higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

PLATING AND STRUCTURAL STEEL DRAWING N4

5 December 2023

This marking guideline consists of 12 pages.

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MARKSHEET

QUESTION 1: OFF-CENTRE RECTANGLE-TO-RECTANGLE

Front view (not to scale)		(1)
Top view (not to scale)		(1)
Calculations		(15)
Pattern of transition piece		(6)
Accuracy		(1)
Neatness		(1)
	TOTAL:	**[25]**

QUESTION 2: OFF-CENTRE CONNECTION

Front view without penetration line		(2)
Top view without penetration line		(2)
Auxiliary view of branch piece without penetration line		(3)
Ellipse in top view		(2)
Line of penetration in auxiliary view		(2)
Ellipse in front view		(2)
Line of penetration in front view		(3)
Pattern of branch pipe		(5)
Accuracy		(1)
Linework and projections		(2)
Neatness		(1)
	TOTAL:	**[25]**

QUESTION 3: OBLIQUE CONE INTERSECTING RIGHT CONE

Front view without interpenetration line		(3)
Top view without interpenetration line		(2)
Interpenetration line in top view		(3)
Interpenetration line in front view		(3)
Pattern of oblique cone		(10)
Accuracy		(1)
Line work and projections		(2)
Neatness		(1)
	TOTAL:	**[25]**

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QUESTION 4: FLARED VENTILATOR HEAD

Front view	(4)
Top view	(3)
Left view	(3)
Pattern of throat piece	(2)
Pattern of back piece	(4)
Pattern of sides	(5)
Accuracy	(1)
Line work and projections	(2)
Neatness	(1)
TOTAL:	**[25]**

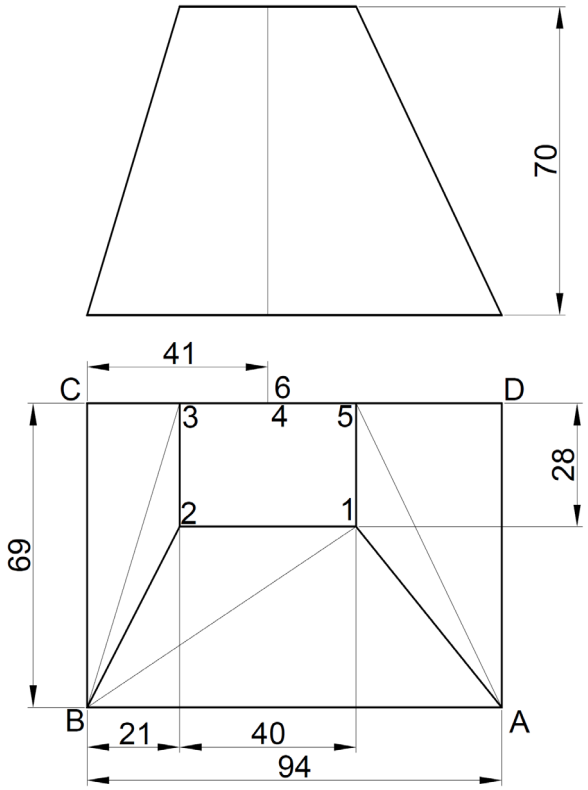
QUESTION 5: TWO-WAY BREECHES PIECE

Front view	(2)
Top view without ellipses	(3)
Ellipses in top view	(3)
Pattern of right-hand side leg of breeches piece	(13)
Accuracy	(1)
Line work and projections	(2)
Neatness	(1)
TOTAL:	**[25]**

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QUESTION 1

DIAGRAMS AND CALCULATIONS



AB = 94 (0,5)

A1 = $\sqrt{(94-61)^2+(69-28)^2+70^2}$ = 87,58 (1,5)

B1 = $\sqrt{(21+40)^2+(69-28)^2+70^2}$ = 101,5 (1,5)

1-2 = 40 (0,5)

B2 = $\sqrt{21^2+(69-28)^2+70^2}$ = 83,8 (1,5)

2-3 = 1-5 = 28 (0,5)

B3 = $\sqrt{21^2+69^2+70^2}$ = 100,51 (1,5)

C3 = $\sqrt{21^2+70^2}$ = 73,08 (1)

BC = AD = 69 (0,5)

3-4 = 4-5 = $\frac{40}{2}$ = 20 (1)

4-6 = 70 (0,5)

3-6 = 5-6 = $\sqrt{20^2+70^2}$ = 72,8 (1)

C-6 = 41 (0,5)

A5 = $\sqrt{(94-61)^2+69^2+70^2}$ = 103,68 (1,5)

D5 = $\sqrt{(94-61)^2+70^2}$ = 77,39 (1)

D6 = 94– 41 = 53 (0,5)

[15]

FIGURE 1
OFF-CENTRE RECTANGLE-TO-RECTANGLE

QUESTION 1

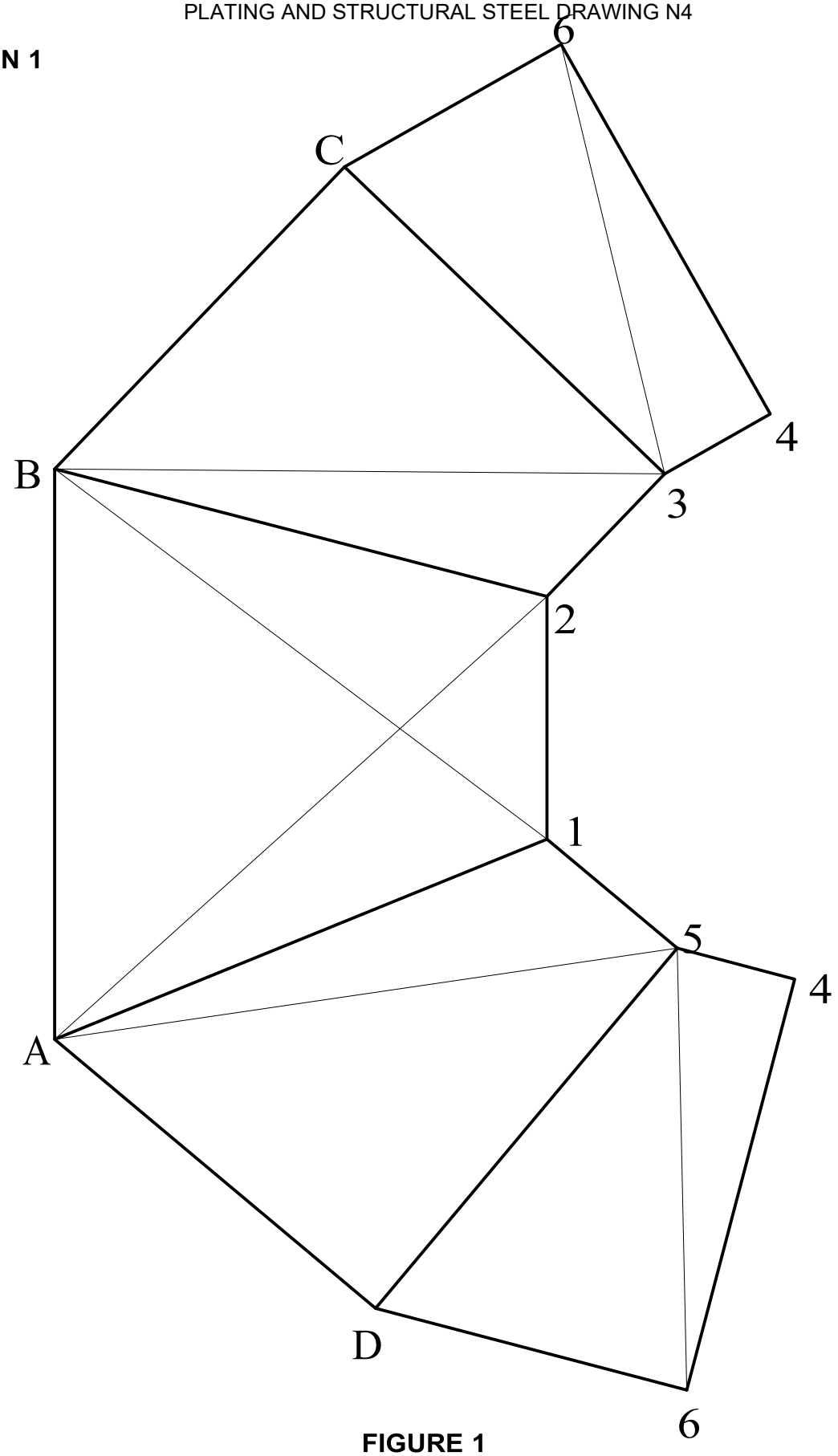


FIGURE 1
OFF-CENTRE RECTANGLE-TO-RECTANGLE
SCALE 1:1

QUESTION 2

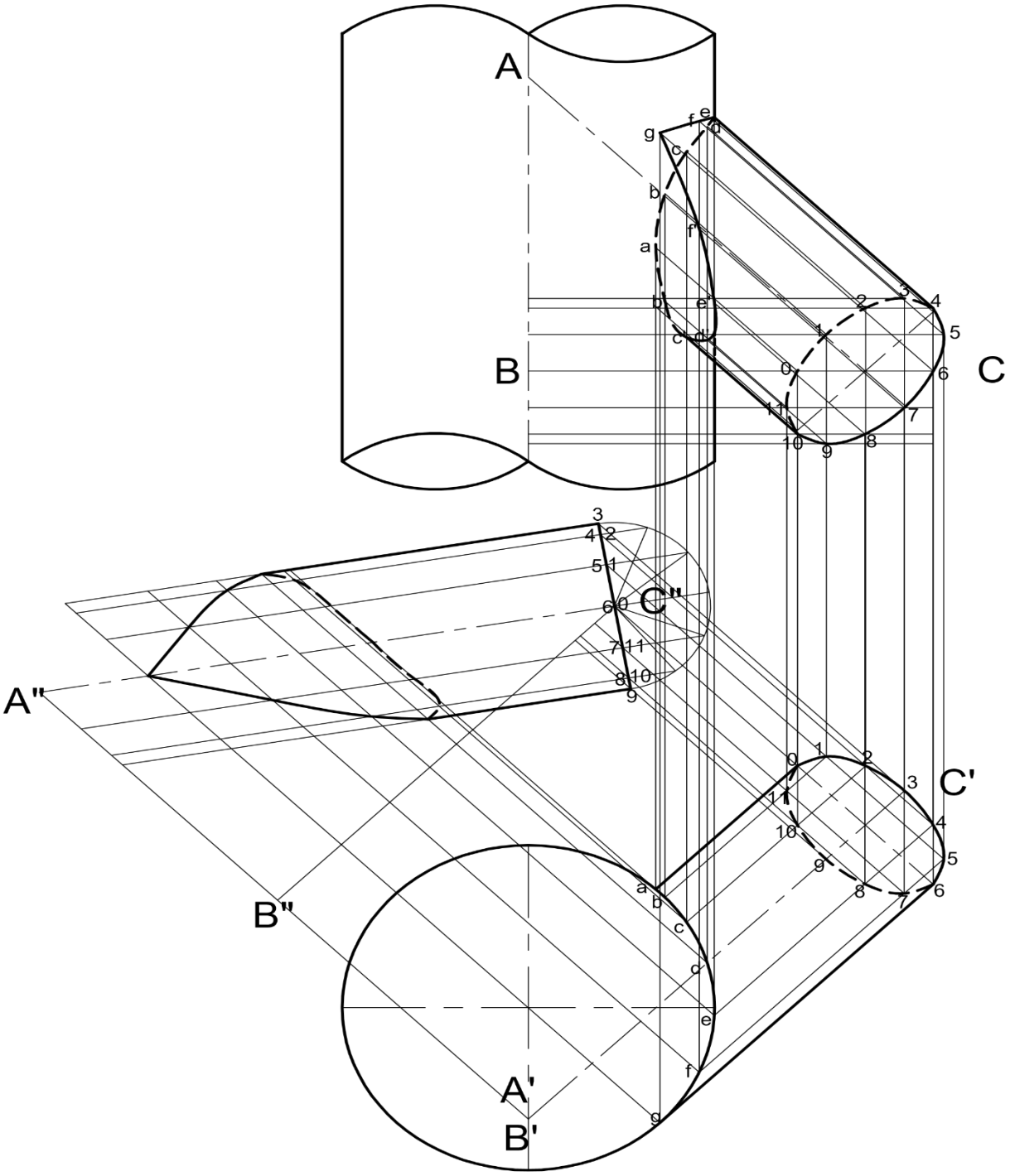


FIGURE 2
OFF-CENTER CONNECTION
SCALE 1:10

QUESTION 2

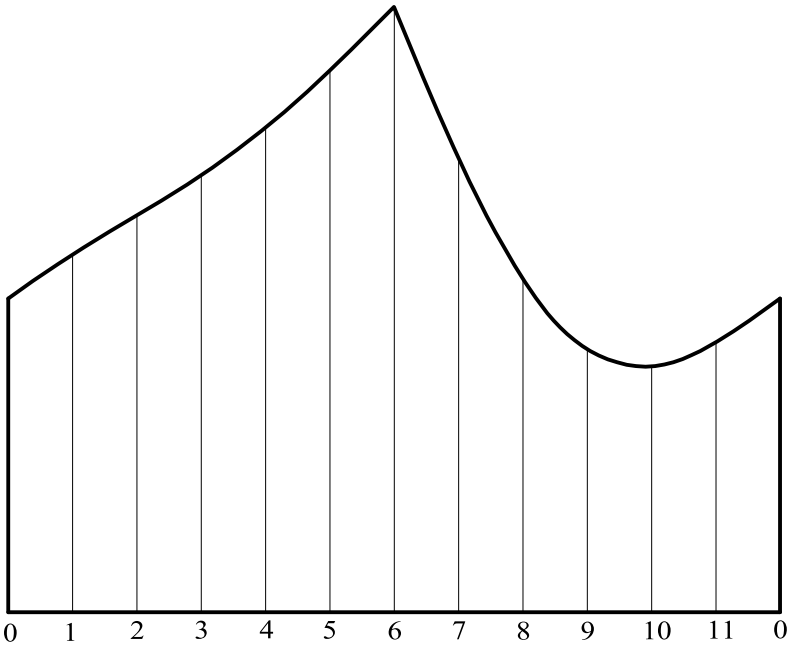


FIGURE 2
OFF-CENTRE CONNECTION
SCALE 1:10

QUESTION 3

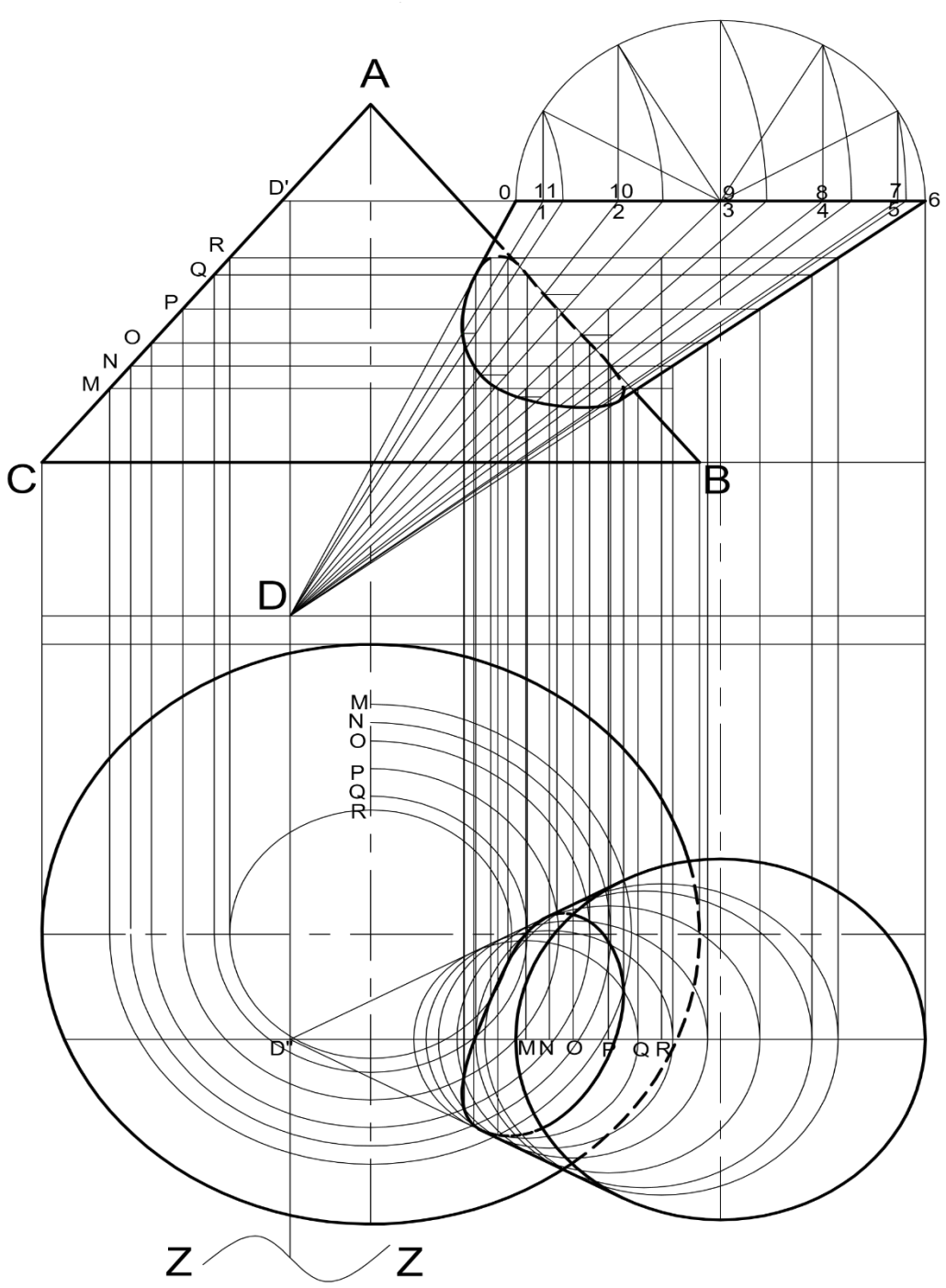


FIGURE 3
OBLIQUE CONE INTERSECTING RIGHT CONE
SCALE 1:10

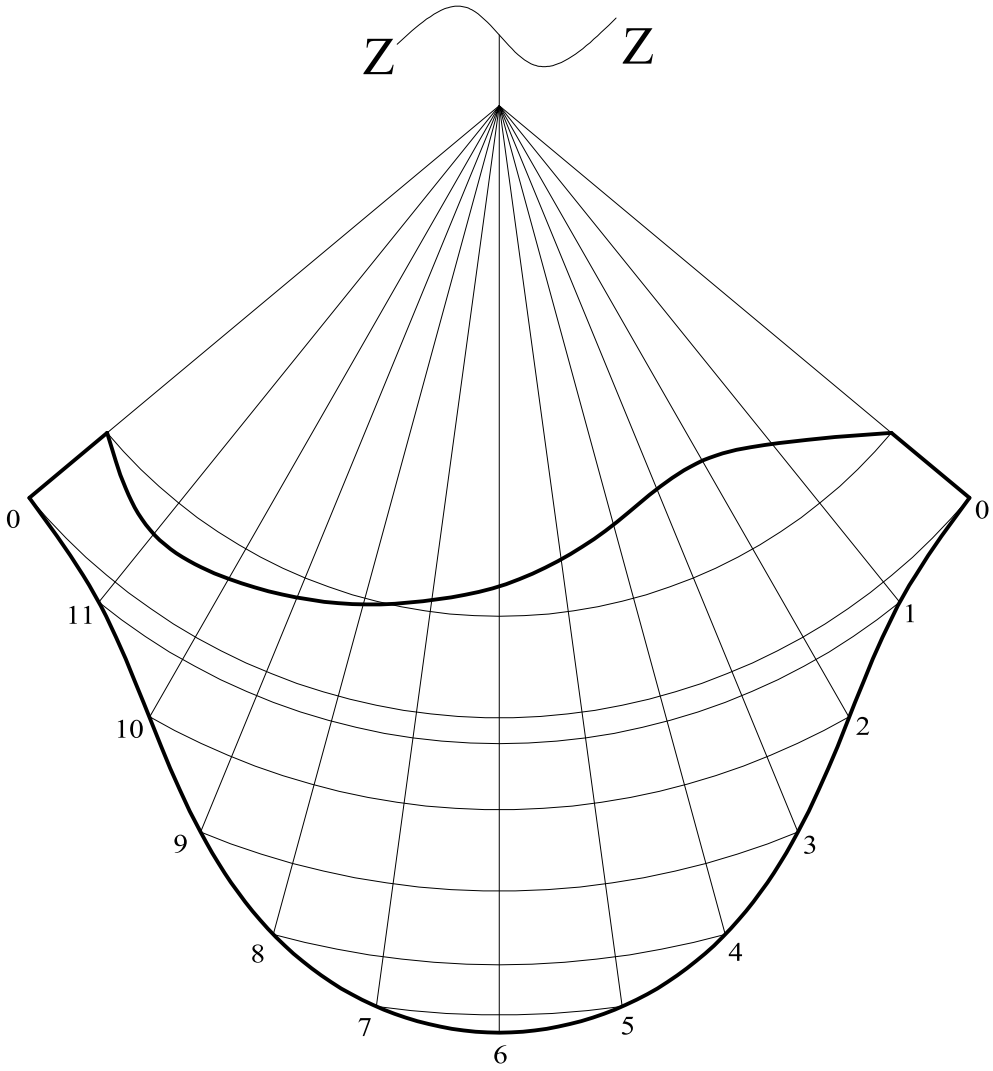


FIGURE 3

OBLIQUE CONE INTERSECTING RIGHT CONE
SCALE 1:10

QUESTION 4

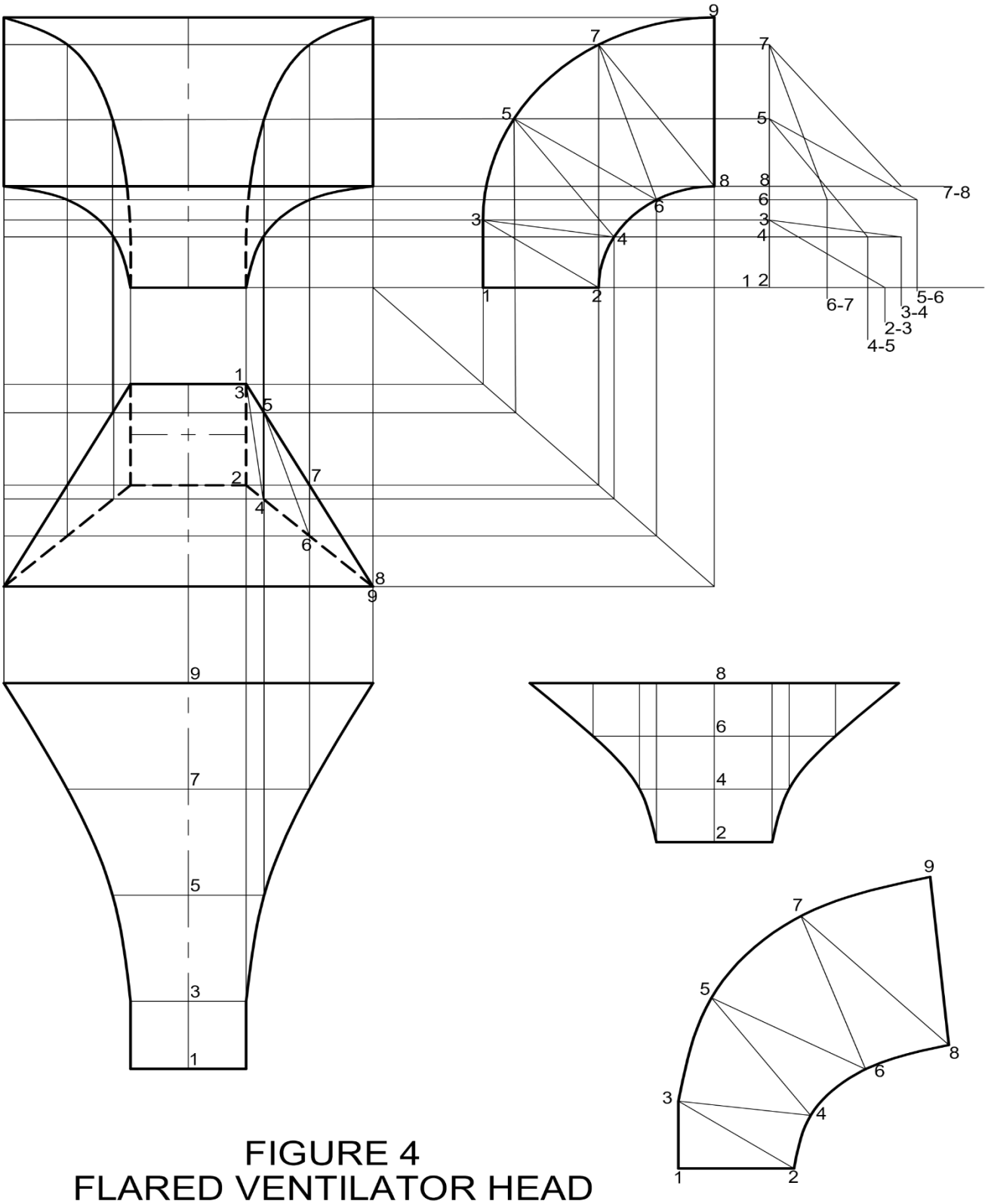


FIGURE 4
FLARED VENTILATOR HEAD
SCALE 1:20

QUESTION 5

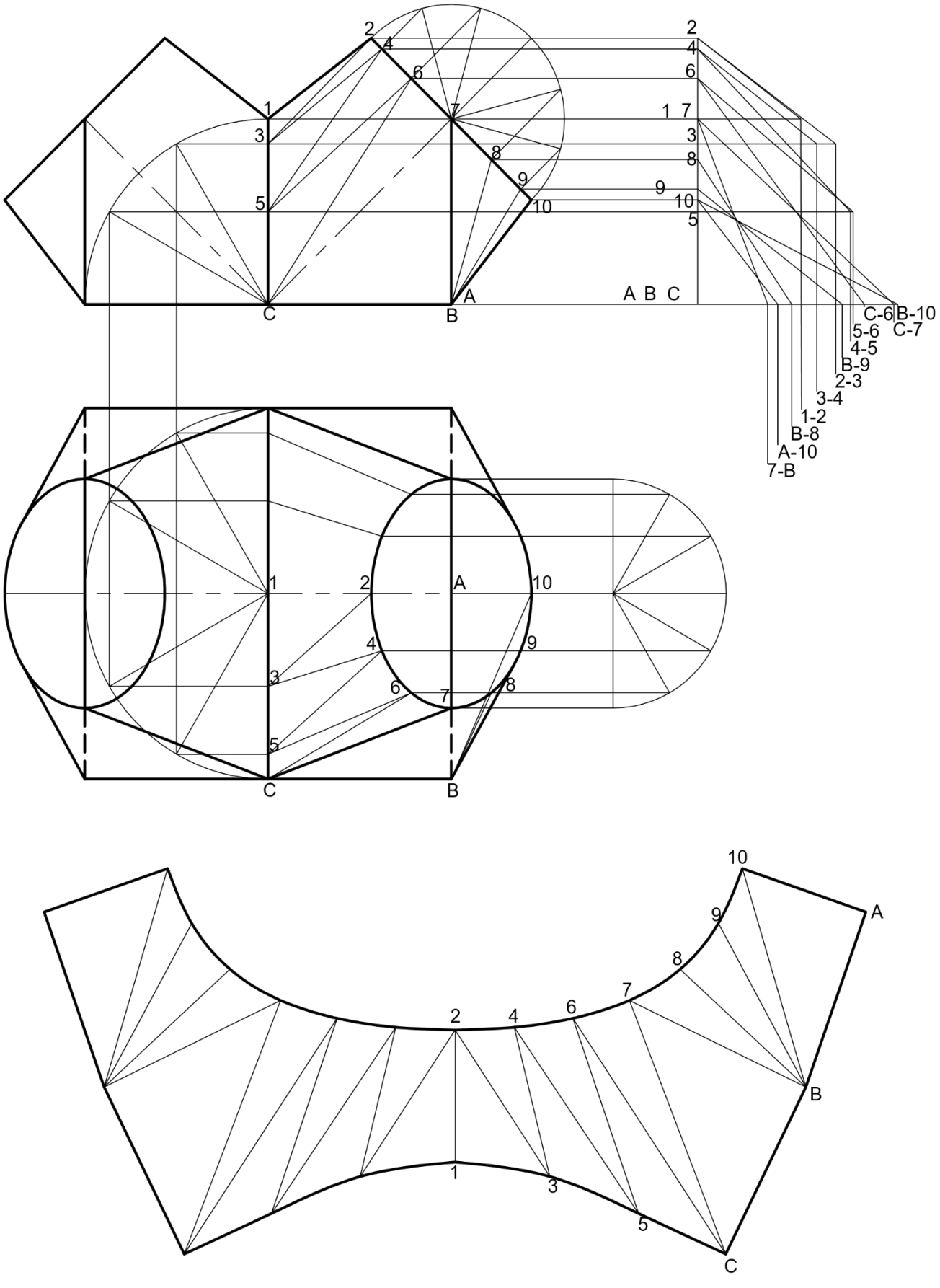


FIGURE 5
TWO-WAY BREECHES PIECE
SCALE 1:5

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