



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

**Final date for issue of award is 31 December 2008**

## **TECHNICIAN'S CERTIFICATE - CIVIL WORK EXPERIENCE GUIDELINES**

### **Introduction**

**Note:** the last date of issue for Technicians Certificate – Civil is 31/12/08.

Civil engineering for the Technicians Certificate primarily is assisting with design, maintenance and construction. This usually is in relation to:

- infrastructure (roads, bridges, reticulation and utility services),
- structures (buildings)
- earthworks (mining)
- waterways, sewerage, stormwater, water supply and flood mitigation
- ports and harbours.

A candidate should read the *General Advice: Work Experience for New Zealand Certificates and Technicians Certificates*, obtainable from the New Zealand Qualifications Authority before he/she writes up work experience.

A candidate should show he/she has:

- worked a minimum of three years and a minimum of 30 hours per week
- engaged in a broad range of activities from each of the following categories:  
(1) Investigation, Research, Testing and Operation, (2) Design & Development, and (3) Maintenance & Construction.

A candidate can assist the process of approving Work Experience Record Books by cross-referencing each activity listed in his/her book to the appropriate activity in the categories.

### **1 Investigation, Research, Testing and Operation**

- 1.1 Assisting in studies of economic viability of a project (e.g. costing, estimating, human resource and material duration, general financing and return on investment).
- 3.3 Assisting with geotechnical investigation, laboratory and field testing for civil engineering works.
- 3.4 Assisting in production of topographical surveys and contour plans.
- 1.4 Collecting of river or channel flows (maximum, minimum and average) and hydrological data.
- 1.5 Investigating traffic loading, type, and accidents.

- 1.6 Determining physical characteristics of site materials proposed for use in civil engineering works (e.g. aggregate, stabilised pavement, foundation support structure of soil).
- 3.3 Testing of materials for building construction, including supervising testing processes and techniques.
- 3.4 Investigating and/or monitoring the quality of the town water supply water, sewerage and stormwater.
- 1.9 Assisting with legislative and environmental studies, and obtaining statutory consents for civil engineering works.
- 1.10 Assisting in the preparation of Asset Management Plans (using RAMM and PAM etc)

## **2 Design & Development**

- 2.1 Draughting – concept sketches and drawings of civil engineering proposals, including any field measurements.
- 2.2 Draughting – producing design drawings and documentation (hand-drawn or using CAD).
- 2.3 Assisting with designing surface grading for earthworks and pavements, including road alignment design.
- 2.4 Assisting with measuring civil engineering quantities e.g. earthworks volumes, pavement areas, drainage.
- 2.5 Designing of culverts, piped drainage systems, street work and service reticulation.
- 2.6 Undertaking hydrological analysis of drainage catchments.
- 2.7 Obtaining river profiles (including computer modelling).
- 2.8 Making calculations for simple structural components, using manual or computer design software programme.
- 3.3 Drafting solid waste, water supply or sewer service components.
- 3.4 Documenting projects and archiving/storage of data and plans.

## **3 Maintenance and Construction**

These activities are in support to the engineer, project manager or contractor depending on where the candidate is employed.

- 3.1 Assisting in preparing a tender of a project.
- 3.2 Assisting with site management including an awareness of contractual obligations.
- 3.3 Maintaining materials, stores, and plant.
- 3.4 Keeping records of plant, plant performance, working time and maintenance.
- 3.5 Compiling progress schedules.
- 3.6 Supervising survey parties and data collection teams.
- 3.7 Checking on site progress against target schedules, and reporting areas of potential delay in work progress

- 3.8 Taking samples of work for testing (e.g. aggregate, concrete, steel, manufactured materials, soils).
- 3.9 Assisting in the smooth and orderly progress of work against plans and specifications.
- 3.10 Assisting with job completion.