



Province of the  
**EASTERN CAPE**  
DEPARTMENT OF EDUCATION

**NATIONAL SENIOR CERTIFICATE  
NASIONALE SENIOR SERTIFIKAAT**

**GRADE 12  
GRAAD 12**

**ENGINEERING GRAPHICS AND DESIGN P1  
INGENIEURSGRAFIKA EN -ONTWERP V1**

**SEPTEMBER 2022  
PREPARATORY EXAMINATION / VOORBEREIDINGSEKSAMEN  
MARKING GUIDELINE / NASIENRIGLYN**

**MARKS / PUNTE: 200**

**TIME / TYD: 3 hours / uur**

**This marking guideline consists of 7 pages.  
Hierdie nasienriglyn bestaan uit 7 bladsye.**

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**PAPER 1**  
**QUESTION 1: ANALYTICAL**  
 Gr. 12  
 SEPTEMBER 2022  
 MARKING GUIDELINE

**VRAESTEL 1**  
**VRAAG 1: ANALITIES**  
 Gr. 12  
 SEPTEMBER 2022  
 NASIENRIGLYN

QUESTION 1 ANSWERS		
1	MLANDWA ARCHITECS	1
2	MRS DLAYEDWA	1
3	SITE- 121A-22	1
4	1,2 metres	1
5	THE WORKSHOP MUST BE DEMOLISHED	2
6	WATER METER	1
7	4	1
8	PALISADE FENCING	1
9	RED	1
10	THREE	1
11	TWO	1
12	13 mm CRUSHED STONE	1
13	SOUTH EAST	2
14	42,2 - 16 = 26.2 m	2
15	CALCULATION BELOW	3
16	CALCULATION BELOW	5
17	SKETCH BELOW	4
<b>TOTAL</b>		<b>29</b>

VRAAG 1 ANTWOORDE		
1	MLANDWA ARGITEKTE	1
2	MEV. DLAYEDWA	1
3	SITE- 121A-22	1
4	1,2 meter	1
5	DIE WERKSWINKEL MOET GESLOOP / AFGEBREEK WORD	2
6	WATERMETER	1
7	4	1
8	PALISADE-HEINING	1
9	ROOI	1
10	DRIE	1
11	TWEE	1
12	13 mm FYN KLIP	1
13	SUID-OOS	2
14	42,2 - 16 = 26.2 m	2
15	BEREKENINGE ONDER	3
16	BEREKENINGE ONDER	5
17	SKETS ONDER	4
<b>TOTAAL</b>		<b>29</b>

**VRAAG / QUESTION 15**

Toon alle berekeninge / Show all calculations

calculation: (+)(-) correct values correct answer correct unit	$S + S + S$ $28 + 22,4 + 22,4$ $= \underline{72,8 \text{ m}}$	berekening: (+)(-) korrekte waardes korrekte antwoord korrekte eenheid
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[3]

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**VRAAG / QUESTION 16**

Toon alle berekeninge / Show all calculations

(L x B) - (L x B) + (L x B) 31,3 x 9,6 = 300,48 5,2 x 3,8 = - 19,76 = <u>280,72</u> 3,4 x 2,7 = + 9,18 = <u>289,9 m<sup>2</sup></u>	subtract BL correct values Multiply correct answer correct unit m <sup>2</sup>	aftrek van BL korrekte waardes Vermenigvuldig korrekte antwoord korrekte eenheid m <sup>2</sup>
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[5]

**VRAAG / QUESTION 17**

Vryhand  
Freehand

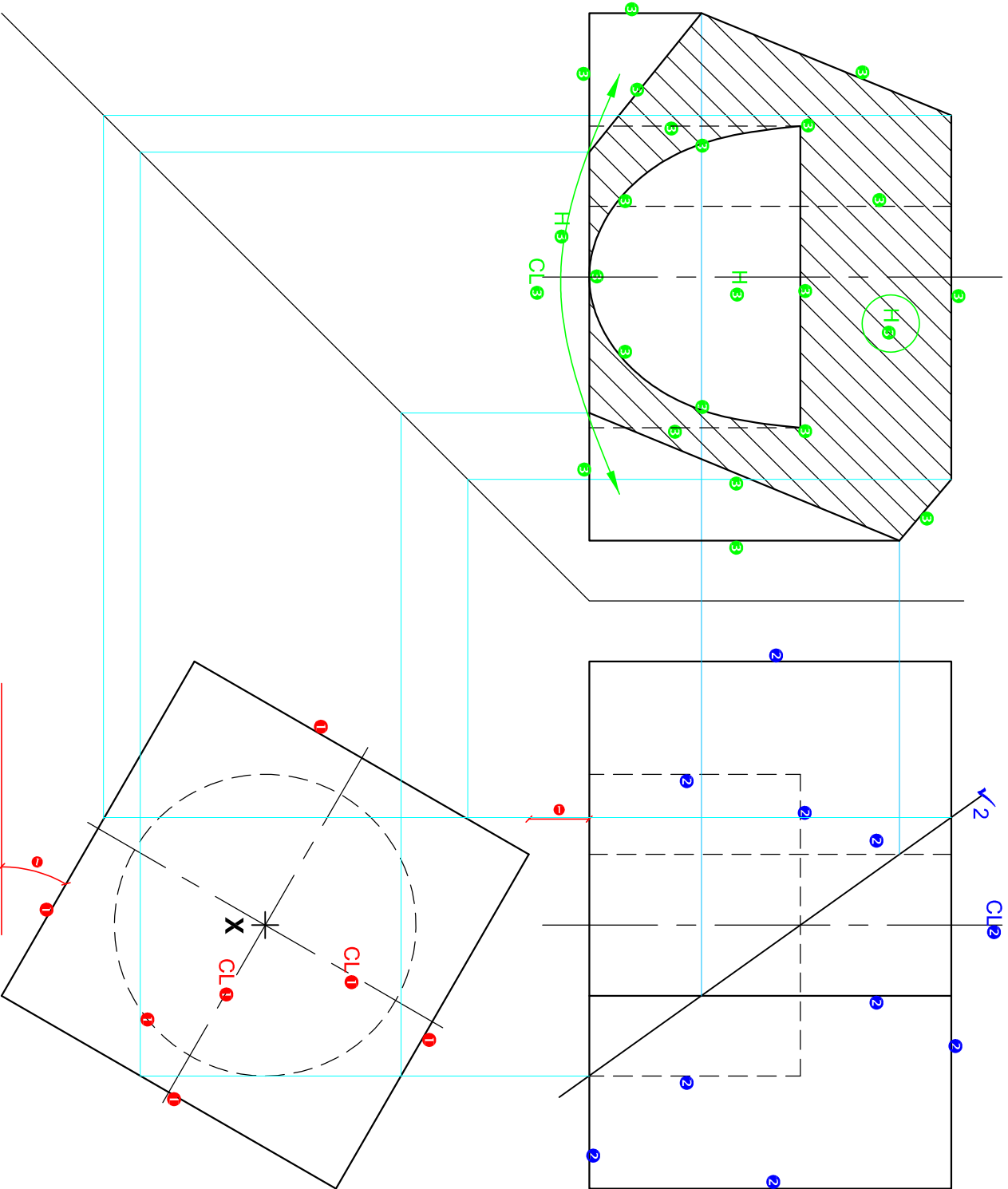
[4]

PAPER 1 - QUESTION 3: SOLID GEOMETRY  
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VRAESTEL 1 - VRAAG 3: VASTE LIGGAME  
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ASSESSERINGSKRITERIA	
1	BOAANSIG 4 ½
2	VOORAANSIG 6
3	REGTERAANSIG 12
4	WARE VORM 8 ½
<b>TOTAAL 31</b>	

ASSESSMENT CRITERIA	
1	TOP VIEW 4 ½
2	FRONT VIEW 6
3	RIGHT VIEW 12
4	TRUE SHAPE 8 ½
<b>TOTAL 31</b>	



PAPER 1 - QUESTION 3: SOLID GEOMETRY

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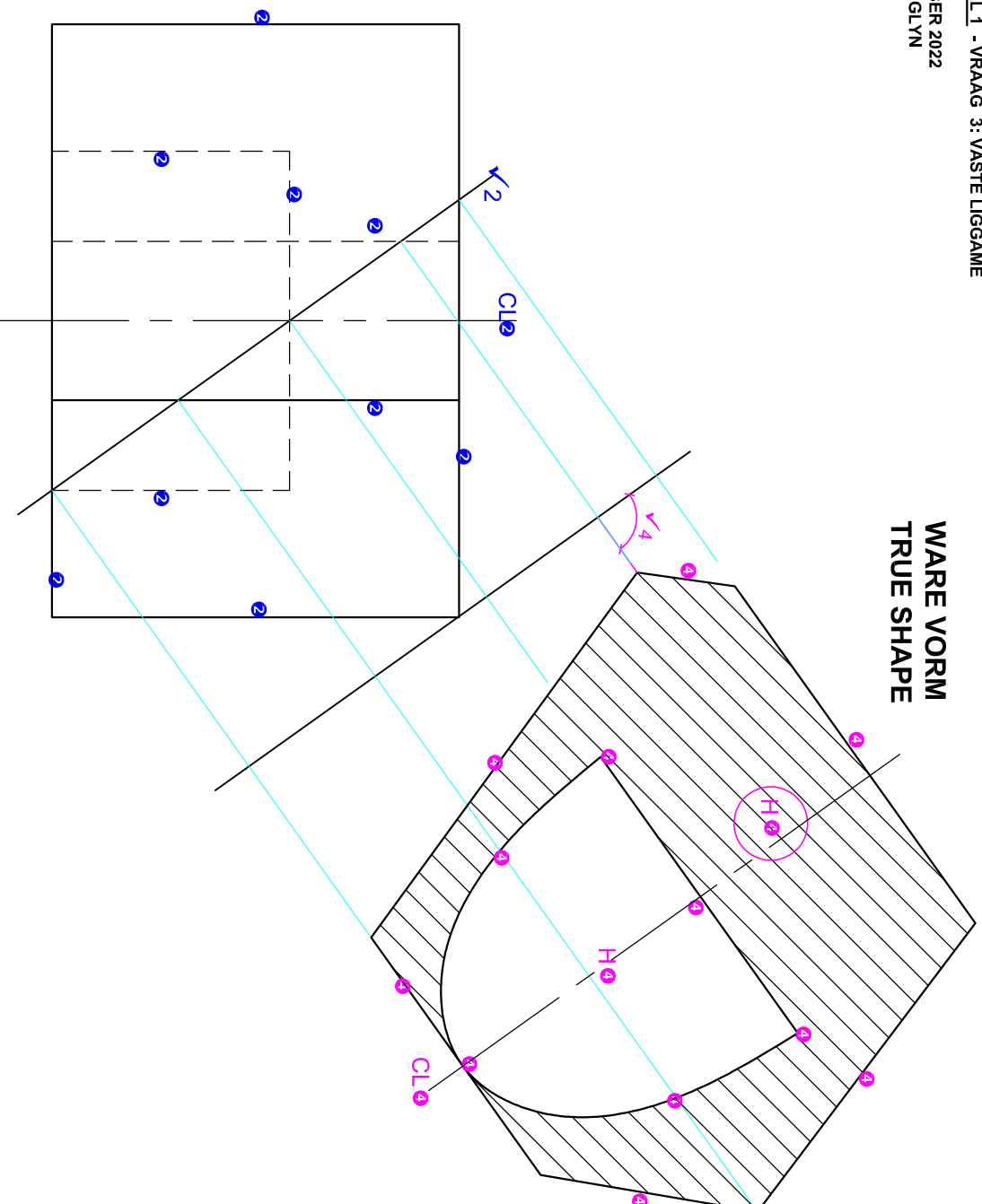
VRAESTEL 1 - VRAAG 3: VASTE LIGGAME

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**WARE VORM  
TRUE SHAPE**

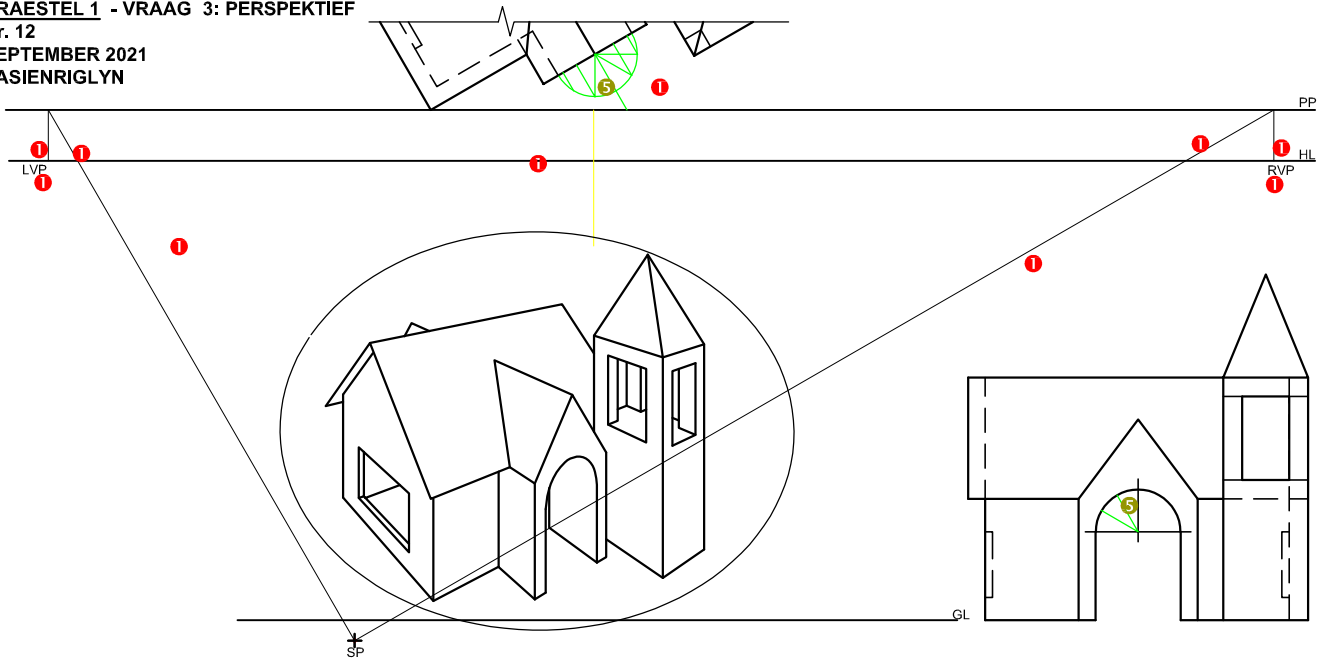


ASSESSERINGSKRITERIA	
1	BOAANSIG 4 $\frac{1}{2}$
2	VOORAANSIG 6
3	REGTERAANSIG 12
4	WARE VORM 8 $\frac{1}{2}$
<b>TOTAAL 31</b>	

ASSESSMENT CRITERIA	
1	TOP VIEW 4 $\frac{1}{2}$
2	FRONT VIEW 6
3	RIGHT VIEW 12
4	TRUE SHAPE 8 $\frac{1}{2}$
<b>TOTAL 31</b>	

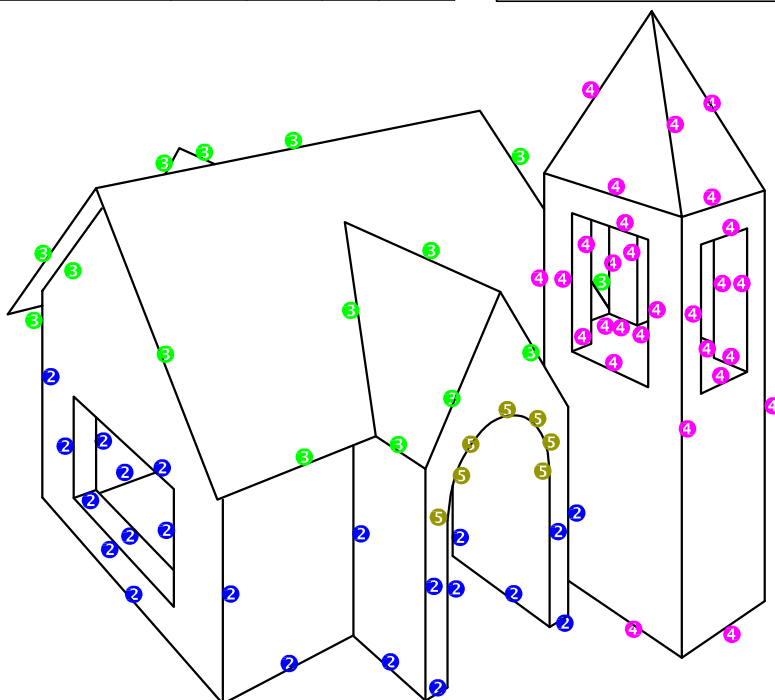
**PAPER 1 - QUESTION 3: PERSPECTIVE**  
 Gr. 12  
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**VRAESTEL 1 - VRAAG 3: PERSPEKTIEF**  
 Gr. 12  
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ASSESSMENT CRITERIA				
1	CONSTRUCTION AND VP's	5		
2	WALLS + WINDOW	11		
3	ROOF	7 1/2		
4	TOWER	14		
5	ARCH AND CONSTRUCTION	4 1/2		
<b>TOTAL</b>		<b>42</b>		

ASSESSERINGSKRITERIA				
1	KONSTRUKSIE EN VP'te	5		
2	MURE + VENSTER	11		
3	DAK	7 1/2		
4	TORING	14		
5	BOOG EN KONSTRUKSIE	4 1/2		
<b>TOTAAL</b>		<b>42</b>		

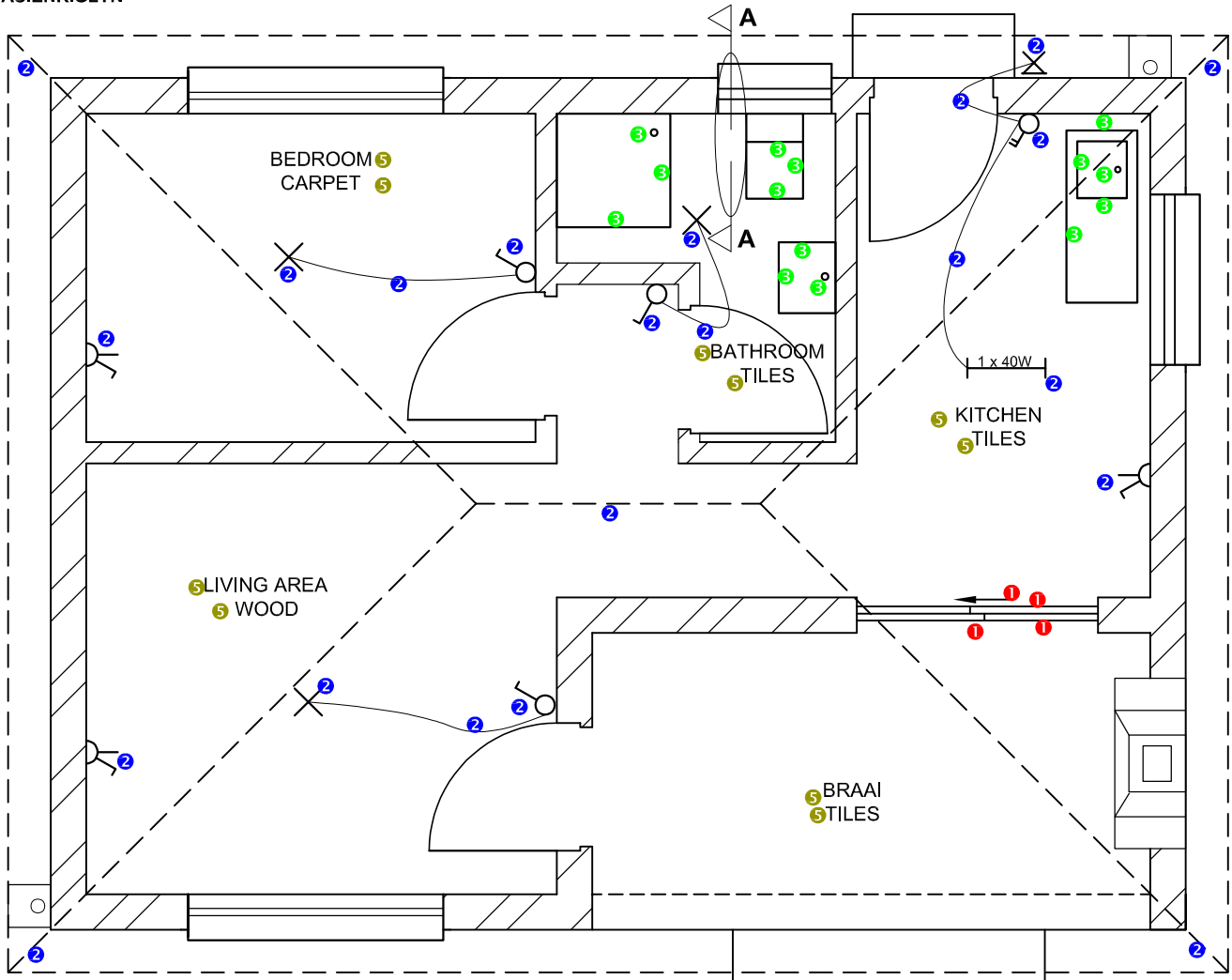


**PAPER 1 - QUESTION 4: FLOOR PLAN**

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**VRAESTEL 1 - VRAAG 4: VLOERPLAN**

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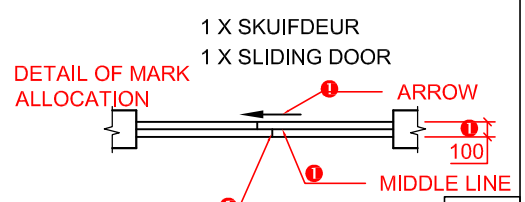
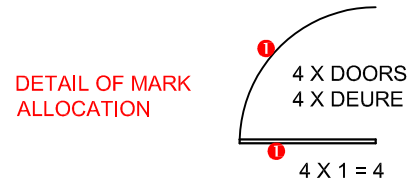
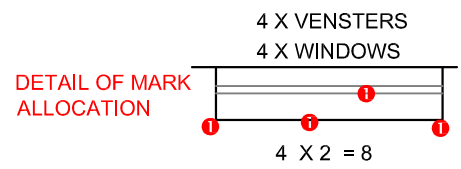
**FLOOR PLAN  
 SCALE 1 : 50**

**Hatching:** All hatched ✓4 ✓4  
 SANS compliant ✓4  
 Instruments must be used

**Arsering:** Alles gearseer ✓4 ✓4  
 Volgens SANS riglyne ✓4  
 Moet instrumente gebruik

ASSESSMENT CRITERIA		
FLOOR PLAN		
1	DOORS + WINDOWS	14
2	ELECTRICAL + ROOF LINES	11
3	FIXTURES	7
4	HATCHING	3
5	LABELS	5
<b>SUBTOTAL</b>		<b>40</b>

ASSESSERINGSKRITERIA		
VLOERPLAN		
1	DEURE + VENSTERS	14
2	ELEKTRIES + DAKLYNE	11
3	TOEBEHORE	7
4	ARSERING	3
5	BYSKRIFTE	5
<b>SUBTOTAAL</b>		<b>40</b>



STAGGERED LINE

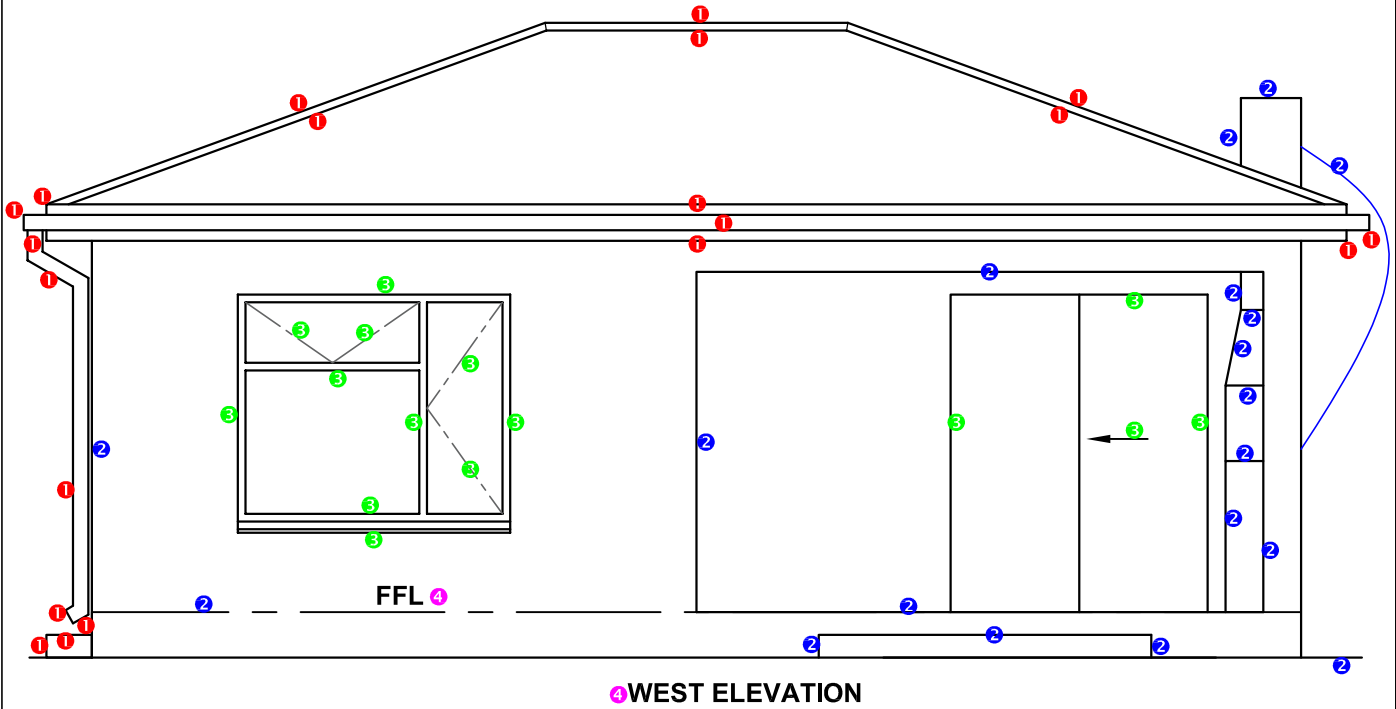
**5**

**PAPER 1 - QUESTION 4: ELEVATION**

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**VRAESTEL 1 - VRAAG 4: ELEVASIE**

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ASSESSERINGSKRITERIA		
NOORDAANSIG		
1	DAK, GEUT, RWAP, DREINPUT, FASSIE, VORS	10
2	MURE, STOEP, BRAAI, VVV	9 1/2
3	DEUR EN VENSTER	7 1/2
4	BYSKRIFTE	1
<b>SUBTOTAAL</b>		<b>28</b>

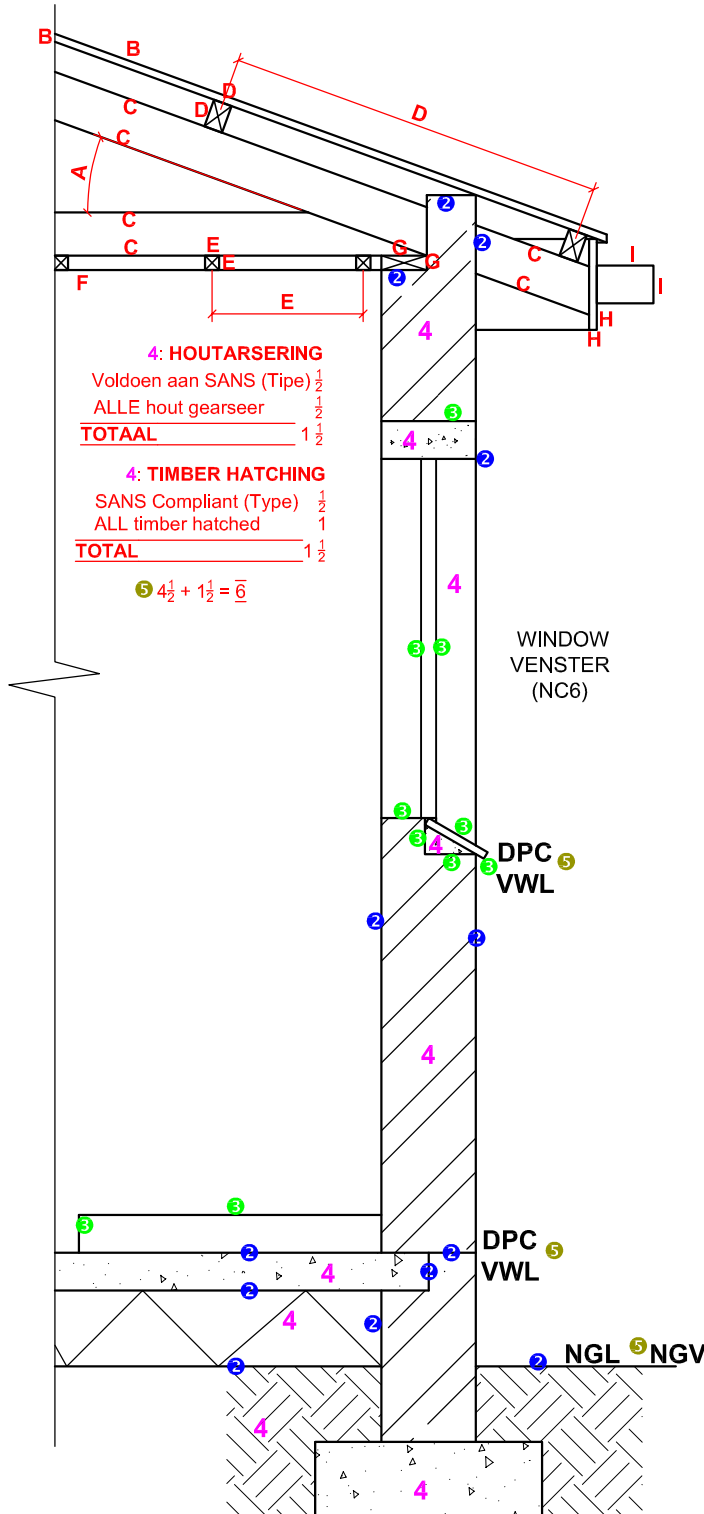
ASSESSMENT CRITERIA		
NORTH ELEVATION		
1	ROOF, GUTTER, RWDP, GULLEY FACIA BOARD, RIDGE COVER	10
2	WALLS, PORCH, BRAAI, FFL	9 1/2
3	DOOR AND WINDOW	7 1/2
4	LABELS	1
<b>SUBTOTAL</b>		<b>28</b>

**PAPER 1 - QUESTION 4: SECTION**

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**VRAESTEL 1 - VRAAG 4: DEURSNEE**

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**4: HOUTARSERING**  
 Voldoen aan SANS (Tipe)  $1\frac{1}{2}$   
 ALLE hout gearseer  $1\frac{1}{2}$   
**TOTAAL**  $1\frac{1}{2}$

**4: TIMBER HATCHING**  
 SANS Compliant (Type)  $1\frac{1}{2}$   
 ALL timber hatched 1  
**TOTAL**  $1\frac{1}{2}$

$5\ 4\frac{1}{2} + 1\frac{1}{2} = 6$

**DETAILED SECTION A-A**  
 SCALE 1 : 20  
**GEDETAILEERDE SNIT A-A**  
 SKAAL 1 : 20

ROOF DETAIL: MARK ALLOCATION DAKBESONDERHEDE: PUNTETOEKENNING		
A	ROOF ANGLE DAKHELLING	$1\frac{1}{2}$
B	ROOF SHEET DAKPLAAT	1
C	ROOF TRUSS DAKKAP	3
D	PURLIN + SPACING DAKLAT + SPASIE	$1\frac{1}{2}$
E	BRANDERING + SPACING PLAFONLAT EN SPASIE	$1\frac{1}{2}$
F	CEILING BOARD PLAFON	$\frac{1}{2}$
G	WALL PLATE MUURPLAAT	1
H	FACIA BOARD FASSIEBORD	1
I	GUTTER GEUT	1
<b>TOTAL / TOTAAL</b>		<b>11</b>

ASSESSERINGSKRITERIA		
DEURSNEE-AANSIG		
1	DAKBESONDERHEDE	11
2	FONDASIES + MURE + VLOER	$6\frac{1}{2}$
3	VENSTER + LATEI + STORT	5
4	ARSERING	6
5	BYSKRIFTE	$1\frac{1}{2}$
<b>SUBTOTAAL</b>		<b>30</b>

ASSESSMENT CRITERIA		
DETAILED SECTION		
1	ROOF DETAIL	11
2	FOUNDATIONS + WALLS + FLOOR	$6\frac{1}{2}$
3	WINDOW + LINTEL + SHOWER	5
4	HATCHING	6
5	LABELS	$1\frac{1}{2}$
<b>SUBTOTAL</b>		<b>30</b>