CPCCBC4004A
IDENTIFY AND PRODUCE ESTIMATED COSTS FOR BUILDING AND CONSTRUCTION PROJECTS
ASSESSMENT SUMMARY

The assessment activities for *CPCCBC4004A Identify and produce estimated costs for building and construction projects* cover all aspects of the unit of competency required. To demonstrate competence in this unit, a participant must undertake all tasks and complete them satisfactorily and consistently. For Apprentices and Trainees, this includes employer completion of the Employer Record Book (ERB).

Participants must read all the information given before starting any assessment task. The assessment tasks are intended to be equitable, fair and flexible. If a participant has any questions or requires alternative arrangements to be made such requests should be directed to their Trainer/Assessor, who should note such arrangements in the 'Assessor Comments' on the affected assessment. If a participant feels they are not yet ready to be assessed, they should discuss their options with their Trainer/Assessor.

To satisfactorily complete the assessment, the participant is required to answer all questions correctly and demonstrate their skills to industry standards. If a participant does not answer some questions or perform some tasks, they will be deemed 'Not Satisfactory' for the task and 'Not Yet Competent' for the unit of competency. The Trainer/Assessor is able to provide the participant with additional information on interpreting the assessment outcomes and provide guidance on the participant's options. Should a participant still be deemed 'Not Satisfactory' they will have the opportunity to undertake a supplementary assessment or appeal the result.

By signing the cover page for each assessment item, the participant acknowledges they understand the assessment instructions and requirements and consent to being assessed. The participant also verifies and assures the RTO that the work submitted is their own work.

Participant Name	Rebecca David

Task	**Assessment Results**	
Theory Exam	☐ Satisfactory	☐ Not Yet Satisfactory
Practical Assessment	☐ Satisfactory	☐ Not Yet Satisfactory
Outcome for Unit of Competency	☐ **Competent**	☐ **Not Yet Competent**

Assessor Name	
Assessor Signature	
Unit Competence Determination Date	Click here to enter a date.

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THEORY EXAM INSTRUCTIONS

- This exam will occur under standard assessment conditions.
  - An oral examination may be allowed under certain circumstances, whereby the Participant's answers will be documented by a party other than the Participant. This must be acknowledged in writing (e.g. FT001 and Assessor Comments)
- Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
- Please fill in the details below, providing your name, signature and date of assessment.
  - Your signature acknowledges that this is your own work.
- Assessors are to complete marking in pen of a different colour to the Participant.
- If a Participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
  - If a Participant changes their response in writing, they must put their initials next to the written change.
  - If a Participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name: Rebecca David

Participant signature: 

Date: 30/07/2020

Assessor name:

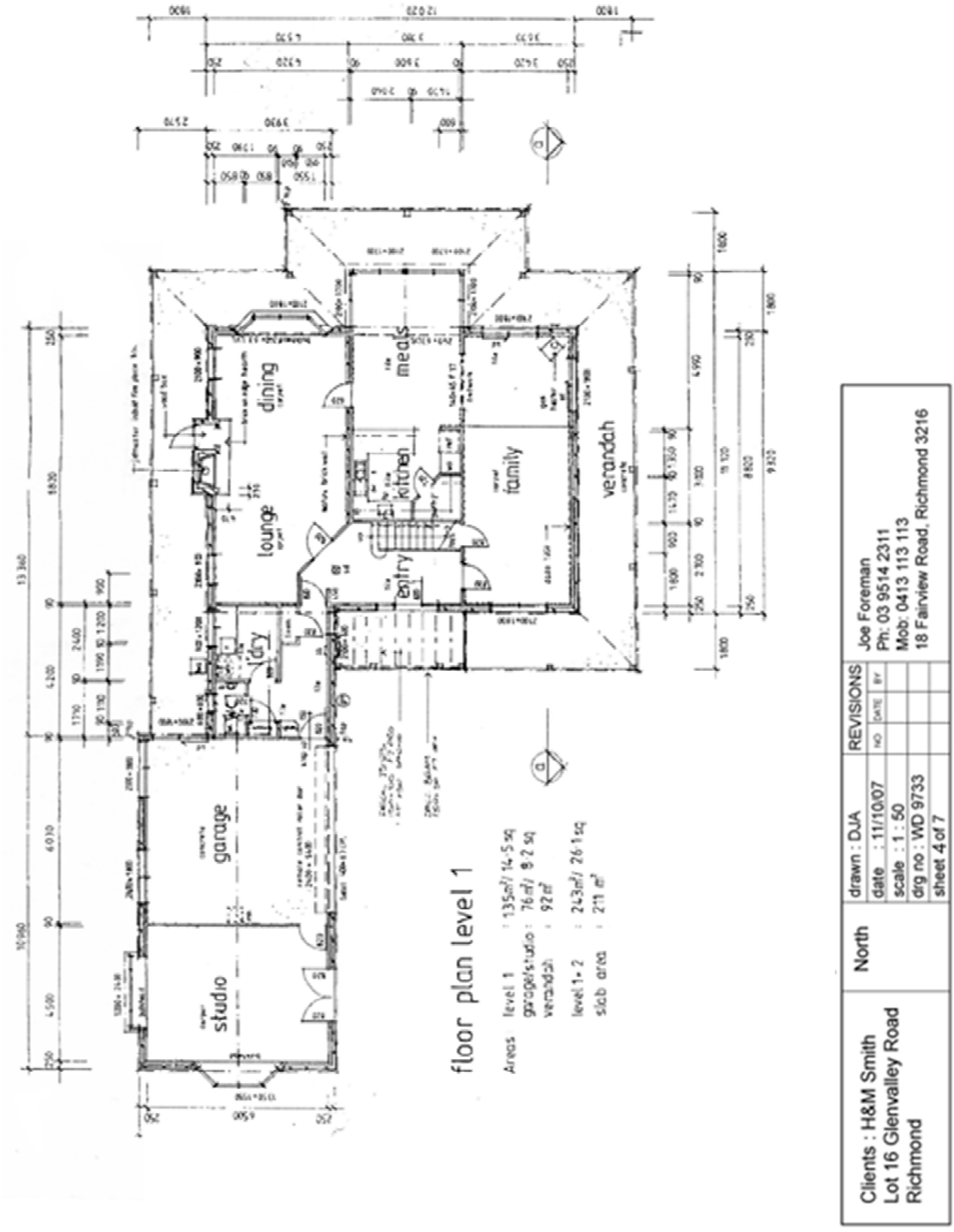
Assessor signature:

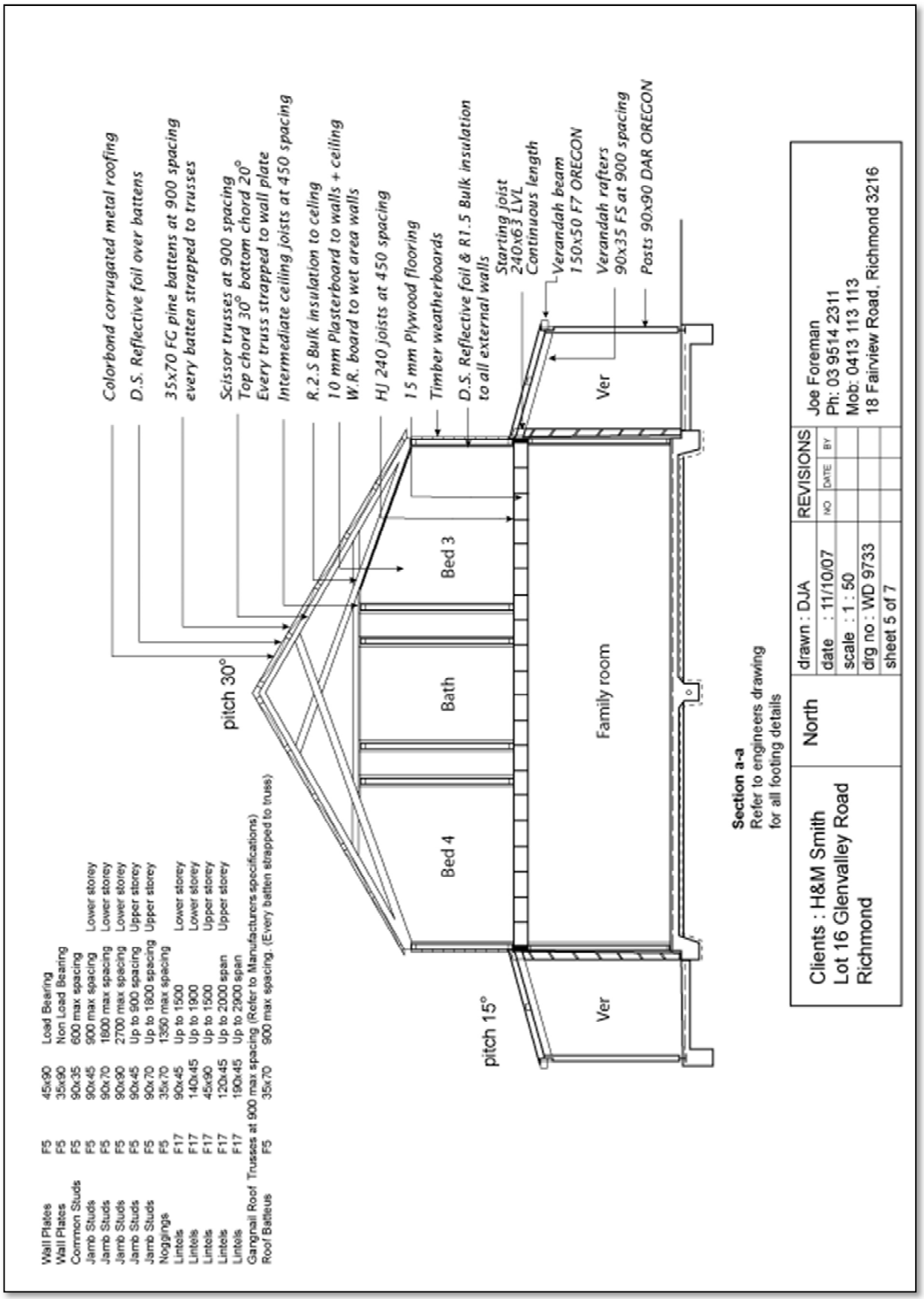
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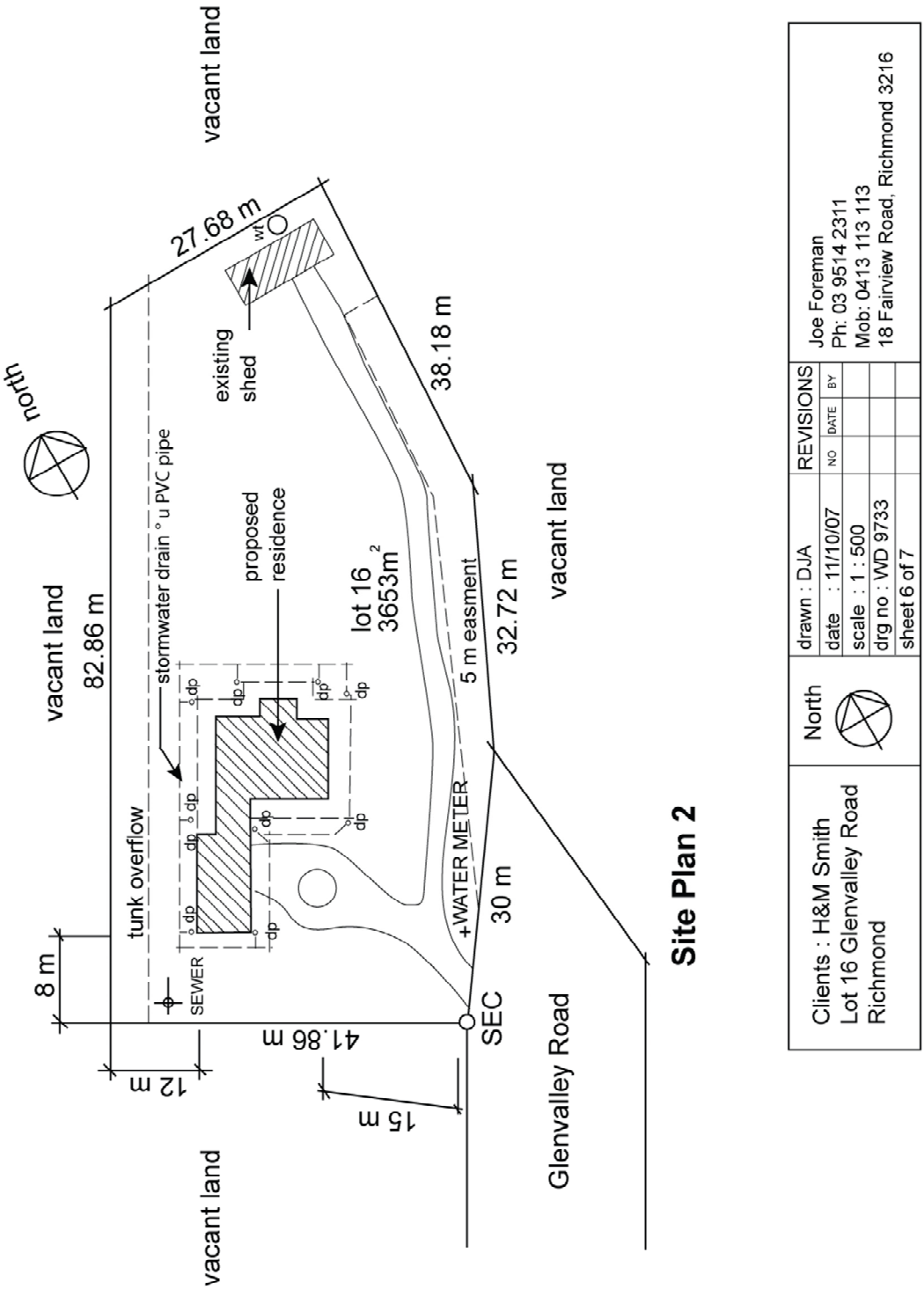
Number of questions	Number of questions answered correctly	Task outcome (Tick)	
37		Satisfactory	Not Yet Satisfactory
		☐	☐

ASSESSOR COMMENTS

Refer to the plans and specifications below to respond to Q1. to Q9.




Colorbond corrugated metal roofing
D.S. Reflective foil over battens
35x70 FG pine battens at 900 spacing every batten strapped to trusses
Scissor trusses at 900 spacing Top chord 30° bottom chord 20° Every truss strapped to wall plate
Intermediate ceiling joists at 450 spacing
R.2.5 Bulk insulation to celing
10 mm Plasterboard to walls + ceiling
W.R. board to wet area walls
HJ 240 joists at 450 spacing
15 mm Plywood flooring
Timber weatherboards
D.S. Reflective foil & R1.5 Bulk insulation to all external walls
Starting joist 240x63 LVL Continuous length
Verandah beam 150x50 F7 OREGON
Verandah rafters 90x35 FS at 900 spacing
Posts 90x90 DAR OREGON
pitch 30°
pitch 15°
Bed 4
Bath
Bed 3
Family room
Ver
Ver
Section a-a
Refer to engineers drawing for all footing details
Clients : H&M Smith
Lot 16 Glenvalley Road
Richmond
North
drawn : DJA
date : 11/10/07
scale : 1 : 50
drg no : WD 9733
sheet 5 of 7
REVISIONS
NO DATE BY
Joe Foreman
Ph: 03 9514 2311
Mob: 0413 113 113
18 Fairview Road, Richmond 3216
Wall Plates F5 45x90 Load Bearing
Wall Plates F5 35x90 Non Load Bearing
Common Studs F5 90x35 600 max spacing
Jamb Studs F5 90x45 900 max spacing Lower storey
Jamb Studs F5 90x70 1800 max spacing Lower storey
Jamb Studs F5 90x90 2700 max spacing Lower storey
Jamb Studs F5 90x45 Up to 900 spacing Upper storey
Jamb Studs F5 90x70 Up to 1800 spacing Upper storey
Noggings F5 35x70 1350 max spacing
Lintels F17 90x45 Up to 1500 Lower storey
Lintels F17 140x45 Up to 1900 Lower storey
Lintels F17 45x90 Up to 1500 Upper storey
Lintels F17 120x45 Up to 2000 span Upper storey
Lintels F17 190x45 Up to 2900 span
Gangnail Roof Trusses at 900 max spacing (Refer to Manufacturers specifications)
Roof Battens F5 35x70 900 max spacing. (Every batten strapped to truss)


vacant land
27.68 m
wt
existing shed
north
38.18 m
vacant land
82.86 m
stormwater drain ° u PVC pipe
proposed residence
lot 16
3653m2
5 m easment
32.72 m
vacant land
tunk overflow
+WATER METER
8 m
SEWER
30 m
41.86 m
SEC
12 m
15 m
Glenvalley Road
vacant land
Site Plan 2
Clients : H&M Smith
Lot 16 Glenvalley Road
Richmond
North
drawn : DJA
date : 11/10/07
scale : 1 : 500
drg no : WD 9733
sheet 6 of 7
REVISIONS
NO
DATE
BY
Joe Foreman
Ph: 03 9514 2311
Mob: 0413 113 113
18 Fairview Road, Richmond 3216

Q1. **Match the sheet numbers and document types by writing the appropriate letter next to each number in the centre column.**

Answer

Sheet Number		Answers	Document Type	
1	Sheet 4	1 - A	A	Floor plan
2	Sheet 5	2 - B	B	Section plan
3	Sheet 6	3 - C	C	Site plan

☐

Q2. **Which sheet number of Drawing WD 9733 identifies the storm water drainage for the proposed structure? Tick your response.**

Answer

Choice	Possible Answers
☐	Sheet 4
☐	Sheet 5
☑	Sheet 6

☐

Q3. **Identify the Volume and Parts of the NCC that outline the requirements for stormwater drainage for Classes 1 and 10, and Classes 2 to 9.**

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2, Section 3, Part 3.1.3.5	Volume 1, Section F, Part F1, F1.1 Stormwater Drainage

☐

Q4. **Which Australian Standard is referenced in the NCC with regards to storm water drainage?**

Answer AS/NZS 3500.3

☐

Q5. **What is the area of the verandah? Tick your response.**

Answer

Choice	Possible Answers
☐	76m^2
☑	92m^2
☐	135m^2
☐	211m^2
☐	243m^2

☐

Q6. **What is the pitch of the verandah roof?**

Answer 15º ☐

Q7. **What size are the verandah beams?**

Answer 150x50 ☐

Q8. **Which of the following Jamb Studs are to be used for both the upper and lower storeys? Tick all that apply.**

Answer ☐

Choice	Possible Answers
☑	90x45
☑	90x70
☑	90x90

Q9. **Identify three (3) subcontractors that may work on this construction project.**

Answer
Roofer
Plasterer
Joiner ☐

Q10. **Identify three (3) items of plant and/or equipment that may be used on this construction project.**

Answer
Excavator
Power tools
compressor ☐

Q11. **Identify the Volume and Part of the NCC that outlines the requirements for the timber weatherboards identified in Sheet 5.**

Answer
Volume 2
Part 3.5.4 Timber and Composite wall cladding ☐

3.5.4.2 Timber Wall Cladding

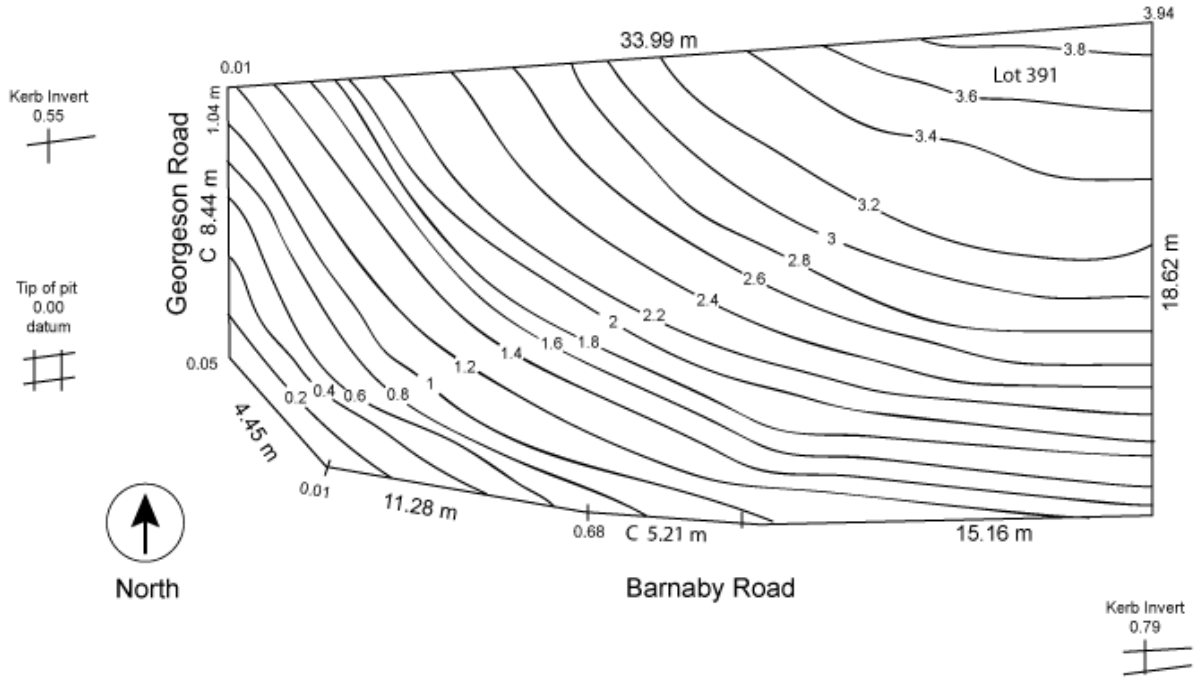
Q12. **Which Australian Standard is referenced in the NCC with regards to timber structures?**

Answer

AS 1720.1 Design of timber structures
AS 1720.5 Nailplated timber roof trusses
AS 1684.2 residential timber-framed construction - non cyclonic areas
AS 1684.3 residential timber-framed construction - cyclonic areas
AS 1684.4 residential timber-framed construction - non cyclonic areas (simplified)

☐

Refer to the contour plan below to respond to Q13. to Q15.



Q13. **What is the datum reading at the tip of the pit?**

Answer

0.00

☐

Q14. **What is the level at the kerb invert?**

Answer

0.55 and 0.79

☐

Q15. **True or False (Tick your response): The lowest point on the site is found at the northernmost point.**

Answer

☑	True
☐	False

☐

Q16. **True or False (Tick your response): A Gantt Chart may assist with determining the numbers of on-site personnel required and the time requirements for a project.**

Answer

☑	True
☐	False

☐

Q17. **Identify labour that may be required for non-contract elements of a construction project.**

Answer Labour required for non-contract elements would include office staff such as administration staff. This is know as company overheads.

☐

Q18. **Explain how the following methods may be used to calculate the costs for on-site work.**

Answer

Method	Explanation
Per hour	This method may be used to work out the cost of labour, hire of equipment or machinery.
Per unit	This method may be used to work out the cost of installing sanitary items, doors, fixtures and fittings.
Per metre	This method may be used for laying foundations, installing pipes.

☐

Q19. **Which of the following documents may you refer to when establishing material quantities for a construction project? Tick all that apply.**

Answer

Choice	Possible Answers

☐

☑	Plans
☐	Project contract
☑	Specifications
☐	Standard construction contracts

Q20. **True or False (Tick your response): The fast way to locate suppliers, such as manufacturers and wholesalers, is to find them online.**

Answer

☑	True
☐	False

☐

Q21. **Explain how each of the following factors affects supplier selection.**

Answer

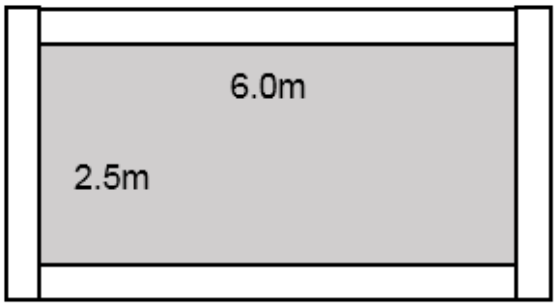
Factor	Impact
Location	When selecting a supplier consideration of the location is paramount because if they are distant to the location there may be longer delivery timeframes, extra freight / delivery costs. Particularly with regards to items coming from overseas, or if the project is remote.
Price	Price plays a part in the selection of a supplier however quality needs to be taken into consideration at the same time. No point paying less but the item does not last.
Reliability	As the project has timeframes that need to be met, it is imperative that suppliers are selected that can deliver the right items and on time each and every time.
Stability	It is good practice to select suppliers that are financial stable. If a company has been in business for a long time it means they have the financial stability to last through the ups and downs of business cycles.

☐

Supplier groups	Selecting more than one supplier for large groups of items is a good idea to avoid problems occurring due to one supplier not being able to meet their contract etc. This way you will have another one that will meet their contract and hence be able to install some items.

Read the following information to respond to Q22. to Q27.

The diagram below shows formwork that is required for a concrete slab.



The table below outlines the costs for this task.

Item	Cost
Timber	$2.50 per metre
Concrete	$50.00 per cubic metre (excluding GST)
Labour	$49.50 per hour

Q22. **Calculate the lineal meters of timber (150mm wide x 25mm thick) required to form up the edge of a concrete slab which is 6.0m x 2.5m x 150mm. Provide no allowance for waste. Show your answer to two decimal places.**

Answer

2.50m + 25mm = 2.55m
2.55m x 2 = 5.10m

6m x 2 = 12

12 + 5.10 = 17.10

Q23. **Use your response to Q22. to calculate how much the timber will cost. Show your workings and answer to two decimal places.**

Answer

17.10 lineal metres x $2.50 = $42.75 allowing for no wastage.

Q24. **Calculate how many cubic metres of concrete are required. Show your workings and answer to two decimal places.**

Answer 2.5 x 6 x 0.15 = 2.25

Q25. **Use your response to Q24. to calculate the cost of the required concrete. Show your answer to two decimal places and ensure it includes GST.**

Answer 2.25 x $50 = $112.50 + 10% = $123.75

Q26. **Calculate how much the labour will cost if the job takes 6 ½ hours. Show your workings and answer to two decimal places.**

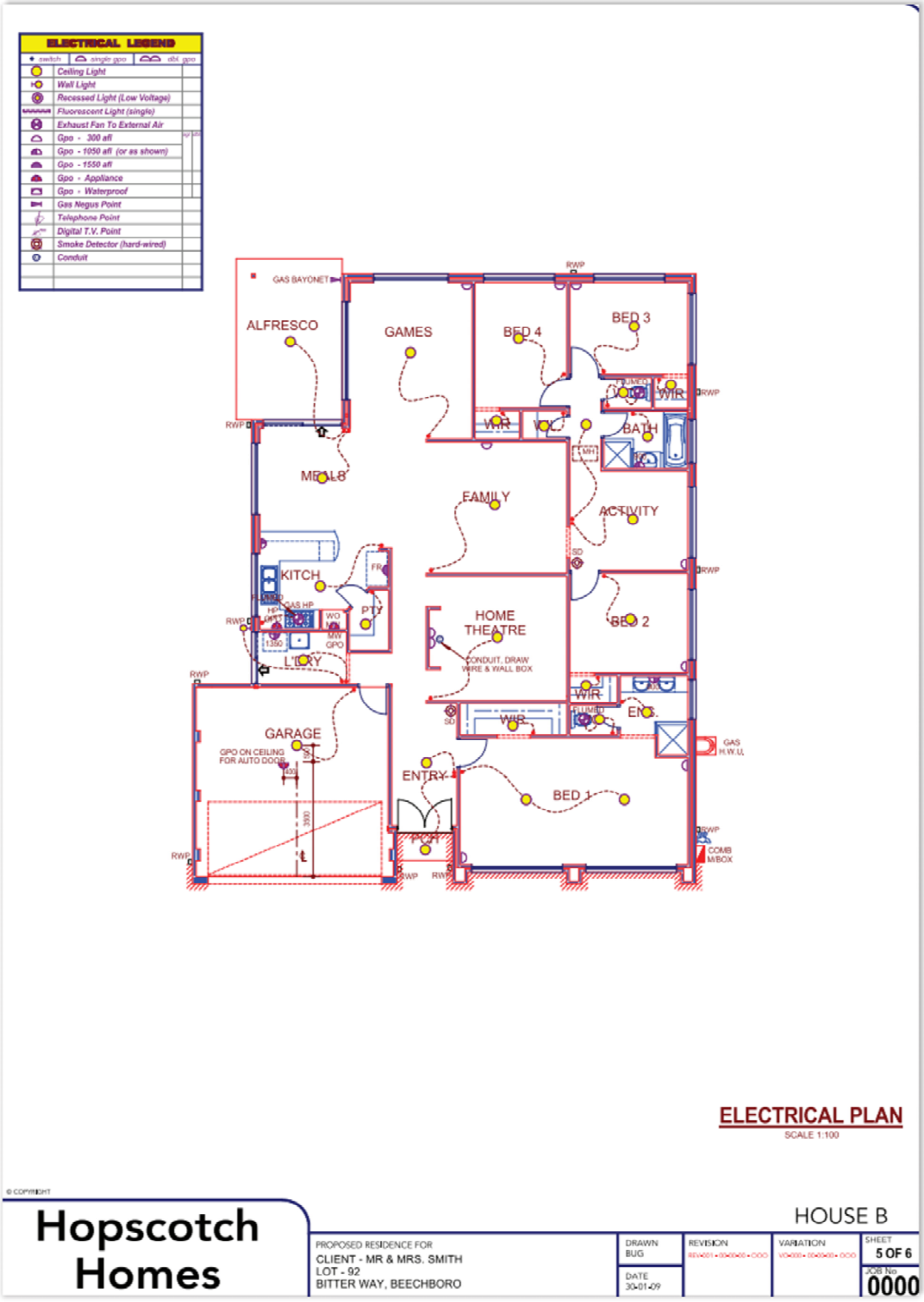
Answer 6.5 x $49.50 = $321.75

Q27. **Use your responses for Q23. Q25. and Q26. to calculate how much this project will cost. Show your workings and answer to two decimal places.**

Answer
$42.50 + 10% = $46.75
$123.75
$321.75 + 10% = $353.93

= $46.75 + $123.75 + $353.93 = $524.43 inc GST

Refer to the electrical plan below to respond to Q28. and Q29.



Source: https://www.dtwd.wa.gov.au/sites/default/files/teachingproducts/BC1944_CCBY.PDF

Q28. **Measure the required quantities for the items listed below.**

Answer

Quantity	Item
27	Ceiling light
1	Wall light
3	External light
3	Exhaust fan
2	Smoke detector

Q29. **The costs for each of the items are provided in the table below.**

Cost	**Item**
$49 each	Ceiling light
$29 each	Exhaust fan
$82 each	External light
$39 each	Smoke detector
$59 each	Wall light

Determine the total costs for each item (using the numbers from Q28.) and the total cost for all items.

Answer

Cost	Item
$1,323.00	Ceiling light
$59.00	Wall light
$246.00	External light
$87.00	Exhaust fan
$78.00	Smoke detector
$1,793.00	**TOTAL**

Q30. **Name one (1) organisation that provides workers' compensation insurance.**

Answer WorkCover Queensland

Q31. **Which of the following environmental costs should be considered when determining project costs? Tick all that apply.**

Answer

Choice	Possible Answers
☑	Approvals
☑	Environmental protection
☑	Permits
☑	Waste management

Q32. **List three (3) statutory costs that should be considered when determining project costs.**

Answer

Required licences
Registration of Vehicles
Training for Health and Safety Representatives

Q33. **Which two (2) of the following methods are commonly used when determining the profit on a project? Tick all that apply.**

Answer

Choice	Possible Answers
☐	Double the builder's cost
☑	Lump sum based on market conditions
☑	Percentage on builder's total cost

Q34. **True or False (Tick your response): Usually a percentage is added to the estimate to cover company overheads.**

Answer

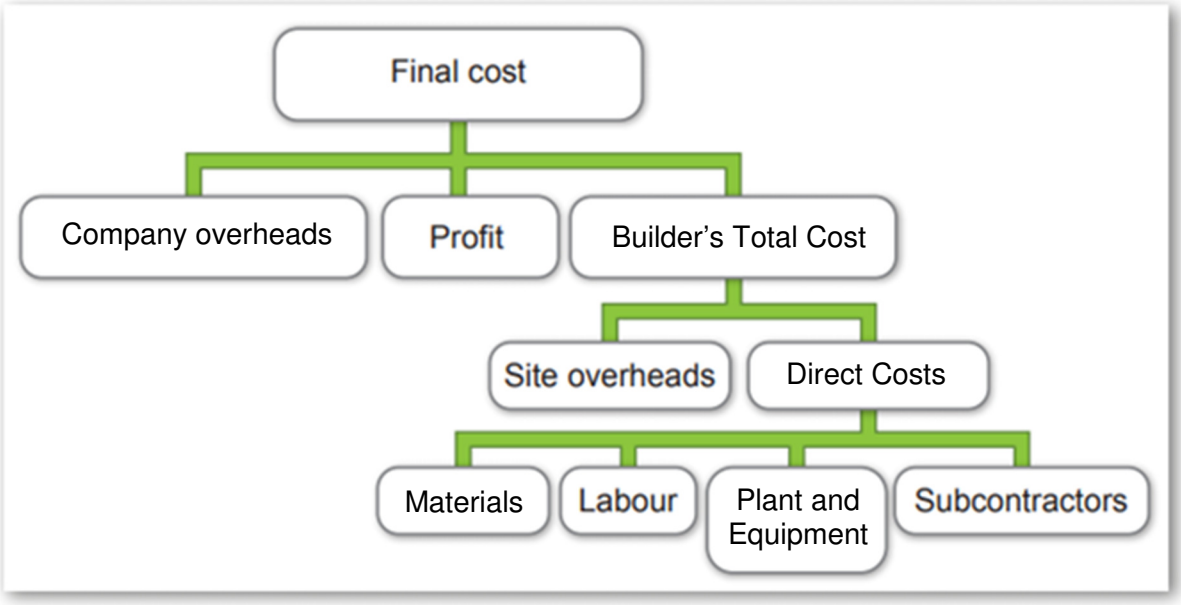
☑	True
☐	False

Q35. **Identify one (1) example of company overheads for each of the listed categories.**

Answer

Factor	Impact
Business premises	Rent
Staff and professional fees	Wages & Salaries
Transport	Fuel
Finance	Interest on Loans

Q36. **Fill in the blanks: Complete the following chart to identify what is included in the final cost for a project.**



Choose from Builder's total cost | Company overheads | Direct costs | Materials | Plant and equipment

Q37. **Which of the following should be included in a letter of quotation? Tick all that apply.**

Answer

Choice	Possible Answers
☑	Conditions to your price
☑	Discrepancies
☑	Final cost
☑	Invitation to proceed

☐

CPCCBC4004A
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PRACTICAL ASSESSMENT INSTRUCTIONS

- The following practical assessment will require the Participant to complete work related activities.
- The Assessor will conduct observations of the Participant's work to determine whether they display sufficient practical skills and knowledge.
- Please fill in the details below – providing your name, signature and date of assessment.
    - The Participant's signature acknowledges that the Assessor provided clear instructions and the Participant understood what was required to complete this assessment.
- The Assessor may substitute a Practical Task with an alternate task of equal value.
    - Alternate tasks must be fully documented by the assessor in the Assessor Comments area.

Participant name: Rebecca David

Participant signature: RDavid

Date: 30/07/2020

Assessor name:

Assessor signature:

Date: Click here to enter a date.

Task	Task outcome (Tick)	
	Satisfactory	Not Yet Satisfactory
Task 1 (Occasion 1)	☐	☐
Task 1 (Occasion 2)	☐	☐

ASSESSOR COMMENTS

CPCCBC4004A
IDENTIFY AND PRODUCE ESTIMATED COSTS FOR BUILDING AND CONSTRUCTION PROJECTS

Practical Task 1 (2X)

Description of task:
On two (2) occasions, a suitable observer is to verify the participant's ability to establish the estimated costs associated with the acquisition of materials and labour on building and construction sites, together with the application of relevant overhead costs and margins.

The participant is to gather evidence of how they have completed each component of the Practical Task, which is to be submitted with this Practical Assessment sheet. Evidence to be submitted may include a copy of a Bill of Quantities or similar estimate for a project that shows the following:

- Quantity calculations for material and labour requirements across the trades
- All other associated costs
- Overhead and Profit Margin allowances
- A copy of a quotation
- A copy of the plans and specifications, etc. for the project
- Variation documentation

The observer is to provide detailed comments on the tasks completed by the participant. The assessor is to verify the observer's comments in the Assessor Comments section, and provide the Practical Assessment outcome on the front cover of this document.

Resources required:
Project plans/drawings/specifications, Computer with costing software.

Assessment of task

Name of participant:	Rebecca David
Name of observer:	Mitch Hamrey
Role of observer (Confirm suitability to sign)	Contracts Manager
Email address of observer	Mitchell.hamrey@paynters.com.au
Signature of observer:	
Date:	Click here to enter a date. 21/07/2020

When completing the task, did the participant:	**Tick if satisfactorily completed. Provide comments if left unticked.**	
	1st Occasion	**2nd Occasion**
1.A. Identify, read and understand plans and drawings: • Interpreting levels, heights, gradients and other measurements • Make measurements and identify quantities that conform to standard industry practice (e.g. national codes, standards)	☑	☑
1.B. Identify types and numbers of appropriate on-site personnel and estimate the time required on-site, including labour hours for non-contract elements of on-site work.	☑	☑
1.C. Calculate costs or rates for required on-site work.	☑	☑

1.D. Identify physical resource requirements, producing lists of materials and calculated quantities against project or standard construction contracts.	☑	☑
1.E. Establish prices from suppliers for: • Materials and consumables • Plant or requirement requirements	☑	☑
1.F. Determine and apply estimates of unit costs, as appropriate.	☑	☑
1.G. Identify and apply costs of statutory/additional costs, including: • WorkCover requirements • Environmental Protection Agency requirements • Seeking approvals • Waste management site fees	☑	☑
1.H. Apply company overhead recovery and margins.	☑	☑
1.I. Using a costing software program, calculate completed estimated project costs for inclusion in a tender or bill.	☑	☑
1.J. Effectively communicate using the following methods: • Verbally using language/concepts appropriate to cultural differences • Non-verbal communication	☑	☑

The Participant's performance was: ☑ **Satisfactory** ☐ **Not Satisfactory**

OBSERVER COMMENTS