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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T450(**E**)(N25)T

NOVEMBER EXAMINATION

NATIONAL CERTIFICATE

ENGINEERING DRAWING N1

(8090261)

25 November 2016 (X-Paper)
09:00–13:00

REQUIREMENTS: A2 drawing sheet

Drawing instruments and calculators may be used.

This question paper consists of 5 pages and 6 diagram sheets.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
ENGINEERING DRAWING N1
TIME: 4 HOURS
MARKS: 100

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. ALL drawings must be done neatly using drawing instruments.
5. ALL drawings must conform to the latest SANS Code of Practice.
6. ALL work you do not want to be marked must be clearly crossed out.
7. Work neatly.

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QUESTION 1: FREEHAND DRAWING

FIGURE 1 on DIAGRAM SHEET 1 (attached) shows a view of a drilling machine.

Use only a pencil and an eraser and draw the view of the drilling machine 1,5 times the given size. **[10]**

QUESTION 2: REPRODUCTION DRAWING AND GEOMETRICAL CONSTRUCTION

FIGURE 2 on DIAGRAM SHEET 2 (attached) shows a view of a gland cover.

2.1 Draw, to scale 1 : 2, the view of the pump cover. (8)

2.2 Show ALL construction lines used in the construction of the ellipse. (2)

2.3 Insert any SIX dimensions. (3)

2.4 Add the following title and scale centrally beneath the layout:

GLAND COVER
SCALE 1 : 2 (2)
[15]

QUESTION 3: FIRST-ANGLE ORTHOGRAPHIC PROJECTION

Figure 3 on DIAGRAM SHEET 3 (attached) shows an isometric view of a casting.

3.1 Do NOT draw the given views but draw, to scale 1 : 1 and in first-angle orthographic projection, the following views:

3.1.1 Front view in the direction of F (3)

3.1.2 Left view in the direction of L (5)

3.1.3 Top view in the direction of T (5)

3.2 Add the following title and scale centrally beneath the layout:

CASTING
SCALE 1 : 1 (2)

3.3 Draw the symbol for first-angle orthographic projection beneath the layout. (1)
[16]

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QUESTION 4: ISOMETRIC DRAWING

Figure 4 on DIAGRAM SHEET 4 (attached) shows two views of a casting drawn in first-angle orthographic projection.

Do NOT draw the given views but draw, to scale 1 : 1, an isometric view of the casting.

Point P must be the lowest point.

NO hidden detail required **[15]**

QUESTION 5: SECTIONAL DRAWINGS

FIGURE 5 on DIAGRAM SHEET 5 (attached) shows two views of a shaft carrier drawn in first-angle orthographic projection.

5.1 Draw, to scale 1 : 1 and in first-angle orthographic projection, the following views of the shaft carrier:

5.1.1 Full-sectional front view on cutting line F–F (4)

5.1.2 Left view (5)

5.1.3 Full-sectional top view on cutting plane T–T (5)

5.2 Add the following title and scale centrally beneath the layout:

SHAFT CARRIER
SCALE 1 : 1 (2)

5.3 Draw the symbol for first-angle orthographic projection beneath the layout. (1)

[17]

QUESTION 6: PRISMS AND PYRAMIDS

FIGURE 6 on DIAGRAM SHEET 6 (attached) shows a front view and an auxiliary view of a cone.

Draw, in first-angle orthographic projection and to scale 1 : 1, the following views of the cone:

6.1 Given front view and auxiliary view (3)

6.2 Top view in the direction of T (4)

6.3 Left view in the direction of L (4)

NO hidden detail is required.

[11]

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QUESTION 7: COMPUTER TERMINOLGY AND ABBREVIATIONS

Draw the table in FIGURE 7 below to full size on the DRAWING SHEET.

Print the answers of the questions in the table drawn on the DRAWING SHEET.

Explain the following concepts:

7.1 Scanner

7.2 Operating software

7.3 Data

7.4 Modem

7.5 Plotter

7.6 Read-only memory

7.1	
7.2	
7.3	
7.4	
7.5	
7.6	

FIGURE 7 (6)

NOTE: Balanced layout and neatness of the complete ANSWER SHEET (10)
[16]

TOTAL: 100

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DIAGRAM SHEET 1

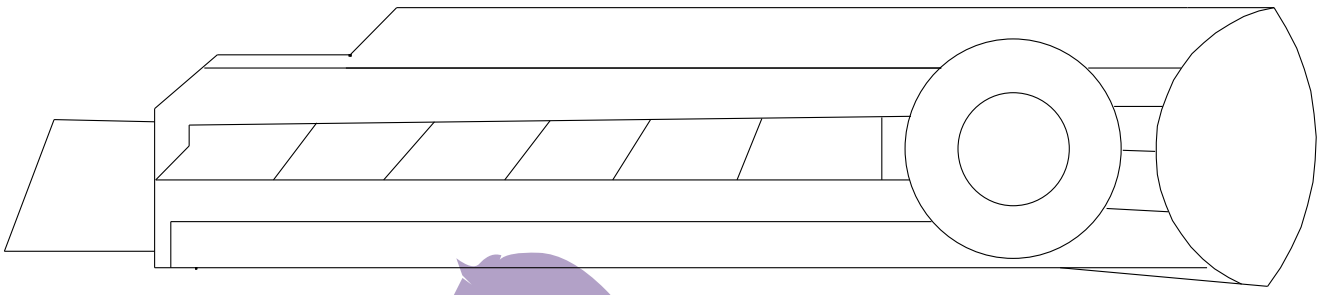

FIGURE 1

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DIAGRAM SHEET 2

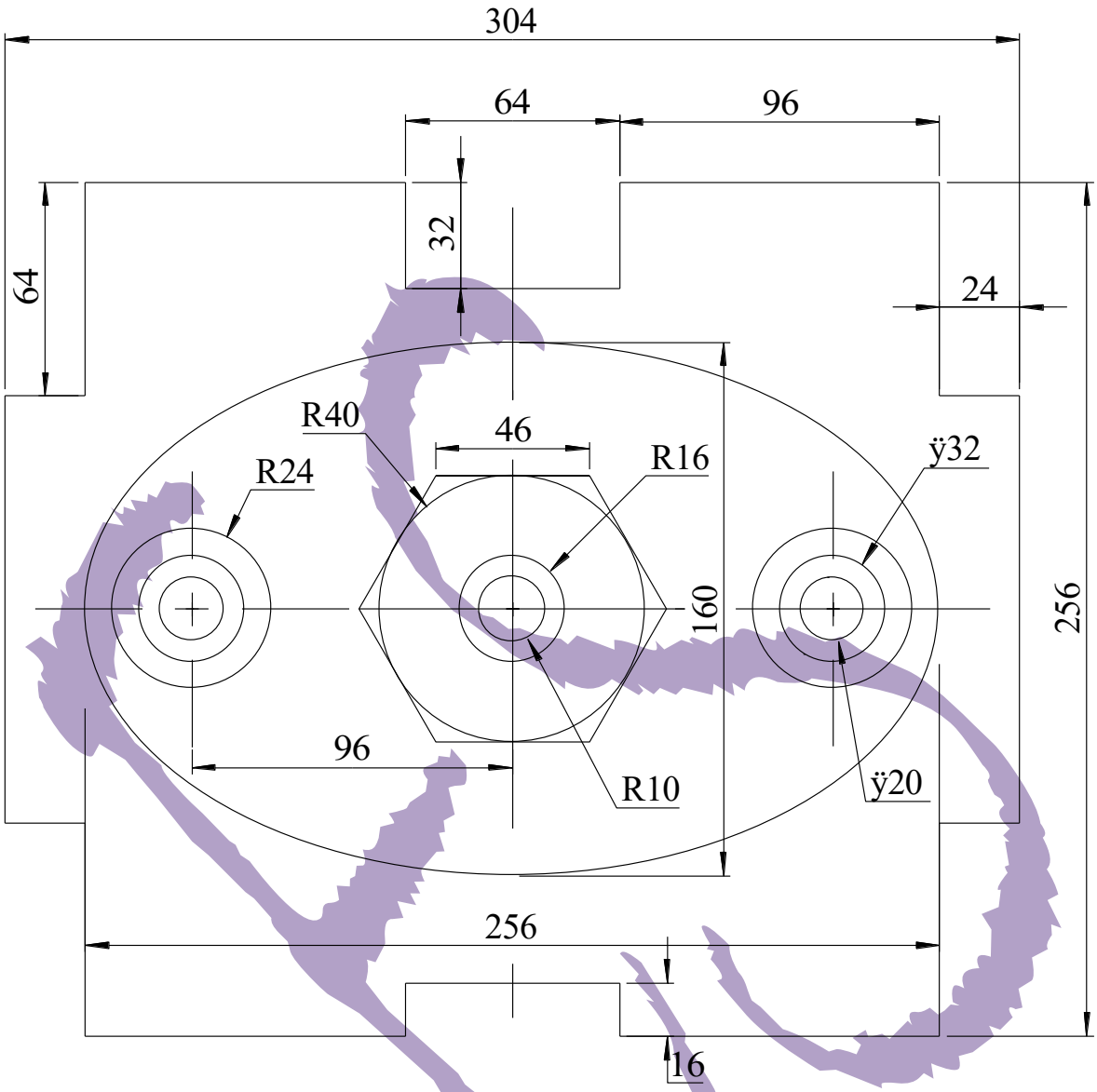

FIGURE 2

SCALE 1 : 2

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DIAGRAM SHEET 3

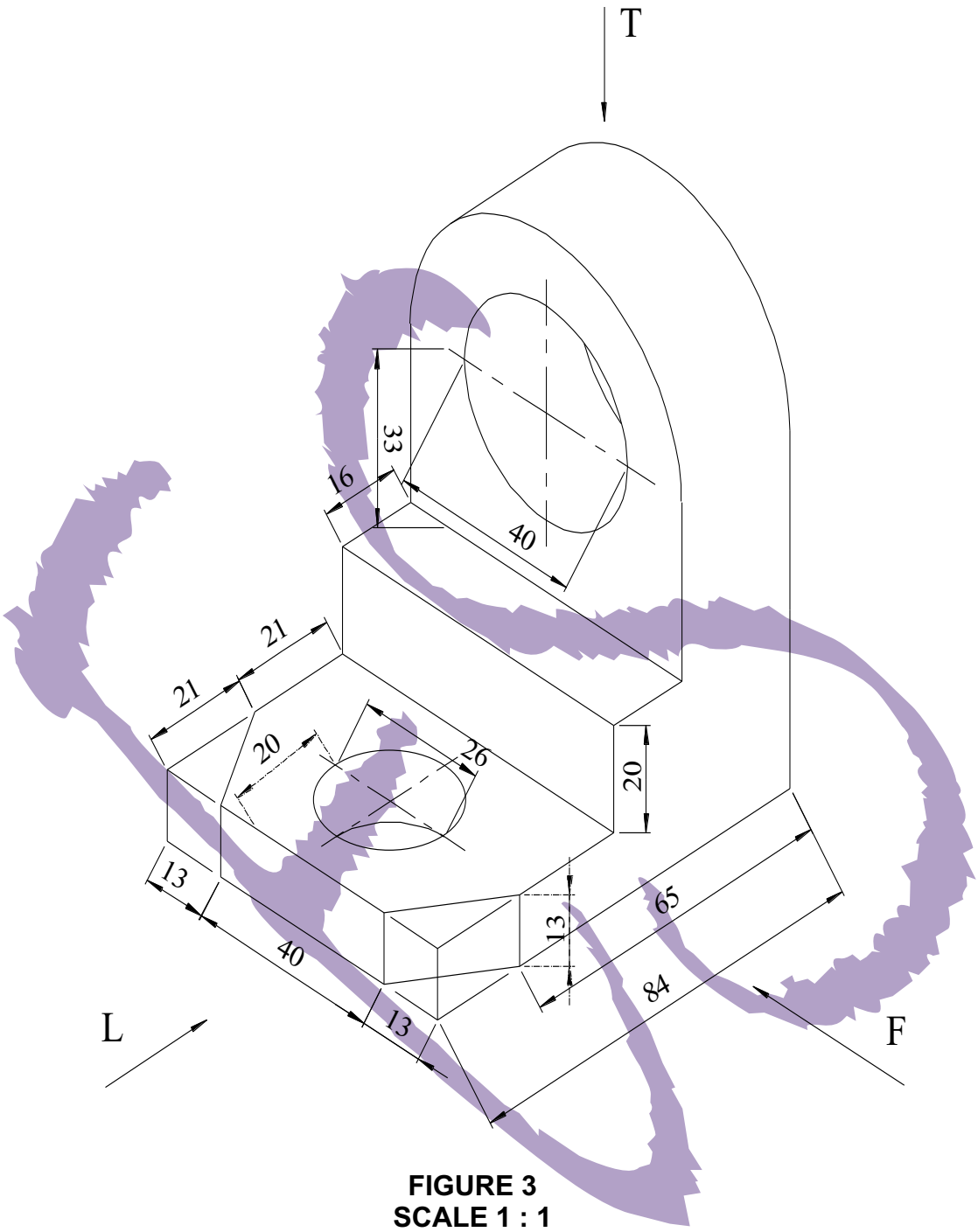

FIGURE 3
SCALE 1 : 1

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DIAGRAM SHEET 4

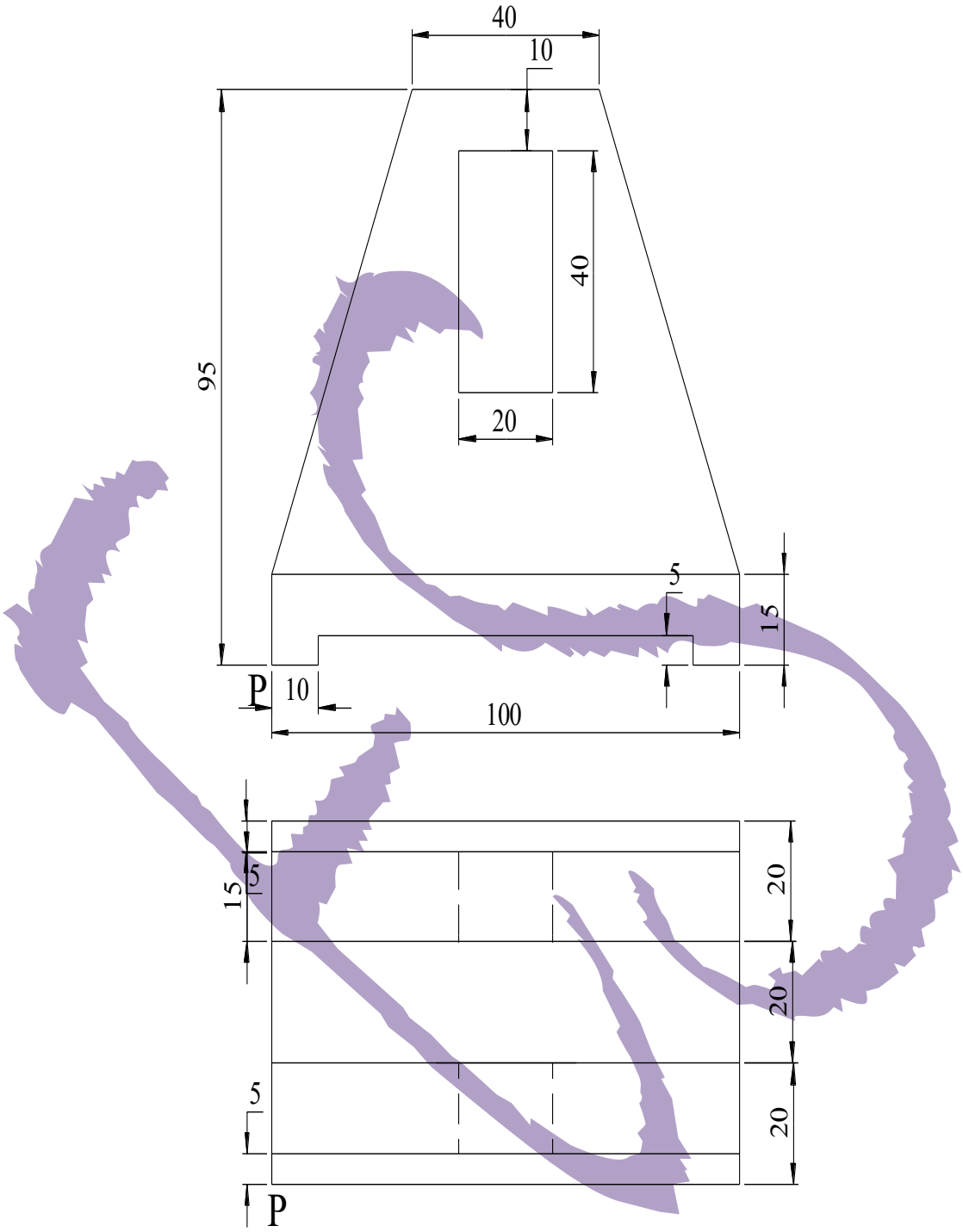

FIGURE 4
SCALE 1 : 1

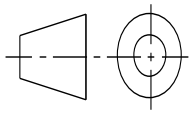

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DIAGRAM SHEET 5

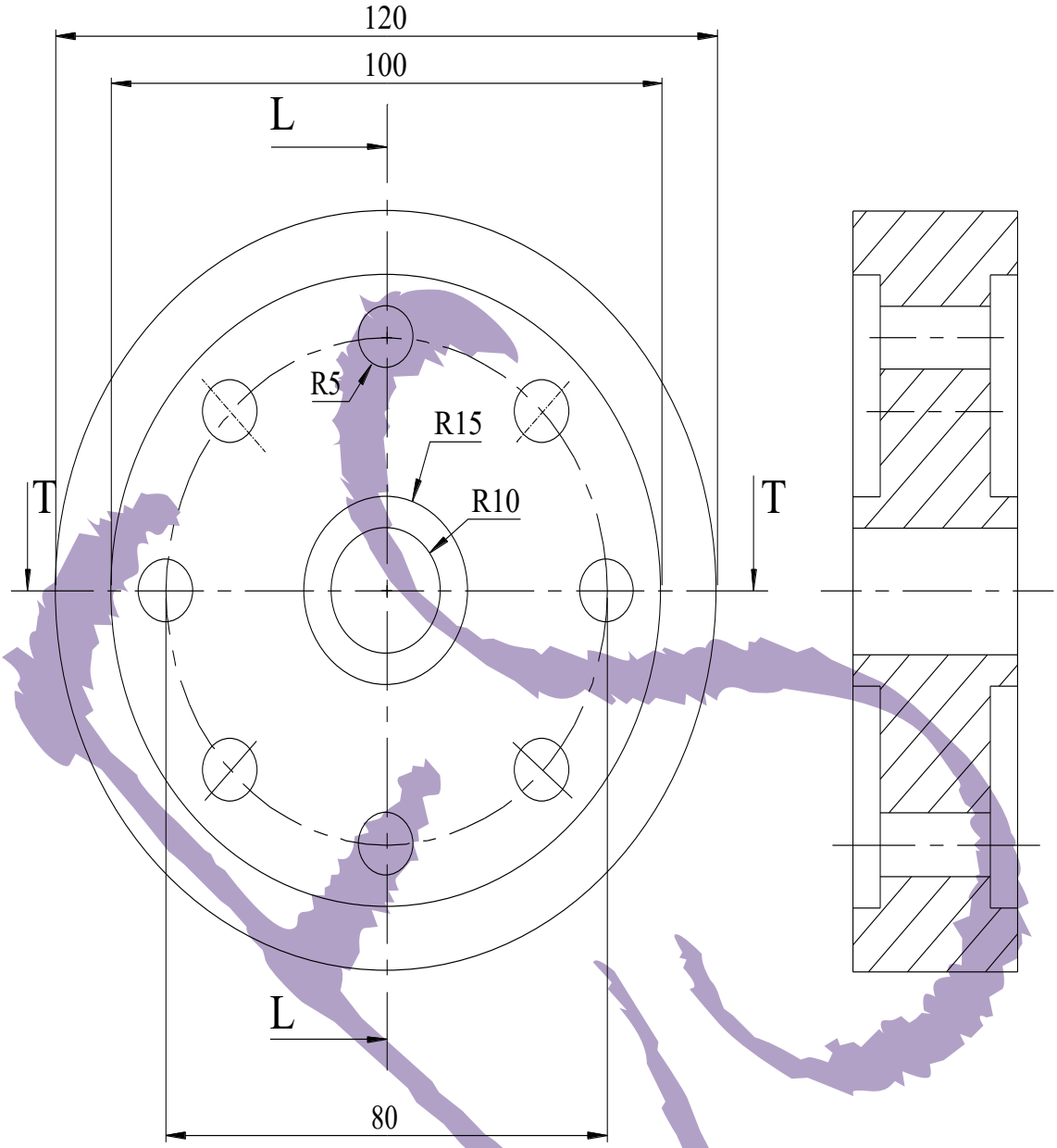

FIGURE 5
SCALE 1 : 1

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DIAGRAM SHEET 6

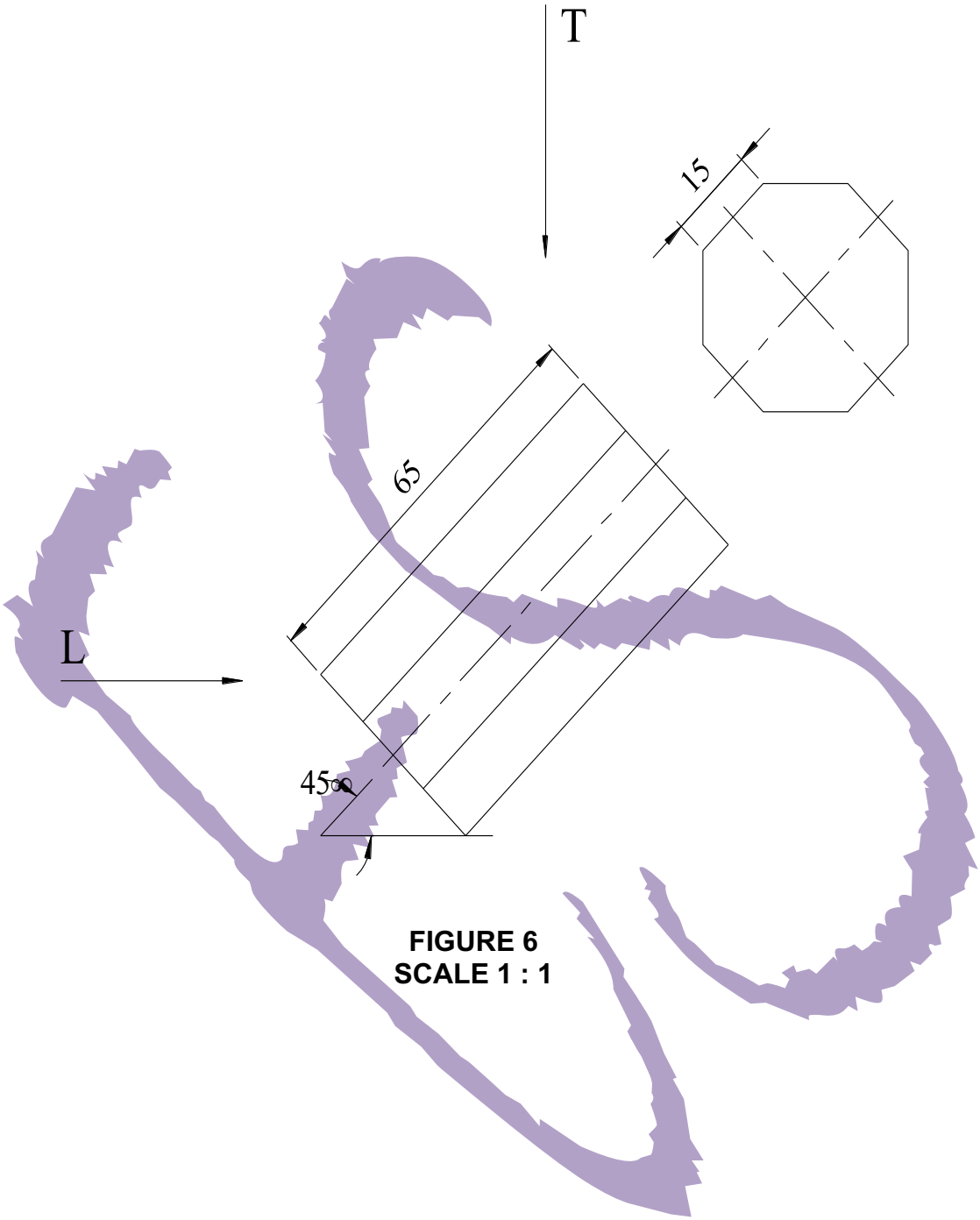

FIGURE 6
SCALE 1 : 1

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