

**2012 Registration Renewal
Career Episode Report (CER)**

Competency Element	Dates of Career Episode: May 2011 to February 2012
	<p>Abstract: Provided survey services on the GLNG Port Central and RG Tanna, land side facilities in Gladstone, for ABC contractors. The project was a design and construct of three separate areas, a ferry terminal with a car park, a bulk material facilities and a lay down yard. My role as a project surveyor was to provide machine control support, earthworks surveys, general survey works, follow the company standards and guidelines.</p>
<p>5.5 2.3 4.4 5.3 5.4 6.5 2.2 6.5 5.1 5.2 5.3 2.3 2.3 5.1 6.3 2.1 1.2</p>	<p>Brief</p> <p>My role was to provide survey services for the civil works on the sites. The main tasks were the setup of machine control data and equipment, provide reports for volumes and QA for the earthworks, maintaining site models, survey of services and maintaining a services database. Also I had to maintain the survey files and reports in line with C Surveying procedures while working in a safe, efficient and professional manner.</p> <p>During the project I work under the supervision of Mr A and Mrs B of C Surveying.</p> <p>Task</p> <p>My involvement in the project began in May 2011, as a full time project surveyor replacing a surveyor from a different company. The initial part of my work was to continue survey works on site so the other surveyor could finish works to a point they could be handed over. Once I was up to speed on current works and had checked the control and GPS calibration, I started to review and QA the other surveyors calculations and reports. Once I believed I was ready to take over the works I told my supervisor and project manager. The hand-over took about four weeks.</p> <p>A normal day consisted of a pre-start meeting, during which safety notices and works would be review for the day. Following the meeting I would talk to the site supervisor about the survey requirements for the day. I would also check in on the other sites to see what was happening. From this I would organize my day. I would then contact my supervisor and talk about what would be happening that day, also I would pass on any other information and if I would be requiring any assistance.</p> <p>The next task was to setup a GPS radio repeater and if required the total station for the Machine Control. If the total station was to be used, I would do a calibration and a blade wear check for the grader, I would then pass control of the total station on to the grader operator.</p> <p>Then depending on the work, I would set out / as construct works or services and survey earthworks. The jobs would change depending what the site supervisor or engineer required.</p> <p>Normally I would try and leave the afternoon for processing of surveys works using 12d model software, producing reports for earthworks and QA. When the reports, plans and results were complete I would email them to site supervisor and my supervisor.</p> <p>Equipment</p> <p>The equipment provided was a Trimble SPS880 GPS, a Trimble SPS930 total station and a TSC2 running SCS900 Software. I had previously used Trimble equipment and except for the SCS900 software which had a very different mindset found it easy to use. The SCS900 software has been built around the idea someone with limited survey knowledge can use it for construction works. Therefore it is very easy to setup and use, but is limited in its functions. It took a while to really get my head around using the software in a way I could achieve the functions I required. But once I had experimented enough I found I could do most things.</p>

4.4	Machine control
4.3	The Machine control was split up into several tasks. The first was the creation of a model of the design. Then downloading the model for the graders as a string and DTM models, and then updating the data cards on the graders. The next part was the setting up and checking of the machine control equipment and the graders. During the day I would also check to see if the machine were still in tolerance and level.
1.2	I found the machine control to be a fantastic survey tool and time saver. It meant that an operator could point out problems with design in the field and the design could to be improved very quickly. It also meant less pegging.
2.3	The machine control did have problems; the initial setup of the graders used the Telstra mobile network to provide data correction for GPS. This didn't provide a consistent stream of data, due to the over loading of the Telstra network in the Gladstone area. This caused a long initialization time and a large amount of drop outs.
6.5	This would mean lost time on the graders and frustration of the operators. To overcome this I talked with the site supervisor and the providers of the machine control. It was decided to switch to a frequency base system. This meant the addition of radios to the graders and the use of a repeater station for the site. While this did work, it did have problems with inference from other sources and the distance from the base caused timing issues with the GPS. This was solved by the usage of the SPS930 total station, which work very well but was limited to one grader and a limited area.
4.6	Earthworks Reporting
1.6	The earthworks required a large amount of reporting and QA of the earth work layers to meet the client's standards. Unfortunately due to the main field engineer being away for first three months of the project, there was not a push to provide these. So it was a bit of a panic when I found out that the sites were split into about 9 lots, with each lot requiring reports on each layer, i.e. subgrade, sub base, base, final, bitumen etc. Fortunately I was up to date with the volume surveys and had surveyed the layers required for reporting.
3.5	To overcome this weekly meeting were organized to keep track of the reporting process and break down the requirements into achievable goals and time frames.
6.1	This meant that towards the end of the project reporting was well on track.
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5.5	
3.4	Services Data Management
3.4	The existing services data was provide by the previous surveyor and the port authority. The majority of the sites were green field, except for an area to the north of the ferry terminal which was an old access road, with underground services and overhead power line. The brown field area had been potholed and surveyed before I arrived on site. The potholing was carried out about 40 metres in from the edge of site; this meant that towards the edges of site, I had to allow for possible errors in the provided information. During the later stage of the project there was a requirement for the installation of supports for guard rails. I told the site supervisor that potholing was required; the services were found to vary by about 1m to 1.5m from the provided information.
3.5	The three parts of provided services information were, set out of existing services before excavation began the survey of new services and then the processing services into the current database. Included into the services map was the survey of the above ground services, such as light poles, footpaths and buildings. This provided a clear picture of what was going on and allowed for quick production of diagrams for excavation permits.
2.3	
2.1	The general method of surveying was to use GPS and to survey the services every change in direction and every ten metres Each services was coded, strung with a description such as 150 Dia. PVC PWR. This ensured that when processed the services were correctly labelled and in the correct layer. As a backup the services were also photographed.

<p>3.1 3.3 4.1 3.2 3.5, 4.3 4.2 5.4 4.7 1.3</p>	<p>Once in the office the services data download and process. The processing of the services was done in 12d survey package; the daily pickup was imported into a new job and annotated. Once completed the Job was exported as a 12d file into the master 12d services file. Once in the file the services were joined and placed into their correct layer. This created a system where the services could be tracked and if the data base was lost it could be reconstructed quickly and easily. The services diagrams were provided to client in PDF, 12d, Dxf and Dwg formats.</p> <p>Data Management Managing the job data required following C Surveying procedures on data management, this covered naming conventions and file structures. Since I was away from an office most of the time, backing up of data was done by using a Cloud system which would constantly backup to the Cloud and then download to a secure server. This was a good improvement over using USB hard drives, solved problems regarding different version of files and ensured the integrity of the data with QA. Also it allowed for the near instant sharing of files with my supervisor.</p> <p>Conclusion The works have been completed and the client was happy with the survey services I provided. The survey data is able to be easily accessed for any future jobs and the reporting for QA was completed on time.</p> <p>Documentary Evidence Supplied to Support CER Examples of Services Data Base AP2 Volume Report Verification Report Base Type Layer Lot Verification Points</p>
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Registrant's Name: _____

Registration No: _____

Current Registration: Surveying Graduate _____

Registration & Endorsement Renewal Sought: Surveying Graduate _____

Contact No: _____

Checklist

- I have included an abstract,
- I have included documentary evidence to support the details of my CER,
- I have fully described the methodology to undertake the work including references to quality assurance procedures,
- I have mapped my work description to the competency framework elements,
- I have signed the solemn declaration,
- I have included the completed Application for Renewal and payment information. _____

Office Use Only

Date Rec: _____ Date sent to Assessor: _____

Assessor: _____ Date returned: _____

Assessor Comments: