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**SA EXAM  
PAPERS**  
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**GAUTENG PROVINCE**

EDUCATION  
REPUBLIC OF SOUTH AFRICA

**JUNE EXAMINATION  
GRADE 12  
2024**

**ENGINEERING GRAPHICS AND DESIGN  
PAPER 1**

MARKS:100

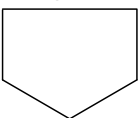
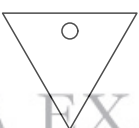
TIME: 3 Hours



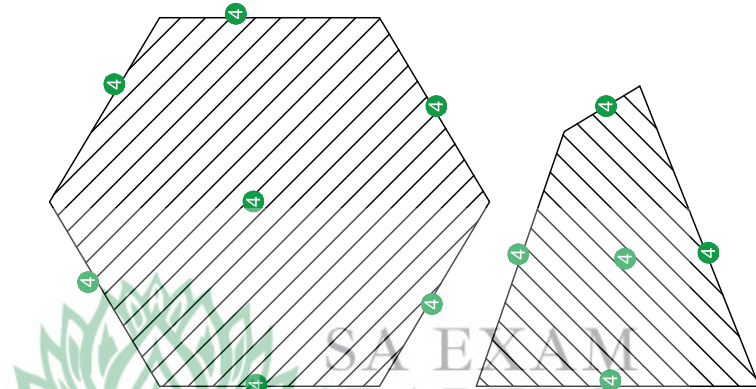
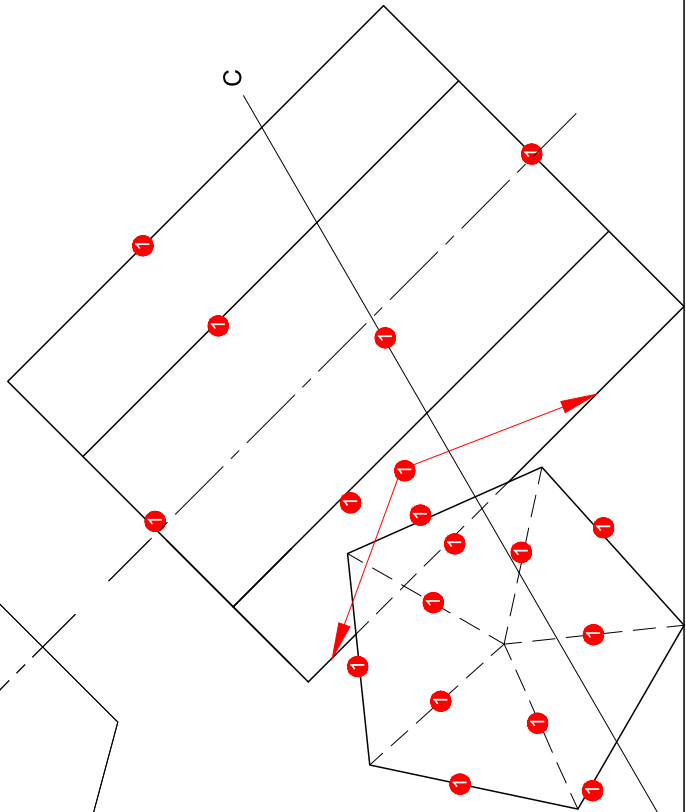
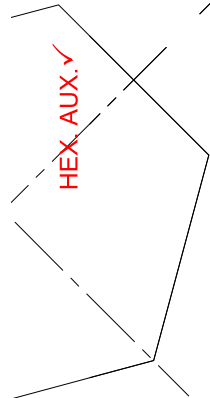
QUESTIONS		ANSWERS	
1	What scale is indicated for the site plan?	1:400	1
2	In which city can the architectural company be found?	NEW YORK	1
3	Name the company that printed the site plan?	HAWKEYE	1
4	Who is the client?	T STARK	1
5	What is the project number?	EGD2024P1-GDE	1
6	What is the first revision?	ADDED A LEGEND	1
7	What does the symbol at 1 indicate?	DIRECTION OF NORTH	1
8	What is the width of Marvel Street in metres?	6	1
9	Name the feature at 2.	CONTOUR LINE	1
10	Which corner is the lowest corner on STAND 24?	B	1
11	What does the abbreviation IC stand for?	INSPECTION CHAMBER	1
12	How many palm trees are on STAND 24?	4	1
13	Name the feature at 3.	WATT/ELECTRICAL METER	1
14	What do the arcs at 4 indicate?	GATE SWING	1
15	What does the dimension at 5 indicate?	HEIGHT ABOVE SEA LEVEL	1
16	With regards to the building regulations, why would the proposed new extension NOT be accepted?	OVER THE BUILDING LINE	1
17	What natural feature is south of STAND 24?	RIVER	1
18	What does the arrow on the municipal sewer line indicate?	DIRECTION FLOW	2
19	Why can nothing be built on the STAND next to boundary AB?	SERVITUDE	2
20	In the space below (ANSWER 20), determine the perimeter of stand 24 in metres.		3
21	In the space below (ANSWER 21), determine the total area of the existing building in square meters.		3
22	In the space in the title panel (ANSWER 22), draw, in neat freehand, the elevation and plan of the SANS 10143 graphical symbol for a wall-mounted URINAL.		3
<b>TOTAL</b>			<b>30</b>

ANSWER 20:  
SHOW ALL CALCULATIONS.  
APPLYING THE ✓  
CORRECT  
FORMULA  
 $AB + BC + CD + DE + EA$   
 $25 + 14.142 + 30 +$   
 $35 + 40$   
 $= 144.142 ✓$   
CONVERTED TO ✓  
METERS

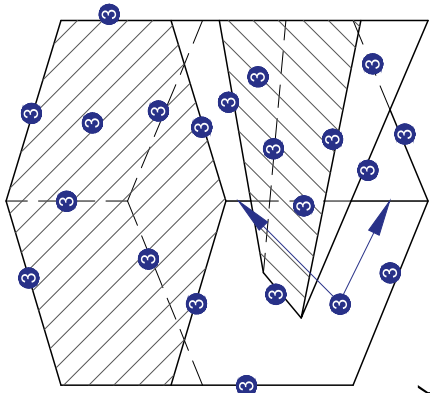
ANSWER 21:  
SHOW ALL CALCULATIONS. ✓  
APPLYING THE CORRECT FORMULA  
 $(18 \times 15) - (11,5 \times 1,5) - (7 \times 4,55)$   
 $= 220.9m^2 ✓$   
CONVERTED TO METERS SQUARED ✓

ANSWER 22:  
  $\frac{1}{2}$  OPEN RECTANGLE  
 $\frac{1}{2}$  OPEN TRIANGLE  
 $\frac{1}{2}$  FREEHAND  
 1 TRIANGLE  
 $\frac{1}{2}$  PLUG HOLE

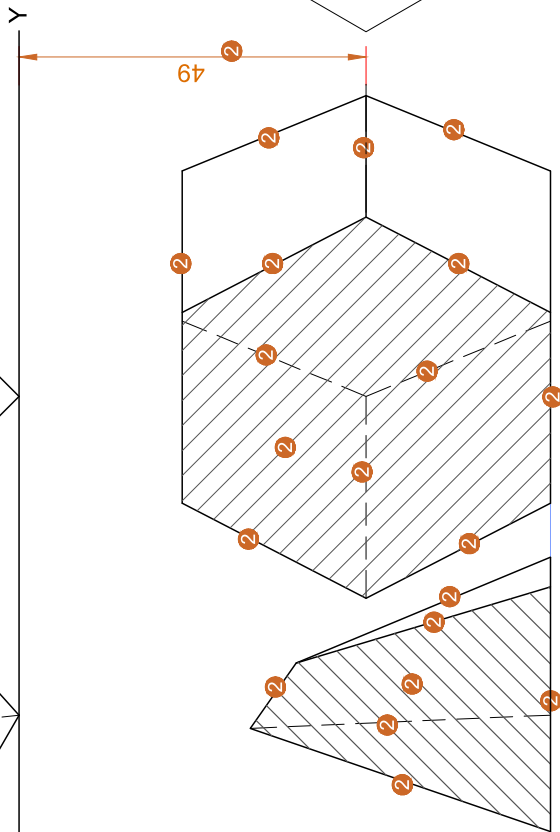




4. MARK ALLOCATIONS  
 - ANY RECOGNIZED METHOD FOR TRUE SHAPE  
 TOTAL 1 1

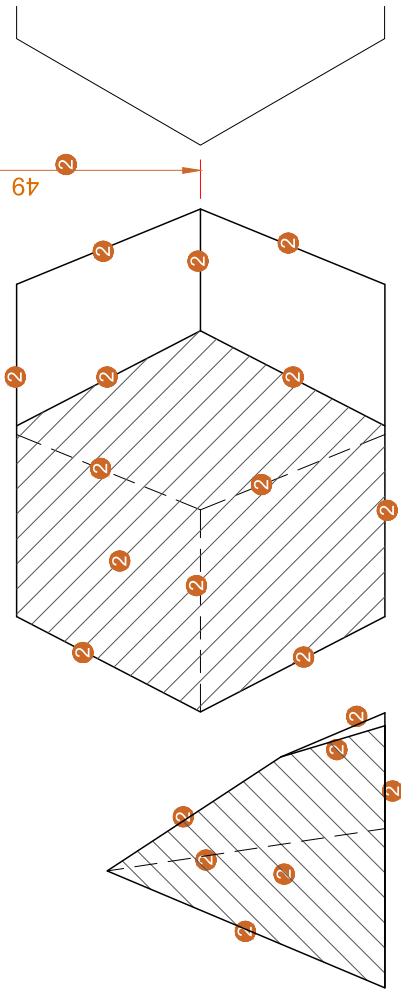
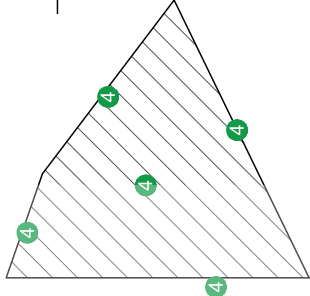
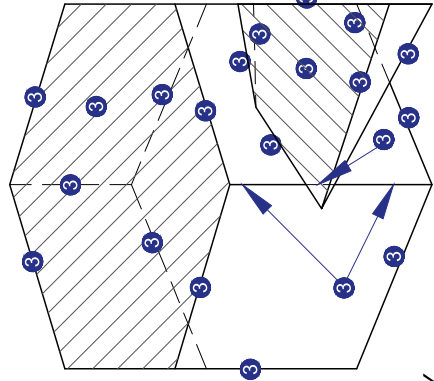
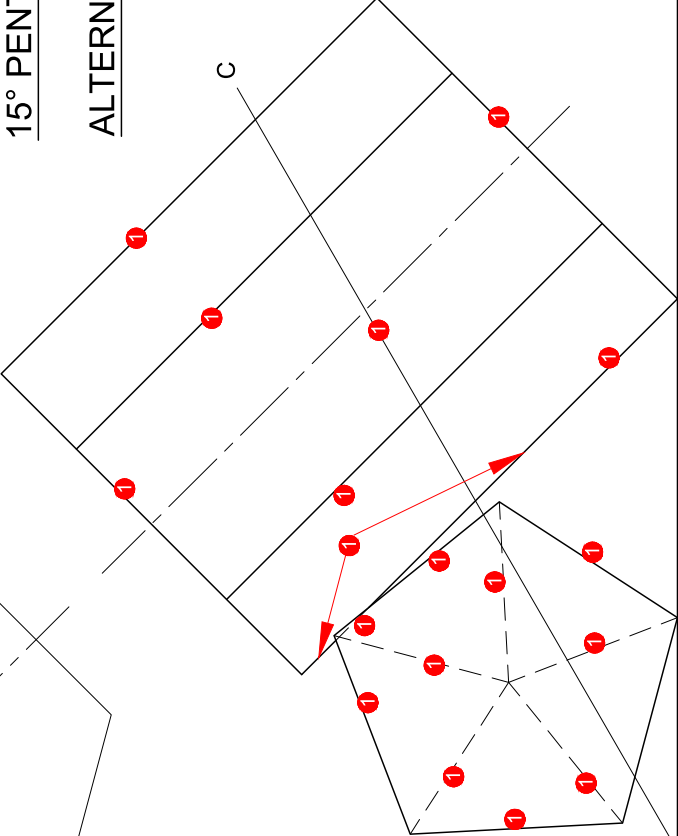
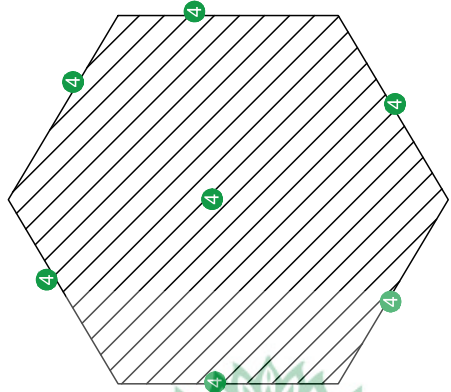
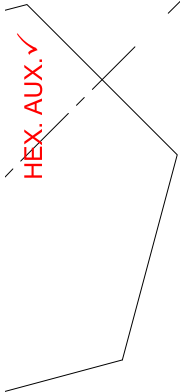


ASSESSMENT CRITERIA			
1	FRONT VIEW + AUX	10	
2	SECTIONAL TOP VIEW	10 ½	
3	SECTIONAL LEFT VIEW	10 ½	
4	TRUE SHAPES	7	
TOTAL		38	



**ALTERNATIVE ANSWER**  
**15° PENTAGON**

**ALTERNATIEWE ANTWOORD**



4. MARK ALLOCATIONS  
- ANY RECOGNIZED METHOD FOR TRUE SHAPE  
TOTAL 1 1

4. PUNTE TOEKENNING  
- ENIGE ERKENDE METODE VIR WARE VORM  
TOTAAL 1 1

ASSESSERINGSKRITERIA			
1	VOOR- en HULPAAANSIG	10	
2	DEURSNEE- BOMAANSIG	10 ½	
3	DEURSNEE LINKERAANSIG	10 ½	
4	WARE VORMS	7	
TOTAAL		38	

ASSESSMENT CRITERIA			
1	FRONT VIEW + AUX	10	
2	SECTIONAL TOP VIEW	10 ½	
3	SECTIONAL LEFT VIEW	10 ½	
4	TRUE SHAPES	7	
TOTAL		38	

RVP

PP

HL

GL

NAME AND SURNAME

CLASS

4

SP

CURVE QUALITY 4

CURVE QUALITY 4

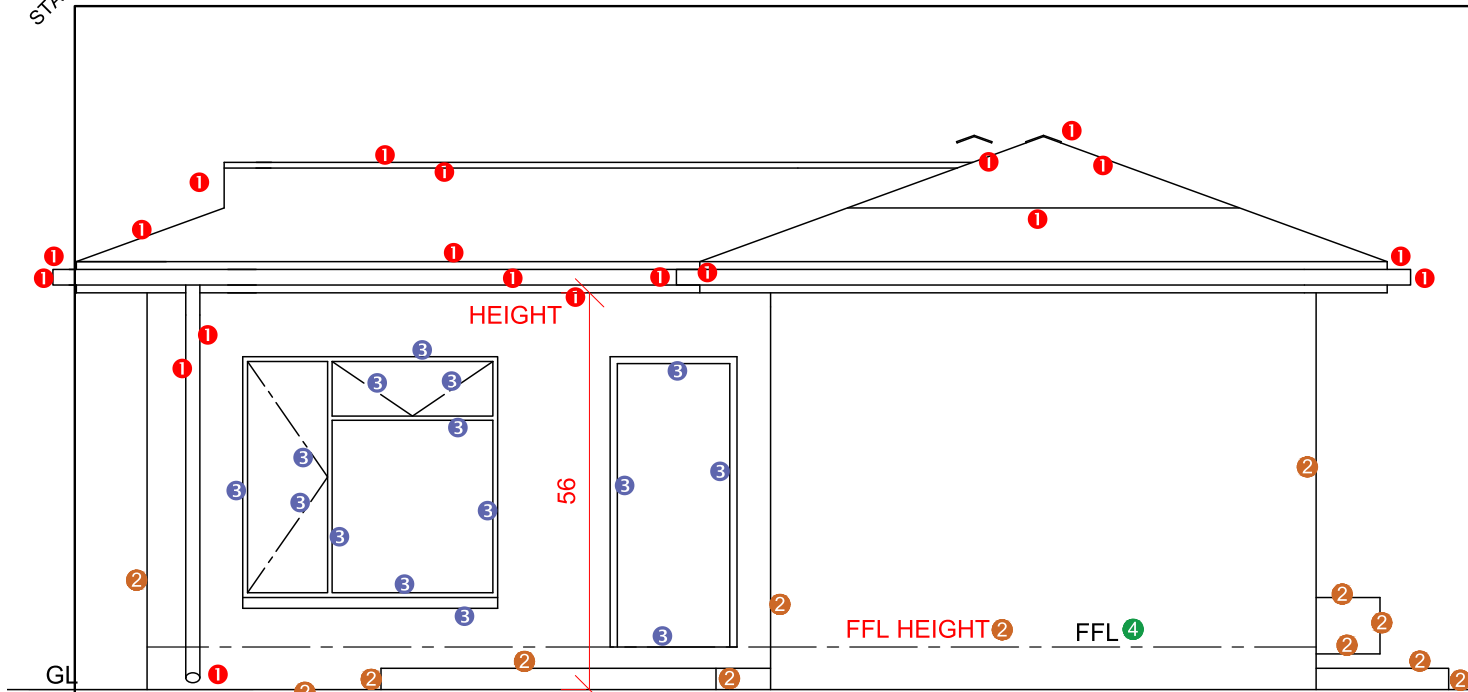
LVP

GL

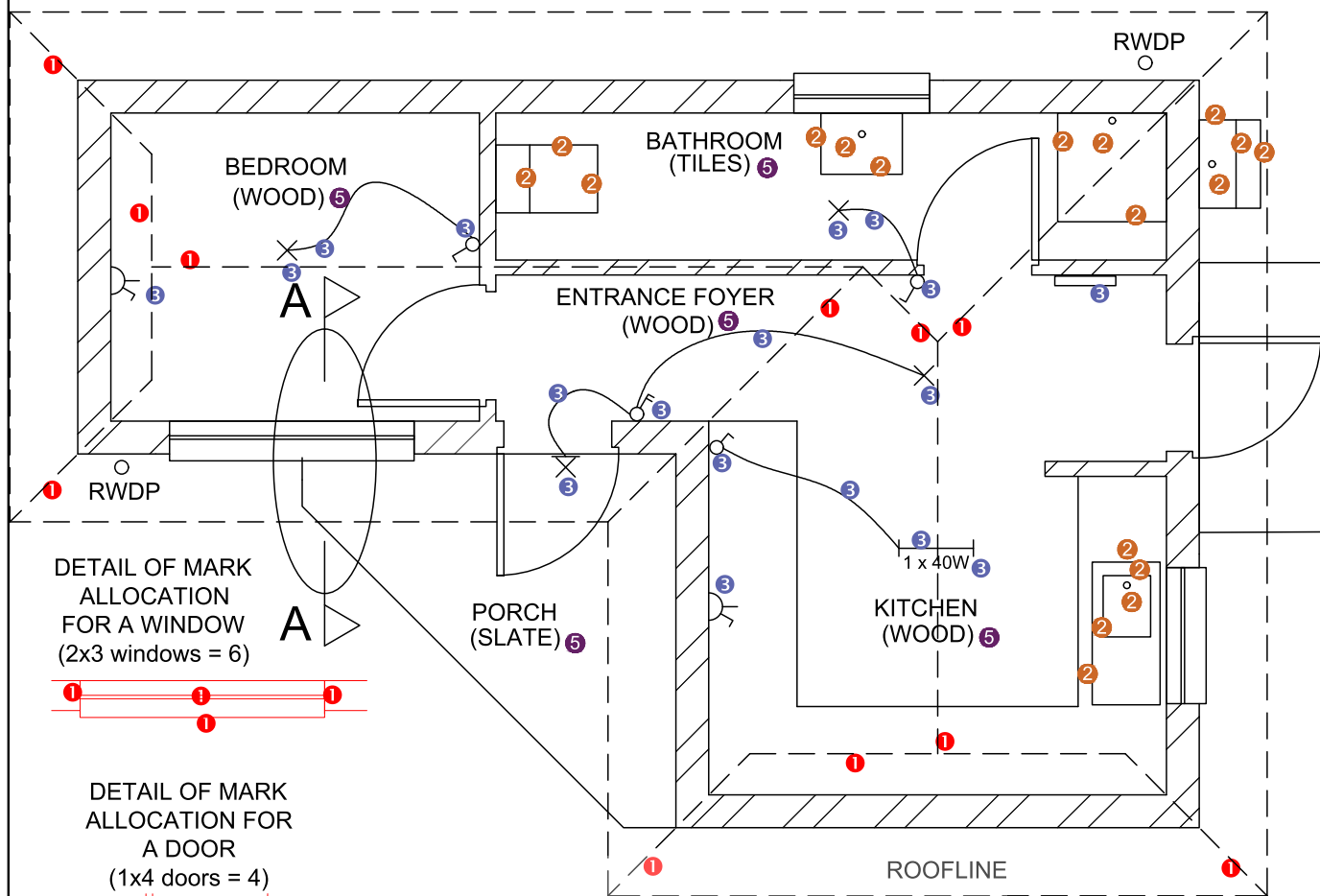
SP



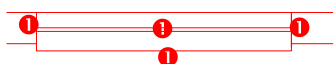
STAPLE



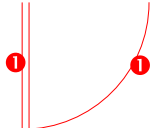
WEST ELEVATION 4



DETAIL OF MARK ALLOCATION FOR A WINDOW (2x3 windows = 6)



DETAIL OF MARK ALLOCATION FOR A DOOR (1x4 doors = 4)



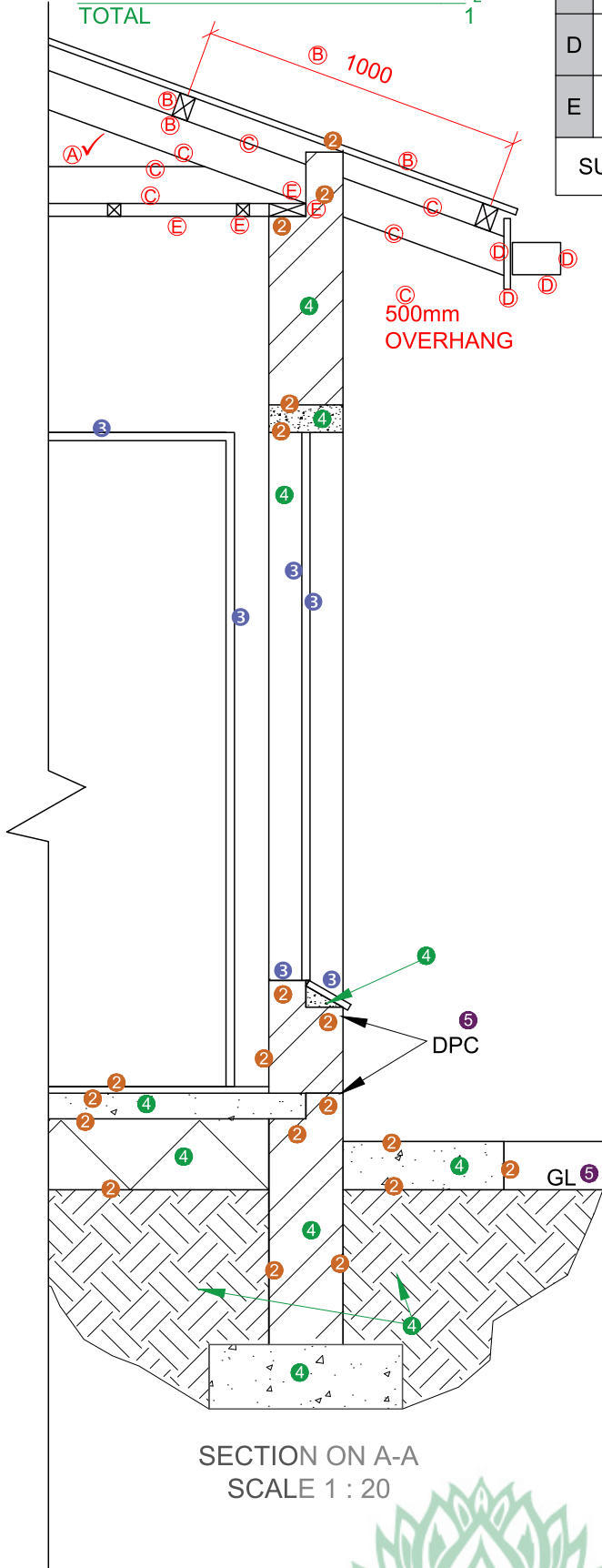
FLOOR PLAN SCALE 1:50



4. HATCHING ALLOCATION	
SANS COMPLIANT (TYPE)	1
HATCHING CORRECTLY APPLIED	2
TOTAL	3



4. HATCHING ALLOCATION  
 SANS COMPLIANT (TYPE) 1/2  
 HATCHING CORRECTLY APPLIED 1/2  
 TOTAL 1



SECTION ON A-A  
 SCALE 1 : 20

ROOF DETAIL			FOR OFFICIAL USE ONLY	
A	ROOF ANGLE	1	INCORRECT SCALE (-2)	
B	ROOF COVER & PURLINS	2	NON-ALIGNMENT OF VIEWS (-2)	
C	RAFTER AND TIE BEAM	3 1/2	VIEWS ROTATED (-2)	
D	FASCIA, GUTTER & RWDP	2	SECTION VIEWED INCORRECTLY (-2)	
E	BRANDING, WALL PLATE & CEILING	2	INCORRECT LETTERING (-1)	
SUBTOTAL		10 1/2	BREAK LINE (-1)	

CONVERSION TABLE

0.5	1
1.0	1.5
1.5	2
2.0	3
2.5	4
3.0	5
3.5	5
4.0	6
4.5	7
5.0	8
5.5	8.5
6.0	9
6.5	10
7.0	11
7.5	12
8.0	12
8.5	13
9.0	14
9.5	15
10	15.5

ASSESSMENT CRITERIA	
FLOOR PLAN	
	POSSIBLE
	OBTAINED
1	DOORS + WINDOWS + ROOF LINE
2	ALL FIXTURES
3	ELECTRICAL
4	HATCHING
5	LABELS
SUBTOTAL	
TOTAL	

ASSESSMENT CRITERIA			
FLOOR PLAN			
		POSSIBLE	OBTAINED
1	DOORS + WINDOWS + ROOF LINE	15 1/2	
2	ALL FIXTURES	9	
3	ELECTRICAL	9	
4	HATCHING	3	
5	LABELS	2 1/2	
SUBTOTAL		39	
WEST ELEVATION			
1	ROOF + RWDP	10	
2	WALLS + FFL + PORCH + WASH TROUGH	6 1/2	
3	DOOR + WINDOW	7 1/2	
4	LABELS	1	
SUBTOTAL		25	
DETAILED SECTION A-A			
1	ROOF DETAIL	10 1/2	
2	FOUNDATION + WALL + DOOR + FIXTURE	9 1/2	
3	WINDOW & DOOR	3	
4	HATCHING	6	
5	LABELS	1	
SUBTOTAL		30	
PENALTIES (-)			
TOTAL		94	
NAME AND SURNAME			
CLASS			

