XIV – Measurement of Sewers and Drains

The method of measuring sewers and drains is largely detailed in clauses 112, 114, 115, 116, 117 and 118 of the Standard Method of Measurement of Civil Engineering Quantities. These clauses are reproduced in full with explanatory notes added where considered desirable.

Worked examples follow illustrating the method to be adopted for the measurement of a sewer constructed of glazed-ware and concrete pipes with concrete tube manholes, and a length of cast iron tunnel lining.

Clauses from the S.M.M. of C.E.Q.

112. Units of Measurement for Earthenware, Stoneware, Asbestos Pipes and Concrete Pipes with Cement or Open Joints

The units of measurement for earthenware, stoneware, asbestos pipes and concrete pipes with cement or open joints are to be:

- Sewers and drains, including laying and jointing pipes
  - . . . Linear metre
- Bends, junctions and other fittings measured extra over pipe sewers and drains
  - . . . Number of each type
- Cuts
  - . . . Number

114. Alternative Methods of Measurement for Sewers and Pipe Lines

Alternatively, sewers, drains and pipe lines may be measured by the linear metre of complete work. In this case, separate items are to be provided for work carried out in tunnel and in open cut, the average, mini-

Explanatory Notes

This clause covers the measurement of pipe sewers and drains with cement or open joints and so covers the majority of sewers and drains. It will be noted that the lineal item of pipe includes the laying and jointing of the pipes, with excavation and concrete beds, etc., separately measured. Cuts to pipes are enumerated, stating the diameter and material of the pipe in each case.

The alternative method of measuring sewers by the linear metre of complete work, with a subsidiary bill giving the detailed quantities of work involved in the construction of a linear metre of sewer, is useful on occasions, and is particularly suitable
mum and maximum depths from ground level to invert being given. A subsidiary bill in the description column should follow the item in the bill of quantities giving the detailed measurements comprised in one linear metre of the complete work. The quantities in the subsidiary bill should be taken out in accordance with the principles and units of measurement as set out herein.

115. *Classification of Items for Pipes*

Separate items are to be entered for pipes of different classes as defined in the British Standard Specifications, and for different diameters under these classes.

116. *Gulleys, Drain Fittings and Manholes*

Gulleys, penstocks and similar drain fittings are to be enumerated and full descriptions given. Manholes, inspection chambers and the like are to be measured in detail, in accordance with the directions given in the appropriate sections for the constituent materials, subject to the modification provided for in clause 29.

117. *Excavation and Concrete*

Excavation, reinstatement of surfaces, rubble drains and concrete are to be dealt with as set out in clauses 39-49 and 52-63.

for tunnel work. Its use for tunnel work is illustrated in Example xvi. The need for the subsidiary bill, when using this method, cannot be over-emphasised.

It is essential that pipes of different classes, as recognised in British Standards and by the manufacturers, should be kept as separate items, as well as varying diameters of pipe, as these have an important influence on price.

Manholes are normally split into their component parts and measured in detail. There is, however, the alternative method of enumerating manholes in groups accompanied by a subsidiary bill giving detailed quantities of the component parts in an average sized manhole of the particular group, although this latter method is not used a great deal in practice.

Excavation of sewer and drain trenches is measured in linear metres, stating the diameter of the pipe or width of concrete protection. The average depth of excavation is given