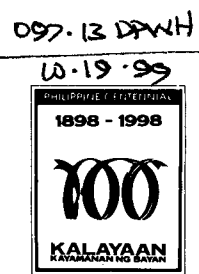


Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Manila



19 October 1999

DEPARTMENT ORDER)

No. **203**)
Series of 1999)


X-X-X-X-X-X-X-X-X-X-X-X-X

SUBJECT: **New DPWH Standard
Specifications for Rubble
Concrete (Item 510)**

For the guidance and compliance of all concerned, the new standard specifications for Rubble Concrete (Item 510) are hereby prescribed which shall form part of the DPWH Standard Specifications.

This supersedes all existing specifications and related issuances issued contrary hereto.

This order shall take effect immediately.


GREGORIO R. VIGILAR
Secretary

DPWH STANDARD SPECIFICATION FOR RUBBLE CONCRETE

510.1 Description

This item shall consist of the construction of rubble concrete in accordance with this specification and in conformity with the lines, grades, slopes and dimensions shown in the Plans or established by the Engineer.

510.2 Material Requirements

510.2.1 Stone

The stone shall be clean, hard, and durable and shall be subject to the Engineers' approval. Adobe stone shall not be used unless otherwise specified. Stones to be used shall be more than 0.015 cubic metre in volume and not less than 75 percent of the total volume of rock embankment and shall consist of stones 0.03 cubic metre in volume as described in Item 506.2. Stones obtained from excavation performed under this contract may be used.

510.2.2 Concrete Class "B"

Concrete shall be Class "B" in accordance with Item 405 - Structural Concrete.

510.3 Construction Requirements

510.3.1 Preparation of Foundation Bed

The foundation bed shall be excavated to the lines and grades as shown in the plans as directed by the Engineer, and shall be thoroughly compacted in accordance with Item 104.3.3.

510.3.2 Falsework and Formwork Construction

Falsework/formwork shall be constructed so as to withstand the stresses imposed.

Formwork used shall be constructed with sufficient strength, rigidity and shape as to leave the finished works true to the dimensions shown on the Plans and with the surface finished as specified.

The inside surface of forms shall be cleaned of all dirt, water and foreign materials. Forms shall be thoroughly coated with form oil prior to use. The form oil shall be commercial quality form oil or other approved coating which will permit the ready release of forms and will not discolor the concrete.

510.3.3 Placing

One layer of concrete class "B" shall be placed at the prepared bed prior to placing of stones. Clearance between stones shall not be more than 2-1/2 inches or the maximum size of concrete aggregate for Class "B".

Concrete Class "B" shall be placed after each layer of stone and shall be thoroughly consolidated by means of a vibrator inserted in each layer of concrete. In no case shall the vibrator be operated longer than 10 seconds in any location.

After removal of forms, any cavities, voids and honeycomb spots shall be filled up with mortar composed of one part cement and two parts sand.

All debris and refuse resulting from work shall be removed and the site left in a neat and presentable condition.

510.4 Method of Measurement

The quantity to be paid for shall be the number of cubic meters of rubble concrete complete in place and accepted. In computing the quantity for payment the dimension used shall be those shown on the plans or ordered in writing by the Engineer. No reduction shall be made for weepholes.

510.5 Basis of Payment

The quantity of rubble concrete determined as provided in the preceeding section, 510.4 - Method of Measurement, shall be paid for at the contract unit price per cubic meter for rubble concrete, which price and payment shall be full compensation for preparation of the bed, furnishing, necessary excavations, falsework, and for all labor, equipment, tools and incidentals necessary to complete the Item.

Payment will be made under:

Pay Item No.	Description	Unit of Measurement
510	Rubble Concrete	Cubic meter