

## **9.0 THE PERMANENT EROSION AND SEDIMENT CONTROL PLAN (PESC PLAN)**

### **9.1 General**

The Permanent Erosion and Sediment Control (PESC) Plan constitutes the measures designed by the consultant to be implemented by the contractor as part of the construction contract to address long term post construction erosion and sedimentation issues. The PESC Plan should be designed using an engineering approach based on acceptable principles of soil mechanics and open channel flow hydraulics. The PESC Plan will also be referenced by the construction contractor in the development of the Environmental Construction Operations (ECO) Plan.

A PESC Plan should be prepared for all construction projects. For sites smaller than 2 ha (and not connected to an environmentally sensitive area), this consists of identifying minimum requirements for an erosion and sediment control strategy, and where practical, implementing erosion and sediment controls to reduce on-site runoff and erosion. Sites larger than 2 ha require the development of a comprehensive PESC Plan and associated documents. During construction, the PESC Plan should be reviewed by the consultant and modified as required as field conditions change.

### **9.2 Consultant Responsibility**

The consultant is required to prepare and submit:

- A PESC Plan Report;
- Design and Construction Drawings showing PESC measures where appropriate;
- Contract special provisions which may be necessary to identify and address special areas of concern or types of work; and
- As-Built drawings showing the type, quantity and location of PESC measures installed.

The consultant is also responsible to monitor construction and confirm that the permanent erosion control works are installed according to the requirements of the PESC Plan.

The required qualifications of the Consultant are provided in Section 3.1.3.

### **9.3 PESC Plan Documentation**

The PESC Plan must include a report and drawings. Reference should be made to Alberta Transportation's Engineering Consultant Guidelines for Highway and Bridge Projects. As a minimum the following should be addressed in the PESC Plan:

- Site Assessment;
- Design of the PESC Plan including highlighting procedural or minimum requirements, required BMPs and site specific designs;
- Shut Down considerations;
- Inspection, Monitoring and Maintenance Requirements;

- Emergency Response Plan and incident reporting requirements; and

A checklist for the development of the PESC Plan is included in Appendix D.

#### **9.4 Design and Construction Drawings**

The Design and Construction Drawings must show the PESC measures (where appropriate) and reference the PESC Plan report.

#### **9.5 Contract Special Provisions**

Contract Special Provisions shall discuss other special or site specific items not included in the Standard Specifications for Highway Construction. Information which may be included in the Special Provisions are design location of the devices, quantities and special regulatory requirements, or reference to special instructions on installing the erosion and sediment control devices.

#### **9.6 Site Inspection During Construction**

Once the PESC measures have been installed, it is important that their effectiveness is monitored and necessary maintenance be carried out. The success of the entire erosion and sediment control strategy will depend upon this, and its importance cannot be overemphasized.

All PESC measures must be inspected by the contractor daily and following heavy rainstorms or snowmelt events during the construction phase. Immediate action must be taken by the contractor when the need for maintenance or repair of PESC measures is identified for the ongoing performance of the measures.

The Consultant should inspect the PESC measures every 7 days and following heavy rainstorms or snowmelt events and advise the contractor immediately of any areas of concern. As site work progresses, the PESC Plan should be modified when necessary by the Consultant to reflect changing site conditions or new information which has been identified during construction.

A copy of the PESC Plan, along with a copy of the Construction Drawings, must be kept by the Contractor at the construction site for use by construction and inspection personnel.

#### **9.7 Inspection and Incident Records**

The Contractor and Consultant must both maintain separate records of their inspection of all ESC measures at the frequencies noted above, including notes regarding damage and deficiencies observed. The same document can be used to record maintenance and repairs undertaken after the inspection.

The Consultant must submit their inspection report of ESC measures to AT on a weekly basis. The contractor must maintain records of their daily inspection and provide copies to the consultant if and when requested.

Sample inspection report forms are presented in Appendix D.

### **9.8 As-Built Drawings and Project Records**

A complete summary of the PESC measures installed must be documented by the Consultant during construction and updated as various measures modified. As-built drawings and supporting records must include a plan view drawing showing the type, quantity and location of PESC measures installed.

Supplemental information which should be included in the Final Details includes:

- Inspection and Maintenance Reports;
- Modifications to the PESC Plan;
- Photos of the installed PESC measures; and
- Incident Reports.

### **9.9 Post Construction**

After final acceptance, the inspection and maintenance responsibilities of the PESC measures will be transferred from the construction contractor to the Maintenance Contract Inspector (MCI) and AT's Maintenance Contractor.

The respective maintenance responsibilities at the Construction Phase and Post Construction Phase are described in Construction Bulletin #12, which is available on Alberta Transportation's website at [www.transportation.alberta.ca/920.htm](http://www.transportation.alberta.ca/920.htm).

Inspection and maintenance of PESC measures must continue regularly so that the measures remain effective in the long term. The following circumstances and conditions will permit BMPs to be removed:

- Revegetation of bare soil is successful;
- No obvious erosion scour is observed;
- No obvious bed load of silt and sediment laden runoff is observed;
- Inspection and maintenance report indicates satisfactory performance for past 3 years; and
- AT maintenance staff will assess and decide on performance of the structures and requirement for necessary removal.