



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P1**

**FEBRUARY/MARCH 2016**

**MEMORANDUM**

**MARKS: 100**

**This memorandum consists of 7 pages.**

| <b>ANSWERS</b> |  |   |
|----------------|--|---|
| 1              | 2  | 1 |
| 2              | 031 5836092  | 1 |
| 3              | REPLACE FUEL TANKS   | 1 |
| 4              | 5 500  | 1 |
| 5              | IBR  | 1 |
| 6              | 4  | 1 |
| 7              | 3  | 1 |
| 8              | DEMOLISH/REMOVE  | 1 |
| 9              | RAMP   | 1 |
| 10             | BLUE   | 1 |
| 11             | NO COLOUR  | 1 |
| 12             | GULLEY   | 1 |
| 13             | ADJACENT BUILDING/STRUCTURE  | 1 |
| 14             | EAST   | 2 |
| 15             | SPEED UP DRAWING PROCESS/<br>STANDARDISATION OF PRESENTATION             | 2 |
| 16             | SCALE  | 1 |
| 17             | 271,3 m  | 2 |
| 18             | 82,28 m [calculation 1, answer 1, converted to metres 1]                 | 3 |
| 19             | 318,2179 m <sup>2</sup> [calculation 1, answer 1, metres <sup>2</sup> 1] | 3 |
| 20             | <i>See below</i>   | 4 |

**TOTAL: 30**

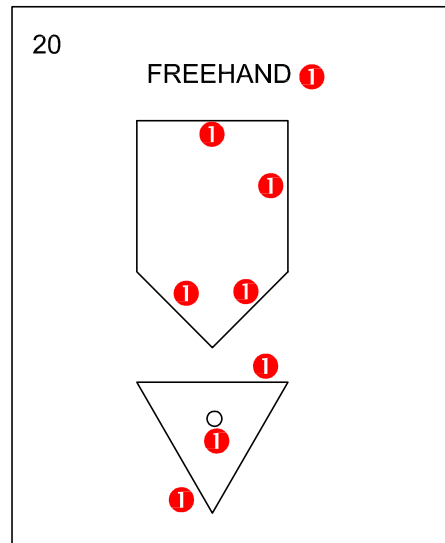
**ANSWER 18**  
Show ALL calculations.

$$20,57 + 6,545 + 7,48 + 6,545 + 28,05 + 13,09 = 82,28 \text{ m}$$

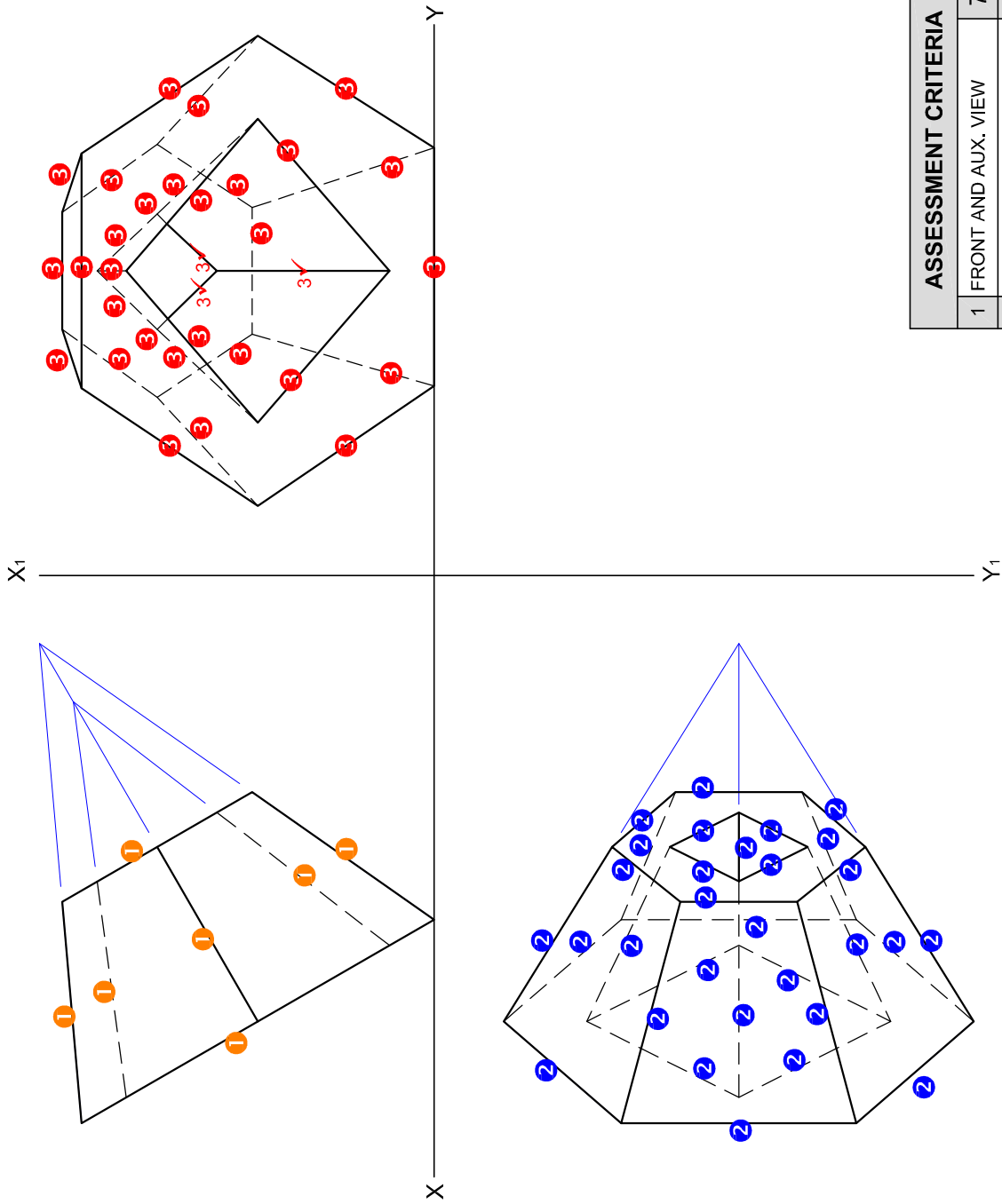
**ANSWER 19**  
Show ALL calculations.

$$(20,57 \times 13,09) + (6,545 \times 7,48)$$

$$269,2613 + 48,9566$$

$$318,2179 \text{ m}^2$$


PAPER 1 QUESTION 1  
GRADE 12  
Feb.-Mar.  
MEMORANDUM



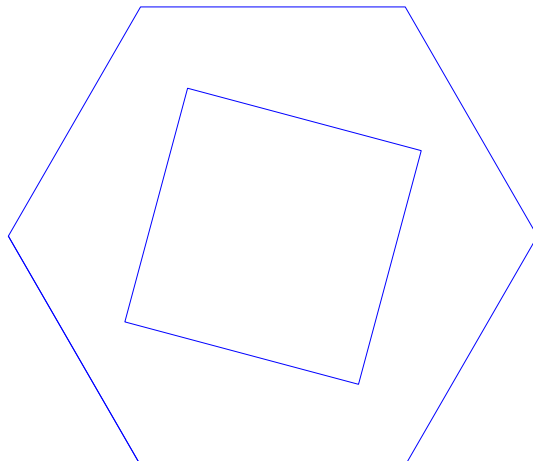
| ASSESSMENT CRITERIA |                     |
|---------------------|---------------------|
| 1                   | FRONT AND AUX. VIEW |
| 2                   | TOP VIEW            |
| 3                   | LEFT VIEW           |
| <b>TOTAL</b>        |                     |

7½

15

17½

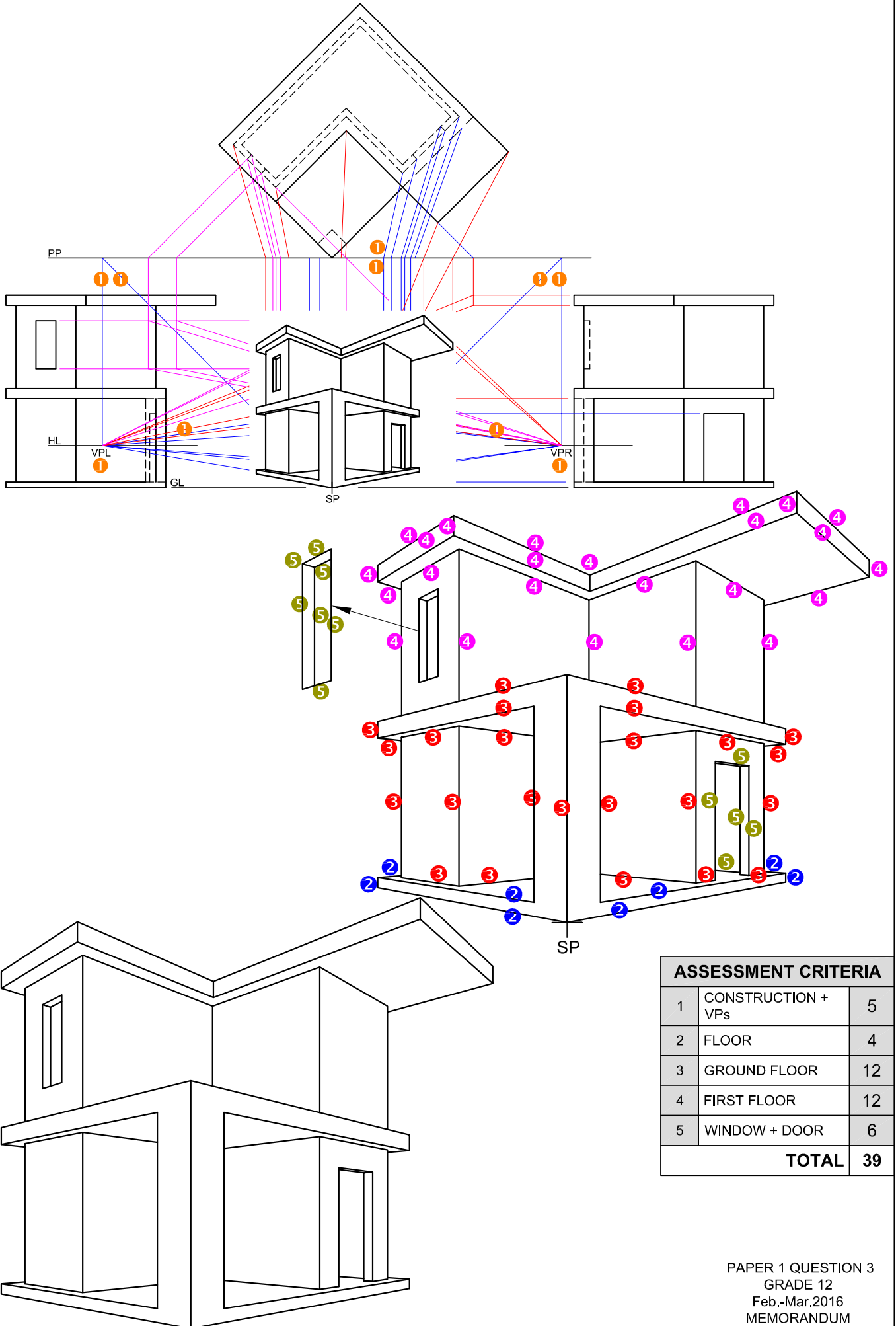
40

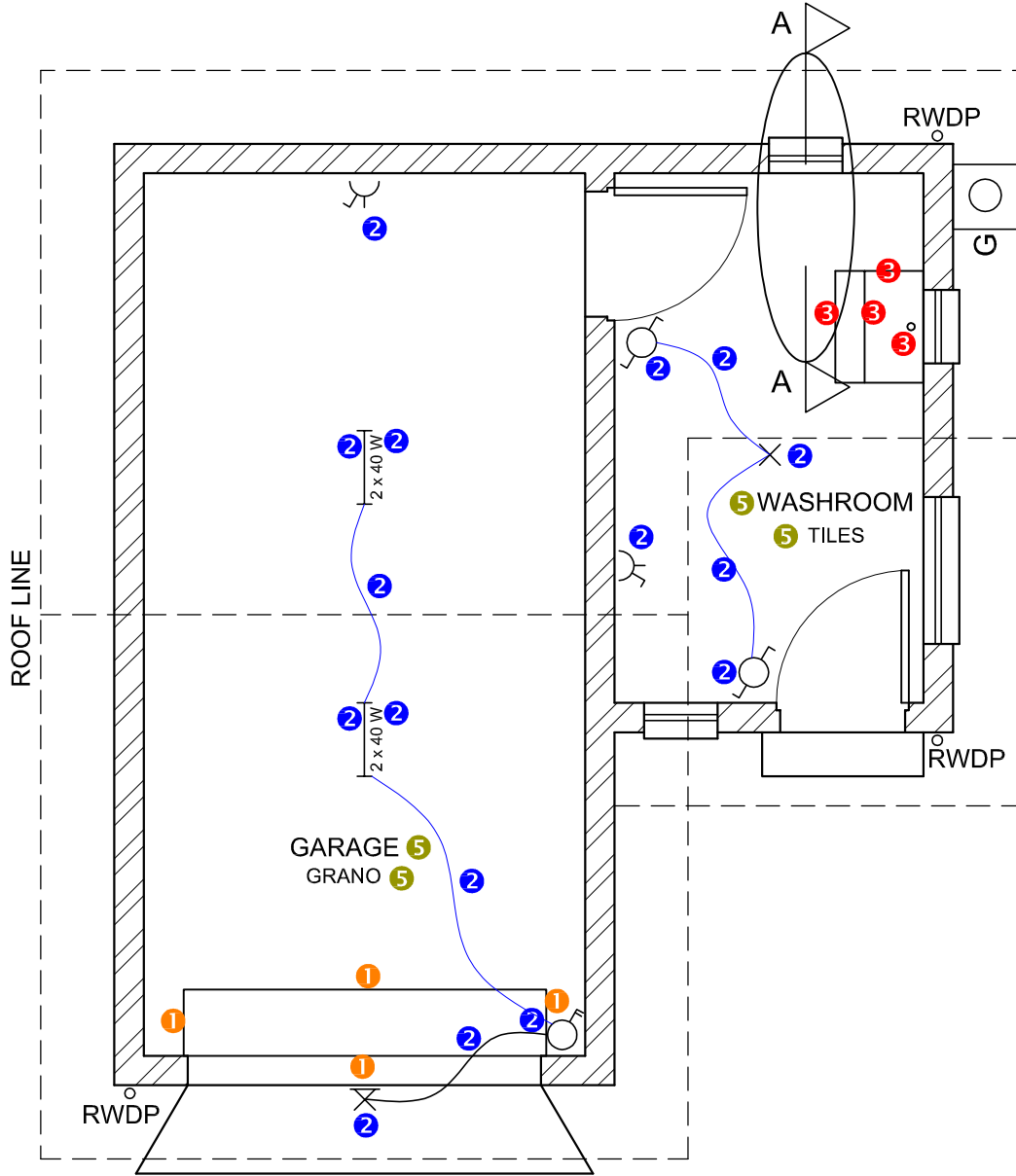
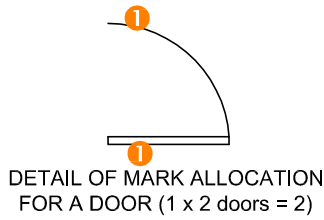
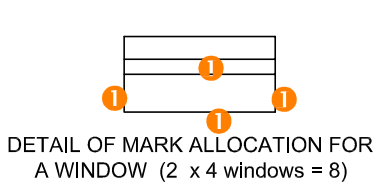


ANY ACCEPTABLE  
CONSTRUCTION METHOD  
USED FOR THE  
AUXILIARY VIEW



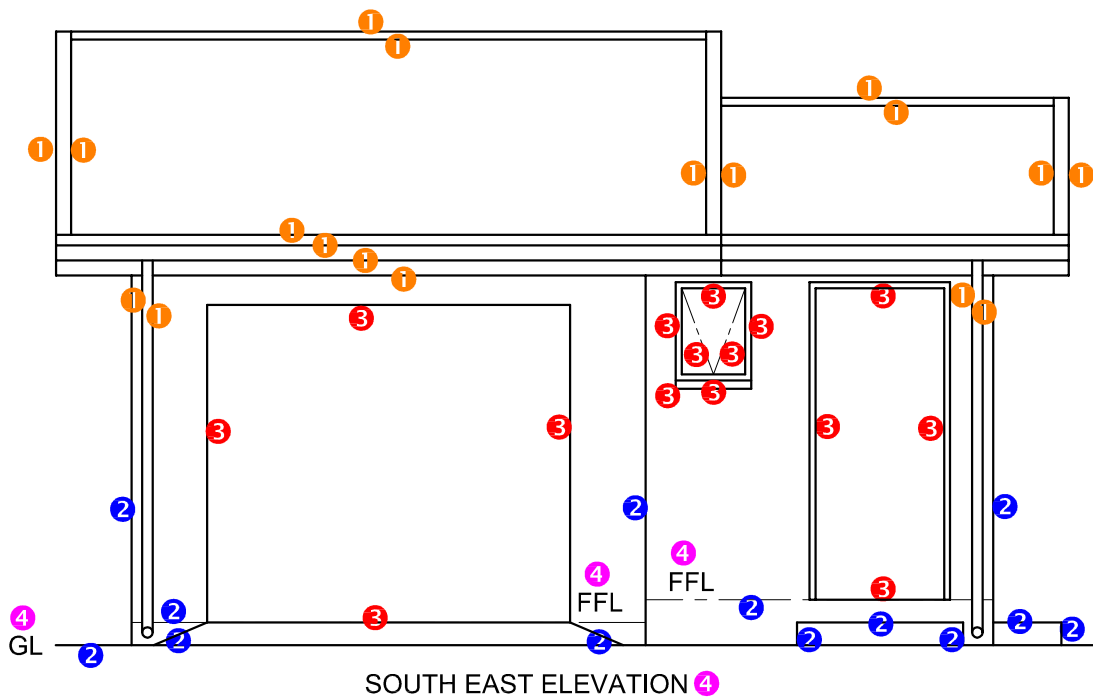
PAPER 1 QUESTION 2  
GRADE 12  
Feb.-Mar.2016  
MEMORANDUM





| ASSESSMENT CRITERIA |                 |           |
|---------------------|-----------------|-----------|
| FLOOR PLAN          |                 |           |
| 1                   | DOORS + WINDOWS | 12        |
| 2                   | ELECTRICAL      | 8         |
| 3                   | FIXTURES        | 2         |
| 4                   | HATCHING        | 4         |
| 5                   | LABELS          | 2         |
| <b>SUBTOTAL</b>     |                 | <b>28</b> |

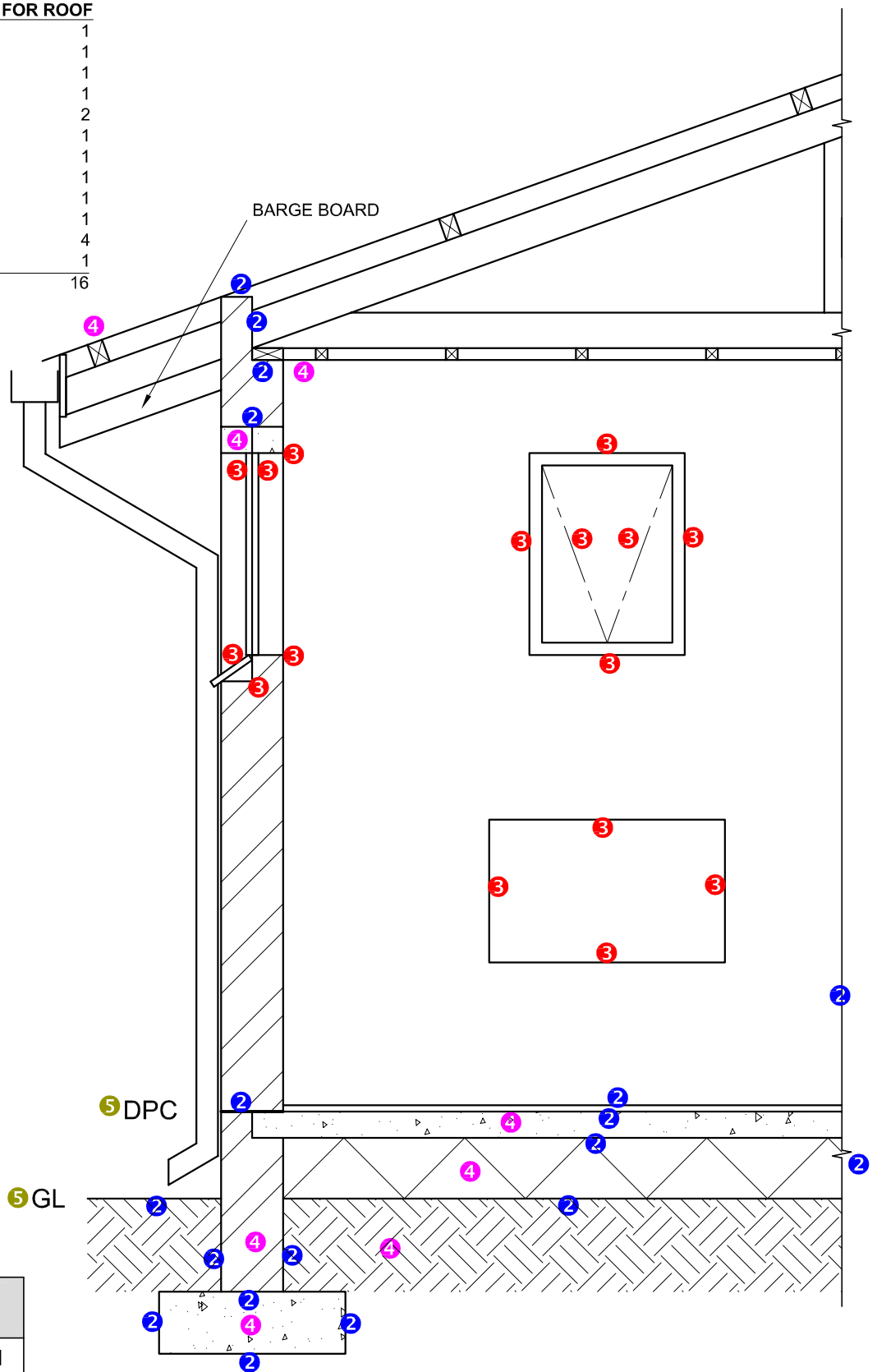
| 4 HATCHING ALLOCATION      |          |
|----------------------------|----------|
| SANS COMPLIANT (TYPE)      | 2        |
| HATCHING CORRECTLY APPLIED | 2        |
| <b>TOTAL</b>               | <b>4</b> |



| ASSESSMENT CRITERIA  |                                    |           |
|----------------------|------------------------------------|-----------|
| SOUTH EAST ELEVATION |                                    |           |
| 1                    | ROOF + RWDP                        | 9         |
| 2                    | WALLS + FFL + GULLEY + STEP + RAMP | 6½        |
| 3                    | DOOR + WINDOW                      | 7½        |
| 4                    | LABELS                             | 2         |
| <b>SUBTOTAL</b>      |                                    | <b>25</b> |

**1. MARK ALLOCATION FOR ROOF**

|                   |           |
|-------------------|-----------|
| A: ROOF ANGLE     | 1         |
| B: ROOF SHEET     | 1         |
| C: PURLINS        | 1         |
| D: PURLIN SPACING | 1         |
| E: TRUSS          | 2         |
| F: FASCIA BOARD   | 1         |
| G: BARGE BOARD    | 1         |
| H: WALL PLATE     | 1         |
| I: BRANDING       | 1         |
| J: CEILING BOARD  | 1         |
| K: RWDP           | 4         |
| L: GUTTER         | 1         |
| <b>TOTAL</b>      | <b>16</b> |



DETAILED SECTION ON A-A  
SCALE 1 : 20

| ASSESSMENT CRITERIA |                                |           |
|---------------------|--------------------------------|-----------|
| DETAILED SECTION    |                                |           |
| 1                   | ROOF DETAIL + RWDP             | 16        |
| 2                   | FOUNDATION + WALL + LINE BREAK | 9         |
| 3                   | WINDOW + WASHTUB               | 8         |
| 4                   | HATCHING                       | 4         |
| 5                   | LABELS                         | 1         |
| <b>SUBTOTAL</b>     |                                | <b>38</b> |