

**Certificate Form**

**Certificate Ref. No 285380-03-129-0003**

**INDEPENDENT STRUCTURAL DESIGN CHECK CERTIFICATE**

*Defined terms and expressions used in this Certificate have the same meanings given in the agreement between HMQ and Project Co dated December 15, 2010 ("the Project Agreement") relating to the Project.*

*Form of certificate to be used by the Checking Team for certifying the design of structures incorporated in the Parkway, in accordance with Part 2 of the Design and Construction Specifications to the Project Agreement.*

- 1) We certify that we have the requisite professional qualifications, skill and experience to perform an independent check of the Design Data referred to herein in accordance with the requirements of the Project Agreement.
- 2) We certify that we have performed an independent check (as required by the Project Agreement for significant and complex Structures) of the Design Data for **Hearthwood Tunnel (Tunnel T-10B) Substructure** listed in the Schedule hereto and utilizing the standards of care, skill and diligence that, in accordance with the standards of our profession, are required of experienced professionals undertaking such an independent check, and that in our professional opinion:
  - i) the said Design Data meets performance expectations outlined in the Project Agreement, [including Technical Appraisal Form] No. **285380-03-127-0025** dated **15 March 2012**, as amended by the following:
    - [List, if any, the changes made and any addenda to the foregoing Technical Appraisal Form]; and
  - ii) the design, methodologies and assumptions are consistent with Good Industry Practice.



## SCHEDULE

### DOCUMENTS

Document No.	Description	Rev	Date
285380-03-127-0025	Technical Appraisal Form Tunnels – Hearthwood Tunnel [T10B]	0	15/03/12
285380-04-119-0004	Geotechnical Investigation and Design Report – Tunnel T-10B	0	15/03/12
285380-03-109-0001	Structural Design Criteria – Seismic Design Guidelines	0	19/07/11
285380-03-109-0002	Structural Design Criteria – Structures Design Criteria	1	10/08/11
285380-03-109-0003	Structural Design Criteria – Structural Design Check Process	0	19/07/11

### DRAWINGS

Drawing No.	Description	Rev	Date
S3050	Cover Page		15/03/12
S3051	General Arrangement	0	15/03/12
S3052	General Notes	0	15/03/12
S3053	Borehole Location and Soil Strata	0	15/03/12
S3054	Soil Stratigraphy	0	15/03/12
S3055	Foundation Layout	0	15/03/12
S3056	Ground Improvements - Plan	0	15/03/12
S3057	Abutment Layout & Bearings	0	15/03/12
S3058	Abutment Reinforcement	0	15/03/12
S3059	RSS Walls Layout	0	15/03/12
S3060	RSS Walls Details	0	15/03/12
S3071	Standard Details	0	15/03/12
S3077	Ground Improvements – Sections I	0	15/03/12
S3078	Ground Improvements – Sections II	0	15/03/12
S3079	Ground Improvements – Sections III	0	15/03/12
S3080	Ground Improvements – Sections IV	0	15/03/12
S3081	Construction Notes – Backfill at Structures	0	15/03/12
S3082	Construction Notes – Lightweight Fill Material	0	15/03/12
S3083	Construction Notes – Expanded Polystyrene	0	15/03/12

Signed:  .....

Checking Team (Principal)

Name: Daniel Tassin

Date: 15 MARCH 2012 .....

Professional Registration Number: 100174152



Signed:  .....

Project Co Representative

Name: Ken MacLeod .....

Date: March 30, 2012 .....