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REPUBLIC OF SOUTH AFRICA

JUNE EXAMINATION GRADE 12

2026

MARKING GUIDELINES

**CIVIL TECHNOLOGY:
WOODWORKING**

16 pages



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**INSTRUCTIONS FOR THE MARKERS****1. Markers should:**

- Familiarise themselves with the question and answers before evaluating the responses of candidates.
- Always interpret the responses of the candidates within the context of the question.
- Consider any relevant and acceptable answer during pre-marking but adhere strictly to the answers after finalisation of the marking guidelines.
- There are TWO approaches to answering questions; these are (1) to describe and (2) to explain.
 - If a candidate is required to explain, e.g. a process in 4 steps, only the first 4 responses should be considered.
 - If however a candidate is required to e.g. to explain or describe how to transfer heights from one point to another using a transparent pipe level we need to consider that candidates may write a long description, not necessarily well organised, as an intellectual response may do. In this case the marker needs to evaluate the complete statement to judge if the candidate explained the required outcome satisfactorily and allocate marks on merit. The marker should apply his/her professional judgement with these types of questions.
- Mark what the candidate wrote and do not award marks for answers that the marker thinks the candidate meant based on what was written.
- Indicate the tick or cross at the position where the mark needs to be awarded or where the candidate made the error.
- Accept the letter corresponding to the correct answer as well as the answer written in full in multiple-choice questions.
- Accept incorrect spelling in one-word answers unless the spelling changes the meaning of the answer.

2. For calculations:

- A mark is only awarded if the correct unit is written next to the answer.
- If TWO marks are awarded ONE mark is awarded for the answer and ONE mark for the correct unit.
- Where the candidate made a principle error, e.g. added instead of multiplying, no marks will be awarded for the steps. If the answer is correct according to what the candidate did, the mark for the answer can be awarded for the application of skills.
- Where an incorrect answer could be carried over to the next step, the first answer will be deemed incorrect. However, should the incorrect answer be carried over correctly, the marker has to recalculate the values, using the incorrect answer from the first calculation. If correctly used, the candidate should receive the full marks for subsequent calculations.
- Markers should consider when and where a candidate has rounded off in a calculation, as well as the subsequent effect it has on the final answer obtained. The calculation should therefore be awarded marks on merit.
- Alternative methods of calculation must be considered, provided that the correct answer is obtained.





3. When marking drawings:

- The member for which the mark should be awarded should be drawn correctly in the correct position to receive a mark.
- A member incorrectly drawn but wrongfully repeated in another position will be awarded the mark for the repeated incorrect member provided that the marking guideline provide for TWO or more marks for that member (positive marking).
- Marks can only be awarded for a label if the label is correctly indicating the correct member.
- Scale drawings should always be marked using an appropriate mask.

When a candidate drew the wrong drawing, e.g.:

- A horizontal section instead of a vertical section, no marks will be allocated to the drawing as the candidate did not respond to the expected outcome.
- If an orthographic view instead of sectional view is presented, no marks will be allocated to the drawing as the candidate did not respond to the expected outcome.
- If an orthographic view instead of an isometric view is presented, no marks will be allocated to the drawing as the candidate did not respond to the expected outcome.
- If the incorrect drawing was drawn, the candidate can be awarded marks only for what was asked but mark/s for the correctness of the drawing will not be awarded.



**QUESTION 1 OHS, MATERIALS AND TOOLS**

- 1.1 1.1.1 Oil or water-based paint ✓
- 1.1.2 Increase the strength of concrete ✓
- 1.1.3 Electrolysis ✓
- 1.1.4 Plastic ✓
- 1.1.5 Zinc ✓ (5)
- 1.2 1.2.1 A – Guardrail ✓
B – Kickboard OR toe-board ✓
C – Base ✓ (3)
- 1.2.2 Independent scaffolding ✓ (1)
- 1.2.3 1 m **OR** 1 000 mm ✓ (1)
- 1.3 1.3.1 Rawl bolt/Coach screw with a plug/Threaded rod/ Bolt and nut/Plastic plug with a screw ✓ (1)
- 1.3.2
- Are strong fasteners ✓
 - Resists pull out failure ✓
 - Have excellent mechanical properties
 - Have excellent carrying capacity/ability/ carry heavy weight
 - Are suitable for tensile strength and yield stress
 - Are suitable for variance of hole sizes.
- ANY TWO OF THE ABOVE. (2)
- 1.3.3
- Drill holes into the pier and remove the debris ✓
 - Remove bolts and washers and insert shields into holes ✓
 - Insert bolt with washers through the hinges and tighten ✓
- OR**
- Drill holes into the pier and remove the debris
 - Insert plastic plugs into the holes
 - Insert Rawl bolts/coach screws with plugs/threaded rods/bolts/ plastic plugs with screws through the hinges and tighten (3)




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1.4 1.4.1 Multi-detector ✓ (1)

1.4.2 Care of the multi-detector:

- Place the multi-detector in its holder directly after use. ✓
- Do not bump the instrument against objects or drop it. ✓
- Protect the multi-detector against moisture and direct sunlight.
- If the measuring tool is not used for a long period, remove the battery.
- Wipe away dirt or spots with a dry, soft cloth.
- Switch off the device before storing.

ANY TWO OF THE ABOVE.

(1)

- 1.5
- Wheelbarrow ✓
 - Trolley ✓
 - Builder's hoist
 - Truck
 - Crane
 - Tractor
 - Conveyor
 - Forklift

(2)

[20]

QUESTION 2: GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)

NO.	QUESTIONS	ANSWERS	MARKS
1	Identify the elevation in FIGURE A.	South Elevation ✓	1
2	Describe the type of house that is indicated in FIGURE A.	Double-storey house/Building/Multi-storey building ✓	1
3	Identify number 1.	Ridge Capping/Ridge tile/Ridge plate/Ridge ✓	1
4	Identify number 3.	Fascia board ✓	1
5	Identify number 4.	Overhang/Eave/Dimension line ✓	1
6	Identify the fastener indicated by number 5.	Holder bat/Clamp/Clip ✓	1
7	Identify number 6.	Window/Window frame/Casement/Casement frame ✓	1
8	Identify number 7.	Shoe/Down pipe outlet/Spout ✓	1
9	Identify number 8.	Natural ground level/NGL ✓	1
10	What does <i>DPM</i> stand for, as indicated in the notes?	Damp proof membrane ✓	1
11	Identify number 10.	Built-in cupboard/BIC ✓	1
12	Recommend a suitable material that can be used for the	Fibre cement/Galvanised sheeting/Sheet ✓	1


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NO.	QUESTIONS	ANSWERS	MARKS
	manufacturing of number 2 in FIGURE A.	metal/Timber/Wood/Plastic/Fibre glass/Aluminium sheeting ✓	
13	Name the TWO elevations on which number 2 is installed.	West elevation ✓ East elevation ✓	2
14	Describe the purpose of number 3.	The gutter is fixed against it ✓ It finishes off the roof Protect roofs/rafters from rainwater.	1
15	Deduce ONE feature that has been omitted from the elevation in FIGURE A.	Stairs missing at the door ✓ Sill missing at the window	1
16	Recommend any TWO sanitary fitments carrying wastewater, other than a bath, that can be installed in the room indicated by number 11.	Hand basin/Wash hand basin/Hand basin/Basin/WB/WHB/HB ✓ Shower/SH ✓	2
17	What sanitary fixture carrying soil water can be installed in the room indicated number 12?	Water closet/WC ✓ Bidet/BT Urinal	1
18	Describe the error that appears at number 6 in the elevation in FIGURE A.	The two side windows are opening to the wrong sides/No window sill/The window drawn in FIGURE A is not the same as that in the window schedule/Window opening ✓	1
19	State the reference code for this plan.	QP 4 - 2020 ✓	1
20	Which room will number 13 serve?	Bedroom 2 ✓	1
21	What does the line between numbers 13 and 14 represent?	Electrical wiring/cable/connection Wiring/Wiring from light switch to light/Shows which switch operates which electrical fitting ✓	1
22	Differentiate between number 15 in FIGURE B and number 17 in the notes.	15: Single tube fluorescent light/✓ 17: Double/ tube fluorescent light ✓ 15: Will use less electricity/ Watt than 17 15: Will provide less light than 17 15: Running cost will be cheaper than 17 15: Has one tube/1 x 40 Watt 17: Has two tubes/2 x 40 Watt	2
23	Explain the installation of brick force from the top of the window to the wall plate, as indicated by the architect.	Brick force must be installed between every course above the window up to wall plate ✓	


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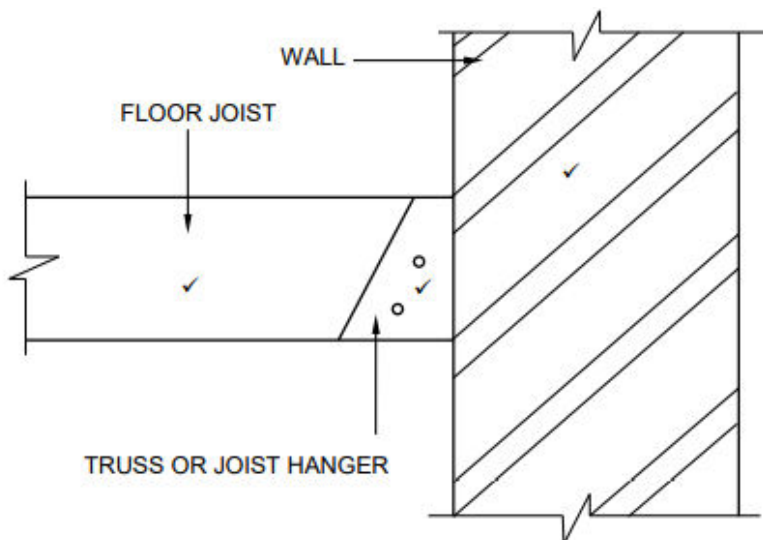
24	Recommend a possible finish for the outside walls of the house.	Face bricks Plaster and paint/Plaster/ Paint/Plaster finish (Smooth finish/ Splatter finish/Wavy finish/Bagging finish) Cladding/Tiling ✓	1
25	Deduce from FIGURE 2 which elevations does not have windows.	East elevation ✓	1
26	Deduce the thickness of the external wall in FIGURE 2.	220 mm ✓	1
27	Name the material that can be used to close the open sides of number 16.	Wood/Timber/Stainless steel/Mild steel/Steel/Aluminium/Glass/ Perspex ✓	1
28	Name the town in which the proposed dwelling will be build.	• Cradock ✓	1
29	Calculate the area of the bathroom. Show ALL calculations. Give your answer in m ² .	$l \times b$ $= 2 \text{ m} \checkmark \times 2 \text{ m} \checkmark$ $= 4 \text{ m}^2 \checkmark$ OR 2 000 mm x 2 000 mm $= 4 \text{ m}^2$	3
30	Calculate the total length of the wall on the eastern side of the building. Show ALL calculations. The length must be indicated in meters.	220 ✓ + 3 000 ✓ + 110 ✓ + 1 400 + 110 + 2 000 ✓ + 220 ✓ $= 7\,060 \text{ mm}$ $= 7,06 \text{ m} \checkmark$ OR 220 + 3 000 + 110 + 3 510 + 220 $= 7\,060 \text{ mm}$ $= 7,06 \text{ m}$	6
		TOTAL:	40



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**QUESTION 3: QUANTITIES AND JOINING**

- 3.1 3.1.1 Wall plug/ Rawl plug ✓ (1)
- 3.1.2 Screw ✓ (1)
- 3.1.3 Gipping and holding screws when inserted into a wall ✓ (1)
- 3.1.4 Grey ✓ (1)
- 3.2 3.2.1 E: Cornice ✓
F: Cross brander ✓
G: One brick wall ✓ (3)
- 3.3 3.3.1 Double bare-faced mortise and tenon joint ✓ (1)
- 3.3.2 Where the rail is thinner than the stile and it is best to keep the mortise near the middle of the stile. It can be used for manufacturing doors. ✓ (1)
- 3.4
- 
- (3)
- 3.5 Thread diameter ✓ (1)
- 3.6 3.6.1 Gang nail ✓ (1)
- 3.6.2 Bolt and nut ✓ (1)
- 3.6.3 Screw ✓ (1)





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3.7

A	B	C	D	
3.7.1			Number of purlins needed:	
			= Number of purlins = $\frac{\text{Length of rafter}}{\text{Distance between centres}}$	
			= <u>3,6</u> ✓ 0,9 ✓	
			= 4 purlins ✓	
				(3)
3.7.2			Length of purlins needed:	
<u>4/2</u> ✓	<u>9,3</u> ✓	<u>74,4 m</u> ✓	= 9 000 + 150 + 150	
			= 9 300 mm ✓	
			= 74,4 m purlins needed	
				(4)
3.7.3			Number of roof trusses needed:	
			Internal measurement = 9000 – 220 – 220 = 8 560 mm ✓	
			= <u>8,56</u> ✓ +1 roof truss ✓ 1,4 ✓	
			= 6,11 + 1 roof truss ✓	
			= 7 + 1 roof truss ✓	
			= 8 roof trusses ✓	(7)

QUESTION 4: CASEMENTS, DOORS AND WALLPANELLING

- 4.1 4.1.1 Skirting ✓ (1)
- 4.1.2 Mullion ✓ (1)
- 4.1.3 Putty' ✓ (1)
- 4.1.4 Tongue and groove ✓ (1)
- 4.1.5 Top rail ✓ (1)
- 4.2 4.2.1 Fanlight ✓ (1)
- 4.2.2 The purpose of a fanlight:
- Allow more light into the room ✓
 - Allow more air circulation
 - Aesthetically pleasing
 - Appealing look/Decorative
- ANY ONE OF THE ABOVE (1)



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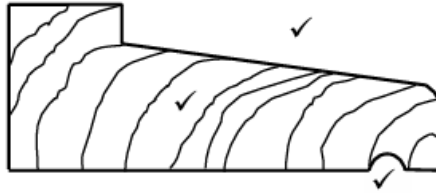
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4.2.3 Sill/window sill ✓

(1)

4.2.4



ASSESSMENT CRITERIA	
Correctness of shape	1
Throat/drip groove	1
Hatching	1
TOTAL	3

(3)

4.3 4.3.1 Concrete roof tiles are ...

- quite prone to chemical weathering. ✓
- fragile and must be handled with care. ✓
- heavier than most other roofing materials.
- not always uniform in colour.
- not able to resist extreme weather conditions.
- more expensive.
- more labour intensive.
- porous at times.

ANY TWO OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER.

(2)

4.3.2 Thatch roof:...

- Are extremely vulnerable to fire and must be treated with fire proof chemical before use ✓
- Are more expensive to install than other roof coverings ✓
- Demands more maintenance
- Are susceptible to decay because thatch is an organic material
- Need re-thatching of the ridge capping every four to six years

ANY TWO OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER.

(2)

4.3.3 IBR roof sheeting:

- Sharp edges can be dangerous. ✓
- If sheets are too thin, they may bend when stepped on. ✓
- The sheets can rust along the edges if they have been cut using an angle grinder

ANY TWO OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER.

(2)

4.4 Mechanical graded timber:

- Indicates the quality/strength of timber. ✓
- Undergone mechanical tests using machines. ✓
- It is a reliable and consistent method to grade wood.
- It is easily available since the process is faster.

(2)

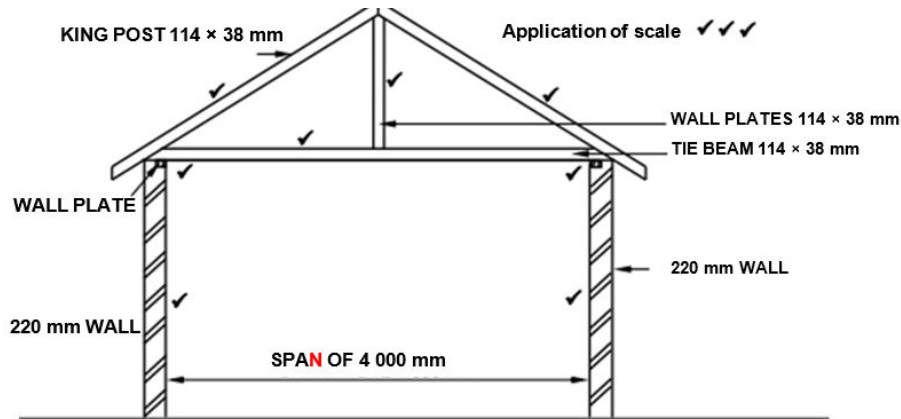


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4.5



ASSESSMENT CRITERIA	MARK
220 mm walls with inside span of 4 000 mm	2
Wall plates 114 × 38 mm	2
Tie beam 114 × 38 mm	1
Rafters 114 × 38 mm	2
King post 114 × 38 mm	1
Correctness of drawing	1
Application of scale	3
ONE or TWO incorrect = 3	
THREE or FOUR incorrect = 2	
More than FIVE incorrect = 1	
NO measurements correct = 0	
TOTAL:	12
Incorrect response, forfeits truss marks (4)	

(12)

4.6 4.6.1 A – Ceiling ✓

B – Cornice ✓

C – Capping ✓

D – Horizontal rough grounds ✓

(4)

- 4.6.2
- Allow for the first board to be nailed to the rounds ✓
 - To keep the boards in position ✓
 - The grounds make it easy to fit
 - Durable

ANY TWO OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER.

(2)

4.7 $\frac{1}{3}$ of the thickness of the lock rail, but nearest in the available size of the chisel ✓

(1)

4.8 B – Drip groove/throat ✓

E – Bottom rail of fanlight ✓

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(2)

[40]





QUESTION 5: ROOFS, CEILINGS, TOOLS, EQUIPMENT AND MATERIALS (SPECIFIC)

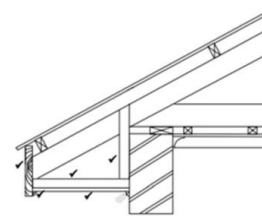
- 5.1 5.1.1 Belt sander ✓ (1)
- 5.1.2 If no personal safety equipment is worn ...
 • Dust and debris can cause eye and body injuries. ✓
 • Dust may damage your lungs. ✓
 • Dust and debris may damage clothes.
 • Loose clothing can be caught in moving parts of the machine and cause injuries.
 ANY TWO OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER. (2)
- 5.1.3 Prevent:
 • Corrosion/rust ✓
 • Machine from being damaged by moisture
 ANY ONE OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER. (1)
- 5.2 **Trap doors:**
 • Conventional ✓
 • Hinged trapdoor ✓ (2)
- 5.3 Differentiate between purlins and battens:
 Roof sheeting is secured to purlins. ✓
 Roof tiles/Slate tiles/Ceiling boards are secured to battens/brandering. ✓ (2)
- 5.4 5.4.1 Polypropylene ✓ (1)
- 5.4.2 Aluminum foil or any other fireproof material ✓ (1)
- 5.4.3 A synthetic or metal waterproofing membrane ✓ (1)
- 5.5 5.5.1 Radial arm saw ✓ (1)
- 5.5.2 Adjusting the saw:
 • Can cause injury to the operator ✓
 • Can cause the wood to get stuck in the blade ✓
 • Can put strain on the machine
 • Blade might get damaged
 ANY ONE OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER (2)
- 5.5.3 Taking care of the blade:
 • Make sure the timber is free of knots and nails ✓
 • Make sure the blade stays sharp ✓
 • Make sure the blade is properly fastened
 ANY ONE OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER (2)



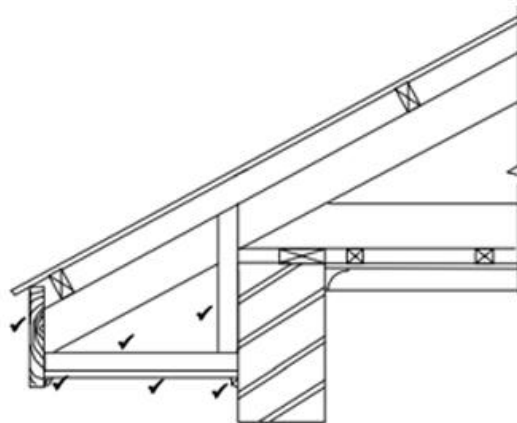

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5.5.4 Checking the timber:

- Operator can get injured ✓
- Material can get damaged ✓
- Blade can get damaged

ANY ONE OF THE ABOVE OR ANY OTHER ACCEPTABLE ANSWER (2)

5.6


Application of scale ✓



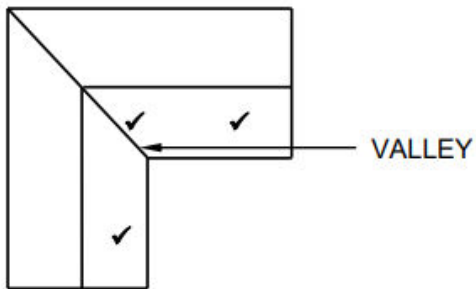
Application of scale ✓

ASSESSMENT CRITERIA	MARK
Fascia board: 230 mm x 38 mm	1
Hanger: 38 mm x 38 mm	1
Bearer: 38 mm x 38 mm	1
6 mm fibre-cement board on closed eaves	1
Quarter round mouldings below fibre-cement board	1
Application of scale	1
TOTAL	6

(6)
5.7
(3)

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ASSESSMENT CRITERIA	MARK
Inclined roof on top	1
Valley	1
Inclined roof on left	1
TOTAL:	3

5.8 Eaves are closed because ...

- it provides a more attractive finish. ✓
- it prevents birds from nesting in the roof.
- beam filling is not compulsory.

ANY ONE OF THE ABOVE

(1)

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5.9 Fibre cement boards are water resistant. ✓ (1)

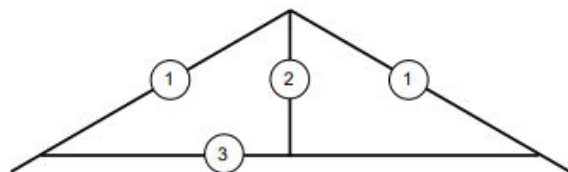
5.10 The trapdoor framework must be secured to the:

- Tie beam ✓
- Brandering ✓

(2)
[30]

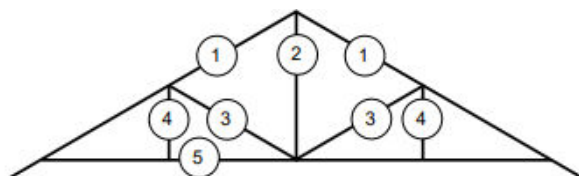
QUESTION 6: GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)

6.1



KING POST ROOF TRUSS

NO	ASSESSMENT CRITERIA	MARK
1	Rafters (Must include overhang)	2
2	King post	1
3	Tie beam	1
TOTAL:		4



SA HOWE ROOF TRUSS

NO	ASSESSMENT CRITERIA	MARK
1	Rafters (Must include overhang)	2
2	King post	1
3	Struts	2
4	Queen posts	2
5	Tie beam	1
TOTAL:		8

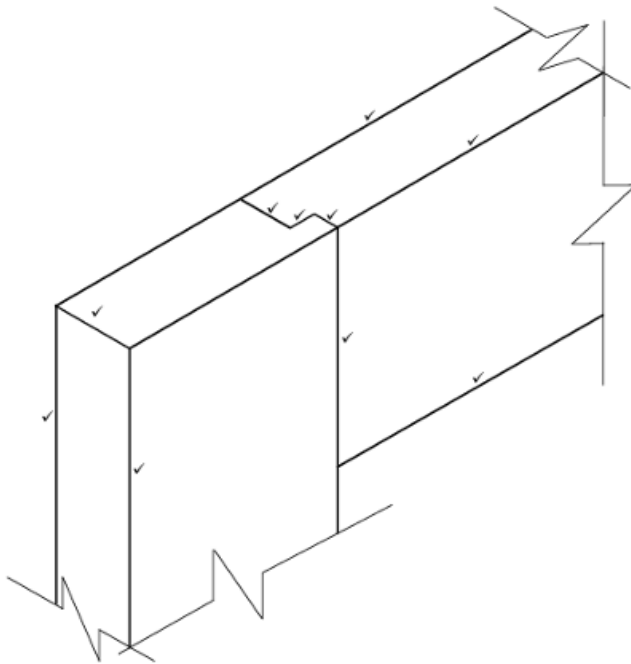
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6.2



DRAWING NOT TO SCALE
USE A MASK TO MARK THIS QUESTION

ASSESSMENT CRITERIA	MARK
Top rail	3
Stile	4
Rebate	3
TOTAL:	10

(10)

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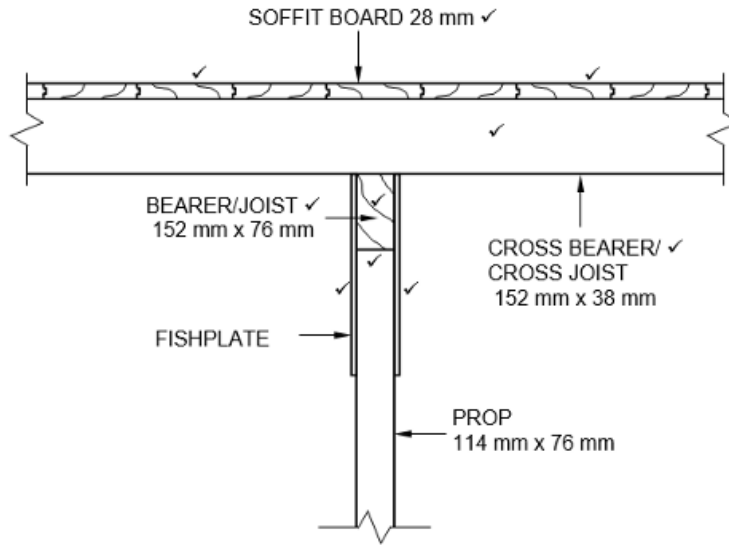


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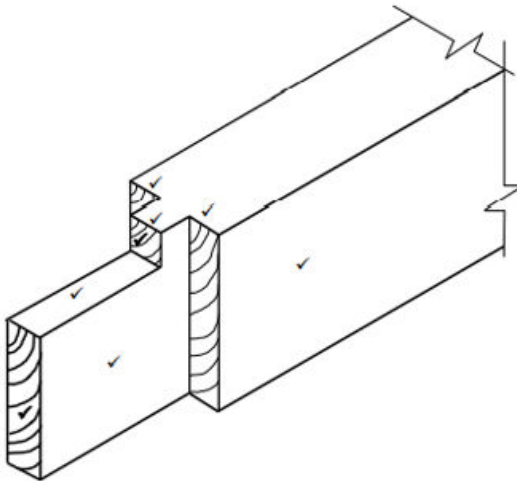
6.3



ASSESSMENT CRITERIA	MARK
Soffit board	2
Cross bearer	1
Bearer	1
Fishplates	2
Hatching	1
Any THREE labels	3
TOTAL:	10

(10)

6.4



ASSESSMENT CRITERIA	MARK
Rail	1
Haunch	4
Tenon	3
TOTAL:	8

(8)

[40]
TOTAL: 200

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