SCHEDULE 33
WORKS REPORTS

PART 1
MONTHLY WORKS REPORT

1. MONTHLY WORKS REPORT

1.1 The provisions of Part 1 of this Schedule 33 shall apply to the monthly Works Report, which shall be submitted to the City in accordance with Schedule 10 – Review Procedure to this Project Agreement.

1.2 The monthly Works Report shall include, without limitation, the following:

(a) an executive summary describing the general status of the Works;

(b) status of the Works by high-level work breakdown segment and project phase, including:

(i) accomplishments in past month;

(ii) planned activities for next three months;

(iii) a narrative description of any Disputes related to the Works, including any action that has taken place over the past month to resolve such Disputes;

(iv) permits;

(v) details of staffing numbers for the Project and Key Individuals;

(vi) schedule of submissions with corresponding City response requirements;

(vii) progress against design and construction milestones; including person-hours against activities;

(viii) progress photos; and

(ix) details of any delays which shall be specifically highlighted together with details of the impacts and corrective actions and program recovery proposals;

(c) outstanding contractual decisions;

(d) status of all reports submitted pursuant to the requirements of the Project Agreement;

(e) an updated Works Schedule in printed (PDF) and native Oracle Primavera Project Management P6 format (XER), including person-hours resources to activities;
environmental monitoring and compliance status;

quality assurance and quality control, including:

update of quality control and quality assurance activities and personnel responsible;

monthly Quality Management System reports, Quality Audit reports and summary information from the Non-Conformance Tracking System, as described in Schedule 11 – Quality Management;

internal and external audits; and

training metrics;

organization/staffing changes and additions for Project Co and Construction Contractor;

tangible capital asset controls;

health and safety, including:

lost time injuries; and

accidents with no lost time;

subcontract status, including:

consultants;

Subcontracts awarded;

tenders;

labour report (average workforce); and

Subcontractor 3 month rolling program;

financial cost control status, including:

progress as measured by Earned Value Management key performance factors, including: Schedule Performance Index (SPI); Cost Performance Index (CPI); Schedule variance (SV); Cost Variance (CV); Planned Value (PV); Earned Value (EV); Actual Cost (AC); Estimate to Complete (ETC); and, Estimate at Completion (EAC);

Variations;

insurance summary;
(iv) Construction Contractor default status; and
(v) cash flow projection (capital cost components);

(m) Risk Management, including:
(i) updated Risk Register;
(ii) Risk response plans requiring action from the City;
(iii) claims;
(iv) liens;
(v) environmental issues;
(vi) labour;
(vii) market conditions;
(viii) outstanding disputes;
(ix) operational risks;
(x) Subcontractor risks; and
(xi) other risks;

(n) status of any integration, testing and commissioning activities.

1.3 Updated versions of each of the Project Management Plan and Risk Management Plan, which shall be submitted to the City in accordance with Schedule 10 – Review Procedure to this Project Agreement and shall be submitted with the first Works Report.
SCHEDULE 33
WORKS REPORTS

PART 2
TECHNICAL REPORTS

2. TECHNICAL WORKS REPORTS

2.1 The provisions of Part 2 of this Schedule 33 shall apply to the technical Works Reports, which shall be submitted to the City under separate cover from the monthly Works Report described in Part 1 of this Schedule 33 and in accordance with Schedule 10 – Review Procedure to this Project Agreement, and shall, without limitation, contain the following:

Table 2.1 – Technical Works Reports

<table>
<thead>
<tr>
<th>Deliverable Name</th>
<th>Due Date</th>
<th>Deliverable Submission Period</th>
<th>Submitted under the Review Procedure</th>
<th>Reference Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tunnel Technical Works Report</td>
<td>Monthly, as noted in Section 2.2 of this Schedule</td>
<td>Design and Construction Period</td>
<td>Yes</td>
<td>2.2</td>
</tr>
<tr>
<td>Interim Tunnel Notifications</td>
<td>As noted in Section 2.3 of this Schedule</td>
<td>Design and Construction Period</td>
<td>Yes</td>
<td>2.3</td>
</tr>
</tbody>
</table>

2.2 The Tunnel Technical Works Report shall be submitted once per month commencing 30 working days prior to the start of construction, and without limitation, contain the following:

(a) Executive Summary

(i) Overall narrative and summation of the previous months work and plan and schedule for the next 3 months.

(b) Protection of Adjacent Structures

(i) Updated Schedule of Assets.
(ii) Summation of Geotechnical instrumentation monitoring including all events that resulted in either a Trigger Level, or an Action Level exceedance has occurred.

(c) General

(i) Geological mapping records and field logs.

(ii) Geological as-built longitudinal section of the Tunnel. The section is to be a developed longitudinal section, depicting the observed geology along the length of the Tunnel for the invert, sidewalls and crown.

(iii) Quality Control testing data and reports for materials used in Construction of the Tunnels.

(iv) Excavation support installation logs and placement records, and testing data for the main support measures.

(v) Summation of meeting agendas and minutes, action plans, reports and data.

(vi) Summation of results of data acquisition and monitoring for excavation performance and deformations within Tunnels.

(vii) Summation of electrical and other inspection reports, including ventilation, muck haulage, and water discharge.

(viii) Summation of inspection stops, equipment maintenance, lost ground, gassy conditions, or emergency conditions.

(ix) Summation of shift reports identifying labour, equipment and materials utilized for final lining activities.

(d) Mined Structures

(i) Production performance and proof testing data for key tunnel support elements including:

(A) Shotcrete;

(B) Rock dowels or bolts; and

(C) Fiberglass dowel or bolts.

(ii) The logs and survey notes that shall include the following information:

(A) Measurements of in-tunnel or other deformations;

(B) Construction loading or other activities in the vicinity of instrumentation; and
(C) Any cracks in or damage to any in-tunnel or surface Structures, or other events.

(e) Bored Tunnels

(i) Summation of TBM daily and weekly records identifying the following:

(A) Shift reports and grout sample testing;

(B) Notifications of low or high grout takes; and

(C) Test results.

(ii) Tail void grouting, summation of daily and weekly records identifying the following:

(A) Shift reports and grout sample testing;

(B) Notifications of low or high grout takes; and

(C) Test Results.

(iii) For segmental linings, summation of records for fabrication, transport to site, damage and repairs, dimension checks, mockup or fit ups, quality control records, and installation records.

(f) Cut and Cover Structures

(i) Summation of test reports for:

(A) Load testing of soil and rock anchors;

(B) Weld inspections;

(C) Waterproofing tests and inspections; and

(D) Concrete, reinforcement, and embedment tests.

(g) Blasting

(i) Blasting Records in accordance with the City Special Provision F-1201.

2.3 Interim Tunnel Notifications shall be articulated and submitted to the City for the following events, no later than the time frames as specified below:

(a) Protection of Adjacent Structures

(i) Geotechnical instrumentation monitoring data: 1 day of obtaining data;
(ii) Trigger Level exceedance: within four hours of determination and every four hours after until levels have stabilized;

(iii) Action Level exceedance: within one hour of determination and every one hour after until levels have stabilized.