

ITEM 203.1101 17: SUBSURFACE SETTLEMENT GAUGE

DESCRIPTION

This work shall consist of furnishing, installing and maintaining an embankment control device, subsurface settlement gauge, used specifically for controlling earthwork construction.

MATERIALS

Provide materials for the embankment construction control device, subsurface settlement gauge, in conformance with the geotechnical control procedure “*Settlement Gauges and Settlement Rods*” including:

A. PIPE GAUGE.

- 1. Pipe.** Provide a 25 mm diameter outer casing meeting the requirements of §732-02 *Drive Pipe*. Provide a 6.3 mm diameter inner pipe meeting the requirements of §732-02 *Drive Pipe*. Provide a sufficient amount of casing and pipe extensions to meet the rise requirements identified in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*”.
- 2. Subsurface Anchor Post.** Provide a 0.4 m tall Borros-Type anchor. The Borros-Type anchor shall contain three prongs capable of extending approximately 150 mm from the anchor body at three places, spaced 120° from one another.
- 3. Protective Cover.** Provide wood to the sizes shown in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*” conforming to the requirements of §712-14 *Stress Graded Timber and Lumber*. Treat wood in accordance with §708-31 *Wood Preservative - Waterborne* and applied in conformance with American Wood Preservers Association (AWPA) Use Category Designation UC4B.

B. MANOMETER GAUGE. Provide materials specified for A. *Pipe Gauge* with the exception of the casing and pipe extensions. To obtain readings from the buried device, provide the following connection:

- 1. Interconnection.**
 - a. Tubing.** Provide 12.7 mm O.D. polyethylene tubing indicated in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*”.
 - b. Sand.** Provide sand conforming to the requirement of §703-07 *Concrete Sand*.
 - c. Fluid.** Provide a 50-50 mixture of ethylene glycol and water.
- 2. Readout Box.** Provide wood to the sizes shown in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*” conforming to the requirements of §712-14 *Stress Graded Timber and Lumber*. Treat wood in accordance with §708-31 *Wood Preservative - Waterborne* and applied in conformance with American Wood Preservers Association (AWPA) Use Category Designation UC4B.
- 3. Base.** Provide wood to the sizes shown in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*” conforming to the requirements of §712-14 *Stress Graded Timber and Lumber*. Treat wood in accordance with §708-31 *Wood Preservative - Waterborne* and applied in conformance with American Wood Preservers Association (AWPA) Use Category Designation UC4B.

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CONSTRUCTION DETAILS

Subsurface settlement gauge(s) shall be constructed, installed, and maintained where shown in the contract documents and in accordance with the details contained in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*” covering construction, installation, maintenance, and abandonment of these devices.

Where subsurface settlement gauges are called for, it will be the Contractor's option to install pipe gauges or manometer gauges, unless a definite type is specified in the contract documents. Subsurface settlement gauges will be accepted for conformance with the specification requirements on the basis of an inspection of the installation by the Departmental Geotechnical Engineer.

METHOD OF MEASUREMENT

Subsurface settlement gauges will be measured by the number of devices satisfactorily installed and maintained.

BASIS OF PAYMENT

The unit price bid shall cover all costs of providing, installing and maintaining each device, including excavation, trenching and backfill during the course of the work. No payment will be made under any other item of the contract for any work associated with these items.

When each installation is completed, 75% of the item unit price will be paid. The remaining 25% will be paid when each device has been properly maintained and is abandoned according to the procedures contained in the geotechnical control procedure “*Settlement Gauges and Settlement Rods*”. Unless otherwise specified in the proposal, the unit price shall also include the costs of removal.

Payment will be made under:

Item No.	Item	Pay Unit
203.1101 17	Subsurface Settlement Gauge	Each