3 PITS AND TRENCHES

3.1 GENERAL

3.1.1 Scope

1 Inspection pits, trial pits and trenches, observation pits and trenches.

2 Related Sections and Parts are as follows:

This Section

Part 1, ...General

Section 1, ...General
Section 4, ...Foundations and Retaining Structures
Section 6, ...Roadworks
Section 8, ...Drainage Works
Section 12, ...Earthworks Related to Buildings.

3.1.2 References

1 The following standards and other documents are referred to in this Part:

ASTM D420 ..... Site Characterization for Engineering, Design, and Construction Purposes

ASTM D2488 ..... Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)

BS 5930 ..... Code of practice for ground investigations

EN 1997-2..... Eurocode 7 - Geotechnical design - Part 2: Ground investigation and testing

Code of Practice and Specifications for Road Openings in the Highway issued by the Government.

3.1.3 Quality Assurance

1 Trial pits and trenches and observation pits and trenches shall be examined and described by a geotechnical person meeting the requirements of Part 1 Clause 1.5 Paragraph 5 Item (c) and photographed, if required.

3.2 PITS AND TRENCHES GENERALLY

3.2.1 Pit and Trench Dimensions

1 Unless otherwise designated

(a) Trial pits and observation pits shall have a minimum base area of 1.5 $m^{2.}$

(b) Trial trenches and observation trenches shall not be less than 1 m wide.

3.2.2 Contaminated Ground

1 Ground that is suspected of being contaminated shall be described by an environmental or geotechnical person, as appropriate, meeting the requirements of Part 1 Clause 1.5 Paragraph 5 Item (c).

3.2.3 Groundwater

1 The Contractor shall divert surface water runoff from entering pits and trenches.

2 Groundwater shall be controlled by the use of wellpoints or sump pumps to permit continuous work if required.

3.2.4 Protection to Pits and Trenches Left Open

1 Where pits and trenches are required to be left open and unattended, the Contractor shall provide fencing together with all necessary lighting and signing.

2 Precautions shall be taken to protect the pits and trenches from the adverse effects of weather during this period.

3.2.5 Backfilling and Restoration

1 Pits and trenches shall be backfilled as soon as practicable and reinstated to their original condition.

2 The backfill shall be placed in lifts of 150 mm thickness and compacted in such a manner as to minimise any subsequent settlement of the ground surface.

3 The use of sand backfill compacted by flooding may be permitted, but this method requires the approval of the Engineer.

4 In paved areas, the pavement shall be restored.

3.2.6 Photographs

1 In addition to the requirements of Part 1, photographs shall clearly show details of the ground conditions in the pit and trench with any support in place and shall contain a graduated scale.

2 Material derived from the excavation shall be photographed, when directed by the Engineer. Artificial lighting shall be used where necessary.

3 Unless directed otherwise by the Engineer, three photographs will normally be required at every pit and trench.

3.3 INSPECTION PITS

3.3.1 Excavation Method

1 Inspection pits for the location of underground services shall be excavated by hand to a depth of 1.2 m unless otherwise designated.

2 Hand-operated power tools may be used to assist excavation where necessary.

3.3.2 Services

1 The locations, depths and dimensions of all services encountered shall be measured and recorded in the daily report with other designated information.

3.3.3 Sidewall Stability

1 Due care shall be exercised to ensure the stability of the sides of the excavation at all times.

3.4 TRIAL PITS AND TRENCHES

3.4.1 Excavation Method

1 Trial pits and trenches shall be excavated by hand to a maximum depth of 1.2 m or by machine to the required depth to enable visual examination and sampling from outside the pit or trench as required.

2 Where dewatering is required, the pumping equipment used shall be adequate to lower the water table to the required level.

3.4.2 Services

1 The locations, depths and dimensions of all services encountered shall be measured and recorded in the daily report with other designated information.

3.4.3 Sidewall Stability

1 Excavations deeper than 1.2 m shall be braced if necessary.

3.4.4 Trial Pits Examination

1 All recovered materials from the Trial Pits shall be examined in accordance with BS 5930 or ASTM D 2488 and the recommendations of the Engineering Group of the Geological Society Working Party.

2 Disturbed samples shall be obtained from the trial pits for laboratory testing and geological description purposes. The samples shall be taken to be representative of the actual site conditions (i.e. from each layer) and placed in airtight bags, labeled and taken to laboratories for examination and testing.

3 Color photographs shall be taken for each excavated trial pit with a metric scale laid into the pit after cleaning it, indicating the pits details such as trial pit number, date and depth.

3.5 OBSERVATION PITS AND TRENCHES

3.5.1 Excavation Method

1 Observation pits and trenches shall be excavated by hand or machine and shall be adequately supported to enable personnel to enter safely and to permit in-situ examination, soil sampling and testing as required. In areas where dewatering is required, the equipment and methods proposed must be approved by the Engineer before beginning the work.

2 All recovered materials from the pit/trench shall be examined in accordance with BS 5930 or ASTM D 2488.

3 Disturbed samples shall be obtained for laboratory testing and geological description purposes (if required). The samples shall be taken to be representative of the actual site conditions (i.e. from each layer) and placed in airtight bags, labeled and taken to laboratories for examination and testing.

4 Color photographs shall be taken for each excavated pit with a metric scale laid into the pit after cleaning it, indicating the pits details such as trial pit number, date and depth.

3.5.2 Services

1 The locations, depths and dimensions of all services encountered shall be measured and recorded in the daily report with other designated information.

3.5.3 Sidewall Stability

1 Due care shall be exercised to ensure the stability of the sides of the excavation at all times.

END OF PART