

	Unit ID: 1922
Domain	BUILDING AND CIVIL CONSTRUCTION MANAGEMENT
Title:	Survey and set out construction work areas
Level: 5	Credits: 15

Purpose

This unit standard is intended for those who survey and set out construction work areas. People credited with this unit standard are able to identify surveying instruments and describe their uses, understand and apply surveying techniques and principles, set out and check levels and profiles, apply tachometric principles and set out construction works, collect site data and prepare as-built drawings.

This unit standard is intended for those who work in the building and civil construction environment.

Special Notes

1. Entry information

Prerequisite:

- *Unit 1157- Demonstrate basic knowledge of workplace health and safety or demonstrated equivalent knowledge and skills.*

2. Assessment evidence may be collected from a real workplace or simulated workplace environment in which building and civil construction management are carried out.

3. Glossary and abbreviations

'Specifications' refers to any, or all of the following: manufacturers' specifications and recommendations, site and workplace specific requirements.

4. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act 2007(Act no 11, 2007)
 - Regulations relating to the health & Safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007 and all subsequent amendments
 - Local Authorities Act. 23, 1992
 - SABS 0400
 - Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977) and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Performance Criteria

Range

Surveying instrument include but not theodolite, dumpy level, dumpy level staff

Element 1: Identify surveying instruments and describe their uses

- 1.1 Surveying instruments are identified and selected in line with job requirements and application.
- 1.2 Components and accessories are identified and their functions described.

Element 2: Understand and apply surveying techniques and principles

Range

Setting out principles includes the setting out of squares, curves, elevations, slopes, distances, vertical and horizontal surfaces.

Reference and survey control systems include setting out points (SOP), benchmarks, grids, centre and staked lines, as well as all survey control work.

Performance Criteria

- 2.1 Setting out principles are explained.
- 2.2 Reference and survey control systems are established.
- 2.3 Techniques for setting out positions, levels (elevations) and slopes from established points are applied.
- 2.4 Surveying instruments are used, stored and safely handled in accordance with manufacturer specifications.
- 2.5 Information regarding dimensions and positions for surveying is obtained from drawings.
- 2.6 Survey errors are identified and eliminated in accordance with surveying principles.

Element 3: Set out and check levels and profiles

Range

Levelling and the transfer of levels include vertical measurement (heights, elevations and levels), the use of an automatic level and levelling staff, reading, booking and reducing of levels.

Performance criteria

- 3.1 Levels are set out and transferred in accordance with survey information and drawings.
- 3.2 Profiles are established for construction works in accordance with drawings.
- 3.3 All surveying and setting out activities are checked to comply with survey information and drawings.

Element 4: Apply tachometric principles and set out construction works

Range

Tachometry includes the use of a tachometer (theodolite), setting up an instrument, reading and booking data, reducing tach-readings, producing a tach survey and the use of Joins and Polars.

Performance Criteria

- 4.1 Principles of tachometry are applied in setting out and collection of data.
- 4.2 Surveying and setting out activities are checked to comply with survey information and drawings.
- 4.3 Taches principles are applied to produce a taches survey and contour plan.

Element 5: Collect site data and prepare as-built drawings

Range

Design changes include those made by the clients' representative, Engineer, Architect etc, and include site instructions, variation orders, change orders, and include any amendments made to position, height, or specification.

As-built drawings may be produced by amending existing drawings or by establishing new drawings, which incorporate all the permanent works and existing information.

Performance Criteria

- 5.1 Information on site regarding existing services, features and structures, is collected using measurement and surveying techniques.

- 5.2 Changes made to design that are incorporated in the permanent works are recorded according to site record keeping principles.
- 5.3 Deviations from original project information that may affect future works or maintenance are recorded according to site record keeping principles.
- 5.4 Information gathered is assimilated and incorporated in as-built drawings according to industry accepted drawings standards, and client requirements.

Registration Data

Subfield:	Civil and Building Services Engineering
Date first registered:	30 August 2018
Date this version registered:	30 August 2018
Anticipated review:	2023
Body responsible for review:	Namibia Training Authority