



education

Department of Education
FREE STATE PROVINCE

ENGINEERING GRAPHICS AND DESIGN

GRADE 10

TEST

SEPTEMBER 2017

TIME: 1 1/2 HOUR

TOTAL: 60

This question paper consists of 5 pages

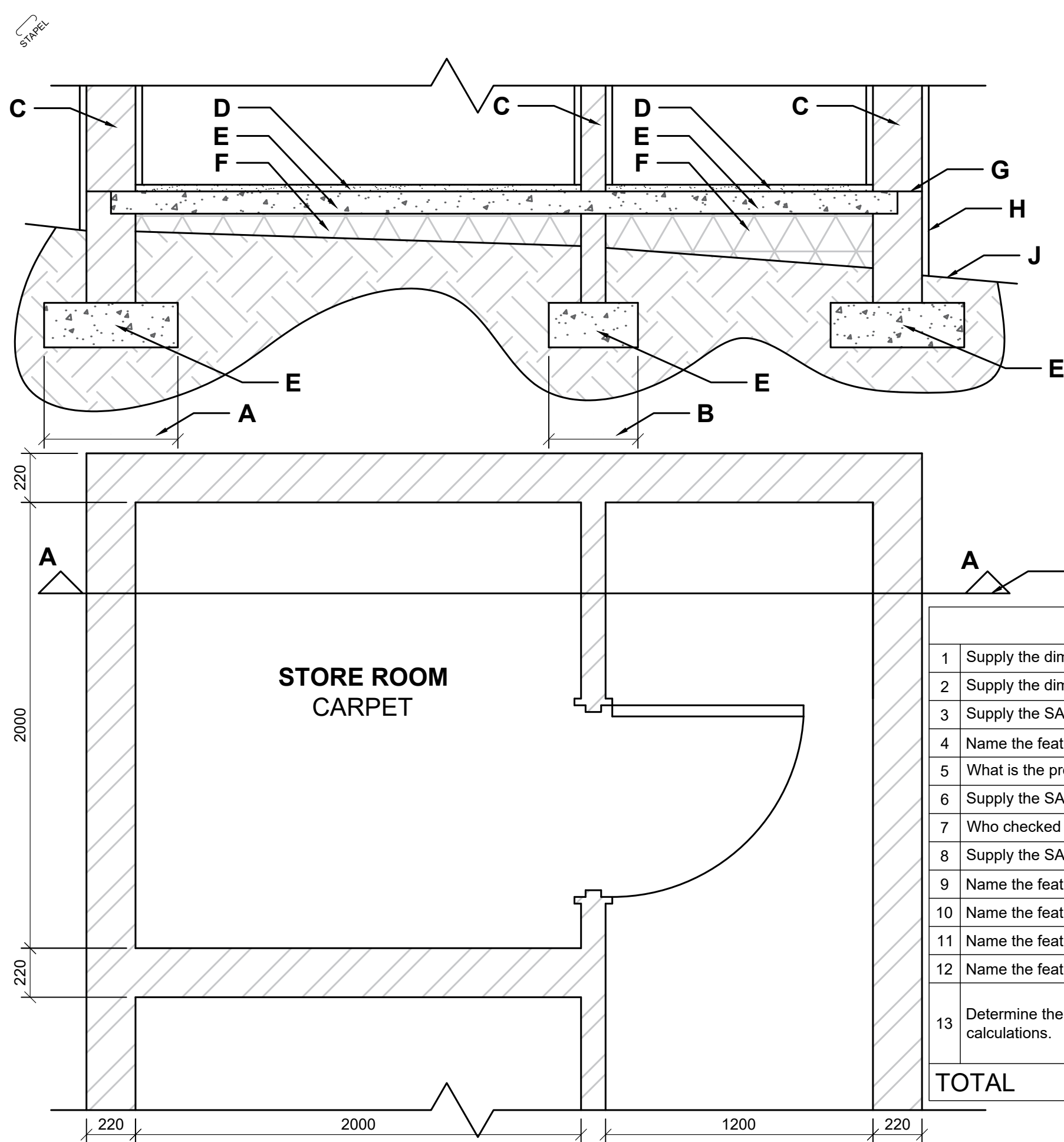
INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. ALL drawings are in first-angle orthographic projection, unless stated otherwise.
3. ALL drawings must be drawn to scale 1:1, unless stated otherwise.
4. ALL questions must be answered on the DIAGRAM SHEET as instructed.
5. ALL the pages must be restapled in numeric sequence, irrespective of whether the question was attempted or not.
6. Time management is essential in order to complete all the questions.
7. Print your name and surname as well as the grade in the space provided on each page.
8. ALL answers must be drawn accurately and neatly.
9. ALL necessary construction and projection lines must be shown.
10. Plan each drawing carefully from the given position, which is indicated on the diagram sheets.
11. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY							
QUESTION	MARKS OBTAINED			1/2	MODERATED		1/2
1							
2							
3							
4							
TOTAL							
		6	0			6	0

FINAL CONVERTED MARK	CHECKED BY
100	

NAME & SURNAME	MEMORANDUM	GRADE	10	1
----------------	-------------------	-------	-----------	----------



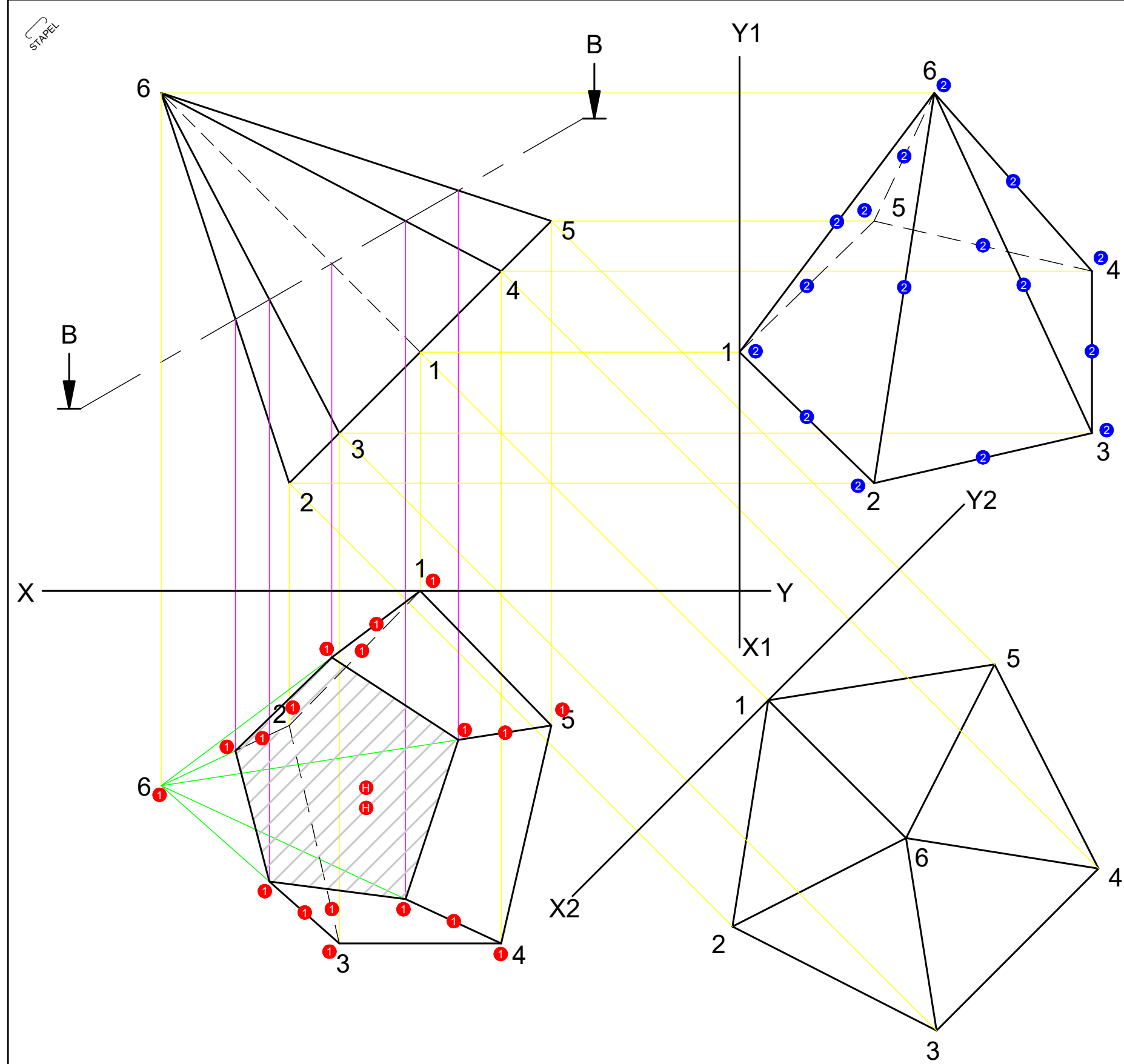
QUESTION 1: CIVIL ANALYTICAL

Given: A sectioned drawing and floor plan is shown on diagram sheet 1 (page 2).

Instructions: Complete the table, which refer to the accompanying drawing and title panel. Print our answer in pencil in the prepared column and/or on the diagram sheet. **[14]**

URBAN ARCHITECTS		125 MAIN ROAD DURBAN 9876 info@eka.co.za
DATE DRAWN 2017-03-16	DRAWN BY LEIGH-ANN	
PRINTED BY: COPY-PRINTERS	DATE PRINTED 2017-04-08	
PROJECT: PROPOSED NEW STORE ROOM UNIT AT COMPLEX 3, STAND 9, RHINO ROAD, MOUNTAIN VIEW.		
CHECKED BY P.A. JAMES	DATE OF REVISION 2017-04-20	
REFERENCE CODE T1-T3-O-2017	PROJECT NUMBER OCT-T1-2017	DRAWING NUMBER JB140417

QUESTIONS		ANSWERS	MARK
1	Supply the dimension for the foundation at A for a load bearing wall.	600	1
2	Supply the dimension for the foundation at B for a non-load bearing wall.	400	1
3	Supply the SANS convention for hatching common brick at C.		1
4	Name the feature at D.	SCREED	1
5	What is the project number for this drawing?	OCT-T1-2017	1
6	Supply the SANS convention for hatching concrete at E.		1
7	Who checked the drawing?	P.A.JAMES	1
8	Supply the SANS convention for hatching hard core filling at F.		1
9	Name the feature at G.	DPC	1
10	Name the feature at H.	PLASTER	1
11	Name the feature at J.	NGL	1
12	Name the feature at K.	SECTION ON AA	1
13	Determine the surface area of the store room in m ² . Show all calculations.	2 000mm x 2 000 mm = 4 000 000 mm = 4 m ²	2
TOTAL			14



QUESTION 2: SOLID GEOMETRY

Given:

The auxiliary view and front view of an octagonal pyramid is shown on diagram sheet 2 (page 3).

Instructions:

Draw in first angle orthographic projection the following:

- A sectional top view on BB.
- A left view.

Note:

- Show all hidden detail.
- Show all construction lines.

[18]

ASSESSMENT CRITERIA				
1	TOP VIEW ($\frac{20}{2}$)	1	10	
2	LEFT VIEW ($\frac{16}{2}$)	2	8	
TOTAL			18	



QUESTION 3: PERSPECTIVE DRAWING

Given:

The views of a house drawn in position for the completion of a one point perspective drawing is shown on diagram sheet 3 (page 4). A side view is also shown.

List of abbreviations:

- PP/PV - Picture plane
- HL - Horizon line
- GL - Ground line
- SP - Standpoint

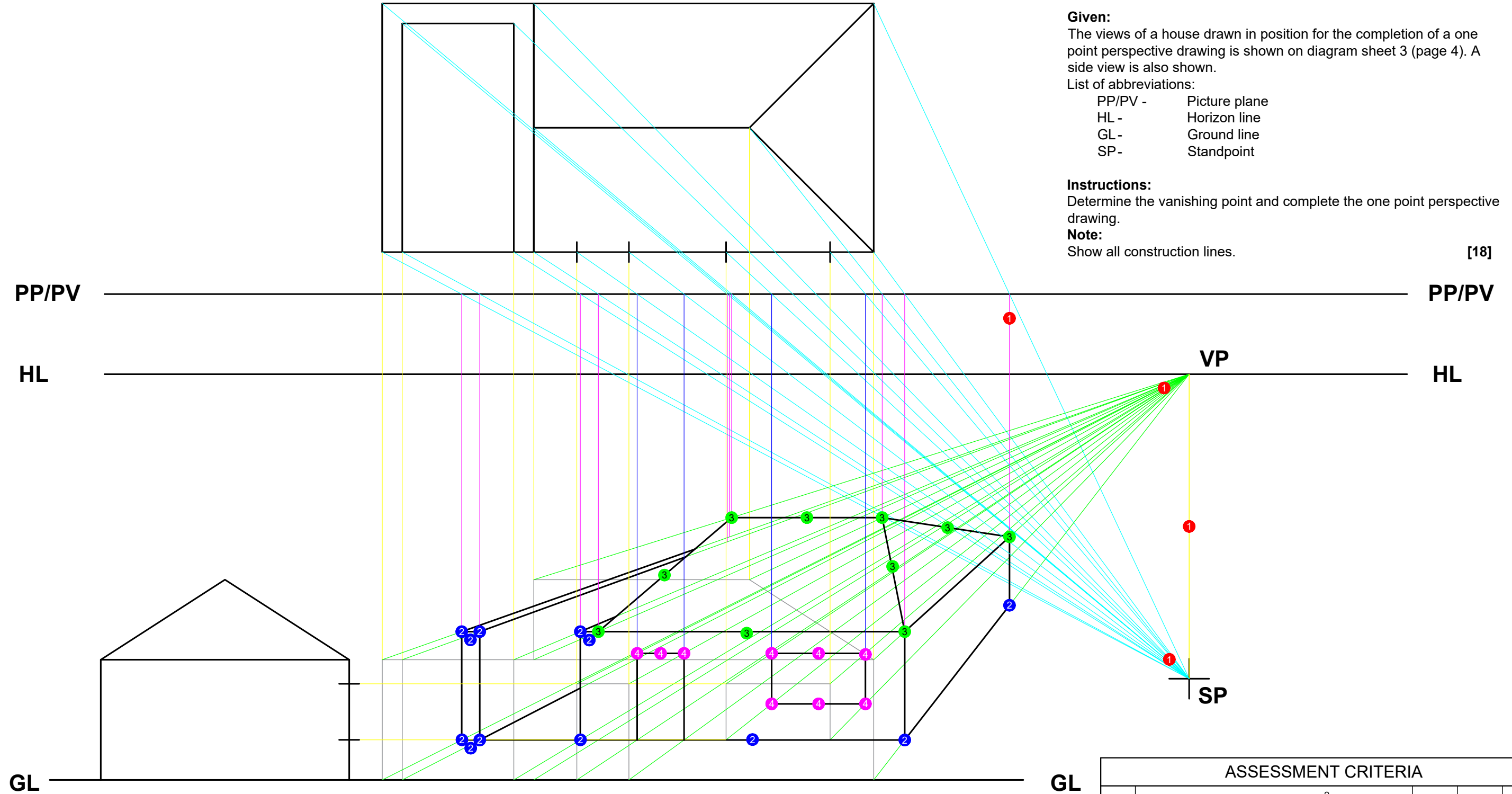
Instructions:

Determine the vanishing point and complete the one point perspective drawing.

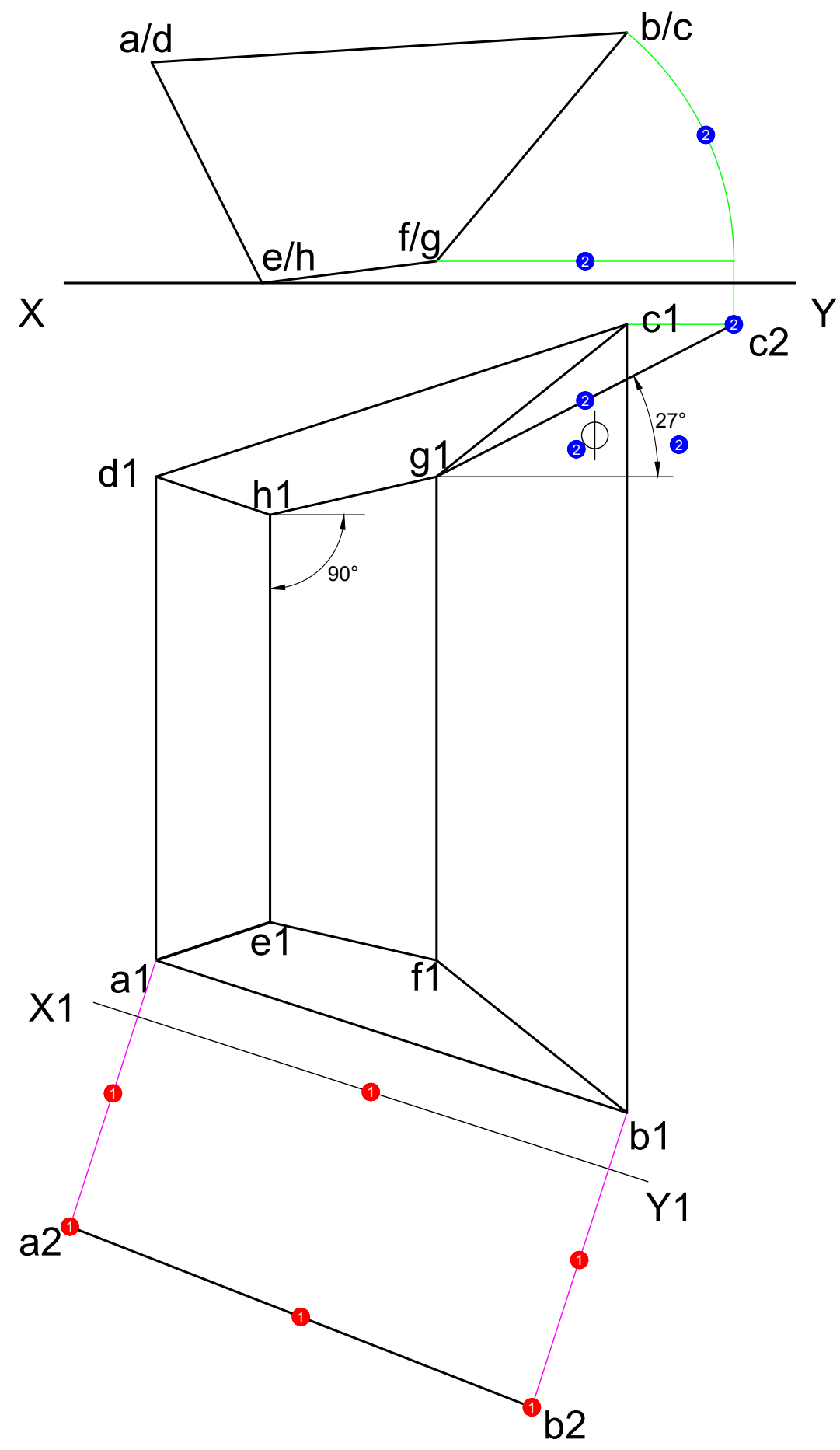
Note:

Show all construction lines.

[18]



ASSESSMENT CRITERIA				
	DETERMINING OF THE VP (2)	1	1	
1	PROJECTION FROM VP, SP, PV (3)	1	1.5	
2	WALLS (12)	2	6	
3	ROOF (10)	3	5	
4	DOOR & WINDOW (9)	4	4.5	
TOTAAL			18	



QUESTION 4: DESCRIPTIVE GEOMETRY

Given

Diagram sheet 4 (page 5) shows the front view and top view of a front shovel for a TLB (Tractor-Loader-Backhoe).

Instructions

Determine the following of the shovel of the TLB.

- 4.1 By means of projection (rabattement method), determine the true length of line segment AB . Project from out of the horizontal plane.
- 4.2 Determine by means of the construction (generator of the cone) method the angle of line segment CG with regard to the vertical plane.
- 4.3 Measure the angle what line segment EH makes with regard to the vertical plane.
- 4.4 Complete the table.

Note:

Show all construction lines.

[10]

TABEL/TABLE		
WL / TL AB	84	3
WL / TL CG	57	3
∠ CG	27°	3
∠ EH	90°	3

ASSESSERINGSKRITERA				
	VRAAG 4.1 (6/2)	1	3	
1	VRAAG 4.2 (6/2)	2	3	
2	TABEL	3	4	
TOTAAL			10	