

### 1.0 GENERAL

- 1.1** The Developer and Contractor shall comply with the requirements of all regulatory authorities, federal, provincial and municipal government departments including the Department of Fisheries and Oceans Canada and Ministry of Environment, in the protection of fish and wildlife during the construction of the works.

Specifically, the Contractor shall ensure that all excavation and construction procedures are undertaken in such a manner as to prevent silt-laden runoff from the site of the work from entering the downstream drainage system, and shall follow procedures as recommended in the publication entitled “Land Development Guidelines for the Protection of Aquatic Habitat”, as issued by the Ministry of Environment.

The sediment control measures shown on these drawings and contract documents are to be deemed minimum and notwithstanding compliance, the Developer and Contractor, are ultimately responsible for sediment control for the duration of the project.

Order of road works and servicing construction to be carried out in accordance with the staged contract construction sequence specified below.

- 1.2** During construction the Contractor shall ensure that all disturbed areas are kept dewatered with concentrated surface runoff either directed around work areas with interceptor ditches or temporarily contained within closed conduits.

The Contractor shall install a temporary cutoff and interceptor ditch system as necessary prior to and during grading and servicing construction to collect all surface runoff and protect disturbed and exposed soils from erosion. The ditching system is to be enclosed with temporary culverts at access crossings.

- 1.3** All exposed slopes and spoil stockpiles to be covered with 6mm polyethylene sheeting or erosion control matting, all well anchored to resist wind with weights or stapled in place.

Erosion control matting to be combination straw/coconut fiber blanket type SC150 as manufactured by North American Green or approved equivalent. Blanket to be placed strictly in accordance with manufacturer’s instructions.

- 1.4** Interceptor and cut-off ditches and boulevard swales to be as per typical section where grade exceeds 5.0% trench inverts to be rip-rap armoured on geofabric. Check weirs/filter berms to be installed at maximum 4.0m O.C.

- 1.5** All silt fencing shown to be constructed in accordance with silt fence detail. Contractor to install additional silt fence where site conditions dictate and down slope of all spoil piles and as directed by the Design Engineer.

- 1.6** All catch basins and lawn basins to have upstream sediment traps prior to and after paving as detailed on the drawings.

- 1.7** Earthworks, grading and services installation construction operations to be terminated during heavy rainfall when soil disturbance is subject to erosion and release of sediments to surface runoff.

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- 1.8** No concrete truck washing is to be directed into the sediment control system or sewers – recirculatory wash systems are to be used for washing the concrete trucks. All concrete trucks to be equipped with wash bucket flushing equipment. No concrete truck/flume to be discharged to the on-site drainage system or onto the street.
- 1.9** All temporary and permanent pipe work is to be fully gasketed.
- 1.10** All existing live city and private utilities to remain operational where a conflict between construction work and live City utilities occurs, the City shall be notified.
- 1.11** Where building construction interferes with cutoff trenches and swales, Contractor to arrange for diversion or enclosure of these drainage facilities to permanent storm sewer system.
- 1.12** All off-site works will be in accordance with MMCD (2009 Edition) and City of Burnaby Supplemental Specifications.
- 1.13** All on-site works will be in accordance with the current BC Building Code and BC Plumbing Code.
- 1.14** Pipe bedding and cover will be in accordance with City of Burnaby Standards (unless noted otherwise) with minimum 600mm cover.
- 1.15** Safety fencing to be 1.8m high chain link. Gate and corner posts to be 75mm $\phi$ , line posts to be 50mm $\phi$  O 3.0m c/c.
- 1.16** The Contractor will provide and maintain efficient traffic management systems, signs, barricades, and flag persons to maintain access on municipal roads. All vehicular and pedestrian access on public rights-of-way to remain.
- 1.17** No excavation to be started until written approval of sediment control measures has been given by the City of Burnaby Climate Action and Energy Division.
- 1.18** All right-of-way/covenant areas to be kept free of stockpiles and sediment control measures.
- 1.19** An adequate supply of materials will be maintained at strategic locations to enable a suitable emergency response to deal with containing downstream watercourse contamination

## **2.0 OPERATION, MAINTENANCE AND PERFORMANCE STANDARD**

- 2.1** Contractor to maintain and repair or replace all sediment control works and measures in good working order and clean out the sediment control pond at maximum six month intervals or more frequently as required by consultant to ensure effective operation. Prior to contract completion, Contractor to clean out pond to consultant's written acceptance.

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- 2.2** Construction and maintenance of the sediment control facilities to be the responsibility of the Contractor. Contractor to provide city with contact names and 24 hour emergency contact.
- 2.3** The Contractor shall mechanically sweep all municipal streets to prevent tracking of sediment, and provide dust suppression measures as required by the City of Burnaby. Sweeping with water and flushing is not permitted.
- 2.4** Contractor, as part of regular maintenance, shall vacuum accumulated silts out of storm mains feeding the sediment control pond and basin. Typical maintenance shall consist of, but is not limited to, the following items:
- Accumulated silts in pond bases and storm sewer system to be vacuum cleaned.
  - Siltation fences shall be cleaned and repaired as required.
  - Perimeter fencing to be repaired if needed.
  - Sediment to be removed from sediment control trenches when thickness reaches 100mm.
- 2.5** The performance criteria for project sediment control shall be a requirement that total suspended solids (T.S.S.) in downstream storm runoff from the project site shall not exceed a maximum of 25mg/L above background levels for normal dry day and 75mg/L above background levels during rain or storm event.
- 2.6** The PH level of water discharging from the site shall be within the range of 6 to 8.5. Runoff outside this range must be neutralized prior to discharge.
- 2.7** Maximum depth of accumulated silt/sediment not to exceed 250mm.
- 2.8** The Developer's Contractor is responsible for maintenance of all sediment control facilities shown on this drawing until 95% of all landscaping is completed or until permission is granted in writing by the Climate Action and Energy Division, Corporate Services Department.

### **3.0 MONITORING, SAMPLING AND TESTING**

- 3.1** A Letter of Understanding will be required from the Developer to be submitted to the City of Burnaby Climate Action and Energy Division prior to approval authorizing the independent environmental monitor to undertake construction monitoring of the proposed sediment control facilities and ensure that the discharge water quality remains in accordance with Burnaby Watercourse Bylaw No. 9044.
- 3.2** An independent environmental monitor is required to be retained by the Developer to undertake sampling and reporting and to ensure adherence to the sediment control requirements during construction. The Developer shall provide adequate ongoing maintenance and monitoring to ensure the effectiveness of the siltation control facilities such that the water discharging from the system does not have total suspended solids in excess of 25mg/L (Dry Event) or 75mg/L (Rain Event) above background levels of the receiving water specified by the City of Burnaby Climate Action and Energy Division (2 times per week. during the initial excavation with an additional sample taken during storm events).

- Email all results to the City of Burnaby: [SCSMonitoringReports@burnaby.ca](mailto:SCSMonitoringReports@burnaby.ca). Developer's reporting responsibilities include weekly summaries of monitoring results, sampling shall also be conducted during or after every storm event with a rainfall amount of 12.5mm or greater. Notwithstanding the weather conditions, the sampling frequency shall be at the discretion of, and to the satisfaction of the Climate Action and Energy Division.
- 3.3** The independent environmental monitor is responsible for noting all system deficiencies in the monitoring report. If a deficiency is noted, the monitor shall include a timeline for corrective actions in the report. A noted deficiency with a high potential for sediment release will be considered noncompliant. City of Burnaby shall be notified about a noncompliant site within 24hrs by submitting page 1 of the monitoring report to City of Burnaby Climate Action and Energy Division by email, to: [SCSMonitoringReports@burnaby.ca](mailto:SCSMonitoringReports@burnaby.ca).
- 3.4** The Contractor shall inspect the sediment control facilities daily during normal operations. Failing systems are to be noted and repaired as necessary for proper operation. Daily inspection log to be completed and kept onsite.
- 3.5** The environmental monitor may choose to measure T.S.S. instead of turbidity. A T.S.S.-turbidity regression analysis is required with 15 to 20 concurrent T.S.S. and turbidity measurements taken over a range of high to low discharges. Data and results shall be forwarded for approval to the City of Burnaby.

#### **4.0 SEDIMENT CONTROL DECOMMISSIONING**

- 4.1** All sediment control facilities shall remain until 95% of construction work including landscaping is completed, or upon permission by the City of Burnaby Climate Action and Energy Division. Upon completion of 95% of on-site development and approval of the Design Engineer and Climate Action and Energy Division, the Contractor is to remove the siltation fences and all sediment to draw down to approved containment system in presence of Engineer. All temporary inlets/outlets are to be removed and manholes plugged and re-benched to the approval of the Climate Action and Energy Division.
- 4.2** Restore disturbed areas and apply finished landscape treatment as per landscape architects specifications

