

**SCHEDULE 6
OPERATION AND MAINTENANCE**

**Part 1
Core O&M Requirements**

1. In the design, planning and execution of all works and functions associated with the operation and maintenance of the Project Facilities, the DBFO Co shall take all such action and do all such things (including, without limitation, organising itself, adopting measures and standards, executing procedures, including inspection procedures and safety patrols, and engaging and managing contractors, agents and employees) as will and in such manner as will secure:

- 1.1 the safety of Users of the Project Road, workers or other persons on the Project Road or on land adjacent to the Project Road or using adjoining roads or facilities;
- 1.2 that the ability of the Secretary of State and others with statutory duties or functions in relation to the Project Road or other adjoining roads to perform those duties and functions is unimpaired;

and, subject to paragraphs 1.1 and 1.2, that:

- 1.3 delay to Users of the Project Road and of adjoining roads or facilities is minimised;
- 1.4 the risk of adverse effects on the environment and on the amenity enjoyed by the owners and occupiers of land adjacent to the Project Road and to adjoining roads and facilities is minimised;
- 1.5 all accidents and emergencies are responded to as quickly as possible and their adverse effects minimised;
- 1.6 risk of damage or disturbance to or destruction of third party property is minimised;
- 1.7 members of the public are treated with due courtesy and consideration;
- 1.8 Users are given adequate information and forewarning of any events on or any matters affecting the Project Road as will enable them to minimise any adverse consequences on them of those events or matters;
- 1.9 members of the public and others are given adequate opportunity to bring to the attention of the DBFO Co any matters affecting the ability of the DBFO Co to meet these Core O&M Requirements;
- 1.10 traffic data and data relating to the operation and maintenance of the Project Facilities and events on the Project Road are collected and disseminated such that the Secretary of State and other persons or bodies with statutory duties or functions in relation to the Project Road or adjoining roads are better able to perform those duties and functions;

- 1.11 the Project Facilities are operated and maintained in accordance with the Core Construction Requirements;
- 1.12 the Project Road is operated and maintained to no lesser standard than is appropriate for a highway of the character of the Project Road and for use by the traffic which is reasonably to be expected to use the Project Road; and
- 1.13 that the requirements of Annex 1 to this Part 1 of Schedule 6 are met.

**Annex 1
to Part 1 of Schedule 6**

Scheme Specific Core O&M Requirements

1. Landscape Environment

The DBFO Co shall provide and maintain a high quality landscape environment on the Project Road consistent with best landscape planting and management practice from time to time.

2. Britannia Bridge

2.1 Subject to Clause 50.5 and this paragraph 2, the DBFO Co shall:

2.1.1 discharge the obligations, functions, duties, liabilities and responsibilities and exercise the rights of the Secretary of State (including those arising under statute or otherwise) under the Britannia Bridge Agreement.

2.1.2 The obligations, functions, duties, liabilities, responsibilities and rights referred to in paragraph 2.1.1 shall not extend to:

- (i) clauses 2, 3, 4, 5, 6, 7, 8, 9, 10, 11(b) and 20 of the Britannia Bridge Agreement;
- (ii) any right to enter into such an agreement as is referred to in clause 14(b) or 17 of that Agreement, save where the terms thereof have previously been specifically approved by the Secretary of State;
- (iii) the exercise of the right of the Secretary of State to give notice of intention to close permanently the highway over the Britannia Bridge or the date of such withdrawal or closure pursuant to clause 18 of that Agreement; and
- (iv) the right to make any amendment, variation or supplement to the Britannia Bridge Agreement,

and shall be subject to any rights of the British Railways Board, Railtrack Plc or any other party entitled to exercise such rights, from time to time under or pursuant to the Britannia Bridge Agreement.

3. Railtrack Works Agreement

3.1 Subject to Clause 50.6 and this paragraph 3, the DBFO Co shall:

3.1.1 discharge the obligations, functions, duties, liabilities and responsibilities and exercise the rights of the Secretary of State and the Secretary of State's Agent (as defined therein) (including those arising under statute or otherwise) under the Railtrack Works Agreement.

3.1.2 The obligations, functions, duties, liabilities, responsibilities and rights referred to in paragraph 3.1.1 shall not extend to:

- (i) recitals (1.1), (1.2), (3) and clauses 2.1.1, 2.1.2, 2.1.3 and 18 of the Railtrack Works Agreement;
 - (ii) references to the Secretary of State in clause 1 to that Agreement; and
 - (iii) the right to make any amendment, variation or supplement to that Agreement,
- and shall be subject to:
- (a) any rights of Railtrack Plc or any other party entitled to exercise such rights, from time to time under or pursuant to the Railtrack Works Agreement;
 - (b) the power of the Secretary of State to exercise any of the obligations, functions, duties, liabilities or responsibilities and exercise any of the rights of the Secretary of State or the Secretary of State's Agent pursuant to Clauses 8, 19.2, 26.1, 26.2 and 26.3 of that Agreement; and
 - (c) the matters referred to in this paragraph 3.1.2(i), (ii) and (iii) above.

4. **Traffic islands and street furniture**

Traffic islands and street furniture removed to facilitate the movement of abnormal vehicles shall be reinstated such that they can easily be removed and replaced as required for other abnormal vehicles.

5. **Flags**

The DBFO Co shall hoist flags in accordance with paragraph 1.12 in Section 1 of Part 2 of this Schedule.

**SCHEDULE 6
OPERATION AND MAINTENANCE**

**Part 2
O&M Requirements**

Section 1: Provisions of General Application

1.1 Definitions

- 1.1.1 In this Part 2 of Schedule 6, expressions defined in Clause 1 shall have the same meaning and, unless the context otherwise requires, the following expressions have the following meanings:

"**CHART**" means the Department's computerised highway assessment of ratings and treatments.

"**CHART Referencing System**" means the system operated by the Department for allocating data to a particular part of the trunk road network by the use of CHART referencing methodology.

"**Communication Installations**" means the Measuring Equipment, the DBFO Co's Systems (as defined in Schedule 17), the Department's Systems (as defined in Schedule 17), other communication systems which the DBFO Co is obliged to install and/or maintain pursuant to this Agreement and any other ancillary equipment, cables and accessories relating thereto.

"**Ecological Area**" means any area within which Relevant Ecological Interests (as defined in Annex 11 to Part 2 of Schedule 4) are located but excluding any area within which Lost Ecological Interests (as defined in Annex 11 to Part 2 of Schedule 4) are located.

"**Emergency**" means any unforeseen event affecting the Project Facilities whether directly or indirectly which causes or has the potential to cause disruption to the free flow of traffic on the Project Road or a threat to the safety of the public or which is an immediate or imminent threat to the long term integrity of any part of the infrastructure of the Project Facilities or to land adjacent to the Project Facilities or land likely to be affected by events on the Project Road.

"**Highway Inspection Survey Site Inspectors Manual**" means the manual for site inspectors published by the Department.

"**HRM**" means highspeed road monitor as referred to in WOTRMM, Part 1, Chapter 2.2.

"**Landscape Area**" means any numbered area within the Site or Adjacent Areas (other than the Off Site Planting Areas) identified on the Landscape Drawings and any area of Retained Existing Vegetation (as defined in Annex 9 to Part 2 of Schedule 4) and any Ecological Area.

"Landscape Drawings" means the drawings numbered 964057/ELA/101 to 111 in Section 1 of Part 3 of Schedule 6 and drawings numbered 964057/CPLA/101 to 117, 964057/CPLA/201 to 208 and 964057/CPLA/301 and 302 in Section 4 of Part 5 of Schedule 4 and drawings numbered 964057/EV/101 to 108 and 964057/EV/301 in Section 6 of Part 5 of Schedule 4.

"Landscape Element" or **"LE"** means any of the landscape and ecological elements identified in Annex 7/5 and **"Landscape Elements"** shall be construed accordingly.

"Landscape Element Requirements" means the requirements in respect of each Landscape Element identified in Annex 7/6 under the heading of the relevant Landscape Element.

"Landscape Function" or **"LF"** means any of the landscape and ecological functions identified in Annex 7/3 and **"Landscape Functions"** shall be construed accordingly.

"Landscape Function Requirements" means the requirements in respect of each Landscape Function identified in Annex 7/4 under the heading of the relevant Landscape Function.

"Landscape Function Period" means, in respect of a Landscape Function, the period specified in Annex 7/4 under the heading of the relevant Landscape Function and **"Landscape Function Periods"** shall be construed accordingly.

"L&E Management Strategy" means a landscape and ecology management strategy to which there has been no objection under the Review Procedure pursuant to paragraph 7.4.1, as revised from time to time in accordance with paragraphs 7.4.2 and 7.4.3.

"L&E Survey" means the landscape and ecology survey referred to at paragraph 7.3.1 and **"L&E Surveys"** shall be construed accordingly.

"Major Maintenance Works" means any of the following:

- 1.1.1.1 any Improvement;
- 1.1.1.2 any Maintenance Works or Renewal Works;
- 1.1.1.3 any other works (other than pursuant to a Subsequent Scheme or in the case of emergency measures) which may affect the structural integrity of any Structure or pavement forming part of the Project Facilities.

"Off Site Planting Area" has the meaning given in paragraph 1.3.5 of Annex 10 to Part 2 of Schedule 4.

"SCRIM" means sideways force coefficient routine investigation machine.

"SS Landscape Requirements" means the landscape and ecological requirements set out in Annex 7/8.

"SSSI" means a Site of Special Scientific Interest as defined in the Wildlife and Countryside Act 1981.

"Traffic Signs Regulations" means the Traffic Signs Regulations and General Directions 1994 (S.I. No.1519).

"Year 5" means the fifth anniversary of the date of planting of the relevant plants and vegetation within a Landscape Area as such date is either identified in Annex 7/8 or, to the extent not so identified, as specified in an L&E Management Strategy to which there has been no objection in accordance with the Review Procedure.

"Year 10" means the tenth anniversary of the date of planting of the relevant plants and vegetation within a Landscape Area as such date is either identified in Annex 7/8 or, to the extent not so identified, as specified in an L&E Management Strategy to which there has been no objection in accordance with the Review Procedure.

"Year 15" means the fifteenth anniversary of the date of planting of the relevant plants and vegetation within a Landscape Area as such date is either identified in Annex 7/8 or, to the extent not so identified, as specified in an L&E Management Strategy to which there has been no objection in accordance with the Review Procedure.

- 1.1.2 A reference to an obligation on the part of the DBFO Co in this Part 2 of Schedule 6 shall as the context requires be read to include the Operator or any other agent on behalf of the DBFO Co discharging such obligation on behalf of the DBFO Co. Notwithstanding the foregoing, the DBFO Co shall remain liable to the Secretary of State for the performance of all obligations imposed on the DBFO Co under this Schedule 6.
- 1.1.3 A reference to any specified provision of WOTRMM, the Traffic Signs Manual, DMRB or the Construction Requirements in this Part 2 of Schedule 6 or any document referred to therein shall be deemed to include a reference to any other provisions of the same as necessary to interpret or give meaning to the specified provision.
- 1.1.4 A reference to DMRB, the Traffic Signs Manual or the Manual of Contract Documents for Highway Works in this Part 2 of Schedule 6 or any document referred to therein shall be deemed to be a reference to the same as modified by the Construction Requirements.
- 1.1.5 A reference to WOTRMM, DMRB, the Traffic Signs Manual or the Manual of Contract Documents for Highway Works in this Part 2 of Schedule 6 or any documents referred to therein shall be deemed to be a reference to the edition of such document which was current as at the 18 September 1998 including any updates or revisions thereto prior to such date.
- 1.1.6 A reference in WOTRMM to **"MA"** shall be construed as referring to the DBFO Co and the provisions of WOTRMM shall be read accordingly.
- 1.1.7 A reference to an Annex in this Part 2 of Schedule 6 is a reference to the relevant Annex contained in this Part 2 of Schedule 6.

1.2 **Duty to operate and maintain**

- 1.2.1 The DBFO Co shall operate and maintain the Project Facilities throughout the Contract Period:
 - 1.2.1.1 so as to keep the Project Facilities sound and free from undue deterioration and undue wear;

- 1.2.1.2 so as to meet the requirements of this Agreement including this Schedule 6;
- 1.2.1.3 so as to comply with the methods and standards of performance set out in each of the following:
 - 1.2.1.3.1 WOTRMM but excluding those provisions of WOTRMM set out in Annex 1/1;
 - 1.2.1.3.2 the Traffic Signs Manual; and
 - 1.2.1.3.3 to the extent not inconsistent with paragraph 1.2.1.4, DMRB, Volumes 3, 3a, 4, 7, 8 and 10;
- 1.2.1.4 in respect of any Major Maintenance Works but subject to paragraph 1.2.3, so as to comply with the methods and standards of performance set out in the Construction Requirements and (if applicable) the Communications Requirements (as though any reference therein to the Works or any aspect thereof were a reference to the Major Maintenance Works (or the relevant aspects thereof) to be undertaken in accordance with this Schedule 6); and
- 1.2.1.5 subject to the foregoing paragraphs 1.2.1.3 and 1.2.1.4, in accordance with Good Industry Practice.
- 1.2.1.6 The DBFO Co shall, in relation to the Project Facilities, comply with all of the obligations under each of the Railtrack Works Agreement and the Britannia Bridge Agreement assumed by it under the Railtrack Appointment and the Appointment respectively.
- 1.2.2 Without prejudice to paragraph 1.10, the provisions of each of the following Sections 2 to 6 of this Part 2 of Schedule 6 shall be read in conjunction with such other Sections of this Part 2 of Schedule 6 as may from time to time be appropriate depending on the nature of the works to be conducted.
- 1.2.3 If the DBFO Co proposes to vary or amend the Construction Requirements or the Communications Requirements in respect of any Major Maintenance Works, such proposal shall be submitted to the Department's Representative as an Alternative Proposal, and such Alternative Proposal shall be dealt with in accordance with the provisions of Section B of Part 3 of Schedule 4 and Clause 13.6. Without prejudice to Clause 18, the Department's Representative shall not be entitled to comment on any such Alternative Proposal under paragraph 3.4 of Part 3 of Schedule 7 solely on the ground that such Alternative Proposal would require any part of the Existing Road to be maintained in accordance with the standard to which such part was constructed or most recently re-constructed prior to the date of this Agreement rather than to the standard set out in the Construction Requirements or (as appropriate) the Communications Requirements, if in an analogous situation elsewhere on the trunk road network the Department would itself maintain facilities only to the standard to which they were constructed or re-constructed rather than to the currently applicable standard.

1.3 **Inventory**

- 1.3.1 The DBFO Co shall maintain an inventory of all items comprising the Project Facilities (the "**Inventory**"), in the format set out in WOTRMM, Part 2, Chapter 2.1.
- 1.3.2 Throughout the Contract Period the DBFO Co shall keep the Inventory updated to take account of works carried out on and other changes made to the Project Facilities.
- 1.3.3 The Inventory shall be cross-referenced to the CHART Referencing System as applied to the Project Facilities.
- 1.3.4 A copy of the Inventory shall be submitted by the DBFO Co to the Department's Representative within thirty (30) days after receipt at any time of a request from the Department's Representative for the same.

1.4 **Materials**

All materials used in the maintenance, repair and replacement of the Project Facilities shall comply with the standards referred to in the Construction Requirements.

1.5 **Abnormal Indivisible Load Routeing**

- 1.5.1 The DBFO Co shall take all reasonable steps to facilitate the transit of Abnormal Indivisible Loads along the Project Road.
- 1.5.2 The DBFO Co shall comply with the provisions of Annex 1/2 and shall develop a procedure for handling Abnormal Indivisible Loads within the Liaison Procedures.

1.6 **Relationship with Secretary of State**

Notwithstanding the responsibility of the DBFO Co for all Operations as set out in Clause 3, Clause 26 acknowledges that the DBFO Co will from time to time require the exercise by the Secretary of State of his statutory powers to enable the DBFO Co to discharge its responsibility in full. Clause 28 describes the way in which the Secretary of State and the DBFO Co shall co-operate for the purposes of, inter alia, operation and maintenance of the Project Facilities.

1.7 **Emergencies**

- 1.7.1 The DBFO Co shall establish a system that ensures that sufficient staff, plant, equipment and materials are available to respond to Emergencies at all times during the Contract Period.
- 1.7.2 The DBFO Co shall appoint appropriate personnel as duty officers ("**Duty Officers**") and shall ensure that a Duty Officer is on duty at all times to manage the response of the DBFO Co to Emergencies. A schedule of telephone numbers for Duty Officers shall be provided to the Department's Representative and the police so that contact can be made with a Duty Officer at any time. The DBFO Co shall ensure that Duty Officers are empowered to, and that they do, mobilise the necessary staff, plant, equipment and materials in response to information or instruction from the Department's Representative, the police or other emergency services. In the event of an Emergency the Duty Officer shall ensure that immediate action is taken to mobilise the necessary resources and to make the Project

Facilities safe for Users. Procedures for liaison between Duty Officers and the police and other emergency services shall be developed as part of the Liaison Procedures.

- 1.7.3 Where an Emergency has an effect on the operation of the Project Facilities, obstructions shall be cleared and damage to the Project Facilities repaired, under the supervision of the police if necessary, to ensure that the Project Facilities are returned to normal operating standards as quickly as possible. Subject to the DBFO Co complying with the requirements of the relevant emergency services, where liquid or soluble material spillage is involved the DBFO Co shall take all necessary measures to minimise pollution.
- 1.7.4 The DBFO Co shall ensure that the disposition of staff, plant, equipment and materials shall be such that they can be present at the scene of an Emergency, at any point on the Project Road, within one (1) hour of initial notification of an Emergency.
- 1.7.5 Following an Emergency, the DBFO Co shall immediately carry out an inspection of any area affected by the Emergency. Where an Emergency has necessitated a closure of the Project Road or a part thereof, the DBFO Co shall promptly carry out any works necessary to return the Project Facilities to a safe condition and in any event shall carry out such works before the affected area of the Project Road is reopened to traffic.

1.8 Equipment Belonging to Third Parties

- 1.8.1 The DBFO Co shall manage the installation, operation, maintenance and removal by any third party of any equipment on, under or over the Project Facilities by such third party (other than equipment installed by the Department or by Statutory Undertakers). The installation, operation, maintenance and removal of any such equipment shall be facilitated by the DBFO Co insofar as the relevant person carrying out the same has the requisite licences and permits to do so. This shall include but not be limited to equipment installed by commercial organisations seeking to use the highway infrastructure to facilitate the erection or installation of equipment as part of their businesses.
- 1.8.2 Any costs incurred by the DBFO Co in relation to the installation, operation, maintenance, or removal by any third party of any such equipment shall only be recoverable by it from the relevant third party.

1.9 Training

The DBFO Co shall ensure that the personnel used to discharge the obligations described in this Part 2 of Schedule 6 have the qualifications and are given the training necessary to ensure the satisfaction of the Core O&M Requirements.

1.10 Conflict

- 1.10.1 In the event of any conflict between the terms of this Agreement (including this Part 2 of Schedule 6) and any of the provisions of the documents referred to in paragraph 1.2.1.3 or any other manuals, statements of practice, guidance notes, advice notes, memoranda or other documents referred to in the said documents or in this Part 2 of Schedule 6, the provisions of this Agreement shall prevail unless expressly stated otherwise.
- 1.10.2 If there is any conflict between the terms of this Part 2 of Schedule 6 and the provisions of Part 2 of Schedule 4, then in respect of any Operations in connection with the operation and maintenance of the Project Facilities the provisions of this Part 2 of Schedule 6 shall prevail unless expressly stated otherwise.

1.11 Included Off-Site Equipment and Excluded On-Site Equipment

- 1.11.1 The DBFO Co shall be responsible for the operation and maintenance of the Included Off-Site Equipment in accordance with the provisions of this Schedule, notwithstanding that the Included Off-Site Equipment is located outside the Site and the Adjacent Areas.
- 1.11.2 The DBFO Co shall not be responsible for the operation and maintenance of the Excluded On-Site Equipment, notwithstanding that the Excluded On-Site Equipment is located on the Site or the Adjacent Areas.
- 1.11.3 The DBFO Co shall procure that the owner or operator of any Excluded On-Site Equipment or its agent has unrestricted access to such Excluded On-Site Equipment at all reasonable times throughout the Contract Period. The DBFO Co shall develop Liaison Procedures with the owner or operator of each item of Excluded On-Site Equipment in relation to access to that item of Excluded On-Site Equipment in relation to access to that item of Excluded On-Site Equipment and all other aspects of the operation of such items of Excluded On-Site Equipment.

1.12 Flags

On the flag poles on and adjacent to Menai Bridge the DBFO Co shall hoist the Union Flag, the Welsh National Flag and European Flag as appropriate in accordance with Annex 1/7, between 08.00 hrs and sunset on the days specified in Annex 1/7 as amended from time to time by the Secretary of State."

**Annex 1/1
to Part 2 of Schedule 6**

Excluded Provisions of WOTRMM

The following provisions of WOTRMM are excluded from those matters which the DBFO Co is required to comply with pursuant to paragraph 1.2.1.3.1:

1. [NOT USED]
2. The following provisions of Part 1, Chapter 2
Paragraphs 2.3.10, 2.4.6, 2.5.8 and 2.6.8
3. The following provision of Part 1, Chapter 3.2:
Paragraph 3.2.6.
4. Part 1, Section 4.
5. Part 1, Section 5.

**Annex 1/2
to Part 2 of Schedule 6**

Requirements for Abnormal Indivisible Loads

1. Heavy Load Route

The DBFO Co shall maintain the section of the Project Road from and including Pen-caledog Overbridge to the junction with Llanfawr Road in Holyhead as a Heavy Load Route capable of carrying a trailer of 390 tonnes gross weight as shown on the drawing of vehicle no. W998.

2. High Load Route

The DBFO Co shall maintain the section of the Project Road from Pen-caledog Overbridge to the junction with Llanfawr Road in Holyhead as a High Load Route with a minimum headroom of 5.5 metres.

**Annex 1/5
to Part 2 of Schedule 6**

Included Off-Site Equipment

1. Warning lines, cats' eyes and lit and unlit traffic signs which are:
 - (a) located on a road intersecting with the Project Road;
 - (b) not located on the Site or any Adjacent Area; and
 - (c) whose installation or affixing on, to or by such road is necessitated solely by reason of the intersection of such road with the Project Road.
2. Traffic signs which are related to the closure or restriction of traffic using the Britannia Bridge. Traffic signs for this purpose are included on the CD Rom (ref: CD/ER/MI/001).

**Annex 1/6
to Part 2 of Schedule 6**

Excluded On-Site Equipment

1. Equipment under the control of the North Wales Traffic Control Centre:
 - 1.1 Digital data transmission equipment within the transmission building to the east of Britannia Bridge.
 - 1.2 The lengths of transmission cables and associated equipment on the Project Road between the digital data transmission equipment referred to in paragraph 1.1 and the Control Centre.
 - 1.3 The "Serco" emergency telephone system associated with Britannia Bridge.
2. The Icealert/Weather station at Mona (currently inactive).
3. Road Traffic Signals on A5 adjacent to Mona Airfield (controlled and maintained by the Ministry of Defence).
4. The weighbridge located in the layby on A5 at OSGR 264815 (operated by Vehicle Inspectorate in conjunction with North Wales Police and Isle of Anglesey County Council).
5. The public conveniences and access pathways coloured red and green on plan No. 964057/EOSE/1 in Section 4 of Part 3 of Schedule 6 to the extent that they fall within the obligations of Gwynedd Council (formerly Arfon Borough Council) under the counterpart lease dated 15 March 1993 made between the Secretary of State and Arfon Borough Council (such lease has Disclosed Data reference ER/MI/014 on CD Rom).
6. Automatic traffic counters at the following locations:
 - A5 Cytir Road Junction, Holyhead
 - A5 West of Valley
 - A5 A4080 Junction
 - A5 A5114 Junction, Llangristtiolus
 - A5 West of Llanfair PG
 - A5 Llanfair PG Bypass
 - A5 Bangor Bypass
 - A4080 Menai Bridge
 - A487 East of Britannia Bridge
 - A5 Rhostrehwfa

**Annex 1/7
to Part 2 of Schedule 6**

Flags

6 February	Her Majesty's Accession
19 February	Birthday of the Duke of York
1 March	St David's Day (<i>see note 1</i>)
10 March	Birthday of Prince Edward
March	Commonwealth Day (<i>second Monday</i>)
21 April	Birthday of Her Majesty the Queen
9 May	Europe Day (<i>see note 4</i>)
2 June	Coronation Day
June	Official Celebration of Her Majesty's Birthday (<i>see note 2</i>)
10 June	Birthday of The Duke of Edinburgh
4 August	Birthday of Her Majesty Queen Elizabeth The Queen Mother
15 August	Birthday of The Princess Royal
21 August	Birthday of The Princess Margaret
November	Remembrance Day (<i>second Sunday, see note 3</i>)
14 November	Birthday of The Princess of Wales
20 November	Her Majesty's Wedding Day

Notes

1. Where a building has two or more flagstaffs the appropriate National flag may be flown in addition to the Union Flag but not in a superior position;
2. Date to be notified;
3. Flags should be flown right up all day;
4. The Union Flag should fly alongside the European Flag. Where there is only one flagpole, the Union Flag should take precedence.

Section 2: Roadworks

2.1 General

- 2.1.1 The DBFO Co shall comply with the provisions of this Section 2 in carrying out all works (other than Works) on the Project Facilities.

2.2 Safety and Traffic Management Measures

- 2.2.1 Safety of the User and site worker shall be the primary consideration in the design, implementation, maintenance and removal of traffic management arrangements. Safety shall be considered at all stages from design to completion and operation of the work. When planning and undertaking any work on the Project Facilities the DBFO Co shall act in a manner consistent with the following:
- 2.2.1.1 for work on motorways - "Planning for Safety: Guidance Notes for the Health and Safety of Workers at In Service Motorway Roadworks Sites", issued jointly by the Department, the Welsh Office, the Scottish Office Industry Department and the Federation of Civil Engineering Contractors; and
 - 2.2.1.2 for work on all highways - "Safety at Roadworks: Notes for guidance" issued jointly by the Department and the County Surveyors' Society.
- 2.2.2 Without prejudice to Clause 15.1, the DBFO Co shall provide, erect, maintain, reposition, cover, uncover and remove traffic signs as required in respect of works on the Project Road (including without limitation any diversions) by reference to the Traffic Signs Manual, Chapter 8. Class 1 reflectorised signs as described in the Traffic Signs Manual, Chapter 8 shall be used at all works on the Project Road.
- 2.2.3 Any area of the Project Facilities which has been closed shall not be re-opened until all appropriate safety and traffic management measures have been completed and the area is in a suitable condition for public use.
- 2.2.4 When work on an area of the Project Facilities is temporarily suspended or no work is in progress the traffic management measures shall be removed if it is safe and practicable to do so, and that area shall be re-opened to traffic without undue delay. The DBFO Co shall anticipate this requirement in its planning of these works. When it is not safe and practicable for traffic management measures to be removed, information signs shall be provided in accordance with paragraph 2.6.
- 2.2.5 A traffic safety and control officer ("**Traffic Safety Officer**") and one or more deputies shall be appointed by the DBFO Co to make all arrangements necessary for traffic safety and control including the provision and operation of recovery vehicles for breakdowns. The Traffic Safety Officer or one of his deputies shall be on site at all times when work is proceeding which affects or may affect Traffic Safety and shall be readily available at all times (and not only when on site) to deal with matters related to traffic safety and control (including recovery vehicles for breakdowns).
- 2.2.6 If an accident or breakdown occurs on a carriageway or hard shoulder open to traffic within or in the vicinity of the working area, the DBFO Co and operators of recovery vehicles provided in accordance with paragraph 2.5 shall minimise the adverse effects to Users and shall act as requested or directed by the police.

- 2.2.7 Where the use of convoy working is proposed, the DBFO Co shall take account of the document attached as Annex 2/1.

2.3 Lane Closures

The DBFO Co shall procure that all carriageways and hard shoulders shall remain fully open unless lane closures or restrictions have been made in accordance with Clause 14.3.

2.4 Closures of the Project Road and Alternative Routes

- 2.4.1 In addition to any requirements imposed by Law, where a road closure and the use of a diversion route is proposed by the DBFO Co it shall be discussed as soon as practicable with the Department's Representative, with the relevant highway authority for the diversion route and with the police pursuant to the Liaison Procedures. Written confirmation of the relevant highway authority's consent to use the diversion route at the times and on the dates proposed shall be obtained by the DBFO Co and a copy of such confirmation shall accompany the submission of a request to the Department's Representative pursuant to Clause 14 for any such road closure and diversion.
- 2.4.2 Subject to paragraph 2.8.3, road closures shall take place in such way as to minimise the impact on Users.
- 2.4.3 The DBFO Co shall erect signs to inform Users of planned road closures at least four (4) weeks before implementation, giving the times and dates of the closure, to enable Users to choose an alternative route.
- 2.4.4 All conflicting traffic signs shall be covered and, where Users are diverted off the Project Road, the DBFO Co shall at its expense procure that traffic signs are erected outside the area of the Project Road which clearly illustrates to Users how to rejoin the Project Road.
- 2.4.5 Signs encouraging the use of alternative routes away from the Project Road to a road of a lesser standard shall only be proposed when necessary to avoid anticipated delays to users in excess of thirty (30) minutes. The use of a signed alternative route shall only be considered if its use would not significantly affect road safety and the approval of the highway authorities concerned has been obtained in writing by the DBFO Co.
- ### 2.5 Recovery Vehicles for Breakdowns
- 2.5.1 In the circumstances described in the Traffic Signs Manual, Chapter 8, paragraphs 2.3.14.8 and 2.6.10, the DBFO Co shall provide and operate a free recovery service in accordance with Good Industry Practice and the remaining provisions of this paragraph 2.5 so as promptly to remove broken down, accident damaged and abandoned vehicles.
- 2.5.2 The recovery service is to be provided between the point which is two miles in advance of the relevant roadworks and the sign marking the end of the roadworks.
- 2.5.3 Operators of recovery vehicles shall hold a certificate certifying successful completion of a course on breakdown recovery recognised by the Road Transport Industry Training Board.
- 2.5.4 Operators of recovery vehicles shall be instructed to accept and act in accordance with the request and directions of the police.

- 2.5.5 Recovery vehicles shall be stationed at locations agreed with the police pursuant to the Liaison Procedures.
- 2.5.6 Broken down, accident damaged or abandoned vehicles shall not be removed by the recovery vehicles other than to location(s) agreed with the police pursuant to the Liaison Procedures. Such location(s) shall be in the vicinity of the Project Road.
- 2.5.7 The recovery vehicle shall be returned immediately to the location referred to in paragraph 2.5.5, after depositing a broken down, accident damaged or abandoned vehicle at one of the locations referred to in paragraph 2.5.6.
- 2.5.8 Users shall at all times be treated with courtesy by recovery vehicle operators and the DBFO Co shall promptly take all reasonable steps on the Project Road to facilitate the onward journey of those Users affected by a breakdown or accident.
- 2.5.9 Operators of recovery vehicles shall issue leaflets, as described in the Manual of Contract Documents for Highway Works, Volume 2, to the drivers of vehicles requiring assistance (other than in respect of abandoned vehicles) before a tow of the relevant vehicle commences.
- 2.5.10 Recovery vehicles shall display a sign mounted so as to be clearly visible from the driving seat of a car, at a distance of three (3) metres from the rear of the vehicles. The sign legend shall be "FREE TOW SERVICE. AVAILABLE ONLY TO END OF ROADWORKS". This sign shall at all times be clean and legible and shall not be obstructed.
- 2.5.11 Such communications systems as may be reasonably recommended by the police pursuant to the Liaison Procedures shall be provided by the DBFO Co for the purpose of enhancing the recovery service. The communications systems shall be fully operational before any work is undertaken which requires recovery vehicles to be provided.
- 2.5.12 A lighting board shall be secured to the rear of the vehicle being towed. The board shall be clearly visible to drivers of vehicles approaching the towed vehicle from the rear. The board shall be maintained in clean and good working order.
- 2.5.13 The recovery service shall comply with the specification in the form referred to in paragraph 2.5.14 in respect of which there has been no objection pursuant to the Review Procedure.
- 2.5.14 The DBFO Co shall, prior to the commencement of any works on the Project Road which would require a free recovery service to be operated, submit to the Department's Representative for review pursuant to the Review Procedure, a specification of the free recovery service it intends to provide on the Project Road. Such specification shall contain the details set out in NG SAMPLE APPENDIX 1/20 in the Manual of Contract Documents for Highway Works, Volume 2 and shall include (without limitation) details of the agreements reached under the Liaison Procedures pursuant to the provisions of paragraphs 2.5.5, 2.5.6 and 2.5.11. The Department's Representative may comment on such submission only on the grounds that the submission:
- 2.5.14.1 would not achieve the satisfaction of the Core O&M Requirements;
- 2.5.14.2 would not comply with Good Industry Practice;

2.5.14.3 would not provide a level of service consistent with that provided throughout the trunk road network; or

2.5.14.4 does not comply with the requirements of the police.

2.6 Driver Information Signs for Roadworks

2.6.1 Signboards shall be erected by the DBFO Co in situations described in the Traffic Signs Manual, Chapter 8, paragraph 3.2.20.3.

2.6.2 The general layout of the signboards referred to in paragraph 2.6.1 shall be in accordance with the principles of sign diagram 7007 as set out in the Traffic Signs Regulations.

2.6.3 Driver information signs shall be provided in accordance with Annex 2/3.

2.6.4 Courtesy signs for roadworks shall be erected by the DBFO Co at all roadworks which would involve the use of the "Sorry for any delay" sign diagram 7006 as set out in the Traffic Signs Regulations.

2.6.5 Subject to Clause 15.1, the DBFO Co shall obtain in advance all requisite approval required at Law in respect of the layout, location, type, size, colour, content, and proposed period of use of all signboards and courtesy signs to be used on or in relation to the Project Facilities.

2.6.6 Without prejudice to paragraph 2.6.5, the DBFO Co shall submit the proposed layout, location, type, size, colour, and content of all signboards and courtesy signs to be used on or in relation to the Project Facilities to the Department's Representative in accordance with Clause 15.2.

2.6.7 All signboards and courtesy signs used on or in relation to the Project Road shall be promptly removed when no longer required.

2.7 Information

2.7.1 The DBFO Co shall, in relation to the Project Road communicate to Users details of roadworks, possible delays and any alternative routes. For that purpose, the Secretary of State may require it to use, inter alia, advance publicity (including the use of paid advertisements and the publication of information leaflets (in such case where appropriate)) and the provision of up-to-date information to the local media and motoring organisations.

2.7.2 Without prejudice to the generality of paragraph 2.7.1, any telephone service referred to in Clause 14.4.2 shall:

2.7.2.1 provide up-to-date information on all existing and planned Lane Closures on the Project Road and planned major schemes or schemes where there will be frequent changes to the traffic management arrangements;

2.7.2.2 be manned during normal office hours in accordance with Good Industry Practice;

2.7.2.3 (insofar as it is not manned) contain a recorded message of any possible delays on the Project Road, any alternative routes that can be used by the User, the

telephone number on which the Traffic Safety Officer or one of his deputies can be contacted in the event of an Emergency and any other information which a User would reasonably require; and

- 2.7.2.4 be established and operated in accordance with the Secretary of State's reasonable requirements as notified to the DBFO Co from time to time.
- 2.7.3 Without prejudice to Clause 29.1, the DBFO Co shall deal with all queries and complaints received relating to the Project Facilities immediately. Insofar as such queries or complaints are not capable of being dealt with immediately, the DBFO Co shall provide a written reply within fifteen (15) days of the relevant query or complaint. The DBFO Co shall maintain a register detailing such queries and complaints and the actions taken by the DBFO Co in relation to the same, which register shall be available for inspection by the Department's Representative at all reasonable times.
- 2.7.4 The DBFO Co shall ensure that adequate notice is given to bus and other commercial operators who may be affected by proposed roadworks on the Project Road in good time to enable the recipients to make alternative arrangements. Where it is not practicable for bus services to use some existing bus stops during roadworks special arrangements shall be made by the DBFO Co at its expense (rather than the expense of the bus company) to ensure that bus passengers who use these stops are provided with a suitable alternative service.
- 2.7.5 Adequate notice shall also be given to large generators of traffic, such as airports and ports, where delays could have serious consequences.
- 2.7.6 The DBFO Co shall establish and, subject to obtaining the prior written consent of the Department's Representative in any particular case, implement a procedure for consulting in advance the general public and any local organisations (including, without limitation, any bus or other commercial operators) which may be affected by proposed roadworks on the Project Road.
- 2.7.7 For the purposes of paragraphs 2.7.4 and 2.7.5, the duration of adequate notice shall be agreed pursuant to the Liaison Procedures.
- 2.8 Level of Service**
- 2.8.1 The DBFO Co shall meet the requirements of Table F in the Traffic Signs Manual, Chapter 8 in the organisation of any programme of roadworks. Departures from the provisions of Table F of Chapter 8 may be submitted to the Department's Representative for review pursuant to the Review Procedure. The Department's Representative may comment on such departures only on the grounds that they will not achieve the satisfaction of the Core O&M Requirements and the satisfaction of the other requirements of this Part 2 of Schedule 6.
- 2.8.2 Full lane availability shall be provided on the Project Road during any period when the Department normally insists on a similar level of lane availability on any Connecting Road. The Liaison Procedures shall include a procedure for the DBFO Co to be informed of any such periods.
- 2.8.3 Night-time working shall be used whenever to do so will materially reduce traffic delays without causing any deleterious environmental effect on residential property adjacent to the works site or to roads used by the DBFO Co for bringing workers, plant or materials to or from the works site. The DBFO Co shall establish procedures with the environmental

health officers of relevant local authorities to determine permitted noise levels for general night-time working along the Project Road and agree permitted noise levels for categories of works.

**Annex 2/1
To Part 2 of Schedule 6**

Convoy Working

1. INTRODUCTION

General

- 1.1 The 1991 edition of Chapter 8 of the Traffic Signs Manual (Ref. 1), at clause 2.5 of Volume 1, requires that lateral safety clearances shall be provided between the edge of the working space of a road works site and the edge of the part of the carriageway in use by vehicles. Where the highway width is restricted, and this is not possible and diversion of the traffic is impractical, Chapter 8 requires that traffic speeds past the working space must be reliably reduced to 10 mph or less and an agreed safe method of working imposed on the site.
- 1.2 Convoy working is a method of working in which traffic is brought to a halt in advance of roadworks using traffic control and is then led through the site past the works by a works vehicle.
- 1.3 References to Figures in this Annex 2/1 are references to the figures in Appendix 1 to this Annex 2/1.
- 1.4 References to drawing numbers or diagram numbers in this Annex 2/1 are references to drawings or diagrams having the same number in Chapter 8.

Key Question

- 1.5 Those responsible for the design or implementation of a convoy working system should ask themselves the key question, "Are the proposed arrangements for this convoy working system sure to prevent any traffic from exceeding 10 mph whilst passing the working space"?

Scope

- 1.6 The recommendations in this Annex 2/1 cover the criteria for use, operational requirements and traffic management layouts for convoy working on all-purpose single carriageway and dual carriageway roads.
- 1.7 The layouts shown must be implemented in conjunction with appropriate layouts from Volume 2 of Chapter 8 of the Traffic Signs Manual. They must not be used on their own.

Definitions

- | | | | |
|-----|--------------------------|---|--|
| 1.8 | Lateral safety clearance | - | this has the meaning given to it in paragraph 2.5.1 of Chapter 8 of the Traffic Signs Manual. |
| 1.9 | Retroreflective sign | - | a sign which has the property to return light in the directions close to the direction from which it came, this being maintained over a wide variation of the direction of the incident light. |

- 1.10 Working space - this has the meaning given to it in paragraph 2.5.1 of Chapter 8 of the Traffic Signs Manual.

Implementation

- 1.11 This advice should be taken into consideration where the highway width is so restricted as to prohibit the provision of the lateral safety clearances required in Chapter 8, and the diversion of traffic would be impractical. The technique can be used on:
- 1.11.1 single carriageways where traffic travels in either a single direction, or in alternating opposite directions;
 - 1.11.2 individual carriageways of 2 lane all-purpose dual carriageway roads where traffic travels in one direction only and works have reduced the traffic to single file; and
 - 1.11.3 carriageways during surface dressing operations when it is considered necessary to ensure compliance with speed limits which have been implemented to protect newly laid surface dressing.
- 1.12 Convoy working may be used during the hours of daylight or darkness.
- 1.13 Convoy working shall not be used on motorways.
- 1.14 Convoy working has been used successfully on single carriageways with 2 way peak hour flows of 900-1000 vehicles/hour and on dual carriageways, where the one way hourly traffic flow has typically not exceeded 600 vehicles/ hour during the period of convoy working.
- 1.15 On single carriageways it has been found that at flow levels approaching the quoted value it may be necessary to restrict peak time working or make provision to withdraw convoy working periodically to disperse queues. In this event the work activity must also be suspended until the passing speed of traffic can again be reduced to 10 mph or less.

2. LEGAL CONSIDERATIONS

- 2.1 Provided that a mandatory speed limit has been lawfully imposed and the traffic signals or Stop/Go boards are lawfully placed and operated, no other statutory authority for convoy working is required, since the driver of the convoy escort vehicle is merely exercising his legal right to proceed along the restricted length of road at a speed at or near the maximum permitted speed. Since there is no primary legislation which enables drivers of convoy escort vehicles to do anything which an ordinary driver cannot do, it is essential that a temporary mandatory speed limit is imposed in accordance with paragraph 8.1 to this Annex 2/1 in order to prevent these drivers from being accused of driving without due consideration to other road users or of causing an obstruction of the highway when travelling at a low speed.
- 2.2 Convoy escort vehicle drivers should be instructed that they are not empowered to carry out manoeuvres other than those which any other driver could do. They must observe speed limits and comply with traffic signals or Stop/Go boards as other drivers are required to do. A convoy escort vehicle driver who breaks any traffic laws or drives in an unsafe manner could be prosecuted.

- 2.3 The convoy vehicle must be fit to travel on the public highway in all respects, including road tax and insurance.

3. **CONTRACT DOCUMENTATION**

- 3.1 Where signs are specified in the Manual of Contract Documents for Highway Works Volume 1 products conforming to equivalent standards and specifications of other member states of the European Economic Area and tests undertaken in other member states will be acceptable in accordance with the terms of the 104 and 105 Series of Clauses of that Manual. Any contract not containing these Clauses must contain suitable clauses of mutual recognition having the same effect regarding the advice which should be sought.

4. **PRE-PLANNING**

- 4.1 Comprehensive pre-planning must involve the Police and other emergency services, and also, as appropriate, the local highway authority, the Contractor, and the Statutory Undertakers. This should include:
- 4.1.1 Planning the works and individual operations to minimise their possible effect on traffic delay and interference with the convoy system.
 - 4.1.2 Planning an appropriate convoy system.
 - 4.1.3 Agreeing a queue management strategy including levels of congestion which trigger special action, and safe methods of working for the withdrawal of convoy working.
 - 4.1.4 Determining the method to be adopted for allowing the safe passage of emergency vehicles through the works.
 - 4.1.5 Determining the method to be adopted for the management of side road traffic.
 - 4.1.6 Agreement of the precise radio commands to use in relation to the convoy operations.
 - 4.1.7 The comprehensive briefing of those involved in the works and the convoy operations as to their precise roles and responsibilities.
- 4.2 Risk assessment: A risk assessment of the actual work activity and the effects of convoy working on the workforce and highway users must be conducted in order to determine whether this system is appropriate for the particular task and location.

5. **CONVOY VEHICLES**

Type of Vehicle

- 5.1 Four wheel vehicles with drivers are to be provided. Each vehicle driver must be in radio contact with the traffic signal (or Stop/Go board) operator and the works supervisor.
- 5.2 Convoy vehicles should have good all round visibility and wing mirrors fitted on both sides. A tight turning circle can be particularly useful on single carriageways. Vehicles should be painted yellow, white or some other conspicuous colour.

- 5.3 The vehicles should be capable of being driven at 10 mph through the length of the works for the duration of the contract. The vehicles should be capable of travelling at low speeds without overheating. Diesel engined vehicles have proved to be less prone to overheating than petrol engined ones. However, overheating problems in the latter can be overcome by fitting additional fans. The vehicle must be equipped with a speedometer capable of indicating 10 mph.
- 5.4 The type of vehicle to be used is also important. For instance quad bikes, mini-tractors and small hatchbacks have been used successfully on single carriageways and medium sized pickup vans on dual carriageways where works are generally longer and intimidation by HGVs is more likely.
- 5.5 The vehicles should be fitted with roof-mounted flashing amber beacon(s). Neither the beacon(s) nor the sign mentioned in paragraph 5.6 to this Annex 2/1 should obscure one another.
- 5.6 A retroreflective sign to Class 1 of BS 873:Part 6:1983 (Ref. 2), stating "CONVOY VEHICLE NO OVERTAKING", shown as Sign A (Figure 1), is to be displayed to the rear of each vehicle. The sign should not obscure the driver's view to the rear and should preferably be roof-mounted. On dual carriageway roads, if the vehicle is unable to turn round within 1/2 mile of the end of the works, then consideration may be given to omitting the words "NO OVERTAKING" from the sign legend. In this case static mandatory "NO OVERTAKING" signs (Diagram 632) should be used where it is considered to be a problem.

Numbers of Vehicles

- 5.7 The number of vehicles required will be dependent on the traffic flow, the characteristics of the site and the method of working. Single vehicle and three vehicle systems have both been used with considerable success on single carriageways. When traffic flows are low, one or two vehicles may be satisfactory. The three vehicle system is particularly suited to higher traffic flow sites or sites where the convoy vehicle has to turn at a location which is remote from the works, increasing the cycle time of the system and hence the delays to traffic.
- 5.8 On dual carriageways, the system does not operate on a shuttle basis and the ease with which vehicles can turn and get back to the start of the works therefore influences the number of vehicles required. The empirical formula below may be used to give an indication of the likely requirement on dual carriageway working.

$$\text{No of convoy vehicles for dual carriageway} = \frac{X}{Y} + 1$$

where	X	=	estimated cycle in minutes of convoy vehicle
		=	time to travel through the works + return time
	Y	=	time in minutes for maximum acceptable queue to develop
		=	$\frac{\text{max queue}}{\text{vehicles/hour}} \times 60$

Maximum queue is site dependent but is generally of the order of 30 vehicles.

- 5.9 At least one standby convoy vehicle should be provided in case of breakdown to any of the operating vehicles and for use when they are being refuelled. If at any time insufficient vehicles are available to operate the system as planned, convoy operations must be suspended and a full safety zone put in place or the work activity temporarily suspended.

6. TRAFFIC CONTROL

- 6.1 Positive traffic control should be provided at sites by means of manually operated portable traffic signals or Stop/Go boards on single or dual carriageways, and at side road junctions with dual carriageways, with Stop/Go boards only. These methods of control are as described in paragraphs 2.6.5-2.6.9 and Section 4.2 of Chapter 8 of the Traffic Signs Manual. Traffic signals requirements are also set out in TD21/85 of Volume 8 of the Design Manual for Roads and Bridges (Ref. 3).
- 6.2 On single carriageways the length of site subject to traffic control should normally be restricted to a maximum length of 300m for portable traffic signals and 500m for Stop/Go signs, these being the maximum permitted lengths under Chapter 8. Whilst lengths greater than these are possible on single carriageways using specially modified control equipment they are currently departures from Chapter 8. Decisions relating to their use should be fully recorded by the proposers and in the case of trunk roads notified to the Department's Nominee.
- 6.3 On dual carriageways the length of site subject to traffic control should be restricted to a maximum length of 1500m. Whilst longer lengths are possible they may adversely affect the capacity of the system or require an inordinately high number of convoy vehicles to be used.
- 6.4 Signals should be operated manually during convoy working with provision to switch to vehicle actuation during periods when no work is taking place. Stop/Go boards can be beneficial on single vehicle convoy working since they are more sensitive to traffic demand and allow more control of red light jumping which can be more prevalent with this convoy system.
- 6.5 On high speed single carriageways and dual carriageways, 2 signal heads are preferred, one on the nearside verge and one on the offside verge. On other roads a single head should be used, positioned to optimise its visibility to approaching traffic. In most cases a position to the centre of the carriageway behind the traffic management coning at each end of the works will be satisfactory.
- 6.6 If unduly large queues of traffic occur it may be necessary to suspend convoy working in order to clear the delay. If this is done then the 10 mph signing should be replaced with 40 mph signing and the convoy signs should be covered. During this phase the works will need to be suspended or modified so that the appropriate safety zone can be implemented.
- 6.7 Where possible the period between convoys in the same direction should not be more than 5 minutes. Shorter periods would be preferable but are not always practical. The optimum length of convoy and cycle time for the site layout and traffic flows should be calculated as far as is possible before operations commence. Transportation of chippings etc. should be planned to work in behind or between convoy flows.
- 6.8 As soon as a convoy has passed by the signals (or Stop/Go board), the vehicle that is to lead the next convoy should take up position to prevent any traffic entering the restricted lane. This is not possible when only one convoy vehicle is in use. In this case, traffic

control should be by means of individually manned Stop/Go boards so that operatives are present to encourage drivers to obey the signs and travel in convoy. Should a gap occur for any reason in the traffic passing the signal (or Stop/Go board) then the operator should immediately signal "Stop". This is to prevent a "late" vehicle rushing through the convoy lane to catch the tail of the convoy.

- 6.9 At the end of the works, the position that the convoy vehicle pulls over and waves traffic on should be such that the last vehicle in the convoy has passed the works. This will avoid the tail of the convoy speeding up whilst still passing the work area.
- 6.10 Manually operated traffic signals or Stop/Go boards should be used to effect the initial stopping of the traffic flow and to allow the introduction of the convoy vehicles (but see Section 6.8 above when a single convoy vehicle is in use).

7. **TRAFFIC SIGNS**

- 7.1 The traffic management layouts given in this Annex 2/1 are not complete in themselves. They supplement whichever layout given in Chapter 8 of the Traffic Signs Manual is appropriate for the road and traffic management arrangement appertaining to the particular work site.
- 7.2 The traffic management layouts for convoy working shall be as indicated in either Figure 2 or Figure 3 using the signs and plates detailed in Figures 1 and 4.
- 7.3 The working space, as defined in paragraph 2.5.1 of Chapter 8, must be adequately delineated by cones or other means unless alternative safe working practices are implemented to compensate for the omission of delineation and adequate warning is given to the travelling public.
- 7.4 On single carriageways with 2 way peak hourly traffic flows in excess of 900 vehicles or which are subject to very high traffic speeds or restricted forward visibility, warning signs (Signs B and C, Figure 1) in the standard layouts should also be placed on the off-side of the carriageway and their size increased from the 750mm specified in Table A of Chapter 8 to 900 mm. Cones should be increased from the 450mm specified in Table C of Chapter 8 to 750 mm where practical.
- 7.5 On single carriageways the Other Danger Ahead sign (Diagram 562) with a supplementary plate stating "Queues ahead" (Diagram NP562.1: Sign H, Figure 4) should be used when visibility on the approach to the traffic control is restricted. The size and siting of the sign (Diagram 562) and the size of supplementary plate (Diagram NP562.1) shall be in accordance with Chapter 4 of the Traffic Signs Manual Tables A and B respectively. In both cases the hazard is defined as the rear of the possible queue.
- 7.6 On dual carriageways traffic should be reduced to single file using a single lane closure at least 500m in advance of the traffic control. In addition to regularising the traffic in advance of the works this also acts as a stacking lane for queuing traffic. The Other Danger Ahead sign (Diagram 562) with a supplementary plate stating "Queues ahead" (Diagram 562.1: Sign H, Figure 4) should be positioned downstream of the lead in taper at the start of the stacking lane.
- 7.7 Signs giving advance notice of the commencement of the works shall be displayed seven days before work begins.

- 7.8 There is a greater possibility of long queues developing at convoy working sites than at normal ones, therefore the siting distance of the first sign in advance of the works should equal or exceed the highest figure given in the second column of Table A in Volume 1 of Chapter 8. Wherever practicable the first sign should be to drawing 7005.
- (NB. If there is a shortage of space the Road Works Ahead sign (Diagram 7001) and the distance plate portion of Diagram 7005 can be on a separate sign from the explanatory legend.)
- 7.9 When convoy working takes place at night on a dual carriageway road Sign I (Figure 4) should be placed between the 1 mile and 2 mile advance signs. This should be left in place during the day.
- 7.10 If necessary the Other Danger Ahead sign (Diagram 562) with plate "Queues ahead" (Diagram 562.1: Sign H, Figure 4) should be used as appropriate.

8. SPEED LIMITS

- 8.1 A temporary mandatory 10 mph limit must be imposed throughout the length of the works which is subject to convoy working. This should extend a short distance beyond the works so that the tail of the convoy is held to 10 mph until it has passed the works. It is likely that an extension of the coned section will be necessary to prevent overtaking of the convoy vehicle. It may be convenient to make the speed limit variable so that a 40 mph or 10 mph restriction comes into force when the appropriate signs are displayed, that is, 40 mph for use when the convoy vehicles have been withdrawn.
- 8.2 Repeater signs should be provided at the intervals indicated in Figures 2 and 3. On dual carriageways a 900mm diameter repeater should be used. On single carriageways the repeater should be as prescribed in the Traffic Signs (Speed Limits) Regulations 1969. Signs larger than those given in paragraph 7 of the Regulations may be used provided they are of a size prescribed in Diagram 1 of the Regulations.
- 8.3 On high speed roads, both single and dual, a temporary mandatory limit of 20 mph below the permanent limit prevailing on the road, should be imposed in advance of the temporary 10 mph limit. The speed limit signs should be positioned far enough away from the works to permit traffic to reduce its speed comfortably to the required level, but not so far as to prematurely constrain drivers to artificially low speeds for long distances in advance of them. On dual carriageway trunk roads an advance sign warning of the speed limit should be provided (Diagram 7290).
- 8.4 Whenever convoy working is withdrawn, any mandatory 10 mph signs must be covered or removed until such time as it is reinstated. All other speed limits signs should be covered or removed outside working hours unless it is unsafe to do so or they are considered necessary to maintain safety within the site. It is important that the arrangements for imposition of mandatory limits are discussed and agreed with the Police.

9. RADIO COMMUNICATION

- 9.1 There should be a radio communications system between the operators of the signals (or Stop/Go boards), the drivers of the convoy vehicles and the works supervisor. The main purposes of this are:

- 9.1.1 to inform the signal (or Stop/Go board) operator of the time to effect a change; and
- 9.1.2 to tell the driver of the leading convoy vehicle when the end of the convoy has cleared the works allowing the speed to be increased.
- 9.2 All operatives must be fully conversant with its use and should be carefully briefed about their role and the agreed method of radio control.
- 9.3 It has been shown that there are benefits to be gained by using precise predetermined radio requests for the changing of the traffic control, dealing with emergency vehicles and other key steps in the operation of the convoy system.
- 10. **SIDE ROADS WITHIN SITES**
 - 10.1 The works should be arranged to avoid junctions occurring within them. Where this is not reasonably practicable then the following procedures should be adopted.
 - 10.2 For minor road with high flows, if a suitable diversion exists for the minor road, a road closure should be implemented to close the minor road in the vicinity of the junction. If there is no diversionary route, the works should, if possible, be located so that the junction falls at one end of them and signal control provided for the minor road flow.
 - 10.3 For a minor road with low flows and accesses where the traffic held at the signals is visible to the joining traffic, control should be provided by Stop/Go signs and signing to Chapter 8 paragraph 3.2.2.6 should be provided on the minor road. This should be supplemented with convoy signs B and C (Figure 1) 100m and 50m respectively in advance of the junction and Sign E (Figure 1, using the "Stop sign" version of the legend) at the junction stop or give way. Arrangements at such locations should prevent the possibility of a gap being created between the end of the convoy and the traffic joining it from the side road.
 - 10.4 Where visibility requirements cannot be met, the minor road should be placed under signal control in accordance with the requirements of Section 4.3 of Chapter 8. Convoy signs should be provided in accordance with Figure 2.
 - 10.5 Signing on the major road in the vicinity of junctions should be provided in accordance with paragraph 3.2.3.3 of Chapter 8.
 - 10.6 On dual carriageways where at-grade side roads are present within the convoy area and closure is not possible, control should be provided by Stop/Go signs. In such cases the traffic signal supervisor should advise the Stop/Go board operator at the side road by radio that the convoy is proceeding through the works. As the tail of the convoy passes his position the operator should signal the waiting side road traffic to join the convoy. When the last vehicle in the side road queue has joined the convoy he should turn the sign to "Stop". On single carriageways, vehicles joining from the side road should be directed to join the tail of a convoy travelling in the direction in which they wish to turn.
- 11. **CONVOYING METHOD**
 - 11.1 The basic principles of convoy working on both single and dual carriageways are given in Appendix 2 to this Annex 2/1. On single carriageways, the choice between single and three vehicle working will depend on the traffic flow and the characteristics of the site. The single vehicle method will be most appropriate when flows are low and there are

convenient locations for turning round at each end of the works (see paragraph 5.7 to this Annex 2/1).

12. WORKS WITHIN THE RUNNING LANE

- 12.1 A limited number of works such as gully cleaning or cats' eye replacement or cone maintenance may be carried out in the running lane between convoys. The traffic signals or Stop/Go boards at both ends of the works must be turned to "Stop" during this process.
- 12.2 Where works are allowed to encroach into the running lane, the traffic signal supervisor must check by radio with the works supervisor that the running lane is clear before releasing the convoy. Similarly the works supervisor must not allow works to recommence until the traffic signal supervisor has confirmed that the running lane is clear of convoyed vehicles.

13. QUEUE MANAGEMENT

- 13.1 A system of monitoring queue lengths should be implemented so that any excessive build up of traffic can be identified at an early enough stage to enable action to be taken to avoid long delays. If unacceptably large queues of traffic occur it may be necessary to suspend convoy working in order to clear the delay. If this is done then the 10 mph signing should be replaced with 40 mph signing and the works will need to be suspended or modified so that the appropriate safety zone can be implemented. Once the queue has cleared, then normal convoy operations may be recommenced. It should be borne in mind that, depending on the nature of the works, it may take longer to implement these measures on some schemes than on others.
- 13.2 On sites where it is not possible to establish a safety zone, plant and operatives shall be stood down and moved to the back of the working space until convoy working has been re-established.
- 13.3 The works supervisor must ensure that the running lane is clear before unrestricted traffic is allowed past the works.

14. EMERGENCY VEHICLES

- 14.1 Contingency measures to allow the free passage of emergency vehicles through the convoy lane should be pre-planned. This should include prior discussion with the local emergency services. One method is for a single radio call to instigate the suspension of work and the implementation of an all-red (or all "Stop") stage thereby clearing the convoy lane and enabling emergency vehicles to overtake the waiting queue on the off-side, "jump" the signals (or Stop/Go board) and proceed unobstructed through the works.
- 14.2 Before the emergency vehicle enters the site, the works supervisor must ensure that any convoy travelling in the opposite direction to it has cleared the works or has been halted at a location where the emergency vehicle can pass. He must also ensure that the running lane is clear and that plant and operatives have been stood down.

15. PUBLICITY

It is essential that the public are made aware of the reasons for carrying out the convoy method eg site safety, the benefits to be gained from its use, eg avoidance of diversionary routes, and minimising queue jumping. Wherever possible the opportunity should be taken

to detail the method of working and the benefits to the workforce and the public in local newspapers, local radio and TV.

16. **REFERENCES**

1. DEPARTMENT OF TRANSPORT (1991). The Traffic Signs Manual - Chapter 8 "Traffic Safety Measures and Signs for Road Works and Temporary Situations". HMSO, London.
2. BRITISH STANDARDS INSTITUTION (1983). British Standards specification BS 873 - Road Traffic Signs and Internally Illuminated Bollards; Part 6 - Specification for Retroreflective and Non-retroreflective Signs British Standards Institution, London.
3. HIGHWAYS AGENCY (1985). Design Manual for Roads and Bridges. Volume 8. Departmental Standard TD21. Portable Traffic Signals at Roadworks on Single Carriageway Roads. HMSO, London.

Appendix 1 to Annex 2/1

Figures Referred to in Annex 2/1

See following pages K1-K4

Appendix 2 to Annex 2/1

Convoying Method

See following pages L1-L4

**Annex 2/3
to Part 2 of Schedule 6**

Driver Information Signs

1. A reference in this Annex 2/3 to a sign diagram number is a reference to the diagram number set out in the Traffic Signs Regulations.

DRIVER INFORMATION SIGNS

2. Information signs shall be used in accordance with this Annex 2/3 for all roadworks on the Project Road (including without limitation all maintenance work, new construction or improvement schemes on the Project Road) where a lane or the hard shoulder is closed ("**Roadworks**").

DRIVER INFORMATION SIGNS IN ADVANCE OF THE SITE

3. A "two mile advance warning sign" in the form of sign diagram 7004 shall be displayed two miles in advance of every Type A works (as defined in the Traffic Signs Manual, Chapter 8, Section 4) ("**Type A Works**") on any dual carriageway which has a 50 mph or more speed limit during normal hours ("**High Speed Dual Carriageway**") and for all Roadworks with a duration of more than 4 weeks. The legend on the sign shall describe the activity being carried out in relation to the Roadworks.
4. A "one mile advance warning sign" in the form of sign diagram 7004 shall be displayed one mile in advance of all Type A Works other than those referred to in paragraph 3 of this Annex 2/3 and for all Type B works (as defined in the Traffic Signs Manual, Chapter 8, Section 5) on any High Speed Dual Carriageway. The legend on the sign shall describe the activity being carried out in relation to the Roadworks.
5. A sign in the form of sign diagram 7005 shall be erected one mile in advance of the site of all Roadworks where a two mile advance warning sign is required to be erected pursuant to paragraph 3 to this Annex 2/3. The sign shall indicate how long delays are possible (e.g. if, upon commencement of the Roadworks, the expected completion date is 20 March, then the third line of the legend shall read "until April 96" (i.e. the month following the expected completion date)). The date on the sign shall be updated to reflect the actual date of the completion of the Roadworks at least 10 working days before the date on which the relevant Roadworks are anticipated to be completed and the carriageway restrictions are to end (e.g. "until 20 March"). The date must be continually updated until the Roadworks are completed and the carriageway restrictions are removed.

DRIVER INFORMATION SIGNS WITHIN ROADWORKS SITES

6. Driver information signs in the form of sign diagram 7004 (but excluding sign diagram 7001 and the distance plate relating thereto) (the "**7004 Information Signs**") shall be displayed when any part of the Project Road is coned off for a period exceeding 30 minutes and the reason for this is not clear to the User. This period may be extended to one hour if the traffic in the vicinity of the relevant Roadworks is moving smoothly at a level which is consistent with movement of traffic on the relevant section of the Project Road at similar times when there are no Roadworks.

7. The 7004 Information Signs shall not be positioned so as to present a distraction to Users and in positioning the 7004 Information Signs, consideration shall be given to the fact that Roadworks are an obstacle and Users need to concentrate and take care when changing lanes to negotiate the traffic management relating to the Roadworks. Therefore, there shall be no distractions until any such manoeuvre has been completed. The 7004 Information Signs shall not be used if they are not capable of being placed at least 50 metres beyond the narrowest point in the coned area approaching the relevant Roadworks (i.e. the downstream end of the taper). The length of the coned off lane must also be long enough for the sign to be read safely.
8. The 7004 Information Signs shall be placed at the beginning of the Roadworks and at 1 kilometre intervals throughout the Roadworks. All signs must be either permanently sited, where it is safe to do so, or kept in adequate storage facilities, ready to be displayed at short notice. The storage facilities must be located away from traffic flows (e.g. on the verge within the Roadworks). Under no circumstances should signs be kept in a safety zone (as defined in the Traffic Signs Manual, Chapter 8, paragraph 1.2.4), propped against a safety fence or left lying between safety fences. If signs are to be permanently sited, covers must be provided that completely cover the sign and prevent the face from being read under any lighting conditions, including when illuminated by vehicle headlights.
9. The 7004 Information Signs shall only be displayed in relation to a Roadworks site when they accurately reflect the reason for the inactivity. They shall not be used as an excuse for poor planning or inefficient work practices.

LEGENDS FOR DRIVER INFORMATION SIGNS

10. A range of legends approved for use on signs in relation to sign diagram 7004 is set out in Appendix 1 hereto. If the legends do not adequately meet the requirements of a particular Roadworks scheme, a suitable legend shall be submitted by the DBFO Co to the Department's Representative for review in accordance with the Review Procedure. The Department's Representative may comment on such submissions only on the grounds that the submission:
 - (a) would not achieve the satisfaction of the Core O&M Requirements;
 - (b) would not comply with Good Industry Practice; or
 - (c) would not provide a level of service consistent with that provided throughout the trunk road network.
11. Guidance on the generation of suitable legends is set out in Appendix 2 hereto.

Appendix 1 to Annex 2/3

Approved Legends for Driver Information Signs At Road Works

2 MILE ADVANCE WARNING SIGN DIAGRAM 7004

Top Line	Second Line	Third Line	Fourth Line
Replacing	worn out	road	
Renewing	damaged	bridge	deck
Repairs to	weak	surface	
Repairs to	weak	bridge	support
Bridge	painting		
Repairs to	bridge		
Installing	new	hard	shoulder
Installing	new	drainage	system
Installing	new	road	markings
Installing	new	cabling	
Installing	new	safety	barrier
Installing	new	gantry	
Installing	new	lighting	
Building	new	service	area
Ground	survey	works	
Widening	and	road	repairs
Installing	sign	gantry	
Building	service	area	access

1 MILE ADVANCE WARNING SIGN DIAGRAM 7004

Top line	Second line
Essential	maintenance

VARIANT TO SIGN DIAGRAM 7004 FOR USE WITHIN THE ROADWORKS

Work suspended Unsuitable weather

Repair work on bridge below

Road Repairs Materials Hardening

Lane closed to protect workforce

Lane closed for safety

Further works ahead Lane remains closed for safety purposes

Concrete setting

Appendix 2 to Annex 2/3**Design Guide for the Legends of Driver Information Signs****SIGN DIAGRAM 7004**

1. This sign should indicate to drivers the nature of the Roadwork being undertaken. Its message should be specific in the case of signs used at major Roadworks. For routine and minor Roadworks it is sufficient to use a general legend such as "Essential maintenance" whether one or more tasks are being carried out. In this latter case a few other general legends may also be needed such as "Surveying" and "Inspecting".
2. The distance shown on the sign should be "2 miles" in the case of major Roadworks and "1 mile" when used for routine and minor Roadworks.
3. The overall size, colour and type of the sign should conform to sign diagram 7004. The legend should take up no more than four lines, each of which should be centred upon one another, and follow the rules given below where it is practicable to do so:
 - (a) Top line - This should be a "verb" eg. Replacing, Renewing, Installing.
 - (b) Second line - This should be an "adjective" eg. worn, damaged, weak.
 - (c) Third/Fourth line - This should be a "noun" eg. road, bridge, deck, concrete.
4. This guidance is without prejudice to the list of approved legends set out in Appendix 1 to this Annex 2/3. Where it is not practicable to adhere to the above rules, the provisions of paragraph 10 of this Annex 2/3 shall apply.

SIGN DIAGRAM 7005

5. This sign should warn Users that they may experience delays and indicate for how long the delays are possible. The day and month or, alternatively, the month and year shall be given.

THE 7004 INFORMATION SIGN FOR USE WITHIN ROADWORKS SITES

6. This sign is to explain why part of the road is coned off but no Roadworks are, or appear to be, taking place and when Roadworks are suspended or are not visible from the carriageway.
7. The size, colour and type of the sign should conform to sign diagram 7004.

Section 3: Routine Maintenance

3.1 Introduction

- 3.1.1 This Section 3 contains provisions for the performance of Routine Maintenance of the Project Facilities. For the purposes of this Section 3, Routine Maintenance does not include Maintenance Works (see Section 4), winter maintenance (see Section 5), or maintenance of highway structures (see Section 6).
- 3.1.2 Paragraphs 3.1, 3.2 and 3.3 contain provisions of general application to Routine Maintenance of all Project Facilities. Paragraphs 3.4 to 3.18 contain additional provisions relating to the Routine Maintenance of specific parts of the Project Facilities.
- 3.1.3 The DBFO Co shall carry out Routine Maintenance in respect of the Project Facilities in accordance with this Section 3. Such Routine Maintenance shall include, without limitation, carrying out cyclical maintenance of the Project Facilities at the frequencies set out in Annex 3/1 or, where no frequencies are set out therein, at the frequencies set out in WOTRMM, Part 2. Where no frequency is stated either in Annex 3/1 or in the relevant part of WOTRMM, cyclical maintenance shall be carried out in accordance with Good Industry Practice.

3.2 Inspection

- 3.2.1 The DBFO Co shall plan and implement a programme of inspection of the Project Facilities in accordance with WOTRMM, Part 2 and the Highway Inspection Survey Site Inspectors Manual, which:
- 3.2.1.1 is designed to verify the continuing safety of the Project Facilities for Users;
 - 3.2.1.2 identifies those defects which fall to be repaired as part of Routine Maintenance;
 - 3.2.1.3 prioritises defects requiring immediate and urgent attention because they are likely to create a danger or serious inconvenience to Users;
 - 3.2.1.4 is responsive to reports or complaints received from Users, the police or other relevant organisations;
 - 3.2.1.5 takes account of major accidents or other adverse incidents affecting the Project Facilities;
 - 3.2.1.6 monitors the effects of extreme weather conditions;
 - 3.2.1.7 collates data to monitor performance of the Project Facilities and to establish priorities for future maintenance operations; and
 - 3.2.1.8 incorporates the other requirements for inspection described elsewhere in this Section 3.
- 3.2.2 In order to ensure compliance with the Core O&M Requirements, as a minimum standard, inspections shall be carried out at the frequencies set out in Annex 3/1 or, where no frequencies are set out therein, at the frequencies set out in WOTRMM, Part 2. Where no

frequency is stated either in Annex 3/1 or in the relevant part of WOTRMM, inspections shall be carried out in accordance with Good Industry Practice.

3.3 **Remedy of Defects**

3.3.1 Where defects in the Project Facilities which constitute an imminent or immediate hazard to Users are revealed by any inspection or are otherwise brought to the attention of the DBFO Co, the DBFO Co shall take immediate steps to alert Users to the hazard and shall, as a minimum, carry out temporary repairs to eliminate such hazard as soon as possible thereafter and in any event within twenty-four (24) hours. Any such temporary repair to safety fencing shall be replaced by a permanent repair within seven (7) days. All other temporary repairs of defects constituting an imminent or immediate hazard to Users shall be replaced by permanent repairs within twenty-eight (28) days.

3.3.2 The DBFO Co shall plan the repair of all defects to ensure that any adverse impact on Users is minimised.

3.4 **Survey Markers**

The DBFO Co shall conduct Routine Maintenance of the CHART node markers and bar code plates on the Existing Road and installed on the New Road in order that HRM, SCRIM and all other relevant survey data can be located accurately relative to the Project Road.

3.5 **Road Pavement**

3.5.1 Routine Maintenance of the road pavement of the Project Road shall include, without limitation to the generality of the foregoing paragraphs of this Section 3, the repair of potholes, ruts, steps, spalled joints, and areas of cracking, crazing or fretting.

3.5.2 The DBFO Co shall carry out Routine Maintenance to road pavements on the Project Road so as to comply with, inter alia, DMRB, Volume 7, Section 4, Part 1, HD 31/94 (Maintenance of Bituminous Roads) or HD 32/94 (Maintenance of Concrete Roads), as appropriate.

3.6 **Footways, Cycle Tracks and Bridleways**

3.6.1 The DBFO Co shall carry out Routine Maintenance of footways, cycle tracks and bridleways. Inspection for the purposes of Routine Maintenance within urban areas shall be carried out on foot.

3.6.2 Without limitation to the generality of the foregoing paragraph 3.6.1, defects in footways, cycle tracks and bridleways which shall be remedied as part of Routine Maintenance within the timescale given in paragraph 3.3 shall include:

3.6.2.1 ridges, projections, sharp edges (trips), cracks and gaps greater than 20mm;

3.6.2.2 potholes and small area depressions greater than 25mm in depth that are creating or are likely to create a hazard;

3.6.2.3 rocking slabs; and

- 3.6.2.4 standing water more than 10mm deep which effectively restricts unimpeded progress to a width less than 500mm, or is likely to cause pedestrians to use the adjacent carriageway.

3.7 **Covers, gratings, frames and boxes**

- 3.7.1 The DBFO Co shall, or where appropriate shall procure the Statutory Undertaker to, carry out Routine Maintenance of covers, gratings, frames and boxes.
- 3.7.2 Without limitation to the generality of the foregoing paragraph 3.7.1, defects which shall be remedied as part of Routine Maintenance within the timescale given in paragraph 3.3 shall include:
 - 3.7.2.1 gully and other gratings in carriageways and cycle tracks that have gaps more than 20mm wide, parallel to the normal line of movement of pedal and motor cycles;
 - 3.7.2.2 worn covers that constitute a skidding hazard to pedal and motor cycle users in wet conditions;
 - 3.7.2.3 cracked or broken items in danger of collapse;
 - 3.7.2.4 differential levels between items and the road pavement, footway or cycle track surface exceeding 20mm;
 - 3.7.2.5 differential levels between components exceeding 20mm;
 - 3.7.2.6 rocking gratings or covers with a relative movement under load exceeding 10mm; and
 - 3.7.2.7 rocking gratings or covers with a relative movement under load of less than 10mm which causes nuisance.

3.8 **Kerbs, Edgings and Pre-formed Channels**

- 3.8.1 The DBFO Co shall carry out Routine Maintenance of kerbs, edgings and pre-formed channels.
- 3.8.2 Without limitation to the generality of paragraph 3.8.1, defects which shall be remedied as part of Routine Maintenance within the timescale given in paragraph 3.3 shall include:
 - 3.8.2.1 vertical projections greater than 20mm;
 - 3.8.2.2 horizontal projections greater than 50mm;
 - 3.8.2.3 loose or rocking items that are creating, or are likely to create, a hazard;
 - 3.8.2.4 damaged or shattered items that are creating, or are likely to create, a hazard or lead to loss of support or protection;
 - 3.8.2.5 poor local alignment of pre-formed channels, which could give rise to danger or nuisance from standing water, or damage to the road pavement caused by water penetration; and

- 3.8.2.6 vegetation growth or detritus at the edge of carriageway preventing overedge run-off and/or flow along the channel, which could give rise to danger or nuisance from standing water, or damage to the road pavement caused by water penetration.

3.9 Highway Drainage

- 3.9.1 The DBFO Co shall carry out Routine Maintenance of all drainage systems relating to the Project Road, including without limitation all piped drainage systems (including slot drains); gullies, catchpits and interceptors; piped grips (weirs or offlets), that is to say short lengths of pipe, usually in rural areas, carrying water from a channel across the verge direct to a ditch; filter drain or soakaway, without a gully-pot but sometimes with a grating; open grips; ditches; filter drains; smaller culverts; balancing ponds; and ancillary items such as sluices, tidal flaps and pumps. Such Routine Maintenance shall be carried out:

- 3.9.1.1 so as to ensure that such drainage systems continue to meet the design criteria of the Project Road relating to interception, flow and run-off of water.

- 3.9.1.2 Not Used.

- 3.9.2 All reasonable steps shall be taken by the DBFO Co to prevent water draining from the Project Facilities causing nuisance or damage on or to any land not forming part of the Project Facilities or damage to any third party.

- 3.9.3 Where flooding occurs and causes hazardous conditions on the Project Road warning signs shall be placed in position as quickly as possible and prompt action shall be taken to protect the safety of Users and to put the Project Road in a fully operational condition.

3.10 Communications Installations

- 3.10.1 The DBFO Co shall carry out Routine Maintenance of Communications Installations, so as to ensure accessibility, cleanliness, legibility of instructions for use, correct working, weatherproofing and safety for Users.

- 3.10.2 Defects in electrical installations shall be protected or, whenever possible, made safe at the time of inspection where there is an immediate hazard.

- 3.10.3 The DBFO Co shall also comply with the further provisions relating to the Communications Installations contained in Schedule 17.

3.11 Embankments and Cuttings

- 3.11.1 The DBFO Co shall carry out Routine Maintenance of embankments and cuttings in accordance with, inter alia, DMRB, Volume 4, Section 1, HA 48/93.

- 3.11.2 All embankments and cuttings on the Project Road shall be inspected by the DBFO Co:

- 3.11.2.1 at least once in each period of twelve (12) months for any immediately visible evidence of instability of earthworks; and

- 3.11.2.2 at least once in each period of five (5) years for the purpose of carrying out tests to check the stability of earthworks. For the purposes of this paragraph 3.11.2.2 the first five (5) year period shall be calculated from the date of the last inspection of the embankments and cuttings prior to the Commencement Date.

Such inspections shall be timed to take place at times of most adverse conditions, such as following periods of heavy rain, severe frost or prolonged dry weather.

3.12 **Grassed Areas**

- 3.12.1 The provisions of this paragraph 3.12 are without prejudice to the provisions of Section 7 to this Part 2 of Schedule 6.
- 3.12.2 The DBFO Co shall carry out Routine Maintenance of grassed verges, central reservations (including central reservations where the construction is such that the growth of vegetation is specifically excluded), cuttings and embankment slopes, roundabout islands, and all other similar areas within the Project Facilities in accordance with this paragraph 3.12.
- 3.12.3 All chemicals used for the purpose of Routine Maintenance shall be environmentally friendly and shall be on the list approved by the Ministry of Agriculture, Fisheries and Foods as suitable for these purposes. Such chemicals shall be used sparingly and in quantities which are unlikely to harm the environment.
- 3.12.4 Routine Maintenance under this paragraph 3.12 shall include:
- 3.12.4.1 cutting or clearance to safeguard visibility at junctions, bends and accesses and of signs, and shall take account of sightline standards referred to in the Construction Requirements; and
- 3.12.4.2 a single width swathe cut (a minimum of one (1) metre in width) on verges and central reservations adjacent to the carriageway where the type and density of growth is such that pedestrians and inspection/survey parties would be at risk or where the adjacent traffic lane is less than three (3) metres wide or where growth, if not cut, would reduce the effective lane width to less than this width.
- 3.12.5 Injurious weeds as listed in the Weeds Act 1959 and the Wildlife and Countryside Act 1981 and wild beet in sugar beet areas and wild oats in cereal crop areas shall be treated as appropriate to the species to remove risk of nuisance or damage to Users or any third party or on or to any land not forming part of the Project Facilities.

3.13 **Hedges and Trees**

- 3.13.1 The provisions of this paragraph 3.13 are without prejudice to the provisions of Section 7 to this Part 2 of Schedule 6.
- 3.13.2 The DBFO Co shall carry out Routine Maintenance of hedges and trees which are the responsibility of the DBFO Co or the Secretary of State at Law or which, although the responsibility of other persons, are causing a nuisance or obstruction on the Project Facilities. Such Routine Maintenance shall be carried out in accordance with this paragraph 3.13.

3.13.3 Routine Maintenance under this paragraph 3.13 shall include:

- 3.13.3.1 cutting or clearance to safeguard visibility at junctions, bends and accesses and of signs and shall take account of sightline standards referred to in the Construction Requirements, provided that such cutting or clearance shall be carried out in such a way as to avoid permanent damage to hedges and trees; and
- 3.13.3.2 trimming of hedges and trees overhanging carriageways to provide a minimum headroom of 5.2 metres.

3.13.4 Inspection shall be carried out by competent persons and at the intervals set out in WOTRMM, Part 2, Chapter 2.11, and in any event at necessary intervals to ensure that growth, soundness and stability of hedges and trees are maintained in accordance with this Part 2 of Schedule 6.

3.14 Landscape Areas and Wildlife Links

3.14.1 The provisions of this paragraph 3.14 are without prejudice to the provisions of Section 7 to this Part 2 of Schedule 6.

3.14.2 The DBFO Co shall carry out Routine Maintenance to the Landscape Areas. Such Routine Maintenance shall sustain the organic development of flora and fauna by properly timed minimum intervention maintenance.

3.14.3 Injurious weeds as listed in the Weeds Act 1959 and the Wildlife and Countryside Act 1981 and wild beet in sugar beet areas and wild oats in cereal crop areas shall be treated as appropriate to the species to remove risk of nuisance or damage to Users or any third party or on or to any land not forming part of the Project Facilities.

3.14.4 Wildlife links wherever they exist, such as via underpasses, overbridges, tunnels and culverts, shall be inspected and cleared as necessary to ensure they continue to perform their function.

3.15 Sweeping and Cleaning

3.15.1 Subject to Clause 29.7, Routine Maintenance shall include:

- 3.15.1.1 sweeping and cleaning of the Project Facilities including the emptying of litter bins; and
- 3.15.1.2 clearing and removal of debris from the Project Facilities.

3.15.2 Such Routine Maintenance shall comply with the Environmental Protection Act 1990, the Code of Practice on Litter and Refuse issued by the Secretary of State thereunder, and in particular the standards of cleanliness set out therein.

3.16 Roadstuds

3.16.1 The DBFO Co shall procure that all types of roadstuds shall be firmly fixed and remain at the correct level.

- 3.16.2 The DBFO Co shall carry out Routine Maintenance of roadstuds, so as to ensure the continuing reflectivity of the roadstuds in accordance with the standards referred to in the Construction Requirements. The DBFO Co shall replace roadstuds where there is a greater than ten (10) percent loss (compared to new roadstuds) of reflectivity on sections of the Project Road subject to a requirement for hazard road markings or continuous centre line markings (both as defined in the Traffic Signs Manual) and where there is a greater than twenty-five (25) percent loss (compared to new roadstuds) of reflectivity in all other cases.
- 3.16.3 The DBFO Co shall only use types of reflecting roadstuds which have been approved by the Department.
- 3.17 **Boundary Fences, Barriers and Safety Fences**
- 3.17.1 The DBFO Co shall carry out Routine Maintenance of:
- 3.17.1.1 all types of fences, barriers and walls within the Project Facilities (including without limitation anti-glare screen fences, vehicle safety fences, environmental barriers, pedestrian, fences and guard rails and fences to control wildlife movements); and
- 3.17.1.2 the items listed in Annex 3/3 to this Section 3 of Part 2 of Schedule 6, (together, the "**Fences**").
- 3.17.2 Such Routine Maintenance shall ensure that all Fences are fit for the purpose for which they have been designed and constructed, and shall ensure compliance with the standards referred to in the Construction Requirements and shall include, inter alia, the following particular requirements:
- 3.17.2.1 steel beam and wire rope safety fences shall be repaired as necessary to maintain mounting height, surface protective treatment and structural condition;
- 3.17.2.2 all steel beam and wire rope tensioned fences shall be adjusted for correct tension; and
- 3.17.2.3 where accident damage to sections of steel beam or wire rope safety fencing has caused failure of post foundations testing shall be carried out in accordance with the Manual of Contract Documents for Highway Works - Volume 1 (Specification for Highway Works) to demonstrate that replacement foundations have the specified resistance to displacement.
- 3.17.3 Not used.
- 3.17.4 The DBFO Co shall carry out timely inspection and maintenance of subterranean crossings by protected wildlife so as to ensure that they are safe, controlled and unimpeded.
- 3.18 **Traffic Signals, Traffic Signs, Road Markings and Road Lighting**
- 3.18.1 The DBFO Co shall carry out Routine Maintenance of all traffic signals, traffic signs and road markings relating to the Project Road so as to maintain the same in a state of full and clear visibility to Users in accordance with WOTRMM, Part 2, Chapters 2.16, 2.17 and 2.18. The DBFO Co shall ensure the continuing reflectivity of traffic signs and road markings relating to the Project Road.

- 3.18.2 The DBFO Co shall institute and operate such procedures as are necessary to ensure that any defect in traffic signals, traffic signs and road markings relating to the Project Road which reduces or threatens to reduce full and clear visibility thereof is rectified in accordance with this paragraph 3.18.2. The DBFO Co shall take immediate steps to alert Users of any hazards resulting from such defects and shall carry out temporary repairs to eliminate such hazards as soon as possible and in any event within twenty-four (24) hours. Any such traffic signals, traffic signs or road markings which have become ineffective or could affect the safety of Users shall be replaced by a permanent repair within seven (7) days unless it is impracticable to do so. All temporary repairs of such defects shall be replaced by permanent repairs within twenty-eight (28) days.
- 3.18.3 The DBFO Co shall carry out Routine Maintenance of road lighting installations on the Project Facilities in accordance with WOTRMM, Part 2, Chapter 2.19.

**Annex 3/1
to Part 2 of Schedule 6**

Maintenance and Inspection Frequency

In certain circumstances it may be appropriate to conduct inspection or maintenance at a greater frequency than stated in this Annex 3/1.

ACTIVITY	INSPECTION FREQUENCY	CYCLICAL MAINTENANCE FREQUENCY
Road Pavement: Rural APTR Urban APTR	12 months 6 months	-
Footways and Cycle Tracks - Urban - Rural	6 months 36 months	- -
Covers, Grating, Frames and boxes	12 months	-
Kerbs - adjacent to carriageway - adjacent to footways (urban) - adjacent to footways (rural)	12 months 6 months 36 months	
Project Road Drainage: Piped Drainage System Gullies, Catchpits and Interceptors Pipes Grips > 75m Grips Ditches Filter Drains Culverts Balancing Ponds - no outflow controls with outflow controls	10 years 12 months 10 years - 5 years 5 years 12 months 2 years 6 months	- 1 per year - 1 per year Every 10 years - - - -
Ancillary Drainage Items headwalls and aprons sluices and tidal flaps pumps	12 months 6 months Manufacturer's requirements	- -
Embankments and Cuttings	12 months/5 years	-
Grassed Areas: Rural Urban	- Up to 4 times a year	1 swathe cut yearly Up to 4 swathe cuts yearly
Hedges and Trees	12 months	-
Landscape Areas	12 months	-
Roadstud (inspection in darkness)	12 months	-

ACTIVITY	INSPECTION FREQUENCY	CYCLICAL MAINTENANCE FREQUENCY
Boundary Fences, barriers and Safety Fences: - metal and concrete sections - timber sections - SF for loose bolts - SF for correct tension - Stock-proofing	2 years 2 years 2 years 2 years 6 months	- - - - -
Road Markings (See TD 26/86)	-	-
Road Signs (See TD 25/86)	-	-
Road Traffic Signals (See TD 24/86)	-	-
Road Lighting (See TD 23/86)	-	-

**Annex 3/3
to Part 2 of Schedule 6**

Fences and Walls

Existing masonry boundary/retaining walls shown on drawings numbered 964057/MW/100 to 112 referred to in Section 3 of Part 3 of this Schedule 6.

Section 4: Surveys and Remedial Maintenance Works

Surveys and Remedial Maintenance Works on Road Pavements

4.1 Programming

- 4.1.1 The DBFO Co shall plan a programme of surveys of the road pavement ("**Road Surveys**") (otherwise than for purposes of Routine Maintenance) on or before 1st January in each year for implementation in the next succeeding Contract Year. A copy of such programme shall be notified to the Department's Representative no later than 15th January prior to the relevant Contract Year. Road Survey data shall be collected, recorded, and analysed on a systematic and regular basis to provide the means (i) for the Department's Representative to monitor performance, and (ii) to assist the DBFO Co in the forward planning of maintenance work.
- 4.1.2 Irrespective of the extent of the Road Surveys proposed in any year, the programme of Road Surveys shall be reviewed and revised if necessary to take account of events which could lead to sudden deterioration of parts of the Project Road, such as a prolonged or severe winter.
- 4.1.3 All Road Surveys shall be referenced to the CHART Referencing System, shall be arranged to minimise disruption and delays to Users and, wherever possible, shall be carried out at the same time as any other surveys.

- 4.1.4 SCRIM surveys shall be arranged to coincide with HRM surveys and vice versa.

4.2 Recording of Survey Data

- 4.2.1 A master copy of the results of all Road Surveys shall be retained by the DBFO Co. A copy of survey reports or results relating to the relevant Road Survey in the form specified in WOTRMM (or as otherwise agreed) shall be submitted to the Department's Representative within three (3) months of the completion of the relevant Road Survey.
- 4.2.2 All records shall be made available for inspection by the Department's Representative when requested.

4.3 SCRIM Surveys

- 4.3.1 All parts of the Project Road shall be categorised by the DBFO Co in accordance with WOTRMM, Part 1, Chapter 2.6, to identify Investigatory Skidding Resistance Levels (as defined in DMRB, Volume 7, Section 3, Part 1, HD 28/94) ("**Investigatory Levels**").
- 4.3.2 All lanes on the Project Road shall be surveyed using a SCRIM, in accordance with WOTRMM, Part 1, Chapter 2.6, or other method approved by the Department's Representative, at intervals of two (2) years or less for the purpose of assessing the Mean Summer SCRIM Coefficient (as defined in DMRB, Volume 7, Section 3, Part 1) ("**MSSC**"). All SCRIM surveys shall be carried out using a machine whose calibration has been agreed by the Department's Representative.
- 4.3.3 The DBFO Co shall conduct an assessment of the MSSC in relation to each part of the Project Road as soon as the results of the surveys referred to in paragraph 4.3.2 are known.

- 4.3.4 Where any survey shows that the MSSC on any part of the Project Road is at or below the relevant Investigatory Level, the DBFO Co shall promptly:
- 4.3.4.1 erect signs warning that the relevant section of the Project Road is slippery; and
 - 4.3.4.2 take such remedial measures as necessary to ensure satisfaction of the Core O&M Requirements.
- 4.3.5 The DBFO Co shall inform the Department's Representative as soon as possible of each warning sign to be erected in accordance with paragraph 4.3.4.1 with a brief report of the reasons, the location, the relevant Investigatory Level and the relevant MSSC. Within 28 days of the relevant warning sign being erected, the DBFO Co shall provide the Department's Representative with a further comprehensive report relating to that warning sign which report shall set out recommendations, including treatments undertaken or proposed to be undertaken or any further proposed examination and details of when the treatment or further examination is to be programmed and the priorities in relation thereto, and if no work is envisaged the reasons why the signs should be removed. The agreement of the Department's Representative shall be obtained before any signs are removed and such agreement may be withheld if the Core O&M Requirements would not be satisfied following such removal.
- 4.4 **HRM Surveys**
- 4.4.1 The DBFO Co shall, in accordance with the provisions of DMRB, Volume 7, Section 3, Part 2, HD 29/94, survey the Project Road at least once every two (2) years using a High Speed Road Monitor (HRM). For the purposes of this paragraph 4.4.1, the first two (2) year period shall be calculated from the date of the last survey of the Project Road using an HRM prior to the Commencement Date.
- 4.4.2 Where the results of an HRM survey indicates that the ride quality of any one hundred (100) metre length of carriageway has reached or has exceeded the threshold of Category 3 ride quality, as ascertained by reference to Table 2.3(a) or 2.3(b) of DMRB, Volume 7, Section 3, Part 2, HD 29/94, that length of carriageway shall be improved by the DBFO Co to Category 0 (zero) within ninety (90) days of the HRM survey disclosing such defects.
- 4.5 **Surface Deterioration**
- 4.5.1 Without prejudice to paragraph 4.4, the DBFO Co shall measure the depth of rutting in all lanes of the Project Road at least every two (2) years. For the purposes of this paragraph 4.5.1, the first two (2) year period shall be calculated from the date of the last measurement of the depth of rutting of the Project Road prior to the Commencement Date.
- 4.5.2 The proportion of total carriageway length within a CHART section having wheel track rutting (structural or non-structural) greater than 10mm in depth ("**Rutting**") shall not exceed ten (10) per cent of the carriageway length of that CHART section. Where the length of Rutting within a CHART section exceeds ten (10) percent of the carriageway length of that CHART section, the DBFO Co shall take such remedial action as necessary to ensure satisfaction of the Core O&M Requirements. For the purposes of calculating the percentage of Rutting within a CHART section, where Rutting occurs at the same location in more than one lane of a carriageway, the length of Rutting shall be measured from the point in any lane where the Rutting first begins to the furthest point in any lane where the Rutting ends.

- 4.5.3 Notwithstanding the above requirements, any areas of wheel track rutting that allow water to pond to a depth greater than 10mm over a length exceeding 10m, and any steps greater than 20mm, shall be rectified within six (6) months. In the event of such defects increasing in severity so that there is a potential risk to the safety of Users, the DBFO Co shall place suitable warning signs and remedy such defects within twenty eight (28) days.

4.6 **Surveys and Maintenance Works on Project Facilities other than Road Pavements**

In respect of all Project Facilities other than the road pavements the subject of paragraphs 4.1 to 4.5 of this Section 4, and other than in respect of highway structures the subject of Section 6 of this Part 2, the DBFO Co shall carry out such surveys and Maintenance Works as may be required from time to time in order to ensure that the Project Facilities are operated and maintained in accordance with this Agreement and in particular in accordance with paragraph 1.2 of this Part 2 of Schedule 6.

Section 5: Winter Maintenance

5.1 General Requirements

- 5.1.1 The DBFO Co shall carry out winter maintenance in accordance with the requirements of this Section 5 so as to promote the safe movement of traffic on the Project Road and to keep delays and accidents caused by snow and ice to a minimum.
- 5.1.2 For the purposes of this Section 5 "**de-icing agent**" means a substance which has the effect of preventing snow adhering to the road surface, preventing the formation of ice or causing snow or ice to melt.
- 5.1.3 Winter maintenance operations shall be designed, inter alia:
- 5.1.3.1 to prevent the formation of ice on the Project Road by precautionary treatment, including the use of a de-icing agent;
 - 5.1.3.2 to minimise the effects of snow by use of a de-icing agent and by snow ploughing or snow blowing on the Project Road; and
 - 5.1.3.3 to minimise the adverse effects of winter maintenance operations on the Project Road.
- 5.1.4 Winter maintenance operations on the Project Road shall be conducted with due regard to the interests of users of Connecting Roads, users of other roads connecting to the Project Road and owners or occupiers of land not forming part of the Project Facilities.

5.2 Staffing

During winter maintenance the DBFO Co shall ensure that a member of staff experienced in the conduct of winter maintenance operations shall be available at all times and shall be responsible for winter maintenance operations, including monitoring road weather conditions and reacting to those conditions. This member of staff shall:

- 5.2.1 have access to information on road conditions, either from site inspections or from an ice prediction system, together in either such case with updates and warnings from a road weather forecasting organisation;
- 5.2.2 use such information to ascertain the appropriate action to be taken in respect of winter maintenance of the Project Road; and
- 5.2.3 have the authority to call out, and shall call out, personnel to carry out winter maintenance operations as necessary.

5.3 Standards of Winter Maintenance

As a minimum standard, the DBFO Co shall comply with the provisions of WOTRMM, Part 4 in implementing techniques and setting standards for the conduct of winter maintenance. Where necessary to protect the Project Road, the DBFO Co shall erect and properly maintain snow fences in the vicinity of the Project Road.

5.4 Salt

- 5.4.1 The DBFO Co shall comply with WOTRMM, Part 4, Chapter 4.2, in respect of its use of salt as a de-icing agent and of the type of salt to be used.
- 5.4.2 Where salt is stored and/or used, the DBFO Co shall take all reasonable precautions to protect the environment and shall comply with the pollution prevention guidelines on pollution from highways depots produced by the Environment Agency.
- 5.4.3 Run-off from stockpiles of salt shall not be allowed to drain directly onto any land owned or occupied by any third party or into fishing waters or watercourses.

5.5 **Alternative De-icing Agents**

Approval shall be obtained from the Department's Representative to use a de-icing agent other than salt. Before approval is given the Department's Representative must be satisfied that the de-icing agent will be effective in all reasonably foreseeable situations and that adequate arrangements have been put in place to obtain, store, control and use the de-icing agent in an environmentally friendly and efficient manner.

5.6 **Application of De-icing Agents**

The DBFO Co shall adopt a policy of de-icing which:

- 5.6.1 produces results consistent with policies adopted on the Connecting Roads so that Users enjoy a consistent level of service; and
- 5.6.2 Not used.

5.7 **Operational Techniques**

- 5.7.1 All possible precautions shall be taken to ensure the safety of staff and Users at all times.
- 5.7.2 On or before 31st August in each year, proposals for the carrying out of winter maintenance operations during the forthcoming winter shall be submitted to the Department's Representative for review in accordance with the Review Procedure. The Department's Representative shall be entitled to comment on such proposals only on the grounds that such proposals will not achieve the satisfaction of the Core O&M Requirements or the requirements of this Section 5 or be in accordance with Good Industry Practice. The proposals shall include details, inter alia, of:
 - 5.7.2.1 management and operational structure and arrangements, including liaison with other highway authorities and/or their maintaining agents and liaison with the Police;
 - 5.7.2.2 storage arrangements for de-icing agents;
 - 5.7.2.3 ice prediction and ice detection systems and services to be used;
 - 5.7.2.4 plans for de-icing and snow ploughing procedures including identification of priority treatment areas;
 - 5.7.2.5 measures to minimise any pollution arising from the use of de-icing agents;

- 5.7.2.6 contingency plans in the event of prolonged or severe winter weather;
- 5.7.2.7 areas identified for dumping of snow; and
- 5.7.2.8 the arrangements referred to in paragraph 5.8.

These proposals shall be based upon the need to complete precautionary treatment of all parts of the Project Road before there is any risk of ice forming.

5.8 **Communications**

The DBFO Co shall make and implement arrangements to pass promptly information about winter weather conditions including snow, ice and frost on the Project Road and the winter maintenance operations to be undertaken or being undertaken in relation to the Project Road to Users, the police, local highway authorities, maintaining agents for adjacent roads, media, public transport operators, and freight transport, road haulage and motorist organisations. The information shall also include details of lanes closed owing to adverse weather conditions. All such information shall be updated at frequent intervals or as circumstances change.

Section 6: Maintenance of Highway Structures

6.1 General

- 6.1.1 The requirements of this Section 6 apply to Structures.
- 6.1.2 The DBFO Co shall maintain Structures in accordance with the requirements of this Section 6.
- 6.1.3 In relation to Structures on the Existing Road the DBFO Co shall adopt and fulfil the ten (10) year rehabilitation programme of the Department described in WOTRMM, Part 1, Chapter 3.2. In particular the DBFO Co shall carry out alteration and strengthening works as may be required in order to meet the objectives for assessment, strengthening and upgrading in accordance with the timescale and the standards set out in WOTRMM, Part 1, Chapter 3.2.
- 6.1.4 The DBFO Co shall conduct underwater inspections of Structures in accordance with, inter alia, DMRB, Volume 3, Section 1, Part 4, BD 63/94, Chapter 2, where the foundations or any part of the Structures on the Project Road are below water level in order to record the condition below water level, the existing stream bed profiles and any evidence of scour. The DBFO Co shall complete a programme of underwater inspections of all existing Structures within two (2) years of the commencement of the Contract Period.

6.2 Records of Highway Structures

- 6.2.1 The DBFO Co shall prepare individual maintenance manuals for each Structure, save that in relation to minor Structures of similar design (e.g. culverts, sign gantries) a group maintenance manual may be prepared instead of individual maintenance manuals. The information to be included in the maintenance manuals shall comply with DMRB, Volume 3, Section 2, Part 1, BD 62/94, Appendix A, Section A2.
- 6.2.2 The DBFO Co shall prepare and maintain (in a form compatible with the National Structures Database) a structure register for each Structure on the Project Road in accordance with DMRB, Volume 3, Section 2, Part 1, BD 62/94, Appendix A, Section A3, and in so doing shall:
 - 6.2.2.1 complete Forms ROADS 277 and BE13/94 for each Structure on the Project Road to be maintained by the DBFO Co and not already included in the National Structures Database and shall submit copies of such Forms to the Department's Representative; and
 - 6.2.2.2 complete Forms ROADS 277 and BE13/94 for each Structure on the Project Road not in the ownership of the Department of Transport and not already included in the National Structures Database, the information required consisting of the location, a brief description and, in the case of Structures over the Project Road, the headroom of the Structures. Copies of such Forms shall be submitted to the Department's Representative.
- 6.2.3 The DBFO Co shall prepare and maintain a structure file for each Structure, save that in relation to minor Structures of similar design (e.g. culverts, sign gantries) a group structure file may be prepared instead of individual structure files. The information contained in the structure files shall comply with DMRB, Volume 3, Section 2, Part 1, BD 62/94,

Appendix A, Section A4 and include details of all maintenance, replacement and repairs carried out during the Contract Period.

- 6.2.4 Without prejudice to Clause 24, at the end of the Contract Period all records of Structures shall be handed over to the Secretary of State.

6.3 Inspections

6.3.1 Inspection Records

- 6.3.1.1 Without prejudice to the provisions of Clause 24, the DBFO Co shall maintain records and reports (the "**Inspection Record**") of all inspections ("**Inspections**") referred to in paragraph 6.1.4 and in this paragraph 6.3 in accordance with the provisions of DMRB, Volume 3, Section 1, Part 5, BA 63/94, Appendix A and such Inspection Record shall also contain details of actions taken or to be taken by the DBFO Co as a result of the relevant Inspections. A copy of the relevant Inspection Record in relation to any Inspection shall be provided to the Department's Representative within 3 months of the relevant Inspection and within 3 months of the completion of any actions taken or to be taken as a result of the relevant Inspection. The Inspection Record shall, in addition, contain inter alia:

6.3.1.1.1 details of the times of the Inspection and the actions taken by the DBFO Co in the conduct of the Inspection;

6.3.1.1.2 details and times or proposed times of any measures undertaken or proposed to be undertaken in respect of a defect or potential defect in a Structure whether discovered pursuant to an Inspection or otherwise.

- 6.3.1.2 Where an Inspection Record states that measures shall be taken in relation to a Structure at a specified time and the same is not complied with, the DBFO Co shall notify the Department's Representative of the reasons for such non-compliance together with details of any revised timings and proposals in relation to the same within fourteen (14) days of the specified time.

6.3.2 Principal Inspections

The DBFO Co shall plan and implement a programme of principal inspections of Structures by competent personnel as follows:

- 6.3.2.1 principal inspections of Structures on the Existing Road other than Menai and Britannia Bridges which shall be at not more than ten (10) yearly intervals shall be at not more than six (6) yearly intervals taken from the date of the last principal inspection;
- 6.3.2.2 principal inspections of Structures on the New Road shall be made at the end of the construction phase and then at not more than six (6) yearly intervals;
- 6.3.2.3 principal inspections shall consist of a close inspection of all inspectable parts of the Structure;

- 6.3.2.4 principal inspections shall comply with DMRB, Volume 3, Section 1, Part 4, BD 63/94.

6.3.3 General Inspections

- 6.3.3.1 The DBFO Co shall plan and implement a programme of general inspections of Structures by competent personnel to take place not more than two years after the last general or principal inspection.
- 6.3.3.2 General inspections shall comply with DMRB, Volume 3, Section 1, Part 4, BD 63/94.

6.3.4 Special Inspections

The DBFO Co shall carry out special inspections as required by DMRB, Volume 3, Section 1, Part 4, BD 63/94.

6.4 Routine Maintenance

The DBFO Co shall carry out Routine Maintenance of Structures in accordance with WOTRMM, Part 3.

6.5 Remedy of Defects

- 6.5.1 Where defects in the Structure which constitute an imminent or immediate hazard to Users are revealed by inspections, the DBFO Co shall take immediate steps to provide suitable protection measures for the safety of the public and of the Structure and to alert the public to the hazard.
- 6.5.2 After such measures have been taken to ensure safety, the DBFO Co shall take further steps to:
- 6.5.2.1 assess the serviceability of the relevant Structure;
 - 6.5.2.2 temporarily or permanently repair the relevant Structure as soon as possible thereafter;
 - 6.5.2.3 replace temporary repairs by permanent repairs as soon as possible;
 - 6.5.2.4 maintain suitable protection measures until temporary or permanent repairs have been carried out.

6.6 Repairs

- 6.6.1 Structures shall be maintained in a safe condition at all times.
- 6.6.2 Where elements of the Structure are identified by inspections as requiring maintenance, repair or replacement, the DBFO Co shall take appropriate steps to carry out such required maintenance, repair or replacement as soon as possible.
- 6.6.3 No maintenance, repair or replacement shall adversely affect the temporary or permanent structural integrity of any Structure.

- 6.6.4 Repaired and replacement elements shall comply with the standards contained in the Construction Requirements and the procedure for the technical appraisal and certification of Structures in paragraph 6.7.

6.7 Technical Appraisal and Certification

Excluding situations where emergency measures are required, in all cases where structural integrity is affected or where assessments are carried out in relation to a Structure, the procedures for the technical appraisal and certification of Structures given in Part 3 of Schedule 4 of this Agreement are to be met before any work is carried out on site.

6.8 Vehicle Collision Loads on Superstructures

Where a guaranteed minimum headroom clearance of 5.7 metres will not be permanently maintained, the DBFO Co shall assess superstructures of bridges in accordance with DMRB Volume 1, Section 3, Part 5 BD 60/94 - Design of Highway Bridges for Vehicle Collision Loads. Where the assessment does not demonstrate full compliance with BD 60/94 the DBFO Co shall strengthen the superstructure to meet the full requirements of BD 60/94. The DBFO Co shall submit any proposals for strengthening the superstructure of bridges to the Department's Nominee in accordance with the Design and Certification Procedure.

6.9 Structures Maintenance Boundaries

Without prejudice to paragraph 6.10, the details contained in Annex 6/1 and the drawings referred to in Annex 6/1 outline the maintenance boundaries for structures on the Project Road and the DBFO Co shall be responsible for the operation and maintenance of those parts of the structures within such boundary.

**Annex 6/1
to Part 2 of Schedule 6**

Structure Maintenance Boundaries

1. The DBFO Co shall be responsible for the maintenance of any structure (which shall include, without limitation, any Structure) on the Project Road, except:
 - 1.1 subject to paragraph 1.2, on each overbridge, (as shown in the drawings referred to in paragraph 2 below), the following items:
 - (a) base course, other than (i) in respect of farm accommodation overbridges and (ii) bridge deck movement joints;
 - (b) wearing course, other than (i) in respect of farm accommodation overbridges and (ii) bridge deck movement joints;
 - (c) road markings and cats' eyes;
 - (d) lamp columns, lighting ducts, other apparatus serving lighting, other services, associated ducts and apparatus owned and operated by parties other than the Secretary of State or the DBFO Co;
 - (e) footway and kerb construction;
 - (f) gully gratings, covers and frames and drainage runs not cast into structures; and
 - (g) street furniture (other than bridge parapets and safety fencing and connections between them);
 - 1.2 within the plan area of the backfill wedge of an overbridge, (as shown in the drawings referred to in paragraph 2 below), the following items:
 - (a) road construction from bottom of sub-base to top of wearing course, other than in respect of farm accommodation overbridge approach embankments;
 - (b) road markings and cats' eyes;
 - (c) lamp columns, lighting ducts serving lighting and other services, associated ducts and apparatus owned and operated by parties other than the Secretary of State or the DBFO Co;
 - (d) footway and kerb construction;
 - (e) drainage gullies and associated pipework not integral to the structure; and
 - (f) street furniture;
 - 1.3 in respect of each overbridge, safety fencing, other than safety fencing extending from the end of the relevant bridge parapet to a point which is equal

to the lesser of 30m from such bridge parapet and the length of the relevant fencing;

- 1.4 in respect of each underbridge which carries the Project Road across another highway, the following items on or in relation to that other highway:
- (a) road construction above and below formation level;
 - (b) road markings and cats' eyes;
 - (c) lamp columns, lighting ducts serving lighting, other services, associated ducts and apparatus owned and operated by parties other than the Secretary of State or the DBFO Co;
 - (d) footway and kerb construction;
 - (e) drainage gullies and associated pipework not integral to, nor required for the drainage of, the structure;
 - (f) street furniture including, without limitation, safety fences;
- 1.5 in respect of each underbridge which carries the Project Road across a railway, the following items on or in relation to that railway:
- (a) tracks;
 - (b) track ballast;
 - (c) signal and telecommunications equipment;
 - (d) electric traction equipment;
 - (e) watercourses;
 - (f) drains, buried pipes, ducts and cables;
- 1.6 in respect of each underbridge or culvert which carries the Project Road across a river, canal or other watercourse, the following items on or in relation to that river, canal or other watercourse:
- (a) watercourse bed;
 - (b) watercourse banks;
 - (c) watercourse walls;
 - (d) watercourse accesses;
 - (e) watercourse footpaths;
 - (f) dams;
 - (g) weirs;

- (h) sluices;
- (i) towpaths;
- (j) signal lights;
- (k) navigational lights and beacons;

2. In addition and without prejudice to the above, the DBFO Co shall be responsible for the maintenance of any structure on the Project Road to the standard provided on the relevant generic structure drawing contained in drawings numbered 964057/SMB/101 to 106 referred to in Part 3 of this Schedule. In the event of any conflict or inconsistency between the provisions of paragraph 1 of this Annex and such drawings, the provisions of paragraph 1 shall prevail.

Section 7: Landscaping and Ecology

7.1 General

7.1.1 Subject to paragraphs 7.1.2, 7.1.7 and 7.2, the DBFO Co shall:

7.1.1.1 comply with the SS Landscape Requirements;

7.1.1.2 manage the Landscape Areas so as to (i) procure that the Landscape Functions attributed to each Landscape Area are achieved or (in the case where such Landscape Functions have been achieved) maintained, and (ii) comply with the relevant Landscape Function Requirements; and

7.1.1.3 without prejudice to paragraphs 7.1.1.1 and 7.1.1.2, manage the Landscape Areas so as to (i) procure that each Landscape Area contains the Landscape Elements (and only the Landscape Elements) attributed to such Landscape Area, and (ii) comply with the relevant Landscape Element Requirements; and

7.1.1.4 without prejudice to paragraphs 7.1.1.1, 7.1.1.2 and 7.1.1.3, comply with the provisions of Annex 7/7.

7.1.2 The Landscape Areas shall be managed in accordance with the L&E Management Strategy in force from time to time.

7.1.3 For the purposes of this Section 7:

7.1.3.1 the Landscape Functions attributed to each Landscape Area shall be as shown in the column entitled "**Landscape Function**" opposite the reference to such Construction Planting Landscape Area or, as the case may be, Existing Landscape Area, in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or Appendix 1 to Annex 7/8 of Section 7 to Part 2 of this Schedule 6 respectively and as described in paragraphs 7.5.3 and 7.5.5; and

7.1.3.2 the Landscape Elements attributed to each Landscape Area shall be as shown in the column entitled "**Landscape Element**" opposite the reference to such Construction Planting Landscape Area or, as the case may be, Existing Landscape Area, in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or Appendix 1 to Annex 7/8 of Section 7 to Part 2 of this Schedule 6 respectively and as described in paragraphs 7.5.3 and 7.5.5.

7.1.4 The DBFO Co shall achieve the Landscape Functions attributed to each Landscape Area as soon as reasonably practicable and in any event within the Landscape Function Period in respect of each Landscape Function.

7.1.5 The provisions of this Section 7 are without prejudice to the provisions of Section 3.

7.1.6 The DBFO Co shall procure that the Landscape Manager and the Ecologist have unrestricted access to the Site and Adjacent Areas at all reasonable times and shall give due regard to any recommendation of the Landscape Manager or Ecologist in regard to any landscape or ecology surveys of the Site and Adjacent Areas.

- 7.1.7 The Landscape Areas identified with suffix "P" in Appendix 3 to Annex 11 of Part 2 to Schedule 4 shall be excluded from the O&M Requirements after the DBFO Co has complied with the provisions of paragraph 2 of Annex 7/7.
- 7.2 **Off-Site Planting**
- 7.2.1 Off-Site Planting shall be excluded from the O&M Requirements after the DBFO Co has complied with the provisions of paragraph 2 of Annex 7/7.
- 7.2.2 The DBFO Co shall be responsible for arranging the timing and manner of access to the Off Site Planting Areas.
- 7.3 **L&E Surveys**
- 7.3.1 Without prejudice to paragraph 7.1.6, the DBFO Co shall carry out a landscape and ecology survey of the Landscape Areas from time to time in order to meet the requirements of paragraphs 7.1.1, 7.1.2 and 7.1.4 and in any event immediately prior to the submission to the Department's Representative of an L&E Management Strategy pursuant to paragraph 7.4.1, 7.4.2 or 7.4.3.
- 7.3.2 Data from all L&E Surveys shall be collected, recorded, and analysed on a systematic and regular basis to provide the means (i) for the DBFO Co to monitor the performance of its obligations in respect of the Landscape Areas; and (ii) to assist the DBFO Co in the forward planning of maintenance work in respect of the Landscape Areas.
- 7.3.3 The results of all L&E Surveys shall, without limitation, be set out on drawings at a scale sufficient to show clearly:
- 7.3.3.1 the condition, height and species composition of the plants and vegetation within the Landscape Areas;
 - 7.3.3.2 the presence of any species and habitats within the Landscape Areas which are protected by Law; and
 - 7.3.3.3 any special circumstances which may affect the management of the Landscape Areas (including, without limitation, highway maintenance operations, ground condition, aspect and slope).
- 7.4 **L&E Management Strategy**
- 7.4.1 The DBFO Co shall, within 12 months of the Commencement Date, procure that the Landscape Manager develops, taking into account any recommendations of the Ecologist, a landscape and ecology management strategy for the Landscape Areas and submit the same to the Department's Representative in accordance with the Review Procedure.
- 7.4.2 The DBFO Co shall procure that the L&E Management Strategy is reviewed by the Landscape Manager and Ecologist from time to time as necessary in order to meet the requirements of paragraphs 7.1.1 and 7.1.4 and to reflect the development of the Landscape Areas, and any revisions thereto shall be submitted to the Department's Representative in accordance with the Review Procedure.

- 7.4.3 Without prejudice to paragraph 7.4.2, the DBFO Co shall procure that the L&E Management Strategy is revised by the Landscape Manager, taking into account any recommendations of the Ecologist, and submitted to the Department's Representative in accordance with the Review Procedure on:
- 7.4.3.1 the fifth anniversary of the Commencement Date and on each fifth anniversary thereafter; and
 - 7.4.3.2 in relation to paragraph 10 of Annex 7/2 to this Section 7, each anniversary of the Commencement Date following the issuance of the Completion Certificate.
- 7.4.4 The DBFO Co shall procure that:
- 7.4.4.1 the L&E Management Strategy shall, without limitation, comply with the provisions of Annex 7/2; and
 - 7.4.4.2 the Landscape Manager shall, without limitation, consult and comply with the reasonable requirements of the Ecologist in developing or revising the L&E Management Strategy.
- 7.4.5 The Department's Representative may comment on an L&E Management Strategy on the grounds that it:
- 7.4.5.1 is not consistent with the outline landscape and ecology management strategy set out in Annex 7/1;
 - 7.4.5.2 does not comply with the provisions of Annex 7/2;
 - 7.4.5.3 is not capable of achieving the Landscape Functions in respect of a Landscape Area in accordance with paragraph 7.1.4, taking into account the condition of the Landscape Area as reflected in the most recent L&E Survey;
 - 7.4.5.4 does not comply with any other provision of this Section 7;
 - 7.4.5.5 does not achieve the satisfaction of the Core O&M Requirements;
 - 7.4.5.6 does not comply with Good Industry Practice;
 - 7.4.5.7 is not consistent with any management strategy referred to in paragraph 7.4.7;
 - 7.4.5.8 is not consistent with the Core Construction Requirement; or
 - 7.4.5.9 is not consistent with the Construction Requirements.
- 7.4.6 In respect of any Landscape Area where a management strategy is already in existence at the Commencement Date, the DBFO Co shall manage that Landscape Area in accordance with such management strategy until such time as there has been no objection in accordance with the Review Procedure to an L&E Management Strategy which covers such Landscape Area.
- 7.4.7 Without prejudice to the foregoing provisions of this paragraph 7.4, a management strategy for any Landscape Area within an SSSI or an area subject to a nature conservation order shall be agreed with the appropriate Relevant Authority prior to any Operations being carried out within or affecting such area and such area shall be managed in accordance

with the agreed strategy. Any such agreed strategy shall be reflected in the L&E Management Strategy.

- 7.4.8 In respect of any Landscape Area not subject to a management strategy at any time for any reason, such area shall be maintained in accordance with Good Industry Practice.

7.5 **Conflict**

- 7.5.1 In the event of any conflict between the SS Landscape Requirements and any other provisions of this Section 7, the SS Landscape Requirements shall prevail.

- 7.5.2 Where any Landscape Area has more than one Landscape Function attributed to it in the column entitled "**Landscape Function**" in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or as the case may be in Appendix 1 to Annex 7/8 to Part 2 of this Schedule 6 and pursuant to paragraph 7.5.5 then each of such Landscape Functions shall be deemed to be primary functions of equal importance.

- 7.5.3 Without prejudice to paragraph 7.5.2 and subject to the L&E Management Strategy and the Construction Requirements:

7.5.3.1 subject to paragraph 7.5.5, where any Landscape Area is in a rural area, Landscape Functions LFB and LFD (as defined in Annex 7/3) shall apply to such area (notwithstanding that such Landscape Functions are not identified in the column entitled landscape function in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or as the case may be in Appendix 1 to Annex 7/8 to Part 2 of this Schedule 6 save that they shall be deemed to be Secondary Functions; and

7.5.3.2 where any Landscape Area is in an urban area, Landscape Function LFC (as defined in Annex 7/3) shall apply to such area notwithstanding that such Landscape Function is not identified in the column entitled "**Landscape Function**" in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or as the case may be in Appendix 1 to Annex 7/8 to Part 2 of this Schedule 6 save that it shall be deemed to be a Secondary Function.

- 7.5.4 For the purposes of paragraph 7.5.3, "**Secondary Function**" means a Landscape Function which shall be achieved as far as possible without prejudicing the achievement of the primary Landscape Functions identified in the column entitled "**Landscape Function**" in the relevant table in Appendix 4 to Annex 10 to Part 2 of Schedule 4 or as the case may be in Appendix 1 to Annex 7/8 to Part 2 of this Schedule 6 and "**Secondary Functions**" shall be construed accordingly.

- 7.5.5 Landscape Function LFD (as defined in Annex 7/3) shall apply to all Ecological Areas and shall be deemed to be a primary function.

7.6 **Protected Species**

If the DBFO Co identifies or becomes aware of the existence within the Site and/or Adjacent Areas of any species or habitats which are protected by Law, it shall immediately notify CCW and the Department's Representative and shall:

- 7.6.1 provide CCW and the Department's Representative with any further information relating to such species or habitats as may be requested; and

- 7.6.2 as soon as reasonably practicable thereafter consult and comply with the reasonable requirements of CCW in relation to such species or habitats.

7.7 Publicity

- 7.7.1 Without prejudice to the provisions of Part 2 and Part 3 of Schedule 16, where the DBFO Co intends to carry out any thinning, coppicing or works to mature trees which screen the Project Road from adjacent properties, the DBFO Co shall take all necessary measures to give reasonable prior notice to persons who may be affected by such operations. The notice shall set out the nature of the operations and the times at which they are to be carried out.
- 7.7.2 Any thinning, coppicing or works to mature trees which screen the Project Road from adjacent properties shall be phased to ensure that the Project Road continues to be screened from the relevant adjacent properties during and after such Operations.

**Annex 7/1 to
Part 2 of Schedule 6**

Outline Landscape and Ecology Management Strategy

To be provided by the DBFO Co pursuant to paragraphs 8 and 10 of Part 3 of Schedule 7

**Annex 7/2 to
Part 2 of Schedule 6**

Contents of L&E Management Strategy

Each L&E Management Strategy shall:

1. include an analysis of the results of the relevant L&E Survey;
2. identify a phased programme of works and priorities for action;
3. identify the date of planting of any plants and vegetation within the Landscape Areas to the extent that such dates are not identified in Annex 7/8;
4. identify the measures to be taken to monitor and review the performance of the DBFO Co in respect of its obligations relating to the Landscape Areas;
5. take account of any changes or improvements to the Project Road which necessitate changes to the management of the Landscape Areas;
6. set out measures for the establishment of all new planting (where relevant);
7. identify any changes to any existing management strategy;
8. identify the measures to be taken to satisfy the SS Landscape Requirements;
9. identify any management measures agreed with CCW pursuant to paragraph 7.7; and
10. in addition to the above, for the sites referred to in sub-paragraph 3.2 of Part 2 of Schedule 16, set out procedures to:
 - 10.1 avoid damaging the wildlife interests;
 - 10.2 enhance the special interests of the sites;
 - 10.3 conserve and manage habitats, wildlife and the landscape;
 - 10.4 create opportunities for public enjoyment;
 - 10.5 create conditions for colonisation;
 - 10.6 create conditions for diversification to meet the objectives in the biodiversity action plan produced by CCW; and
 - 10.7 to prevent operations which are likely to damage the special interests of the site.

**Annex 7/3 to
Part 2 of Schedule 6**

Landscape Functions

1. LFA: Screening

Mitigate against adverse visual impact by screening views of the Project Road and its traffic from properties and public view points.

2. LFB: Integration with the Surrounding Landscape

Integrate the landscape of the Project Road with the character of the surrounding landscape by maintaining the continuity of local vegetation patterns, blending with local landform and softening views of the Project Road and its traffic.

3. LFC: Townscape Conservation

Integrate the landscape of the Project Road with the surrounding urban landscape whilst reflecting (i) the scale and character of the local townscape through which the relevant part of the Project Road passes, and (ii) the needs of those living in or using areas adjacent to the relevant part of the Project Road.

4. LFD: Nature Conservation

Promote nature conservation and reflect the character of any appropriate neighbouring habitat.

5. LFE: Provide Interest for the User

Maintain open views from the Project Road to areas of interest in the landscape and, where practicable and appropriate to the landscape character, create variety in the "roadside scene" so as to provide (i) a location point or landmark for the User, and (ii) interest for the User.

6. LFF: Conservation of Existing Landscape

Conserve existing landscape features where they make a material contribution to the quality and character of the local landscape or constitute local landmarks.

**Annex 7/4 to
Part 2 of Schedule 6**

Landscape Function Requirements

1. LFA: Screening

- 1.1 Thinning shall be carried out:
 - 1.1.1 in such a way as not to open up views of the Project Road and the traffic on it; and
 - 1.1.2 by light thinning on a regular basis rather than heavy thinning on an irregular basis,
- 1.2 Landscape Function Period: by Year 15.

2. LFB: Integration with the Surrounding Landscape

- 2.1 Planting shall be carried out so as to soften the appearance of the earthworks, environmental barriers and engineering features of the Project Road in views (i) from the surrounding landscape, and (ii) by Users on the Project Road.
- 2.2 Landscape Function Period: by Year 15.

3. LFC: Townscape Conservation

- 3.1 Grassed and planted areas adjacent to pedestrian areas in town centres and on important approaches to towns shall be maintained so as to create a neat and tidy appearance.
- 3.2 Landscape Function Period: by Year 10.

4. LFD: Nature Conservation

- 4.1 Drainage characteristics necessary to support a diverse flora and fauna or particular species of interest already found on the site shall be conserved.
- 4.2 Habitats, including without limitation native woodland, woodland edge, wetlands, species rich grasslands and heathland, shall be managed so as to optimise their nature conservation value.
- 4.3 Landscape Function Period: Immediately and continuing.

5. LFE: Providing Interest for the User

- 5.1 Shape, form and colour of planting to provide interest for the User shall be designed using species appropriate to the local landscape character (e.g. by the use of wild flowers).
- 5.2 Landscape Function Period: by Year 15.

6. **LFF: Conservation of Existing Landscape**

- 6.1 Where trees or other vegetation or features of importance have to be removed for safety reasons they shall, where possible prior to removal, be replaced by similar features in an appropriate safe location.
- 6.2 Landscape Function Period: Immediately and continuing.

**Annex 7/5 to
Part 2 of Schedule 6**

Landscape Elements

1. LE1: Grassland Areas

1.1 LE1.1: Close Mown Grassland Areas

Grass and herb species, the sward of which shall:

- 1.1.1 be even and uniformly coloured;
- 1.1.2 be maintained in the range of 25 to 50 mm height in the growing season;
- 1.1.3 cover at least 95% of the relevant Landscape Area; and
- 1.1.4 not contain any scrub.

1.2 LE1.2: Parkway Grassland Areas

Grass and herb species, the sward of which shall:

- 1.2.1 be even and uniformly coloured;
- 1.2.2 be maintained in the range of 50 to 80 mm height in the growing season;
- 1.2.3 cover at least 95% of the relevant Landscape Area; and
- 1.2.4 not contain any scrub.

1.3 LE1.3: Amenity Grassland Areas

Grass and herb species, the sward of which shall:

- 1.3.1 be maintained in the range of 80 to 150 mm height in the growing season;
- 1.3.2 cover at least 95% of the relevant Landscape Area; and
- 1.3.3 not contain any scrub.

1.4 LE1.4: Grassland Bulb Areas

Bulbs dispersed in naturalistic drifts covering 30-50% of the relevant Landscape Area with grass and herb species covering the remainder of the relevant Landscape Area.

1.5 LE1.5: Not Used

1.6 LE1.6: Wildflower Areas

Herb and grass species appropriate to the location or as exist already on site, the sward of which shall:

1.6.1 cover at least 95% of the relevant Landscape Area; and

1.6.2 not contain any scrub.

1.7 LE1.7: General Grass Areas

1.7.1 Herb and grass species appropriate to the location or as exist already on site, the sward of which shall cover at least 80% of the relevant Landscape Area with a species composition and diversity capable of being maintained by an average of one cut per year or less.

1.7.2 Scrub cover of no more than 20% of the relevant Landscape Area.

1.8 LE1.8: Rock and Scree

Rock and scree colonised by grass, herb and scrub species.

1.9 LE1.9: Heath or Moorland Areas

Grass, herb and scrub species appropriate to the heath or moorland location or as exist already on site with a species composition and diversity capable of being maintained by an average of one cut per year or less.

1.10 LE1.10: Limestone and Chalk Grassland Areas

Grass and herb species appropriate to limestone and chalk soils or as exist already on site, the sward of which shall cover at least 60% of the relevant Landscape Area with a species composition and diversity capable of being maintained by an average of cut per year or less.

1.11 LE1.11: Woodland Edge Grassland Areas

Grass and herb species appropriate to the location with a species composition and diversity capable of being maintained by an average of one cut per year or less.

1.12 LE1.12: Other Species Rich Grassland

Grass and herb species appropriate to the location or as exist already on site with a species composition and diversity capable of being maintained by an average of one cut per year or less.

1.13 LE1.13: Rock and Scree

Rock and scree colonised by grassland herb species with a target of 15% scrub cover dispersed throughout the area.

1.14 LE1.14: Existing Grassland (Verge Type-A)

Management of existing grassland to maintain grass and herb species diversity.

1.15 **LE1.15: Existing Grassland (Verge Type-B)**

Management of existing grassland to increase grass and herb species diversity.

1.16 **LE1.16: Grassland Diversity (Verge Type-C)**

Increase grassland diversity through introduction of additional wildflower species dispersed evenly and manage to maintain species diversity.

1.17 **LE1.17: Grass and Herb Species**

Grass and herb species as already exist on adjoining field(s) and with a species composition and diversity capable of a management regime equivalent to that of the adjoining field(s).

2. **LE2: Native Tree and Shrub Planting and Regeneration**

2.1 **LE2.1: Woodland**

Vegetation dominated by tree and shrub species appropriate to the location or as exist already on site with a species composition, age and structural diversity forming or clearly capable of forming identifiable tree, shrub and field layers.

2.2 **LE2.2: Woodland Edge**

Vegetation dominated by tree and shrub species appropriate to the location or as exist already on site with a species composition, age and structural diversity forming or clearly capable of forming a stable and visually appropriate edge to the woodland.

2.3 **LE2.3: High Forest**

Tree species appropriate to the location or as exist already on site with an age and structural diversity forming or clearly capable of forming layered forest.

2.4 **LE2.4: Shrubs**

Shrub species appropriate to the location or as exist already on site.

2.5 **LE2.5: Shrubs with Intermittent Trees**

Shrub and tree species appropriate to the location or as exist already on site with individual trees or groups of trees dispersed throughout the relevant Landscape Area.

- 2.6 **LE2.6: Scrub**
- Vegetation generated by self sown shrubs and trees which are capable of being managed to reflect local vegetation patterns with a diverse age structure and species.
- 2.7 **LE2.7: Scattered Trees**
- Tree and shrub species appropriate to the location or as exist already on site appropriately dispersed and forming or capable of forming scattered groups.
- 2.8 **LE2.8: Linear Belts of Trees and Shrubs**
- Tree and shrub species appropriate to the location or as exist already on site in linear belts too narrow to be considered woodland but more substantial than a hedgerow.
- 2.9 **LE2.9: Older Planting Which Includes Non-Native Species**
- Tree and shrub species which are out of character with the surrounding landscape.
- 2.10 **LE2.10: Ornamental Tree Planting**
- Non-native tree species or cultivars used in urban areas to reflect the character of the locality and provide visual interest.
- 2.11 **LE2.11: Woody Vegetation Structure**
- Management to diversify woody vegetation structure and facilitate the extension of any adjacent landscape/grassland to create an indented edge.
- 2.12 **LE2.12: Canopy Trees and Shrubs**
- Thinning and cutting back of canopy trees and shrubs as appropriate to diversify the age class distribution. Encourage regeneration and enhance ground flora.
- 2.13 **LE2.13: Canopy Trees and Shrubs**
- Thinning and cutting back of canopy trees and shrubs as appropriate to diversify age class distribution. Planting of appropriate tree and shrub species.
- 2.14 **LE2.14: Existing Species**
- Retention of existing appropriate species except gorse and broom with additional tree and shrub planting in gaps.
- 2.15 **LE2.15: Trees and Shrubs**
- Small groups of trees and shrubs set in species rich grassland. Manage to maintain grass and herb species diversity.

- 2.16 **LE2.16: Intermittent Shrub Planting**
- Shrub planting species appropriate to the location or as exist already on site appropriately dispersed and forming or being capable of forming scattered groups.
3. **LE3: Ornamental Shrubs, Ground Covers and Climbers**
- 3.1 **LE3.1: Ornamental Shrubs**
- Ornamental shrub species appropriate to the location or as exist already on site.
- 3.2 **LE3.2: Ground Cover Shrubs**
- Ground cover shrub species appropriate to the location or as exist already on site.
- 3.3 **LE3.3: Climbers**
- Climbing plants appropriate to the location or as exist already on site.
4. **LE4: Hedges**
- 4.1 **LE4.1: Ornamental Species Hedges**
- Shrub or tree species appropriate to the location or as exist already on site trimmed to a constant width and height.
- 4.2 **LE4.2: Native Species Hedges**
- Shrub or tree species appropriate to the location or as exist already on site trimmed to a constant height in the region of 1.2m and to a constant width.
- 4.3 **LE4.3: Native Species Hedgerows (includes Linear Plantings of Native Shrubs)**
- Shrub and tree species appropriate to the location or as exist already on site managed as informal hedgerows with standard trees allowed to develop where appropriate.
- 4.4 **LE4.4: Native Species Hedges with Individual Tree/Tree Groups**
- Shrub or tree species appropriate to the location or as exist already on site with intermittent standard trees.
5. **LE5: Individual Trees**
- Tree species appropriate to the location or as exist already on site identifiable as individual trees separate from other woody vegetation.

6. LE6: Wetlands**6.1 LE6.1: Waterbodies and Associated Plants**

Wetland species appropriate to the location or as exist already on site.

6.2 LE6.2: Banks and Ditches

Grass, herb and woody species appropriate to the location or as exist already on site with a species composition and diversity capable of being maintained by less than one cut per year.

6.3 LE6.3: Reed Beds

Wetland species appropriate to the location or as exist already on site with reed species covering 85% to 95% of the relevant Landscape Area.

6.4 LE6.4: Marsh and Wet Grassland

Grass and herb species appropriate to the location or as already exist on site with a species composition and diversity capable of being maintained by the drainage regime at that location.

6.5 LE6.5: Stream Diversion

Stream diversion to reflect character, quality and composition appropriate to the location or as exist already on site.

7. LE7: Cloddiau**7.1 LE7.1: Cloddiau**

Shrub and tree species appropriate to the location or as exist already on site with individual trees dispersed throughout the relevant Landscape Area as shown on the drawing numbered 964057/SD/105.

**Annex 7/6 to
Part 2 of Schedule 6**

Landscape Element Requirements

1. LE1: Grassland Areas

- 1.1 In respect of all LE1s other than LE1.1, LE1.2 and LE1.3, the colonisation of grassland by native wildflower species and the regeneration of all native tree and shrub species shall be encouraged, save that the colonisation of Sycamore, Rhododendron, Gorse, Broom and Bramble shall be controlled to ensure that these species collectively form less than 5% of the relevant Landscape Area.
- 1.2 Areas of wildflower grassland shall be managed to maintain floristic diversity appropriate to the soil type, aspect and species range existing or introduced. Management of such areas shall be in accordance with DMRB, Volume 10, Section 4, Part I, HA 67/93 - Wildflower Handbook, as a minimum standard.

2. LE2: Native Tree and Shrub Planting and Regeneration

- 2.1 The percentage cover within a Landscape Area in respect of LE2.1 to LE2.10 and LE2.11 to LE2.16 shall be in accordance with Table 1 and Table 2 below save where:
 - 2.1.1 thinning, removal of nurse species or cuttings which form part of a coppice management cycle has been undertaken within the previous two growing seasons;
 - 2.1.2 deliberate glades have been created;
 - 2.1.3 the development of an ecologically valuable ground flora would be damaged; and
 - 2.1.4 natural regeneration of native species will lead to increased landscape or nature conservation value.

Table 1
Percentage Cover Requirements

LE	Type	Interval	
		Year 5 until Year 15	Year 15 until the Expiry Date
2.1	Woodland	80%	90%
2.2	Woodland Edge	80%	90%
2.3	High Forest	50%	75%
2.4	Shrubs	80%	90%
2.5	Shrubs with Intermittent Trees	80%*	90%*
2.8	Linear Belt of Trees and Shrubs	80%	90%

Notes to Table 1: (i) All percentages are minimum figures and are percentages of the relevant Landscape Areas.
(ii) * refers to shrub coverage only.

Table 2
Percentage Cover Requirements

LE	Type	Interval		
		Commencement	Year 5	Year 30
2.11	Woody/scrub cover	As exists	90	90
2.12	Woodland planting	As exists	80	80
2.13	Woodland planting	As exists	90	90
2.14	Woody/scrub cover	As exists	80	90
2.15	Grassland/Scrub	As exists	Within 10% of existing cover	Within 10% of existing cover

Notes to Table 2: Percentages relating to LE2.11 to LE2.14 are minimum percentages of the existing cover.

2.2 The following shall be achieved in respect of all LE2s by Year 15 and maintained thereafter until the Expiry Date:

2.2.1 the vegetation shall form or shall be clearly capable of forming groups of similar species, form and height to those in the vicinity, reflecting local vegetation patterns, structure and nature conservation value;

2.2.2 there shall be a diversity of age, structure and species; and

2.2.3 a native ground flora shall have been allowed to develop.

3. **LE3: Ornamental Shrubs, Ground Covers and Climbers**

3.1 Ornamental shrubs shall attain growth rates and a form typical to the relevant species under good growing conditions, be free from other vegetation and shall not encroach upon or overhang footpaths or carriageways.

3.2 Individual shrubs shall be allowed to grow into one another.

3.3 Climbing shrubs shall be attached securely to and cover their supporting structure.

3.4 Ornamental shrubs and ground cover shrubs shall cover (i) at least 80% of the relevant Landscape Area at Year 5 and maintained thereafter until Year 10, and (ii) 100% of the relevant Landscape Area at Year 10 and maintained thereafter until the Expiry Date.

4. **LE4: Hedges**

4.1 Tops of hedges and hedgerows shall not be trimmed until they reach the appropriate height and side-branching of hedges shall be encouraged by trimming the sides.

4.2 Ornamental hedges shall be pruned in a manner suited to the relevant species.

4.3 At Year 5 and thereafter until the Expiry Date, save where natural regeneration of native species and ground flora enhances landscape or ecological value, hedges and hedgerows shall cover at least 80% of their basal area.

4.4 The following shall be achieved in respect of hedges and hedgerows by Year 10 and maintained thereafter until the Expiry Date:

4.4.1 they shall be broadest at the base and form a dense visual screen with vegetation to ground level; and

4.4.2 they shall cover at least 95% of their basal area.

4.5 Management of hedges, including, without limitation, hedge laying, shall be consistent with local practice where it contributes to the landscape character of the relevant area.

5. **LE5: Individual Trees**

- 5.1 The following shall be achieved in respect of individual trees by Year 5 and maintained thereafter until Year 15:
 - 5.1.1 they shall form or be clearly capable of forming groups of similar species, form and height to those in the vicinity reflecting local vegetation patterns;
 - 5.1.2 they shall have a single leader except where multi-stemmed plants are appropriate to the location;
 - 5.1.3 they shall retain their lower branches and have a well-balanced crown with no closely spaced branches or weak or tight forks;
 - 5.1.4 where they are less than 1m in height and located in a grassland area, the area within a radius of 600mm of such trees shall be maintained so as to be vegetation free.
- 5.2 The following shall be achieved in respect of individual trees by Year 15 and maintained thereafter until the Expiry Date:
 - 5.2.1 they shall have a single leader, except where multi-stemmed specimens are appropriate to the location;
 - 5.2.2 they shall retain their lower branches and have a well-balanced crown with no weak or tight forks.
- 5.3 The quantity of individual trees within a Landscape Area shall be maintained.
- 5.4 Older trees shall be allowed to retain the character and shape they have developed unless other considerations such as safety prevent this. Where such trees are removed they shall be replaced with similar trees in suitable adjacent locations.
- 5.5 Arboricultural work to trees shall be carried out in accordance with the Forestry and Arboricultural Training Council (FASTCO) Guidelines.
- 5.6 Semi-mature and mature trees shall be managed to enhance their growth to retain them for as long as is practicable while they contribute to the character and quality of the landscape.
- 5.7 Over-mature trees which contribute towards nature conservation value shall be retained unless they pose a danger to Users or others.

6. **LE6: Wetlands**

- 6.1 Wetland areas shall be maintained to retain and develop habitat and species of ecological value or importance.
- 6.2 Where a wetland area also has an engineering function or already has ecological status this shall be taken into account in managing these areas.

- 6.3 Existing areas of ecological interest shall be maintained and enhanced.
- 6.4 Water quality shall be such as to encourage wildlife.
- 6.5 Pesticides and herbicides shall only be applied in or near water after permission has been obtained from the Environment Agency.
- 6.6 No more than 30% of emergent or marginal vegetation within a wetland area shall be cut in one year.
- 6.7 Water levels in reed beds shall be such as to allow and control the reed growth.
- 6.8 Waterbodies shall be maintained to provide, under conditions of average rainfall, 100% of their water surface clear of weeds, emergent vegetation or blanket algae.
- 6.9 From Year 5 until the Expiry Date all wetland species in shallow margins shall cover at least 70% of their margin, with woody wetland species covering no more than 30% of their margin.
- 6.10 Banks and ditches shall have no more than 20% of shrub or tree species covering the area above water level.

**Annex 7/7 to
Part 2 of Schedule 6**

General Landscape and Ecological Requirements

1. Where planting is carried out it shall be carried out in accordance with the provisions set out in Appendix 3 to Annex 10 to Part 2 of Schedule 4.
2. During the three year period following planting, plants shall be managed so as to ensure they are established within such period in accordance with Appendix 1 to this Annex 7/7.
3. Disruption to wildlife, wildlife habitats and sites of botanical interest shall be minimised.
4. Operations shall be carried out in a manner compatible with the seasonal ecological requirements of the habitats and species within the relevant areas.
5. All L&E Surveys or other landscape or ecology surveys shall be carried out during the appropriate season.

Appendix 1 to Annex 7/7

Establishment Provisions

1. General

- 1.1 The programme and timing of operations to comply with the provisions of this Appendix 1 shall be included in the L&E Management Strategy.
- 1.2 Firming of stakes, maintenance of fencing and mulch mats shall be carried out at regular intervals.

2. Vegetation Control and Other Operations

2.1 Vegetation Control

- 2.1.1 The provisions of paragraphs 2.5 and 2.6 of Appendix 3 to Annex 10 to Part 2 of Schedule 4 shall be complied with.
- 2.1.2 Vegetation control areas shall be maintained around each shrub or tree, along hedgerows and on beds. This operation shall also include the clearance of weed and grass growth from the inside of shelters and guards.
- 2.1.3 Areas where hand weed control is to be carried out shall be identified in the L&E Management Strategy.
- 2.1.4 All weeds from areas containing herbaceous plants shall be removed by hand. No herbicides shall be used since the use of herbicides may be detrimental to plant growth.

2.2 Firming of Stakes, Ties, Plants, Shelters and Guards

- 2.2.1 The following operations shall be carried out as appropriate:
 - 2.2.1.1 refirm the ground around all plants;
 - 2.2.1.2 spread topsoil obtained from the surrounding ground to protect the plants;
 - 2.2.1.3 ensure that all plants are refirmed and straightened to an upright position;
 - 2.2.1.4 refirm or adjust all tree stakes, tree and shrub shelter stakes and plastic mesh guard stakes;
 - 2.2.1.5 refix displaced or replace where damaged, plastic mesh, spiral or plastic tube guards around the plant stems;
 - 2.2.1.6 refix displaced, ease where necessary or replace where damaged, tree ties and tree and shrub shelters;

- 2.2.1.7 refirm all plot marker posts and maintain such posts in an upright position;
 - 2.2.1.8 refix weed control membrane to ensure weed suppression; and
 - 2.2.1.9 adjust root anchors to maintain trees in a firm upright position whilst avoiding the causing of damage to the tree.
 - 2.2.2 Any surplus discarded materials from the items referred to in paragraph 2.2.1 above shall be removed from the Site and Adjacent Areas.
- 2.3 Maintenance of Fencing, Stiles and Fenced Tree Guards
 - 2.3.1 All fencing, stiles and fencing tree guards shall be effectively maintained in a proper order.
 - 2.3.2 All individual planting stations, planting plots, hedgerows and beds shall be bordered by protective fencing so as to ensure that the plants are free from rabbits and deer. In addition the following shall be complied with:
 - 2.3.2.1 all entry points for rabbits and deer into fenced areas shall be closed and secure;
 - 2.3.2.2 all rabbits and deer shall be removed from the fenced areas; and
 - 2.3.2.3 all rabbit burrows within fenced areas shall be effectively cleared of rabbits and securely blocked.
- 2.4 Mulch Mats, Organic Mulch and Weed Control Membranes
 - 2.4.1 All mulch mats shall be maintained so as to be flat to the ground contours by replacing and renewing the wire pegs and turf that ensure that the mulch mats are firmly anchored to the ground and the provision of paragraph 5.5 of Appendix 3 to Annex 10 to Part 2 of Schedule 4 shall be complied with.
 - 2.4.2 All organic mulch shall be maintained at a depth of at least 75mm and shall be of even distribution over the area to be covered and the provisions of paragraph 5.6 of Appendix 3 to Annex 11 to Part 2 of Schedule 4 shall be complied with.
 - 2.4.3 All weed control membranes shall be maintained so as to be flat to the ground contours by replacing and renewing the turf to ensure that the membrane is firmly anchored to the ground and the provisions of paragraph 5.7 of Appendix 3 to Annex 11 to Part 2 of Schedule 4 shall be complied with.

3. **Plant Replacement**

- 3.1 At the end of each growing season the DBFO Co shall remove from the planting pits, beds or trenches all plants which have died or are failing to thrive or, in the opinion of the Landscape Manager are likely to die or fail to thrive and all plants which are not of the species specified in the relevant Landscape Design (as defined in Annex 10 to Part 2 of Schedule 4) to which there has been no objection in accordance with the Review Procedure. Such plants shall be removed off the Site and Adjacent Areas.
- 3.2 In the three week period prior to 30 September in each year all planted stock shall be assessed and a plot by plot schedule of replacement necessary to maintain 100% stocking shall be prepared and implemented.
- 3.3 All plants removed in accordance with paragraph 3.1 above shall be replaced with plant material of the same size and species as specified in the relevant Landscape Design (as defined in Annex 10 to Part 2 of Schedule 4) to which there has been no objection in accordance with the Review Procedure or as otherwise agreed by the Department's Representative. Such replacement shall be carried out in the planting season immediately following removal.
- 3.4 Any existing planting pit, bed or trench shall be dug or forked over to its original dimensions to relieve compaction prior to any replacement stock being planted. For isolated plants in beds or planting trenches a volume of 200mm x 200mm x 200mm shall be relieved.

4. **Pruning**

Trees and shrubs shall be pruned, dead wood shall be removed and new lead shoots shall be trained where the originals have become damaged or diseased.

5. **Post Planting Fertiliser**

- 5.1 Other than in wildflower areas and any other areas specifically excluded in the L&E Management Strategy, fertiliser shall be applied as specified in Table 1 of this Appendix 1.
- 5.2 The DBFO Co shall inform the Department's Representative of its intention to apply fertiliser 10 days prior to such operations being carried out.
- 5.3 The number of operations and programme of post planting fertiliser application shall be set out in the L&E Management Strategy.

Table 1

Fertiliser Application

Type	Application to	Rate per Plant
N P2 O5 K2 O Mg 5 18 10 5 (minimum)	Semi Mature Extra Heavy Standard Selected Standard and Standard	60 grm
N P2 O5 K2 O Mg 5 19 10 7.5 (maximum)	Light Standard, Half Standard and Feathered	45 grm
	Whip, Transplant Bush and Shrub	25 grm
	Hedging and Beds	100 grm/m2

6. Watering

- 6.1 Watering shall be carried out as necessary so as to maintain the healthy growth of all plant material.
- 6.2 A minimum of 100 litres of water shall be supplied for every 2.5cm of trunk diameter of semi mature trees at fortnightly intervals during the months of June, July, August and September. Watering of plants shall be carried out slowly at a rate which ensures proper penetration into the rootball.

7. Cutting of Vegetation

- 7.1 All vegetation within the areas planted pursuant to Annex 10 of Part 2 of Schedule 4, excluding any Retained Existing Vegetation (as defined in Annex 9 to Part 2 of Schedule 4), vegetation of nature conservation value or plants planted pursuant to such Annex 11 shall be cut down to the levels required pursuant to paragraph 7.5 below. The timing of the cutting and the heights to which they are to be cut shall be set out in the L&E Management Strategy for the different types of vegetation.
- 7.2 Vegetation cutting shall be carried out by means that avoids any damage to the soil surface or damage to vegetation which is to be retained.
- 7.3 No objects or arisings shall be allowed to fall outside the area to be cut.
- 7.4 Except in wildflower areas and unless otherwise set out in the L&E Management Strategy, all arisings shall remain on the ground and be spread evenly over the cut areas.
- 7.5 After cutting, the height of the vegetation shall not be greater than 75mm or less than 50mm.

8. Removal of Tree Stakes

- 8.1 At the end of the period of three years following planting, stakes and ties shall be removed from all trees unless the Landscape Manager requires them to be retained for further seasons.
- 8.2 When removing stakes and ties from trees, the trees shall not be damaged and the post holes from the stakes shall be closed over.
- 8.3 All stakes and ties removed shall be removed from the Site and Adjacent Areas.

9. Aftercare Inspection Reports

At the end of the three years following planting pursuant to Annex 11 to Part 2 of Schedule 4, the DBFO Co shall provide to the Department's Representative a report detailing any replanting carried out and the condition of plants planted pursuant to the said Annex 10 or replaced pursuant to this Appendix 1.

**Annex 7/8 to
Part 2 of Schedule 6**

SS Landscape Requirements

The SS Landscape Requirements are included in Appendix 1 to this Annex.

**Appendix 1 to
Annex 7/8 to
Part 2 of Schedule 6**

SS Landscape Requirements

Drawing numbered 964057/ELA/101 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
1.	Not Used	-
2.	Not Used	-
3.	Not Used	-
4.	Not Used	-
5.	Not Used	-
6.	Not Used	-
7.	Not Used	-
8.	Not Used	-
9.	Not Used	-
10.	Not Used	-
11.	LFA	LE2.12
	LFB	
	LFD	
12.	LFB	LE2.11
13.	LFB	LE1.14
14.	LFB	LE2.11
	LFD	
15.	LFB	LE1.13
16.	LFB	LE1.13
17.	LFA	LE2.12
	LFD	
18.	LFA	LE2.12
	LFD	
19.	LFB	LE2.11

Drawing numbered 964057/ELA/101 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
20.	LFB	LE1.13
21.	LFB	LE1.13
22.	LFB	LE1.15
23.	LFB	LE1.13
24.	LFB	LE1.15
25.	LFB	LE1.13
	LFA	LE2.12
	LFB	
	LFD	
	LFB	LE2.11
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-
	Not Used	-

Drawing numbered 964057/ELA/102 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
1.	LFA	LE2.12
	LFD	
2.	LFA	LE2.12
3.	LFA	LE2.14
4.	LFA	LE2.12
5.	LFB	LE2.14
6.	LFA	LE2.12
	LFB	
7.	LFA	LE2.12
8.	LFB	LE1.13
	LFD	
9.	LFB	LE1.15
10.	LFB	LE1.13
	LFD	
11.	LFA	LE2.12
	LFD	
12.	LFD	LE1.15
13.	LFB	LE1.13
14.	LFB	LE1.14
	LFD	
15.	LFA	LE2.12

Drawing numbered 964057/ELA/103 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
1.	LFB	LE1.13
	LFD	
2.	LFB	LE1.13
3.	LFB	LE1.13
4.	LFA	LE2.14
5.	LFB	LE1.16
6.	LFB	LE1.14
7.	LFB	LE2.7
8.	LFB	LE1.16
9.	LFB	LE1.13
	LFD	
10.	LFB	LE1.14
11.	LFB	LE1.16
12.	LFB	LE1.13
	LFD	
13.	LFB	LE2.12
14.	LFB	LE2.12
15.	LFA	LE2.13
16.	LFB	LE2.14
17.	LFB	LE1.14
18.	LFB	LE1.13
	LFD	
19.	LFB	LE1.13
20.	LFB	LE1.15
21.	LFB	LE2.12
22.	LFB	LE2.12
23.	LFB	LE2.12
24.	LFB	LE1.15

Drawing numbered 964057/ELA/103 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
25.	LFB	LE1.14
26.	LFB	LE1.15
27.	LFB	LE2.14
28.	LFB	LE2.14
29.	LFB	LE1.13
30.	LFA	LE4.3
31.	LFB	LE1.13
	LFD	
32.	LFB	LE1.13
	LFD	
33.	LFB	LE1.15
34.	LFB	LE1.13
	LFD	

Drawing numbered 964057/ELA/104 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
1.	LFB	LE2.12
2.	LFB	LE2.12
3.	LFB	LE1.16
4.	LFB	LE1.14
5.	LFB	LE1.15
6.	LFA	LE2.12
7.	LFA	LE2.13
8.	LFB	LE2.12
9.	LFA	LE2.12
10.	LFB	LE1.16
11.	LFB	LE1.16
12.	LFB	LE1.15
13.	LFB	LE1.13
14.	LFA	LE2.12
15.	LFB	LE1.15
16.	LFA	LE2.12
17.	LFB	LE1.13
18.	LFB	LE1.15
19.	LFA	LE2.12
20.	LFA	LE2.11
21.	LFA	LE2.12
22.	LFB	LE2.15
	LFD	
23.	LFB	LE1.15
24.	LFA	LE2.14
25.	LFB	LE1.15
26.	LFB	LE2.2
27.	LFB	LE1.16
28.	LFA	LE2.14
29.	LFA	LE2.13

Drawing numbered 964057/ELA/104 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
30.	LFA	LE2.14
31.	LFB	LE1.15

Drawing numbered 964057/ELA/105 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFA	LE2.12
	LFB	LE1.13
	LFB	LE1.16
	LFB	LE2.15
	LFB	LE1.13
	LFB	LE1.16
	LFA	LE2.11
	LFB	
	LFA	LE2.11
	LFB	
	LFB	LE1.16
	LFB	LE1.16
	LFB	LE1.16
	LFB	LE1.16
	LFB	LE1.16
	LFB	LE1.16
	LFA	LE2.12
	LFB	LE1.16
	LFA	LE4.3
	LFB	LE1.14
	LFB	LE1.15
	LFB	LE2.11
	LFB	LE2.6
	LFD	
	LFA	LE2.11
	LFE	
	LFB	LE2.15
	LFB	LE2.14
	LFB	LE1.14
	LFA	LE2.12

Drawing numbered 964057/ELA/105 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFB	LE1.15
	LFB	LE1.14
	LFD	LE2.15
	LFE	
	LFB	LE1.15
	LFD	LE1.14
	LFE	
	LFA	LE2.11
	LFB	LE1.16
	LFD	LE2.15
	LFE	
	LFA	LE2.7
	LFB	LE1.16
	LFB	LE1.14
	LFA	LE2.14
	LFA	LE2.14
	LFB	
	LFB	LE1.16
	LFB	LE1.16
	LFB	LE2.14
	LFB	LE1.16
	LFE	
	LFB	LE1.13
	LFB	LE1.13
	LFB	LE1.16
	LFE	
	LFB	LE1.13

Drawing numbered 964057/ELA/106 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFA	LE2.12
	LFB	LE1.15
	LFD	LE2.15
	LFE	
	LFA	LE2.11
	LFB	
	LFB	LE1.15
	LFA	LE2.11
	LFB	
	LFE	
	LFB	LE1.14
	LFD	
	LFB	LE1.14
	LFD	
	LFB	LE2.15
	LFB	LE1.14
	LFB	LE2.15
	LFB	LE1.14
	LFE	
	LFB	LE2.15

Drawing numbered 964057/ELA/107 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFB	LE2.12
	LFD	
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE3.1
	LFC	LE2.10
	LFC	LE1.1
	LFC	LE1.1
	LFD	-
	LFF	
	LFD	-
	LFF	

Drawing numbered 964057/ELA/108 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFC	LE4.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE3.1
	LFC	LE3.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFF	LE5.
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFE	LE1.16
	LFC	LE1.1
	LFC	LE1.1
	LFC	-
	LFF	
	LFC	-
	LFD	
	LFF	

Drawing numbered 964057/ELA/109 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFF	LE2.10
	LFC	LE1.1
	LFB	LE1.15
	LFA	LE2.8
	LFA	LE2.13
	LFA	LE2.12
	LFB	LE1.14
	LFA	LE2.12
	LFB	LE1.15
	LFB	LE1.16
	LFB	LE1.15
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFC	LE1.1
	LFB	LE1.15
	LFA	LE2.12
	LFD	
	LFA	LE2.12
	LFD	
	LFD	LE1.15
	LFA	LE2.14
	LFA	LE2.13
	LFD	LE1.15
	LFA	LE2.14
	LFB	
	LFA	LE2.14
	LFB	LE2.11

Drawing numbered 964057/ELA/110 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFA	LE2.12
	LFB	LE1.16
	LFA	LE2.12
	LFB	LE2.7
	LFB	LE1.16
	LFB	LE2.7
	LFA	LE2.11
	LFA	LE2.11
	LFA	LE2.12
	LFB	LE2.7
	LFA	LE2.12
	LFD	
	LFD	LE1.15
	LFB	LE2.12
	LFB	LE2.12
	LFA	LE2.12
	LFB	
	LFB	LE2.7
	LFB	LE1.15
	LFA	LE2.14
	LFB	LE1.15
	LFB	LE2.7
	LFA	LE2.14
	LFB	LE1.14
	LFB	LE2.7
	LFB	LE2.7
	LFB	LE1.13
	LFB	LE2.11

Drawing numbered 964057/ELA/111 in Section 1 of Part 3 of this Schedule 6

Existing Landscape Area	Landscape Function	Landscape Element
	LFA	LE2.12
	LFB	LE1.14
	LFA	LE2.12
	LFD	
	LFA	LE2.12
	LFB	LE2.7
	LFB	LE2.15
	LFB	LE2.7

**SCHEDULE 6
OPERATION AND MAINTENANCE**

**Part 3
Drawings**

The drawings in this Part 3 of Schedule 6 are identified in Appendix 0/4 to Annex 5 to Part 2 of Schedule 4 and are contained in a folio provided by the Secretary of State to the DBFO Co marked "A55 Llandegai to Holyhead Schedule 6 Operations and Maintenance Part 3 Drawings", save for drawings numbers 964057/SMB/101 to 106 and 964057/EOSE/1 Rev A which are contained in this Part 3.

Section 1 Existing Landscape Areas

964057/ELA/101 Rev A, 102 Rev A, 103 Rev A, 104, Rev A, 105 Rev A, 106 Rev A, 107 Rev A, 108 Rev A, 109 Rev A, 110 Rev A and 111 Rev A

Section 2 Structures Maintenance Boundaries

964057/SMB/101 to 106

Section 3 Masonry boundary/retaining walls

964057/MW/100 to 112

Section 4 Excluded On-site Equipment

964057/EOSE/1 Rev A

**SCHEDULE 6
OPERATION AND MAINTENANCE**

**Part 4
Form of Notice of Appointment**

[To be given to Railtrack Plc by UK Highways A55 Limited]

To: Kevin Turner Hague
Railtrack Plc
Railtrack House
North West Zone
15th Floor 111 Piccadilly
Ducie Street
Manchester
M1 2HY

The Company Secretary
Railtrack Plc
DP 13 Railtrack House
Euston Square
London
NW1 2EE

Dear Sirs,

Britannia Bridge Agreement between the British Railways Board and the Secretary of State for Wales dated 19 April 1977 (the "Agreement")

1. We are writing to inform you that we, UK Highways A55 Limited, have entered into a contract (the "**DBFO Contract**") with the Secretary of State for Wales dated [*] for the design, construction, financing, operation and maintenance of the A55 from Llanfair Pwllgwyngyll to Holyhead and related matters as more fully set out in the DBFO Contract.
2. The Secretary of State for Wales has provided us with a copy of the Agreement.
3. We hereby notify you that under the DBFO Contract, the Secretary of State for Wales has appointed us to act as his agent (the "**Appointment**") solely for the purpose of exercising the rights and performing the obligations to be discharged by us pursuant to paragraph 2 of Annex 1 to Part 1 of Schedule 6 to the DBFO Contract, a copy of which is attached to this Notice.
4. We further notify you that the Appointment is subject to the terms of Clause 50.5 of the DBFO Contract, a copy of which is attached.
5. Kindly acknowledge your receipt of this Notice of Appointment and acceptance of its terms and the terms of the Appointment by signing and returning to us and to the Department's Agent the Acknowledgement of this Notice enclosed for the purpose.

Yours faithfully,

.....
For and on behalf of
UK Highways A55 Limited

Form of Acknowledgement of Notice of Appointment

[To be given to UK Highways A55 Limited and the Department's Agent by Railtrack Plc]

To: UK Highways A55 Limited
PO Box 295
Alexandra Gate
Rover Way
Cardiff
CF2 2UE

To: Department's Agent
Halcrow Group Limited
Llanthony Warehouse
The Docks
Gloucester
GL1 2NS

Attention: Bryan Bamber

From: Railtrack Plc

DUPLICATE

[To be given to Railtrack Plc by UK Highways A55 Limited]

To: Kevin Turner Hague
Railtrack Plc
Railtrack House
North West Zone
15th Floor 111 Piccadilly
Ducie Street
Manchester
M1 2HY

The Company Secretary
Railtrack Plc
DP 13 Railtrack House
Euston Square
London
NW1 2EE

Dear Sirs,

Britannia Bridge Agreement between the British Railways Board and the Secretary of State for Wales dated 19 April 1977 (the "Agreement")

1. We are writing to inform you that we, UK Highways A55 Limited, have entered into a contract (the "**DBFO Contract**") with the Secretary of State for Wales dated [*] for the

design, construction, financing, operation and maintenance of the A55 from Llanfair Pwllgwyngyll to Holyhead and related matters as more fully set out in the DBFO Contract.

2. The Secretary of State for Wales has provided us with a copy of the Agreement.
3. We hereby notify you that under the DBFO Contract, the Secretary of State for Wales has appointed us to act as his agent (the "**Appointment**") solely for the purpose of exercising the rights and performing the obligations to be discharged by us pursuant to paragraph 2 of Annex 1 to Part 1 of Schedule 6 to the DBFO Contract, a copy of which is attached to this Notice.
4. We further notify you that the Appointment is subject to the terms of Clause 50.5 of the DBFO Contract, a copy of which is attached.
5. Kindly acknowledge your receipt of this Notice of Appointment and acceptance of its terms and the terms of the Appointment by signing and returning to us and to the Department's Agent the Acknowledgement of this Notice enclosed for the purpose.

Yours faithfully,

.....
For and on behalf of
UK Highways A55 Limited

We acknowledge receipt of the Notice of Appointment in the form set out above. We hereby confirm that we have read and accept its terms.

Yours faithfully,

.....
For and on behalf of
Railtrack Plc

**SCHEDULE 6
OPERATION AND MAINTENANCE**

**Part 5
Form of Notice of Railtrack Appointment**

[To be given to Railtrack Plc by UK Highways A55 Limited]

To: Kevin Turner Hague
Railtrack Plc
Railtrack House
North West Zone
15th Floor 111 Piccadilly
Ducie Street
Manchester
M1 2HY

The Company Secretary
Railtrack Plc
DP 13 Railtrack House
Euston Square
London
NW1 2EE

Dear Sirs,

Railtrack Works Agreement between the Secretary of State for Wales and Railtrack Plc dated [*] 1998 (the "Agreement")

1. We are writing to inform you that we, UK Highways A55 Limited, have entered into a contract (the "**DBFO Contract**") with the Secretary of State for Wales dated [*] for the design, construction, financing, operation and maintenance of the A55 from Llanfair Pwllgwyngyll to Holyhead and related matters as more fully set out in the DBFO Contract.
2. The Secretary of State for Wales has provided us with a copy of the Agreement.
3. We hereby notify you that under the DBFO Contract, the Secretary of State for Wales has appointed us to act as his agent (the "**Railtrack Appointment**") solely for the purpose of exercising the rights and performing the obligations to be discharged by us pursuant to paragraph 3 of Annex 1 to Part 1 of Schedule 6 to the DBFO Contract, a copy of which is attached to this Notice and that we are the Secretary of State's Agent (as defined in the Agreement), subject to the provisions of Clause 2.1.1 of the Agreement.
4. We further notify you that the Railtrack Appointment is subject to the terms of Clause 50.6 of the DBFO Contract, a copy of which is attached.

5. Kindly acknowledge your receipt of this Notice of Appointment and acceptance of its terms and the terms of the Appointment by signing and returning to us and to the Department's Agent the duplicate of this Notice enclosed for the purpose.

Yours faithfully,

.....
For and on behalf of
UK Highways A55 Limited

Form of Acknowledgement of Notice of Railtrack Appointment

[To be given to UK Highways A55 Limited and the Department's Agent by Railtrack Plc]

To: UK Highways A55 Limited
PO Box 295
Alexandra Gate
Rover Way
Cardiff
CF2 2UE

To: Department's Agent
Halcrow Group Limited
Llanthony Warehouse
The Docks
Gloucester
GL1 2NS

Attention: Bryan Bamber

From: Railtrack Plc

DUPLICATE

[To be given to Railtrack Plc by UK Highways A55 Limited]

To: Kevin Turner Hague
Railtrack Plc
Railtrack House
North West Zone
15th Floor 111 Piccadilly
Ducie Street
Manchester
M1 2HY

The Company Secretary
Railtrack Plc
DP 13 Railtrack House
Euston Square
London
NW1 2EE

Dear Sirs,

Railtrack Works Agreement between the Secretary of State for Wales and Railtrack Plc dated [*] 1998 (the "Agreement")

1. We are writing to inform you that we, UK Highways A55 Limited, have entered into a contract (the "**DBFO Contract**") with the Secretary of State for Wales dated [*] for the

design, construction, financing, operation and maintenance of the A55 from Llanfair Pwllgwyngyll to Holyhead and related matters as more fully set out in the DBFO Contract.

2. The Secretary of State for Wales has provided us with a copy of the Agreement.
3. We hereby notify you that under the DBFO Contract, the Secretary of State for Wales has appointed us to act as his agent (the "**Railtrack Appointment**") solely for the purpose of exercising the rights and performing the obligations to be discharged by us pursuant to paragraph 3 of Annex 1 to Part 1 of Schedule 6 to the DBFO Contract, a copy of which is attached to this Notice and that we are the Secretary of State's Agent (as defined in the Agreement), subject to the provisions of Clause 2.1.1 of the Agreement.
4. We further notify you that the Railtrack Appointment is subject to the terms of Clause 50.6 of the DBFO Contract, a copy of which is attached.
5. Kindly acknowledge your receipt of this Notice of Appointment and acceptance of its terms and the terms of the Appointment by signing and returning to us and to the Department's Agent the Acknowledgement of this Notice enclosed for the purpose.

Yours faithfully,

.....
For and on behalf of
UK Highways A55 Limited

We acknowledge receipt of the Notice of Appointment in the form set out above. We hereby confirm that we have read and accept its terms.

Yours faithfully,

.....
For and on behalf of
Railtrack Plc

BF298296.07