MANUAL OF CONTRACT DOCUMENTS FOR ROAD WORKS: VOLUME 3 SECTION 2: NOTES FOR GUIDANCE ON THE METHOD OF MEASUREMENT FOR ROAD WORKS

Contents

Introduction

Chapters I, II and III

Item Coverage

Extra Over Items

Remove from Store and Re-erect/Re-install/Relay

Hard Material

Testing

Modification and New Materials

Chapter IV

Series 100 Preliminaries

Definitions

Temporary Accommodation

Permanent Accommodation

Vehicles for the Employer's Personnel

Communications System for the Employer's Personnel

Operatives for the Employer's Representative

Information Board

Traffic Safety and Management

Temporary Diversion for Traffic

Recovery Vehicles

Progress Photographs

Road Sweeping and Cleaning

Emergency Services

Facilities for Local Authority, Public or Private Utility Undertakers and Other Contractors

Series 200 Site Clearance

Site Clearance

Take Up or Down and Set Aside for Re-use or Remove to Store Off Site

Series 300 Fencing and Environmental Noise Barriers

Fencing, Gates and Stiles

Remove from Store and Re-erect Fencing Gates and Stiles

Walls and Environmental Noise Barriers

Series 400 Safety Barriers and Pedestrian Guardrails

Definition

Safety Barrier System

Terminals

Delivery of Materials and Equipment for Maintenance Purposes

Temporary Safety Barriers

Pedestrian Guardrails and Handrails

Anti-Glare Screens

Series 500 Drainage and Service Ducts

Definitions

Drains, Sewers, Piped Culverts and Service Ducts (excluding Filter Drains, Narrow Filter Drains & Fin Drains)

Filter Drains

Fin Drains and Narrow Filter Drains

Connections

Chambers and Gullies

Headwalls and Outfall Works

Small Headwalls

Soft Spots and Other Voids

Supports Left in Excavation

Drainage and Service Ducts in Structures (including Reinforced Earth Structures and Anchored Earth Structures)

Filling to Pipe Bays and Verges on Bridges

Renewal, Raising or Lowering Covers and Gratings on Existing Chambers and Gullies

Remove from Store and Reinstall Chamber Covers and Gully Gratings and Frames

Grouting up of Existing Drains, Sewers, Piped Culverts and Service Ducts

Excavation in Hard Material

Backdrop Chambers

Series 600 Earthworks

Definitions and Measurement General

Excavation

Excavation in Hard Material

Processing of Unacceptable Material Class U1

Deposition of Fill

Disposal of Material

Imported Fill

Compaction of Fill

Geotextiles

Soft Spots and Other Voids

Disused Sewers, Drains, Cables, Ducts, Pipelines and the Like Occurringat Formation or Sub-formation Level; Disused Basements,

Cellars and the Like and Gullies

Supports Left in Excavation

Topsoiling and Storage of Topsoil

Grass Seeding and Turfing

Completion of Formation and Sub-formation

Lining of Watercourses

Clearing of Existing Ditches

Ground Improvement – Establishment of Dynamic Compaction Plant

Ground Improvement – Dynamic Compaction

Gabion Walling and Mattresses

Crib Walling

Filling and Caps to Mine Working, Well, Swallow Hole and the Like

Ground Anchorages - Ground Anchorage Plant

Ground Anchorages

Ground Anchorages – Waterproofing Anchorage Boreholes

Instrumentation and Monitoring - Boring Plant

Instrumentation and Monitoring – Boring Holes

Instrumentation and Monitoring – Instrumentation

Instrumentation and Monitoring – Instrument Hut or Cabinet

Instrumentation and Monitoring – Monitoring Equipment

Ground Water Lowering

Trial Pits

Breaking Up and Perforation of Redundant Pavement

Perforation of Redundant Slabs, Basements and the Like

4

Series 700 Pavements

Sub-base

Pavement

Regulating Course Surface Treatment

Tack Coat

Cold Milling (Planing)

Reinstatement of Paved Areas

Repairs to Existing Concrete Carriageway

Series 800 Not taken up

Series 900 Not taken up

Series 1000 Not taken up

Series 1100 Kerbs, Footways and Paved Areas

Kerbs, Channels, Edgings and Combined Drainage and Kerb Blocks

Additional Concrete for Kerbs, Channels,

Edgings and Combined Drainage and Kerb Blocks

Remove from Store and Relay Kerbs, Channels, Edgings and

Combined Drainage and Kerb Blocks

Footways and Paved Areas

Remove from Store and Relay Paving Flags and Blocks

Steps

Series 1200 Traffic Signs and Road Markings

Traffic Signs

Remove from Store and Re-erect Traffic Signs

Road Markings

Retroreflecting Road Studs

Remove from Store and Re-install Retroreflecting Road Studs

Traffic Signals Installations

Pedestrian Crossings

Permanent Bollards

Node Markers

Reflective Markers

Series 1300 Road Lighting Columns and Brackets

Road Lighting Columns, Brackets and Wall Mountings

Remove from Store and Re-erect Road Lighting Columns,

Brackets and Wall Mountings

Series 1400 Electrical Work for Road Lighting and Traffic Signs

March 2011

Locating Buried Road Lighting and Traffic Signs Cable

Cabling

Cable Joints and Terminations

Feeder Pillars

Earth Electrodes

Series 1500 Motorway Communications

Locating Buried Communications Cable

Communications Cabling

Communications Cable Joints and Terminations

Communications Equipment

Remove from Store and Re-install Communications Cabling and Equipment

Loop Detector Installations

Site Records

Stage 2 Commissioning of Cable

Series 1600 Piling and Embedded Retaining Walls

Piling Plant

Precast Concrete Piles

Cast-in-place Piles

Reinforcement for Cast-in-place Piles

Steel Bearing Piles

Proof Loading of Piles

Steel Sheet Piles

Embedded Retaining Wall Plant

Diaphragm Walls

Secant Pile Walls

Contiguous Bored Pile Walls

Reinforcement for Embedded Retaining Walls

King Post Wall Plant

King Posts

Reinforcement for King Post Piles

King Post Walling

Series 1700 Structural Concrete

In Situ Concrete

Precast Concrete

Surface Finish of Concrete – Formwork

Surface Finish of Concrete – Patterned Profile Formwork

Steel Reinforcement for Structures

Reinforcement for Reinforced and Anchored Earth Structures

In Situ Post-tensioned Prestressing for Structures

Series 1800 Steelwork for Structures

Fabrication and Erection of Steelwork

Fabrication of Steelwork Erection of Steelwork

Miscellaneous Metalwork

Corrugated Steel Buried Structures

Metal Facing Units for Reinforced Earth Structures

Series 1900 Protection of Steelwork Against Corrosion

Protective System

Series 2000 Waterproofing for Structures

Waterproofing

Surface Impregnation and Coatings of Concrete

Removal of Existing Waterproofing

Series 2100 Bridge Bearings

Bearings

Series 2200 Parapets

Parapets

Series 2300 Bridge Expansion Joints and Sealing of Gaps

Bridge Deck Expansion Joints

Sealing of Gaps

Series 2400 Brickwork, Blockwork and Stonework

Brickwork

Blockwork and Stonework

Remove from Store and Relay Brickwork, Blockwork and Stonework

Series 2500 Structures Designed by the Contractor

Structures Designed by the Contractor

Series 2600 Not taken up

Series 2700 Watermains, Utilities and Accommodation Works

Watermains Connections

Pipe Fittings

Valves and Penstocks

Chambers

March 2011

Thrust Blocks

Series 2800 Trenchless Installation of Road Drainage & Service Ducts

Scope

Definitions

Establishment and Removal of Plant

Drain and Service Ducts

Lateral Connections to Pipes to be Replaced by On-line Replacement

Series 2900 CCTV Survey of Road Drainage Systems

Scope

CCTV Survey of Highway Drainage Systems

Introduction

The Method of Measurement for Road Works (MMRW) has been based upon the Specification for Road Works (SRW) and the NRA Road Construction Details (RCDs).

Chapters I, II and III

1 Item Coverage

Item coverages in the MMRW ensure that the Contractor knows the items of work to be covered by the rates and prices he inserts against the appropriate items in the Bill of Quantities. However, coverages relative to the base item description are not normally included, for example cement in concrete, nor are those contingently and indispensably necessary to enable the work item to be completed satisfactorily, for example nuts and bolts in safety barrier systems. Similarly general obligations are not separately covered, for example obligations set out in the Conditions or covered in the Preambles to Bill of Quantities. The basic item coverages closely match the Specification for Road Works and the NRA Road Construction Details. Hence if changes are introduced into the Specification the item coverages have to be reviewed to ensure that they accurately relate to the revised Specification. Changes to the Specification should not be introduced on the drawings in the Contract although revised drawings may reflect revisions to the Specification in which case reference to the drawings should be incorporated in the Specification. Conversely item coverages should not be extended to include items of work which are not specified or not shown in the NRA Road Construction Details.

Item coverages often refer to item coverages set out in one or more other Series. The complete item coverage therefore embodies all such references despite those references appearing to be unconnected with the original item in some cases.

2 Extra Over Items

Extra Over (EO) items shown in the MMRW are applied to a base item where a significant additional burden is placed upon the Contractor to undertake extra work of much the same nature as the work covered by the base item. The quantities to be billed for the EO items must be in respect of work included with the quantities for the base item. Consequently the item coverage in respect of the quantities for the EO item comprises a summation of that for the base item and the EO item.

3 Remove From Store and Re-erect/Re-install/Relay

The items for remove from store and re-erect, reinstall, relay include items which have been removed to store off Site designated by the Employer's Representative and items which have been set aside by the Contractor as required by the Contract.

4 Hard Material

Excavation in Hard Material occurs in the item coverage for several items of work, for example, fencing, safety fencing, traffic signs and road markings, road lighting and electrical work. The Contract should contain information known to the compiler about the existence and extent of Hard Material and this should include existing buried roads and the like. This would not relieve the Contractor of his obligations under the Conditions. Hard Materials is measured extra over normal excavation for earthworks and drainage and guidance is given under Series 600.

5 Testing

Table NG 1/1 lists tests and the frequencies with which they should normally be undertaken. The compiler has to decide which of those tests are to be undertaken by the Contractor and those for which the Contractor is to provide samples for the Employer's Representative to carry out tests. Those tests to be undertaken by the Contractor have to be scheduled in Appendix 1/5 of the Specification. The Contractor will then be deemed to have included the value of those tests in his rates and prices. Testing is covered by Preamble 2(vii) to the Bill of Quantities and no items should be included in the Bill of Quantities for testing. Where additional types or numbers of tests are ordered by the Employer's Representative they should be paid for under the provisions contained within the Conditions of Contract except where they relate to tests applicable to goods or materials put forward by the Contractor when reasonable tests should be called for at the Contractor's expense to ensure conformity with the Specification. (See also SRW Clause 105)

The provision and delivery of samples to be tested by the Employer's Representative is covered by Preamble 2 (vii) to the Bill of Quantities.

6 Modification and New Materials

The item coverage applicable to removing from store and re-erecting/re-installing/relaying various materials includes for modification and new materials to the extent that the requirements are detailed in the Contract. Modification and new materials of which the Contractor was not informed at the time of tender are not covered by this item coverage.