



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BUILDING AND STRUCTURAL SURVEYING N5

26 JULY 2019

This marking guideline consists of 4 pages.

SECTION A**QUESTION 1**

- 1.1 1.1.1 Lowest level✓ in a pipeline✓ on which water will flow✓
- 1.1.2 Distance✓ between two✓ adjacent contour lines✓
- 1.1.3 Common site name✓ given to any instrument✓ that can be mounted on a tripod✓
- 1.1.4 Position of a point✓ from a point of zero origin✓✓
- 1.1.5 Process of measuring✓ distance horizontally✓ on the surface of the earth✓
- (5 × 3) (15)
- 1.2 1.2.1 True
- 1.2.2 False
- 1.2.3 True
- 1.2.4 True
- 1.2.5 True
- (5 × 2) (10)
- [25]**

QUESTION 2

- 2.1 $C1-C2 = \sqrt{[(-75263.37 - -75243.16)^2 + (3649\ 934.32 - 3650\ 011.00)^2]}$ ✓
 $= \sqrt{[(-20.21)^2 + (-76.68)^2]}$ ✓
 $= 79.300\ m$ ✓✓
- $C1- C3 = \sqrt{[(-75316.13 - -75\ 292.89)^2 + (3650\ 016.79 - 3650\ 010.66)^2]}$ ✓
 $= \sqrt{[(-23.24)^2 + (6.13)^2]}$ ✓
 $= 24.033\ m$ ✓✓
- $C3-C4 = \sqrt{[(-75\ 309.79 - -75\ 292.89)^2 + (3\ 649\ 946.55 - 3\ 650\ 010.66)^2]}$ ✓
 $= \sqrt{[(-16.900)^2 + (-64.11)^2]}$ ✓
 $= 66.300\ m$ ✓✓
- $C3 - C7 = \sqrt{[(-75\ 316.13 - -75\ 292.89)^2 + (3650\ 016.79 - 3650\ 010.66)^2]}$ ✓
 $= \sqrt{[(-23.24)^2 + (6.13)^2]}$ ✓
 $= 24.033\ m$ ✓✓
- $C7 - C6 = \sqrt{[(-75\ 333.84 - -75\ 316.13)^2 + (3\ 649\ 966.33 - 3\ 650\ 016.79)^2]}$ ✓
 $= \sqrt{[(-17.71)^2 + (-50.46)^2]}$ ✓
 $= 53.477\ m$ ✓✓
- (25)
- 2.2
- Use the correct zero mark.
 - Measure to the centre of a peg or a ranging rod.
 - View the tape vertically on the graduations.
 - Clear obstacles on the chain line.
 - Minimise sag.
- (10)

- 2.3
- pegs
 - ranging rod
 - tape
 - plumbing
 - hammer
 - lime

(Any 5 × 1) (5)
[40]

QUESTION 3

3.1

BACK SIGHT	INTER. SIGHT	FORE-SIGHT	RISE	FALL	REDUCED LEVEL	REMARKS
1.17					30.32	Benchmark 30.23
	1.42			0.25✓	29.98✓	A
2.18		1.76		0.34	29.64✓	B
	2.28			0.1	29.54✓	C
0.81		0.93		1.35✓	28.19✓	D
1.43		3.00		2.184✓	26.006✓	E
1.46		1.35	0.08✓		26.086✓	F
	1.35		0.11		26.196✓	G
	1.40			0.05✓	26.146✓	H
		0.52	0.88✓		27.026✓	I
1.07 <u>4.274</u> -3.204		4.274			30.23 <u>27.026</u> <u>3.204</u>	

3.204 – 3.204 = 0 there is no error (15)

3.2 At two points A and B erect perpendicular line BC,✓ at line BC erect another perpendicular line CD✓ to clear the obstacle. At CD erect a perpendicular line DE equal in length✓ to BC and at DE set off a right angle EF.✓ The direction EF is the extension of the survey line and distance CD = BE.✓

(5)
[20]