) maintenance of highways.
(q) removal and reinstatement on completion;

Provision of Mobile Closures

Units

72 The units of measurement shall be:

(i) Provision of mobile closure with IPV and operatives ….Hours.

(ii) Provision of mobile closure with IPV and operatives …. Days.

Measurement

73 The measurement of provision of mobile closure with IPV and operatives shall be:

- For duration of up to 12 hours - the total number of hours 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. Hours shall be rounded up to the nearest whole hour. OR

- For duration of 12 hours or over - the total number of days between the time that the closure is in full operation and the time that the *Service Manager* confirms that the removal of the closure can commence. Days shall be rounded up to the nearest whole day.

'Day' shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday 07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

Itemisation

74 Separate items shall be provided for provision of mobile closure with IPV and operatives in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Provision of mobile closure with IPV and operatives
II	1	1 no. IPV and operatives
	2	2 no. IPV and operatives
	3	3 no. IPV and operatives

Provision of Mobile Closures

75 The items for provision of mobile 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 *Service 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 *Service Manager* may require;

(d) design of traffic safety and management measures specified in this contract;

(e) modification and resubmission of proposals and designs;

(f) 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;

(g) surveillance and maintaining stocks;
(h) traffic safety and control personnel;
(i) Equipment, traffic signs, driver information signs, traffic signs
(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) maintenance of highways.

Series 300 : Fencing

Insert new paragraphs 17 to 22.

Replacement of Fencing and Gates

Units

17 The units of measurement shall be:

(i) replacement of fencing……..linear metre.

(ii) concrete foundation to timber posts……number.

(iii) replacement of gates……number.

Measurement

18 The measurement of replacement of fencing shall be the replaced length along the centre line of the fence. The measurement of height of replacement of fencing shall be that stated in the Task Order for the type of fence.

The measurement of width of replacement of gates in the case of single gates shall be the distance between the outer edges of the gate unit excluding the width of the hinges. In the case of double gates the distance between the outer edges of the gates excluding the width of the hinges.

The measurement of height of gates shall be the distance between the upper surface of the top rail and the underside of the bottom rail.

Concrete foundation to timber posts shall be measured for those locations specified within the Task.

Itemisation

19 Separate items shall be provided for replacement of fencing and gates in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of each type of fencing.
	2	Concrete foundation to different types of timber post for different types of fencing.
	3	Replacement of each type of gate.
II	1	Fencing of different heights.
	2	Gates of different heights and widths.
III	1	Individual lengths not exceeding 3 metres.
	2	Individual lengths exceeding 3 metres but not exceeding 10 metres.
	3	Individual lengths exceeding 10 metres.
IV	1	Not exceeding 5 number posts per Task Order.

		2 Exceeding 5 number posts per Task Order.
		Note 1: Group III shall be applied to Group I Feature 1 only. Note 2: Group IV shall be applied to Group I Feature 2 only.
Replacement of Fencing	**20**	The items for replacement of fencing shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 300 paragraphs 4 and 10.
Concrete Foundation to Timber Posts	**21**	The items for concrete foundation to timber posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 300 paragraph 5;
Replacement of Gates	**22**	The items for replacement of gates shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 300 paragraphs 6 and 12.

	Series 400 : Road Restraint Systems (Vehicle and Pedestrian)	
		Insert new paragraphs 48 to 58.
	Replacement of Safety Barriers	
Units	**48**	The units of measurement shall be:
		(i) replacement of safety barrier……..linear metre
		(ii) replacement of transition…….. …..number
		(iii) replacement of post, mounting bracket, terminal section, full height anchorage, expansion joint anchorage, connection to bridge parapet and crash cushion ..... number
		(iv) Concrete foundation and socketed foundations to posts……. number
Measurement	**49**	The measurement of replacement of safety barrier shall be: the developed length along the centre line of the beams for single sided safety barrier, or the developed length along the centre line of the beams for one side only for double sided barrier, between the following points: the limits of the repair instructed by the *Service Manager*. The containment performance class and working width where applicable are those of the completed item after replacement.
	50	The measurement of replacement of transitions shall be the complete installation.
	51	The measurement of replacement of terminal sections, full height anchorages, connections to bridge parapets and crash cushions shall be the complete installation. Replacement mounting brackets and all other posts required between those points defined in paragraph 49 shall be measured. Concrete foundations and socketed foundation to posts between those points defined in paragraph 49 shall only be measured for those locations stated in the Contract.
	52	The measurement of replacement of expansion joint anchorages shall be for each anchorage on each side of the expansion joint.
Itemisation	**53**	Separate items shall be provided for replacement of safety barriers in accordance with Chapter II paragraphs 3 and 4 and the following:

		Group	**Feature**	
		I	1	Replacement of safety barrier.
			2	Replacement of transition.
			3	Replacement of post.
			4	Replacement of mounting bracket.
			5	Replacement of terminal section.
			6	Replacement of full height anchorage.
			7	Replacement of expansion joint anchorage.
			8	Replacement of connection to bridge parapet.
			9	Replacement of crash cushion.
			10	Concrete foundation to replacement posts.
			11	Socketed foundation to replacement posts.
		II	1	Each containment performance class.
		III	1	Each working width class.
		IV	1	Designed to be impacted on one side only.
			2	Designed to be impacted on both sides.
		V	1	Straight or curved exceeding 120 metres radius.
			2	Curved exceeding 50 metres radius but not exceeding 120 metres radius.
			3	Curved not exceeding 50 metres radius.
		Note 1: Group IV shall not be applied to Group I Features 2, 4 8, 10 and 11.		
		Note 2: Group V shall be applied only to Group I Feature 1.		
Replacement of Safety Barriers and Transitions	**54**	The items for replacement of safety barriers and transitions shall in accordance with the Preambles to Bill of Quantities General Directions include for:		
Item coverage		(a) all matters listed in Series 400 paragraph 5 except posts, mounting brackets, full height anchorages, expansion joint anchorages, connections to bridge parapets, crash cushions, concrete foundations and socketed foundations. (b) all matters listed in Series 200 paragraph 11.		
Replacement of Posts	**55**	The items for replacement of posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:		
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 400 paragraph 5; (c) all matters listed in Series 400 paragraph 38; (d) Post extension units (as Series 400 paragraph 44).		
Replacement of Mounting Brackets	**56**	The items for replacement of mounting brackets shall in accordance with the Preambles to Bill of Quantities General Directions include for:		

Item coverage		a) all matters listed in Series 200 paragraph 11; b) all matters listed in Series 400 paragraph 5; c) all matters listed in Series 400 paragraph 39.
Replacement of Terminal Sections, Full Height Anchorages, Expansion Joint Anchorages, Connections to Bridge Parapets and Crash Cushions	**57**	The items for replacement of terminal sections, full height anchorages, expansion joint anchorages, connections to bridge parapets and crash cushions shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		a) all matters listed in Series 200 paragraph 11; b) all matters listed in Series 400 paragraph 5; c) all matters listed in Series 400 paragraph 40.
Concrete foundations and socketed foundations to Replacement Posts	**58**	The items for concrete and socketed foundations to replacement posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		a) all matters listed in Series 400 paragraph 5; b) all matters listed in Series 400 paragraph 41.

Series 500 :Drainage and Service Ducts

	Filter Drains			
Itemisation	**21**	In the table in paragraph 21 add new Feature to Group V as follows;		
		Group	**Feature**	
		V	**2**	In verges or edge of carriageway
		Below the table in paragraph 21 add footnotes as follows;		
		Note 1: Groups III and IV shall not be applied to Group I Feature 5.		
	Cleaning Existing Drainage Systems			
Units	**81**	Add additional sub-paragraph to paragraph 81 as follows; (iv) cleaning of catchpits, manholes, gully covers and aprons, interceptors….number. (v) Cleaning soakaways……cubic metre		
Measurement	**82**	The measurement of cleaning soakaways shall be the volume of filter material cleaned.		
Itemisation	**83**	In the table in paragraph 83 add new Features to Group II and III as follows;		
		Group	**Feature**	
		II	**8**	Catchpits.
			9	Manholes.
			10	Gully covers and aprons
			11	Interceptors
			12	Soakaways
		III	**2**	Volume
	Note 1: Group III feature 2 shall be applied only to feature 12 of Group II			

Cleaning Existing Drainage Systems **Itemisation**	**84**	In matter (b) of paragraph 84 after "chamber" insert ", catchpit and manhole". In matter (q) of paragraph 84 after "chamber" insert ", catchpit, manhole, interceptors". r) Digging out, washing and replacing of filter material
	Replacement of Drains in Trenches	
		Add the following paragraphs 85 to 90;
Units	**85**	The unit of measurement shall be
		(i) replacement of drains in trenches …… linear metre
Measurement	**86**	The measurement of replacement of drains in trenches shall be the summation of their individual lengths measured along the centre lines of the pipes between any of the following; a) the internal faces of chambers; b) the external faces of headwalls; c) the intersections of the centre lines at pipe junctions; d) the centre of gully gratings (or where no grating is provided, the centre of the gully); e) the position of terminations shown in the Contract; f) the point of change of stage depth.
	87	The depth of replacement of drains in trenches shall be the vertical measurement between the invert and the Existing Ground Level.
	88	The average depth to invert shall be the calculated arithmetic mean of the depths taken at the mid-point of the pipelines replaced.
Itemisation	**89**	Separate items shall be provided for replacement of drains in accordance with Chapter II paragraphs 3 and 4 and the following:

		Group	**Feature**	
		I	1	Replacement of drains in trenches.
		II	1	Different internal diameters.
		III	1	Average depth to invert.
		IV	1	Specified design groups.
			2	Particular designs stated in the Contract.
		V	1	In verges or edge of carriageway
			2	In side slopes of cuttings or side slopes of embankments.

		VI	1	Not exceeding 15 metres in length per length of replacement.
			2	Exceeding 15 metres in length per length of replacement.
		Note: For each item which includes Group III Feature 1 an associated item shall be provided for adjustment of the rate for each 250mm of difference where the average depth to invert calculated from site measurement varies from that stated in the Schedule of Rates. The foregoing shall apply to both increases and decreases of average and will result in either a positive or negative adjustment of the rate.		
Replacement of Drains in Trenches **Item coverage**	**90**	The items for replacement of drains in trenches shall in accordance with the Preambles to Bill of Quantities General Directions include for: (a) all matters listed in Series 500 paragraph 16; (b) excavation in Hard Material (as Series 600 paragraph 23); (c) all matters listed in Series 600 paragraph 71; (d) geotextiles (as Series 600 paragraph 60).		
	Replacement of Connections to Drains, Piped Culverts, Chambers and Land or Mole Drains			
		Add the following paragraphs 91 to 94;		
Units	**91**	The unit of measurement shall be		
		(i) extra over replacement of drains in trenches for replacement of connections to drains, piped culverts, chambers and land or mole drains …… number		

Measurement	**92**	The measurement of extra over replacement of drains in trenches for replacement of connections to drains, piped culverts, chambers and land or mole drains shall be the number of connections within the length of pipe measured under Series 500 paragraphs 85 to 90 inclusive.		
Itemisation	**93**	Separate items shall be provided for extra over replacement of drains in trenches for replacement of connections to drains, piped culverts, chambers and land or mole drains in accordance with Chapter II paragraphs 3 and 4 and the following:		
		Group	**Feature**	
		I	1	Extra over replacement of drains in trenches.
		II	1	Replacement of connection to drain.
			2	Replacement of connection to piped culvert.
			3	Replacement of connection to chamber.
			4	Replacement of connection to land or mole drain.
		III	1	Different diameters.
Replacement of Connections to Drains, Piped Culverts, Chambers and Land or Mole Drains **Item coverage**	**94**	The items for replacement of connections to drains, piped culverts, chambers and land or mole drains shall in accordance with the Preambles to Bill of Quantities General Directions include for: (i) all matters listed in Series 500 paragraph 32 except for matter (l); (ii) all matters listed in Series 600 paragraph 71.		
	Replacement of Gullies			

		Add the following paragraphs 95 to 98;
Units	**95**	The unit of measurement shall be:
		(i) replacement of gullies…… number
Measurement	**96**	The measurement of replacement of gullies shall be the complete gully.
Itemisation	**97**	Separate items shall be provided for replacement gullies in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	**1**	Replacement of gullies.
II	**1**	Specified design groups.
	2	Particular designs stated in the Contract.
III	**1**	Different types of gratings.

Replacement of gullies	**98**	The items for replacement of gullies shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) gullies (as Series 500 paragraph 38); (b) all matters listed in Series 200 paragraph 11; (c) excavation in Hard Material (as Series 600 paragraph 23).

		Drainage Reactive Services and Disposal of Waste
		Add the following paragraphs 99 to 104.
Units	**99**	The units of measurement shall be:
		(i) drainage reactive services …… hour (ii) disposal of waste …… tonne
Measurement	**100**	Drainage reactive services and disposal of waste shall only be measured where the Task Order expressly states to this effect.

	101	The measurement of drainage reactive services shall be each hour during which the *Contractor* is required to Provide the Service as agreed with the *Service Manager* and subject to a minimum measurement of two hours. Measurement of part hours shall be rounded up to the nearest hour. Periods when the Equipment is not Providing the Service shall not be measured.
	102	The measurement of disposal of waste by tonne shall be calculated from the tonnage of waste disposal certified by the *Service Manager*. The tonnage certified by the *Service Manager* shall be only that waste included on waste disposal tickets which has arisen from the Task. Waste in excess of the requirements of the Task and waste arising from any other purpose shall not be included within the certified tonnage.
Itemisation	**103**	Separate items shall be provided for drainage reactive services and disposal of waste in accordance with Chapter II paragraphs 3 and 4 and the following:
		Group / **Feature**
		I — **1** Drainage reactive services.
		2 Disposal of waste.
		II — **1** Gully emptier including driver and operative.
		2 Vactor unit including driver and operative.
		3 CCTV unit including technician.
		III — **1** Inert waste.
		2 Wet waste gully emptying arisings.
		3 Wet waste drainage arisings.
		4 Green waste.
		Note 1: Group II shall not be applied to Group I Feature 2. Note 2: Group III shall not be applied to Group I Feature 1. Note 3: Group I Feature 2 shall only be itemised when there is a corresponding Group I Feature 1 itemisation and shall only relate to that Group I Feature 1 item.
Drainage Reactive Services and Disposal of Waste	**104**	The items for drainage reactive services and disposal of waste shall in accordance with the Preambles to Bills of Quantities General Directions include for:
		(a) compliance with all legislation not limited to legislation affecting use of vehicles on the public highway and the like; (b) Equipment inspections and submission of certificates; (c) bringing Equipment to site;

		(d) maintenance of Equipment including communication equipment in accordance with manufacturer's recommendations and identification signs; (e) comprehensive insurance; (f) replacement Equipment; (g) depreciation; (h) maintenance; (i) fuel, oil and other consumables; (j) qualified operatives, technicians and provision of documents; (k) completion and submission of information log sheets and record sheets; (l) liaising with police; (m) vehicle inspections and reports; (n) lighting board (o) disposal of material (as Series 600 paragraph 39); (p) water supply.

Series 700 :Pavements

Repairs and Patching

Units **77** In paragraph 77 sub item (i) delete the words "Repairs to potholes" and replace with "Local repairs".

Measurement **78** In paragraph 78 delete the words "repairs to potholes" and replace with "Local repairs".

Itemisation **80** In the table in paragraph 80, delete the words "Repairs to potholes" in Group I Feature 1 and replace with "Local repairs".

In the table in paragraph 80, delete the words "In areas" in Group IV Features 1, 2 and 3 and replace with "Individual patch areas".

In the table in paragraph 80 add new Groups V and VI as follows;

Group	Feature	
V	1	In carriageways.
	2	In footways.
VI	1	Not exceeding 5 number Local Repairs per Task.
	2	Exceeding 5 but not exceeding 20 number Local Repairs per Task.
	3	Exceeding 20 number Local Repairs per Task.

4 Not exceeding 10 square metres of patching per Task.
5 Exceeding 10 but not exceeding 20 square metres of patch per Task.
6 Exceeding 20 but not exceeding 50 square metres of patch per Task.
7 Exceeding 50 square metres of patch per Task.

Series 1100: Kerbs, Footways and Paved Areas

Insert new paragraphs 34 to 37.

Replacement of Kerbs, Channels, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems

Units

34 The units of measurement shall be:

(i) Replacement of kerbs, channels, combined drainage and kerb blocks and linear drainage channel systems……..linear metre

Measurement

35 The measurement of replacement of kerbs, channels, combined drainage and kerb blocks and linear drainage channel systems shall be the lengths required by the Contract. No deduction shall be made for gaps of 1 linear metre or less.

Itemisation

36 Separate items shall be provided for replacement of kerbs, channels, combined drainage and kerb blocks and linear drainage channel systems in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	**1**	Replacement of kerbs.
	2	Replacement of channels.
	3	Replacement of combined drainage and kerb blocks.
	4	Replacement of linear drainage channel systems.
II	**1**	Different types, sizes and designs.
III	**1**	Continuous lengths not exceeding 10 metres.
	2	Continuous lengths exceeding 10 metres.

Replacement of Kerbs, Channels, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems

37 The items for replacement of kerbs, channels, combined drainage and kerb blocks and linear drainage channel systems shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage	(i) all matters listed in Series 1100 paragraph 4; (ii) all matters listed in Series 200 paragraph 11; (iii) replacement of bedding and backing.

Series 1200: Traffic Signs and Road Markings

Insert new paragraphs 46 to 54.

Replacement of Traffic Signs and Posts

Units	**46**	The units of measurement shall be:
		(i) replacement of traffic signs……..number
		(ii) replacement of traffic sign posts…….number
Measurement	**47**	The measurement of replacement of traffic signs and posts shall be the complete installation except for earth electrodes which shall be measured separately under Series 1400 (paragraphs 24 to 27). For replacement of traffic signs separate items shall not be provided for lighting units.
Itemisation	**48**	Separate items shall be provided for replacement of traffic signs and posts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of permanent traffic signs.
	2	Replacement of permanent traffic sign posts.
II	1	Internally Lit Sign Units.
	2	Externally Lit Sign Units.
	3	Non Lit Sign Units.
III	1	Different sizes and types.
IV	1	In verges and soft landscaped areas.
	2	In footways and paved areas.

Note 1: Group IV shall not be applied to Group I Feature 1.

Replacement of Traffic Signs and Posts	**49**	The items for replacement of posts shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(i) all matters listed in Series 200 paragraph 11; (ii) all matters listed in Series 1200 paragraph 4;

		Road Markings and Road Studs Replacement Team Visits
Units	**50**	The units of measurement shall be:
		(i) road markings and road studs replacement team visit …… number.
Measurement	**51**	Road markings and road studs replacement team visits shall only be measured where the Task Order expressly states to this effect.
	52	The measurement of road markings and road studs replacement team visits shall be the number of visits made to site per team to complete the works instructed by the *Service Manager*. A visit shall not be measured where the carrying out of the replacement works is prevented by weather conditions at the stated location.
Itemisation	**53**	Separate items shall be provided for road markings replacement team visits and road studs replacement team visits in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Road markings replacement team visit.
	2	Road studs replacement team visit.
II	1	Hand applied road markings.
	2	Machine applied road markings.

		Note 1: Group II Features shall not be applied to Group I Feature 2.
Road Markings and Road Studs Replacement Team Visits	**54**	The items for road markings and road studs replacement team visits shall in accordance with the Preamble to Bill of Quantities General Directions include for:

Item coverage		(a) cleaning, brushing and drying surfaces; (b) Plant & Materials; (c) application of the marking materials including incorporation of specified reflecting medium; (d) thinners, primers and tack coats; (e) markings down the faces of kerbs; (f) adhesives and grout; (g) cutting or forming holes; (h) disposal of material (as Series 600 paragraph 39). (i) Reinstatement of surfaces
		Portable Variable Message Signs and Vehicle Activated Signs
Unit	**55**	The unit of measurement shall be:
		(i) Deployment……no (ii) Retrieval……no (iii) In deployment checks……day (iv) In deployment supply and checks……day
Measurement	**56**	The measurement of deployment of portable variable message sign (including trailer) and vehicle activated sign (including trailer) shall be per number deployment. The measurement of retrieval of portable variable message sign (including trailer) and vehicle activated sign (including trailer) shall be per number retrieval. The measurement of in deployment checks, in deployment supply and checks of Portable Variable Message Signs and Vehicle Activated Signs shall be the total number of days between the time that the PVMS/PVAS is in full operation and the time that the *Service Manager* confirms that retrieval of the PVMS/PVAS can commence. Days shall be rounded up to the nearest whole day. 'Day' shall mean a period of 12 hours Monday to Friday from 07:00 to 19:00 hours. Extra Over rates shall be applied in addition to the flat rates for Night Working (Monday to Friday 19:00 – 07:00), Weekend Working (Saturday 07:00 to Monday 07:00) and Seasonal Adjustment (Nov-April). For the avoidance of doubt, a 24 hours period shall mean 2 Days.

Itemisation	**57**	Separate items shall be provided for deployment, retrieval, in deployment checks and in deployment supply and checks of variable message sign (including trailer) and vehicle activated sign (including trailer) in accordance with Chapter II paragraphs 3 and 4 and the following:		
		Group	**Feature**	
		I	1	Portable Variable message sign (including trailer) (PVMS)
			2	Portable Vehicle activated sign (including trailer) (PVAS)
		II	1	issued by the *Client*
			2	supplied by the *Contractor*
Deployment of Portable Variable Message Signs and Vehicle Activated Signs	**58**	The items for deployment of portable variable message signs and vehicle activated signs shall in accordance with the Preamble to Bill of Quantities General Directions include for:		
Item Coverage		a) Providing all measures, equipment and traffic management resources such as cones, signs, barriers and the like b) Notices and communications; c) Consulting with authorities and services; d) Communication and management system; e) Equipment; f) Trailer; g) Provision of suitable trained staff; h) Pre-use checks; i) Transportation; j) Installation; k) Plans and layouts; l) Gated vehicle access control points in respect of Road closures and diversions; m) Batteries and lights for temporary lit cones; n) Other associated requirements specified in this contract.		
Retrieval of Portable Variable Message Signs and Vehicle Activated Signs		The items for retrieval of portable variable message signs and vehicle activated signs shall in accordance with the Preamble to Bill of Quantities General Directions include for:		
Item Coverage		a) Retrieving all measures, equipment and traffic & pedestrian management resources such as cones, signs, barriers and the like; b) Removal and reinstatement on completion; c) Notices and communications; d) Communication and management systems; e) Equipment; f) Trailer;		

		g) Post-use checks; h) Transportation; i) Provision of suitable trained staff; j) Consulting with authorities and services; k) Plans and layouts; l) Gated vehicle access control points in respect of Road closures and diversions. m) Other associated requirements specified in this contract
In deployment checks of Portable Variable Message Signs and Vehicle Activated Signs		The items for in deployment checks of portable variable message signs and vehicle activated signs shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item Coverage		a) Attendance to site; b) Provision of suitable trained staff; c) Maintenance and inspections; d) Maintaining all measures, equipment and resources; e) All items for the deployment above, but for maintaining same; f) Other associated requirements specified in this contract.
In deployment supply and checks of Portable Variable Message Signs and Vehicle Activated Signs		The items for in deployment supply and checks of portable variable message signs and vehicle activated signs shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item Coverage		a) supply of equipment for the entire duration of deployment b) Attendance to site; c) Provision of suitable trained staff; d) Maintenance and inspections; e) Maintaining all measures, equipment and resources; f) All items for the deployment above, but for maintaining same; g) Other associated requirements specified in this contract.

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

		Insert new paragraphs 8 to 13.
	Replacement of Road Lighting Columns and Brackets	
Units	**8**	The units of measurement shall be:

		(i) replacement of road lighting columns and brackets …….number. (ii) Replacement of luminaires …….number
Measurement	**9**	The measurement of replacement of road lighting columns and brackets shall be the complete installation except for earth electrodes which shall be measured separately (under Series 1400 paragraphs 24 to 27).
	10	The measurement of replacement of luminaires shall be the number of luminaires required
Itemisation	**11**	Separate items shall be provided for replacement of road lighting columns and brackets in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of road lighting columns and brackets.
II	1	Different height of lighting columns.
III	1	Different projections of brackets.
IV	1	Different luminaires and types.

Replacement of Road Lighting Columns and Brackets	**12**	The items for replacement of road lighting columns and brackets shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 1300 paragraph 7; (c) all matters listed in Series 1300 paragraph 4
Replacement of luminaires	**13**	The items for replacement of luminaires shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		a) Luminaires, taking delivery, unpacking and checking; b) fixing with supplied fixings in accordance with manufacturers recommendations, including fixtures; c) disposal of surplus materials; d) complying with wiring regulations; e) protection of components; f) marking and the like; g) commissioning; h) reports and site records to the *Service Manager.*

Series 1400: Electrical Work for Road Lighting and Traffic Signs

		Insert new paragraphs 36 to 43.
	Replacement of Cable	
Units	**36**	The units of measurement shall be:
		(i) replacement of cable …….linear metre.
Measurement	**37**	The measurement of replacement of cable shall be the summation of the individual lengths along the centre line of the route of the cable between the points of cable termination within each item of equipment. Points of cable termination shall be; (a) in the case of loop detector feeders – the point at which the cable enters the terminal block; (b) In all other cases – the point at which the cables enter the boxes, distributors, lighting columns, cut-outs, joint to the existing and the like.
Itemisation	**38**	Separate items shall be provided for replacement of cable in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of cable.
II	1	Different types and sizes of cable.
III	1	In duct.

Replacement of Cable	**39**	The items for replacement of cable shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 1400 paragraph 13 except matter (k).
	Replacement of Cable Terminations	
Units	**40**	The units of measurement shall be:
		(i) replacement of cable terminations ….number.
Measurement	**41**	The measurement of replacement of cable terminations shall be the complete installation.

Itemisation	**42**	Separate items shall be provided for replacement of cable terminations in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	**1**	Replacement of cable termination.
II	**1**	Different types.
III	**1**	Different sizes.
IV	**1**	Different locations.

Replacement of Cable Terminations	**43**	The items for replacement of cable terminations shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 1400 paragraph 19.
		Electrical Testing of Network Cabling, Structural Testing of Columns and Condition of Feeder Pillars
Units	**44**	The unit of measurement shall be:
		(i) electrical testing of network cabling, structural testing of columns and condition of feeder pillars…… number.
Measurement	**45**	The measurement of electrical testing of network cabling and structural testing of columns shall be the number of columns within which the item is carried out.
	46	The measurement of condition of feeder pillars shall be each feeder pillar.
Itemisation	**47**	Separate items shall be provided for electrical testing of network cabling, structural testing of columns and condition of feeder pillars in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	**1**	Electrical testing of network cabling
	2	Structural testing of columns
	3	Condition of feeder pillars

Electrical Testing of Network Cabling, Structural Testing of Columns and Condition of Feeder Pillars	**48**	The items for electrical testing of network cabling, structural testing of columns and condition of feeder pillars shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item Coverage		(a) setting up test equipment; (b) protection of components; (c) marking and the like; (d) recording results; (e) reports and site records to the *Service Manager*.

Series 1500: Motorway Communications

		Insert new paragraphs 47 to 97.
	Replacement of HSM Cameras, cables and terminations	
Units	**47**	The units of measurement shall be:
		(i) replacement of HSM Camera fuses ….number. (ii) replacement of HSM camera termination unit ...number. (iii) replacement of HSM camera and housing ….number. (iv) replacement of HSM camera within housing ….number. (v) replacement of HSM camera cable between camera and termination unit ….linear Metre. (vi) re-alignment of HSM cameras on Dynamic Hard Shoulder Link...number. (vii) set up and replace equipment configuration plug ….number.
Measurement	**48**	The measurement of replacement of HSM Cameras, cables and terminations shall be the complete camera site installation.
Itemisation	**49**	Separate items shall be provided for replacement of HSM Cameras, cables and terminations in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of fuses.
	2	Replacement of camera termination unit.
	3	Replacement of camera and housing.
	4	Replacement of camera within housing.
	5	Replace of camera cable.
	6	Re-alignment of cameras.
	7	Set up and replace equipment configuration plug
II	1	Different locations.

Replacement of HSM Cameras, cables and terminations	**50**	The items for replacement of HSM cameras, cables and terminations shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41; (c) testing; (d) review with Traffic Officers.

		Replacement of CCTV Cameras, cables and terminations
Units	**51**	The units of measurement shall be:
		(i) replacement of camera and housing ….number. (ii) replacement of camera termination unit ….number. (iii) replacement of camera mast cable ….linear metre. (iv) replacement of camera root cable ….linear metre. (v) re-make camera mast / root cable termination and test ….number. (vi) replacement of camera cable between camera and TV Outstation ….linear metre. (vii) replacement of TV Outstation unit ….number. (viii) replacement of camera infra-red power tray ….number. (ix) replacement of PTZ unit ….number. (x) replacement of infra-red unit on structure ….number. (xi) replacement of infra-red connection cable between equipment and cabinet ….linear metre. (xii) set up and replace equipment configuration Plug ….number.
Measurement	**52**	The measurement of replacement of CCTV Cameras, cables and terminations shall be the complete camera site installation.
Itemisation	**53**	Separate items shall be provided for replacement of Cameras, cables and terminations in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of camera and housing.
	2	Replacement of camera within housing.
	3	Replace of camera cable.
	4	Re-make of cable termination.
	5	Replacement of TV Outstation.
	6	Replacement of infra-red equipment.
	7	Set up and replace equipment configuration plug.
II	1	Different types.
III	1	Different locations.

Replacement of Cameras, cables and terminations	**54**	The items for replacement of CCTV cameras, cables and terminations shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41; (c) testing.

		Replacement and re-configuration of 354 Telephones
Units	**55**	The units of measurement shall be:
		(i) replacement of 354 Pod ….number. (ii) replacement of 354 handset ….number. (iii)replacement of 354 beacon and charger ….number. (iv) replacement of 354 barrier unit ….number. (v) replacement of GSM SIM card ….number. (vi) replacement of 354 battery ….number. (vii) clean corroded battery and cable terminations ….number. (viii)reset 354 telephone ….number. (ix) re-load software onto 354 telephone ….number.
Measurement	**56**	The measurement of replacement of 354 telephones shall be the complete telephone site installation.
Itemisation	**57**	Separate items shall be provided for replacement of telephones, cables and terminations in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of 354 Pod.
	2	Replacement of 354 handset.
	3	Replacement of 354 beacon and charger.
	4	Replacement of 354 barrier unit.
	5	Replacement of GSM SIM card.
	6	Replacement of 354 battery.
	7	Clean corroded battery terminals and cables.
II	1	Re-set of 354 telephone.
	2	Re-load software onto 354 telephone.
III	1	Different locations.

Replacement of Telephones	**58**	The items for replacement of 354 telephones shall in accordance with the Preambles to Bill of Quantities General Directions include for:

Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41; (c) testing.

		Replacement of Signals, lanterns and associated equipment
Units	**59**	The units of measurement shall be:
		(i) replacement of AMI ….number. (ii) replacement of AMI Cable Marshalling Unit ….number. (iii) replacement of AMI Data cable …….linear metre. (iv) replacement of AMI Power cable …….linear metre. (v) replacement of AMI Roadside Controller ….number. (vi) replacement of Ambient Light Monitor ….number. (vii) replacement and alignment of MS1(94xx) ….number. (viii) replacement of Lantern on X Frame ….number. (ix) replacement of Signal PSU ….number. (x) replacement of Data Link Connection Box ….number. (xi) replacement of Signal Power cable ….linear metre. (xii)replacement of Signal Data cable ….linear metre. (xiii)replacement of 901 switch ….number. (xiv)set up and replacement of equipment configuration plug ….number. (xv)re-alignment of AMIs ….number.
Measurement	**60**	The measurement of replacement of Signals shall be the complete Signal installation.
Itemisation	**61**	Separate items shall be provided for replacement of Signals, lanterns and associated equipment in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of AMI.
	2	Replacement of AMI Cable Marshalling unit.
	3	Replacement of AMI Data cable.
	4	Replacement of AMI Power cable.
	5	Replacement of AMI Roadside Controller.
	6	Replacement of Ambient Light Monitor.
	7	Replacement and alignment of MS1 (94xx).
	8	Replacement of Lantern.
	9	Replacement of Signal PSU.
	10	Replacement of DLCB.
	11	Replacement of Signal Power cable.
	12	Replacement of Signal Data cable.
	13	Replacement of 901 switch.

14 Set up and replace equipment configuration plug.
15 Re-alignment of AMIs.

II	1	Different types.
III	1	Different locations.

Replacement of Signals, Lanterns and associated equipment	**62**	The items for replacement of Signals, Lantern and associated equipment shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41 (except for Re-alignment of AMIs where Series 1500 paragraph 22 is not applicable); (c) test.

		Replacement of Message Signs and component parts
Units	**63**	The units of measurement shall be:
		(i) replacement of character module ….number. (ii) replacement of sign power supply ….number. (iii) replacement of Sign controller ….number. (iv) replacement of ribbon cable ….number. (v) replacement of Photo-electric cell ….number. (vi) replacement of heater ….number. (vii) replacement of Sign Roadside controller ….number. (viii) replacement of Cat5e cable ….linear metre. (ix) replacement of FTMS controller ….number. (x) replacement of FTMS sign motor ….number. (xi) replacement of FTMS sheer pins ….number. (xii)replacement of ROTTM media converter ….number. (xiii)replacement of ROTTM LED sign ….number. (xiv)replacement of batteries in PVMS ….number. (xv)set up and replace equipment configuration plug ….number. (xvi)replacement of vehicle activated sign on post …..number.
Measurement	**64**	The measurement of replacement of Sign component parts shall be the sub components changed.
Itemisation	**65**	Separate items shall be provided for replacement of Signs, sign component parts and associated equipment in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of character module.
	2	Replacement of sign power supply.
	3	Replacement of sign controller.
	4	Replacement of ribbon cable.
	5	Replacement of Photo-electric cell.
	6	Replacement of heater.
	7	Replacement of sign roadside controller.
	8	Replacement of Cat5e cable.
	9	Replacement of FTMS controller.
	10	Replacement of FTMS sign motor.
	11	Replacement of FTMS sheer pins.
	12	Replacement of ROTTM media converter.
	13	Replacement of ROTTM sign.
	14	Replacement of batteries in PVMS.
	15	Set up and replace equipment configuration plug.
II	1	Different types.
III	1	Different locations.

Replacement of Message Sign component parts	**66**	The items for replacement of message sign component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41; (c) test.

		Replacement of Midas equipment
Units	**67**	The units of measurement shall be:
		(i) re-set Loop detector packs on Outstation ….number. (ii) replacement of Loop bottle joint ….number. (iii) replacement of Radar head ….number. (iv) replacement of Radar Power surge unit ….number (v) replacement of Radar power tray ….number. (vi) replacement of Radar interface card ….number. (vii) replacement of Midas Outstation ….number. (viii) replacement of Loop Feeder cable ….linear metre. (ix) re-cut Loops in 2 lane carriageway ….number. (x) re-cut Loops in 3 lane carriageway ….number. (xi) re-cut Loops in 4 lane carriageway ….number. (xii) set up and replace equipment configuration plug ….number.
Measurement	**68**	The measurement of replacement of Midas equipment component parts shall be the sub components changed.
Itemisation	**69**	Separate items shall be provided for replacement of Loops and other detector equipment in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Re-set Loop detector packs on Outstation.
	2	Replacement of Loop bottle joint.
	3	Replacement of Radar Head.
	4	Replacement of Radar Power Surge unit.
	5	Replacement of Radar Power tray.
	6	Replacement of Radar interface card.
	7	Replacement of Midas outstation.
	8	Replacement of Loop Feeder cable.
	9	Re-cut Loops in 2 lane carriageway.
	10	Re-cut Loops in 3 lane carriageway.
	11	Re-cut Loops in 4 lane carriageway.
	12	Set up and replace equipment configuration

		plug.
II	1	Different types.
III	1	Different locations.

Replacement of Midas equipment	**70**	The items for replacement of Midas equipment shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 31, 34, and 41; (c) test and terminate.

		Replacement of NTIS equipment and component parts
Units	**71**	The units of measurement shall be:
		(i) replacement of ANPR camera ….number. (ii) replacement of ANPR processor ….number. (iii) replacement of ANPR antenna and lead ….number. (iv) replacement of cable between ANPR camera and ANPR processor unit ….linear metre. (v) replacement of TMU Processor ….number (vi) replacement of TAME Processor ….number. (vii)replacement of TAME Solar Panel ….number. (viii) replacement of TMU solar Panel ….number. (ix) replacement of TAME batteries ….number. (x) replacement of TMU batteries ….number. (xi) replacement of TMU battery charger ….number. (xii)replacement of TAME power inverter ….number. (xiii)replacement of ANPR camera to processor lead ….linear metre. (xiv)replacement of TAME cabinet antenna and lead ….number. (xv)re-cut of TAME/TMU Loops in 1 lane carriageway….number. (xvi)re-cut of TAME/TMU Loops in 2 lane carriageway ….number. (xvii)re-cut TAME/TMU Loops in 3 lane carriageway ….number.
Measurement	**72**	The measurement of replacement of NTIS equipment and component parts shall be the sub components changed.
Itemisation	**73**	Separate items shall be provided for replacement of NTIS equipment and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of ANPR camera.
	2	Replacement of ANPR Processor.
	3	Replacement of ANPR antenna and lead.
	4	Replacement of TMU Processor.
	5	Replacement of TAME Processor.
	6	Replacement of TAME Solar Panel.
	7	Replacement of TMU Solar Panel.
	8	Replacement of TAME batteries.
	9	Replacement of TMU batteries.
	10	Replacement of TMU battery charger.
	11	Replacement of TAME power inverter.
	12	Replacement of ANPR camera to Processor lead.

	13	Replacement of TAME cabinet antenna and lead.
	14	Re-cut of TAME/TMU Loops in 1 lane carriageway.
	15	Re-cut of TAME/TMU Loops in 2 lane carriageway
	16	Re-cut of TAME/TMU Loops in 3 lane carriageway.
II	1	Different types.
III	1	Different locations.

Replacement of NTIS equipment and component parts	**74**	The items for replacement of NTIS equipment and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 31, 34, and 41; (c) test and terminate.

		Replacement of Traffic Signal equipment and component parts
Units	**75**	The units of measurement shall be:
		(i) replacement of Signal Aspect ….number. (ii) replacement of Signal Head ….number. (iii) replacement of Photo Electric Cell ….number. (iv) replacement of Above Ground Detector ….number (v) replacement of Pedestrian detection / display unit ….number. (vi) replacement of Loop Joints ….number. (vii) replacement of Traffic Signal Controller power supply ….number. (viii) replacement of Lamp Switch card in Traffic Signal Controller ….number. (ix) replacement of CPU in Traffic Signal Controller ….number. (x) replacement of remote monitoring / control unit ….number. (xi) replacement of detector packs within Traffic Signal Controller ….number. (xii)replacement of Traffic Signal CCTV camera ….number. (xiii)replacement of video controller ….number. (xiv)replacement of microswitch within traffic signal pole ….number. (xv)re-set Safety Isolation System Circuit breaker ….number. (xvi)replace Safety Isolation System Circuit breaker ….number. (xvii)replacement of Safety Isolation System sensor card ….number. (xviii)replacement of Safety Isolation System power supply ….number.
Measurement	**76**	The measurement of replacement of Traffic Signal equipment and component parts shall be the subcomponents changed.
Itemisation	**77**	Separate items shall be provided for replacement of Traffic Signal equipment and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of Signal Aspect.
	2	Replacement of Signal Head.
	3	Replacement of Photo Electric Cell.
	4	Replacement of Above Ground Detector.
	5	Replacement of Pedestrian detection / display unit.

	6	Replacement of Loop joints.
	7	Replacement of Traffic Signal Controller Power Supply.
	8	Replacement of Lamp Switch card in Traffic Signal Controller.
	9	Replacement of CPU in Traffic Signal Controller.
	10	Replacement of remote monitoring / control unit.
	11	Replacement of detector packs within Traffic Signal Controller.
	12	Replacement of Traffic Signal CCTV camera.
	13	Replacement of video controller.
	14	Replacement of microswitch within traffic signal pole.
	15	Re-set Safety isolation system circuit breaker
	16	Replace Safety isolation system circuit breaker.
	17	Replacement of Safety isolation sensor card.
	18	Replacement of safety isolation system power supply.
II	1	Different types.
III	1	Different locations.

Replacement of Traffic Signal equipment and component parts	**78**	The items for replacement of Traffic Signal equipment and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in Series 1200 paragraph 30; (c) all matters listed in series 1500 paragraph 22, 23, 27, 31, 34, and 41; (d) test.

		Replacement of Ramp Metering equipment and component parts
Units	**79**	The units of measurement shall be:
		(i) replacement of Signal Aspect ….number. (ii) replacement of Signal Head ….number. (iii) replacement of Loop Joints ….number. (iv) replacement of Ramp Metering Controller ….number. (v) replacement of cable interface board on Signal Pole ….number. (vi) Re-cut Ramp Metering Loop in 1 lane carriageway ….number. (vii) Re-cut Ramp Metering Loop in 2 lane carriageway ….number.
Measurement	**80**	The measurement of replacement of Ramp Metering equipment and component parts shall be the subcomponents changed.
Itemisation	**81**	Separate items shall be provided for replacement of Ramp Metering equipment and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of Signal Aspect.
	2	Replacement of Signal Head.
	3	Replacement of Loop joints.
	4	Replacement of Ramp Metering Controller.
	5	Replacement of cable interface board on Signal Pole.
	6	Re-cut Ramp Metering Loop in 2 lane carriageway.
	7	Re-cut Ramp Metering Loop in 3 lane carriageway.
II	1	Different types.
III	1	Different locations.

Replacement of Ramp Metering equipment and component parts	**82**	The items for replacement of Ramp Metering equipment and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 31, 34, and 41; (c) test and terminate.

		Replacement of Environmental Sensor Station equipment, Meteorological equipment and component parts
Units	**83**	The units of measurement shall be:
		(i) replacement of Communications Processor ….number. (ii) replacement of Solar Panel ….number. (iii) replacement of camera set ….number. (iv) replacement of Cyclo Sensor ….number. (v) replacement of Precipitation Sensor ….number. (vi) replacement of Spectror Sensor ….number. (vii) replacement of Barometer Sensor ….number. (viii)replacement of ROSA Frame ….number. (ix) replacement of Sensor card ….number. (x) replacement of Modem ….number. (xi) replacement of wind Sensor ….number. (xii)replacement of humidity and Air Sensor Probe ….number. (xiii)replacement of battery ….number. (xiv)replacement of visibility Sensor ….number. (xv)replacement of combined wind unit ….number. (xvi)replacement of depth Sensor ….number. (xvii)replacement of road surface Sensor ….number.
Measurement	**84**	The measurement of replacement of Environmental Sensor Station equipment and component parts shall be the subcomponents changed.
Itemisation	**85**	Separate items shall be provided for replacement of Environmental Sensor Station equipment and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of Communications Processor.
	2	Replacement of Solar Panel.
	3	Replacement of Camera set.
	4	Replacement of Cyclo Sensor.
	5	Replacement of Precipitation Sensor.
	6	Replacement of Spectror Sensor.
	7	Replacement of Barometer Sensor.
	8	Replacement of ROSA Frame.
	9	Replacement of Sensor card.
	10	Replacement of Modem.
	11	Replacement of Wind Sensor.
	12	Replacement of Humidity and Air Sensor.
	13	Replacement of Battery.
	14	Replacement of Visibility Sensor.
	15	Replacement of Combined Wind unit.

	16	Replacement of Depth Sensor.
	17	Replacement of Road Surface Sensor.
II	1	Different types.
III	1	Different locations.

Replacement of Environmental Sensor Station equipment and component parts	**86**	The items for replacement of Environmental Sensor Station equipment and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, and 41; (c) test

		Replacement of Gantry Power Safety Isolation equipment and component parts and DNO supplies
Units	**87**	The units of measurement shall be:
		(i) test and re-set of Safety Isolation System cut-out in verge mounted cabinet ….number. (ii) test and replacement of Safety Isolation System cut-out in verge mounted cabinet ….number. (iii) test and re-set of Safety Fibre Isolation System cut-out in verge mounted cabinet ….number. (iv) test and replacement of Safety Fibre Isolation System cut-out in verge mounted cabinet ….number. (v) test and confirm power cable failure and report to third party ….number. (vi) test and confirm DNO power failure in EI / EB cabinet and report to third party ….number. (vii) replacement of power cable reduction joint ….number.
Measurement	**88**	The measurement of replacement of Gantry Power Safety Isolation equipment and component parts shall be the subcomponents changed.
Itemisation	**89**	Separate items shall be provided for replacement of Gantry Power Safety Isolation equipment and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	**Feature**	
I	1	Replacement of Safety Isolation system cut-out in verge mounted cabinet.
	2	Replacement of Safety Fibre isolation system cut-out in verge mounted cabinet.
	3	Replacement of power cable reduction joint.

	4	Test and confirm power cable failure.
	5	Test and confirm DNO power failure in EI / EB cabinet.
II	1	Different types.
III	1	Different locations.

Replacement of Gantry Power Safety Isolation System equipment and component parts and testing of power cables and DNO supplies	**90**	The items for replacement of Gantry Power Safety Isolation equipment and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(a) all matters listed in Series 200 paragraph 11; (b) all matters listed in series 1500 paragraph 22, 23, 27, 34, 38 and 41.

		Replacement of Vehicle Activated Signs
Units	**91**	The units of measurement shall be:
		(i) Replacement of Vehicle Activated Signs ….number.
Measurement	**92**	The measurement of replacement of Vehicle Activated Signs and component parts shall be the subcomponents changed.
Itemisation	**93**	Separate items shall be provided for replacement of Vehicle Activated Signs and component parts in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Replacement of Vehicle Activated Signs.
II	1	Different locations.

Replacement of Vehicle Activated Signs	**94**	The items for replacement of Vehicle Activated Signs and component parts shall be in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(c) all matters listed in Series 200 paragraph 11; (d) all matters listed in series 1500 paragraph 22, 23, 27, 34, 38 and 41; (e) test.

		Attend site and investigate faulty items to be replaced / repaired
Units	**95**	The units of measurement shall be:
		(i) 2 hour response ….number. (ii) 4 hour response….number. (iii) 12 hour response ….number. (iv) 24 hour response ….number. (v) 48 hour response ….number. (vi) 7 day response ….number. (vii) 56 day response ….number
Measurement	**96**	The measurement of attendance will be the number of sites attended at the requested response time.
Itemisation	**97**	Separate items shall be provided for attendance response times in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	2 hour response.
	2	4 hour response.
	3	12 hour response.
	4	24 hour response.
	5	48 hour response.
	6	7 day response.
	7	56 day response.
II	1	Different locations.

	Maintenance of Established Trees and Shrubs	
		In paragraph 21 add the following;
Units	**21**	(iv) removal of branch or limb from tree…..number.
		At the end of paragraph 22 add the following;
Measurement	**22**	Removal of branch or limb from tree shall be the number of branches or limbs removed. In cases where there are a number of branches or limbs connected to one main branch or limb attached to the trunk then this shall constitute one number branch or limb if that main branch or limb is the branch or limb.to be removed.
		In the table in Paragraph 23 add the following Group and Features;

23

Group	Feature	
I	9	Removal of branch or limb from tree.
VIII	1	Height not exceeding 4.0 metres from ground level.
	2	Height exceeding 4.0 metres from ground level but not exceeding 10.0 metres.

		Add the following notes beneath the table in paragraph 23;
		Note 2: Groups II to VII inclusive shall not be applied to Group I Feature 9. Note 3: Group VIII features shall only be applied to Group Feature 9.
		Insert new paragraph 30A.
Removal of branch or limb from tree	**30A**	The items for removal of branch or tree limb shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(i) cutting; (ii) dealing with infected timber arisings; (iii) disposal of material (as Series 600 paragraph 39); (iv) sterilising tools and the like; (v) inspections and reports.

	Grass Cutting Reactive Services and Disposal of Waste	
		Add new paragraphs 53 to 58.
Units	**53**	The units of measurement shall be:
		(i) grass cutting reactive services …… hour. (ii) disposal of waste …… tonne.
Measurement	**54**	Grass cutting reactive services and disposal of waste shall only be measured when the Task Order expressly states to this effect.
	55	The measurement of grass cutting reactive services shall be each hour during which the *Contractor* is required to Provide the Service as agreed with the *Service Manager* and subject to a minimum measurement of two hours. Measurement of part hours shall be rounded up to the nearest hour. Periods when the Equipment is not Providing the Service shall not be measured.
	56	The measurement of disposal of waste by tonne shall be calculated from the tonnage of waste disposal certified by the *Service Manager*. The tonnage certified by the *Service Manager* shall be only that waste included on waste disposal tickets which has arisen from the Task. Waste in excess of the requirements of the Task and waste arising from any other purpose shall not be included within the certified tonnage.
Itemisation	**57**	Separate items shall be provided for grass cutting reactive services and disposal of waste in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Grass cutting reactive services.
	2	Disposal of waste.
II	1	Grass cutter including driver and operators.

Note 1: Group II shall not be applied to Group I Feature 2.
Note 2: Group I Feature 2 shall only be itemised when there is a corresponding Group I Feature 1 itemisation and shall only relate to that Group I Feature 1 item.

Grass Cutting Reactive Services and Disposal of Waste	**58**	The items for grass cutting reactive services and disposal of waste shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) compliance with all legislation not limited to legislation affecting use of vehicles on the public highway and the like; (b) Equipment inspections and submission of certificates; (c) bringing Equipment to site; (d) maintenance of Equipment including communication equipment in accordance with manufacturer's recommendations and identification signs; (e) comprehensive insurance; (f) replacement Equipment; (g) depreciation; (h) maintenance; (i) fuel, oil and other consumables; (j) qualified operatives, technicians and provision of documents; (k) completion and submission of information log sheets and record sheets; (l) liaising with police; (m) vehicle inspections and reports; (n) lighting board (o) disposal of material (as Series 600 paragraph 39);

	Make safe areas of invasive pests	
		Add new paragraph 59 to 62.
Units	**59**	The units of measurement shall be:

		(i) Make safe areas of invasive pests (including brown tail moth), either through the use of biological solution or by cutting out the affected vegetation to hardstandings and paved areas, topsoil heaps, planted beds, open ditches, filter drains, grassed areas and waterbodies …… square metre. (ii) Make safe areas of invasive pests (including brown tail month), either through the use of biological solution or by cutting out affected vegetation to individual trees and shrubs ……number.
Measurement	**60**	The measurement of make safe areas of invasive pests (including brown tail moth) to hardstandings and paved areas, topsoil heaps, planted beds, open ditches, filter drains, grassed areas and waterbodies shall be the plan area. The measurement of make safe areas of invasive pests to individual trees and shrubs shall be the number of trees or shrubs irrespective of girth. Make safe areas of invasive pests shall be measured separately only when required to be carried out in connection with any landscape and ecology areas that have been established prior to the commencement of the Contract.
Itemisation	**61**	Separate items shall be provided for make safe areas of invasive pests in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Make safe areas of invasive pests (including brown tail moth), either through the use of biological solution or by cutting out the affected vegetation
II	1	To hardstandings and paved areas.
	2	To topsoil heaps
	3	To planted beds.
	4	To open ditches.
	5	To filter drains.
	6	To grassed areas.
	7	To wildflower areas.
	8	To waterbodies.
	9	To individual trees.
	10	To individual shrubs.

Make safe areas of invasive pests (including brown tail moth)	**62**	The items for Make safe areas of invasive pests (including brown tail moth) shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) Providing all measures, equipment and resource necessary to ensure compliance with the specification; (b) Providing evidence of operative training; (c) Protective measures; (d) Biological pesticides and insecticides; (e) Compliance with all legislation not limited to legislation affecting use of pesticides. (f) Strimming and cutting branches, brambles and herbages; (g) Extracting roots; (h) Excavation (as Series 600 paragraphs 18 and 19) (i) Dealing with arisings; (j) Disposal of material (as Series 600 paragraph 39) (k) Inspections; (l) Reports, records and registers to the *Service Manager*.

	Control and Maintenance of Shrubs, Trees, Woodland, Grassland, Grass and Vegetation	
		Add new paragraph 63 to 66

		The units of measurement shall be:
Units	**63**	(i) Remove obstructions that prevent safe access, inspection and maintenance of all equipment, as instructed by the *Service Manager*…. square metre
Measurement	**64**	The measurement of remove obstructions that prevent safe access, inspection and maintenance of all equipment as instructed by the *Service Manager.*
Itemisation	**65**	Separate items shall be provided for control and maintenance of shrubs, trees, woodland, grassland, grass and vegetation in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	**Feature**	
I	1	Sub-Asset Type
II	1	Item

Remove obstructions that prevent safe access, inspection and maintenance of all equipment	**66**	The item for remove obstructions that prevent safe access, inspection and maintenance of all equipment shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage		(i) Providing all measures, equipment and resources necessary to ensure compliance with the specifications; (ii) Initial cutting and maintenance; (iii) Strimming and cutting; (iv) Cutting around objects and edges; (v) Reports to the *service manager*; (vi) Leaving the site clean and tidy; (vii)Weed control (as Series 3000 paragraph 20); (viii)disposal of material (as Series 600 paragraph 39) (ix) all matters listed in Series 3000 paragraph 24, 25, 26, 27, 28, 29 and 30 where applicable.

Series 4000: Sweeping and Cleaning

		Add new Series 4000 paragraphs 1 to 10.
	Sweeping and Cleaning Reactive Services, Application of Herbicide, Cleaning and Emptying of Litter Bins, Removal of Graffiti and Posters and Disposal of Waste	
Units	**1**	The units of measurement shall be:

		(i) sweeping and cleaning reactive services …… hour. (ii) application of herbicide and removal of graffiti and posters……..square metre. (iii) cleaning and emptying of litter and waste bins……number. (iv) disposal of waste …… tonne.
Measurement	**2**	Sweeping and cleaning reactive services and disposal of waste shall only be measured when the Task Order expressly states to this effect.
	3	The measurement of sweeping and cleaning reactive services shall be each hour during which the *Contractor* is required to Provide the Service as agreed with the *Service Manager* and subject to a minimum measurement of two hours. Measurement of part hours shall be rounded up to the nearest hour. Periods when the Equipment is not Providing the Service shall not be measured.
	4	The measurement of application of herbicide and removal of graffiti and posters shall be the plan or elevation area subject to a minimum measurement of five square metres.
	5	The measurement of cleaning and emptying of litter and waste bins shall be each litter and waste bin.
	6	The measurement of disposal of waste by tonne shall be calculated from the tonnage of waste disposal certified by the *Service Manager*. The tonnage certified by the *Service Manager* shall be only that waste included on waste disposal tickets which has arisen from the Task. Waste in excess of the requirements of the Task and waste arising from any other purpose shall not be included within the certified tonnage.
Itemisation	**7**	Separate items shall be provided for sweeping & cleaning reactive services, application of herbicide, cleaning and emptying of litter bins, removal of graffiti and posters and disposal of waste in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Sweeping and cleaning reactive services.
	2	Application of herbicide.
	3	Cleaning and emptying of litter and waste bins.
	4	Removal of graffiti and posters.
	5	Disposal of waste.
II	1	Operated roadsweeper.
	2	Pickup and 2 operatives.
III	1	For sweeping of running lanes.
	2	For sweeping of channels, hard shoulders and central reserve.
	3	For general sweeping and cleaning services including litter picking.

Note 1: Group II shall not be applied to Group I Features 2, 3, 4 or 5.
Note 2: Group I Feature 5 shall only be itemised when there are corresponding Group I Features and shall only relate to those Group I Features.
Note 3: Group III Features 1 and 2 shall only be applied to Group II Feature 1.
Note 4: Group III Feature 3 shall only be applied to Group II Feature 2.

Sweeping and Cleaning Reactive Services and Disposal of Waste	**8**	The items for sweeping and cleaning reactive services and disposal of waste shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) compliance with all legislation not limited to legislation affecting use of vehicles on the public highway and the like; (b) Equipment inspections and submission of certificates; (c) bringing Equipment to site; (d) maintenance of Equipment including communication equipment in accordance with manufacturer's recommendations and identification signs; (e) comprehensive insurance; (f) replacement Equipment; (g) depreciation; (h) maintenance; (i) fuel, oil and other consumables; (j) qualified operatives, technicians and provision of documents; (k) completion and submission of information log sheets and record sheets; (l) liaising with police; (m) vehicle inspections and reports; (n) lighting board (o) disposal of material (as Series 600 paragraph 39);

Application of Herbicide	**9**	The items for application of herbicide shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item Coverage		(a) protective measures; (b) destruction; (c) herbicides; (d) inspections and reports. (e) disposal of material off site.
Cleaning and Emptying of Litter Bins and Removal of Graffiti and Posters	**10**	The items for cleaning and emptying of litter bins and removal of graffiti and posters shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) replacement bin liners (b) maintaining schedules; (c) inspections and reports; (d) disposal of material off site.

Series 7800: Winter Maintenance

		Insert new paragraphs Series 7800 paragraphs 1 to 10.
	Preparation For And Precautionary Salting	
Units	**1**	The units of measurement shall be:
		(i) preparation for precautionary salting …... depot (ii) precautionary salting…….. salting route
Measurement	**2**	The measurement of preparation for precautionary salting shall be per depot preparation period from the decision to treat, to load the salt and brine until all the Winter Service Vehicles required are loaded, manned and ready to leave the depot.. The measurement of precautionary salting shall be the number of salting routes instructed by the *Service Manager*.
Itemisation	**3**	Separate items shall be provided for preparation for precautionary salting and precautionary salting in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Preparation for precautionary salting
	2	Precautionary salting

Preparation for Precautionary Salting	**4**	The items for preparation for precautionary salting shall in accordance with the Preamble to Bill of Quantities General Directions include for:

Item coverage		(y) determination of the extent of the gritting operation and agreement with the Overseeing Organisation; (z) loading of the salt/brine, supplied by the Overseeing Organisation; (aa) recording the amount of salt/brine loaded into each vehicle and reporting to the Overseeing Organisation; (bb) calculating the amount of salt/brine required by each vehicle
Precautionary Salting	**5**	The items for precautionary salting shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) carrying out pre-operational checks on vehicle in accordance with the scope and record results; (b) operating the vehicle in accordance with the scope; (c) full wash down after salting; (d) completing vehicle record book; (e) topping-up fuel tank (and AdBlue tank if fitted) after salting; (f) Treatment of lay-bys; (g) Pre-treatment prior to arrival of freezing rain.

	Fitting & Removal of Snow Plough Blades	
Units	**6**	The units of measurement shall be:
		(iii) fitting of snow plough blades …... number (iv) removal of snow plough blades…... number
Measurement	**7**	The measurement of fitting of snow plough blades shall be the number of snow plough blades required and instructed to be fitted by the Overseeing Organisation. The measurement of removal of snow plough blades shall be the number of snow plough blades required and instructed to be removed by the Overseeing Organisation.
Itemisation	**8**	Separate items shall be provided for fitting of snow plough blades and removal of snow ploughing blades in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature	
I	1	Fitting of snow plough blades ….number
	2	Removal of snow plough blades….number

Fitting of Snow Plough Blades	**9**	The items for fitting of snow plough blades shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) Taking snow plough blade from store and fitting to the vehicle in accordance with the manufacturers recommendations; (b) Connecting hydraulic hoses and tightening bolts to the specified torque settings in accordance with the manufacturers recommendations; (c) Fixing consumables and fixtures (d) Repairs (e) Replacement of damaged or stolen parts (f) Cleaning (g) Repositioning
Removal of Snow Plough Blades	**10**	The items for removal of snow plough blades shall in accordance with the Preamble to Bill of Quantities General Directions include for:
Item coverage		(a) Disconnecting hydraulic hoses and tightening bolts to the specified torque settings in accordance with the manufacturers recommendations; (b) Removal of snow plough blade in accordance with the manufacturers recommendations and taking back to store; (c) Fixing consumables and fixtures (d) Repairs (e) Replacement of damaged or stolen parts (f) Cleaning (g) Repositioning (h) Safe storage