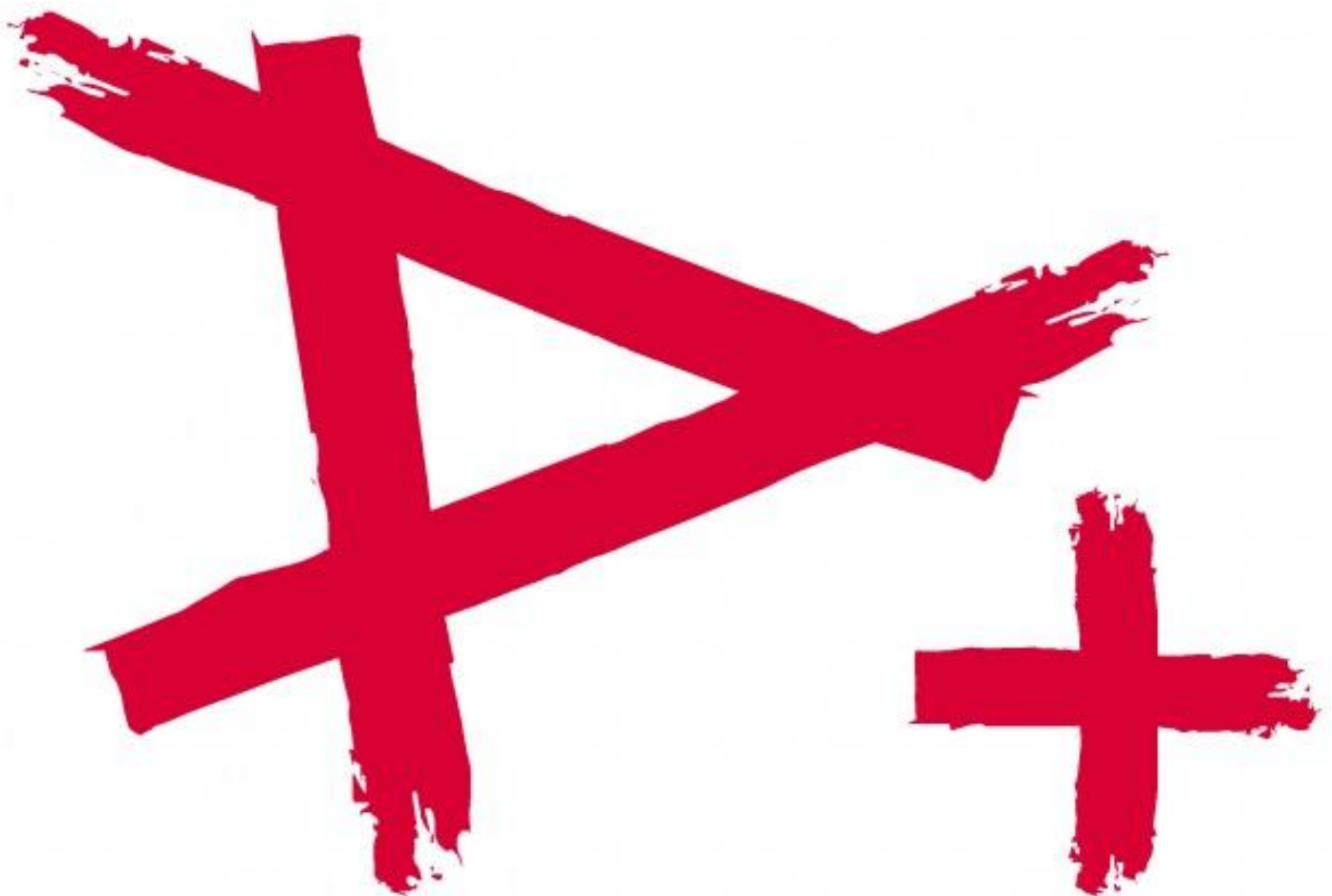
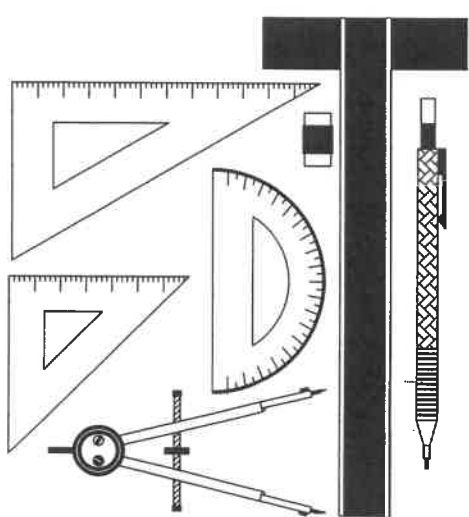




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MARKING GUIDELINES



NATIONAL SENIOR CERTIFICATE EXAMINATION
2019

ENGINEERING GRAPHICS AND DESIGN
PAPER 1

MARKS: 200
TIME: 3 HOURS

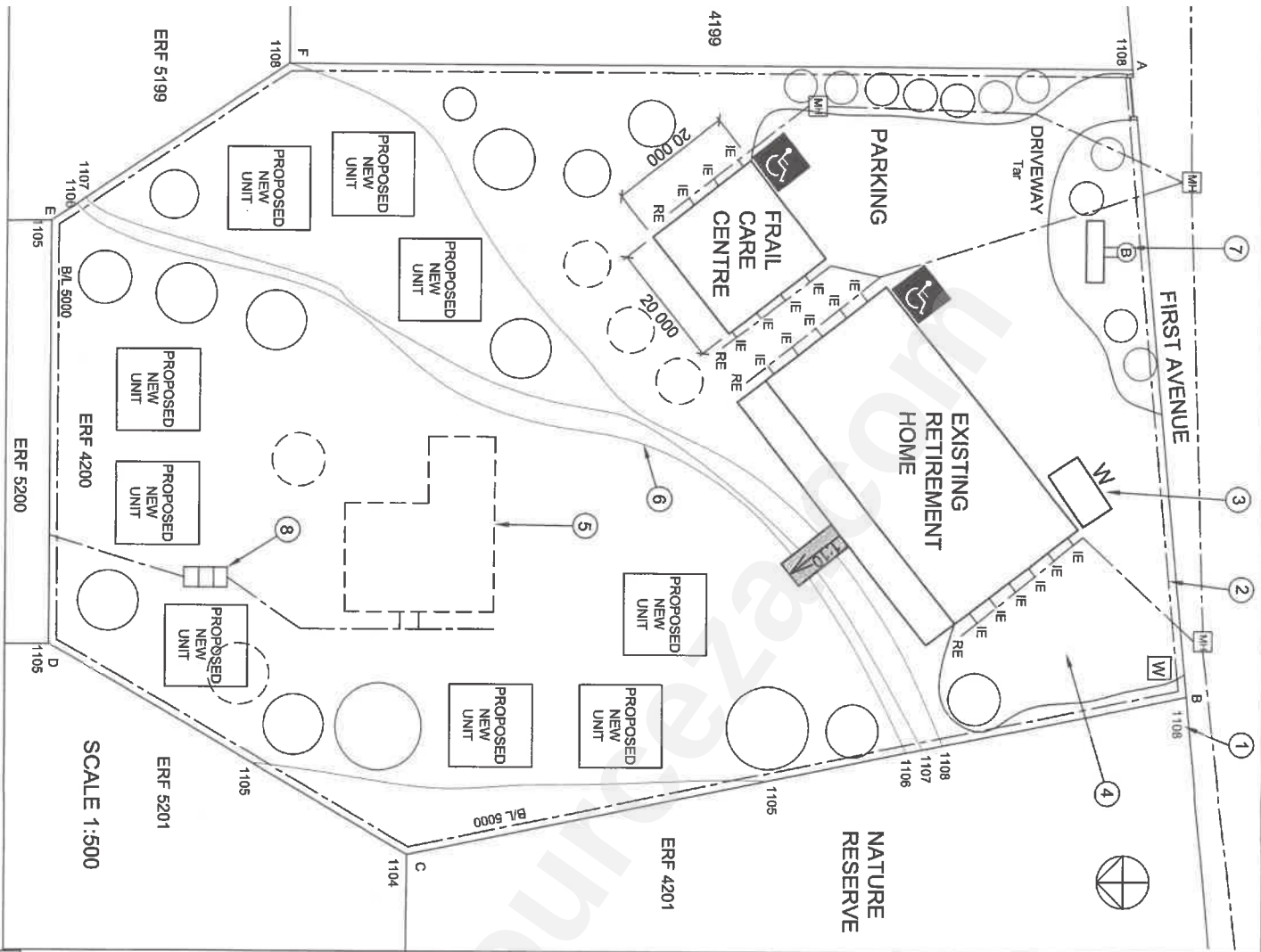
PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 6 pages including the cover page and 4 questions.
2. All questions must be answered.
3. Unless specified otherwise, all questions are in First-angle Orthographic Projection.
4. Unless specified otherwise, all questions are to be completed to a scale of 1:1.
5. All answer sheets must be restapled in numerical order, even questions that have not been answered.
6. All construction work must be shown.
7. Print your examination number neatly on each page.
8. Use only the answer sheets provided.
9. Your drawings should reflect neatness and accuracy.
10. All dimensions or detail not given may be assumed in good proportion.
11. Your drawings should comply with SANS 10143.

FOR OFFICIAL USE ONLY					
QUESTION	SECTION	MARK	MODERATED	MAXIMUM	
1	CIVIL ANALYTICAL				20
2	INTERPENETRATION & DEVELOPMENT				40
3	TWO-POINT PERSPECTIVE				40
4	CIVIL DRAWING				100
	TOTAL				200

CHECKED BY

EXAMINATION NUMBER



STUDY THE ADJACENT DRAWING AND ANSWER THE QUESTIONS THAT FOLLOW:

QUEST	CN	ANSW
1.1 What type of civil drawing is shown?	SITE PLAN	
1.2 Which ERF is to the NORTHEAST of the retirement complex?	5:199	
1.3 How many manholes are there in this drawing?	4	
1.4 Which corner has the lowest elevation? (either A,B,C,D,E or F)	C	
1.5 How many trees need to be removed?	5	
1.6 What is the feature at 1 called?	CORNER / BEACON HEIGHT	
1.7 What is the feature at 2 called?	BUILDING LINE	
1.8 What is the feature at 3 called?	WATER TANK	
1.9 What is the feature at 4 called?	SEWER LINE	
1.10 What is indicated at feature 5?	WORK TO BE REMOVED	
1.11 Has the ramp been drawn correctly?	NEE	
1.12 What is the feature at 6 called?	CONTOUR	
1.13 What is the feature at 7 called?	FIRE HYDRANT	
1.14 What is the feature at 8 called?	SEPTIC TANK	
1.15 In what colour would a proposed new unit be drawn on this plan?	RED/GREY	
1.16 Is this drawing drawn to the scale indicated?	NO	
1.17 What does the abbreviation IE stand for?	INSPECTION EYE	
1.18 What is the closest that a new unit can be placed to ERF 5200?	5000 mm / 5 m	
1.19 In the space below, determine the area of the Frail Care Centre in m ² .		

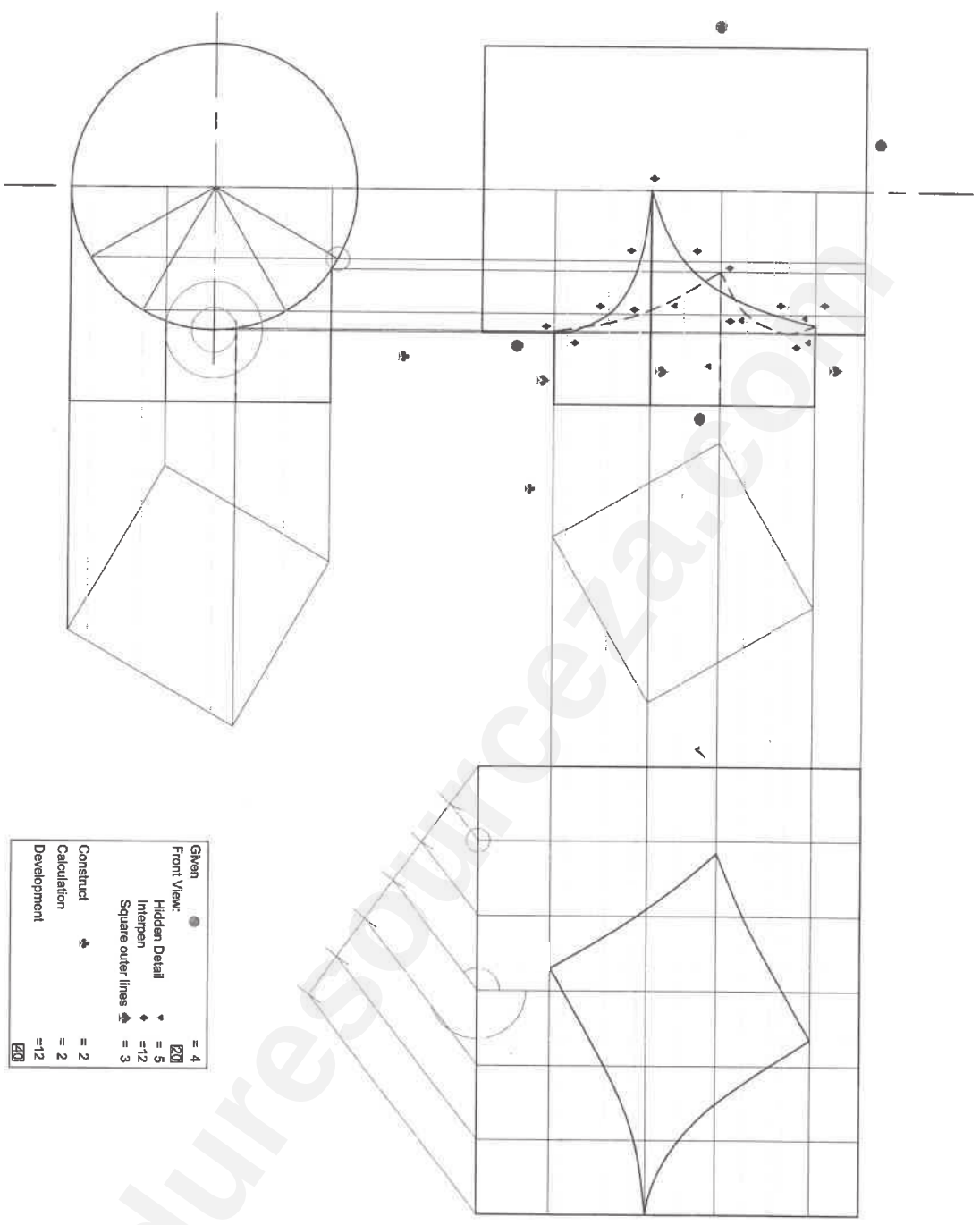
Area = length x breadth
= 20 m x 20 m
= 400 m²

Answer: 400 m²

ANSWER SHEET 1

EXAMINATION NUMBER

$\frac{1}{2} C = \frac{1}{2} 60 \times P1$
 $= 94$



Given	●	= 4
Front View:	●	= 20
Hidden Detail	◆	= 5
Interpen	◆	= 12
Square outer lines	◆	= 3
Construct	◆	= 2
Calculation	◆	= 2
Development	◆	= 12
	◆	= 20

QUESTIONS

The drawings below show the COMPLETE Top and Front Views as well as the INCOMPLETE Front View of a CYLINDRICAL PIPE which has been joined to a SQUARE DUCT and drawn in First-angle Orthographic Projection. An Auxiliary View of the square duct is shown in the Top and Front Views.

Draw the following:

2.1 the complete Front View clearly showing the construction of interpenetration. Show all hidden detail.

2.2 the development of only half of the cylindrical pipe which joins with the duct, clearly showing the interpenetration.

Show all construction and calculations.

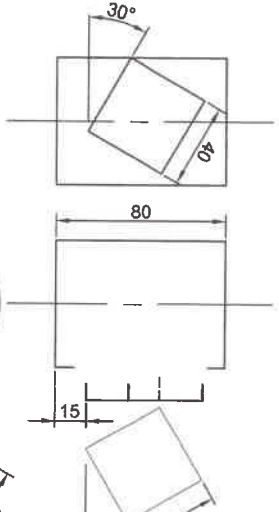
Do not draw the right view.

The complete Top View and an Auxiliary View have already been drawn in position.

ASSESSMENT CRITERIA

You will be assessed on your ability to do the following:

- draw and complete the Front View
- show necessary construction
- develop and draw the cylindrical pipe



QUES

TWO-I

PERSP1

The figures show the three views of the inside tuck shop with built-in cupboards and a semi-serving hatch. Some walls have been removed inside the room.
Draw a neat two-point perspective view of the shop.

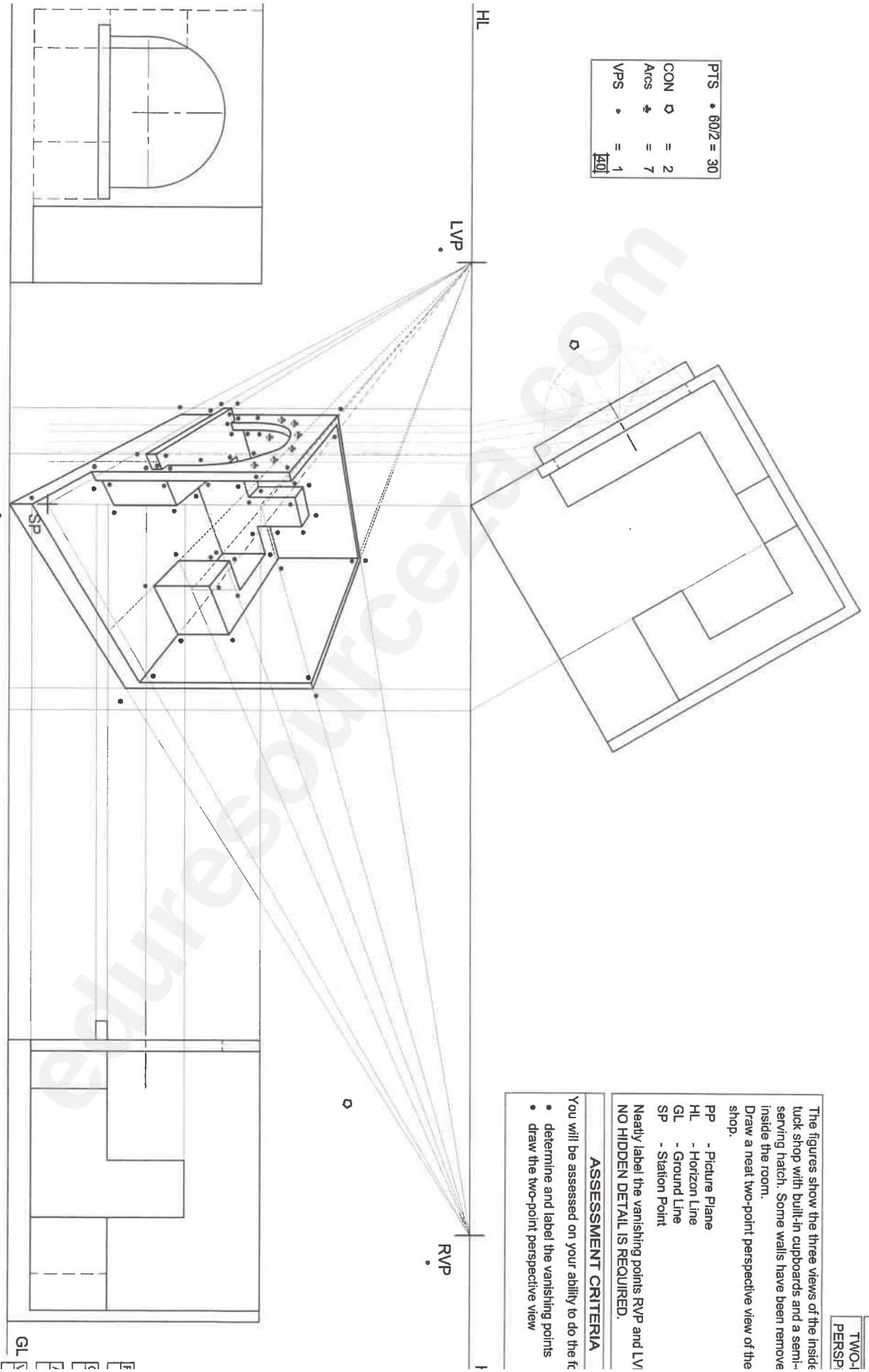
- PP - Picture Plane
- HL - Horizon Line
- GL - Ground Line
- SP - Station Point

Neatly label the vanishing points RVP and LVP. NO HIDDEN DETAIL IS REQUIRED.

ASSESSMENT CRITERIA

- You will be assessed on your ability to do the following:
- determine and label the vanishing points
 - draw the two-point perspective view

PTS	•	60/2	=	30
CON	□	=	2	
Arms	+	=	7	
VPS	•	=	1	
				<u>40</u>





Assessment Criteria		
Sectional Elevation		
1	Ceiling Battens	
2	Wall Plates	
3	Ceiling Board	
4	Truss Plates	
5	Roof Truss	
6	Purlins	
7	Roof	
8	Sectioned Walls	
9	Sectioned Window	
10	Floor & Foundation	
11	DPC	
12	Hatching	
13	Internal Door	
14	Basin	
15	External Walls	
16	Fascia Boards	
17	Roof Detail	
18	Finished Floor Level	
19	Labels	
Subtotal		
Floor Plan		
20	Walls	
21	Hatching	
22	Window	
23	Doors	
24	Cupboard	
25	Plumbing Fixtures	
26	Labels	
27	Ramp	
28	Cutting Plane	
Subtotal		
TOTAL		