

SPECIFICATION SECTION 12400 – SLOPE PROTECTION

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SPECIFICATION SECTION 12400 – SLOPE PROTECTION

1. DESCRIPTION

This Specification Section prescribes the supply and installation of Slope Protection as shown on the Drawings or as may be required by the Engineer.

2. MATERIAL REQUIREMENTS

2.1 Reference Standards

The most recent edition of the following standards shall be applied to the Works.

Vietnamese Standard

22TCN 333-06 Specification for Compaction of Crushed Stone and Soil in Laboratory

TCVN4197-95 Methods of Laboratory Determination of Plastic Limit and Liquid Limit

2.2 Materials

2.2.1 Concrete

Concrete shall be class C20 concrete, either precast or cast insitu as indicated on the Drawings and shall conform with the requirements of Specification Section 07100 Concrete and Concrete Structures.

2.2.2 Reinforcing Steel

Reinforcing steel shall conform with the requirements of Specification Section 07500 Reinforcing Steel.

2.2.3 Mortar

Mortar shall conform with the requirements of this Specification Section 12100 Cement Mortar.

2.2.4 Mortared Stonework

Mortared stonework shall conform with the requirements of Specification Section 04400 Mortared Stonework.

2.2.5 Blinding Stone

Granular materials for bedding shall conform with the requirements of the Specification.

3. CONSTRUCTION REQUIREMENTS

- a) The construction of Slope Protection shall be as shown on the Drawing.
- b) The work shall not begin until such time as the construction of the embankment to the correct line and level has been approved by the

Engineer.

- c) Precast elements shall not be transported to the work site until the concrete has been cured and has reached the required strength. Ends of precast units to be cast into joints shall be prepared in accordance with the requirements for construction joints in but without shear keys.
- d) Excavation shall be carried neatly to the required line and level. Excavations shall not be further compacted and they shall be free of high or low spots such that the precast beam sections, when placed, are fully supported along their length and not subject to undue bending such that they may crack or otherwise be damaged.

4. MEASUREMENT AND PAYMENT

4.1 Method of Measurement

- a) Mortared stonework for embankment shall be measured for payment in cubic meters according to the dimensions on the Drawings and/or field measurement determined by the Engineer. The trimming/filling the slope to lines and levels, the layer of blinding stone under the mortar bed and the mortar bed for the mortared stonework shall be included in the unit rates.
- b) Toe protection comprising mortared stonework shall be measured in linear meters according to the dimensions on the Drawings and/or the field measurement determined by the Engineer. The trimming/filling the slope to lines and levels, the preparation of the ground, excavation, disposal of spoil on or off Site, the layer of blinding stone under the mortar bed and the mortar bed for the mortared stonework shall be included in the unit rates.
- c) Slope Protection comprising reinforced concrete precast panels shall all be measured in the square meters according to the dimensions on the Drawings and/or field measurement as determined by the Engineer. The unit rates shall, inter alia, include for; the mortar, trimming/filling the slope to lines and levels, compacting, tying the blocks together with steel anchors, topsoiling and grassing all as described in more detail on the Drawings.
- d) The Slope Protection provisions, material requirements and construction requirements identified in this Specification Section shall be measured for payment in pay items 12400-02-1, 12400-03, 12400-04, 12400-05, 12400-10 and 12400-11.
- e) Any Slope Protection Works not specifically identified in this Specification Section but which are necessary for the performance of the Works shall be deemed to be included in pay items 12400-02-1, 12400-

03, 12400-04, 12400-05, 12400-10 and 12400-11.

4.2 Basis of Payment

The work under this Specification Section shall be paid for in accordance with the applicable unit prices as indicated in the Bill of Quantities and given below. Payment shall constitute full compensation for performing the requirements of the Contract for the item of work as specified including furnishing all necessary labor, materials, tools, equipment, incidentals and tests.

<u>Pay Item</u>	<u>Description</u>	<u>Unit</u>
12400	Slope Protection	
12400-02-1	Slope Protection Type 3 (Precast Concrete Block)	m2
12400-03	Mortared Stonework for Embankment Slope Protection	m3
12400-04	Mortared Stonework for Toe of Slope Protection (h=1.0m)	m
12400-05	Mortared Stonework for Toe of Slope Protection (h=0.55m)	m
12400-10	Mortared Stonework for Toe of Slope Protection (h=0.5m)	m
12400-11	Geotextile Filter Fabric (non-woven)	m2