



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2018

**CIVIL TECHNOLOGY: WOOD WORKING
MARKING GUIDELINE**

MARKS: 200

This marking guideline consists of 12 pages.

QUESTION 1: SAFETY, MATERIAL AND EQUIPMENT (GENERIC)

- 1.1 1.1.1 True (1)
 1.1.2 False (1)
 1.1.3 False (1)
 1.1.4 True (1)
- 1.2 Any THREE requirements to which a trestle scaffold must comply.
 • Soundly constructed with a solid material
 • Prevent spreading of supporting legs
 • Not higher than 3 m
 • Consists of not more than 2 tiers (3 x 1) (3)
- 1.3 Similar answer.
 (1) Aluminium conducts (2) electricity / workers subjected to electrical shock (2)
- 1.4 Similar answer.
 (1) Paint will cover (2) weaknesses (2)
- 1.5 1.5.2 Improves the durability of concrete. (1)
 1.5.5 It improves the strength of concrete. (1)
 1.5.7 It makes concrete more watertight. (1)
 1.5.8 It improves the resistance to abrasion. (1)
- 1.6 (1) Plastic finish / coating (2) in powder form by (3) using a spray-gun (3)
- 1.7 Briefly describe any ONE use of the dumpy level.
 • (1) Determine (2) height differences
 • (1) Determine (2) levels and slopes
 • (1) Setting out (2) of buildings
 • (1) Transferring of (2) levels and heights
 • (1) Determine horizontal (2) distances (1 x 2) (2)
- 1.8 1.8.1 1.5 m (1)
 1.8.2 $1.535 - 1,47 \times 100 = 6,5 \text{ m}$ (4)
- 1.9 Any THREE materials which can be detected in walls by the multi-detector.
 • Ferrous metals
 • Non-ferrous metals
 • AC wiring
 • Wood
 • Metal studs
 • Steel bars
 • Copper pipes (3 x 1) (3)
- 1.10 1.10.1 Dry, soft cloth / Not cleaning agents or solvents (1)
 1.10.2 Remove battery (1)

[30]

QUESTION 2: GRAPHICS AND JOINING (GENERIC)

- 2.1 Use the information on ANSWER SHEET A and complete the site plan on scale 1 : 200 according to the following requirements:
- 2.1.1 The site boundaries are measured from point A
The site boundaries in front and back are 23 m long
The site boundaries on the sides are 25 m long (2)
 - 2.1.2 The front building line is 4 m from the site boundary
The back and side building lines are 2 m from the site boundaries (2)
 - 2.1.3 Show the site entrance, 3 m from the western site boundary (1)
 - 2.1.4 Show the datum level in the north-eastern corner of the site
Complete the sewage lay-out and abbreviations of the sewage appliances according to the following requirements: (1)
 - 2.1.5 The main sewage from the bathroom to the municipal connection (2)
 - 2.1.6 The branch sewage to the bathroom and kitchen (2)
 - 2.1.7 Manhole on the site, before the municipal connection (2)
 - 2.1.8 Rodding eyes (4)
 - 2.1.9 Inspection eyes (4)
- 2.2
- Length of shank
 - Diameter
 - Type of thread
 - Head size (4 x 1) (4)
- 2.3 (1) When square shoulder is driven in (2) it resists rotation (2)
- 2.4
- 2.4 A – Nut
 - 2.4 B – Thread
 - 2.4 C – Runout
 - 2.4 D – Shank (4)

[30]

QUESTION 3: CASEMENTS, DOORS AND WALL PANELLING (SPECIFIC)

3.1 FIGURE 3.1 illustrates the outside elevation of a window frame.

- | | | |
|-------|---------------------------|-----|
| 3.1.1 | A – Mullion | (1) |
| | B – Frame stile / Jambs | (1) |
| | C – Moulding | (1) |
| | D – Glazing / Window pane | (1) |
| | E – Sill | (1) |

3.1.2	Helps water to run off / Drip groove prevents wall from getting wet.	(2)
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3.1.3	76 mm x 150 mm	(2 x 1)	(2)
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3.2	3.2.1	1 200 mm	(1)
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	3.2.2	1 768 mm	(1)
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	3.2.3	1 768 mm	(1)
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	3.2.4	1 768 mm	(1)
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	3.2.5	1 200 mm	(1)
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	3.2.6	900 mm	(1)
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3.3	3.3.1	Gypsum plaster / Clout nail / Silicone	(1)
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	3.3.2	Steel nails / Silicone	(1)
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	3.3.3	Clout nails / Dry wall screws	(1)
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3.4	3.4.1	Stile	(1)
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	3.4.2	50 mm	(1)
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	3.4.3	600 mm	(1)
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	3.4.4	3 mm	(1)
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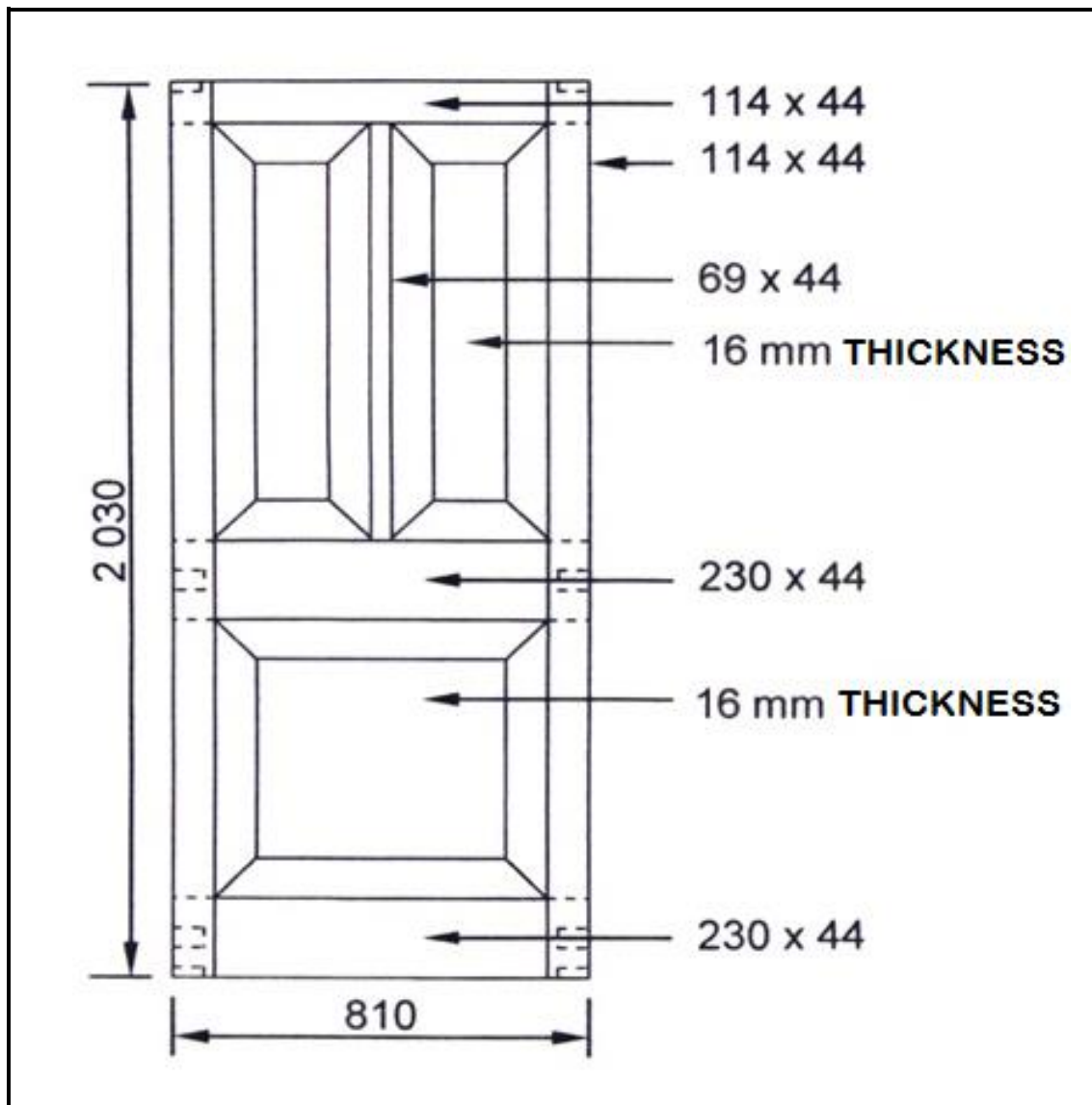
	3.4.5	713 mm	(1)
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	3.4.6	2 032 mm	(1)
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	3.4.7	20 mm	(1)
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3.5 ANSWER SHEET 3.5 (ANSWER SHEET B)

Three-panel door



ASSESSMENT CRITERIA	MARKS	LM
Placement of door	1	
Top rail	2	
Lock rail	2	
Top raised fielded panel	3	
Bottom raised fielded panel	2	
Bottom rail	3	
Measurements	2	
TOTAL	15	

(15)
[40]

QUESTION 4: ROOFS AND CEILINGS (SPECIFIC)

4.1	4.1.1	Couple roof truss	(1)
	4.1.2	W or Fink roof truss	(1)
	4.1.3	Howe or South African roof truss	(1)
	4.1.4	Lean-to-roof truss	(1)
4.2	4.2.1	F	(1)
	4.2.2	K	(1)
	4.2.3	G	(1)
	4.2.4	C	(1)
	4.2.5	J	(1)
	4.2.6	H	(1)
	4.2.7	I	(1)
	4.2.8	A	(1)
	4.2.9	D	(1)
	4.2.10	B	(1)
4.3	4.3.1	Rafter	(1)
	4.3.2	Tie beam	(1)
	4.3.3	Cornice	(1)
	4.3.4	Plaster	(1)
	4.3.5	Brick wall	(1)
	4.3.6	Purlin	(1)
	4.3.7	Roof sheeting	(1)
	4.3.8	Wall plate	(1)

4.4 ANSWER SHEET FOR KING POST ROOF TRUSS (ANSWER SHEET C)

ANSWER SHEET 4.4 KING POST ROOF TRUSS

Assessment Criteria	Marks	LM
Rafter	2	
King post	1	
Tie beam	1	
Title	1	
Scale in print	1	
Neatness	2	
Application of scale	4	
Labels	3	
Total	15	

KING POST TRUSS

SCALE : 1:20

APPLICATION OF SCALE ✓✓
NEATNESS ✓✓

(15)

4.5 Cover the roof trusses / Finishing off the room / Dust / Temperature

(1)

4.6 Any TWO below:

- To allow access to the roof space
- To attend to the geyser
- For electrical wiring
- To install cables for television

(2 x 1)

(2)
[40]

QUESTION 5: CENTERING, FORMWORK, SHORING AND IRONMONGERY (SPECIFIC)

- 5.1 5.1.1 Temporary support to stabilise walls (1) while cracks are being repaired or when new or large openings are being made (1). (2)
- 5.1.2 Are used to provide temporary support to two parallel walls that are located between 9 metres and 15 metres apart (1), where one or both walls shows signs of failure (1). (2)
- 5.2 5.2.1 To carry the weight by transferring the forces to the keystones. (2)
- 5.2.2
- Choose a suitable scale and draw a horizontal line (birth line) of span and mark the middle point. (1)
 - Draw a perpendicular line through the middle of the mid-point (1) of the span line and mark the desired height (1). (2)
 - Connect the height mark diagonally with one of the bottom points of the arc. (1)
 - Half the diagonal and draw a perpendicular line (spring line) from where to cut the vertical line. (1)
 - This point (centre of percussion) is the radius of the segmental arch. (1)
- 5.2.3 Formal compound and full arch. (2)
- 5.3 5.3.1 A – Drawer or till lock (1)
B – Cut cupboard lock (1)
- 5.3.2 Drawer or till lock: Used in a horizontal position (1) and fitted into a recess for drawers and tills (1). (2)
- Cut cupboard: Fitted into a recess on the external surface of the door (1) and gives a neater appearance (1). (2)
- 5.4 5.4.1 Vertical clamps (1)
- 5.4.2 Metal collar / Yoke (1)
- 5.4.3 Lining material (1)
- 5.4.4 Laggings (1)
- 5.4.5 Bolts / Nut (1)
- 5.5 5.5.1 Any FOUR below:
- They are inserted under the bearers and props.
 - To support the formwork.
 - Wedges keep the different formwork components sturdy and fixed.
 - Wedges facilitate the raising or lowering of the formwork to a required height.
 - They are used for the levelling of formwork.
 - Wedges ease the striking of formwork after the concrete cured. (4)
- 5.6 Better bonding with concrete / Resist tensile forces better (1)

[30]

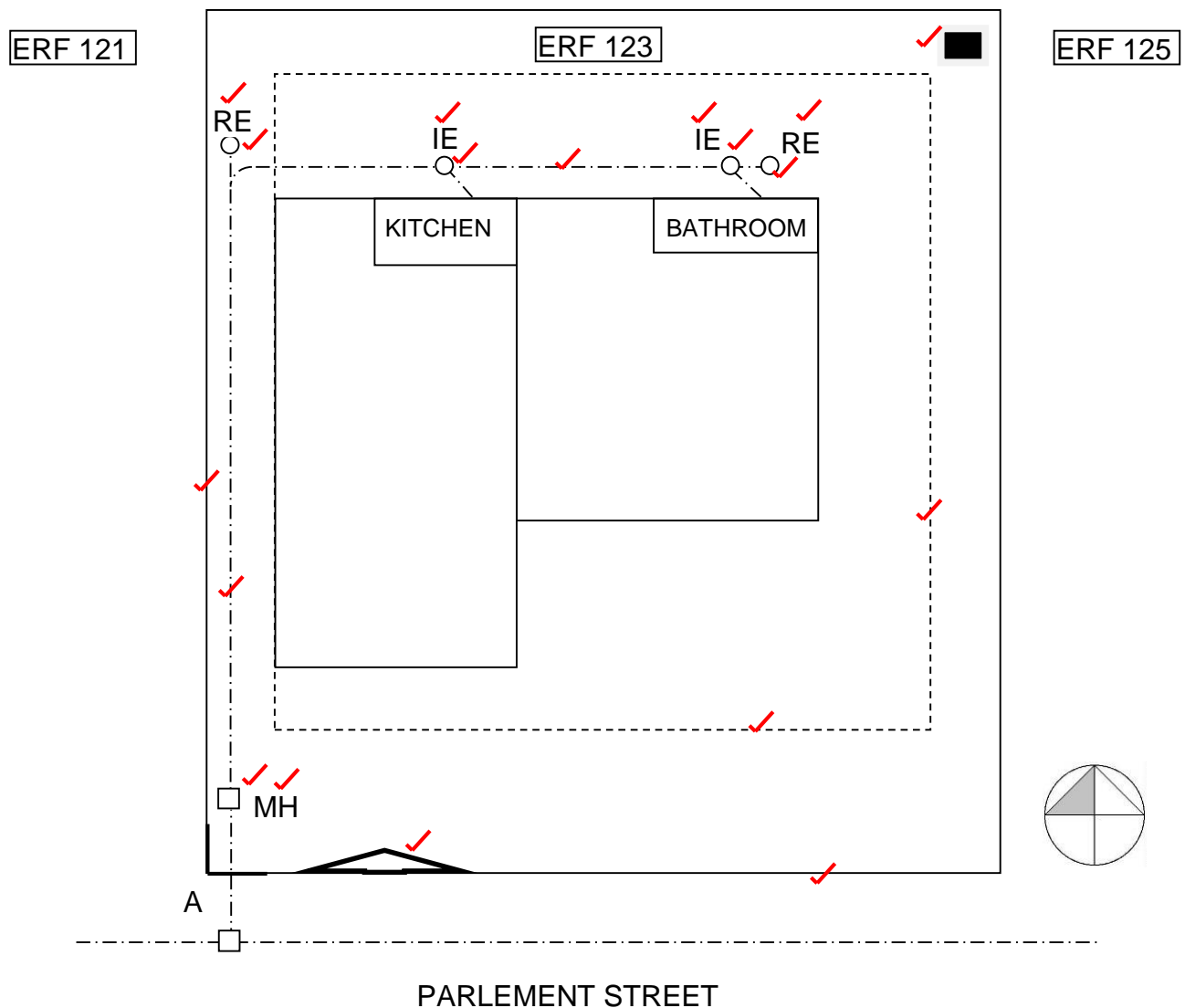
QUESTION 6: SUSPENDED FLOOR AND STAIRCASE (SPECIFIC)

- | | | | |
|-----|---|--|-----|
| 6.1 | 6.1.1 | Handrail | (1) |
| | 6.1.2 | Newel post | (1) |
| | 6.1.3 | Riser | (1) |
| | 6.1.4 | Half-landing | (1) |
| | 6.1.5 | Tread | (1) |
| | 6.1.6 | Stringer | (1) |
| 6.2 | 6.2.1 | 750 mm | (1) |
| | 6.2.2 | 150 mm | (1) |
| | 6.2.3 | 240 mm | (1) |
| 6.3 | 6.3.1 | C | (1) |
| | 6.3.2 | D | (1) |
| | 6.3.3 | A | (1) |
| | 6.3.4 | E | (1) |
| | 6.3.5 | B | (1) |
| 6.4 | 6.4.1 | To ensure the circulation of fresh air to ventilate the interior area below the floor. | (2) |
| | 6.4.2 | The floor joist rests on them. | (2) |
| | 6.4.3 | To prevent ants or termite infestations that could damage and eventually destroy the timber. | (2) |
| 6.5 | 6.5.1 | Floor boards | (1) |
| | 6.5.2 | Bearer | (1) |
| | 6.5.3 | Ant guard | (1) |
| | 6.5.4 | Damp proof coarse (DPC) | (1) |
| | 6.5.5 | Brick pier / Brick wall | (1) |
| | 6.5.6 | Foundation | (1) |
| 6.6 | (1) Prevent the damp in the debris to spread to (2) the floor parts/members | | (2) |
| 6.7 | 220 mm x 170 mm | | (2) |

[30]**TOTAL: 200**

ANSWER SHEET A	CIVIL TECHNOLOGY GENERIC	NAME: _____
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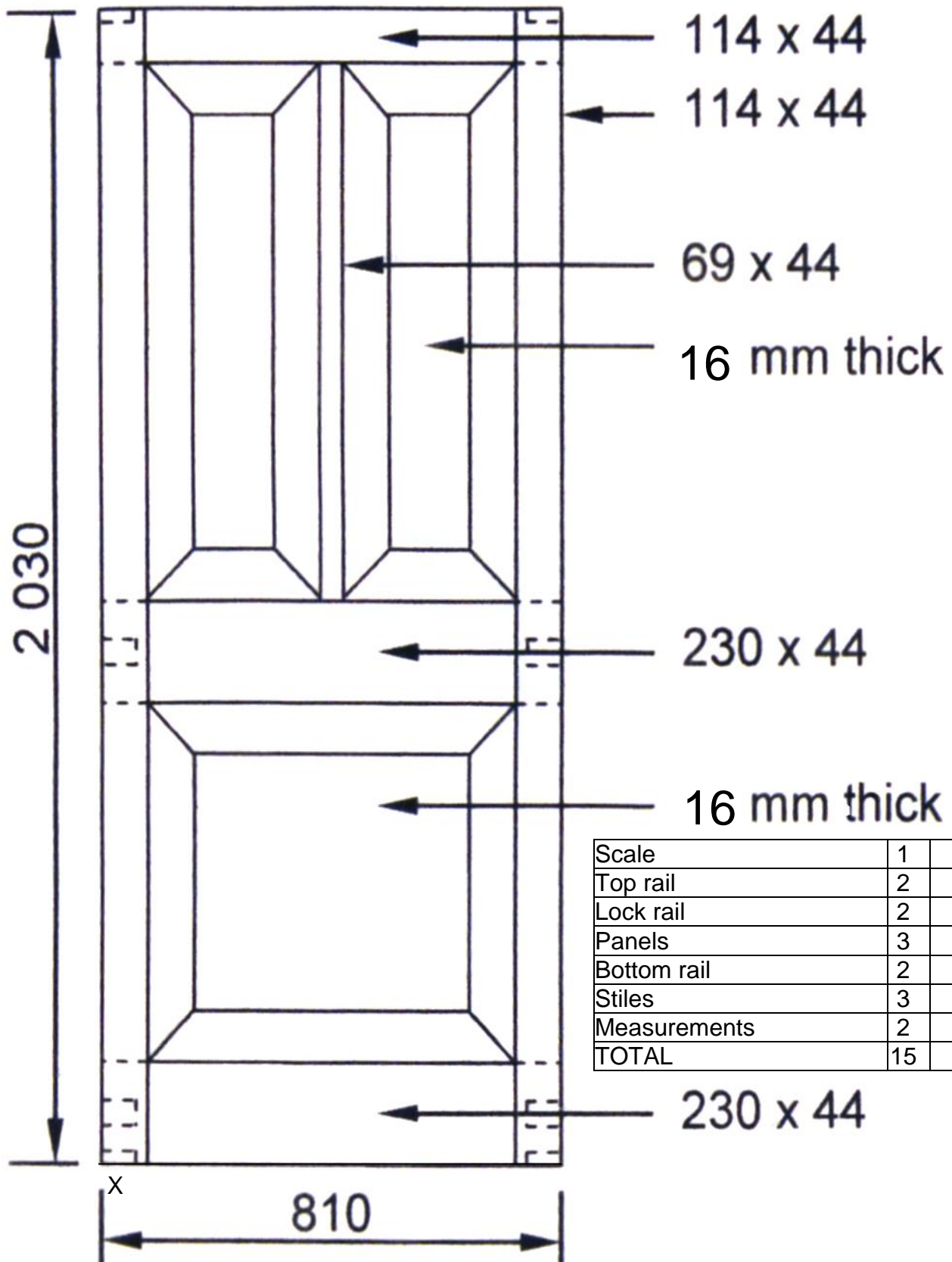
2.1 Use the information on ANSWER SHEET A and complete the site plan to scale 1 : 200.



Site boundaries	2	
Building lines	2	
Site entrance	1	
Datum level	1	
Main sewerage	2	
Branch sewerage	2	
Manhole	2	
Rodding eyes	4	
Inspection eyes	4	
TOTAL	20	

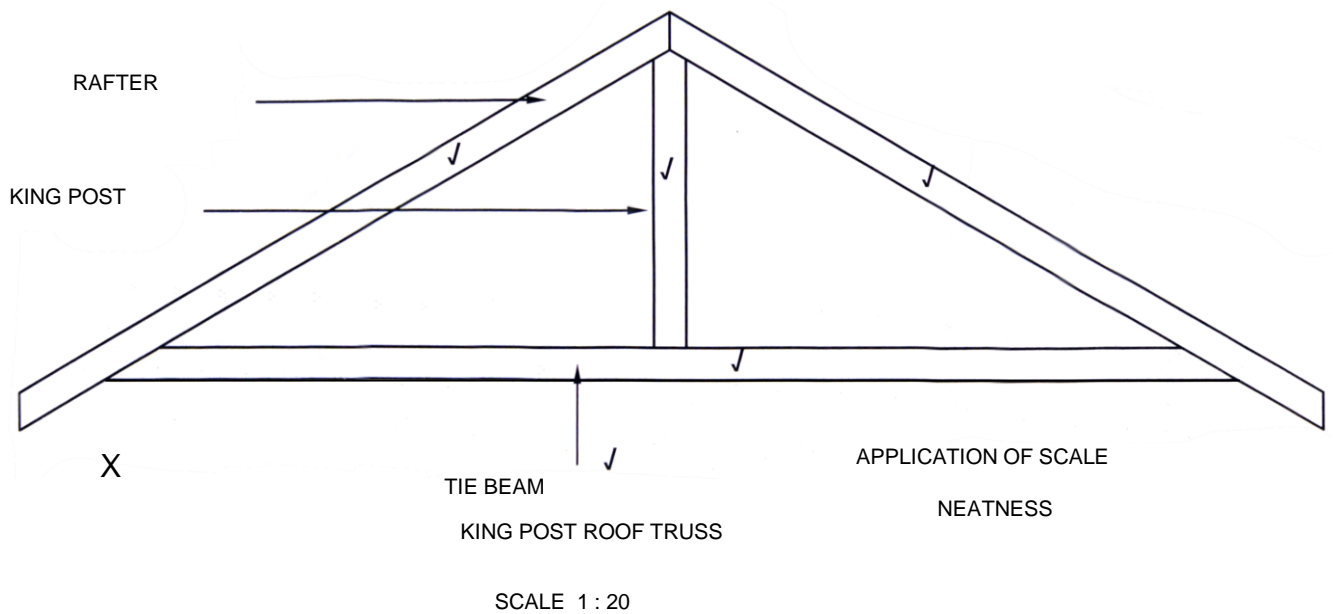
ANSWER SHEET B	CIVIL TECHNOLOGY WOOD WORKING	NAME: _____
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- 3.5 Draw on ANSWER SHEET B the completed front elevation of a three-panel door with raised and fielded panels. (15)



ANSWER SHEET C	CIVIL TECHNOLOGY WOOD WORKING	NAME: _____
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- 4.4 Use ANSWER SHEET C and draw to scale 1 : 20 the front view of a king post roof truss. (15)



Rafter	2	
King post	1	
Tie beam	1	
Title	1	
Scale in print	1	
Neatness	2	
Scale	4	
Labels	3	
TOTAL	15	