

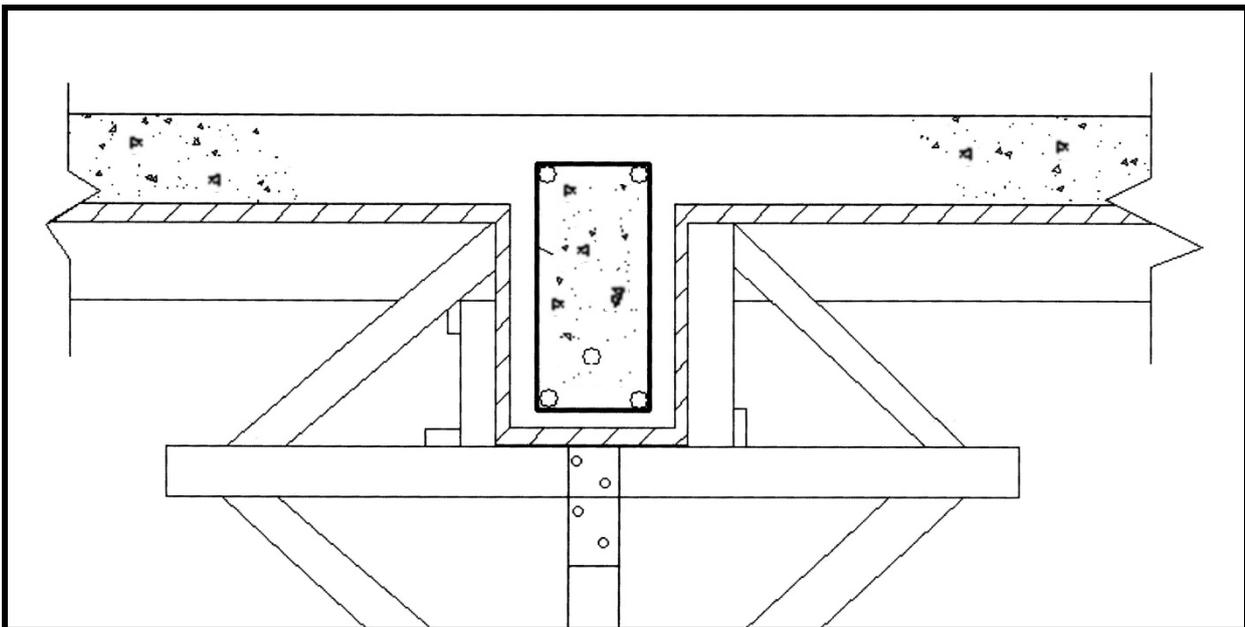
**CIVIL TECHNOLOGY**

**EXAMINATION NUMBER**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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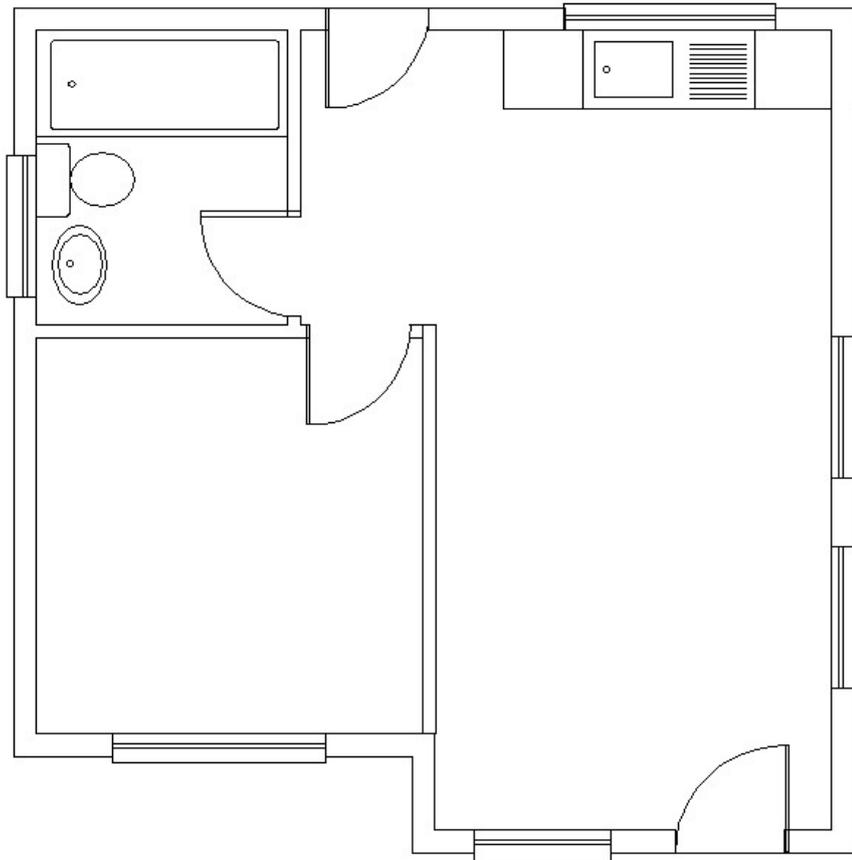
**ANSWER BOOKLET**

**QUESTION 2.4.2 REINFORCEMENT**



| Assessment Criteria | Possible Mark | Mark Obtained |
|---------------------|---------------|---------------|
| Placing main bar    | 1             |               |
| Placing anchor bar  | 1             |               |
| Placing shear bar   | 1             |               |
| Labelling of bars   | 3             |               |
| <b>TOTAL</b>        | <b>6</b>      |               |

**QUESTION 3.3 ELECTRICAL DIAGRAM**



| Question | Assessment Criteria   | Possible Mark | Mark Obtained |
|----------|---|---------------|---------------|
| 3.3.1    | 2 × Switched socket outlets                                   | 2             |               |
| 3.3.2    | Double-tube fluorescent light                                 | 1             |               |
| 3.3.3    | Filament light in bathroom and bedroom                        | 2             |               |
| 3.3.4    | Wall-mounted light  | 1             |               |
| 3.3.5    | Placement of single-pole one-way switch and wiring – bathroom | 2             |               |
|          | <b>TOTAL</b>  | 8             |               |

**QUESTION 4.3.1 QUANTITY SURVEYING**

| <b>Item</b> | <b>Measurement</b> | <b>Result</b> | <b>Description</b>                    |
|-------------|--------------------|---------------|---------------------------------------|
|             |                    |               | Total area of wall before deduction:  |
| 1/          |                    |               |                                       |
|             |                    |               | (2)                                   |
|             |                    |               |                                       |
|             |                    |               | Number of bricks for the wall:        |
| 2/          |                    |               |                                       |
|             |                    |               | (2)                                   |
|             |                    |               | Area of Window 1:                     |
| 1/          |                    |               |                                       |
|             |                    |               | (1)                                   |
|             |                    |               | Area of Window 2:                     |
| 1/          |                    |               |                                       |
|             |                    |               | (1)                                   |
|             |                    |               | Total area of openings:               |
|             |                    |               | (1)                                   |
|             |                    |               |                                       |
|             |                    |               | Deduction of bricks for the openings: |
| 2/          |                    |               |                                       |
|             |                    |               | (2)                                   |
|             |                    |               |                                       |
|             |                    |               | Number of bricks after deduction:     |
|             |                    |               | (1)                                   |
|             |                    |               |                                       |
|             |                    |               | 5% breakage of bricks:                |
|             |                    |               |                                       |
|             |                    |               | (1)                                   |
|             |                    |               | Total number of bricks:               |
|             |                    |               |                                       |
|             |                    |               | (1)                                   |

(12)

**QUESTIONS 4.3.2 AND 4.3.3**

| Item | Measurement | Result | Description              |
|------|-------------|--------|--------------------------|
|      |             |        | Volume of floor:         |
| 1/   |             |        |                          |
|      |             |        | (3)                      |
|      |             |        |                          |
|      |             |        | Mix ratio:               |
|      |             |        | (1)                      |
|      |             |        |                          |
|      |             |        | Volume of cement needed: |
|      |             |        |                          |
|      |             |        |                          |
|      |             |        | (1)                      |
|      |             |        |                          |
|      |             |        | Number of bags:          |
|      |             |        |                          |
|      |             |        | (1)                      |

**QUESTION 5.3 APPLIED MECHANICS**

5.3.1 Force diagram



(6)

5.3.2 Nature and magnitude

| MEMBER | NATURE   | MAGNITUDE |
|--------|----------|-----------|
| GF     | <b>A</b> | 2,8 kN    |
| DE     | <b>B</b> | 11,2 kN   |
| BG     | Strut    | <b>C</b>  |
| HD     | Tie      | <b>D</b>  |

(4)

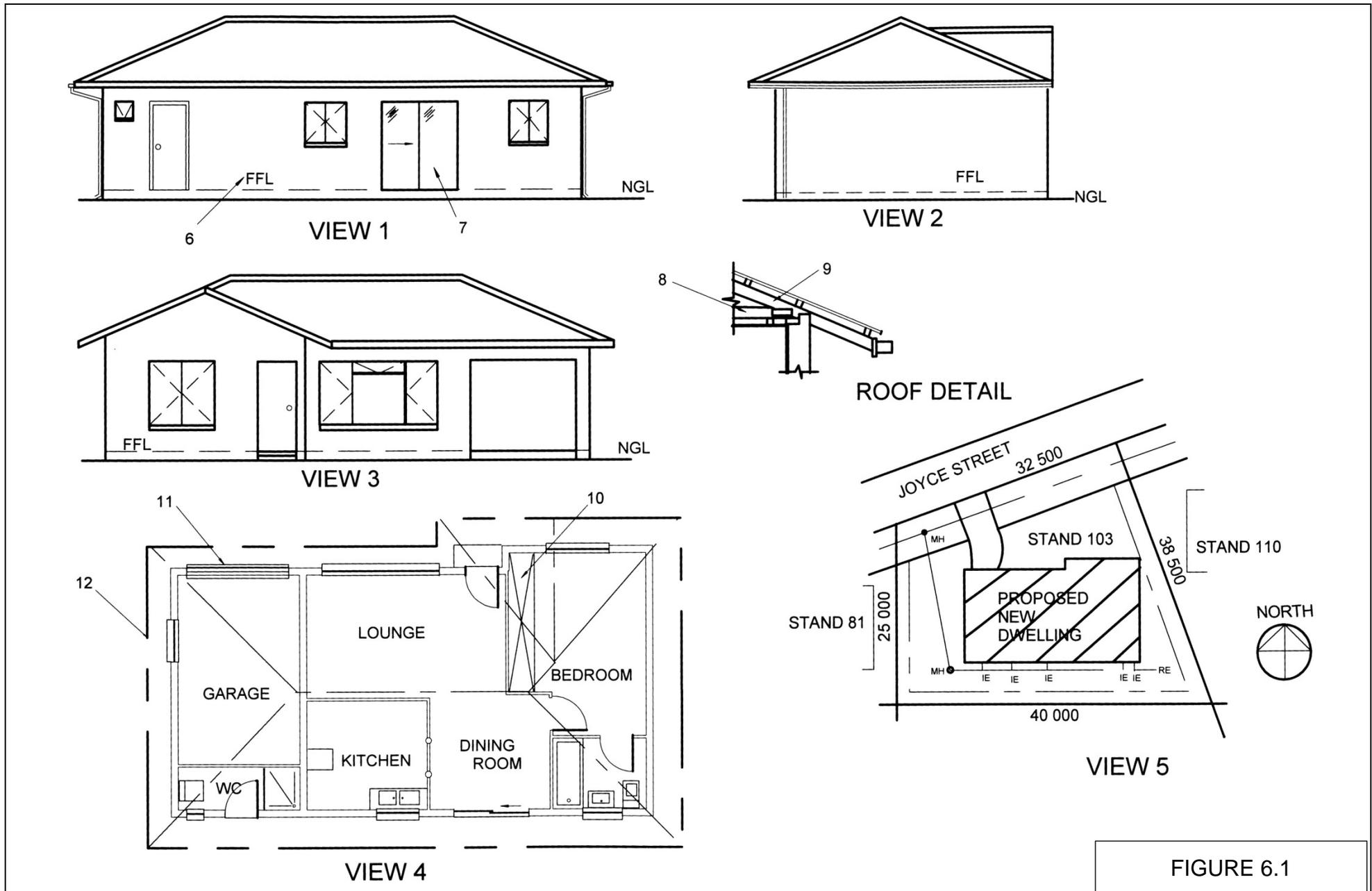


FIGURE 6.1

**QUESTION 6.1 HOUSE PLAN – ANALYTICAL**

| <b>No.</b> | <b>Question</b>   | <b>Answer</b> | <b>Mark</b> | <b>Mark Obtained</b> |
|------------|---|---------------|-------------|----------------------|
| 6.1.1      | Identify the elevation shown in VIEW 1.   |               | 1           |                      |
| 6.1.2      | Identify the elevation shown in VIEW 2.   |               | 1           |                      |
| 6.1.3      | Identify the elevation shown in VIEW 3.   |               | 1           |                      |
| 6.1.4      | State the type of drawing shown in VIEW 5.  |               | 1           |                      |
| 6.1.5      | State the full name of the abbreviation at 6.   |               | 1           |                      |
| 6.1.6      | Identify the feature at 7.  |               | 1           |                      |
| 6.1.7      | Identify part 8 of the roof detail.   |               | 1           |                      |
| 6.1.8      | Identify part 9 of the roof detail.   |               | 1           |                      |
| 6.1.9      | State the name of the feature at 10.  |               | 1           |                      |
| 6.1.10     | State the name of the feature at 11.  |               | 1           |                      |
| 6.1.11     | State the name of the feature at 12 indicated by the long chain line shown on VIEW 4. |               | 1           |                      |
| 6.1.12     | State the colour that will be used to draw the proposed new dwelling in VIEW 5.       |               | 1           |                      |
| 6.1.13     | State a suitable scale to draw VIEW 5.  |               | 1           |                      |
| 6.1.14     | Calculate the perimeter of stand 103.   |               | 2           |                      |

(15)

| <b>Assessment Criteria</b>     | <b>Possible Mark</b> | <b>Mark Obtained</b> |
|--------------------------------|----------------------|----------------------|
| Foundation                     | 1                    |                      |
| Hard core fill                 | 1                    |                      |
| Undisturbed Earth              | 1                    |                      |
| Wall with drawing symbol       | 1                    |                      |
| Floor slab with drawing symbol | 1                    |                      |
| Correctness of roof truss      | 5                    |                      |
| Wall plate                     | 1                    |                      |
| Window                         | 1                    |                      |
| Window sills                   | 1                    |                      |
| Lintel                         | 1                    |                      |
| Dimensioning of foundation     | 2                    |                      |
| Labels                         | 4                    |                      |
| Application of Scale           | 3                    |                      |
| Line Quality and Neatness      | 2                    |                      |
| <b>TOTAL</b>                   | <b>25</b>            |                      |

|                     |             |  |
|---------------------|-------------|--|
| <b>QUESTION 6.2</b> |             |  |
| <b>EXAM NO:</b>     |             |  |
| <b>GR 12</b>        | <b>2015</b> |  |