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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1

FEBRUARY/MARCH 2017

MEMORANDUM

MARKS: 100

This memorandum consists of 5 pages.

ANSWERS		
1	2015-10-12	1
2	J VAN WYK	1
3	NONE	1
4	50967	1
5	1 : 450	1
6	INSPECTION CHAMBER	1
7	RODDING EYE	1
8	MAN HOLE	1
9	5357	1
10	SLOPE OF SEWAGE LINE	1
11	ELECTRICAL METER/WATT METER/SUPPLY	1
12	RED	1
13	1 m	1
14	AGRICULTURAL LAND	1
15	EAST	2
16	30.4 m [calculation 1, answer 1, converted to metres 1]	3
17	1254.69 m² [calculation 2, answer 1, converted to metres 1]	4
18	See below	3
19		4
TOTAL		30

ANSWER 16

Show ALL calculations

$$\begin{aligned}
 \text{PERIMETER} &= S + S + S + S + S + S + S \quad \checkmark_1 \\
 &= 8 + 4.8 + 5 + 2.4 + 3 + 7.2 \\
 &= 30.4 \text{ m} \quad \checkmark_1 \quad \checkmark_1
 \end{aligned}$$

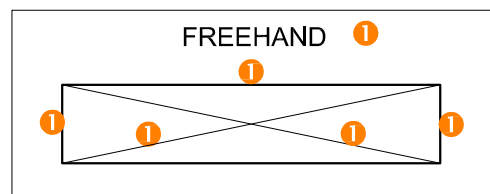
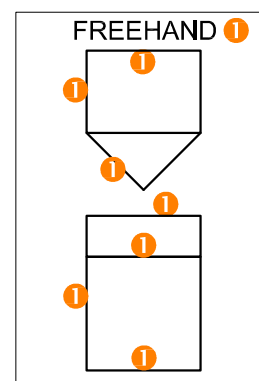
ANSWER 17

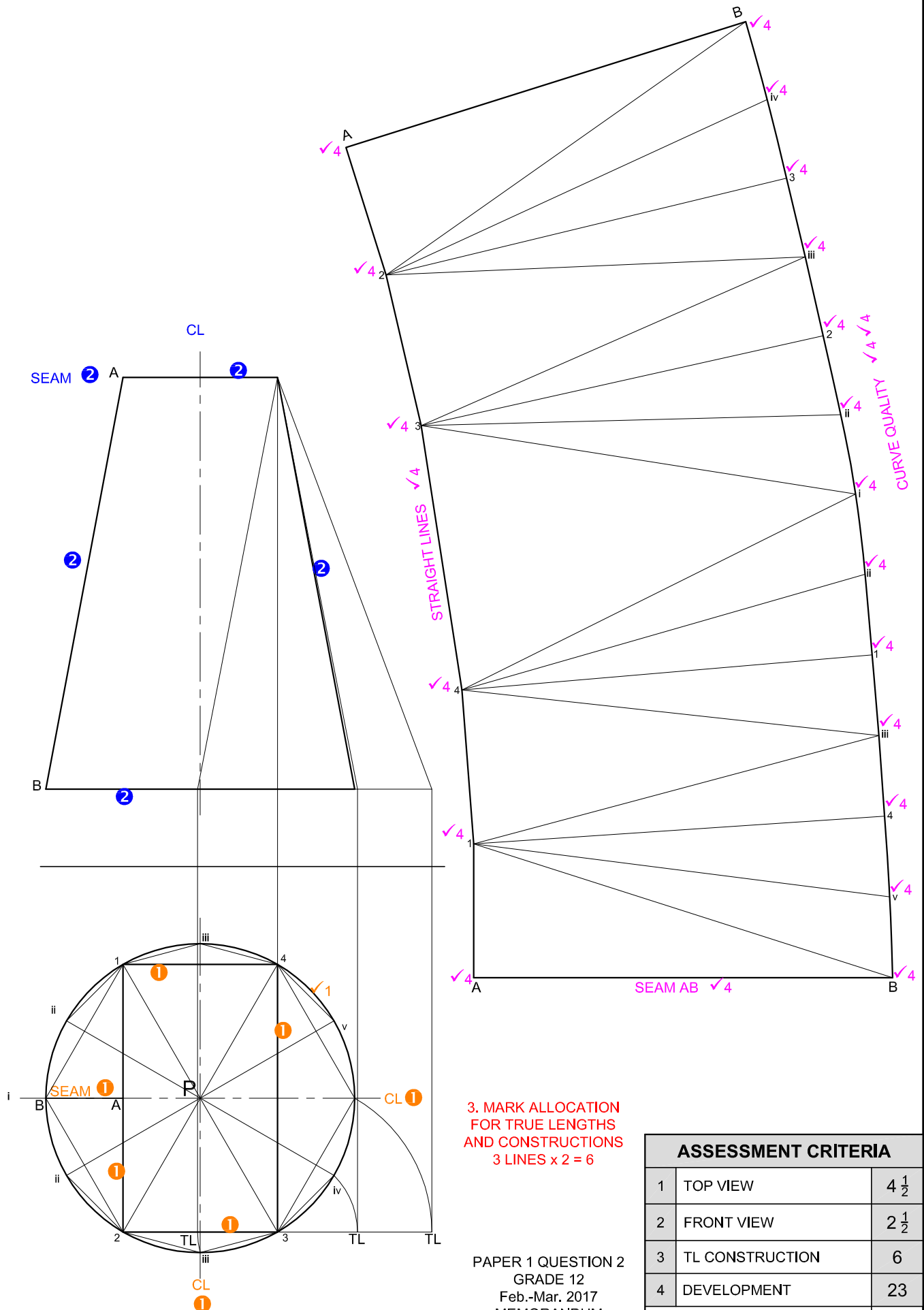
Show ALL calculations

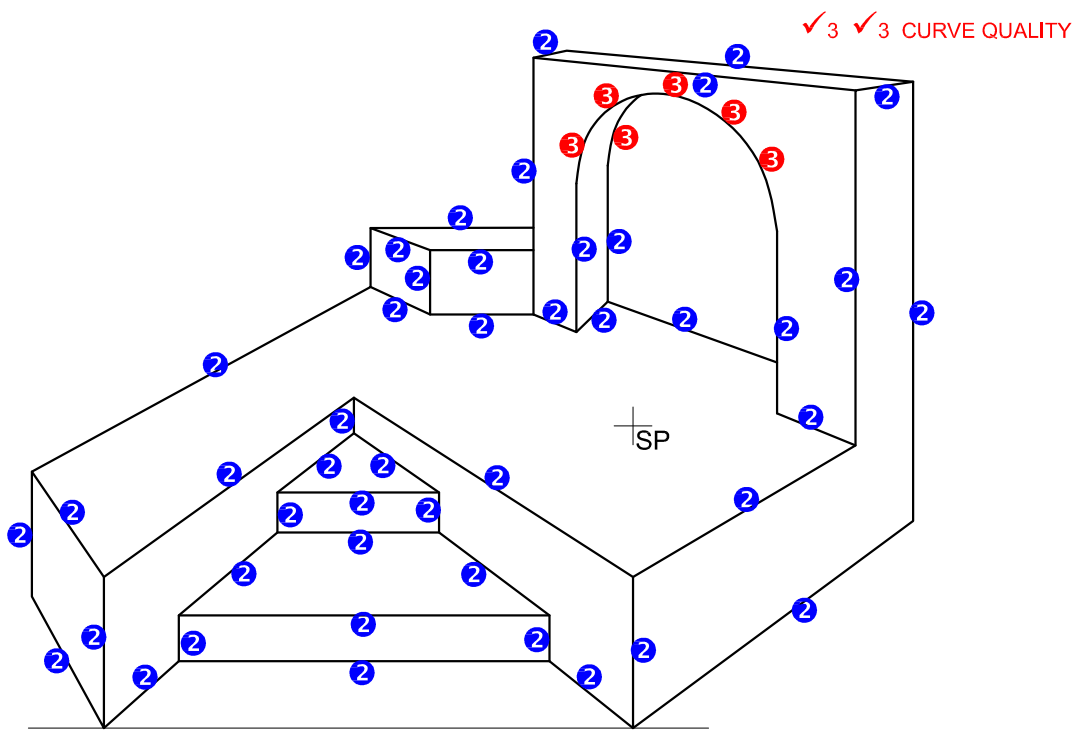
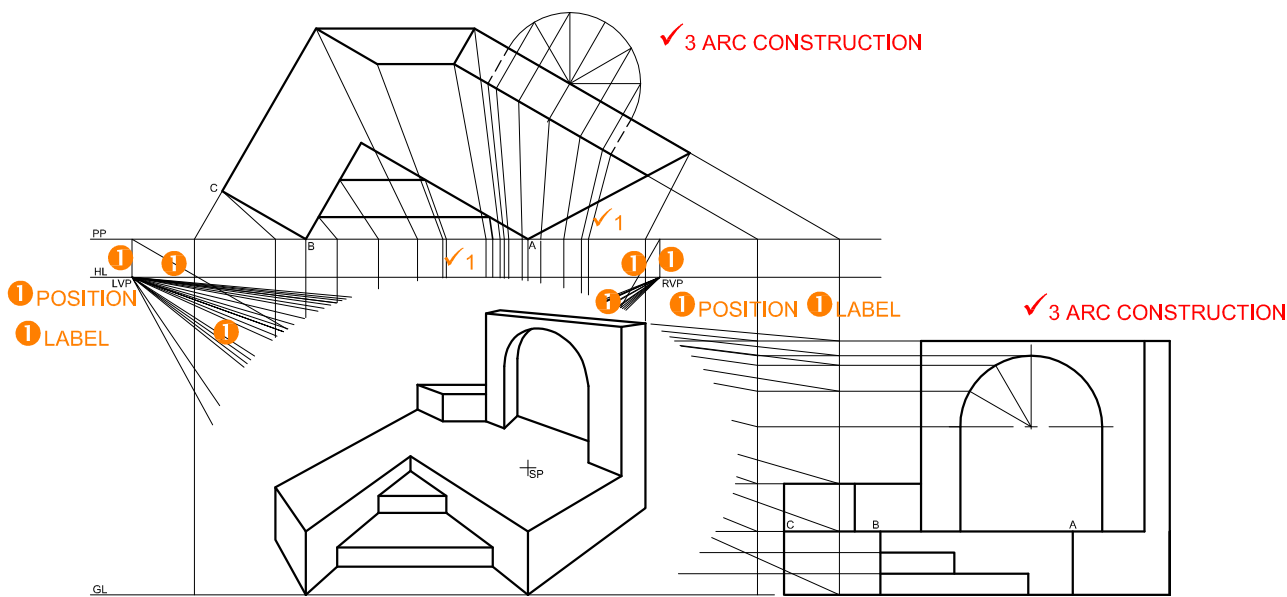
$$\begin{aligned}
 \text{Area of } \Delta &= \frac{1}{2} b \times h \quad \checkmark_1 \\
 &= \frac{1}{2} (25.2) \times (44.4) \\
 &= 559.44 \text{ m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Area of rectangle} &= l \times b \quad \checkmark_1 \\
 &= 25.2 \times 27.6 \\
 &= 695.52 \text{ m}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Area of Stand 1932} &= 559.44 + 695.52 \\
 &= 1254.96 \text{ m}^2 \quad \checkmark_1 \quad \checkmark_1
 \end{aligned}$$

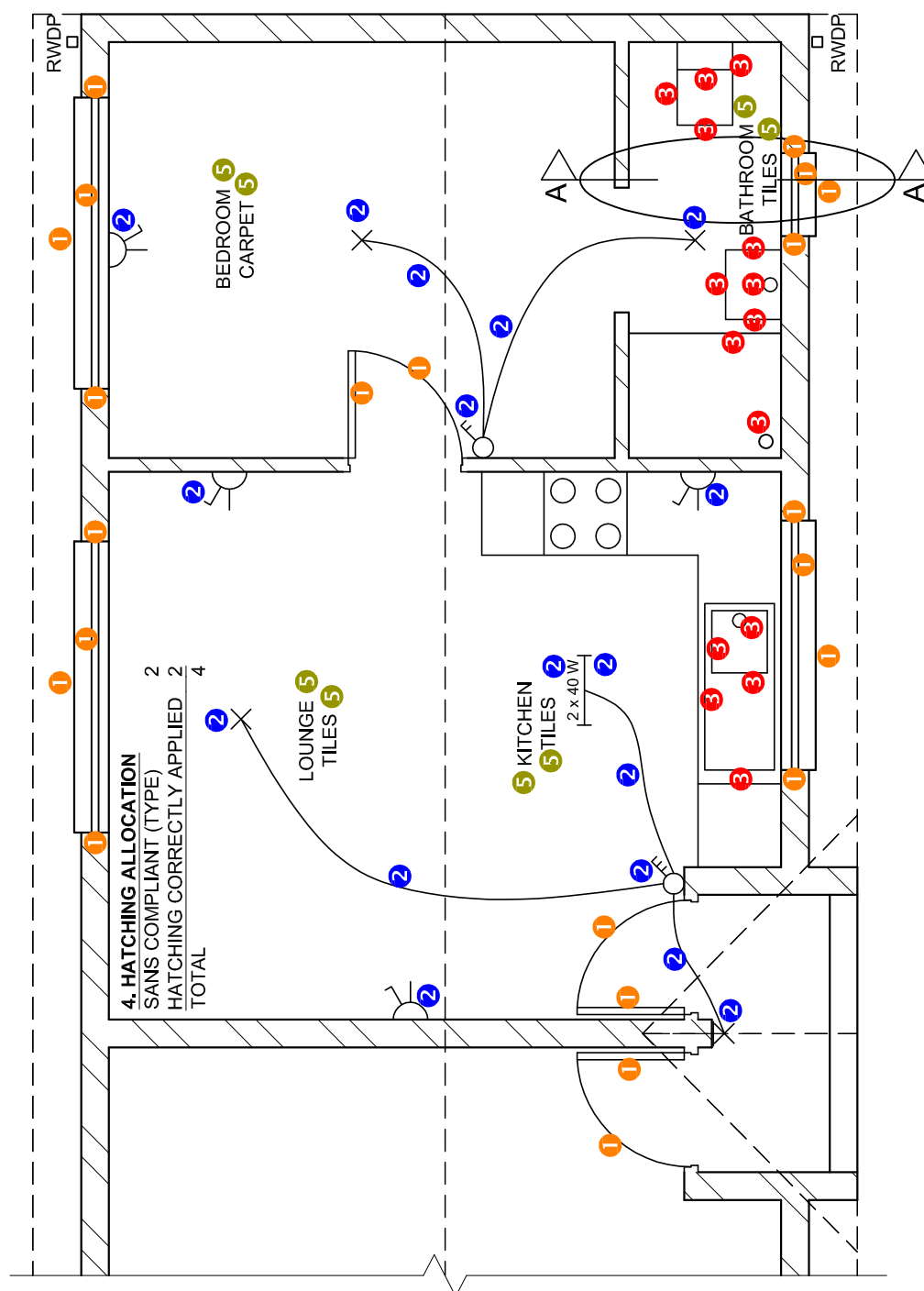
ANSWER 18**ANSWER 19**





PAPER 1 QUESTION 3
GRADE 12
Feb.-Mar. 2017
MEMORANDUM

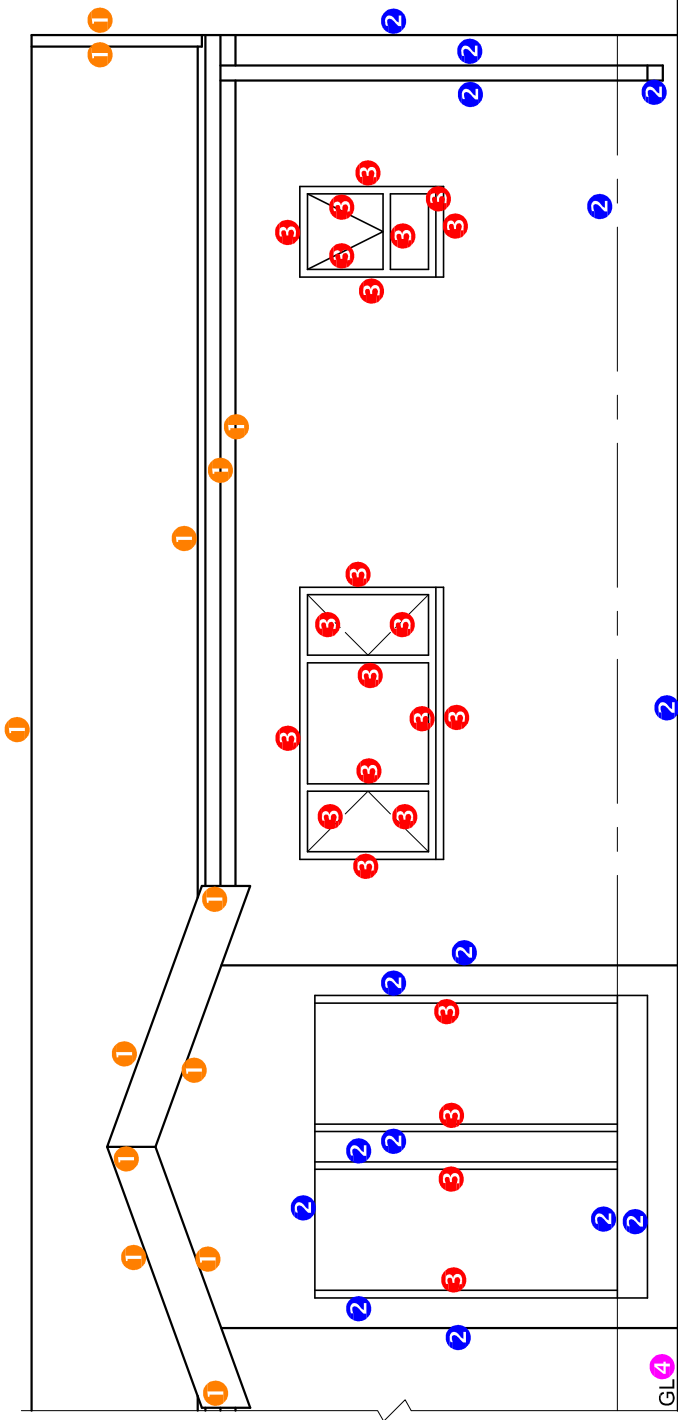
ASSESSMENT CRITERIA		
1	CONSTRUCTION + VPs	7
2	STEPS + FLOOR + WALLS	23
3	CIRCULAR ARC	7
TOTAL		37



FLOOR PLAN
SCALE 1 : 50

PAPER 1 QUESTION 4
GRADE 12
Feb.-Mar. 2017
MEMORANDUM

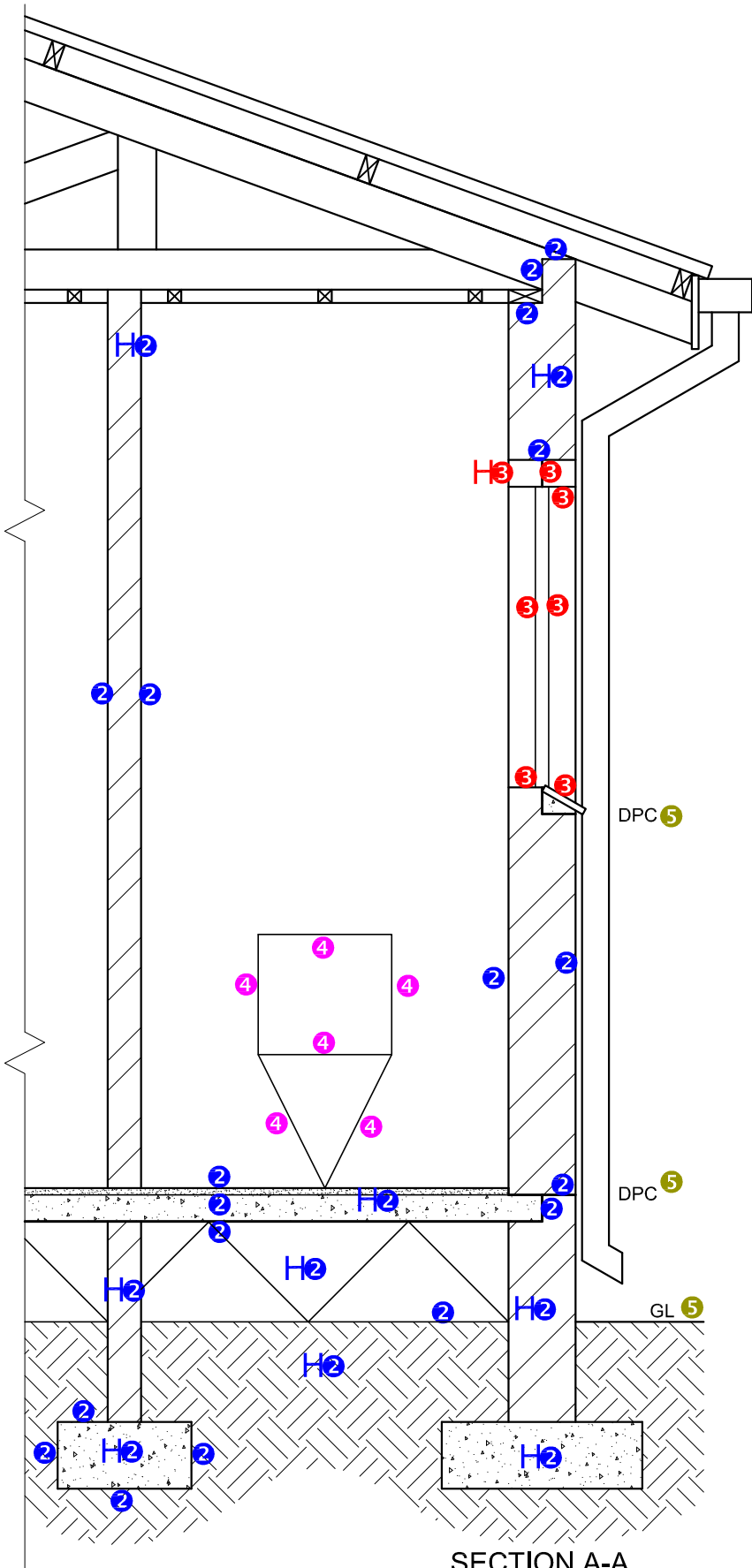
ASSESSMENT CRITERIA		
FLOOR PLAN		
1	DOORS + WINDOWS	11
2	ELECTRICAL	8 $\frac{1}{2}$
3	FIXTURES	7 $\frac{1}{2}$
4	HATCHING	4
5	LABELS	4
SUBTOTAL		35



SOUTH ELEVATION 4

ASSESSMENT CRITERIA	
SOUTH ELEVATION	
1	ROOF
2	WALLS + RWDP + FFL + GULLEY
3	DOORS + WINDOWS
4	LABELS
SUBTOTAL	
	6 1/2
	7 1/2
	11 1/2
	1
	26 1/2

PAPER 1 QUESTION 4
GRADE 12
Feb.-Mar. 2017
MEMORANDUM

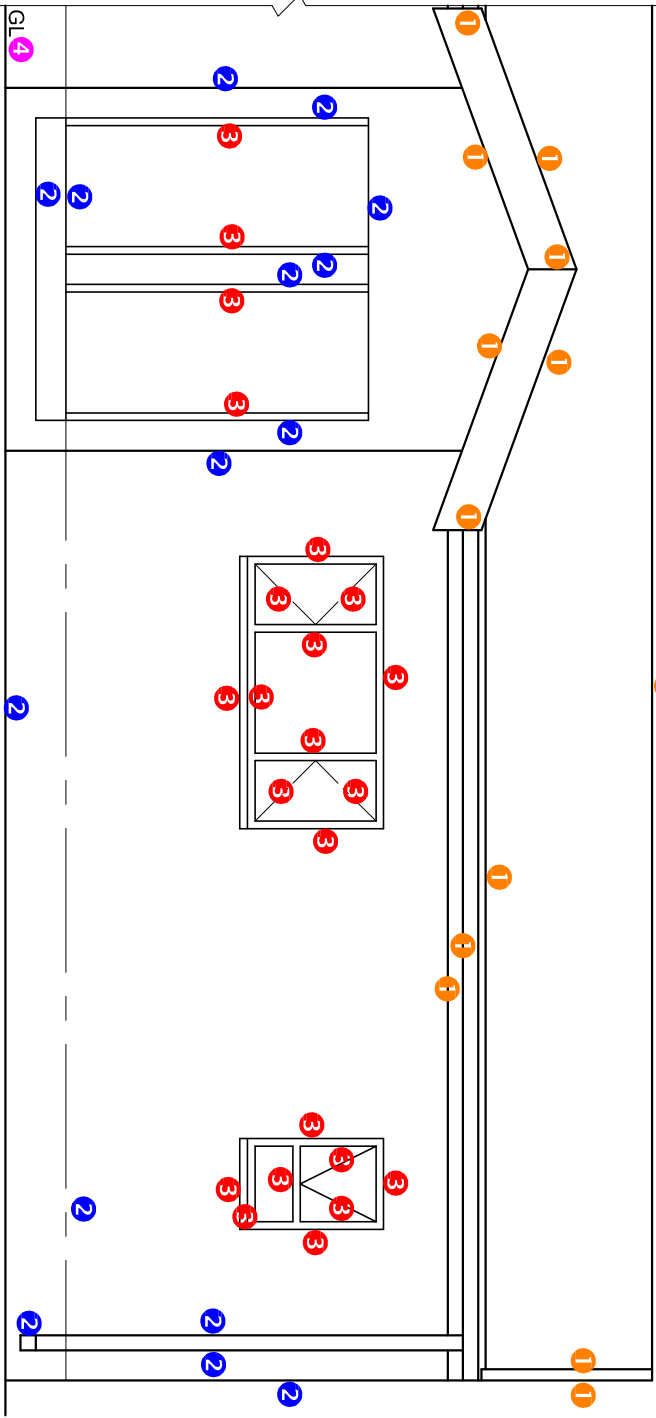


SECTION A-A
SCALE 1 : 20

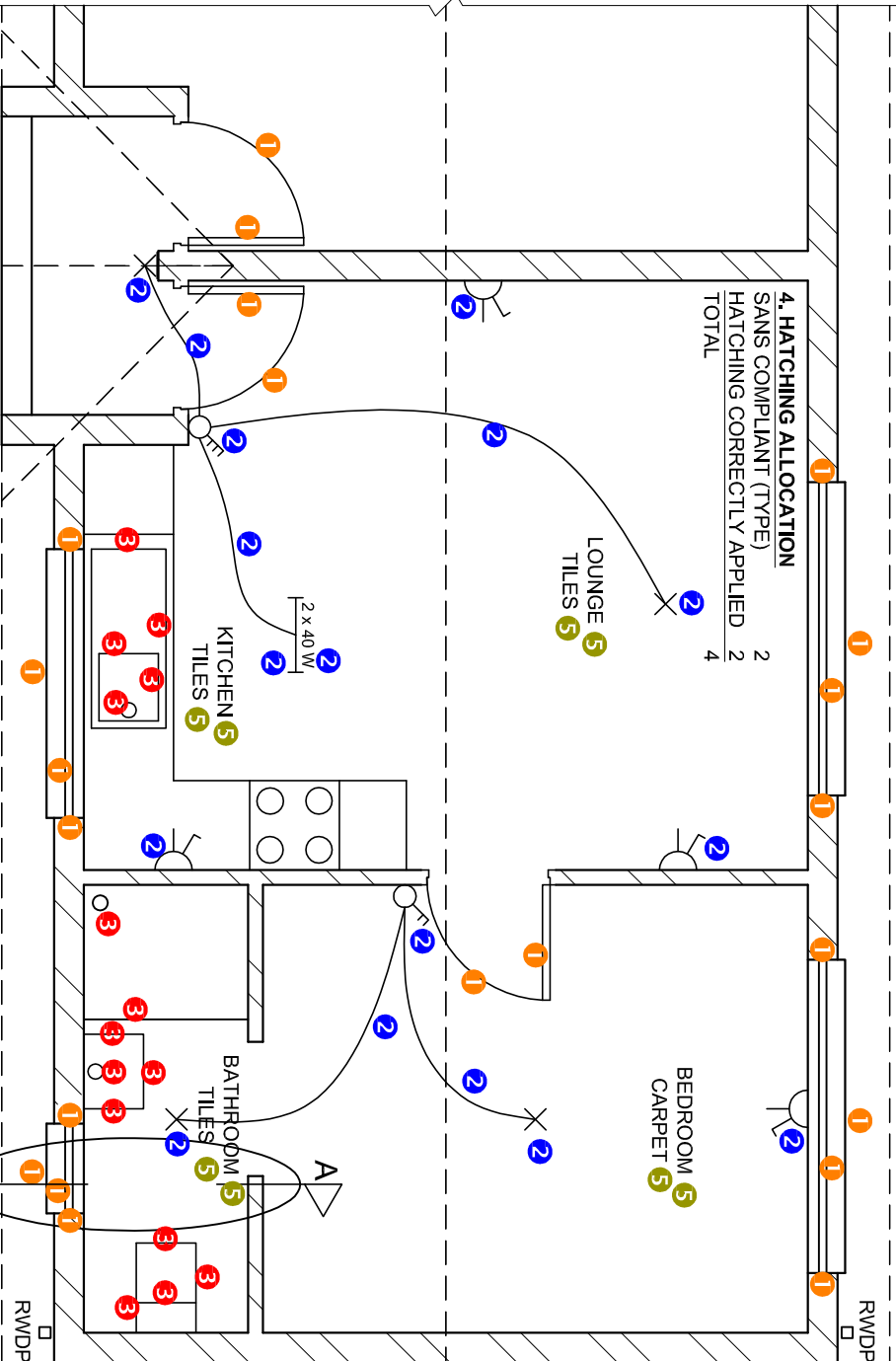
PAPER 1 QUESTION 4
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MEMORANDUM

1. MARK ALLOCATION FOR SECTION OF ROOF	
A. ROOF ANGLE	1
B. ROOF SHEET	1
C. PURLIN + SPACING	2
D. TRUSS	3
E. FASCIA BOARD	1
F. WALL PLATE	1
G. BRANDING	1
H. CEILING BOARD	1
I. GUTTER + RWDP	3
TOTAL	14

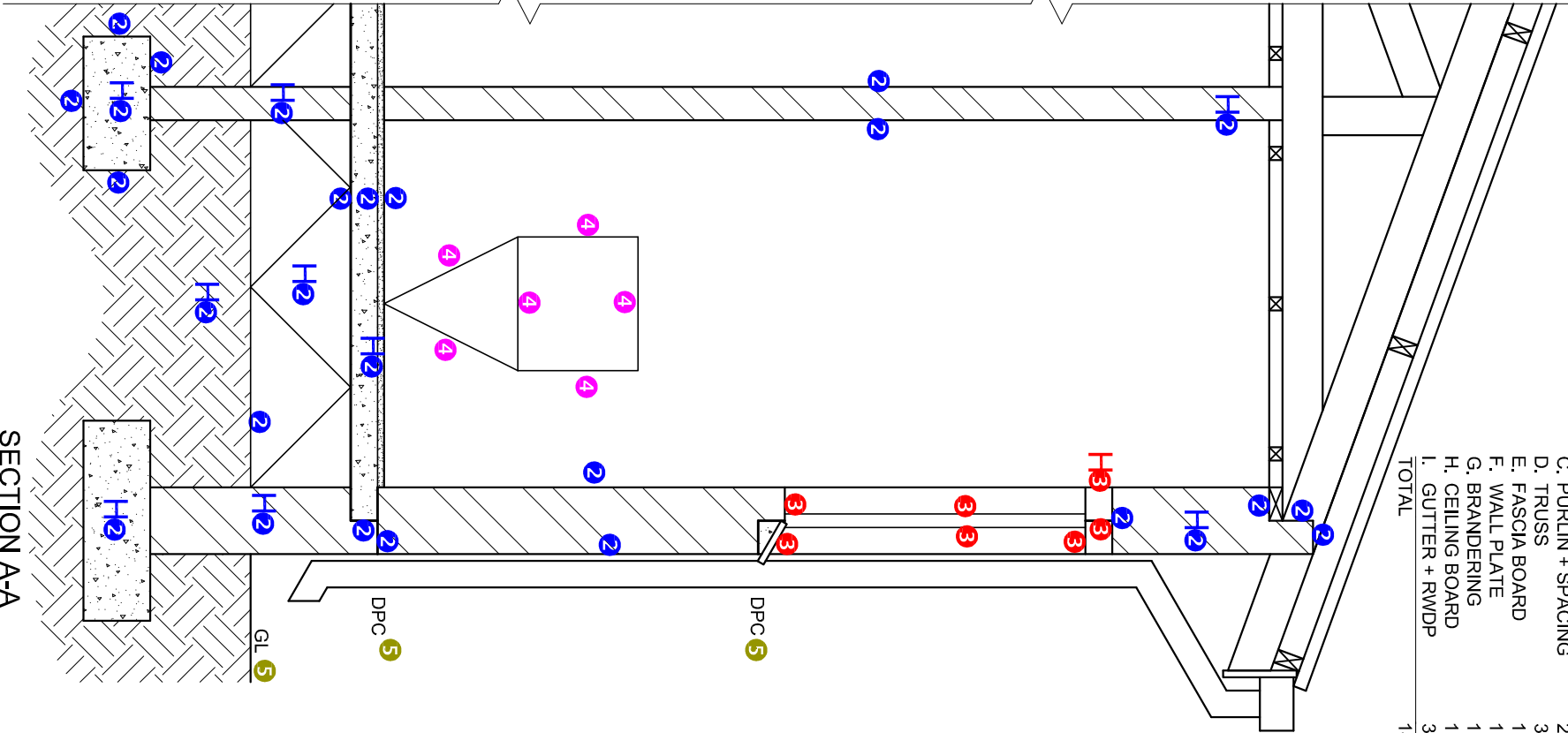
ASSESSMENT CRITERIA		
DETAILED SECTION		
1	ROOF DETAIL	14
2	FOUNDATIONS + WALLS + SLAB	13 1/2
3	WINDOW + LINTELS	3 1/2
4	FIXTURE	3
5	LABELS	1 1/2
SUBTOTAL		35 1/2



SOUTH ELEVATION



FLOOR PLAN
SCALE 1 : 50



SECTION A-A
SCALE 1 : 20

1. MARK ALLOCATION FOR SECTION OF ROOF		FOR OFFICIAL USE ONLY	
ALLOCATION FOR SECTION OF ROOF		INCORRECT SCALE	
A (1)		INCORRECT POSITIONING OF VIEWS	
B (1)		ROTATED VIEWS	
C (2)		PRINTED CAPITAL LETTERS	
D (3)			
E (1)			
F (1)			
G (1)			
H (1)			
I (3)			
TOTAL		TOTAL	

ASSESSMENT CRITERIA			
FLOOR PLAN			
1	DOORS + WINDOWS	11	
2	ELECTRICAL	8 1/2	
3	FIXTURES	7 1/2	
4	HATCHING	4	
5	LABELS	4	
SUBTOTAL		35	
SOUTH ELEVATION			
1	ROOF	6 1/2	
2	WALLS + RWDP + FFL + GUTTER	7 1/2	
3	DOORS + WINDOWS	11 1/2	
4	LABELS	1	
SUBTOTAL		26 1/2	
DETAILED SECTION			
1	ROOF	14	
2	FOUNDATIONS + WALLS + SLAB	13 1/2	
3	WINDOW + LINTELS	3 1/2	
4	FIXTURE	3	
5	LABELS	1 1/2	
SUBTOTAL		35 1/2	
TOTAL		97	
PENALTIES (-)			
GRAND TOTAL			
EXAMINATION NUMBER			
EXAMINATION NUMBER			