

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	Gordon Pirret
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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.

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, 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 Gordon Pirret

Participant signature



Date 7th March 2020

Assessor name

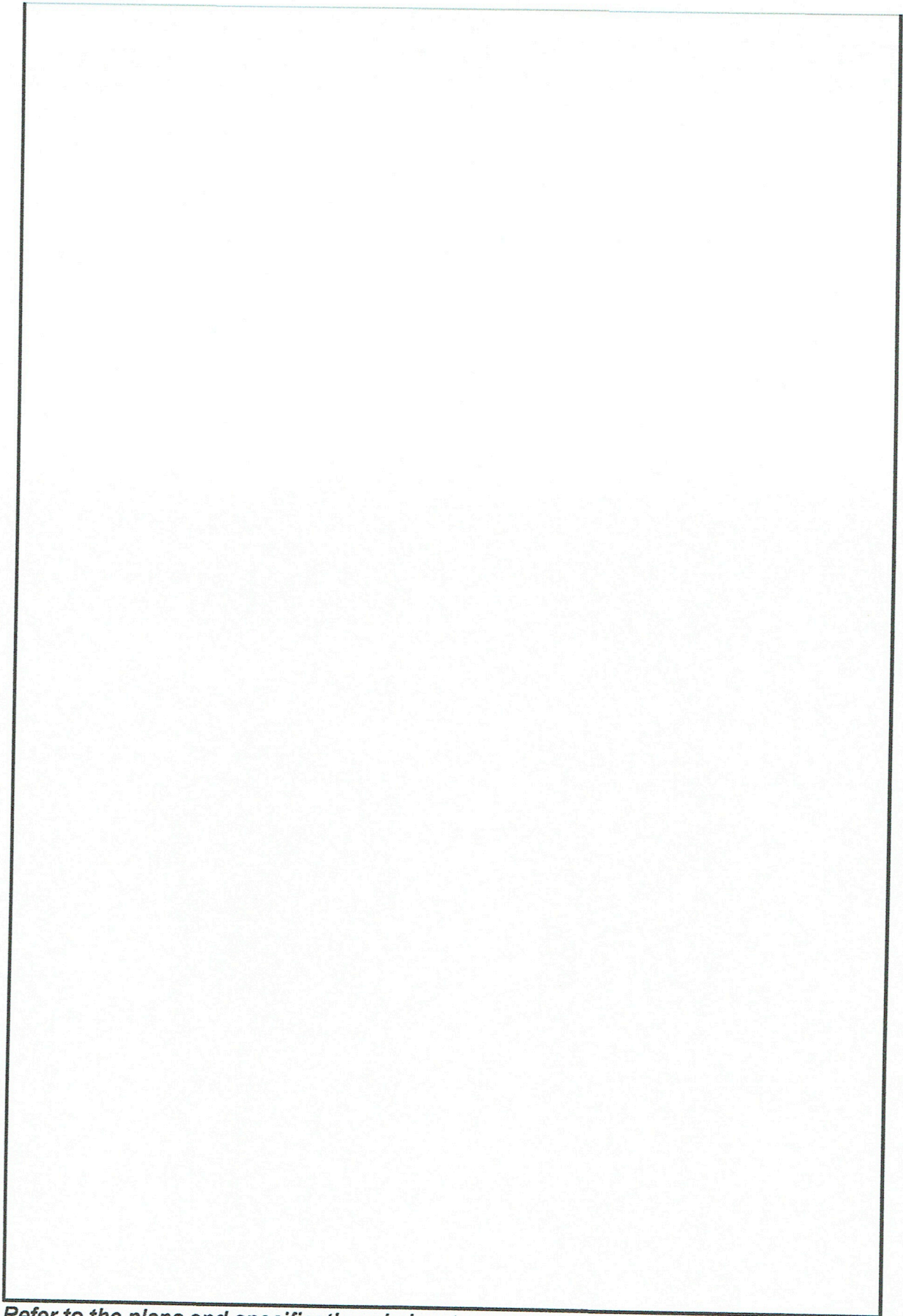
Assessor signature

Date Click here to enter a date.

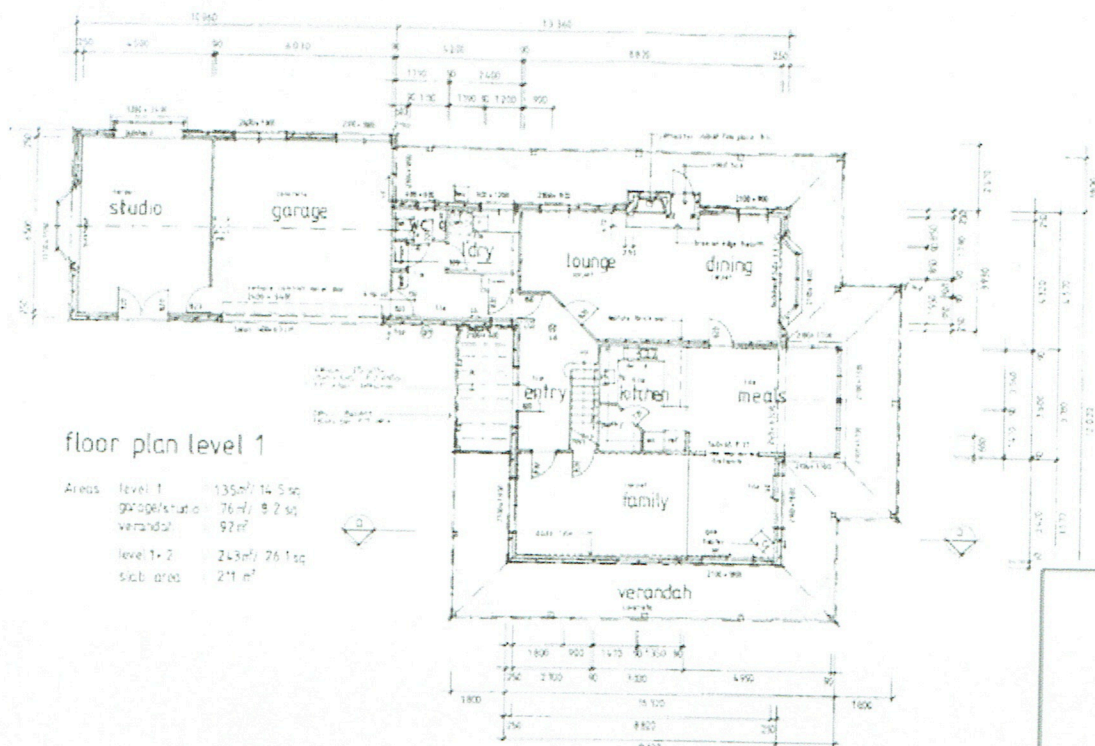
Number of questions	Number of questions answered correctly	Task outcome (Tick)
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37		Satisfactory	Not Yet Satisfactory
		☐	☐

ASSESSOR COMMENTS

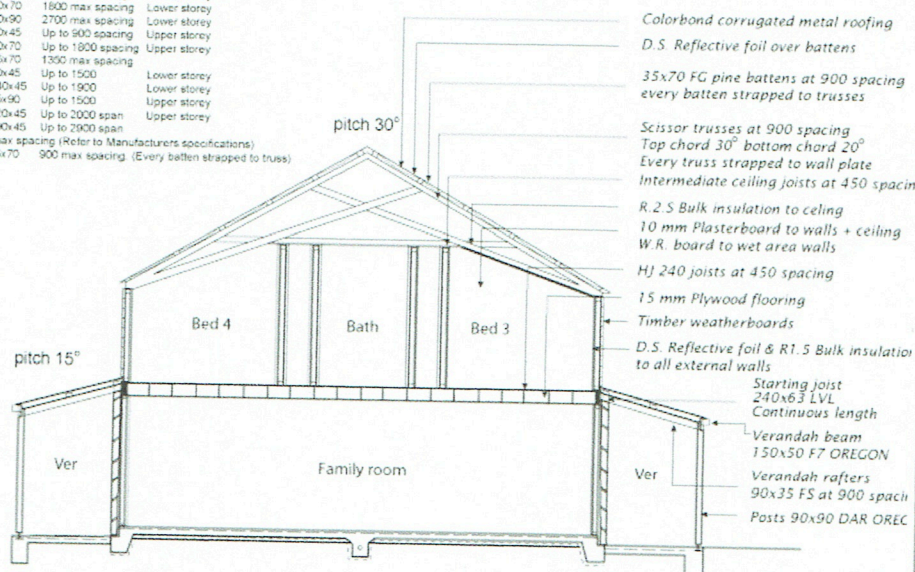


Refer to the plans and specifications below to respond to Q1. to Q9.



Clients: H&M Smith Lot 16 Glenvalley Road Richmond	North	drawn: DJA	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216
		date: 11/10/07	NO.	DATE	
		scale: 1:50			
		org no: WD 9733			
		sheet 5 of 7			

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	1300 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)



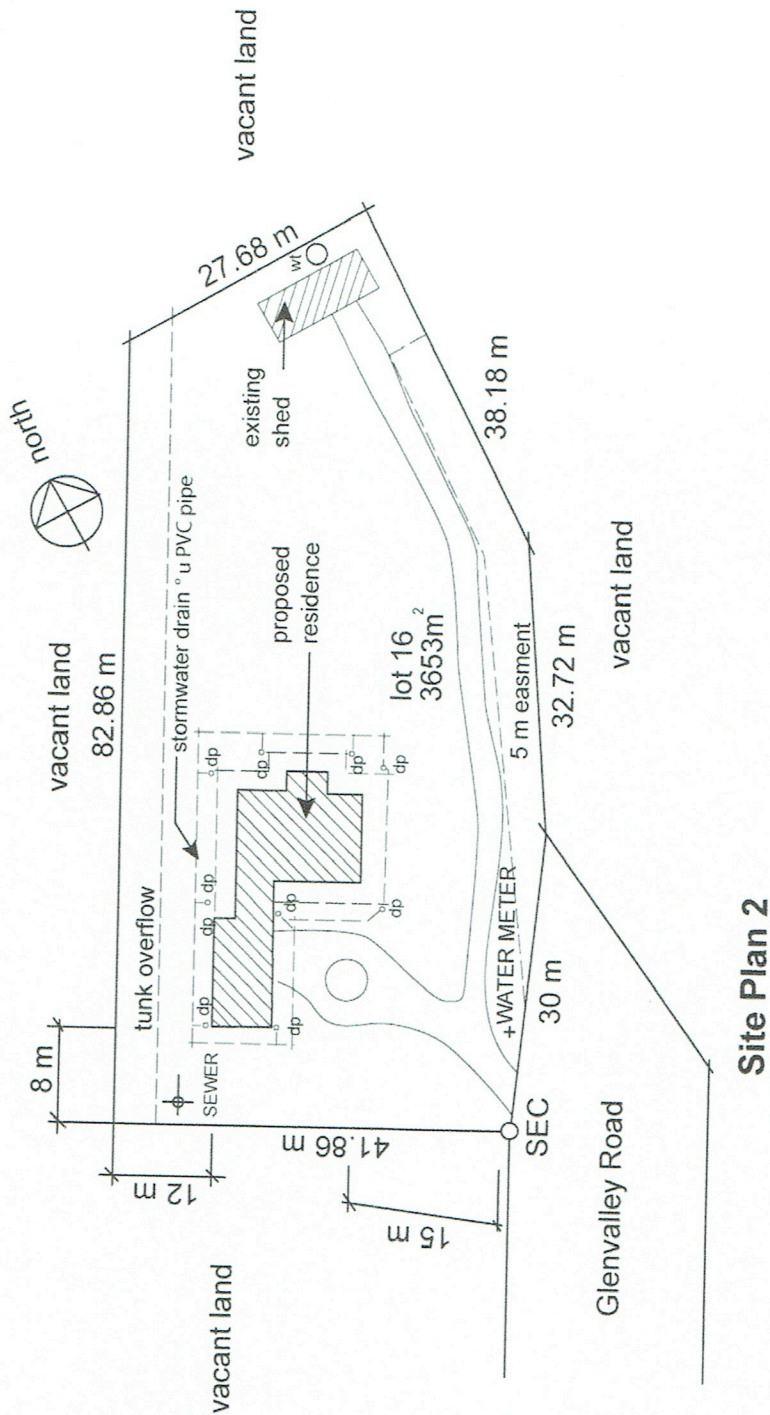
Section a-a
Refer to engineers drawing for all footing details

Clients: H&M Smith Lot 16 Glenvalley Road Richmond	North	drawn: DJA	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216
		date: 11/10/07	NO.	DATE	
		scale: 1:50			
		org no: WD 9733			
		sheet 5 of 7			

Joe Foreman
Ph: 03 9514 2311
Mob: 0413 113 113
18 Fairview Road, Richmond 3216

Clients: H&M Smith Lot 16 Glenvalley Road Richmond	North	drawn: DJA	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216
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		scale: 1:50			
		org no: WD 9733			
		sheet 4 of 7			

Joe Foreman
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Clients : H&M Smith Lot 16 Glenvalley Road Richmond	North 	REVISIONS		Joe Foreman Ph: 03 9514 2311 Mob: 0413 113 113 18 Fairview Road, Richmond 3216	
		drawn : DJA		NO	DATE
		date : 11/10/07		BY	
		scale : 1 : 500			
		drg no : WD 9733			
		sheet 6 of 7			

1. 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

2. 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

3. 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 2019 Volume 2 Part 3.1.3.5	NCC 2019 Volume 1 Section F Part F1.1

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

Answer

AS/NZS 3500.3

5. What is the area of the verandah? Tick your response.

Answer

Choice	Possible Answers

☐	76m ²
☒	92m ²
☐	135m
☐	211m
☐	243m

6. What is the pitch of the verandah roof?

Answer 15 Degrees

☐

7. What size are the verandah beams?

Answer 150 x 50mm

☐

8. 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

☐

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

Answer Plumber
Carpenter
Electrician

☐

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

Answer

- Pozi Track for cutting the block
- Franna for lifting trusses and upper wall frames
- Bobcat for landscaping and fall away from the property.



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

Answer

NCC 2019
Volume 2
Part 3.5.4.2



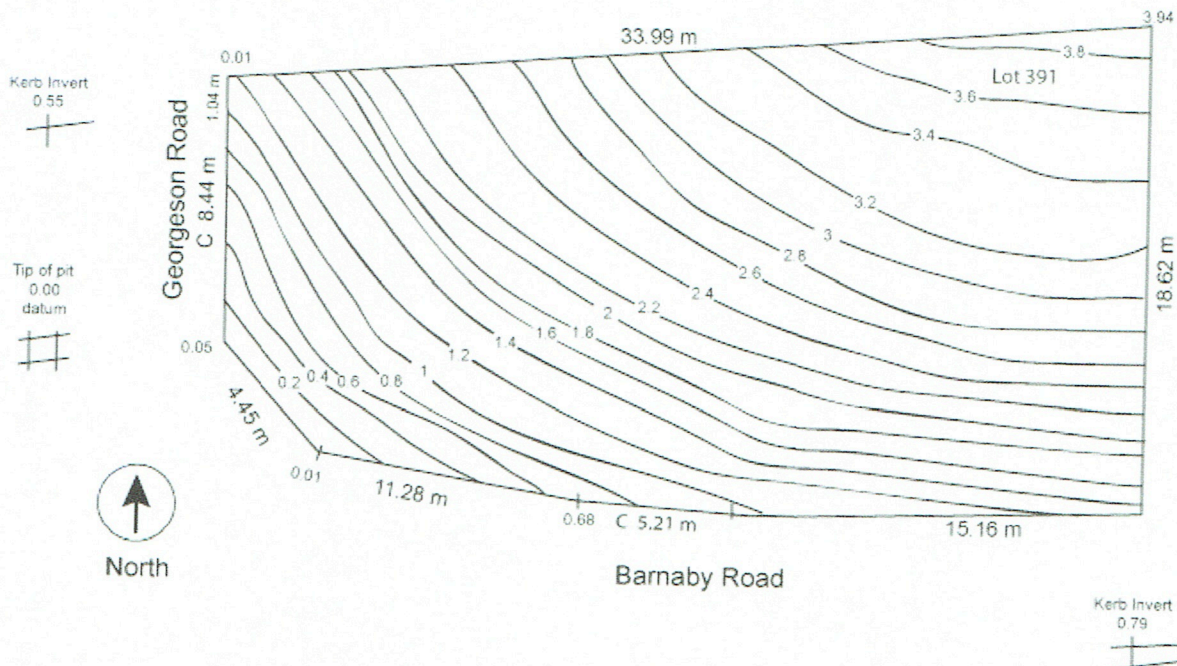
12. Which Australian Standard is referenced in the NCC with regards to timber structures?

Answer

AS 1720.1



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



13. What is the datum reading at the tip of the pit?

Answer

0.00



14. What is the level at the kerb invert?

Answer 0.55 and 0.79

☐

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

Answer

☐	True
☒	False

☐

16. 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

☐

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

Answer Administration and sales staff involved in the selling and forming of contracts associated with builds are non contractual elements of a construction project.

☐

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

Answer

Method	Explanation
Per hour	Calculate hourly rate per direct employee and multiply that by the time that you expect the job to take.
Per unit	Calculate cost per unit and to install and multiply by however many units are required to complete job
Per metre	Calculate either lineal metres or square metre of work required and calculate as per that requirement per job

☐

19. 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

☐

20. 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

☐

21. Explain how each of the following factors affects supplier selection.

Answer

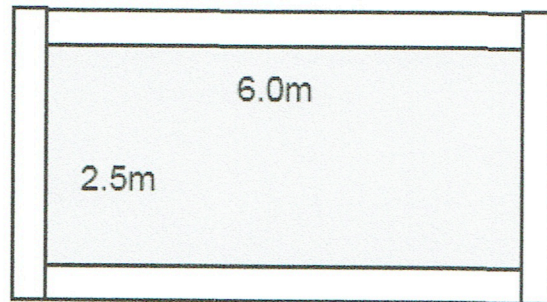
Factor	Impact
Location	Dealing with distant suppliers might mean longer delivery times and extra freight costs

☐

Price	Affordability is a key factor, but cheap does not always equate with quality
Reliability	Suppliers should be able to deliver the right goods on time
Stability	Look for experienced suppliers who have been in the business a long time. This illustrates financial stability
Supplier groups	Whilst using a single supplier has its advantages, it also has its 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

22. 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 $6.0+6.0+2.5+2.5=17.00$ lineal metres of timber



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

Answer $17.00 \times 2.50 = \$42.50$ cost of timber



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

Answer $6.0 \times 2.5 \times 0.15 = 2.25$ cubic metres



- 25. 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 $50.00 \times 2.25 = 112.50$ (cost of concrete minus GST)
 $112.50 \times 1.1 = 123.75$ (cost of concrete with GST)



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

Answer $49.50 \times 6.5 = 321.75$ cost of labour



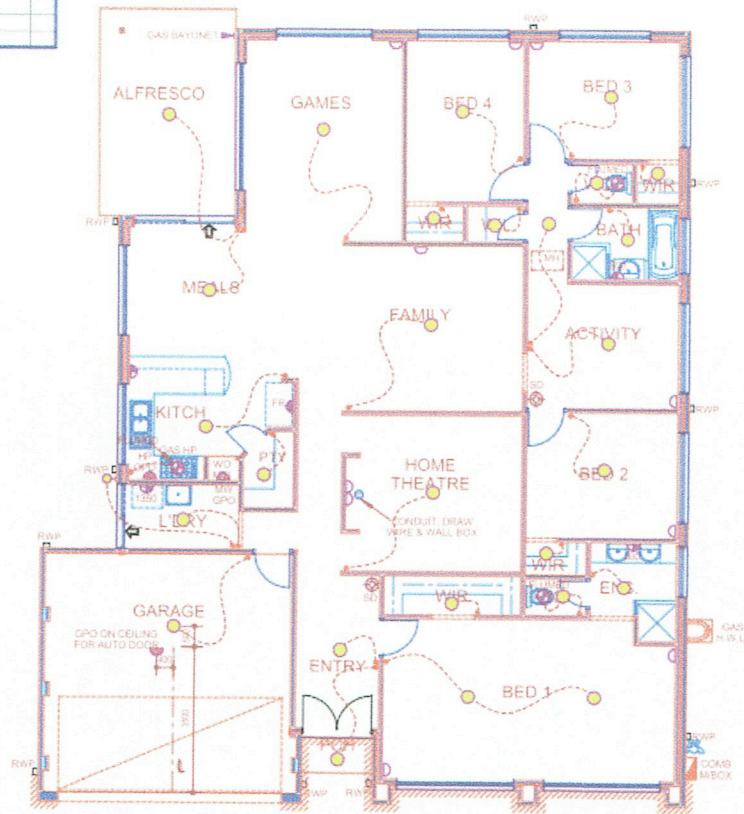
- 27. Use your responses for Q23, Q25, and Q26. to calculate how much this project will cost. Show your workings and answer to two decimal places.**

Answer $42.50 + 123.75 + 321.75 = 488.00$ cost of project



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

ELECTRICAL LEGEND	
	Switch
	Ceiling Light
	Wall Light
	Recessed Light (Low Voltage)
	Fluorescent Light (single)
	Exhaust Fan To External Air
	Gpo - 300 aff
	Gpo - 1050 aff (or as shown)
	Gpo - 1550 aff
	Appliance
	Gpo - Waterproof
	Gas Nipus Point
	Telephone Point
	Digital T.V. Point
	Smoke Detector (hard-wired)
	Conduit



ELECTRICAL PLAN
SCALE 1:100

**Hopscotch
Homes**

PROPOSED RESIDENCE FOR
CLIENT - MR & MRS. SMITH
LOT - 92
BITTER WAY, BEECHBORO

DRAWN
BUG
DATE
30-01-09

REVISION
REVISION 1 - REVISION 1 - 0000

VARIATION
REVISION 1 - REVISION 1 - 0000

SHEET
5 OF 6
JOB No
0000

HOUSE B

Source: https://www.dtwd.wa.gov.au/sites/default/files/teachingproducts/BC1944_OCCBY.PDF

28. Measure the required quantities for the items listed below.

Answer

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



29. 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	Ceiling light
\$59.00	Wall light
\$0	External light
\$87.00	Exhaust fan
\$78.00	Smoke detector
\$1,547.00	TOTAL



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

Answer Workcover Queensland



31. 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

☐

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

Answer

- Required Licences e.g. high risk building work, electrical workers, asbestos handling.
- Registration of vehicles e.g plant, work vehicles.
- Training for health and safety representatives.

☐

33. 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

☐

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

Answer

✓	True
☐	False

☐

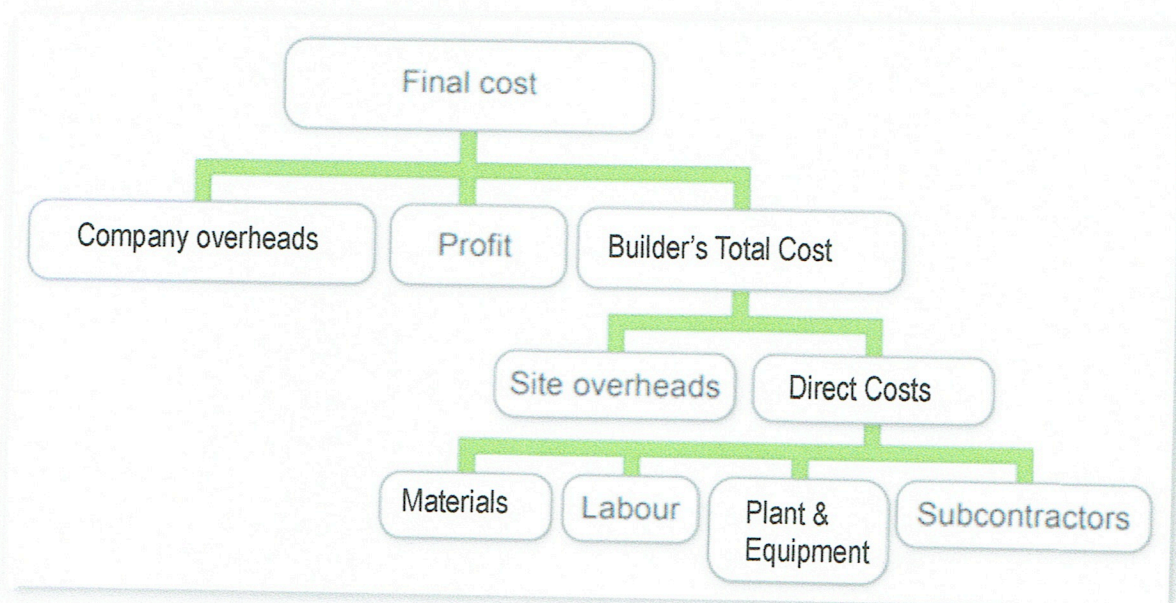
35. Identify one (1) example of company overheads for each of the listed categories.

Answer

Factor	Impact
Business premises	lease of business premises
Staff and professional fees	Salary of Administration/Sales staff
Transport	Cost of registration/insurance of vehicle
Finance	Cost of business accountant



36. 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



37. 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

IDENTIFY AND PRODUCE ESTIMATED COSTS FOR BUILDING AND CONSTRUCTION PROJECTS

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 Gordon Pirret

Participant signature



Date 7th March 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

A large, empty rectangular box with a thin black border, occupying the majority of the page. It is intended for a student to draw or write their response to the practical assessment.

CPCBC4004A

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:

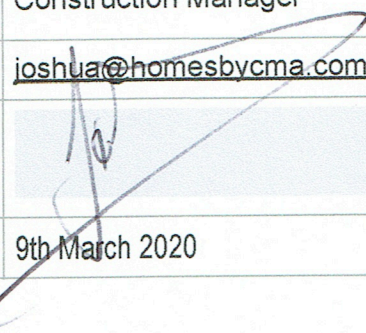
- Quantity calculations for material and labour requirements across the trades
- All other associated costs
- Overhead and Profit Margin allowances
- A copy of a quotation
- A copy of the plans and specifications, etc. for the project
- Variation documentation

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:	Gordon Pirret		
Name of observer:	Josh Reed		
Role of observer (Confirm suitability to sign)	Construction Manager		
Email address of observer	<u>joshua@homesbycma.com.au</u>		
Signature of observer:			
Date:	9th March 2020		
When completing the task, did the participant:	Tick if satisfactorily completed. Provide comments if left unticked.		
	1st Occasion	2nd Occasion	
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)	✓	✓	
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.	✓	✓	

C.	Calculate costs or rates for required on-site work.	✓	✓
D.	Identify physical resource requirements, producing lists of materials and calculated quantities against project or standard construction contracts.	✓	✓
E.	Establish prices from suppliers for: • Materials and consumables • Plant or requirement requirements	✓	✓
F.	Determine and apply estimates of unit costs, as appropriate.	✓	✓
G.	Identify and apply costs of statutory/additional costs, including: • WorkCover requirements • Environmental Protection Agency requirements • Seeking approvals • Waste management site fees	✓	✓
H.	Apply company overhead recovery and margins.	✓	✓
I.	Using a costing software program, calculate completed estimated project costs for inclusion in a tender or bill.	✓	✓
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

Gordon Comes to this role, as Construction Supervisor with a vast amount of experience beneath him. This experience spans 16+ years within the construction industry on both side of the world, and in that time has worked coherently in various aspects of the building and construction industry, qualifying in 2006 as an advanced craft carpenter/joiner in the UK. He has progressed and also worked as an carpenter/electrical assistant and scaffolder in the FIFO industry for a number of years. Gordon also worked as a Quality Assessor for a Structural Framing Company prior to joining us as Construction Supervisor.

As part of his role as Construction Supervisor, Gordon, has to identify and estimate time required on site for completion of various tasks. Some of these may be completed in a day, others within a few days, Therefore, Gordon is able to schedule each job dependant on its own requirements ensuring the job flows without issue and at the best cost.

Gordon is required to calculate on site costs and keep them to a minimum to ensure business profitability. E.g. Use of a concrete pump over man power to pour concrete piers. Estimated cost of a pump being \$400+GST daily as opposed to 4 men x\$28 per hour for 8 hours. Gordon is required to do this for all elements of the build from the ground to project completion.

Certain jobs will require additional materials due to client requirements or meeting council covenant requirements. Therefore, it is paramount that Gordon reads and interprets construction plans accurately and notifies our suppliers early to ensure all scheduled dates are met. Gordon also has to be mindful that certain materials need to be delivered at certain times, however, utilising his experience, Gordon is able to reduce the number of deliveries by having certain materials bulk delivered to complete the job and be stored in the property until they are required.

As with all our supervisors, Gordon has a duty to reduce overheads as much as possible and utilise minimal site waste management fees. Gordon does this effectively e.g. The general public often use our skips to dump their own waste, therefore Gordon schedules delivery and uplift of these to coincide with major milestones within the project.

Gordon as always, effectively communicates in various formats with clients, sub contractors and colleagues.