

**MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS
VOLUME 1 SPECIFICATION FOR HIGHWAY WORKS**

**SERIES 100
PRELIMINARIES**

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PRELIMINARIES

101 (05/14) Temporary Accommodation and Equipment for the Overseeing Organisation

1 (05/14) The Contractor shall provide, maintain, service and remove all accommodation including contents, access roads and hardstanding thereto, as described in contract specific Appendix 1/1, for the use of the Overseeing Organisation.

2 (05/14) Equipment, furnishings, fittings and supplies shall be located as described in contract specific Appendix 1/1. All temporary initial accommodation shall be ready for occupation on the date for commencement of the works and all other accommodation complete with contents, access roads and hardstanding shall be ready for occupation and use by the Overseeing Organisation within four weeks of the date for commencement of the works unless otherwise stated in Appendix 1/1.

3 (05/14) Where stated in contract specific Appendix 1/1 the Contractor shall furnish and service accommodation made available by the Overseeing Organisation.

4 (05/14) The Contractor shall organise the provision of all telephones, mobiles and/or land lines, for the Overseeing Organisation as described in contract specific Appendix 1/1. The Contractor shall undertake all liaison with telecommunications companies as required. Where stated in contract specific Appendix 1/1 the land lines shall be for the exclusive use of the Overseeing Organisation. Any provision for data connections shall also be for the exclusive use of the Overseeing Organisation.

5 (05/14) All accommodation shall be regularly cleaned for so long as it is in use and suitable arrangements be made for the disposal of any waste arising from use of such accommodation.

6 (05/14) All equipment supplied by the Contractor shall be of a quality and precision appropriate to its proposed use and shall be delivered in a serviceable condition. The Contractor shall maintain all such equipment in serviceable condition and replace, if necessary, any that becomes unserviceable. The Contractor shall ensure that any equipment needing periodic calibration is calibrated on delivery, annually and/or at other times as and when required by the Overseeing Organisation. Unless otherwise stated in contract specific Appendix 1/1 equipment supplied by the Contractor shall comply with 'Government Buying Standards' minimum mandatory requirements and 'EU Green Public Procurement' core criteria.

7 (05/14) When major components of the works are manufactured off the site the Contractor shall arrange to make available adequate and secure accommodation as described in contract specific Appendix 1/1 at or adjacent to the place of, and during the period of, manufacture and testing.

102 (05/14) Vehicles for the Overseeing Organisation

1 (05/14) The Contractor shall provide transport as described in contract specific Appendix 1/2 for the exclusive use of the Overseeing Organisation for any purpose in connection with the works. The vehicles shall be delivered and maintained in good roadworthy condition. They shall have a current MOT Certificate where required, be licensed for use on the public highway and shall have comprehensive insurance cover for any qualified driver authorised by the Overseeing Organisation together with any authorised passengers and the carriage of goods or samples. The Contractor shall provide fuel, oil and maintenance in conformity with the vehicle manufacturer's recommendations and shall keep clean the vehicles inside and out on a regular basis as described in contract specific Appendix 1/2. A suitable replacement shall be provided for any vehicle out of service for more than 8 working hours.

The choice of vehicle type, engine size and transmission shall reflect the acceleration and manoeuvrability required of that vehicle during normal working conditions. Unless stated otherwise in contract specific Appendix 1/2 all vehicles shall have all round visibility from the driver's position. Where vans are identified in Appendix 1/2 additional mirrors shall be fitted to eliminate blind spots.

2 (05/14) Unless otherwise stated in contract specific Appendix 1/2 all vehicles shall have sign boards reading 'Highway Maintenance' or where appropriate 'Motorway Maintenance' in accordance with Diagram 7404 of Schedule 12, Part V of the Traffic Signs Regulations and General Directions 2002 on the rear of the vehicle (the lettering shall be the largest x height that can be accommodated from the range 37.5mm to 150mm. Unless otherwise stated in Appendix 1/2 the vehicles shall have chevron markings and a roof mounted amber flashing light bar in accordance with Section O5 of Chapter 8 (Part 2 Operations) of the Traffic Signs Manual.

3 (05/14) Unless otherwise stated in contract specific Appendix 1/2 all vehicles provided for the use of the Overseeing Organisation shall be free from markings identifying any company associated with the Contract.

103 (05/14) Radio Communication System for the Overseeing Organisation

1 (05/14) When required in contract specific Appendix 1/3 the Contractor shall provide a radio communication system for the Overseeing Organisation as described therein, within 4 weeks of the date for commencement of the works unless a different date for provision is required in Appendix 1/3. This would be in addition to any telephones or telecommunications equipment provided for in contract specific Appendix 1/1.

2 (05/14) The system, unless otherwise described in contract specific Appendix 1/3, shall be entirely separate from any provision for a radio communication system provided by the Contractor for his own use except that any aerial installation may be shared.

3 (05/14) The system shall have an operating range which ensures reception throughout the site.

4 (05/14) The Contractor shall be responsible for obtaining any necessary radio licences.

5 (05/14) The Contractor shall maintain the system, dismantling and removing it at the end of the period stated in contract specific Appendix 1/3. If the system is inoperative for any reason, it shall either be repaired or a replacement provided within 24 hours.

#104 (05/14) Standards, Quality Management and Acceptance

(05/14) Standards and CE markings

1 (12/14) Where there is a requirement in this specification for compliance with any part of a "British Standard" or other technical specification, that requirement may be met by compliance with:

- (a) a standard or code of practice of a national standards body or equivalent body of any EEA state or Turkey;
- (b) any international standard recognised for use as a standard or code of practice by any EEA state or Turkey;
- (c) a technical specification recognised for use as a standard by a public authority of any EEA state or Turkey;
- or
- (d) a European Technical Assessment issued in accordance with the procedure set out in regulation (EU) No 305/2011

provided that the relevant standard imposes an equivalent level of performance and safety provided for by the stated Standard or technical specification.

"EEA State" means a state which is a contracting party to the European Economic Area Agreement.

"British Standard" means any standard published by the British Standards Institution including adopted European or other international standards.

2 (05/14) Electrical equipment to which directives 2006/95/EC or 2004/108/EC apply and which are produced for incorporation in a permanent manner in the works must have affixed to them CE marking attesting to their conformity to the provisions of the applicable directives. Declarations of conformity required by the above directives must be provided to the Overseeing Organisation prior to installation or use or procurement or supply of the equipment.

3 (05/14) Construction products which are produced for incorporation in a permanent manner in the works and are covered by a harmonised European standard or European Technical Approval or Assessment must have the product performance required by the specification for the intended use declared under the Declaration of Performance and

be CE marked in accordance with the relevant British adopted European standard or European Technical Approvals or Assessments and the regulation (EU) No 305/2011. Unless otherwise described in the specification, the declared performance of the product shall meet the required performance of all the essential characteristics required by the specification. Declarations of performance required by the above regulation shall be provided to the Overseeing Organisation prior to installation or use or procurement or supply of the product.

(05/14) Quality Management

4 (05/14) Unless otherwise indicated in contract specific Appendix 1/24 or as required in the Conditions of Contract, the Contractor shall institute a quality management system complying with BS EN ISO 9001 and shall prepare a Quality Plan. The Contractor shall demonstrate compliance with this requirement to institute a quality management system to the Overseeing Organisation, one acceptable method for this demonstration is to evidence registration to BS EN ISO 9001.

5 (05/14) The Quality Plan shall incorporate the requirements of contract specific Appendix 1/24 and the requirements of the quality management schemes listed in Appendix A applicable to the works in accordance with sub-Clause 8 of this Clause.

The Quality Plan shall be submitted to the Overseeing Organisation within the period(s) stated in contract specific Appendix 1/24, for acceptance, before any related work is commenced.

Where any work, goods or materials to be used in the works are the subject of the quality management schemes listed in Appendix A, the Contractor shall require the supplier of such items to prepare a Quality Plan and the Contractor shall submit it to the Overseeing Organisation. Such Quality Plans shall comply with the requirements of contract specific Appendix 1/24 and the individual requirements of the relevant Sector Scheme Documents for Quality Management in Highway Works, see sub-Clause 8.

6 (05/14) Quality Plans shall indicate “hold points” as follows:

Contractor’s hold points: points where no further work shall proceed without the written approval of a designated person of the Contractor’s management, who shall be named in the Quality Plan.

Overseeing Organisation’s hold points: points where no further work shall proceed without the written approval of a designated representative of the Overseeing Organisation.

The Contractor shall ensure the Quality Plans and associated quality documentation are made available to all parties involved with the works.

(05/14) Quality Records

7 (05/14) For works, goods or materials other than those which are CE marked, the Contractor shall make available contemporary quality records to the Overseeing Organisation when requested. This includes quality records such as those identified in BS EN ISO 9001 to demonstrate achievement of the required quality and the effectiveness of the quality system. The Contractor shall require any member of the Contractor’s supply chain to make available such contemporary quality records when requested. Following a request copies of all quality records shall be made available immediately to the Overseeing Organisation. The Contractor shall report any non-conforming product/service to the Overseeing Organisation and shall require any member of the Contractor’s supply chain to immediately report any non-conforming product/service to the Contractor. The Contractor shall immediately pass these reports to the Overseeing Organisation, and undertake no further related work until remedial or other measures have been undertaken.

The Contractor shall submit the quality records required by this specification, as indicated in Appendix H, to the Overseeing Organisation. No item of work shall be considered complete until these records have been received by the Overseeing Organisation.

Note: Quality terms used in this Clause are as BS EN ISO 9000.

(05/14) **Quality Management Schemes**

8 (05/14) Except as described in sub-Clause 104.9, where any work, goods or materials to be used in the works are the subject of a quality management scheme listed in Appendix A, only work, goods or materials conforming with such a scheme shall be used and the organisations carrying out such work shall have current registration to the relevant scheme(s). The Contractor shall in each case submit to the Overseeing Organisation a copy of the certificate of conformity affirming compliance with the scheme.

9 (05/14) Where any work, goods or materials to be used in the works are the subject of a quality management scheme listed in Appendix A and for which the goods or materials are CE marked products in accordance with the relevant standard(s) exclusions to mandatory requirements as listed in Appendix A apply.

10 (05/14) Where specific training and competency requirements are identified in any quality management scheme listed in Appendix A, the Contractor shall provide copies of the relevant training and/or competency assessments certificates and/or registration/skill cards of the workforce to the Overseeing Organisation for acceptance prior to the commencement of relevant work.

11 (05/14) The requirement for compliance with a registered quality management scheme listed in Appendix A shall be satisfied by compliance with an equivalent quality management scheme of any Member State of the European Economic Area or a State which is party to a relevant agreement with the European Union, provided that the proposed scheme is designed to ensure in use levels of safety, performance and fitness for purpose equivalent to those provided for by the scheme specified. The proposed scheme will include third party assessment by bodies accredited in accordance with BS EN ISO/IEC 17021 by the United Kingdom Accreditation Service (UKAS) or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s). This sub-Clause applies also to works only in so far as the means of carrying out such works are indivisibly associated with the goods or materials for which an alternative quality management scheme is proposed.

(05/14) **Product Certification Schemes and CE Marked Products**

12 (05/14) Works, goods and materials, other than those covered by the Construction Products Regulation, falling under the standards listed in Appendix B are required to have attestation or third party accreditation to demonstrate compliance with the relevant standard. This can be satisfied by one or more of the following:

- (i) Compliance with a relevant product mark scheme demonstrating compliance as described in sub-Clause 13 below;
- (ii) Demonstration of compliance as described in sub-Clause 13 below;
- (iii) Demonstration of compliance using testing and calculation as described in sub-Clause 14 below.

Where works, goods or materials are covered by the Construction Products Regulation (EU) No. 305/2011 (CPR) their compliance with the specification shall be demonstrated by the product being CE marked, the declared performance of the product given in the Declaration of Performance meeting the required performance of all the essential characteristics given in the specification and evidence being provided that demonstrates the product meets the requirements of the specification for aspects other than those covered by the essential characteristics, where such evidence meets the requirements of options (i) or (ii) above.

13 (05/14) Where option (i) or (ii) of sub-Clause 12 is used the product shall be certified as compliant with the specification and relevant standard, or equivalent as described in sub-Clause 1 of this Clause, by a Certification Body.

The Certification Body shall be accredited in accordance with BS EN 45011 or BS EN ISO/IEC 17065 by the United Kingdom Accreditation Service (UKAS) or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s).

Unless otherwise described in the specification assessment of the product shall be carried out to the level of attestation as determined in the relevant standard for the intended use of the product in the works and shall include confirmation that the product provides, in use, adequate levels of safety, performance and fitness for purpose. For products covered by the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC) the safety aspects would be for aspects not covered by the relevant CE marking.

The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include certification, attestation details and Certification Body details.

14 (05/14) Where option (iii) of sub-Clause 12 is used it shall be demonstrated that the product is capable of performing as required using tests, calculations or other means. Such testing or other means shall have a minimum level of attestation as that determined by the relevant standard and be suitably extensive to provide information on all relevant parameters. Testing shall be carried out by laboratories accredited to UKAS or equivalent Accredited Organisations as described in sub-Clause 105.4.

The testing or other means shall include confirmation that the product provides, in use, adequate levels of safety, performance and fitness for purpose. For products covered by the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC) the safety aspects would be for aspects not covered by the relevant CE marking.

The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include testing or calculation details and results, certification and attestation details.

(05/14) **Product Acceptance Schemes**

15 (05/14) Where there are references in the specification to particular industry product acceptance schemes such as British Board of Agrément Certificates, Roads and Bridges Certificates, HAPAS certificates, CARES certificate or equivalent scheme, these shall be taken as references to a product acceptance scheme that has the attributes given in sub-Clause 16 below. The types of work, goods or materials listed in Appendix C are required to be certificated by a product acceptance scheme prior to their inclusion in the works.

16 (05/14) The works, goods or materials shall be assessed against a set of guidelines and criteria by a Certification Body. Certification to confirm the products successfully meet the guidelines and criteria shall be issued by a Certification Body. The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include the certification and, when requested, details of the scheme to confirm its compliance with the criteria given below and accreditation details of the organisation issuing the certification.

The scheme shall meet the following criteria:

- (a) Product acceptance and certification specified in this sub-Clause shall be structured and implemented to provide assurance to the Overseeing Organisation that the product, when supplied for its intended use and installed or processed post manufacture, in accordance with the manufacturer's instructions, will give the performance and level of safety required by the specification and be fit for purpose.
- (b) The organisation certifying products and issuing the certificates must be accredited to the relevant Certification Body standard, BS EN 45011 or BS EN ISO/IEC 17065 for product certification, or BS EN ISO/IEC 17020 for site inspection, by UKAS or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s). This shall include accreditation to manage and execute a certification scheme as defined in this sub-Clause. Accreditation must cover a scope of activity relevant to the construction, installation, maintenance and operation of highway infrastructure.
- (c) The scheme must cover as appropriate:
 - i) Manufacture and installation or post manufacture processing of those products for which a Declaration of Performance, and consequent CE marking, has not been made on the basis of any harmonised European Standard (hEN) or European Technical Assessment; or
 - ii) Only the installation of a material or post manufacture processing where the manufacturer has made a Declaration of Performance of the material (with consequent CE marking); or
 - iii) Product characteristics not included in the required essential characteristics of a hEN or in a European Technical Assessment if such characteristics provide additional protection for the consumer (e.g. road user).
- (d) The assessment and certification requirements for a product certified under the scheme must be developed ensuring due consideration is given to the requirements of the users of the product and those responsible for the highways on which such products will be used or installed.

- (e) The scheme must have a technical supervisory panel that provides technical oversight on the operation of the scheme and formally consents to the issue of assessment and certification requirements of the specialist groups developing the assessment and certification requirements. This panel must include a balanced representation of key end users, recognized industry experts and those responsible for the highways on which such products will be used or installed.
- (f) The product certification must include requirements for the audit and quality control of the production and installation processes for the product where necessary taking account of the product having its performance declared under a CE mark. Installer certification must include requirements for on-site surveillance of installation or post manufacturing processes.
- (g) For every product it has certified under a product certification scheme, an organisation must make open and publicly accessible details of the assessment and certification guidelines.
- (h) Where different organisations have certified the same generic form of product they must be able to demonstrate to the Overseeing Organisation equivalence of performance of products certified under the different schemes or agree a common set of guidelines for the assessment and certification of the product.
- (i) The competences of organisations certifying products shall be as the competency requirements for Technical Assessment Bodies given in Regulation (EU) No 305/2011, the Construction Products Regulation, Annex IV, Table 2 with the additions given in Table 1/1.

(05/14) **Table 1/1 Competency additions to Construction Product Regulation (EU) No. 305/2011 Annex IV, (Table 2)**

Competence	Description of Competence	Requirement
7. Determining the specific installation or post manufacturing control	Understand and evaluate the installation or post manufacturing processes of the specific product in order to identify appropriate measures ensuring consistent compliant delivery of the installed or post manufactured product.	A certification body shall have staff with appropriate technical knowledge of the relationship between the installation/post manufacturing processes and the product characteristics related to production control for installation or post manufacture.
8. Constructive engagement	Be prepared to engage constructively with highway infrastructure managers and other certifying bodies for resolution of issues.	Be able to resolve differences in the certified performance of products of the same generic type and where appropriate agree a common set of guidelines for the assessment and certification of such products.

(05/14) **European Technical Assessment (ETA)**

17 (05/14) The requirements for works, goods or materials to be subject to a product certification scheme or product acceptance scheme as discussed in sub- Clauses 12 to 16 above may alternatively be met by a product being attested using a European Technical Assessment (ETA) issued in accordance with the procedure set out in Regulation 305/2011, provided that the relevant attestation imposes an equivalent level of safety, performance and fitness for purpose provided for by the specification.

(05/14) **Statutory Type Approval**

18 (05/14) The requirements for statutory type approval are embodied in the Traffic Signs Regulations and General Directions 2002, the Zebra, Pelican and Puffin Pedestrian Crossings Regulations and General Directions 1997, and subsequent amending Regulations. Traffic signs requiring such approval are listed in Appendix D. The Contractor shall submit written evidence to the Overseeing Organisation that the relevant statutory type approval has been obtained. Where the Contractor has designed part of the works for which statutory type approval is required, application to the Secretary of State shall be made through the Overseeing Organisation.

(05/14) **Statutory Authorisation**

19 (05/14) Statutory authorisation is required before any traffic signs are incorporated into the works where these are of a character and/or are to be used in circumstances which have not been prescribed in the Traffic Signs Regulations and General Directions 2002, the Zebra, Pelican and Puffin Pedestrian Crossings Regulations and General Directions 1997, or subsequent amending Regulations. Where the Contractor has designed part of the works for which such authorisation is required, applications in accordance with the Regulations shall be made through the Overseeing Organisation.

(05/14) **Type Approval/Registration/Listing**

20 (05/14) The types of works, goods or materials which are required to have Type Approval or Registration prior to their acceptance for inclusion in the works are given in Appendix E, with the exception that products that are covered by the Construction Products Regulation (EU) No. 305/2011 (CPR) do not have to be listed prior to their acceptance for inclusion in the works. For products not covered by CPR previously obtained type approval or registration can be used. The Contractor shall submit to the Overseeing Organisation a copy of the type approval/registration certificate. Where previously obtained type approval or registration is not available the Contractor shall submit documentation to the Overseeing Organisation which demonstrates compliance with the relevant specification and/or standards. For products covered by the CPR the information required in Clause 104.3 shall be provided by the Contractor in accordance with that sub-Clause.

(05/14) **Provision of Information**

21 (05/14) Where information and documentation regarding works, goods or materials is required to be submitted to the Overseeing Organisation for acceptance the Contractor shall submit such documentation in a timescale to meet the requirements of the Contractor's programme of works. The Contractor shall liaise with the Overseeing Organisation to ensure that adequate time is allocated for the Overseeing Organisation to undertake the required assessments for acceptance. The time allocated for acceptance shall not be less than four weeks.

22 (05/14) Unless otherwise specified, two copies of all information and documentation, including valid certificates, in respect of work, goods or materials proposed by the Contractor shall be supplied to the Overseeing Organisation in English.

23 (05/14) Where the Contractor proposes to use an equivalent standard, quality management scheme, product certification scheme, industry product acceptance scheme, or type approval/registration to that specified the Contractor shall provide relevant information to enable the Overseeing Organisation to ascertain whether or not the proposal is equivalent to the specified requirement. The information provided by the Contractor shall provide full disclosure and appropriate evidence regarding the works, goods or materials concerned in order to fully demonstrate equivalent levels of safety, performance and fitness for purpose. For products within the scope of the Construction Products Regulation this documentation would be the relevant Declaration of Performance and associated CE mark for the intended specified use.

24 (05/14) When required in contract specific Appendix 1/4, three copies of detailed working and fabrication drawings in the format detailed in contract specific Appendix 1/4, prepared by or on behalf of the Contractor, shall be submitted for the Overseeing Organisation's acceptance. The minimum period for submission of the drawings prior to commencement of the related works shall be as stated in contract specific Appendix 1/4. Such acceptance shall in no way relieve the Contractor of his responsibilities for the work under the Contract.

105 (05/14) **Goods, Materials, Sampling and Testing Goods and Materials**

1 (05/14) The Contractor shall provide the Overseeing Organisation with details of the suppliers from whom he proposes to purchase the goods and materials necessary for the execution of the works prior to their inclusion in the works.

Unless otherwise detailed in contract specific Appendix 1/5 the Contractor shall keep and maintain supply records of all works, goods and materials incorporated into the works. These shall include:

- (i) supplier's details, including name/company name and address;
- (ii) date of supply to site;
- (iii) manufacturer's information and safety information;

- (iv) details of where the goods are incorporated into the works.

These details shall be provided to the Overseeing Organisation by the Contractor upon request and at completion of the works.

(05/14) **Sampling and Testing**

2 (05/14) The testing scheduled in contract specific Appendix 1/5, including sampling and provision of the associated samples, shall be undertaken by the Contractor. The Contractor shall carry out each of the tests required in contract specific Appendix 1/5 within an elapsed time from the taking of the respective samples which shall be reasonable in all the circumstances unless otherwise prescribed by the Overseeing Organisation. The Contractor shall supply to the Overseeing Organisation, within 24 hours of the completion of each test, a copy of the results.

The following operations are not included in contract specific Appendix 1/5:

- (i) checking, inspecting, examining, measuring (except in connection with testing);
- (ii) trials and demonstrations;
- (iii) routine testing carried out by manufacturers and suppliers in compliance with a specified standard or specification;
- (iv) testing of plant.

3 (05/14) Where required in contract specific Appendix 1/5 test certificates and/or product certification complying with the provisions of the relevant standard or specification where applicable and certifying that the goods or materials meet the specified requirements, shall be supplied to the Overseeing Organisation by the Contractor at least four weeks prior to the incorporation of the goods or materials in the works.

Where goods or materials are required to be CE marked or where the Contractor proposes to use CE marked goods or materials the Contractor shall supply the Overseeing Organisation with the CE marking information including any relevant instructions and safety information at least four weeks prior to the incorporation of the goods or materials in the works. This information shall be in English.

4 (05/14) Where required in contract specific Appendix 1/5 tests and associated sampling shall be undertaken by testing laboratories accredited in accordance with BS EN ISO/IEC 17025. The accreditation shall be by UKAS or equivalent European accreditation organisation which is party to a multi-lateral agreement (MLA) with UKAS or any other equivalent International Accreditation Forum MLA signatory with a scope that includes BS EN ISO/IEC 17025.

Where UKAS or equivalent laboratory accreditation is required the results shall be reported on an official UKAS or equivalent accredited laboratory test report or certificate.

5 (05/14) Where goods or materials are accepted on the basis of an equivalent standard, quality management scheme, product certification scheme or product acceptance scheme as provided for in Clause 104, testing and sampling as specified in or applicable to such an equivalent standard quality management scheme, product certification scheme or product acceptance scheme is accepted and shall be substituted for those specified in contract specific Appendices 1/5 and 1/6 respectively.

6 (05/14) The Contractor shall provide samples, which shall include source samples, of goods and materials and shall deliver these to the Overseeing Organisation as described in contract specific Appendix 1/6. Unless otherwise stated in contract specific Appendix 1/6, the Contractor shall arrange for the sampling of such goods and materials to be undertaken by qualified staff of testing laboratories holding UKAS or equivalent European Accreditation Organisation accreditation to BS EN ISO/IEC 17025 for such sampling. These samples shall be supplied in sufficient time for them to be tested for acceptability by the Overseeing Organisation, taking into account the programme for the works. Production samples shall be delivered in a condition which is representative of the material's state for the purpose of the test.

7 (05/14) The Contractor shall provide for rates of sampling specified in contract specific Appendix 1/6. These rates of sampling shall apply at the outset of each of the respective activities and for the duration of each of the activities. Following an initial period of sampling, the Contractor may apply to the Overseeing Organisation for a relaxation in these rates of sampling having demonstrated to the Overseeing Organisation an acceptable level of confidence in control. Provided, at any subsequent time when test results indicate the need for improved control in the opinion of the Overseeing Organisation, the Contractor samples at the rate specified in contract specific Appendix 1/6.

8 (05/14) Where testing is undertaken by a supplier or manufacturer in accordance with the Contract, other than for products which are CE marked, the Contractor shall ensure that each supplier and manufacturer will admit the Overseeing Organisation's representative to his premises during normal working hours for the purposes of inspecting, selecting the samples and witnessing the testing.

9 (05/14) Where testing or in use operation of works, goods or materials which are CE marked identifies failure of the CE marked works, goods or materials, the Contractor shall make formal notification of the failure to the relevant Trading Standards office. The Contractor shall copy such correspondence to the Overseeing Organisation.

106 (05/14) Design of Works by the Contractor

(05/14) Permanent Works Design

1 (05/14) The Contractor shall design the works items or elements listed in contract specific Appendix 1/10 (A) to comply with the design specifications and requirements therein. Where the Contractor proposes to design a works item or element for which a choice of designs is offered and listed in Appendix 1/10 (B) he shall comply with the design specification and requirements therein. The Contractor shall follow the technical approval procedures given in the Technical Approval Scheme adopted by the Overseeing Organisation for which purposes the Contractor shall be deemed to be the designer.

(05/14) Permanent Structures

2 (05/14) Unless otherwise stated in contract specific Appendix 1/10 the Contractor shall follow the technical approval procedures given in BD2 (DMRB 1.1.1).

3 (12/14) Unless otherwise stated in contract specific Appendix 1/10 the Contractor shall complete the Approval in Principle (AIP) form, or Record of Design Principles and Record of Assessment Principles for each structure or element to be designed. The Contractor shall complete any other documentation required for the Technical Approval procedures such as Departures from Standard. The Contractor shall complete design and check certificates as required. The Contractor shall forward the completed forms and certificates to the Overseeing Organisation for acceptance and onward transmission to the Technical Approval Authority. The format of these and other submissions shall be agreed with the Overseeing Organisation, where paper copies are required three copies shall be supplied to the Overseeing Organisation.

4 (05/14) The Contractor shall make any necessary alterations to the AIP or other documentation as required and submit the revised documents to the Overseeing Organisation in the agreed format.

5 (05/14) Unless otherwise stated in contract specific Appendix 1/10 the Contractor shall allow six working weeks for the review of the documentation by the Technical Approval Authority. Where revisions are required to the documentation the Contractor shall allow an additional four working weeks for review of the revised documents by the Technical Approval Authority.

6 (05/14) Unless otherwise stated in contract specific Appendix 1/10 three copies of the completed 'Issue for Construction' (IFC) drawings shall be submitted to the Overseeing Organisation for acceptance. The Contractor shall allow four working weeks for review and acceptance of the IFC drawings by the Overseeing Organisation.

7 (05/14) The works detailed in the documentation shall not commence until acceptance by the Technical Approval Authority and the Overseeing Organisation has been notified to the Contractor.

(05/14) Temporary Works Design

8 (05/14) The Contractor shall comply with the requirements of contract specific Appendix 1/11 for the items of temporary works design listed therein.

(05/14) Temporary Structures

9 (05/14) Equipment designed by the Contractor for temporary works, including bridge lifting systems, structures demolition, support systems and platforms used over or adjacent to highway, railway, watercourse, footpath or other public right of way, or where failure could affect the integrity or safety of any persons or structure, shall be considered as a temporary structure and subject to the requirements of this Clause.

10 (05/14) Unless otherwise stated in contract specific Appendix 1/11 the Contractor shall follow the technical approval procedures given in BD2 (DMRB 1.1.1) for which purposes the Contractor shall be deemed to be the Designer. Works are to be designated as described in Section 4 of BD2 (DMRB 1.1.1). The design specifications, requirements and constraints for equipment to be designed by the Contractor shall be as stated in contract specific Appendix 1/11.

11 (12/14) Where required the Contractor shall complete the Approval in Principle (AIP) or Record of Design Principles and Record of Assessment Principles for each item incorporating all equipment to be designed. The Contractor shall complete any other documentation required for the Technical Approval procedures such as Departures from Standard. The Contractor shall complete design and check certificates as required. The completed forms and certificates shall be submitted by the Contractor to the Overseeing Organisation for onward transmission to the Technical Approval Authority. The format of these and other submissions shall be agreed with the Overseeing Organisation, where paper copies are required three copies shall be supplied to the Overseeing Organisation.

The Contractor shall make any necessary alterations to the AIP or other documentation as required and submit the revised documents to the Overseeing Organisation in the agreed format.

12 (05/14) Unless otherwise stated in contract specific Appendix 1/11 the Contractor shall allow six working weeks for the review of the documentation by the Technical Approval Authority. Where revisions are required to the documentation the Contractor shall allow an additional four working weeks for review of the revised documents by the Technical Approval Authority.

13 (05/14) Unless otherwise stated in contract specific Appendix 1/11 three copies of the completed 'Issue for Construction' (IFC) drawings shall be submitted to the Overseeing Organisation for acceptance and forwarding to the Technical Approval Authority. The Contractor shall allow four working weeks for review and acceptance of the IFC drawings by the Overseeing Organisation.

14 (05/14) The works detailed in the documentation shall not commence until acceptance by the Technical Approval Authority and the Overseeing Organisation has been notified to the Contractor.

107 (05/14) Site Extent and Limitations on Use

1 (05/14) The extent of the site and any limitations on its use shall be as described in contract specific Appendix 1/7.

108 (05/14) Operatives for the Overseeing Organisation

1 (05/14) The Contractor shall provide the Overseeing Organisation with, and maintain continuity of, operatives equal to the tasks, and capable of performing the functions, described in contract specific Appendix 1/8.

2 (05/14) For site surveys and setting out, operatives shall be experienced in assisting engineers in such work.

3 (05/14) For laboratory-related duties, operatives shall be capable of assisting laboratory staff in routine tasks.

4 (05/14) Operatives provided under sub-Clauses 2 and 3 of this Clause shall have valid driving licences and driving experience suitable for the vehicles supplied in accordance with contract specific Appendix 1/2.

109 (05/14) Control of Noise and Vibration

(05/14) General

1 (05/14) The Contractor shall comply with the recommendations for practical measures to reduce noise set out in BS 5228: Noise and Vibration Control on Construction and Open Sites: 2009: Parts 1 & 2 and with any specific requirements stated in contract specific Appendix 1/9.

2 (05/14) The Contractor shall comply with any specific requirements for the control of vibration stated in contract specific Appendices 1/9, 2/4, 6/3, 6/13 and Clause 607.

3 (05/14) The Contractor shall carry out the measurement and monitoring of construction noise and vibration effects as detailed in contract specific Appendix 1/9.

(05/14) **Vibration**

5 (05/14) The Contractor shall limit vibration levels arising from the site activities to the levels stated in contract specific Appendix 1/9. Tracked plant shall be prohibited from travelling within 6m of buildings.

6 (05/14) Unless otherwise detailed in contract specific Appendix 1/9 the levels of vibration shall be monitored by the Contractor using an approved vibration meter plus a graphical level recorder, a record of this shall be provided to the Overseeing Organisation within 24 hours. Vibration control stations will be at locations as detailed in contract specific Appendix 1/9.

110 (05/14) Information Boards

1 (05/14) The Contractor shall, within four weeks of the date for the commencement of the works provide and erect information boards at the locations and to the specification given in contract specific Appendix 1/21. The Contractor shall ensure that they are kept clean and maintained in a safe and legible condition and remove them on completion of the works.

2 (05/14) The design, content and layout of information boards and any other project publicity material including any and all Overseeing Organisation logos and branding shall be in accordance with policy requirements of the Overseeing Organisation, the contract employer and the highway authority and in accordance with contract specific Appendix 1/21. For the Highways Agency these requirements shall be in accordance with the requirements stated in the document 'The Highways Agency's Visual Identity Specifications'.

111 (05/14) Existing Ground Levels

1 (05/14) The Contractor shall satisfy himself that the existing ground levels as described in contract specific Appendix 1/12 are correct. Should the Contractor wish to dispute any levels he shall submit to the Overseeing Organisation a schedule of the position of the levels considered to be in error and a set of revised levels. The existing ground relevant to the disputed levels shall not be disturbed before the correct levels are determined.

#112 (05/14) Setting Out

1 (05/14) The Contractor shall, unless otherwise stated in contract specific Appendix 1/12, within 3 weeks of the date for commencement of the works, carry out a check of the co-ordinates and levels of all permanent ground markers and permanent bench marks described in Appendix 1/12 and shall supply the Overseeing Organisation, if requested, with their position and level in order that they may be checked and revised if necessary. The Contractor shall identify and bring to the attention of the Overseeing Organisation any markers that are missing. The Contractor shall comply with any specific requirements for setting out described in contract specific Appendix 1/12.

2 (05/14) The Contractor shall keep updated schedules and drawings of all bench marks (which shall be based on Ordnance Datum at Newlyn) used in the setting out and shall make these available to the Overseeing Organisation when required.

3 (05/14) The Contractor shall ensure that where necessary, in order to maintain his programme, lines and levels are set out in such time as to enable Statutory Undertakers' apparatus and other publicly or privately owned services or supplies to be installed, altered or removed.

4 (05/14) The Contractor shall survey and record existing details of items which he is required to remove and subsequently replace. The level of survey information to be recorded is described in contract specific Appendix 1/12.

113 (05/14) Programme of Works

1 (05/14) Subject and without prejudice to the Conditions of Contract, the programme which the Contractor submits to the Overseeing Organisation shall comply with the constraints imposed by the Contract and specific requirements stated in contract specific Appendix 1/13. The Contractor shall update the programme as necessary.

The programme and subsequent revisions of the programme shall show the level of detail appropriate to each stage of the works and all activities and restraints, each of which shall be given a short title. All events shall be numbered.

2 (05/14) When required in contract specific Appendix 1/13 the Contractor shall also provide a mass-haul diagram showing his intended earthworks movements and locations and capacities of anticipated plant and other resource input.

114 (05/14) Payment Applications

1 (05/14) Unless otherwise described in the Contract, the Contractor shall comply with the requirements described in contract specific Appendix 1/14 concerning applications for payment.

115 (05/14) Accommodation Works

1 (05/14) The Contractor shall undertake and complete the accommodation works as described in contract specific Appendix 1/15. The Contractor shall give the Overseeing Organisation at least ten days' notice of the date he intends to start work on individual plots, for the benefit of each owner, lessee or occupier.

116 (05/14) Privately and Publicly Owned Services or Supplies

1 (05/14) The Contractor shall satisfy himself as to the exact position of Statutory Undertakers and other publicly and privately owned services or supplies affected by the works.

2 (05/14) The Contractor shall, during the progress of the works take all measures required by any Statutory Undertaker or the management of other publicly or privately owned services or supplies, for the support and full protection of all such services or supplies.

3 (05/14) Where privately or publicly owned services or supplies affected by the works are subject to alteration, removal or addition, the Contractor shall be responsible for all arrangements with the owners and/or their agents for the execution and phasing of such works in accordance with his programme. Details of such work, preliminary arrangements made by the Overseeing Organisation, and/or any orders already placed are given in contract specific Appendix 1/16.

4 (05/14) The Contractor shall take all measures required by the Overseeing Organisation for the location and protection of all cabling, ducts and other devices which form part of the motorway or highway communications system or other systems of the Overseeing Organisation. The Contractor shall comply with the requirements of NRTS (National Roads Telecommunications Services) and the technology maintenance agent in relation to motorway communications cables. Where the communications system or other system will be affected by the works the Contractor shall ensure that an alternative system as described in contract specific Appendix 1/16 is fully operational prior to interrupting the existing system; any connections or disconnections to the existing system may only be undertaken by the Overseeing Organisation's maintenance agent. The Contractor shall be responsible for liaising, with the Overseeing Organisation's maintenance agent.

5 (05/14) No services or supplies shall be interrupted without the written consent of the appropriate authority or owner, and the Contractor shall provide a satisfactory alternative before interrupting any existing service or supply, unless otherwise stated in contract specific Appendix 1/16.

6 (05/14) Disconnected apparatus shall be removed by the Contractor only with the prior consent of the Authority concerned.

#117 (05/14) Traffic Safety and Management

(05/14) General

- 1** (05/14) Unless otherwise stated in contract specific Appendix 1/17 the Contractor shall plan, design, programme, provide, implement, maintain and remove all traffic safety and management measures necessary for the completion of the works. This shall include undertaking all necessary liaison with the police and highway authority responsible for each public highway affected by the works both before commencement and throughout the duration of the works. The traffic safety and management measures shall be in accordance with the requirements and constraints stated in contract specific Appendix 1/17 and the Contractor shall take into account the information contained in contract specific Appendix 1/18. The traffic safety and management measures shall be in accordance with Chapter 8 of the Traffic Signs Manual. The Contractor shall inform the Overseeing Organisation of any details the Contractor has agreed with the police and/or the highway authority.
- 2** (05/14) All traffic safety and management operations shall be undertaken by a supplier registered to National Highway Sector Scheme 12 with a scope of registration that includes reference to one or more of National Highways Sector Schemes 12A/B, 12C or 12D as appropriate to the works.
- 3** (05/14) The Contractor shall, unless otherwise stated in contract specific Appendix 1/17, after consultation with the police and highway authorities concerned, prepare and submit traffic safety and management proposals within the timescale described in contract specific Appendix 1/17 to the Overseeing Organisation. These shall show the proposed traffic safety and management measures including provision of safety zones. If stated in Appendix 1/17, the proposals shall include the provision of running lanes for the use of emergency vehicles within the site. The Contractor shall make such changes to his proposals as may be necessary to meet the requirements of the Contract. Thereafter the Contractor shall furnish and update such details and information as may be necessitated by the works.
- 4** (05/14) If stated in contract specific Appendix 1/17, the Contractor shall undertake the highway maintenance functions described therein and to the extent there described, on the lengths of highway there specified, until the issue of the appropriate certificate of completion.
- 5** (05/14) Traffic signs shall comply with the appropriate Clauses in Series 1200 of the specification.
- 6** (05/14) Where a temporary speed limit at road works has been imposed and the works have been temporarily terminated, with the removal of traffic management measures, the Contractor shall ensure that the temporary speed limit signs are covered or taken down for the duration of the cessation of the works. Where the temporary speed limit signs are covered, the covering material shall prevent the sign being visible through the cover in natural light and under vehicle headlamp or street lamp illumination at night, be non light reflective and securely fastened.
- 7** (05/14) Where the Contract provides that the Contractor shall not erect, maintain or reposition traffic signs, the Contractor shall not change in any manner the permanent or temporary traffic signs without instruction from the Overseeing Organisation and shall give such notice as is stated in contract specific Appendix 1/17 to indicate when signs should be moved compatible with the progress of the works.
- 8** (05/14) All traffic safety and management measures necessitated by the works shall be fully operational before the Contractor commences any work, which affects the public highway or the use of it.
- 9** (05/14) Any area of highway which has been closed because of the works shall not be re-opened to traffic until all appropriate traffic safety and management measures have been completed and the highway is in a suitable condition for public use.
- 10** (05/14) Where work is carried out on, or adjacent to a highway open to traffic the Contractor shall ensure that vehicles and mobile plant under his control operating frequently or regularly on or adjacent to that highway in the execution of the works shall be conspicuous and comply with Section O5 General Vehicle Issues of Chapter 8, Part 2 Operations, of the Traffic Signs Manual.
- 11** (05/14) Where required in contract specific Appendix 1/17 or where required for the execution of the works the Contractor shall provide temporary lighting in accordance with Clause 1405.
- 12** (05/14) Where required in contract specific Appendix 1/17 or where required for the execution of the works the Contractor shall provide Temporary Emergency Telephones in accordance with Clause 1529.

13 (05/14) The Contractor shall provide and suitably sign points of entry to and exit from the site, for vehicles and plant engaged on the works. The Contractor shall ensure that when any vehicle or item of plant is reversing within the site on or adjacent to a highway open to traffic, it does so only under the supervision of a person designated for the purpose of regulating traffic within the site who shall be readily distinguishable from the remainder of the work force.

14 (05/14) If an accident or breakdown occurs on a carriageway or hard shoulder open to traffic within or in the vicinity of the site, the Contractor and operators of recovery vehicles provided in accordance with Clause 120 shall act as requested by police officers or traffic officers acting under their statutory powers.

15 (05/14) Where work is carried out on or adjacent to a highway open to traffic the Contractor shall ensure that the workforce and the site supervisory staff at all times wear high visibility warning clothing complying with BS EN 471. Clothing shall be to Table 1, Class 2 or 3 (Class 3 on motorways or other high speed roads) and shall comply with the requirements of para 4.2.3(b). In addition on motorways or other high speed roads full length sleeves meeting the requirements of para 4.2.4 shall be provided for coveralls and jackets. The colour of the clothing shall normally be “fluorescent yellow” or “fluorescent orange-red” complying with Table 2. The retroreflective material used shall be to Level 1 as defined at Table 5. Clothing complying with other specifications may be used in accordance with Clause 104 where they offer equivalent levels of performance in so far as the specification given is not inconsistent with the basic health and safety requirements set out in Annex 2 of the Personal Protective Equipment Directive (89/686/EEC). The Contractor shall ensure that the person in charge of the workforce is readily distinguishable from the person designated in sub-Clause 16 of this Clause and from the remainder of the workforce.

(05/14) **Traffic Safety and Control Officer**

16 (05/14) Unless otherwise stated in contract specific Appendix 1/17, the Contractor shall appoint a suitably qualified Traffic Safety and Control Officer (TSCO) who shall make all arrangements necessary for traffic safety and control including the provision and operation of breakdown recovery vehicles.

17 (05/14) The TSCO shall be experienced in the control of temporary traffic management operations and shall possess a National Highway Sector Scheme (NHSS) 12 Traffic Safety and Control Officer (2009) Registration Card.

18 (05/14) The Contractor shall provide the Overseeing Organisation with the names and contact details of the TSCO and any nominated deputies. Unless otherwise described in contract specific Appendix 1/17 the TSCO or a nominated deputy shall be on the Site at all times when traffic management is in operation and shall be readily available to deal with matters related to traffic safety and control including breakdown recovery vehicles.

19 (05/14) Without prejudice to sub-Clause 16 above, whilst within the limits of a temporary traffic management scheme, the TSCO shall manage any traffic management related requests given by a Police Officer or Traffic Officer. The TSCO shall liaise with the Overseeing Organisation’s traffic management control centres and other parties detailed in contract specific Appendix 1/17 on traffic management related matters including requests and instructions.

20 (05/14) Unless otherwise stated in contract specific Appendix 1/17 the responsibilities of the Traffic Safety and Control Officer and of his nominated deputies shall include the following:

- (a) Monitoring, with the assistance of sufficient mobile personnel and of sufficient other suitable and appropriate aids, the flow of traffic within the area of the site;
- (b) Ensuring that, within 5 minutes of notification of the occurrence of an incident resulting in stationary vehicle(s) on a highway open to the public, the incident is reported to the vehicle recovery service when vehicle recovery is in operation;
- (c) Recording and logging all incidents and all movements of recovery vehicles and, when called, all movements of the emergency services.

Where an “incident” is a shed load, vehicle breakdown, vehicle abandonment or traffic accident, whether or not the latter involves personal injury.

(05/14) **Statutory Orders, Temporary Traffic Regulation Orders**

21 (05/14) Unless otherwise detailed in contract specific Appendix 1/17 the Contractor shall submit a formal application to the appropriate authority for any temporary traffic regulation orders or other statutory orders required to be made or notices required to be published in connection with his traffic safety and management proposals. The Contractor shall comply with any procedural requirements given in contract specific Appendix 1/17.

22 (05/14) The Contractor shall allow for the notice periods required for obtaining and implementation of any temporary traffic regulation orders or other statutory orders in the programme of works. Where applications are to be made to the Overseeing Organisation the notice periods required shall be as given in contract specific Appendix 1/17.

23 (05/14) Where applications for temporary traffic regulation orders or other statutory orders are made by the Overseeing Organisation prior to the commencement of the works the Contractor shall provide all necessary traffic safety and management measures to implement the orders.

(05/14) **Crossovers**

24 (05/14) The Contractor shall design, construct and maintain, or if contract specific Appendix 1/17 so provides, shall construct and maintain, the central reserve crossovers described in contract specific Appendix 1/17 in accordance with the information stated therein. Unless otherwise described in contract specific Appendix 1/17, the Contractor shall remove those crossovers when no longer required and reinstate the central reserve to its original condition.

25 (05/14) If the Contractor proposes to construct central reserve crossovers as part of his traffic safety and management proposals he shall submit such proposals to the Overseeing Organisation in advance, in accordance with the requirements of sub-Clause 3 of this Clause.

(05/14) **Driver Information Signs**

26 (05/14) Where required in contract specific Appendix 1/17, the Contractor shall provide, erect, maintain and remove Driver Information Signs to diagrams 7004 and 7005 of the Traffic Signs Regulations and General Directions in accordance with sub-Clause 27 of this Clause and Chapter 8 of the Traffic Signs Manual. Information signs shall only be displayed within roadworks where they accurately reflect the work being undertaken or the reason for the inactivity.

27 (05/14) Legends shall be selected as appropriate from those permitted and listed in Chapter 8 of the Traffic Signs Manual unless stated otherwise in contract specific Appendix 1/17.

Sign 7005 shall indicate how long delays are possible. This date shall be updated by the Contractor, if necessary, until the restrictions are removed.

Sign 7004 shall be located within roadworks when part of the road is coned off, and the reason for this is not apparent from the carriageway, for any period exceeding 30 minutes, or one hour if road capacity is maintained. However, signs located within roadworks shall only be used where they can be located at least 50 metres beyond the downstream end of a taper and in a position which does not prejudice traffic safety.

If needed, Information Signs shall be sited at the beginning and at one kilometre intervals through the works. They shall not be placed where they may distract drivers negotiating traffic management provisions.

Signs shall either be sited for the duration of the works where it is safe and appropriate to do so or provision made to enable their use at short notice.

The Contractor shall provide adequate storage facilities clear of any safety zone. Storage within the central reserve or in front of safety barriers shall not be permitted.

(05/14) **Temporary Automatic Speed Camera System (TASCAR)**

28 (05/14) Where required in contract specific Appendix 1/17, a Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roadworks (TASCAR) shall be provided in accordance with the following requirements and those given in contract specific Appendix 1/27. The type of system and the number of speed monitoring sites and their locations shall be as specified in contract specific Appendix 1/27.

29 (05/14) The Contractor shall be responsible for the design, installation, commissioning, maintenance and removal of the system. This shall be undertaken using a suitably qualified Enforcement Equipment Supplier (EES). The EES shall make all arrangements necessary for the provision and operation of the TASCAR system. The Contractor shall supply evidence of the EES qualifications to the Overseeing Organisation prior to the commencement of the works.

The equipment shall meet the requirements of the Speedmeter Handbook and have Home Office Type Approval (HOTA) for the purpose required. The installation, commissioning, operation and maintenance of the system shall be undertaken in accordance with the requirements of the equipment's HOTA.

All equipment and training necessary to bring the sites into operation shall be provided and installed by the Contractor, this shall include, but not be limited to, all equipment, poles, housings and power supplies. The quantities of equipment required shall be as specified in contract specific Appendix 1/27. The Contractor shall ensure that the System is completely installed and fully operational from the time defined in contract specific Appendix 1/27 and that it remains in operation for the duration of the Contract unless otherwise specified in Appendix 1/27 and is removed on completion of the works.

The Contractor shall commission any necessary third party certification of the system and shall supply copies of the certification to the Overseeing Organisation.

30 (05/14) Unless otherwise required by the equipment's HOTA requirements, the equipment and ancillary items shall be compatible with all permanent and temporary installations associated with the works.

31 (05/14) The Contractor shall liaise with the relevant Enforcement Authority (EA) to determine how the system for the scheme shall integrate with the EA's existing facilities and operations. The Contractor shall comply with the Overseeing Organisation's procedures with respect to the liaison as described in contract specific Appendix 1/27. The Contractor shall submit details of the system to the Overseeing Organisation four weeks in advance of its operation for approval.

32 (05/14) The TASCAR equipment shall consist of a HOTA detection and measuring device, and ancillary equipment that allows day and night operation. If a trailer mounted system is supplied it shall be fitted with retractable de-mountable wheels.

33 (05/14) The Contractor shall arrange for the provision of a mains electrical supply of adequate power capacity to all components of the system. Alternatively, he may provide an equivalent supply from a local electrical generator or generators which shall be used only for this purpose. Such generator(s) shall have electric start mechanisms and be adequately regulated as to voltage and frequency to suit the accuracy requirements of the equipment provided for TASCAR and be capable of running constantly for 48 hours without refuelling at an output of not less than that required by the equipment at 0.8 power factor, or equivalent output. All generators shall be housed in vandal-proof containers and be securely locked. One set of keys shall be provided to the EA. Generators may only be used when they will not adversely affect the equipment/systems operations or the equipments HOTA requirements.

34 (05/14) The housing and poles for the TASCAR equipment must be as required for the specific HOTA for that equipment, and shall include security-locking mechanisms to prevent unauthorised access or operation.

35 (05/14) The Contractor shall install the poles/masts/cabinets or trailers required at each individual speed monitoring location, any installation shall be within highway limits.

36 At completion of the works the Contractor shall remove all TASCAR equipment and reinstate ground as described in contract specific Appendix 1/27.

37 (05/14) The Contractor shall ensure that suitable access arrangements are in place at each speed monitoring site including vehicle hard standings, walkways and steps where necessary to allow for general maintenance and servicing of the camera unit. Where supplied, suitable provisions shall be made for installing and recovering trailers.

38 (05/14) The Contractor shall ensure that the camera poles are located in accordance with road restraint systems requirements detailed in TD 19/06.

39 (05/14) The Contractor shall ensure that the site reference number is clearly indicated on both the installation and on the road surface within the field of view of the camera(s). Site reference numbers should be agreed with the EA.

- 40** (05/14) Any ducting provision, loop or piezo installation shall be carried out in accordance with the relevant clauses of Series 500 and 1200 of the Specification.
- 41** (05/14) The Contractor shall be responsible for the commissioning of the TASCAR as a whole, including secondary and in station checks. The Contractor shall, where required as part of the HOTA, provide a secondary method of confirming the speed calculation.
- 42** (05/14) The commissioning of the TASCAR shall be carried out in the presence of, and for acceptance by, the EA and shall be in accordance with any particular requirements in contract specific Appendix 1/27, the commissioning shall only be complete when each site, and where applicable, the overall system is accepted as being operational by the EA. The Contractor shall give notice to the Overseeing Organisation of his intention to carry out this work, unless otherwise stated in contract specific Appendix 1/27 this shall be not less than four days in advance of the intended time for the commissioning. An Evidential Trail (ET) which meets all the requirements as stated in contract specific Appendix 1/27 including commissioning certificates shall be provided by the Contractor to the Overseeing Organisation and shall include one pair of photographs or video images for acceptance by the EA as part of the commissioning and acceptance procedure of the system. The Contractor shall ensure that all relevant requirements of the Evidential Trails for Enforcement Systems documents are achieved.
- 43** (05/14) Cameras sited on the nearside of the carriageway shall be installed and commissioned prior to 24 hour lane closures being put into operation. Cameras sited in the central reserve shall be installed and commissioned not later than 12 hours after installation of the contraflow. Both sets of cameras shall then remain in continuous operation until a completion certificate has been issued for the whole of the works. At the end of the period of operation required under the Contract, the equipment shall remain the property of the Contractor.
- 44** (05/14) Following commissioning the TASCAR Operator will be the EA. The Contractor shall provide assistance to the EA for the repositioning of the speed monitoring equipment between the housings, or switching of detection equipment between zones and servicing as and when requested by the EA. Any repositioning during the works that requires that the equipment parameters are changed must be supported by the issue of a calibration certificate by the Contractor to the EA.
- 45** (05/14) All evidential media from speed monitoring sites will remain the property of the EA. The scheme ET documents shall be kept up to date by the Contractor.
- 46** (05/14) The Contractor shall provide and install all necessary speed limit signing in connection with the operation of the TASCAR system, any signing used shall either be prescribed or where necessary authorised. The Contractor shall provide the EA, through the Overseeing Organisation, with a two hourly log showing the locations of all the speed limit and speed limit repeater signs relative to existing marker posts. A repeater sign shall be positioned such that one is visible in each photograph. Where there is a 24-hour CCTV system installed that is monitoring ALL speed limit and repeater signs this log can be compiled remotely.
- 47** (05/14) Where digital HOTA equipment is used, the Contractor will provide either the communications service to transfer data and control the device or appropriate media such as WORM (Write Once Read Many) drives, CDs, memory sticks as appropriate, and in quantities required by the EA for the use of the equipment for the duration of the works. If HOTA 35mm wet film systems are used, the film will be supplied to the EA by the Contractor, typically at the rate of one film per day per live camera in operation, plus ten which shall be supplied at the commencement of the works.

118 (05/14) **Temporary Highways for Traffic**

- 1** (05/14) The provisions of this Clause apply to the construction of temporary highways for use by traffic, they do not apply to any temporary access or accommodation works which the Contractor may construct for his sole use in the execution of the works or to existing highways used for diverted traffic. Requirements for existing highways subject to temporary closure and associated diversion route signing are given in Clause 117.
- 2** (05/14) Each temporary highway, or part of highway, for traffic shall be made operative in advance of any interference with the existing arrangements and shall be maintained to the standard stated in contract specific Appendix 1/18 or if no standard is so stated, in accordance with sub-Clause 6 of this Clause.

(05/14) Temporary Highways for Traffic Specified by the Overseeing Organisation

3 (05/14) The Contractor shall construct, maintain, remove and reinstate each temporary highway, or part of highway, for traffic specified in contract specific Appendix 1/18 in accordance with the details stated therein. Where stated in contract specific Appendix 1/18, the Contractor shall design each temporary highway, or part of highway, for traffic, including any temporary structures, in accordance with the details stated therein. Unless otherwise described in contract specific Appendix 1/18, the Contractor shall remove each temporary highway for traffic as soon as it is no longer required. Unless otherwise stated in contract specific Appendix 1/18 the Contractor shall reinstate the ground over which the temporary highway is provided to its original condition.

(05/14) Temporary Highways for Traffic Proposed by the Contractor

4 (05/14) If the Contractor proposes to construct a temporary highway, or part of highway, for traffic as part of his intended traffic safety and management measures, he shall submit an outline of his proposals to the highway authority for their agreement and consultation with the police in accordance with the requirements of Clause 117.

5 (05/14) The Contractor shall submit a formal application to the appropriate authority for any statutory orders required to be made or notices required to be published in connection with the temporary highway or part of highway. Details of such applications shall be agreed with the Overseeing Organisation prior to their submission. The Contractor shall comply with procedural requirements given in contract specific Appendix 1/18.

The Contractor shall allow for the notice periods required for obtaining and implementation of any statutory orders in the programme of works. Where applications are to be made to the Overseeing Organisation the notice periods required shall be as given in contract specific Appendix 1/18.

6 (05/14) The standard and siting of every temporary highway, or part of highway, for traffic shall be suitable in all respects for the class or classes of traffic using it, and its width shall be not less than that of the existing way except where indicated in contract specific Appendix 1/18.

7 (05/14) The Contractor shall inform the Overseeing Organisation of any details agreed with the highway authority for traffic signs, lighting, construction, maintenance, removal and reinstatement of any temporary highway, or part of highway, for traffic proposed by the Contractor.

119 (05/14) Routeing of Vehicles

1 (05/14) The Contractor shall comply with the requirements described in contract specific Appendix 1/19 in connection with routeing of site and delivery vehicles.

120 (05/14) Recovery Vehicles and Operation for Breakdowns

(05/14) General

1 (05/14) When required by contract specific Appendix 1/20 the Contractor shall provide and operate a vehicle breakdown, recovery and removal service, including storage. This service shall recover broken down or accident damaged vehicles or vehicles that have been abandoned on the highway within the limits of the site. The service shall be provided in accordance with the requirements of this Clause and contract specific Appendix 1/20, it shall also comply with contract specific Appendix 1/17.

2 (05/14) Vehicle recovery operations shall be carried out by organisations registered to National Highway Sector Scheme 17/17B for Vehicle Recovery at Highway Construction Sites (17) and Vehicle Recovery and Removal on Control Roads (17B) as listed in Appendix A.

3 (05/14) The Contractor shall ensure that, once a vehicle recovery organisation has been appointed, changes shall only be made with the agreement of the Overseeing Organisation.

4 (05/14) When planning and undertaking any recovery work the Contractor shall comply with the requirements of the Sector Scheme at all times, if applicable.

5 (05/14) The Contractor shall ensure that recovery vehicles are operated in accordance with all applicable statutory requirements and the recommendations and requirements contained in the following, unless superseded by more specific requirements of this Clause or the Sector Scheme:

- (i) “Code of Practice on Health and Safety for Vehicle Recovery Operators” published by the Association of Vehicle Recovery Operators;
- (ii) “PAS 43 Safe Working of Vehicle Breakdown and Recovery Operators - Management System Specification” published by the British Standards Institution;
- (iii) BS 7121-12 - Safe Use of Cranes - Recovery Vehicles and Equipment - Code of Practice; and
- (iv) BS 7901 - Specification for recovery vehicles and vehicle recovery equipment.

6 (05/14) The Contractor shall ensure that, suitable insurances to cover all claims arising out of the operation of the recovery service, are taken out and maintained in force for the duration of the works. The Contractor shall submit copies of relevant certificates to the Overseeing Organisation not less than 14 days prior to the commencement of recovery operations and within 14 days of policy renewal thereafter.

(05/14) **Recovery Personnel**

7 (05/14) The Contractor shall ensure that all recovery operations are carried out under the control of a competent Recovery Controller. The Recovery Controller shall be an employee of the Vehicle Recovery Organisation and may be either part of the recovery vehicle crew or a separate trained recovery technician. The Recovery Controller shall be responsible for the planning and implementation of a safe and efficient system of work for recovery of the casualty vehicle, unless subject to specific requests from police officers or uniformed traffic officers acting under their statutory powers.

8 (05/14) Without prejudice to sub-Clause 7 above, whilst within the limits of a temporary traffic management scheme, the Recovery Controller shall comply with any traffic management related instructions given by the Traffic Safety and Control Officer or his deputy in accordance with sub-Clause 117.19. Elsewhere the Recovery Controller shall comply with the traffic management related instructions of the Overseeing Organisation’s Regional Control Centre.

9 (05/14) The Contractor shall ensure that vehicle recovery technicians hold a relevant training certificate, which meets the requirements of the Sector Scheme. Such certificate shall certify successful completion of a course on breakdown recovery applicable to the type of breakdown recovery vehicle(s) being operated. The Sector Scheme requires the certificate to be in the form of an identity card containing such information and a photograph of the technician. A copy of each certificate shall be provided to the Overseeing Organisation not less than 14 days before the commencement of recovery operations.

10 (05/14) The Contractor shall check the validity of the certificates/cards on a regular basis, including checking that the photograph matches with the card holder’s image, at intervals not exceeding 6 months and report his findings to the Overseeing Organisation.

11 (05/14) The Contractor shall ensure by appropriate checks on a regular basis, that all operatives involved with vehicle recovery are suitable to work with ‘vulnerable’ motorists. The Contractor shall report his findings to the Overseeing Organisation not less than 14 days prior to the commencement of recovery operations and at regular intervals thereafter not exceeding 12 months.

12 (05/14) The Contractor shall ensure by appropriate checks that each technician has a valid driving licence covering the class of vehicle and trailer being driven. The Contractor shall submit copies of all driving licences for operatives, to the Overseeing Organisation, not less than 14 days prior to commencement of recovery operations. The Contractor shall carry out regular 6 monthly checks on driving licences and report his findings to the Overseeing Organisation.

13 (05/14) The Contractor shall ensure that all technicians involved with vehicle recovery display an identity card, which incorporates the name of the Contractor, the name of the Vehicle Recovery Organisation and the name and a photograph of the holder. This card must be available for inspection at all times and a copy must be submitted to the Overseeing Organisation prior to the commencement of the operative working.

14 (05/14) In addition to any special provisions identified in the Contractor’s health and safety risk assessment for recovery operations, the Contractor shall ensure that each recovery technician is provided with the following personal protective equipment, as a minimum:

- (i) a high visibility reflective safety jacket which prominently displays the word “RECOVERY” on the front and back. It shall conform to BS EN 471 and the specific requirements of sub-Clause 117.18;

- (ii) safety helmet to BS EN 397 and chin strap where considered appropriate;
- (iii) safety boots with steel reinforced toecaps and midsole conforming to BS EN ISO 20345;
- (iv) protective goggles conforming to BS EN 166; and
- (v) protective gloves conforming to BS EN 388.

The Contractor may upgrade the specification of personal protective equipment at their own cost.

15 (05/14) The Contractor shall ensure that all Personal Protective Equipment (PPE) is stored and maintained in good and clean condition. The Contractor shall ensure that high visibility safety wear is replaced or cleaned, as necessary, throughout the duration of the Contract, to maintain its conspicuity.

16 (05/14) The Contractor shall ensure that the operatives shall be familiar with their vehicles and the equipment carried on board, before commencing recovery operations. Where appropriate, they shall be trained to use any ancillary equipment carried on the vehicle, including fire extinguishers and first aid equipment for personal use.

(05/14) **Recovery Operations**

17 (05/14) Prior to the commencement of the works, the Contractor shall consult with the local representative of the Chief Officer of Police and/or the Overseeing Organisation's Regional Control Centre to establish procedures, including contact telephone numbers, for:

- (i) clearing shed loads; and
- (ii) vehicle recovery which may be beyond the capabilities of the free recovery service.

18 (05/14) The recovery service is to be provided between the 'Roadworks Ahead - 2 miles' sign and the 'Road Works End' sign unless otherwise stated in Sheet 1 of contract specific Appendix 1/20.

19 (05/14) The Contractor shall ensure that the recovery vehicles are only used to remove vehicles that are stationary due to mechanical breakdown, accident damage or abandoned on the highway, within the limits of the service.

20 (05/14) The Contractor shall ensure that the recovery vehicle operatives comply with the provisions contained within Sheet 1 of contract specific Appendix 1/20 in connection with this service, subject to specific requests from police officers and uniformed traffic officers acting under their statutory powers.

21 (05/14) The recovery vehicles shall be stationed at the points either specified in Sheet 1 of contract specific Appendix 1/20 or otherwise agreed with the Overseeing Organisation, subject to specific requests from police officers and uniformed traffic officers acting under their statutory powers.

22 (05/14) The Contractor shall provide the facilities required by Sheet 1 of contract specific Appendix 1/20 and shall ensure that broken-down, accident damaged or abandoned vehicles are not removed by the recovery vehicles other than to the location(s) described in Sheet 1 of contract specific Appendix 1/20 unless some other location has first been agreed with a police officer or uniformed traffic officer acting under their statutory powers.

23 (05/14) The Contractor shall ensure that, after depositing a broken-down, accident damaged or abandoned vehicle at one of the designated locations, the recovery vehicle returns immediately to its station described in Sheet 1 of contract specific Appendix 1/20. The Contractor shall ensure that recovery vehicle operatives at no time attempt to repair vehicles that have broken down.

24 (05/14) The Contractor shall make no charge for this recovery service to the owner or driver of the recovered vehicle.

25 (05/14) The Contractor shall ensure that the recovery vehicle operatives issue leaflets, as described in Sheet 3 of contract specific Appendix 1/20, before the tow commences, to the drivers of vehicles requiring assistance.

26 (05/14) The Contractor shall submit weekly to the Overseeing Organisation:

- (i) duplicate completed information sheets logging the assistance given by the recovery vehicles; and
- (ii) duplicate completed log sheets which record daily checks made on each recovery vehicle.

These shall be on printed forms provided by the Contractor in accordance with the samples given in Sheets 2 to 4 of contract specific Appendix 1/20.

(05/14) **Communications systems**

27 (05/14) In addition to the requirements of contract specific Appendix 1/1 and Appendix 1/3 and this sub-Clause, the Contractor shall provide and maintain dedicated equipment for communication with the Vehicle Recovery Organisation, for the duration specified in the Contract, as described in Sheet 1 of contract specific Appendix 1/20.

28 (05/14) Unless otherwise described in Sheet 1 of contract specific Appendix 1/120, the communication system shall also include the following:

- (i) a secondary ‘back up’ communications system between the recovery base station(s) and all recovery vehicles; and
- (ii) an emergency telephone and line at the recovery base station(s) for the sole use of emergency calls. Where possible, the link between the recovery base station(s) and the police shall be by direct land line.

29 (05/14) The communication system shall be fully established, tested and operational before the Contractor commences the works.

30 (05/14) The Contractor shall be responsible for providing all associated equipment and payment of fees to operate the system.

(05/14) **Requirements for Recovery Equipment**

31 (05/14) The Contractor shall ensure that all recovery vehicles are maintained in such condition that the vehicles conform to appropriate current legislation (including, but not limited to, the Road Vehicle (Construction and Use) Regulations, Road Vehicle Lighting Regulations, Road Transport Act and Road Traffic Act) at all times.

32 (05/14) All recovery vehicles shall have either a current goods vehicle test certificate or MOT certificate or other certificate of roadworthiness issued by a Vehicle and Operator Services Agency (VOSA) approved testing station, and also weigh bridge certificate stating individual axle and gross vehicle loadings. Copies of certificates shall be provided to the Overseeing Organisation not less than 14 days prior to the commencement of recovery operations using the vehicle concerned. Certificates shall be renewed annually on the due anniversary of the inspection and new certificates shall be provided to the Overseeing Organisation immediately following the inspection.

33 (05/14) The Contractor shall make appropriate arrangements for any inspections required under the Sector Scheme to be carried out in a place of safety, either on or off site for the duration of the contract.

34 (05/14) Recovery vehicles shall not be replaced without the prior agreement of the Overseeing Organisation.

35 (05/14) Photographs of each vehicle, clearly showing vehicle registration number, shall be provided to the Overseeing Organisation not less than 14 days prior to the commencement of recovery operations using the vehicle concerned. Any replacement vehicle shall normally be of the same vehicle class and category, shall conform to the requirements of this Clause and shall have been inspected in accordance with any additional requirements of the Sector Scheme, if applicable.

36 (05/14) Recovery vehicles shall prominently display the name and telephone number of the Vehicle Recovery Organisation, and be of conspicuous colour (e.g., white, yellow or orange) and marking to emphasise the length and outline of the vehicle. Suitable retroreflective markings not less than 200 mm wide shall be applied along the full length of the sides of the vehicle. Colours and usage of retroreflective markings must comply with the Road Vehicle Lighting Regulations. High visibility chevron markings comprising of alternate strips of red retroreflective material and yellow non-retroreflective material, of not less than 150mm width each, inclined at 45°-60° to the horizontal, shall be applied to the rear of the vehicle. The chevrons shall cover as much of the rear-facing portion of the vehicle as possible without obscuring windows, vehicle lighting or registration plates. Red retroreflective tape shall be applied to all rear facing edges of open doors and equipment lockers. The vehicle and all retroreflective markings shall be maintained in good and clean condition.

37 (05/14) Each recovery vehicle shall display a sign with the legend “FREE RECOVERY TO END OF ROAD WORKS”. This sign shall be securely mounted on the recovery vehicle in such position as to be clearly visible from the driving seat of a car at a distance of 3 m from the rear of the recovery vehicle. This sign shall at all times be clean and legible and shall not be obstructed.

38 (05/14) A lighting board shall be secured to the rear of the vehicle being towed. The board shall be clearly visible to other drivers of vehicles approaching from the rear. It shall be maintained in good working order and shall be cleaned after use to maintain its conspicuity.

39 (05/14) Recovery vehicles shall be equipped with sufficient chains, wire rope and shackles for the safe recovery of any fully laden vehicle within the appropriate class of recovery (e.g., heavy or light). All chains, wire ropes, tow poles and shackles shall comply with relevant British standards and be fully certified by an independent competent person to comply with all current legislation. All lifting equipment shall be accompanied by a valid proof loading certificate, be suitably marked with the SWL and be free from snags, excess stretching and wear. Copies of all certificates shall be supplied to the Overseeing Organisation not less than 14 days prior to the commencement of recovery operations using the vehicle concerned.

40 (05/14) All equipment shall be suitably marked so as to be identifiable and provide an audit trail for inspection purposes.

41 (05/14) All walkways at height on the recovery vehicle shall be fitted with hand rails and non slip tread systems. Access steps shall be provided on the non-trafficked passenger side of the vehicle. Equipment shall be stored on the passenger side of the vehicle, as far as is practicable.

42 (05/14) Where insufficient seating capacity is available in the recovery vehicle for transport of passengers, the Contractor shall ensure that suitable arrangements are made to transport passengers to the setting down location.

43 (05/14) When carrying child passengers, the Contractor shall ensure that a child restraint seat appropriate to the age of the child is used.

44 (05/14) The Contractor shall ensure that each light recovery vehicle has a crew including at least one trained technician and that each heavy recovery vehicle has a crew including at least two trained technicians.

45 (05/14) Prior to commencement of the recovery service, the Contractor shall provide method statements for Heavy and Light Recovery to be agreed by the Overseeing Organisation. The method statement shall include a detailed list of the equipment carried on each Recovery vehicle. The list may be used for audit by independent third party as required by the Overseeing Organisation.

(05/14) **Heavy recovery vehicles**

46 (05/14) A heavy recovery vehicle shall comply with the following as a minimum:

- (i) It shall be a recovery vehicle with not less than three axles, capable of removing a loaded vehicle of 80 tons total train weight (i.e., Category 2 Special Types in accordance with Road Traffic Act Section 44 and Road Vehicles (Authorisation of Special Types)(General) Order). It must be able to maintain a minimum road speed of 20 mph on a level road when fully loaded and pull away or hold back the complete train weight when towing a maximum weight vehicle either up or downhill without wheel slip or loss of traction. Axle loadings shall be within permissible legal loadings for the vehicle at all times.
- (ii) It shall be fitted with two power winches of not less than 12.5 tons each on bottom layer, safeguarded by pressure relief devices as appropriate. Each winch shall have no less than 30 m of cable. All equipment shall be power-operated with SWL indicated on both the winch and fixings. Operating levers/buttons shall be clearly marked for operational use with key functions duplicated on a remote control unit. Emergency stop controls shall be provided.
- (iii) Without prejudice to sub-Clause 39 of this Clause, it shall carry the following recovery equipment as a minimum:
 - (a) 1 no. full set of forks for use with underlift.
 - (b) 1 no. tool kit including both $\frac{3}{4}$ and $\frac{1}{2}$ inch socket sets with AF/Metric sized sockets.
 - (c) 2 no. 12 tonne bottle jacks.
 - (d) 1 no. 24/12 volt engine starter pack.
 - (e) 1 no. crowbar.
 - (f) 1 no. sledge hammer - 7 lbs minimum.
 - (g) All lines and fittings necessary for connection of the air braking system on the casualty vehicle to the air braking system on the recovery vehicle.
 - (h) 2 no. wheel chocks suitable for use with an HGV.

- (i) 4 no. suitable lengths of wood block skidding.
 - (j) 8 no. screw pin bow shackles, minimum SWL 30 tonnes.
 - (k) 6 no. 16mm diameter G80 chains with grab hooks, 4 m minimum length.
 - (l) 2 no. 16 mm diameter G80 chains with grab hooks, 2 m minimum length.
 - (m) 4 no. 12 mm diameter G80 chains with grab hooks, 3 m minimum length.
 - (n) 4 no. 7 mm diameter G80 chains with grab hooks, 3 m minimum length.
 - (o) 2 no. 50 mm ratchet straps, 2m minimum length with “soft” eyes.
 - (p) 2 no. 12 tonne SWL nylon straps with sewn eyes, no less than 8m long and 300mm wide.
 - (q) 2 no. snatch blocks per winch, each with a SWL of twice that of the winch. Snatch block sheaves shall have a minimum diameter of 10 times the diameter of the winch cable.
- (iv) It shall carry and use, when necessary, equipment designed and manufactured for the purpose of locking the steering of the broken-down or accident-damaged vehicle in order to tow it safely in a reverse direction.
- (v) It shall carry equipment to enable the recovery crew to remove the drive line or shafts of the broken-down or accident-damaged vehicle.
- (vi) It shall have seating for not less than two recovery operatives. The Contractor shall make suitable arrangements for the safe transport of passengers from the recovered vehicle to the setting down location.
- (vii) It shall be fitted with and where appropriate, operatives trained to use, the following ancillary equipment, as a minimum:
- (a) 1 no. full cab width amber warning lightbar (minimum 4 no. active light sources) visible through 360 degrees from road level and complying with the Road Vehicle Lighting Regulations and the United Nations Economic Commission for Europe (UNECE) Regulation 65 on Special Warning Lamps. Vehicle electrics must be capable of running the lightbar for a minimum of 15 minutes with the ignition key removed.
 - (b) 2 no. fully adjustable work lights to illuminate both the sides and rear of the vehicle.
 - (c) 2 no. fire extinguishers (9 litre (nett) aqueous film forming foam in accordance with ADR) marked with date of last inspection/test.
 - (d) 1 no. HSE approved 1-10 person first aid kit, marked with expiry date.
 - (e) 6 no. traffic cones minimum 450 mm height.
 - (f) 1 no. 900 mm diameter “Keep Right Arrow” traffic sign, complying with diagram 610 of the current Traffic Signs Regulations and General Directions.
 - (g) 1 no. rear lighting board incorporating a duplicate of the recovery vehicle registration plate and ‘On Tow’ legend in lettering of not less than 70 mm on conspicuously coloured background to conform with the size, colour and type illustrated in the Road Vehicles Lighting Regulations. The board shall be fitted with lights, reflectors and indicators and sufficient cable to reach the rear of any vehicle recovered.
 - (h) 1 no. ADR (HAZCHEM) chart.
 - (i) 1 no. spillage containment kit including oil/diesel absorbent granules (minimum 25 kg) in sealed container.
 - (j) 1 no. intrinsically safe battery operated torch with spare batteries.
 - (k) 1 no. broom and shovel.

The number of the required heavy recovery vehicles shall be as stated in Sheet 1 of contract specific Appendix 1/20.

(05/14) **Light Recovery Vehicle**

47 (05/14) A light recovery vehicle shall comply with the following as a minimum:

- (i) It shall be capable of removing, by means of a slide bed and/or underlift, at least one vehicle weighing 3500 kg (including a vehicle with permanent four wheel drive) and shall be fitted with a suitable towing hitch for the safe recovery of all forms of trailers (including caravans, boat trailers and horse boxes etc). It must be able to maintain a minimum road speed of 20 mph on a level road when fully loaded and pull away or hold back the complete train weight when towing a maximum weight vehicle either up or downhill without wheel slip or loss of traction. Axle loadings shall be within permissible legal loadings for the vehicle at all times.
- (ii) It shall be fitted with at least one power winch of not less than 3.6 tonnes capacity on bottom layer, safeguarded by pressure relief devices as appropriate. The winch shall have no less than 30 m of cable. All equipment shall be power-operated with SWL indicated on both the winch and fixings. Operating levers/ buttons shall be clearly marked for operational use with key functions duplicated on a remote control unit. Emergency stop controls shall be provided.
- (iii) Slide bed vehicles shall have 1 tonne SWL lashing points fitted every half a metre on each side of the bed, the last being no more than 15 cm from the end of the bed. There shall be a return anchorage point of minimum 3600 kg SWL, fitted to or alongside the winch. Suitable anchorage points shall also be provided at points on the bed to enable side pulls to be performed.
- (iv) Without prejudice to sub-Clause 39 of this Clause, it shall carry the following recovery equipment as a minimum:
 - (a) 1 no. 3.5 tonne straight tow pole.
 - (b) 1 no. tool kit including both $\frac{3}{4}$ and $\frac{1}{2}$ inch socket sets with AF/Metric sized sockets.
 - (c) 1 no. 2 tonne minimum capacity trolley jack.
 - (d) 1 no. 12 volt engine starter pack.
 - (e) 1 no. crowbar.
 - (f) 1 no. wheel chock suitable for use with a light commercial size vehicle.
 - (g) 4 no. suitable lengths of wood block skidding.
 - (h) 2 no. 7.2 tonne SWL screw pin bow shackles.
 - (i) 2 no. 7 mm G80 chains, 3 m minimum length with grab hooks.
 - (j) 2 no. 2 tonnes SWL, 50 mm webbing straps, 2 m minimum length with "soft" eyes.
 - (k) 4 no. transporter straps, 4 m minimum length.
 - (l) 2 no. underlift frame straps.
 - (m) 1 no. snatch block per winch, each with a SWL of twice that of the winch.
 - (n) Snatch block sheaves shall have a minimum diameter of 10 times the diameter of the winch cable.
 - (o) 4 no. wheel skates.
- (v) When specified in Sheet 1 of contract specific Appendix 1/20, it shall be capable of recovering motor cycles using a damage free motorcycle lifting/recovery frame or dolly and/or lorry mounted crane as appropriate to the condition of the casualty motorcycle.
- (vi) It shall have seating capacity for up to five adult passengers (in addition to the recovery operatives) with access from the passenger side of the cab. The Contractor shall make suitable arrangements for the safe transport of additional passengers from the recovered vehicle to the setting down location. When carrying child passengers, the Contractor shall ensure that a child restraint seat appropriate to the age of the child is used.
- (vii) It shall be fitted with and where appropriate, operatives trained to use, the following ancillary equipment, as a minimum:

- (a) 1 no. full cab width amber warning lightbar (minimum 2 no. active light sources and 2 no. independent reflectors) fitted transversely, visible through 360 degrees from road level and complying with the Road Vehicle Lighting Regulations and Economic Commission for Europe (ECE) Regulation 65 on Special Warning Lamps. Vehicle electrics must be capable of running the lightbar for a minimum of 15 minutes with the ignition key removed.
- (b) 2 no. fully adjustable work lights to illuminate both the sides and rear of the vehicle.
- (c) 2 no. fire extinguishers (1 No. 6 kg (nett) dry powder; 1 No. 9 litre (nett) aqueous film forming foam) marked with date of last inspection/test.
- (d) 1 no. HSE approved 1-10 person first aid kit, marked with expiry date.
- (e) 6 no. traffic cones minimum 450 mm height.
- (f) (For underlifts) 1 no. rear lighting board incorporating a duplicate of the recovery vehicle registration plate and 'On Tow' legend in lettering of not less than 70 mm on conspicuously coloured background to conform with the size, colour and type illustrated in the Road Vehicles Lighting Regulations. The board shall be fitted with lights, reflectors and indicators and sufficient cable to reach the rear of any vehicle recovered.
- (g) 1 no. spillage containment kit including oil/diesel absorbent granules (minimum 25 kg) in sealed container.
- (h) 1 no. ADR (HAZCHEM) chart.
- (i) 1 no. intrinsically safe battery operated torch with spare batteries.
- (j) 1 no. broom and shovel.

(viii) It shall carry and use, when necessary, equipment designed and manufactured for the purpose of locking the steering of the broken-down or accident-damaged vehicle in order to tow in a reverse direction.

The number of the required light recovery vehicles shall be as stated in Sheet 1 of contract specific Appendix 1/20.

(05/14) **Impact Protection Vehicles**

48 (05/14) Where specified in Sheet 1 of contract specific Appendix 1/20, the Contractor shall provide dedicated Impact Protection Vehicles (IPVs) to protect recovery operations in the live carriageway.

49 (05/14) The Contractor shall ensure that IPVs comply with the requirements of Section O5 of Chapter 8 (Part 2 Operations) of the Traffic Signs Manual and that any non-prescribed traffic signs mounted on the vehicle meet the requirements of the Traffic Signs Regulations and General Directions, particularly with respect to authorisation and/or type approval.

50 (05/14) The Contractor shall ensure that IPV drivers hold a relevant training certificate which meets the requirements of the Sector Schemes 12A/B, 12C and 12D as detailed in Appendix A.

(05/14) **Accommodation**

51 (05/14) The contractor shall ensure that any accommodation (caravans or cabins) provided in connection with the recovery service, complies with all appropriate legislation including health, safety and welfare requirements.

52 (05/14) The Contractor shall ensure that any accommodation sited within the highway, is afforded appropriate protection from errant vehicles, is conspicuously coloured with retroreflective markings on the sides facing traffic and is prominently marked with the name of the Vehicle Recovery Organisation.

53 (05/14) Where the recovery service is located on the hardshoulder, the Contractor shall make arrangements for private vehicles to be parked off site and operatives transported to site by an appropriate vehicle complying with sub-Clause 117.10.

54 (05/14) Unless stated otherwise in Sheet 1 of contract specific Appendix 1/20, where it is proposed to construct or site temporary facilities for recovery services outside the highway boundary, the Contractor shall be responsible for planning permission, waste arrangements and any statutory charges or other costs associated with the facilities (e.g., ground rent).

121 (05/14) Tidal, Flowing and Standing Water

1 (05/14) The Contractor shall take measures and carry out any operation necessary for dealing with tidal, flowing or standing water within the site.

122 (05/14) Progress Photographs

1 (05/14) The Contractor shall arrange, as described in contract specific Appendix 1/22, to have record photographs of the works taken at the times and/or intervals stated in contract specific Appendix 1/22. The format of the photographs and the media used for submission to the Overseeing Organisation shall be as described in contract specific Appendix 1/22. Unless otherwise stated in contract specific Appendix 1/22 the photographs shall be taken by a professional photographer.

2 (05/14) All prints shall be marked on the reverse side with the date taken, identification reference number, and brief description of the work or features including chainage and direction of view.

3 (05/14) The copyright of all photographs shall be vested in the Employer and the photographs shall be delivered to the Overseeing Organisation within 1 week of the photographs being taken. The photographs shall not be used for any purpose whatsoever without the Overseeing Organisation's approval.

123 Not Used

124 (05/14) Health and Safety Restrictions, Precautions and Monitoring

1 (05/14) In addition to all other health and safety requirements the Contractor shall implement the requirements described in contract specific Appendix 1/23 to protect the workforce, members of the public and persons visiting the site from risks arising from the hazards defined therein. Where described in contract specific Appendix 1/23 the Contractor shall also comply with the specific monitoring requirements described therein. The monitoring requirements as described in contract specific Appendix 1/23 are in addition to contract specific monitoring requirements described elsewhere in the specification.

2 (05/14) In addition to all other information required the Contractor shall provide copies of CE marking information for all CE marked works, goods or materials used in the works for inclusion in the Health and Safety File. This information shall include, as appropriate, the Declaration of Conformity or Declaration of Performance and all safety information.

125 (05/14) Temporary Closed Circuit Television (CCTV) System for the Monitoring of Traffic

(05/14) General

1 (05/14) Where required in contract specific Appendix 1/25, the Contractor shall design, provide, install, maintain, operate and, at the completion of the requirement, remove the temporary CCTV system as specified in this Clause. Where associated work is subject to a Quality Management Scheme listed in Appendix A such work shall be undertaken by organisations registered to the relevant scheme(s).

The Contractor shall be responsible for obtaining any licences, power supplies and approvals required, including structural approvals, prior to the installation of any equipment.

2 (05/14) The system shall be designed such that the whole of the works area, including both carriageways and hardshoulders, is covered at all times. There shall be sufficient overlap between the areas covered by adjacent cameras such that there are no blind spots. Supplementary cameras shall be provided in accordance with sub-Clause 6 of this Clause.

3 (05/14) Where specified in contract specific Appendix 1/25, the Contractor shall interface the temporary CCTV system with the permanent CCTV system, and ensure that it does not cause any interference to or interruption of effective operation and functionality of any other element of the existing or permanent CCTV system or motorway communications equipment and network.

4 (05/14) The Contractor shall restore each site to its original condition following the removal of cameras and other temporary equipment.

(05/14) **Cameras**

5 (05/14) The temporary CCTV system shall provide coverage of the works area specified in sub-Clause 2 using cameras that are fixed in their direction of view. The orientation of all cameras on each carriageway shall be the same.

6 (05/14) Where specified in contract specific Appendix 1/25, the Contractor shall design, provide, install, maintain, operate and, at the completion of the requirement, remove supplementary cameras at the locations specified in contract specific Appendix 1/25. These supplementary cameras shall have pan, tilt and zoom facilities providing an unimpaired view of traffic in all directions.

7 (05/14) The cameras and their location shall take account of the sun and lighting such that their effectiveness is not reduced by glare over a 24 hour period.

8 (05/14) Cameras shall be of a type that provides 24 hours per day operation.

(05/14) **Camera Supports**

9 (05/14) The Contractor shall be responsible for the design, provision, construction, maintenance, operation and, at the end of the requirement, removal of all necessary supporting structures and associated safety barriers, paving, steps and hand rails.

(05/14) **Maintenance**

10 (05/14) The minimum requirements for maintenance shall be:

- (i) any faults shall be repaired or the equipment replaced within 4 hours of any fault or failure;
- (ii) the whole system, including cameras, monitors and video recording equipment, shall be in full working order for no less than 160 hours in any 7 day period.

11 (05/14) The cameras shall be located such that they can be removed, replaced and maintained without the need for traffic management.

(05/14) **Monitoring**

12 (05/14) The Contractor shall provide, train and maintain suitable staff for the monitoring of the works area covered by the temporary CCTV system.

13 (05/14) The Contractor shall provide, maintain and, at the end of the requirement, remove suitable temporary accommodation for monitoring equipment and staff.

14 (05/14) The monitoring staff shall be competent in the use of the system and shall be responsible for the reporting of breakdowns and faults to the Contractor.

15 (05/14) The monitoring staff shall maintain a daily log of all incidents within the roadworks area. This log shall be available for inspection by the Overseeing Organisation and the police at all times. The monitoring staff shall report all incidents immediately to the Contractor's Traffic Safety and Control Officer. The Contractor shall provide a suitable communications system for use by the monitoring staff. Where an "incident" is a shed load, vehicle breakdown, vehicle abandonment or traffic accident, whether or not the latter involves personal injury, or any other incident which causes a change to traffic flow or a potential for personal injury.

16 (05/14) The monitoring equipment shall include video recording equipment with sufficient capacity and recording media for the duration of the requirement.

The system shall be such that the image on the monitor and any video recording taken from it shall provide a legible image of the registration plate of any stationary vehicle within 150 metres of the camera.

All monitor images shall include the date, time and unique camera reference.

17 (05/14) The Contractor shall provide, install, operate, maintain and, at the completion of the requirement, remove a dedicated communication link to the Regional Control Centre, Police Control Office or other control centre as detailed in contract specific Appendix 1/25.

126 (05/14) Timber and Products Containing Wood Supplied Under the Contract

1 (05/14) All Timber and wood-derived products for supply or use in the works shall be independently verifiable and either from a Legal and Sustainable source or a FLEGT-licensed or equivalent source.

The Contractor shall submit documentary evidence to demonstrate this to the Overseeing Organisation prior to its inclusion or use in the works.

The verification and evidence shall comply with the criteria in this Clause.

2 (05/14) Management of the forest or plantation shall be audited at intervals confirming ongoing good forest management and by organisations with appropriate forest management experience that are independent of the organisation that holds timber harvest and/or management rights for that forest.

3 (05/14) The Overseeing Organisation will accept evidence from any of the following three categories:

- (a) Category A evidence: Certification under a scheme recognised by the UK government as meeting the criteria set out in the document entitled “UK Government Timber Procurement Policy: Criteria for Evaluating Certification Schemes (Category A Evidence)” The edition current on the day the contract is awarded shall apply. Acceptable schemes must ensure that at least 70% (by volume or weight) is from a Legal and Sustainable source with the balance from a legal source.
- (b) Category B evidence: Documentary evidence, other than Category A evidence and FLEGT evidence, that provides assurance that the source is sustainable. In this context “sustainable” is defined in the document entitled “UK Government Timber Procurement Policy: Framework for Evaluating Category B evidence” The edition current on the day the contract is awarded shall apply. Such Category B evidence may include, for example, independent audits and declarations by the Contractor or his suppliers. Where Category B evidence is to be relied on, the Contractor is required to notify the Overseeing Organisation of the source or sources of all virgin timber and wood-derived products supplied. Source in this context means the forest or plantation where the trees were grown and all subsequent places of delivery through the supply chain prior to receipt of the timber or wood-derived product on site. The Contractor shall separately identify virgin timber and wood-derived products supplied from forests and plantations that are claimed to be subject to sustainable timber production and shall submit to the Overseeing Organisation documentation in respect of such wood to confirm that the criteria for sustainable timber production set out in this specification have been met.
- (c) FLEGT evidence, from either or both of the following categories: Evidence of timber and wood-derived products being exported from a timber-producing country that has signed a bilateral Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreement (VPA) with the European Union and which have been licensed for export by the producing country’s government. This may also include timber and wood-derived products that have been independently verified as meeting all the producing country’s requirements for a FLEGT licence where a VPA has been entered into but the FLEGT licensing system is not fully operational, or equivalent evidence from a country that has not entered into a VPA which demonstrates that all of the requirements equivalent to FLEGT-licensed timber have been met.

NATIONAL ALTERATIONS OF THE OVERSEEING ORGANISATION OF WALES

150NAW (05/14) Checking Bar Schedules

1 (05/14) The Contractor shall check the bar schedules and, make any corrections necessary. Checking shall be commenced sufficiently in advance of ordering steel reinforcement to allow for corrections and approvals. The Contractor shall be fully responsible for correctness of the schedules, and the Overseeing Organisation does not accept any liability whatsoever for any errors therein. The schedules, corrected as necessary, shall be the basis of admeasurement.

151NAW (05/14) Dimensional Accuracy

1 (05/14) Before commencing any part of the works, the Contractor shall check that all co-ordinates, levels and dimensions shown in the Contract Documents are correct. He shall check and satisfy himself that the various parts fit satisfactorily together and in relation to existing physical features. Checking shall be commenced sufficiently in advance of construction to allow for corrections. The Contractor shall be fully responsible for correctness and the Overseeing Organisation does not accept any liability whatsoever for any errors therein.

152NAW (05/14) Agreement on Measurements Involving Computer Equipment

1 (05/14) If applicable all measurements relating to the works which involve the use of computer equipment (whether in the taking of the measurements or in the storage of results of the measurements) and will have a bearing on valuations, payment and specification compliance shall, where practicable, be jointly undertaken by the Overseeing Organisation and Contractor's staff. The results of the measurement, as produced by or stored in the respective computer equipment, shall be compiled to and certified as being correct by both parties. If joint measurement is not possible, independent check measuring shall be carried out and certifying counter-signatures shall be attached to the original measure and the check-measure.

2 (05/14) If compatible computerised data-storage systems are employed by both the Overseeing Organisation and the Contractor, agreement on the correctness of the data can be based on data files transferred between the parties in the form of computer disks or by direct transfer. Counter-signatures must, however, be attached to printed copies of the data which must be filed for record purposes.

NATIONAL ALTERATIONS OF THE OVERSEEING ORGANISATION OF NORTHERN IRELAND

104NI (05/14) Standards, Quality Management and Acceptance

(05/14) Standards and CE markings

1 (12/14) Where there is a requirement in this specification for compliance with any part of a “British Standard” or other technical specification, that requirement may be met by compliance with:

- (a) a standard or code of practice of a national standards body or equivalent body of any EEA state or Turkey;
- (b) any international standard recognised for use as a standard or code of practice by any EEA state or Turkey;
- (c) a technical specification recognised for use as a standard by a public authority of any EEA state or Turkey;
or
- (d) a European Technical Assessment issued in accordance with the procedure set out in regulation (EU) No 305/2011

provided that the relevant standard imposes an equivalent level of performance and safety provided for by the stated Standard or technical specification.

“EEA State” means a state which is a contracting party to the agreement on an European Economic Area signed at Oporto on the 2nd of May 1992 as adjusted or amended.

“British Standard” means any standard published by the British Standards Institution including adopted European or other international standards.

2 (05/14) Electrical equipment to which directives 2006/95/EC or 2004/108/EC apply and which are produced for incorporation in a permanent manner in the works must have affixed to them CE marking attesting to their conformity to the provisions of the applicable directives. Declarations of conformity required by the above directives must be provided to the Overseeing Organisation prior to installation or use or procurement or supply of the equipment.

3 (05/14) Construction products which are produced for incorporation in a permanent manner in the works and are covered by a harmonised European standard or European Technical Approval or Assessment must have the product performance required by the specification for the intended use declared under the Declaration of Performance and be CE marked in accordance with the relevant British adopted European standard or European Technical Approvals or Assessments and the regulation (EU) No 305/2011. Unless otherwise described in the specification, the declared performance of the product shall meet the required performance of all the essential characteristics required by the specification. Declarations of performance required by the above regulation shall be provided to the Overseeing Organisation prior to installation or use or procurement or supply of the product.

(05/14) Quality Management

4 (05/14) Unless otherwise indicated in contract specific Appendix 1/24 or as required in the Conditions of Contract, the Contractor shall institute a quality management system complying with BS EN ISO 9001 and shall prepare a Quality Plan. The Contractor shall demonstrate compliance with this requirement to institute a quality management system to the Overseeing Organisation, one acceptable method for this demonstration is to evidence registration to BS EN ISO 9001.

5 (05/14) The Quality Plan shall incorporate the requirements of contract specific Appendix 1/24 and the requirements of the quality management schemes listed in Appendix A applicable to the works in accordance with sub-Clause 8 of this Clause.

The Quality Plan shall be submitted to the Overseeing Organisation within the period(s) stated in contract specific Appendix 1/24, for acceptance, before any related work is commenced.

Where any work, goods or materials to be used in the works are the subject of the quality management schemes listed in Appendix A, the Contractor shall require the supplier of such items to prepare a Quality Plan and the Contractor shall submit it to the Overseeing Organisation. Such Quality Plans shall comply with the requirements of contract specific Appendix 1/24 and the individual requirements of the relevant Sector Scheme Documents for Quality Management in Highway Works, see sub-Clause 8.

6 (05/14) Quality Plans shall indicate “hold points” as follows:

Contractor’s hold points: points where no further work shall proceed without the written approval of a designated person of the Contractor’s management, who shall be named in the Quality Plan.

Overseeing Organisation’s hold points: points where no further work shall proceed without the written approval of a designated representative of the Overseeing Organisation.

The Contractor shall ensure the Quality Plans and associated quality documentation are made available to all parties involved with the works.

(05/14) **Quality Records**

7 (05/14) For works, goods or materials other than those which are CE marked, the Contractor shall make available contemporary quality records to the Overseeing Organisation when requested. This includes quality records such as those identified in BS EN ISO 9001 to demonstrate achievement of the required quality and the effectiveness of the quality system. The Contractor shall require any member of the Contractor’s supply chain to make available such contemporary quality records when requested. Following a request copies of all quality records shall be made available immediately to the Overseeing Organisation. The Contractor shall report any non-conforming product/service to the Overseeing Organisation and shall require any member of the Contractor’s supply chain to immediately report any non-conforming product/service to the Contractor. The Contractor shall immediately pass these reports to the Overseeing Organisation, and undertake no further related work until remedial or other measures have been undertaken.

The Contractor shall submit the quality records required by this Specification, as indicated in Appendix H, to the Overseeing Organisation. No item of work shall be considered complete until these records have been received by the Overseeing Organisation.

Note: Quality terms used in this Clause are as BS EN ISO 9000.

(05/14) **Quality Management Schemes**

8 (05/14) Except as described in sub-Clause 104.9, where any work, goods or materials to be used in the works are the subject of a quality management scheme listed in Appendix A, only work, goods or materials conforming with such a scheme shall be used and the organisations carrying out such work shall have current registration to the relevant scheme(s). The Contractor shall in each case submit to the Overseeing Organisation a copy of the certificate of conformity affirming compliance with the scheme.

9 (05/14) Where any work, goods or materials to be used in the works are the subject of a quality management scheme listed in Appendix A and for which the goods or materials are CE marked products in accordance with the relevant standard(s) exclusions to mandatory requirements as listed in Appendix A apply.

10 (05/14) Where specific training and competency requirements are identified in any quality management scheme listed in Appendix A, the Contractor shall provide copies of the relevant training and/or competency assessments certificates and/or registration/skill cards of the workforce to the Overseeing Organisation for acceptance prior to the commencement of relevant work.

11 (05/14) The requirement for compliance with a registered quality management scheme listed in Appendix A shall be satisfied by compliance with an equivalent quality management scheme of any Member State of the European Economic Area or a State which is party to a relevant agreement with the European Union, provided that the proposed scheme is designed to ensure in use levels of safety, performance and fitness for purpose equivalent to those provided for by the scheme specified. The proposed scheme will include third party assessment by bodies accredited in accordance with BS EN ISO/IEC 17021 by the United Kingdom Accreditation Service (UKAS) or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or

any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s). This sub-Clause applies also to works only in so far as the means of carrying out such works are indivisibly associated with the goods or materials for which an alternative quality management scheme is proposed.

(05/14) Product Certification Schemes and CE Marked Products

12 (05/14) Works, goods and materials, other than those covered by the Construction Products Regulation, falling under the standards listed in Appendix B are required to have attestation or third party accreditation to demonstrate compliance with the relevant standard. This can be satisfied by one or more of the following:

- (i) Compliance with a relevant product mark scheme demonstrating compliance as described in sub-Clause 13 below;
- (ii) Demonstration of compliance as described in sub-Clause 13 below;
- (iii) Demonstration of compliance using testing and calculation as described in sub-Clause 14 below.

Where works, goods or materials are covered by the Construction Products Regulation (EU) No. 305/2011 (CPR) their compliance with the specification shall be demonstrated by the product being CE marked, the declared performance of the product given in the Declaration of Performance meeting the required performance of all the essential characteristics given in the specification and evidence being provided that demonstrates the product meets the requirements of the specification for aspects other than those covered by the essential characteristics, where such evidence meets the requirements of options (i) or (ii) above.

13 (05/14) Where option (i) or (ii) of sub-Clause 12 is used the product shall be certified as compliant with the specification and relevant standard, or equivalent as described in sub-Clause 1 of this Clause, by a Certification Body.

The Certification Body shall be accredited in accordance with BS EN 45011 or BS EN ISO/IEC 17065 by the United Kingdom Accreditation Service (UKAS) or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s).

Unless otherwise described in the specification assessment of the product shall be carried out to the level of attestation as determined in the relevant standard for the intended use of the product in the works and shall include confirmation that the product provides, in use, adequate levels of safety, performance and fitness for purpose. For products covered by the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC) the safety aspects would be for aspects not covered by the relevant CE marking.

The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include certification, attestation details and Certification Body details.

14 (05/14) Where option (iii) of sub-Clause 12 is used it shall be demonstrated that the product is capable of performing as required using tests, calculations or other means. Such testing or other means shall have a minimum level of attestation as that determined by the relevant standard and be suitably extensive to provide information on all relevant parameters. Testing shall be carried out by laboratories accredited to UKAS or equivalent Accredited Organisation as described in sub-Clause 105.4.

The testing or other means shall include confirmation that the product provides, in use, adequate levels of safety, performance and fitness for purpose. For products covered by the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC) the safety aspects would be for aspects not covered by the relevant CE marking.

The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include testing or calculation details and results, certification and attestation details.

(05/14) Product Acceptance Schemes

15 (05/14) Where there are references in the Specification to particular industry product acceptance schemes such as British Board of Agrément Certificates, Roads and Bridges Certificates, HAPAS certificates, CARES certificate or equivalent scheme, these shall be taken as references to a product acceptance scheme that has the attributes given in sub-Clause 16 below. The types of work, goods or materials listed in Appendix C are required to be certificated by a product acceptance scheme prior to their inclusion in the works.

16 (05/14) The works, goods or materials shall be assessed against a set of guidelines and criteria by a Certification Body. Certification to confirm the products successfully meet the guidelines and criteria shall be issued by a Certification Body. The Contractor shall provide information on the product to the Overseeing Organisation for acceptance. This information shall include the certification and, when requested, details of the scheme to confirm its compliance with the criteria given below and accreditation details of the organisation issuing the certification.

The scheme shall meet the following criteria.

- (a) Product acceptance and certification specified in this sub-Clause shall be structured and implemented to provide assurance to the Overseeing Organisation that the product, when supplied for its intended use and installed or processed post manufacture, in accordance with the manufacturer's instructions, will give the performance and level of safety required by the specification and be fit for purpose.
- (b) The organisation certifying products and issuing the certificates must be accredited to the relevant Certification Body standard, BS EN 45011 or BS EN ISO/IEC 17065 for product certification, or BS EN ISO/IEC 17020 for site inspection, by UKAS or equivalent European Accreditation Organisation, which is party to a multi-lateral agreement (MLA) with UKAS or any equivalent International Accreditation Forum (IAF) MLA signatory with a scope which includes the relevant standard(s). This shall include accreditation to manage and execute a certification scheme as defined in this sub-Clause. Accreditation must cover a scope of activity relevant to the construction, installation, maintenance and operation of highway infrastructure.
- (c) The scheme must cover as appropriate:
 - i. Manufacture and installation or post manufacture processing of those products for which a Declaration of Performance, and consequent CE marking, has not been made on the basis of any harmonised European Standard (hEN) or European Technical Assessment; or
 - ii. Only the installation of a material or post manufacture processing where the manufacturer has made a Declaration of Performance of the material (with consequent CE marking); or
 - iii. Product characteristics not included in the required essential characteristics of a hEN or in a European Technical Assessment if such characteristics provide additional protection for the consumer (e.g. road user).
- (d) The assessment and certification requirements for a product certified under the scheme must be developed ensuring due consideration is given to the requirements of the users of the product and those responsible for the highways on which such products will be used or installed.
- (e) The scheme must have a technical supervisory panel that provides technical oversight on the operation of the scheme and formally consents to the issue of assessment and certification requirements of the specialist groups developing the assessment and certification requirements. This panel must include a balanced representation of key end users, recognized industry experts and those responsible for the highways on which such products will be used or installed.
- (f) The product certification must include requirements for the audit and quality control of the production and installation processes for the product where necessary taking account of the product having its performance declared under a CE mark. Installer certification must include requirements for on site surveillance of installation or post manufacturing processes.
- (g) For every product it has certified under a product certification scheme, an organisation must make open and publicly accessible details of the assessment and certification guidelines.
- (h) Where different organisations have certified the same generic form of product they must be able to demonstrate to the Overseeing Organisation equivalence of performance of products certified under the different schemes or agree a common set of guidelines for the assessment and certification of the product.
 - i) The competences of organisations certifying products shall be as the competency requirements for Technical Assessment Bodies given in Regulation (EU) No 305/2011, the Construction Products Regulation, Annex IV, Table 2 with the additions given in Table 1/1.

(05/14) **Table 1/1 Competency additions to Construction Product Regulation (EU) No. 305/2011 Annex IV, (Table 2)**

Competence	Description of Competence	Requirement
7. Determining the specific installation or post manufacturing control	Understand and evaluate the installation or post manufacturing processes of the specific product in order to identify appropriate measures ensuring consistent compliant delivery of the installed or post manufactured product.	A certification body shall have staff with appropriate technical knowledge of the relationship between the installation / post manufacturing processes and the product characteristics related to production control for installation or post manufacture.
8. Constructive engagement	Be prepared to engage constructively with highway infrastructure managers and other certifying bodies for resolution of issues.	Be able to resolve differences in the certified performance of products of the same generic type and where appropriate agree a common set of guidelines for the assessment and certification of such products.

(05/14) **European Technical Assessment (ETA)**

17 (05/14) The requirements for works, goods or materials to be subject to a product certification scheme or product acceptance scheme as discussed in sub- Clauses 12 to 16 above may alternatively be met by a product being attested using a European Technical Assessment (ETA) issued in accordance with the procedure set out in Regulation 305/2011, provided that the relevant attestation imposes an equivalent level of safety, performance and fitness for purpose provided for by the Specification.

18 (05/14) Not used.

(05/14) **Departmental Authorisation**

19 (05/14) Departmental authorisation is required before any traffic signs are incorporated into the works where these are of a character and/or are to be used in circumstances which have not been prescribed in the Traffic Signs Regulations (Northern Ireland) 1997, the Zebra, Pelican and Puffin Pedestrian Crossings Regulations (Northern Ireland) 2006 and subsequent amending Regulations. Where the Contractor has designed part of the works for which such authorisation is required, application shall be made to the Overseeing Organisation.

20 (05/14) The types of works, goods or materials which are required to have Type Approval or Registration prior to their acceptance for inclusion in the works are given in Appendix E, with the exception that products that are covered by the Construction Products Regulation (EU) No. 305/2011 (CPR) do not have to be listed prior to their acceptance for inclusion in the works. For products not covered by CPR previously obtained type approval or registration can be used. The Contractor shall submit to the Overseeing Organisation a copy of the type approval/ registration certificate. Where previously obtained type approval or registration is not available the Contractor shall submit documentation to the Overseeing Organisation which demonstrates compliance with the relevant specification and/or standards. For products covered by the CPR the information required in Clause 104.3 shall be provided by the Contractor in accordance with that sub-Clause.

(05/14) **Provision of Information**

21 (05/14) Where information and documentation regarding works, goods or materials is required to be submitted to the Overseeing Organisation for acceptance the Contractor shall submit such documentation in a timescale to meet the requirements of the Contractor's programme of works. The Contractor shall liaise with the Overseeing Organisation to ensure that adequate time is allocated for the Overseeing Organisation to undertake the required assessments for acceptance. The time allocated for acceptance shall not be less than four weeks.

22 (05/14) Unless otherwise specified, two copies of all information and documentation, including valid certificates, in respect of work, goods or materials proposed by the Contractor shall be supplied to the Overseeing Organisation in English.

23 (05/14) Where the Contractor proposes to use an equivalent standard, quality management scheme, product certification scheme, industry product acceptance scheme, or type approval/registration to that specified the Contractor shall provide relevant information to enable the Overseeing Organisation to ascertain whether or not the proposal is equivalent to the specified requirement. The information provided by the Contractor shall provide full disclosure and appropriate evidence regarding the works, goods or materials concerned in order to fully demonstrate equivalent levels of safety, performance and fitness for purpose. For products within the scope of the Construction Products Regulation this documentation would be the relevant Declaration of Performance and associated CE mark for the intended specified use.

24 (05/14) When required in contract specific Appendix 1/4, three copies of detailed working and fabrication drawings in the format detailed in contract specific Appendix 1/4, prepared by or on behalf of the Contractor, shall be submitted for the Overseeing Organisation's acceptance. The minimum period for submission of the drawings prior to commencement of the related works shall be as stated in contract specific Appendix 1/4. Such acceptance shall in no way relieve the Contractor of his responsibilities for the work under the Contract.

112NI (05/14) Setting Out

1 (05/14) The Contractor shall, unless otherwise stated in contract specific Appendix 1/12, within 3 weeks of the date for commencement of the works, carry out a check of the co-ordinates and levels of all permanent ground markers and permanent bench marks described in contract specific Appendix 1/12 and shall supply the Overseeing Organisation, if requested, with their position and level in order that they may be checked and revised if necessary. The Contractor shall identify and bring to the attention of the Overseeing Organisation any markers that are missing. The Contractor shall comply with any specific requirements for setting out described in contract specific Appendix 1/12.

2 (05/14) The Contractor shall keep updated schedules and drawings of all bench marks (which shall be based on Ordnance Datum of Belfast Mean Sea Level) used in the setting out and shall make these available to the Overseeing Organisation when required.

3 (05/14) The Contractor shall ensure that where necessary, in order to maintain his programme, lines and levels are set out in such time as to enable Statutory Undertakers' apparatus and other publicly or privately owned services or supplies to be installed, altered or removed.

4 (05/14) The Contractor shall survey and record existing details of items which he is required to remove and subsequently replace. The level of survey information to be recorded is described in contract specific Appendix 1/12.

117NI (05/14) Traffic Safety and Management

(05/14) General

1 (05/14) Unless otherwise stated in contract specific Appendix 1/17 the Contractor shall plan, design, programme, provide, implement, maintain and remove all traffic safety and management measures necessary for the completion of the works. This shall include undertaking all necessary liaison with the police and highway authority responsible for each public highway affected by the works both before commencement and throughout the duration of the works. The traffic safety and management measures shall be in accordance with the requirements and constraints stated in contract specific Appendix 1/17 and the Contractor shall take into account the information contained in contract specific Appendix 1/18. The traffic safety and management measures shall be in accordance with Chapter 8 of the Traffic Signs Manual. The Contractor shall inform the Overseeing Organisation of any details the Contractor has agreed with the police and/or the highway authority.

2 (05/14) All traffic safety and management operations shall be undertaken by a supplier registered to National Highway Sector Scheme 12 with a scope of registration that includes reference to one or more of National Highways Sector Schemes 12A/B, 12C or 12D as appropriate to the works.

3 (05/14) The Contractor shall, unless otherwise stated in contract specific Appendix 1/17, after consultation with the police and highway authorities concerned, prepare and submit traffic safety and management proposals within the timescale described in contract specific Appendix 1/17 to the Overseeing Organisation. These shall show the

proposed traffic safety and management measures including provision of safety zones. If stated in contract specific Appendix 1/17, the proposals shall include the provision of running lanes for the use of emergency vehicles within the site. The Contractor shall make such changes to his proposals as may be necessary to meet the requirements of the Contract. Thereafter the Contractor shall furnish and update such details and information as may be necessitated by the works.

4 (05/14) If stated in contract specific Appendix 1/17, the Contractor shall undertake the highway maintenance functions described therein and to the extent there described, on the lengths of highway there specified, until the issue of the appropriate certificate of completion.

5 (05/14) Traffic signs shall comply with the appropriate Clauses in Series 1200 of the Specification.

6 (05/14) Where a temporary speed limit at road works has been imposed and the works have been temporarily terminated, with the removal of traffic management measures, the Contractor shall ensure that the temporary speed limit signs are covered or taken down for the duration of the cessation of the works. Where the temporary speed limit signs are covered, the covering material shall prevent the sign being visible through the cover in natural light and under vehicle headlamp or street lamp illumination at night, be non light reflective and securely fastened.

7 (05/14) Where the Contract provides that the Contractor shall not erect, maintain or reposition traffic signs, the Contractor shall not change in any manner the permanent or temporary traffic signs without instruction from the Overseeing Organisation and shall give such notice as is stated in contract specific Appendix 1/17 to indicate when signs should be moved compatible with the progress of the works.

8 (05/14) All traffic safety and management measures necessitated by the works shall be fully operational before the Contractor commences any work, which affects the public highway or the use of it.

9 (05/14) Any area of highway which has been closed because of the works shall not be re-opened to traffic until all appropriate traffic safety and management measures have been completed and the highway is in a suitable condition for public use.

10 (05/14) Where work is carried out on, or adjacent to a highway open to traffic the Contractor shall ensure that vehicles and mobile plant under his control operating frequently or regularly on or adjacent to that highway in the execution of the works shall be conspicuous and comply with Section O5 General Vehicle Issues of Chapter 8, Part 2 Operations, of the Traffic Signs Manual.

11 (05/14) Where required in contract specific Appendix 1/17 or where required for the execution of the works the Contractor shall provide temporary lighting in accordance with Clause 1405.

12 (05/14) Where required in contract specific Appendix 1/17 or where required for the execution of the works the Contractor shall provide Temporary Emergency Telephones in accordance with Clause 1529.

13 (05/14) The Contractor shall provide and suitably sign points of entry to and exit from the site, for vehicles and plant engaged on the works. The Contractor shall ensure that when any vehicle or item of plant is reversing within the site on or adjacent to a highway open to traffic, it does so only under the supervision of a person designated for the purpose of regulating traffic within the site who shall be readily distinguishable from the remainder of the work force.

14 (05/14) If an accident or breakdown occurs on a carriageway or hard shoulder open to traffic within or in the vicinity of the site, the Contractor and operators of recovery vehicles provided in accordance with Clause 120 shall act as requested by police officers or traffic officers acting under their statutory powers.

15 (05/14) Where work is carried out on or adjacent to a highway open to traffic the Contractor shall ensure that the workforce and the site supervisory staff at all times wear high visibility warning clothing complying with BS EN 471. Clothing shall be to Table 1, Class 2 or 3 (Class 3 on motorways or other high speed roads) and shall comply with the requirements of para 4.2.3(b). In addition on motorways or other high speed roads full length sleeves meeting the requirements of para 4.2.4 shall be provided for coveralls and jackets. The colour of the clothing shall normally be "fluorescent yellow" or "fluorescent orange-red" complying with Table 2. The retroreflective material used shall be to Level 1 as defined at Table 5. Clothing complying with other specifications may be used in accordance with Clause 104 where they offer equivalent levels of performance in so far as the specification given is not inconsistent with the basic health and safety requirements set out in Annex 2 of the Personal Protective Equipment Directive (89/686/EEC). The Contractor shall ensure that the person in charge of the workforce is readily distinguishable from the person designated in sub-Clause 16 of this Clause and from the remainder of the workforce.

(05/14) **Traffic Safety and Control Officer**

16 (05/14) Unless otherwise stated in contract specific Appendix 1/17, the Contractor shall appoint a suitably qualified Traffic Safety and Control Officer (TSCO) who shall make all arrangements necessary for traffic safety and control including the provision and operation of breakdown recovery vehicles.

17 (05/14) The TSCO shall be experienced in the control of temporary traffic management operations and shall possess a National Highway Sector Scheme (NHSS) 12 Traffic Safety and Control Officer (2009) Registration Card.

18 (05/14) The Contractor shall provide the Overseeing Organisation with the names and contact details of the TSCO and any nominated deputies. Unless otherwise described in contract specific Appendix 1/17 the TSCO or a nominated deputy shall be on the site at all times when traffic management is in operation and shall be readily available to deal with matters related to traffic safety and control including breakdown recovery vehicles.

19 (05/14) Without prejudice to sub-Clause 16 above, whilst within the limits of a temporary traffic management scheme, the TSCO shall manage any traffic management related requests given by a Police Officer or Traffic Officer. On Highways Agency roads the TSCO shall liaise with the Overseeing Organisation's Regional Control Centre on traffic management related matters including requests and instructions.

20 (05/14) Unless otherwise stated in contract specific Appendix 1/17 the responsibilities of the Traffic Safety and Control Officer and of his nominated deputies shall include the following:

- a) Monitoring, with the assistance of sufficient mobile personnel and of sufficient other suitable and appropriate aids, the flow of traffic within the area of the site;
- b) Ensuring that, within 5 minutes of notification of the occurrence of an incident resulting in stationary vehicle(s) on a highway open to the public, the incident is reported to the vehicle recovery service when vehicle recovery is in operation;
- c) Recording and logging all incidents and all movements of recovery vehicles and, when called, all movements of the emergency services.

Where an "incident" is a shed load, vehicle breakdown, vehicle abandonment or traffic accident, whether or not the latter involves personal injury.

(05/14) **Statutory Orders, Temporary Traffic Regulation Orders**

21 (05/14) Unless otherwise detailed in contract specific Appendix 1/17 the Contractor shall submit a formal application to the appropriate authority for any temporary traffic regulation orders or other statutory orders required to be made or notices required to be published in connection with his traffic safety and management proposals. The Contractor shall comply with any procedural requirements given in contract specific Appendix 1/17.

22 (05/14) The Contractor shall allow for the notice periods required for obtaining and implementation of any temporary traffic regulation orders or other statutory orders in the programme of works. Where applications are to be made to the Overseeing Organisation the notice periods required shall be as given in contract specific Appendix 1/17.

23 (05/14) Where applications for temporary traffic regulation orders or other statutory orders are made by the Overseeing Organisation prior to the commencement of the works the Contractor shall provide all necessary traffic safety and management measures to implement the orders.

(05/14) **Crossovers**

24 (05/14) The Contractor shall design, construct and maintain, or if contract specific Appendix 1/17 so provides, shall construct and maintain, the central reserve crossovers described in contract specific Appendix 1/17 in accordance with the information stated therein. Unless otherwise described in contract specific Appendix 1/17, the Contractor shall remove those crossovers when no longer required and reinstate the central reserve to its original condition.

25 (05/14) If the Contractor proposes to construct central reserve crossovers as part of his traffic safety and management proposals he shall submit such proposals to the Overseeing Organisation in advance, in accordance with the requirements of sub-Clause 3 of this Clause.

(05/14) **Driver Information Signs**

26 (05/14) Where required in contract specific Appendix 1/17, the Contractor shall provide, erect, maintain and remove Driver Information Signs to diagrams 7004 and 7005 of the Traffic Signs Regulations and (Northern Ireland) 1997 in accordance with sub-Clause 27 of this Clause and Chapter 8 of the Traffic Signs Manual. Information signs shall only be displayed within roadworks where they accurately reflect the reason for the inactivity.

27 (05/14) Legends shall be selected as appropriate from those permitted and listed in Chapter 8 of the Traffic Signs Manual unless stated otherwise in contract specific Appendix 1/17.

Sign 7005 shall indicate how long delays are possible. This date shall be updated by the Contractor, if necessary, until the restrictions are removed.

Sign 7004 shall be located within roadworks when part of the road is coned off, and the reason for this is not apparent from the carriageway, for any period exceeding 30 minutes, or one hour if road capacity is maintained. However, signs located within roadworks shall only be used where they can be located at least 50 metres beyond the downstream end of a taper and in a position which does not prejudice traffic safety.

If needed, Information Signs shall be sited at the beginning and at one kilometre intervals through the works. They shall not be placed where they may distract drivers negotiating traffic management provisions.

Signs shall either be sited for the duration of the works where it is safe and appropriate to do so or provision made to enable their use at short notice.

The Contractor shall provide adequate storage facilities clear of any safety zone. Storage within the central reserve or in front of safety barriers shall not be permitted.

(05/14) **Temporary Automatic Speed Camera System (TASCAR)**

28 (05/14) Where required in contract specific Appendix 1/17, a Temporary Automatic Speed Camera System for the Enforcement of Mandatory Speed Limits at Roadworks (TASCAR) shall be provided in accordance with the following requirements and those given in contract specific Appendix 1/27. The type of system and the number of speed monitoring sites and their locations shall be as specified in contract specific Appendix 1/27.

29 (05/14) The Contractor shall be responsible for the design, installation, commissioning, maintenance and removal of the system. This shall be undertaken using a suitably qualified Enforcement Equipment Supplier (EES). The EES shall make all arrangements necessary for the provision and operation of the TASCAR system. The Contractor shall supply evidence of the EES qualifications to the Overseeing Organisation prior to the commencement of the works.

The equipment shall meet the requirements of the Speedmeter Handbook and have Home Office Type Approval (HOTA) for the purpose required. The installation, commissioning, operation and maintenance of the system shall be undertaken in accordance with the requirements of the equipment's HOTA.

All equipment and training necessary to bring the sites into operation shall be provided and installed by the Contractor, this shall include, but not be limited to, all equipment, poles, housings and power supplies. The quantities of equipment required shall be as specified in contract specific Appendix 1/27. The Contractor shall ensure that the System is completely installed and fully operational from the time defined in contract specific Appendix 1/27 and that it remains in operation for the duration of the Contract unless otherwise specified in contract specific Appendix 1/27 and is removed on completion of the works.

The Contractor shall commission any necessary third party certification of the system and shall supply copies of the certification to the Overseeing Organisation.

30 (05/14) Unless otherwise required by the equipment's HOTA requirements, the equipment and ancillary items shall be compatible with all permanent and temporary installations associated with the works.

31 (05/14) The Contractor shall, liaise with the relevant Enforcement Authority (EA) to determine how the system for the scheme shall integrate with the EA's existing facilities and operations. The Contractor shall comply with the Overseeing Organisation's procedures with respect the liaison as described in contract specific Appendix 1/27. The Contractor shall submit details of the system to the Overseeing Organisation four weeks in advance of its operation for approval.

- 32** (05/14) The TASCAR equipment shall consist of a HOTA detection and measuring device, and ancillary equipment that allows day and night operation, If a trailer mounted system is supplied it shall be fitted with retractable de-mountable wheels.
- 33** (05/14) The Contractor shall arrange for the provision of a mains electrical supply of adequate power capacity to all components of the system. Alternatively, he may provide an equivalent supply from a local electrical generator or generators which shall be used only for this purpose. Such generator(s) shall have electric start mechanisms and be adequately regulated as to voltage and frequency to suit the accuracy requirements of the equipment provided for TASCAR and be capable of running constantly for 48 hours without refuelling at an output of not less than that required by the equipment at 0.8 power factor, or equivalent output. All generators shall be housed in vandal-proof containers and be securely locked. One set of keys shall be provided to the EA. Generators may only be used when they will not adversely affect the equipment/systems operations or the equipments HOTA requirements.
- 34** (05/14) The housing and poles for the TASCAR equipment must be as required for the specific HOTA for that equipment, and shall include security-locking mechanisms to prevent unauthorised access or operation.
- 35** (05/14) The Contractor shall install the poles/masts/cabinets or trailers required at each individual speed monitoring location, any installation shall be within highway limits.
- 36** (05/14) At completion of the works the Contractor shall remove all TASCAR equipment and reinstate ground as described in contract specific Appendix 1/27.
- 37** (05/14) The Contractor shall ensure that suitable access arrangements are in place at each speed monitoring site including vehicle hard standings, walkways and steps where necessary to allow for general maintenance and servicing of the camera unit. Where supplied, suitable provisions shall be made for installing and recovering trailers.
- 38** (05/14) The Contractor shall ensure that the camera poles are located in accordance with road restraint systems requirements detailed in TD 19/06.
- 39** (05/14) The Contractor shall ensure that the site reference number is clearly indicated on both the installation and on the road surface within the field of view of the camera(s). Site reference numbers should be agreed with the EA.
- 40** (05/14) Any ducting provision, loop or piezo installation shall be carried out in accordance with the relevant clauses of Series 500 and 1200 of the Specification.
- 41** (05/14) The Contractor shall be responsible for the commissioning of the TASCAR as a whole, including secondary and in station checks. The Contractor shall, where required as part of the HOTA, provide a secondary method of confirming the speed calculation.
- 42** (05/14) The commissioning of the TASCAR shall be carried out in the presence of, and for acceptance by, the EA and shall be in accordance with any particular requirements in contract specific Appendix 1/27, the commissioning shall only be complete when each site, and where applicable, the overall system is accepted as being operational by the EA. The Contractor shall give notice to the Overseeing Organisation of his intention to carry out this work, unless otherwise stated in contract specific Appendix 1/27 this shall be not less than four days in advance of the intended time for the commissioning. An Evidential Trail (ET) which meets all the requirements as stated in contract specific Appendix 1/27 including commissioning certificates shall be provided by the Contractor to the Overseeing Organisation and shall include one pair of photographs or video images for acceptance by the EA as part of the commissioning and acceptance procedure of the system. The Contractor shall ensure that all relevant requirements of the Evidential Trails for Enforcement Systems documents are achieved.
- 43** (05/14) Cameras sited on the nearside of the carriageway shall be installed and commissioned prior to 24 hour lane closures being put into operation. Cameras sited in the central reserve shall be installed and commissioned not later than 12 hours after installation of the contraflow. Both sets of cameras shall then remain in continuous operation until a Completion Certificate has been issued for the whole of the works. At the end of the period of operation required under the Contract, the equipment shall remain the property of the Contractor.
- 44** (05/14) Following commissioning the TASCAR Operator will be the EA. The Contractor shall provide assistance to the EA for the repositioning of the speed monitoring equipment between the housings, or switching of detection equipment between zones and servicing as and when requested by the EA. Any repositioning during the works that requires that the equipment parameters are changed must be supported by the issue of a calibration certificate by the Contractor to the EA.

- 45** (05/14) All evidential media from speed monitoring sites will remain the property of the EA. The scheme ET documents shall be kept up to date by the Contractor.
- 46** (05/14) The Contractor shall provide and install all necessary speed limit signing in connection with the operation of the TASCAR system, any signing used shall either be prescribed or where necessary authorised. The Contractor shall provide the EA, through the Overseeing Organisation, with a two hourly log showing the locations of all the speed limit and speed limit repeater signs relative to existing marker posts. A repeater sign shall be positioned such that one is visible in each photograph. Where there is a 24-hour CCTV system installed that is monitoring ALL speed limit and repeater signs this log can be compiled remotely.
- 47** (05/14) Where digital HOTA equipment is used, the Contractor will provide either the communications service to transfer data and control the device or appropriate media such as WORM (Write Once Read Many) drives, CDs, memory sticks as appropriate, and in quantities required by the EA for the use of the equipment for the duration of the works. If HOTA 35mm wet film systems are used, the film will be supplied to the EA by the Contractor, typically at the rate of one film per day per live camera in operation, plus ten which shall be supplied at the commencement of the works.