

1 SPECIFICATION AND SCHEDULES

1.1 SPECIFICATION

The Specification shall be the *UK Specification for Ground Investigation* Second Edition published by ICE Publishing in 2011, with information, amendments and additions as described in the Schedules.

- Schedule 1. Information and site-specific requirements
- Schedule 2. Exploratory holes
- Schedule 3. Investigation supervisor's facilities
- Schedule 4. Specification amendments
- Schedule 5. Specification additions

SCHEDULES

S.1 Schedule 1: Information

Name of Contract	S1.1	<to be inserted on a Work Order Basis>
Investigation Supervisor	S1.2	<to be inserted on a Work Order Basis>
Description of site	S1.3	<to be inserted on a Work Order Basis>
Main works proposed and purpose of this contract	S1.4	<to be inserted on a Work Order Basis>
Scope of investigation	S1.5	<p><to be inserted on a Work Order Basis></p> <p>General site clearance and specific items such as barriers, vegetation and fences may require removal prior to arriving on site or undertaking works for the Ground Investigation. This is the responsibility of the appointed Supplier to undertake and ensure any necessary clearance work required is carried out prior to the expected start on site for surveys.</p>
Geology and ground conditions	S1.6	<to be inserted on a Work Order Basis>
Schedule of drawing(s) and documents	S1.7	<to be inserted on a Work Order Basis>
General requirements (Specification Section 3) Particular restrictions/ relaxations	S1.8	<p><Insert specific details as applicable under each of the headings below on a Work Order Basis></p> <p>S1.8.1 Quality management system</p> <p>See Framework Information</p> <p>S1.8.2 Professional attendance</p> <p>All work sites must have a competent and experienced Site Supervisor (also referred to as the <i>Supplier's Site Supervisor</i>). The Supplier shall demonstrate competence of their Site Supervisor in construction health and safety, and technical competence including appropriate qualifications and evidence of experience in supervising similar works.</p>

The Investigation site shall be managed for the Supplier (i.e. the Supplier's Site Supervisor) by a Ground Practitioner(s) meeting the following criteria:

- An appropriate Geosciences degree
- CSCS Card (Managerial/Professional/Academically Qualified Grade);
- CDM training certified;
- For CDM Notifiable sites the Site Supervisor must hold as a minimum a current CITB Site Management Safety Training Scheme (SMSTS) or the IOSH Managing Safely in Construction qualification;
- For non CDM notifiable sites the Site Supervisor must hold as a minimum CITB Site Supervisors Safety Training Scheme (SSSTS) qualification or the IOSH 'Safe Supervision of Geotechnical Sites' qualification;
- Environmental Awareness including Asbestos Awareness (CIRIA's 'Environmental Good Practice on Site' training or CITB 'Site Environmental Awareness Training Scheme within the last 5 years);
- Minimum 5 years Post Graduate experience;
- CDM Notifiable Sites - Minimum 5 years Supervisory experience in similar field;
- Non CDM Notifiable Sites - Minimum 3 years Supervisory experience in similar field.

Rates for Professional Attendance (Reference Items 4 and 22 of the Preamble to the Bill of Quantities) in Item A7.1 to A7.8 of the Bill of quantities shall NOT include:

- Logging;
- In situ testing and sampling;
- Photography;
- Preparation of daily records and preliminary logs;
- Compiling, preparing and checking of the draft and final reports.

Professional Attendance for these items shall be included in the standard rates for:

- Sections B, C, D and F - logging & preparation of daily records and preliminary logs;
- Section H – In situ testing and sampling;
- Section A Item A26 Hard Copy Photographs - photography;

- Section A Item A19 One master copy of the Ground Investigation Report (or specified part thereof) – Compiling, preparing and checking of the draft and final reports.

No contract / freelance staff will be permitted to work at the Site without prior consent of the Investigation Supervisor.

In all instances the Supplier's Site Supervisor shall be empowered to make all decisions on site regarding the operation of the site works and take full instruction from the Investigation Supervisor and act on that instruction with all due expediency. The Investigation Supervisor will not enter into correspondence with any other representative or office of the Supplier during the site works phase.

A minimum level of supervisory cover, based on numbers of items of plant, is detailed in Table 1. The requisite experience and number of personnel over and above these levels shall be agreed on a work order basis depending on type of plant, proximity of working areas, complexity of geology etc. Numbers of additional staff to achieve the Supplier's Safe System of work are to be determined by the Supplier:

Table 1 Minimum level of site supervision

Number of items of plant	Minimum number of supervisory staff	Experienced Ground Engineer	Graduate Ground Engineer	Registered Ground Engineering Professional
1-2	1	1 ⁽¹⁾	-	-
3-4	2	1 ⁽¹⁾	1	-
5-10	3	1 ⁽¹⁾	1	1 ⁽²⁾
>10	4 ⁽³⁾	1	2	1 ⁽¹⁾

- (1) Also fulfilling the role of the Supplier's Site Supervisor
- (2) Part time, defined to be equivalent to be a minimum of the equivalent of 2 full days per week on site
- (3) Additional Ground Practitioner required for each 5 items of investigation plant (e.g. 16-20 items requires minimum 5 site staff)

There should be sufficient numbers of fully trained first aider and hold a current certificate for the number of all staff on site, including the Investigation Supervisor's and Client's staff.

The description of soils, the logging of rock cores, inspection pits and trial/observation pits and trenches, the recording of soil and rock discontinuities, shall be carried out by Experienced Ground Engineers with at least 3 years of relevant postgraduate experience in the examination and logging of soil and rock samples and masses in accordance with current versions of BS EN ISO 14688 & BS EN ISO 14689, or BS5930:2015 where appropriate. Graduates ground engineers with less than 3 years' experience are permitted, provided that at least 20% of their work is checked logged by an experienced ground engineer, with appropriate documentation presented confirming this. Two weeks prior to the *starting date* the Supplier shall submit Curriculum Vitae for the proposed Ground Practitioners on site and all drillers intended to be involved with the Investigation

All drillers shall hold as a minimum, an appropriate CSCS card and the NVQ Level 2 Diploma in Land Drilling (as accredited by the BDA or equivalent body), with the appropriate occupation for the position proposed (Lead Driller or Drilling Support Operative) and the appropriate application (specialism) for the lead driller, for the drilling or boring method proposed. This includes sub- contractor drillers, the details of whom shall be sent to the Investigation Supervisor for approval prior to commencement of the works. No sub- contract staff will be permitted without prior approval of the employer/ investigation supervisor.

The Supplier's site personnel, including drillers, must at all times be equipped with a mobile telephone in order to communicate with the Supplier's supervisory staff and the Investigation Supervisor.

S1.8.3 Provision of ground practitioners and other personnel

<to be inserted on a Work Order Basis>

S1.8.4 Hazardous ground, land affected by contamination and notifiable and invasive weeds

The site is classified as RED/YELLOW/GREEN [delete as appropriate] under the Site Investigation Steering Group's "Guidelines for the Safe Investigation by Drilling of Landfills and Contaminated Land", published by Thomas Telford in 1993.

In accordance with the AGS guidelines on Asbestos Risk assessments for site investigation, Forms A and B of the AGS Interim Guidance "Site Investigation Asbestos Risk Assessments for the protection of Site Investigation and Geotechnical Laboratory Personnel" dated February 2013 are included in Appendix XX.

See also S310 in the Scope.

<additional text to be inserted on a Work Order Basis>

S1.8.5 Additional information on services not shown on the contract drawings

<to be inserted on a Work Order Basis>

Irrespective of any information provided to the Supplier, he is solely responsible for any damage caused to any utilities or other buried structures or services on the site.

It is the Supplier's responsibility to identify the location of all buried services and structures at the proposed exploratory hole locations. Survey up to PAS 128 Category B, with a minimum Quality Level B2, is required for purposes of utility avoidance, post processing and supply of the data is not required:

- Obtaining independently and consultation of existing utility plans,
- Physical reconnaissance of the site to identify features of the network visible above ground,
- Remote detection using GPR; and

The survey must be followed by a hand dug service inspection pit excavated to a minimum of 1.20m and CAT scanned at the base to confirm no services are present.

S1.8.6 Known/ suspected mine workings, mineral extractions, etc.

<to be inserted on a Work Order Basis>

S1.8.7 Protected species

<to be inserted on a Work Order Basis>

S1.8.8 Archaeological remains

See Scope Section S405.

S1.8.9 Security of the site

See Scope Section S403.

S1.8.10 Traffic management measures

See Scope Section S408.

S1.8.11 Restricted working hours

<to be inserted on a Work Order Basis>

S1.8.12 Trainee site operatives

Trainee operatives will be permitted but only as an addition to a fully qualified drilling team. The Supplier shall notify at the time of tendering for a Work Order if trainee operatives are intended to be used on this site.

S1.8.13 Contamination avoidance and/ or aquifer protection measures required.

<to be inserted on a Work Order Basis>

The investigation works must be undertaken in such a way to avoid the spread of any contamination encountered.

All site investigation plant and equipment is to be decontaminated on completion of each exploratory hole where visual or olfactory evidence of contamination has been noted. Cleaning of the plant and equipment is to be undertaken in bunded areas of hard standing where wash water can be appropriately stored then disposed of.

If significant contamination is encountered, sampling equipment and tools shall be cleaned between strata, specifically at the boundary between made ground and natural strata, in order to prevent cross contamination occurring.

As detailed in S1.8.4, the Supplier submits proposals for formation and restoration of exploratory holes so that they do not become a hazard to the public or the environment, or spread contamination.

This must include the temporary storage of arisings on boards (underlain by suitable protective sheeting where appropriate). Details regarding the groundwater regime across the site are provided in S1.6. The Supplier must ensure protection of the underlying ground and groundwater at all times and where contamination has been observed in shallow soils.

Lubricants used on equipment are to be vegetable based. Equipment shall be degreased as necessary before use on site and between holes.

All necessary precautions must be taken to prevent spillages on site. The Supplier provides measures for containing any rig related arisings, fuel, oil spillages, bentonite, dust and water run-off. All packaging, wrapping and surplus arisings must be removed from site by the Supplier on Completion of the works.

S1.8.14 Maximum period for boring, pitting or trenching through hard material, hard stratum or obstruction

The exploratory holes shall be advanced to the depths stated in Schedule 2 or as instructed by the Investigation Supervisor. The Investigation Supervisor is to be informed immediately when hard strata and obstructions are encountered.

The Investigation Supervisor will instruct the Supplier of the maximum chiselling time which can be undertaken before further instruction is required beyond that stated in the Specification. Boreholes may only be terminated above the scheduled depth with the permission of the Investigation Supervisor. The Supplier is required to obtain the Investigation Supervisor's approval before backfilling any borehole.

S1.8.15 Reinstatement Requirements

All reinstatement shall be undertaken prior to the end of the site works phase as defined in accordance with Clause 3.16 of the Specification.

The principle behind the degree of reinstatement required by the Ultimate Client and the various landowners and users is to leave the ground as near as possible in the same condition and appearance as that which it was in prior to the commencement of the investigation.

In all areas of the Site, topsoil, turfs and soil from within 300mm of the ground surface must be removed carefully set aside for reinstatement, and replaced at the same depth and location from which they originated within the pedological profile.

All trial pits, inspection pits and trenches shall be backfilled with the excavated soil in the same sequence as it was originally found and with compaction. The surfacing shall be reinstated to match its condition prior to the commencement of works.

Land Drains are to be reinstated using appropriate diameter undivided lengths of pipe for the full width/length of the area affected. The reinstatement should be such that there is no long term disruption to the drainage systems of the relevant adjacent agricultural land. Care should be taken when digging hand excavated inspection pits and trial pits as land drains could be expected at shallow depths in fields, generally between 600-800mm bgl. This does not relieve the Supplier of any of his duties under clause 6.5 of the Specification. Should land drains be encountered, the Supplier shall notify the investigation Supervisor immediately.

The position of any damaged land drains are to be carefully marked in and surveyed as part of the exploratory hole survey works by the Supplier.

Where the reinstatement is of the Highway, the works shall be carried out by an Approved Supplier only, and in accordance with the current edition of the Specification for the Reinstatement of Openings in Highways. Suppliers excavating and reinstating in the highway must ensure that the works are supervised by a person who has been accredited to a minimum standard of Units 1 and 10-16 inclusive of the Street Works Award and that there is on site during all working hours at least one trained operative who has been accredited to a minimum standard of Units 1-9 inclusive of the Street Works Award or an equivalent qualification.

S1.8.16 Hygiene facilities required

See Scope S426.

S1.8.17 Unavoidable damage to be reinstated by Supplier

<to be inserted on a Work Order Basis>

S1.8.18 Accuracy of exploratory hole locations

As built positions will be surveyed in to National Grid to within 0.5m and to Ordnance Datum Newlyn Datum as specified in Clause 3.20.

S1.8.19 Photography requirements

Photographs of rock cores shall be undertaken in accordance with the Specification.

Photographs of trial pits and inspection pits shall be undertaken in accordance with Clause 3.25 of the Specification with the following additions:

- Digital photographs of trial pits are required at the rate of three per trial excavation – one of a long side of the excavation, one of the short side and one of each spoil heap. All photographs are to be taken with a digital camera only that allows instant viewing on an integral screen within the camera unit. Photos shall show the full sequence of strata, under or overexposed or poorly lit photos will not be acceptable.
- The Supplier shall seek approval of the photographs from the Investigation Supervisor prior to backfilling of the excavation. Additional photographs shall be taken where warranted by the features encountered in the excavation or by the length of the trial trench.
- Photographs shall be supplied for any dynamic sample core. These should be treated as a rock core in terms of the photography requirements.
- Photographs are required of each inspection pit. Inspection pits should be treated as a trial pit for the purposes of photography requirements.

<Additional requirement to be inserted on a Work Order Basis>

S1.8.20 Noise and Vibration

The Supplier employs the best practical means to minimise noise production by his operations including plant maintenance and shall comply with the recommendations in BS 5228 2009 (Noise Control on Construction and open sites).

All vehicles and mechanical plant used on the site must be fitted with effective exhaust silencers and shall be maintained in good and efficient working order for the duration of the works in compliance with BS 5228. Machines in intermittent use must be shut down in the periods between works or throttled down to a minimum.

The Supplier removes from the site any item of plant, which in the Employer's opinion is ineffectively silenced. All compressors must be

“sound reduced” models fitted with lined and sealed acoustic covers, which must be kept closed whenever the machines are in use. All ancillary pneumatic percussive tools must be fitted with mufflers and silencers of the type recommended by the manufacturer. Pumps and static mechanical plant shall be enclosed by acoustic screens where directed by the Employer.

Sound levels shall be monitored by method set out in Annex G of BS 5228.

Those locations which require acoustic panels due to proximity to surrounding property are identified in Schedule 2. The Investigation Supervisor may instruct that additional locations receive acoustic panels during investigation upon request of Employer.

S1.8.21 Provision of emergency spill kits on site

The Supplier shall provide and maintain emergency spill kits on site throughout the Site Operations and incidents of spillages shall be reported and dealt with expeditiously.

S1.8.22 Prevention of Discharges to Water Courses and Sewers

The Supplier must not discharge or allow any discharge into water courses or drainage system without prior agreement of the relevant authority and the Investigation Supervisor.

Discharge must not be made to surface water drains or watercourses. Discharges to a watercourse will only be permitted after the Supplier has obtained all necessary consents from the relevant authorities.

Settlement tanks shall be provided by the Supplier to treat any water drilling flush or groundwater discharged from site. The tanks shall provide a minimum retention period of at least 2 hours. All settled solids shall be disposed of to a registered tip. In addition the Supplier is required to provide additional measure (for example a flocculent or similar) to ensure that the groundwater leaving the site is free of suspended solids.

Particular care must be applied to the storage of diesel fuel, oil, waste oil, chemicals and other hazardous liquids and control of pollution by oil and grease from the Supplier's plant and slurry from the drilling of rotary boreholes.

In the event of a watercourse becoming polluted as a result of the works, the Supplier must be responsible for taking immediate action to

prevent the pollution from spreading downstream or to nearby water bodies. The Supplier must notify the Investigation Supervisor.

If pollution, silting or erosion take place in spite of the precautions required above the Supplier complies with the advice from the local authority/Environment Agency and take immediate action to minimise the effect on the watercourse. The Environment Agency may be contacted on a 24 hour basis (RCC), on telephone number freephone 0800 80 70 60.

The Supplier ensures that any pumps, barrels or tanks on the site are kept in a safe and secure building or compound from which they cannot leak, spill or be open to vandalism, protected by an impermeable temporary bund with a capacity of 110% of the stored volume.

Materials which may cause pollution shall not be stored near controlled waters, nor shall they be stored in such a manner that they may fall or be carried into controlled waters. All refuse and debris arising from the site in the vicinity of controlled waters shall be collected and removed as required so that none may fall or be carried into the controlled waters.

The Supplier must not use construction plant in any controlled waters without the prior written approval of the Environment Agency.

S1.8.23 Site access permissions / Notice of Entry

See Scope S412.

S1.8.24 Cleanliness of surrounding highways

See Scope S407.

S1.8.25 Biosecurity measures

As a result of the ongoing development of Ash Die Back disease, the Supplier shall ensure that all plant and equipment is disinfected prior to mobilising to site and then on demobilising at the end of the contract.

S1.8.26 Access

See S409.

S1.8.27 Health and Safety Monitoring

See Scope S424

**Percussion boring
(Specification
Section 4) Particular
restrictions/
relaxations**

S1.9

<Insert specific details as applicable under each of the headings below>

S1.9.1 Permitted methods and restrictions

S1.9.2 Backfilling

S1.9.3 Dynamic sampling

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Rotary drilling
(Specification
Section 5) Particular
restrictions/
relaxations**

S1.10

<Insert specific details as applicable under each of the headings below>

S1.10.1 Augering requirements and restrictions

S1.10.2 Particular rotary drilling techniques

S1.10.3 Drilling fluid type and collection

S1.10.4 Rotary core drilling equipment and core diameter

S1.10.5 Core logging

S1.10.6 Core sub-samples for laboratory testing

S1.10.7 Address for delivery of selected cores

S1.10.8 Rotary open-hole drilling general requirements

S1.10.9 Rotary open-hole drilling for locating mineral seams, mine workings, etc.

S1.10.10 Open-hole resonance (sonic) drilling

S1.10.11 Resonance (sonic) drilling with sampling or continuous coring

S1.10.12 Backfilling

S1.10.13 Core photographic requirements

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Pitting and
trenching
(Specification
Section 6) Particular
restrictions/
relaxations**

S1.11

<Insert specific details as applicable under each of the headings below>

S1.11.1 Indirect detection of buried services and inspection pits

S1.11.2 Restrictions on plant or pitting/trenching methods

S1.11.3 Entry of personnel

S1.11.4 Alternative pit and trench dimensions

S1.11.5 Abstracted groundwater from land affected by contamination

S1.11.6 Backfilling

S1.11.7 Photographic requirements

S1.11.8 Artificial lighting

Should artificial lighting be required to illuminate the site works the proposed lighting must be submitted to Highways England for acceptance.

S1.11.9 Provision of pitting equipment and crew for Investigation Supervisor's use

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Sampling and monitoring during intrusive investigation (Specification Section 7) Particular restrictions/relaxations

S1.12

<Insert specific details as applicable under each of the headings below>

- S1.12.1 Address for delivery of selected geotechnical samples*
- S1.12.2 Retention and disposal of geotechnical samples*
- S1.12.3 Frequency of sampling for geotechnical purposes*
- S1.12.4 Open-tube and piston samples*
- S1.12.5 Retention of cutting show samples*
- S1.12.6 Delft and Mostap sampling*
- S1.12.7 Groundwater level measurements during exploratory hole construction*
- S1.12.8 Special geotechnical sampling*
- S1.12.9 Address for delivery of selected samples*
- S1.12.10 Retention and disposal of contamination/WAC samples*
- S1.12.11 Frequency of sampling*
- S1.12.12 Sampling method*
- S1.12.13 Headspace testing*

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Probing and cone penetration testing (Specification Section 8) Particular restrictions/relaxations

S1.13

<Insert specific details as applicable under each of the headings below>

- S1.13.1 Type(s) and reporting of dynamic probing*
- S1.13.2 Capacity and equipment requirements for cone penetration testing*
- S1.13.3 Reporting of cone penetration testing parameters*
- S1.13.4 Seismic cone equipment requirements*
- S1.13.5 Interpretation of seismic cone tests*
- S1.13.6 Other cone or specialist probes*

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Geophysical testing
(Specification
Section 9) Particular
restrictions/
relaxations**

S1.14

<Insert specific details as applicable under each of the headings below>

S1.14.1 Geophysical survey objectives

S1.14.2 Requirement for Ground Specialist geophysicist

S1.14.3 Trials of geophysical methods

S1.14.4 Types of geophysics required

S1.14.5 Information provided

S1.14.6 Horizontal data density

S1.14.7 Level datum

S1.14.8 Geophysical survey report

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**In situ testing
(Specification
Section 10)
Particular
restrictions/
relaxations**

S1.15

<Insert specific details as applicable under each of the headings below>

S1.15.1 Tests in accordance with British Standards

S1.15.2 Hand penetrometer and hand vane for shear strength

S1.15.3 Self-boring pressuremeter and high-pressure dilatometer testing and reporting

S1.15.4 Driven or push-in pressuremeter testing and reporting requirements

S1.15.5 Menard pressuremeter tests

S1.15.6 Soil infiltration tests

S1.15.7 Special in situ testing and reporting requirements

S1.15.8 Interface probes

S1.15.9 Contamination screening tests

S1.15.10 Metal detection

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Instrumentation
(Specification
Section 11)
Particular
restrictions/
relaxations**

S1.16

<Insert specific details as applicable under each of the headings below>

S1.16.1 Protective covers for installations

S1.16.2 Protective fencing

S1.16.3 Standpipe and standpipe piezometer installations

S1.16.4 Other piezometer installations

S1.16.5 Development of standpipes and standpipe piezometers

Following completion, each borehole must be initially developed, cleared of debris and drilling fluid. Development of the borehole must be performed by pumping, or other suitable methods, initial development is required to:

- ensure good hydraulic continuity between the installation and the groundwater
- settle the filter pack
- break down any skin of remoulded soil/debris and drilling fluid on the borehole wall surface formed during its installation.

The Supplier must not discharge or allow any discharge into water courses or drainage system any water generated from the development of boreholes without prior agreement of the relevant authority and the Investigation Supervisor. See Clause S1.8.22.

For the duration of the initial development, water abstracted from the boreholes must be discharged to a mobile water tank to allow settlement prior to disposal off site.

Development shall be carried out as follows:

- Suitable size equipment shall be lowered to the installation depth and securely clamped at this level.
- The first phase of pumping should be designed to establish a low rate of water flow to ascertain whether the borehole is transmitting water efficiently. The higher rate pumping must then be carried-out continuously to determine whether the groundwater is free from sediment. If the water becomes sufficiently sediment-free then the pumping will be operated periodically (5 minutes on, 5 minutes off) for a further period to be determined on-site. Finally the pump will be operated continuously for a further period until the water is sediment-free. The nominal period per borehole shall be 2 hours or as directed by the Investigation Supervisor.

S1.16.6 Ground gas standpipes

S1.16.7 Inclinometer installations

S1.16.8 Slip indicators

S1.16.9 Extensometers and settlement gauges

S1.16.10 Settlement monuments

S1.16.11 Removal of installations

S1.16.12 Other instrumentation

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Installation monitoring and sampling (Specification Section 12) Particular restrictions/relaxations

S1.17

<Insert specific details as applicable under each of the headings below>

S1.17.1 Groundwater level readings in installations

S1.17.2 Groundwater sampling from installations

S1.17.3 Purging/micro-purging

S1.17.4 Ground gas monitoring

S1.17.5 Sampling from ground gas installations

S1.17.6 Other monitoring

S1.17.7 Sampling and testing of surface water bodies

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Daily records (Specification Section 13) Particular restrictions/relaxations

S1.18

<Insert specific details as applicable under each of the headings below>

S1.18.1 Information for daily records

S1.18.2 Special in situ tests and instrumentation records

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Geotechnical laboratory testing (Specification Section 14) Particular restrictions/relaxations

S1.19

<Insert specific details as applicable under each of the headings below>

S1.19.1 Investigation Supervisor or Contractor (aka Supplier) to schedule testing

S1.19.2 Tests required

S1.19.3 Specifications for tests not covered by BS 1377 and options under BS 1377

S1.19.4 UKAS accreditation to be adopted

S1.19.5 Rock testing requirements

S1.19.6 Chemical testing for aggressive ground/ groundwater for concrete

<Refer to Suites A-D in Schedule 1.19.6>

S1.19.7 Laboratory testing on site

S1.19.8 Special laboratory testing

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Geoenvironmental
laboratory testing
(Specification
Section 15)
Particular
restrictions/
relaxations**

S1.20

<Insert specific details as applicable under each of the headings below>

S1.20.1 Investigation Supervisor or Contractor (aka Supplier) to schedule testing

S1.20.2 Accreditation required

Environment Agency Monitoring Certificate Scheme (MCERTS) and United Kingdom Accreditation Service (UKAS) accredited laboratories are required for all testing of geo-environmental samples.

S1.20.3 Chemical testing for contamination

<Refer to Suites E-G in Schedule 1.20.3>

S1.20.4 Waste characterisation

S1.20.5 Waste acceptance criteria testing

<Refer to Suites H-J in Schedule 1.20.5>

S1.20.6 Laboratory testing

S1.20.7 Special laboratory testing

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

**Reporting
(Specification
Section 16)
Particular
restrictions/
relaxations**

S1.21

<Insert specific details as applicable under each of the headings below>

S1.21.1 Form of exploratory hole logs

S1.21.2 Information on exploratory hole logs

S1.21.3 Variations to final digital data supply requirements

S1.21.4 Preliminary digital data

S1.21.5 Type(s) of reports required

S1.21.6 Electronic report requirements

S1.21.7 Format and contents of Desk Study Report

S1.21.8 Contents of Ground Investigation Report (or specified part thereof)

S1.21.9 Contents of Geotechnical Design Report (or specified part thereof)

S1.21.10 Times for supply of electronic information

S1.21.11 Electronic information transmission

S1.21.12 Report approval

<Further particular contract restrictions/relaxations shall be entered below, using sequential numbers to those above>

Disposal of Samples

S1.22

Unless otherwise directed by the Investigation Supervisor the Supplier shall store and protect any samples or cores obtained from the Investigation until 28 days after the acceptance of the final report to the investigation Supervisor. After the said period the Supplier shall

give the Investigation Supervisor 14 days written notice of their intention to dispose of the samples and cores and in the absence of any further instructions from the Investigation Supervisor shall then dispose of the samples and cores appropriately at their own expense.

Schedule 2: Exploratory holes

Hole number	Type	Scheduled depth (m)	National grid reference		Approx ground level (mOD)	Remarks
			Easting (m)	Northing (m)		
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>
<insert>	<insert> >	<insert>	<insert>	<insert>	<insert> >	<insert>

S.3 Schedule 3: Investigation Supervisor's facilities

Accommodation	S3.1	<to be inserted if required>
Furnishings	S3.2	<to be inserted if required >
Services	S3.3	<to be inserted if required >
Equipment	S3.4	<to be inserted if required >
Transport	S3.5	<to be inserted if required >
Personal Protective Equipment for Investigation Supervisor	S3.6	<to be inserted if required >

S.4 Schedule 4: Specification amendments

The following clauses are amended

Section No.	Clause No.	Delete the following	Add/Substitute the following
Specification	3.17		<p>Insert in line 2 after “reported”</p> <p>“Immediately and under no circumstances longer than 24hours from receipt of the complaint”.</p>
Specification	11.3	<p>" The fence shall comprise at least three wooden stakes, 75mm square, preserved in accordance with BS 8417, firmly bedded in the ground, stoutly cross-braced and projecting at least 1.0m above ground level."</p>	<p>Insert after "...top of an installation." The fence shall be constructed in accordance with the Manual of Contract Documents for Highways Works, Volume 5, Section 3, Part 4 Specification, Appendix 1, Drawing 1.5 unless otherwise specified in Schedule S1.16.2."</p>
Schedule	S1.20.3 Suites E and F		<p>Add to Notes:</p> <p>3.</p> <ul style="list-style-type: none"> • Phenol should be monohydric • Polyaromatic hydrocarbons (PAHs) shall be tested with the full list of speciated compounds (EPA 16) reported. For individual compounds the lower limit of detection should be less than 0.1mg per kg. • Total Petroleum Hydrocarbons (TPH) shall be tested (water and soil samples) but using the criteria

working group (CWG) methods, providing the Environment Agency aliphatic/aromatic split (C5-C35). For carbon bandings less than C10 the lower limits of detection must be <0.1 mg/kg. For carbon bandings greater than C10 the lower limit of detection must be <1mg/kg.

- If asbestos identified, undertake quantification (soil only)

App I

AI.3 Full Grouted Vibrating Wire Piezometers.

Only propriety products specifically designed as piezometers by the manufacturer must be used. The method of installation must follow that as specified by the manufacturer.

The operation of the piezometer must be verified before installation.

<to be inserted if required >

<to be inserted if required >

<to be inserted if required >

<to be inserted if required >

S.5 Schedule 5: Specification additions

The following clauses are added to the specification

Section No.	Clause No.	Clause wording
<to be inserted if required >	<to be inserted if required >	<to be inserted if required >
<to be inserted if required >	<to be inserted if required >	<to be inserted if required >
<to be inserted if required >	<to be inserted if required >	<to be inserted if required >
<to be inserted if required >	<to be inserted if required >	<to be inserted if required >
<to be inserted if required >	<to be inserted if required >	<to be inserted if required >

2 PRICE LIST FOR GROUND INVESTIGATION

2.1 PREAMBLE TO THE PRICE LIST FOR GROUND INVESTIGATION

Preamble	The Preamble to the Price List for Ground Investigation is the Preamble contained in the UK Specification for Ground Investigation Second Edition published by ICE Publishing in 2011.
Preamble amendments and additions	The following clauses are amended or added to the Preamble.
24.	All rates are to be net exclusive of any Value Added Tax.
25.	No standing time or equipment moves shall be charged for items where work is to be undertaken on a day rate
26.	Day rates for dynamic sampling and probing, Items B19, B19.1 and F7; hand augering, Item C5; shall include for mobilisation of the rig to site, all moves, inspection pit, all sampling, reinstatement and reporting of results and provision of borehole logs.
27.	The rates for bringing rotary drilling plant to the site of each hole shall include for setting up over a previously bored shell and auger boring
28.	The rates for the advancement of rotary drilling (including the day rate for the restricted access rig) shall include for providing sufficient casing to case off to rock head to ensure that advancement of the rotary hole is not aborted
Price List	The following pages constitute the Price List.