higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# NATIONAL CERTIFICATE (VOCATIONAL)

# DRAWING OFFICE PROCEDURES AND TECHNIQUES

(Second Paper)

**NQF LEVEL 4**

(12050724)

**27 November 2019 (X-Paper)**
**09:00–13:00**

**CLOSED-BOOK EXAMINATION**

**Calculators may be used.**

**This question paper consists of 3 pages and 5 diagram sheets and 1 page of window and door schedules.**

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**TIME: 4 HOURS**
**MARKS: 100**

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**INSTRUCTIONS AND INFORMATION**

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Do ALL drawing work, including candidate information, with a computer.
5. Spread drawings evenly on the DRAWING SHEET.
6. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
7. ALL abbreviations and symbols must comply with the latest National Building Regulations and ALL relevant SANS (SABS) codes.
8. Work neatly.

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## QUESTION 1

DIAGRAM SHEET 1 (attached) shows multiviews of a crosshead in third-angle orthographic projection. DIAGRAM SHEET 2 (attached) shows a three-dimensional view of the same crosshead drawn in third-angle orthographic projection.

Use the dimensions on DIAGRAM SHEET 1 and draw, to scale 1:2, the crosshead in three dimensions (3D) as shown on DIAGRAM SHEET 2. Do NOT insert dimensions and hidden details. Print the scale in the title block.

| MARK ALLOCATION | |
|---|---|
| Each item in 3D | 30 |
| Each item positioned as shown | 3 |
| Scale printed | 2 |

**[35]**

## QUESTION 2

DIAGRAM SHEET 3 (attached) shows the floor plan of a house drawn to scale 1:100.

Use the given dimensions and draw, to scale 1:100, the house. Take brick sizes as 220 × 110 × 75 mm. The height of the wall from the ground to the roof is 2 900 mm. The pitch angle of the roof is 22°. Do NOT insert dimensions and hidden details. Print the scale in the title block.

| MARK ALLOCATION | |
|---|---|
| Drawing in 3D | 18 |
| Windows according to schedule | 5 |
| Hip roof | 5 |
| Doors according to schedule | 5 |
| Scale printed | 2 |

**[35]**

## QUESTION 3

DIAGRAM SHEET 4 shows views of a model in first-angle orthographic projection.

Draw, to scale 1:1, the model using the 3D-method.

| MARK ALLOCATION | |
|---|---|
| Model in 3D | 13 |
| Scale | 2 |

**[15]**

## QUESTION 4

DIAGRAM SHEET 5 shows views of a model in third-angle orthographic projection.

Draw, to scale 1:1, the model using the 3D-method.

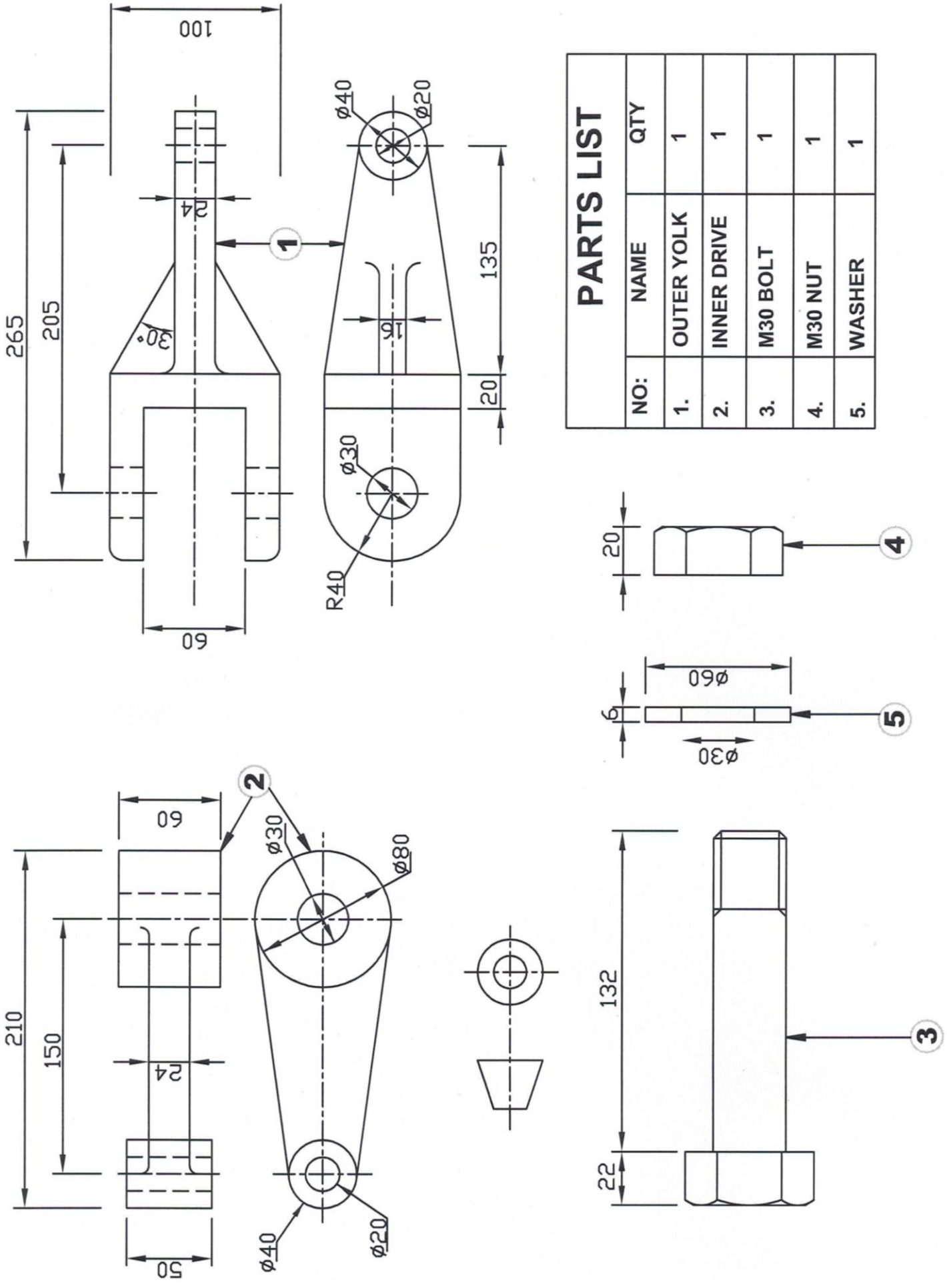
| MARK ALLOCATION | |
|---|---|
| Model in 3D | 13 |
| Scale | 2 |

**[15]**

**TOTAL: 100**

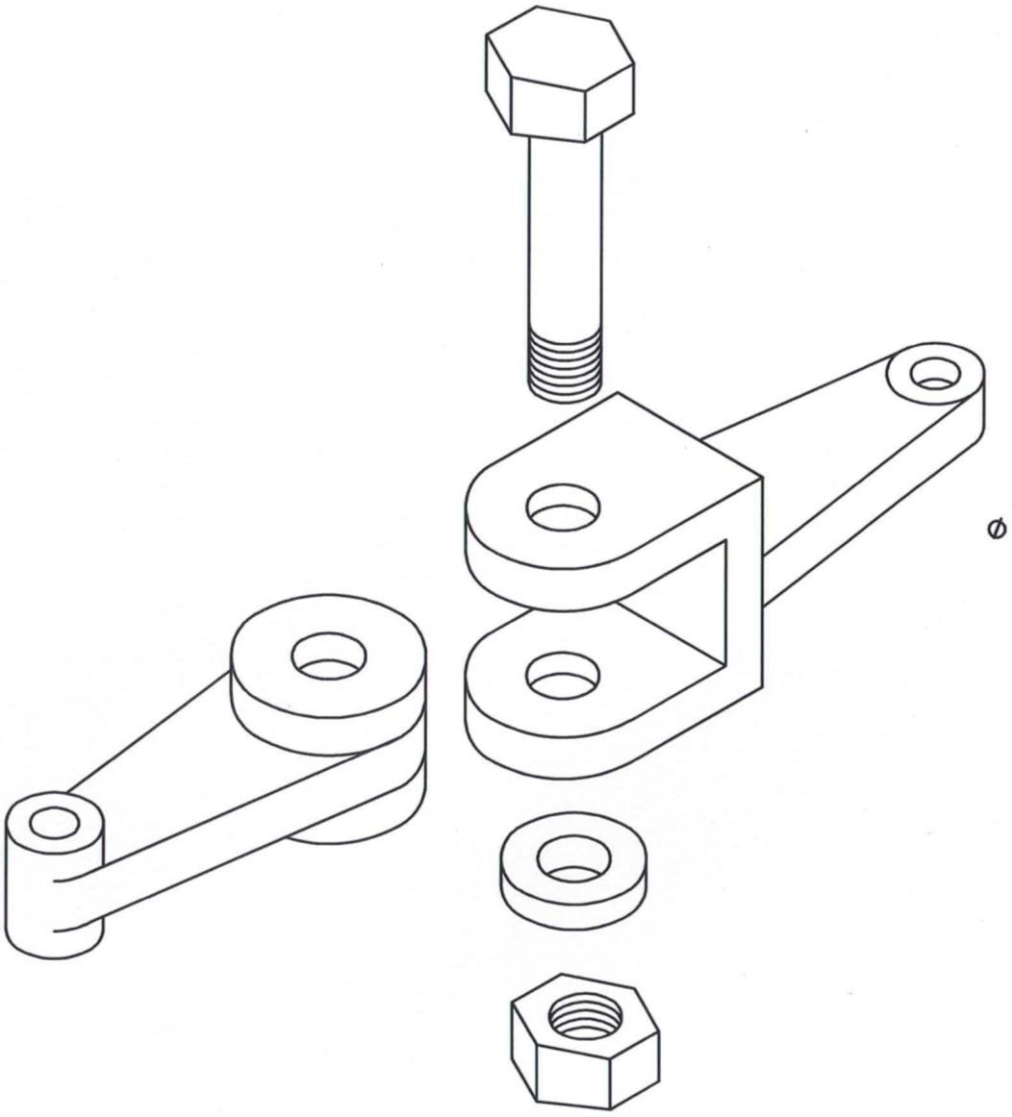
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**DIAGRAM SHEET 1**



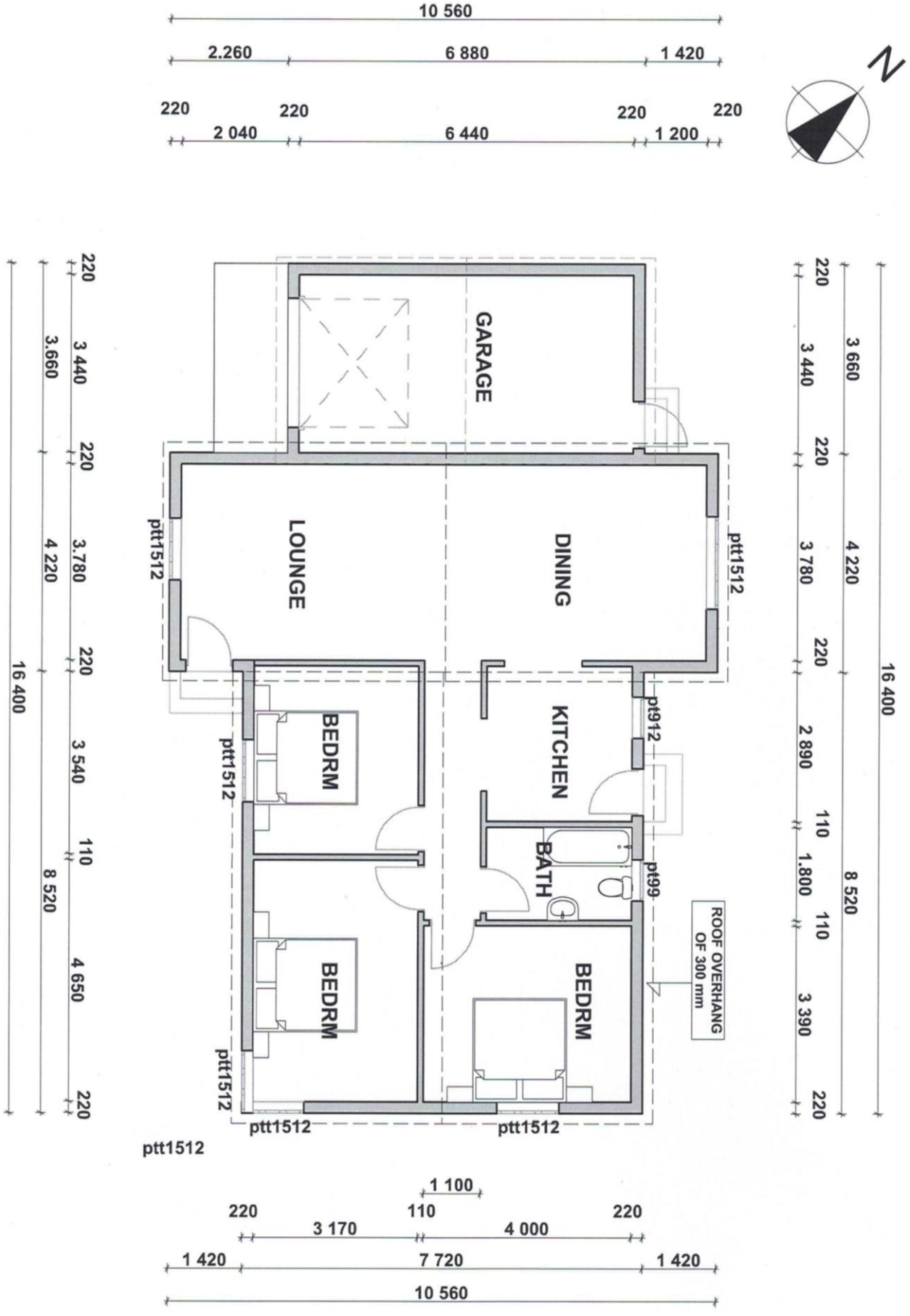

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**DIAGRAM SHEET 2**



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## DIAGRAM SHEET 3




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**DIAGRAM SHEET 4**

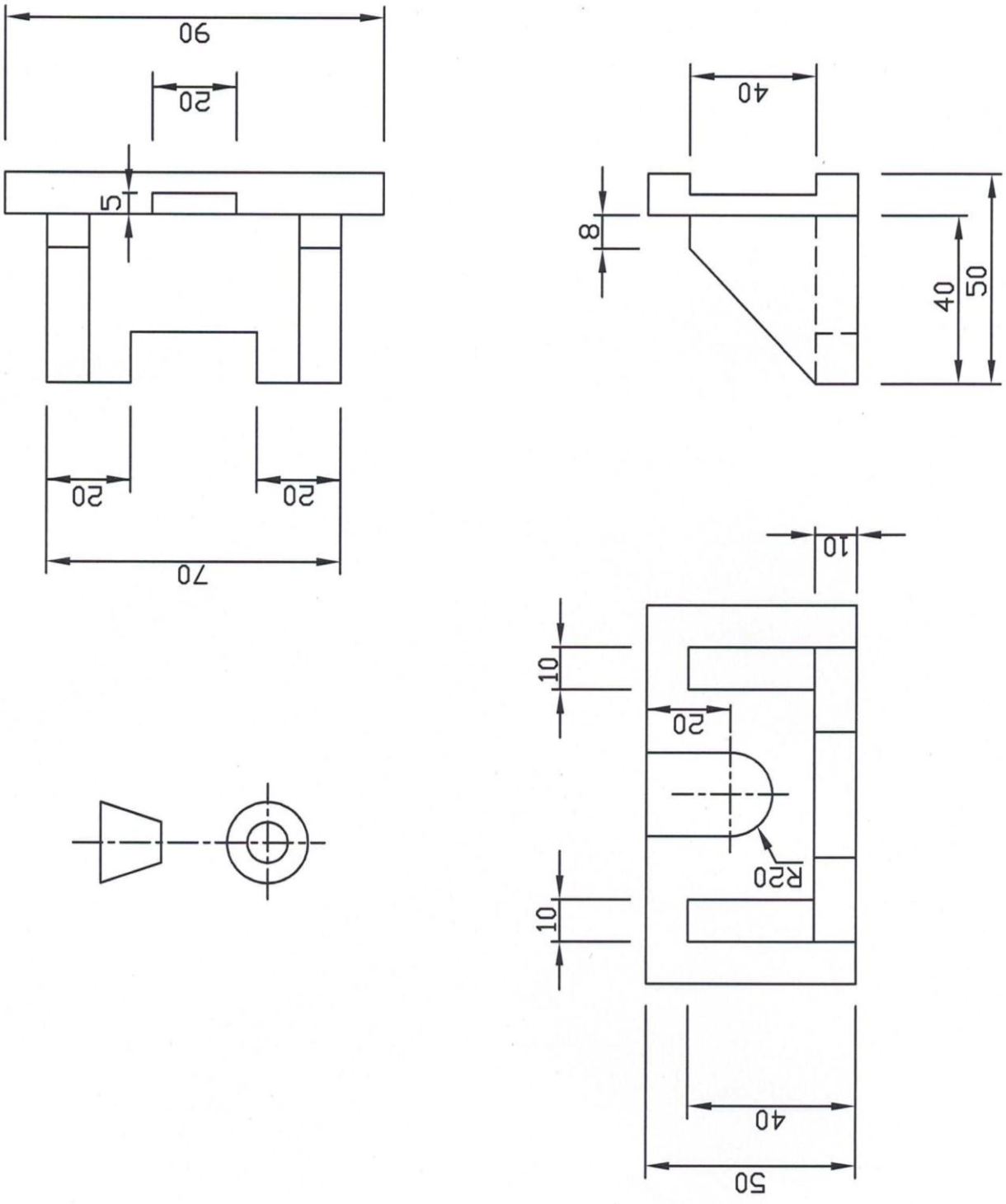
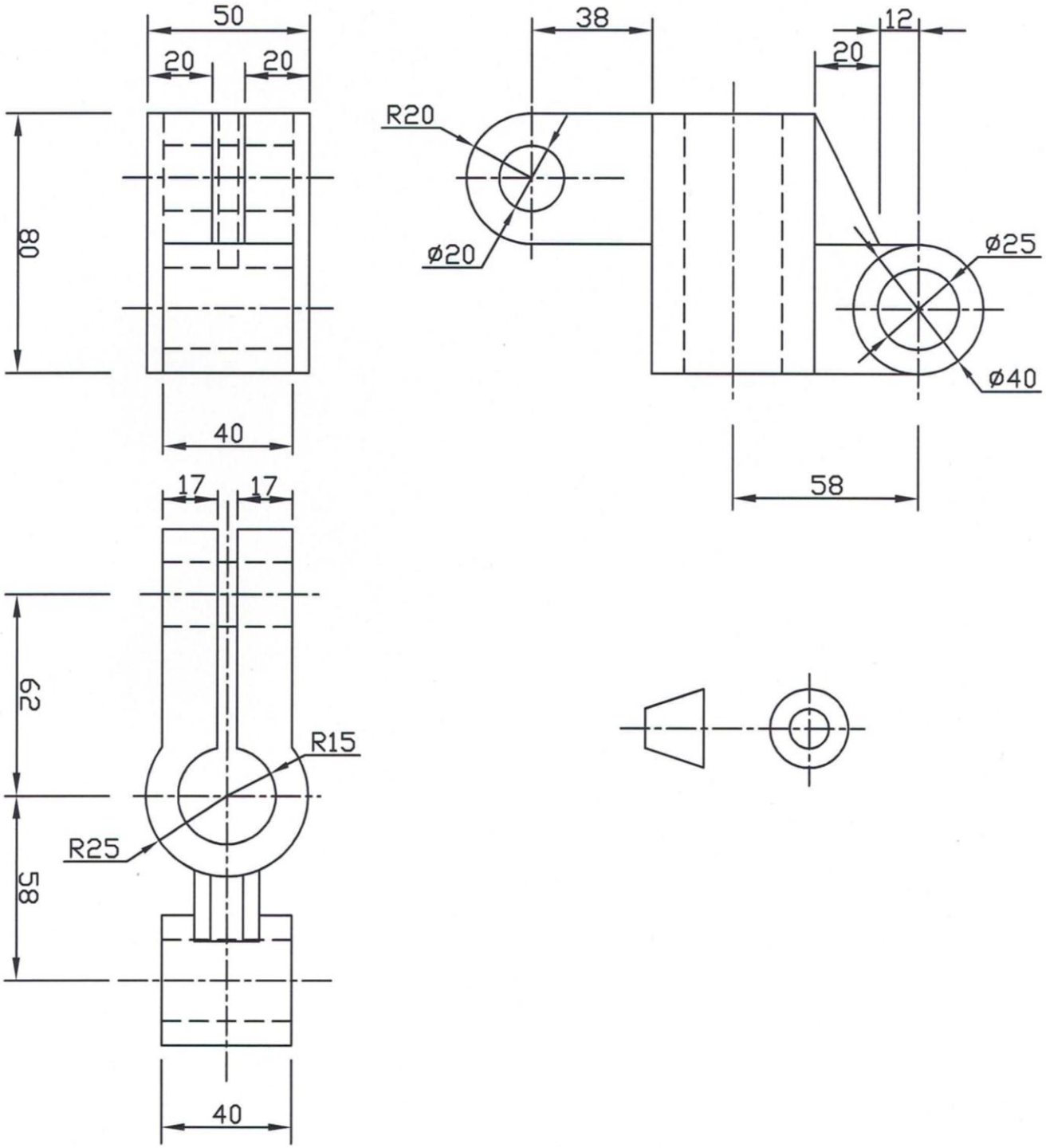
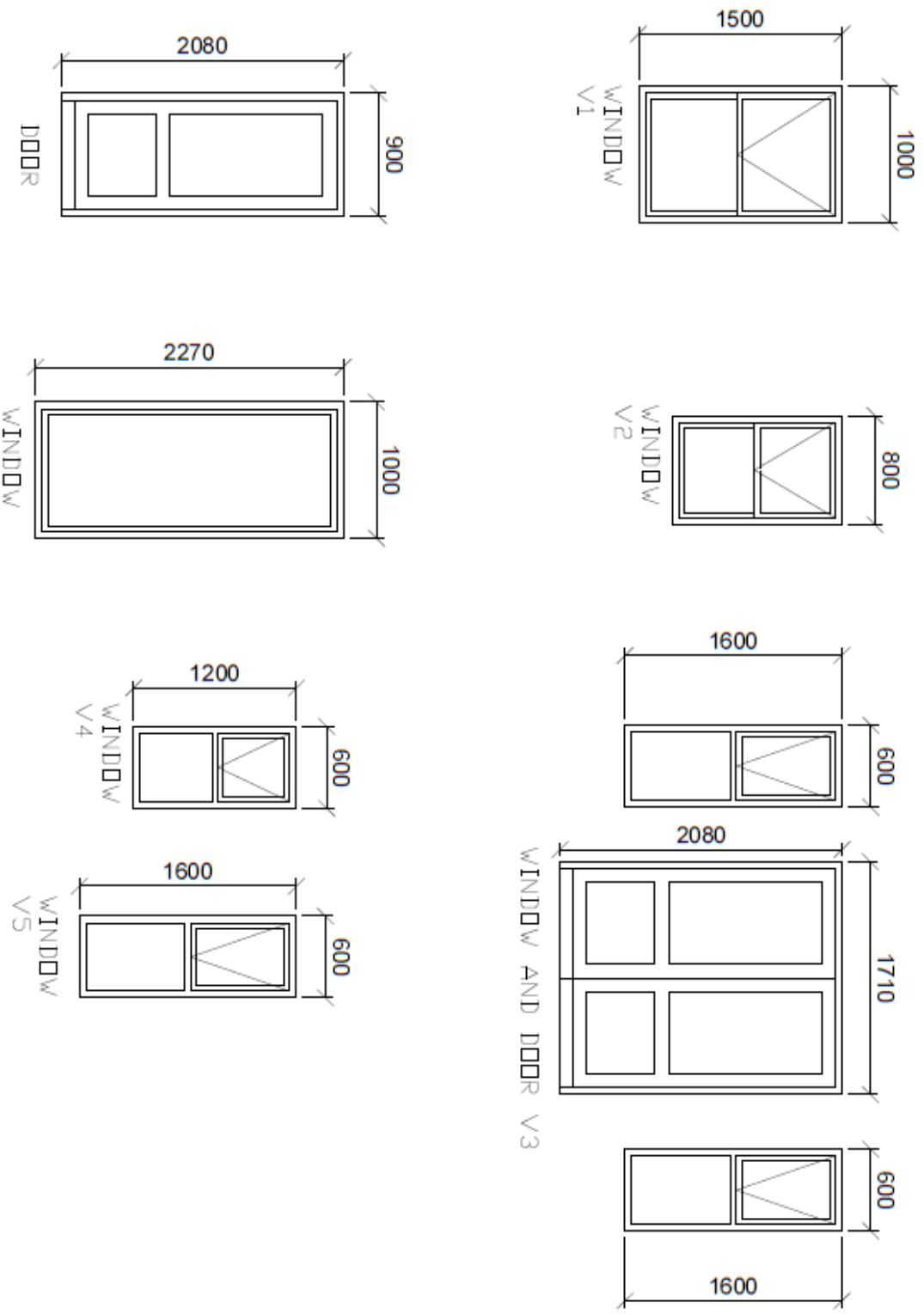


**DIAGRAM SHEET 5**




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WINDOW AND DOOR SCHEDULE SCALE 1 : 50

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