

**ITEM 17203.9403 M - FURNISHING AND INSTALLING SLOPE INDICATOR CASING
(DRILLED IN METHOD OF INSTALLATION)**

DESCRIPTION

Furnish, install and protect slope indicator (SI) casing at the locations and depths shown in the contract documents or as directed by the Engineer. See Figure 1, Typical Slope Indicator Installation Details.

MATERIALS

- A. Slope Indicator Casing - Furnish 70 mm (nominal diameter) slope indicator casing with an external alignment spline, compatible couplings, two end caps and assembly tools. Casing is available from:

Slope Indicator Company
12123 Harbour Reach Drive
Mukilteo, WA 98275
(425) 493-6200 or an approved equal.

B. General Supplies

1. 1.5 meter long section of 150 mm (nominal diameter) steel drive pipe threaded on top to accept plastic female adaptor
2. 500 mm long section of 150 mm (nominal diameter) PVC pipe (schedule 40)
3. Female adapter for 150 mm (nominal diameter) PVC pipe (schedule 40)
4. Plastic cap for 150 mm (nominal diameter) PVC pipe (schedule 40)

- C. Grout - Mix grout to the satisfaction of the Engineer conforming to the following requirements:

COMPONENT	NYSDOT SPECIFICATION REQUIREMENT	PROPORTION
Portland Cement Type 2	Subsection 701-01	85 kg (55 liters)
Water	Subsection 712-01	130 liters
Bentonite (ground to pass a 75µm mesh sieve)	NA	11 kg (11 liters)

CONSTRUCTION DETAILS

The installation of all slope indicators shall be inspected by a representative of the Geotechnical Engineering Bureau.

INSTALLATION PROCEDURE

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- A. Install a 1.5 meter section of 150 mm steel drive pipe below the ground surface with approximately 300 mm remaining above the ground surface.
- B. progress a 4 NPS nominal diameter drill hole inside the 150 mm diameter steel drive pipe using steel casing or bentonite slurry. Use equipment conforming to the requirements contained in Subsection 732-01 of the NYSDOT Standard Specifications.
- C. Pump grout into the hole to fill it.
- D. Assemble the slope indicator casing to form a continuous pipe as recommended by the manufacturer or as directed by the Engineer. Place the slope indicator casing in the pre-drilled hole as shown in Figure 1 to the elevation or depth specified in the contract plans. Use clean water to sink the casing to the bottom. No grout, debris or other foreign material shall enter the slope indicator casing.
- E. Remove the steel casing. It may be necessary to weight the slope indicator casing with drill rods. Refill the hole with grout as each piece of casing is removed to maintain the level of grout at the top of the hole.
- F. Assemble and install the protective cover as shown in Figure 1.

METHOD OF MEASUREMENT

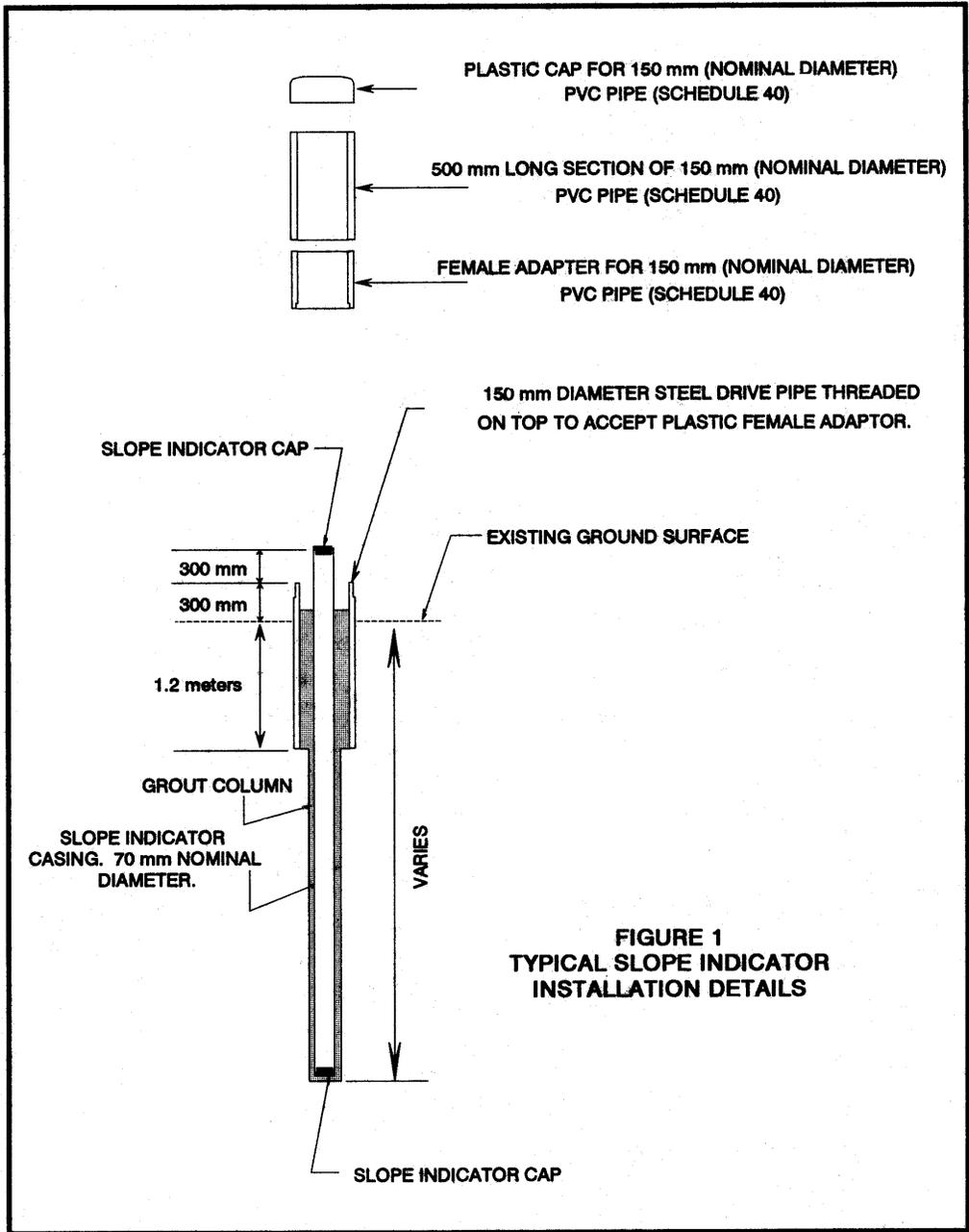
The quantity is the number of lineal meters of slope indicator casing satisfactorily installed in accordance with this specification measured from the top to the bottom of the slope indicator casing.

BASIS OF PAYMENT

The unit price bid for this item includes the cost all labor, materials and equipment necessary to satisfactorily install and protect the slope indicator casing. The Contractor will receive full payment after the slope indicator casing has been tested and approved by the State.

No separate payment will be made for progressing the 4 NPS drill hole. The cost of this work will be included in the price bid for this item.

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**FIGURE 1
TYPICAL SLOPE INDICATOR
INSTALLATION DETAILS**