Sample Specifications for Earth Control Measures

(Revised as at Nov 2013)

1. The Contractor shall implement effective Earth Control Measures (ECM) during construction stage at all times. The ECM shall be implemented according to the Code of Practice on Surface Water Drainage. [Important Note: The contractor shall note that ECM are meant for the containment and treatment of silty rainwater runoff only, and not meant for the treatment of process water from construction activities such as slurry from tunnelling, pipe-jacking and bore-piling works. Such process water should be handled and treated to comply with the requirements under Environmental Protection and Management Act (Chapter 94A).]

2. In the tender submission, the Contractor shall provide schematic diagrams outlining the ECM for the whole duration of the construction activities, taking into account the various ECM requirements under different phases of construction activities. The ECM plan shall be designed and endorsed by a Qualified Erosion Control Professional (QECP) and form the basis for the Contractor to price for ECM. The Contractor shall be deemed to have included the price of ECM in the total contract price, even if the contractor did not separately priced for the ECM.

3. The Contractor shall engage a QECP to design ECM. The Contractor shall implement ECM accordingly to the QECP's ECM plan before earth works starts. During the course of construction works, the Contractor shall engage his QECP to review the effectiveness of the ECM regularly, in tandem with the various phases of construction works. The Contractor shall revise the ECM as and when advised by his QECP.

4. The Contractor shall keep good records of the ECM operation and maintenance.

5. The Contractor shall not remove the ECM until all works are completed and upon the advice of his QECP.

6. The Contractor shall submit the ECM plan duly endorsed by his QECP to Director, Catchment and Waterways (PUB) to obtain the necessary clearance before earth works start, in the format as prescribed by PUB. The ECM plan shall include the following content:

I. Project Brief
   The Brief shall include:

   a. Project Description;
   b. Name and address of site occupier;
   c. Site area and contract period;
   d. Location map and site plan;
   e. Construction phases and schedules

II. ECM design calculations
III. Erosion Control Plan
   The plan shall include minimise bare earth areas/slopes/stockpiles via sequencing and phasing of earth works, paving up/covering bare earth surfaces with lean concrete, milled waste, erosion control blankets, close-turfing, canvas etc
IV. Sediment Control Plan
   The plan shall include:

   a. Concrete-lined cut-off drains (minimum C7 precast channel) along the perimeter of the construction sites
   b. Sealing of site hoarding.
   c. Ramp/curb at site entrance/exit.
   d. Separate drainage for bare earth surfaces and non-bare earth surfaces.
   e. Silt fence properly installed and embedded onto the ground along the internal and perimeter cut-off drains.
   f. Silt traps.
   g. Holding sumps/ponds for silty water.
   h. Adequate silty water treatment systems to treat silty water before the discharge points into public drain.
   i. Turbidity curtains for works in or adjacent to water bodies, such as canals, rivers, sea or in a reclamation work.

V. Site ECM Management System
   The Management System shall include:

   a. Daily ECM inspection.
   b. Regular ECM review and report by QECP.
   c. Monitoring and alerts of the treated runoff quality, and if required by PUB, CCTV system to monitor the discharge at the public drain.

Sample Breakdown for Earth Control Measures

S/No	Description	Qty	Unit	Rate	Amount ($)
A	Allow for engaging a Qualified Erosion Control Professional to design and supervise the implementation of Earth Control Measures	-	Item	-	
B	Allow for the implementation and maintenance of the Erosion Control Plan	-	Item	-	
C	Allow for the implementation and maintenance of Sediment Control Plan	-	Item	-	
D	Allow for site reporting and monitoring system	-	Item	-	
E	Allow for ECM review by the QECP		Item		
TOTAL					