

## Applications

Settlement plates are simple instruments that provide direct measurements of settlement beneath placed fills. Typical applications include:

- Monitoring consolidation of ground treated with wick drains and surcharges.
- Monitoring settlement of foundation soil during construction of embankments.

## Components

**Base Plate:** 24 x 24 x 0.25 inch steel plate with connection for riser.

**Riser:** 1-inch threaded steel pipe, typically supplied in 5-foot lengths. Threads allow extensions to be added.

**Sleeve:** 1.5-inch PVC, typically supplied in 5 foot length. Optional or required.

**Extensions:** Riser & sleeve extensions, with couplings, required as height of fill increases.

**L-Bar prism:** 25.4mm L-Bar prism with fitting for top of riser.

## Installation & Maintenance

Settlement plates are installed at specified locations and the initial elevations of the plate and prism are noted carefully.

Fill is hand-compacted around the riser to the specified level of the first lift. Paint, flags, cones, or fences are used to make the riser visible to equipment operators.

When fill approaches the top of the riser, an extension is added. The prism is moved to the top of the extension and new offset is noted. Fill is again hand-compacted around the riser to the specified level of the next lift. These steps are repeated until all the fill has been placed.

## Monitoring Settlement Plates

**Traditional:** Settlement plates are traditionally monitored by a surveyor, who measures the elevation of the top of each riser. Each set of elevation measurements requires a visit by the surveyor, who then prepares and delivers a report.

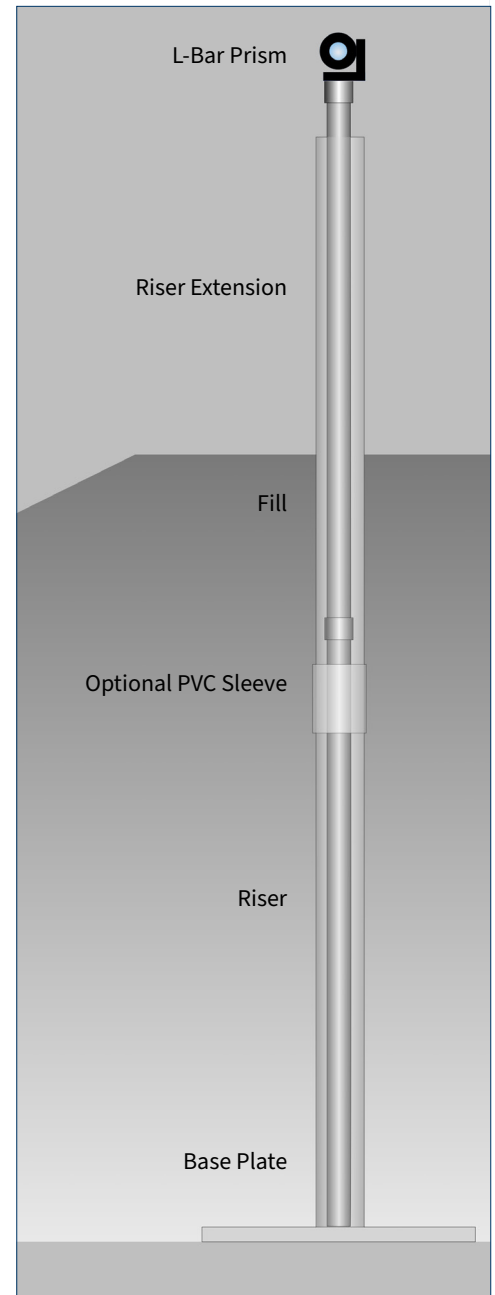
**Automated:** The top of each riser is fitted with a prism. Elevations of the prisms are measured automatically using an AMTS system. The AMTS system obtains frequent measurements and transmits them a GeoCloud server on the internet.

## GeoCloud Project Website

The GeoCloud server makes data and graphs available on a dedicated project website just minutes after each measurement cycle.



Settlement plate risers should be painted and flagged to be visible to equipment operators.



The riser follows settlement of the plate, and an AMTS system monitors the elevation of the L-Bar prism at the top of the riser.

