CPCCBC4004A
IDENTIFY AND PRODUCE ESTIMATED COSTS FOR BUILDING AND CONSTRUCTION PROJECTS

THEORY EXAM INSTRUCTIONS

- This exam will occur under standard assessment conditions.
  - An oral examination may be allowed under certain circumstances. Answers will be documented and FT003 (Oral examination declaration form) must be completed.
- 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.
- 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: Chloe McGregor

Participant signature: CMcgregor

Assessor name: _____

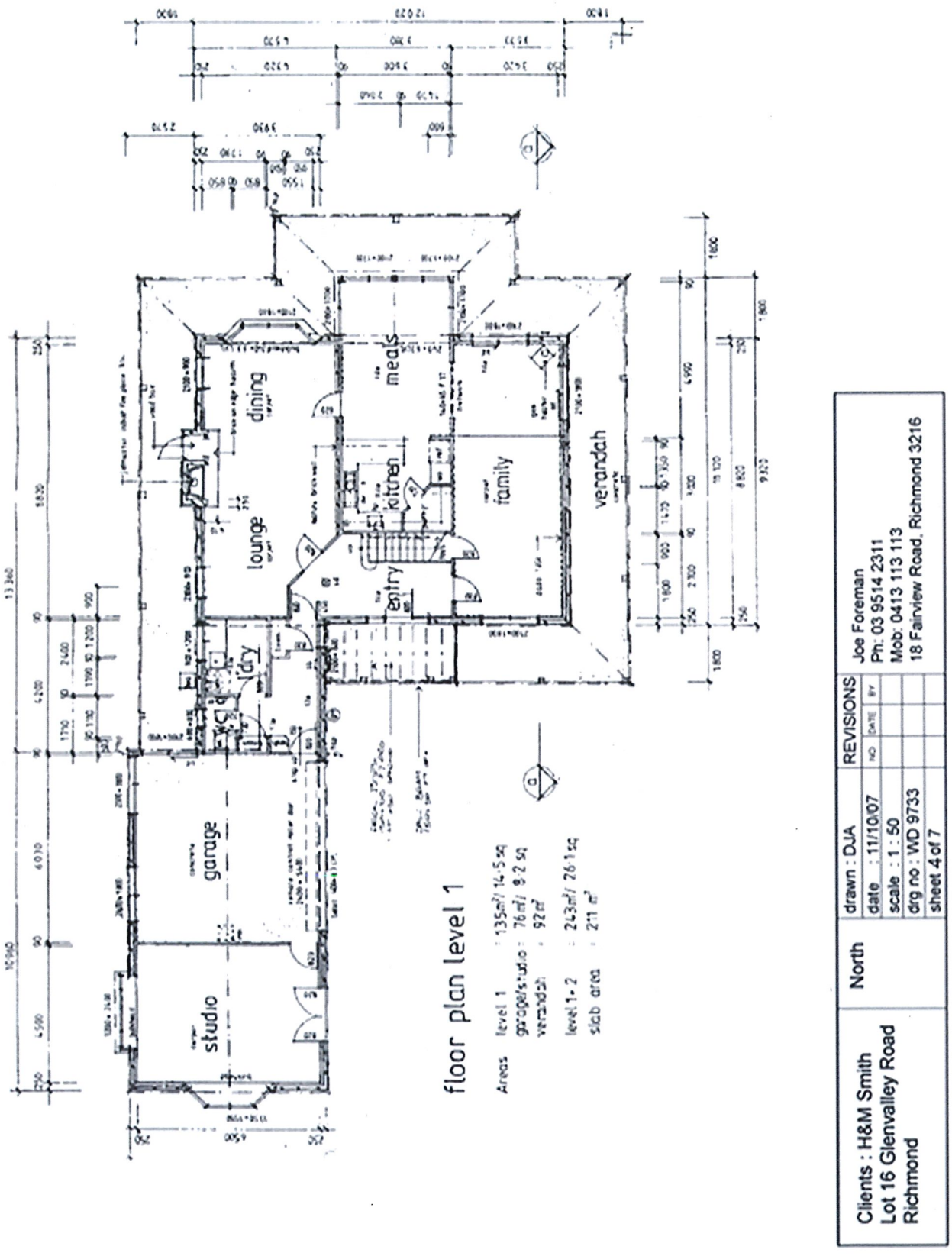
Assessor signature: _____

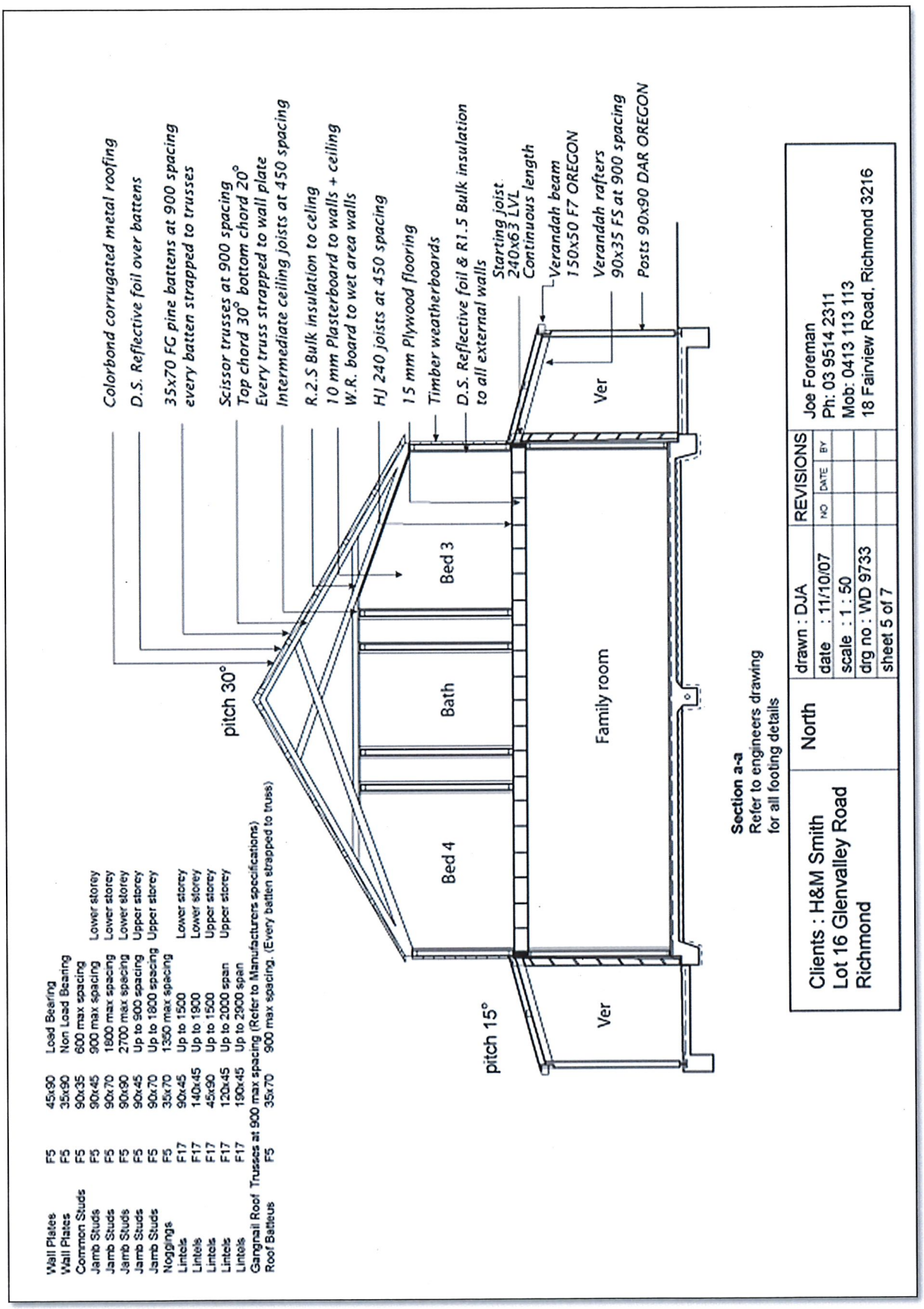
Date: Click here to enter a date.

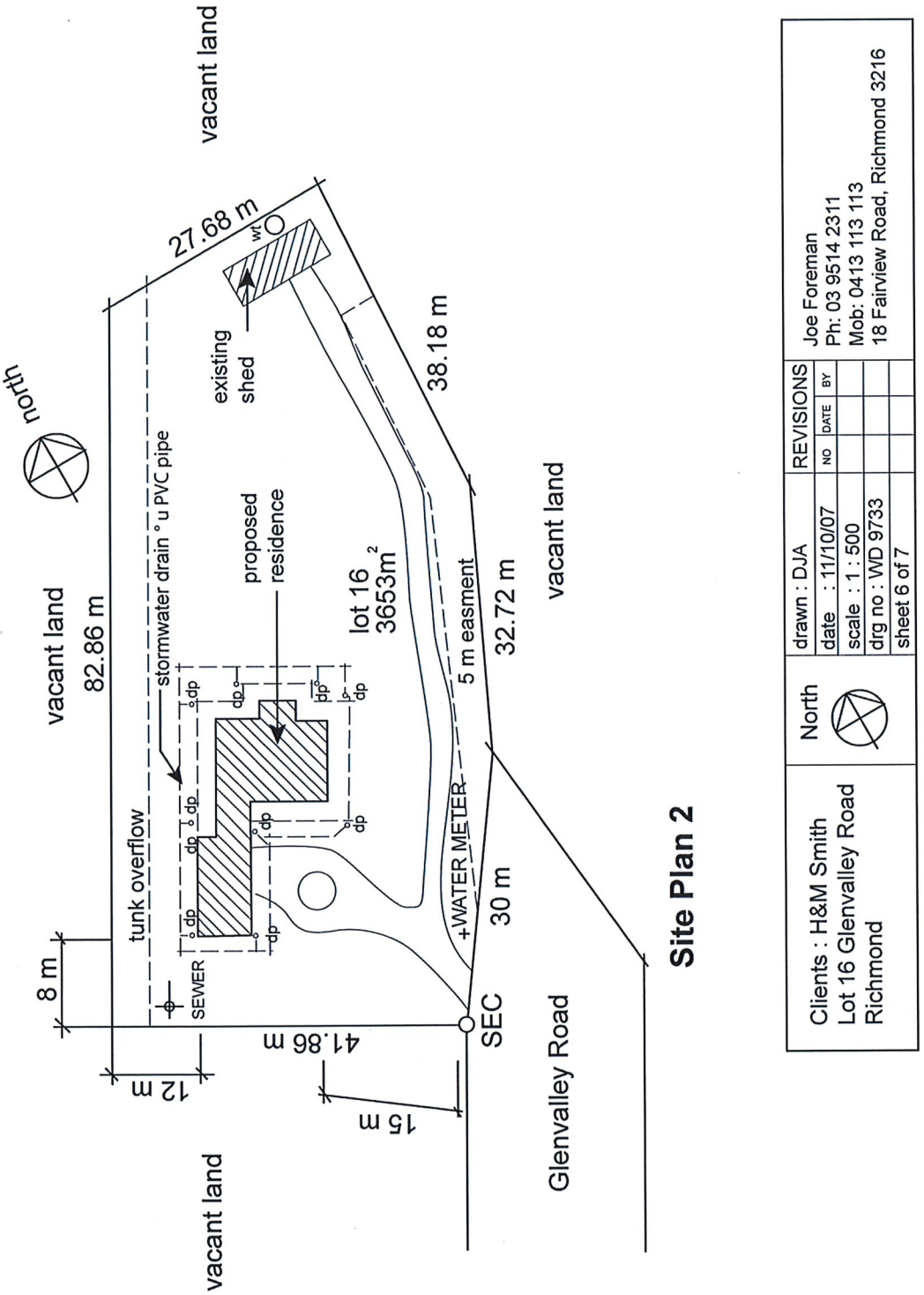
Number of questions	Number of questions answered correctly	Satisfactory?	
		Yes	No
37		☐	☐

ASSESSOR COMMENTS

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




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)
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


vacant land
27.68 m
north
existing shed
wt
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
30 m
8 m
SEWER
41.86 m
SEC
12 m
15 m
vacant land
Glenvalley Road
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
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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	
1	Sheet 4
2	Sheet 5
3	Sheet 6

Answers

1 - A
2 - B
3 - C

Document Type	
A	Floor plan
B	Section plan
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
NCC Part 3 2003 D1.2,	NCC Part 3 2003 A2.1 D2.2

☐

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

Answer

Section D Stormwater Drainage Systems
2016 NCC 2016 Volume Three Queensland Section D Stormwater Drainage Systems

☐

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 The pitch of the veranda's roof is 15 degrees. ☐

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

Answer The Veranda beams are 150x50 F7 Oregon. ☐

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 Three types of subcontractors needed for this project included, a plumber, electrician and a concreter Hiring plant and equipment is not dissimilar to purchasing materials for the build. ☐

- **Plant** refers to the larger mechanical pieces of machinery which may be used on-site, such as a tower lift or compressor.
- **Equipment** describes the smaller non-mechanical tools such as ladders and wheelbarrows.

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

Answer There are many items of plant and equipment that can be used on construction jobs, for example, plant, refers to larger mechanical pieces of machinery, such as a compressor or tower lift. Whilst equipment describes smaller non-mechanical tools such as wheelbarrows and ladders. ☐

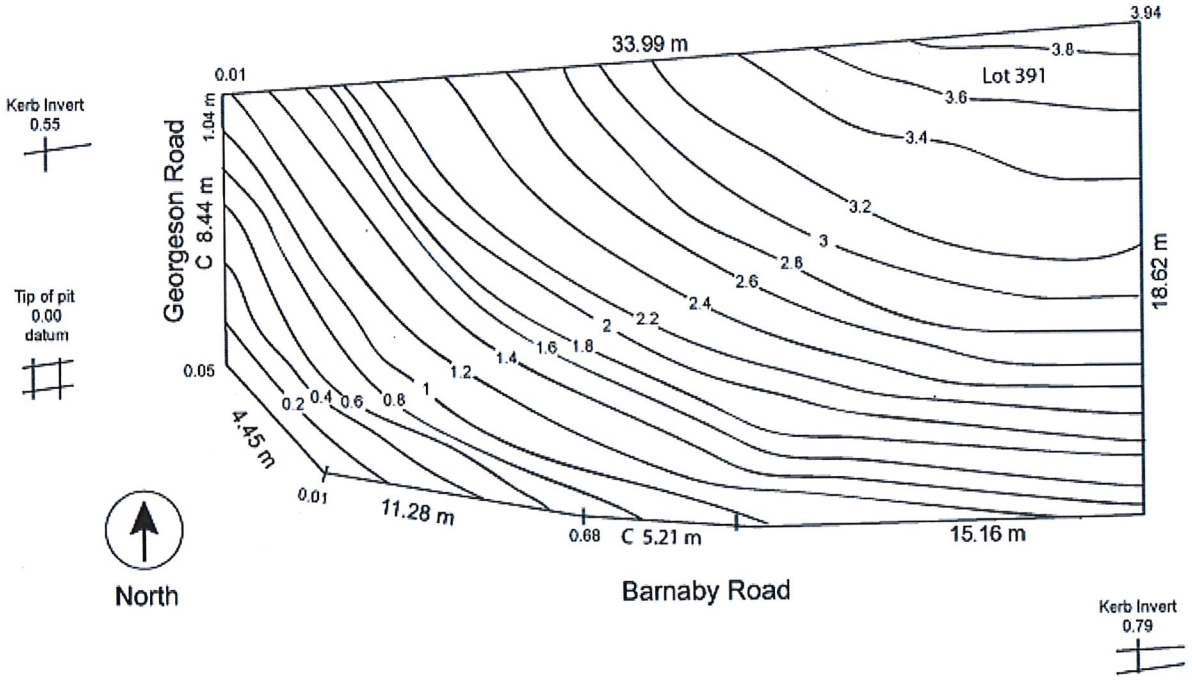
Q11. **Identify the Volume and Part of the NCC that outlines the requirements for the timber weatherboards identified in Sheet 5.**

Answer NCC 2019 NCC 2019 Volume Two Part 3.5 Roof and Wall Cladding Part 3.5.4 Timber and composite wall cladding ☐

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

Answer NCC 2015, volume 2, is referenced in regards to Timber Structures. ☐

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 The datum at the tip of the pit is reading 0.00. ☐

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

Answer The level at the kerb invert is 0.55. ☐

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 There are aspects of on-site work that do not form part of the contract. Costs associated with running the building business (as opposed to costs associated with the site project) are called company overheads. For example: staff feeds (e.g. office administration staff) It is important to calculate the labour hours in relation to these non-contractual elements of work

☐

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

Answer

Method	Explanation
Per hour	Per Hour: A sub-contractor can quote for labour on an hourly basis (e.g. $70 per hour) for a particular job without specifying the time to complete the job. This charge covers the overheads and profit in running their business.
Per unit	Per unit: installation of doors is usually quoted per unit
Per metre	Per lineal metre: the cost of building walls to a specified height such as 2400 mm may be quoted per lineal metre of wall length Per square metre: the cost of building wall may be quoted on the floor area in square metres

☐

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.**

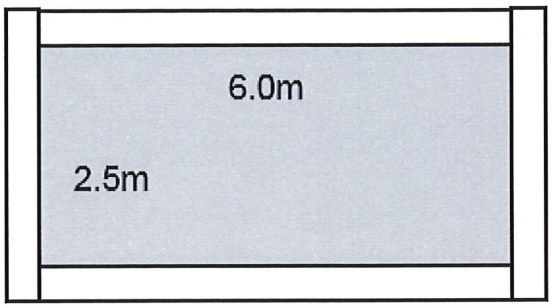
Answer

Factor	Impact
Location	. Location: Dealing with distant suppliers might mean longer delivery times and extra freight costs.
Price	Price: Affordability is a key factor, but cheap does not always equate with quality
Reliability	Reliability: Suppliers should be able to delivery the right goods and on time
Stability	Stability: Look for experienced suppliers who have been in business a long time. This illustrates financial stability

Supplier groups	Supplier groups: While using a single supplier has its advantages, it also has risks. It might be better to use a carefully selected group of suppliers as insurance against any problems occurring

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

$L = 6 \times 2 = 12$

$W = 2.55 \times 2 = 5.1$

$17.1\ m$

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

Answer

$L = 6 \times 2.5 = \$15.60$

$W = 2.55 \times 2.5 = 6.375$

$17.6 \times 2.5 = 21.975$

$\times 2 = \$42.75$

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

Answer

L W T-T
6 x 2.5 x 0.15 = 2.25m3

2.25 x 50 = $ 112.50

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
x 0.10
= 11.25

112.5 + 11.25 = $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

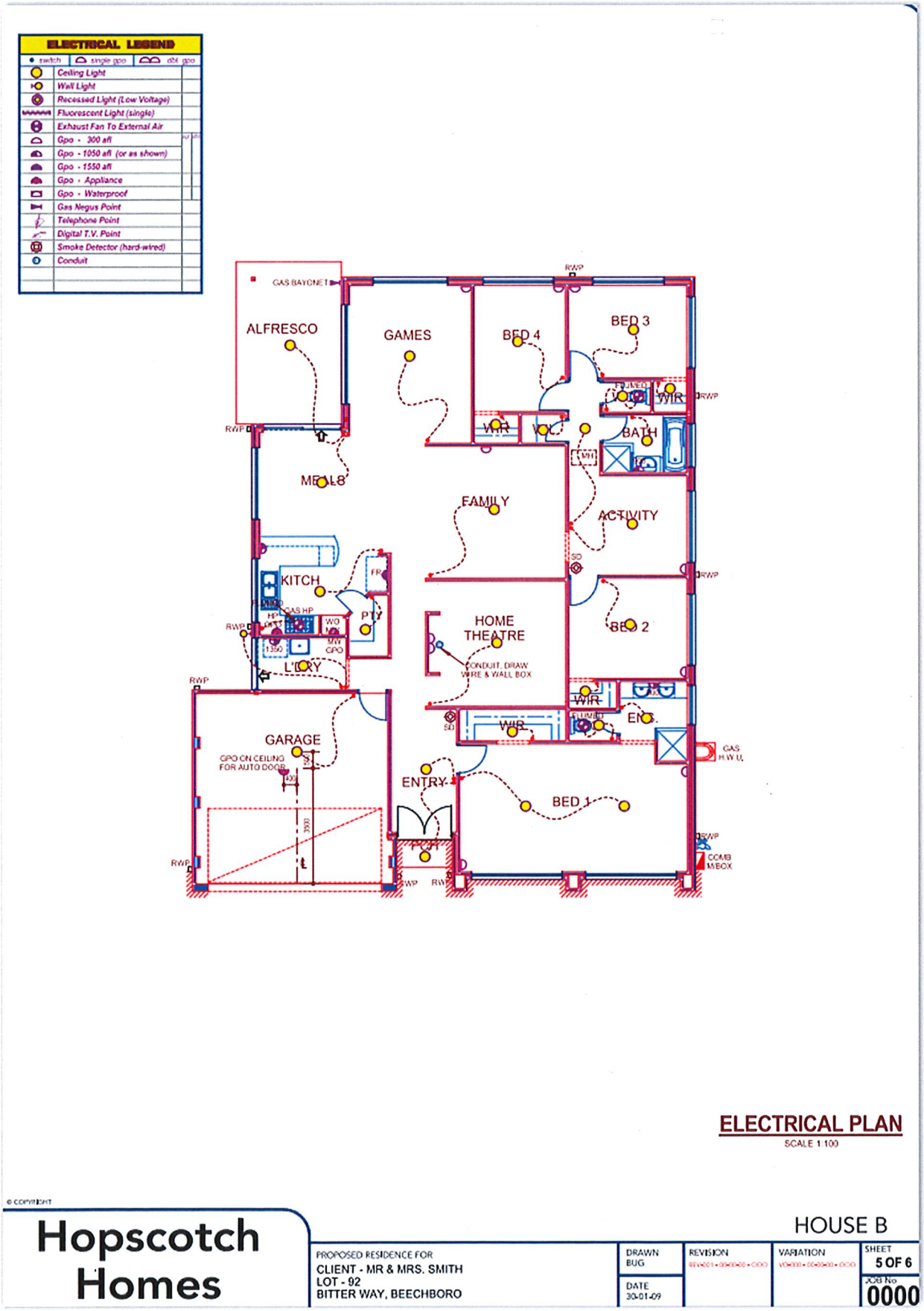
Labour - $49.50
Hour - x 6.5 hrs
$321.75

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

42.75
+123.75
+321.75
$488.25

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
0	Wall light
0	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
$1323.00	Ceiling light
$0.00	Wall light
$0.00	External light
$87.00	Exhaust fan
$78.00	Smoke detector
$1488.00	**TOTAL**

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

Answer Workcover provides Workers' compensation insurance.

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 There are statutory costs that should always be considered when determining project costs. For example, required licences (e.g. high-risk building work, electrical workers, asbestos handling), registration of vehicles (e.g. plant, work vehicles) and 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

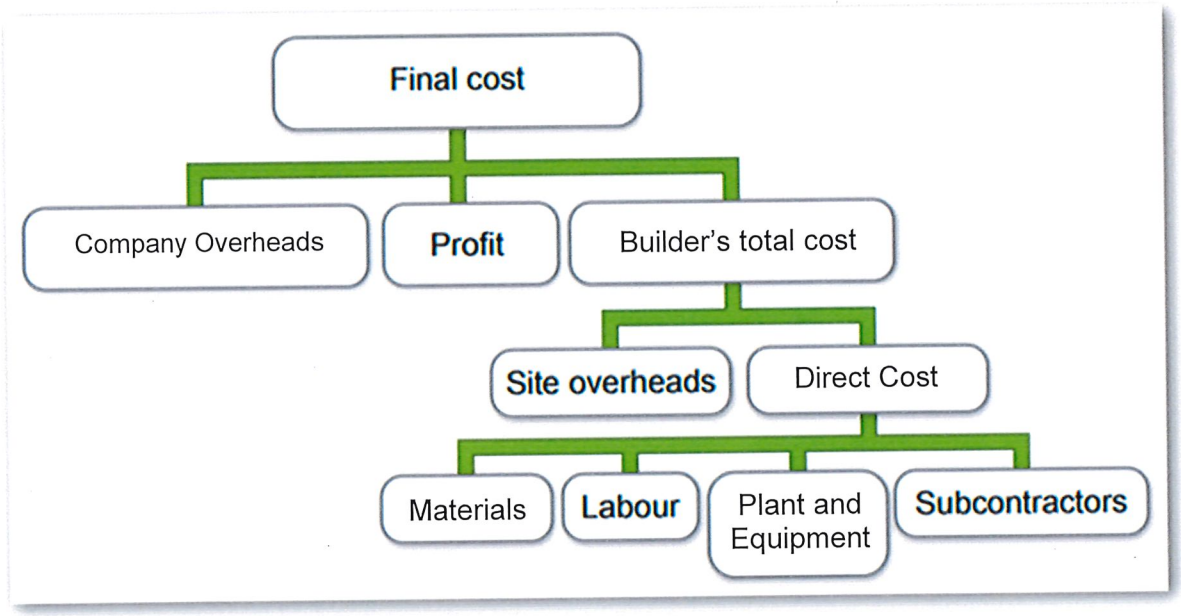
☐

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

Answer

Factor	Impact
Business premises	Paying rent for office (internet, power etc)
Staff and professional fees	Paying staff wages. (bussiness etc)
Transport	Paying for work vechiles & fuel.
Finance	Paying for an accountant

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

☐