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DEPARTMENT OF EDUCATION

**NATIONAL SENIOR CERTIFICATE
NASIONALE SENIOR SERTIFIKAAT**

**GRADE 12
GRAAD 12**

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

**SEPTEMBER 2025
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 2025
 MARKING GUIDELINE

VRAESTEL 1
VRAAG 1: ANALITIES
 Gr. 12
 SEPTEMBER 2025
 NASIENRIGLYN

QUESTION 1 ANSWERS	
1	MARITZ AND POTGIETER 1
2	2025 - 06 - 18 1
3	TO ADD THE STEEL SECURITY SLIDING GATE 1
4	4 CATTLE PENS 1
5	NO COLOUR 1
6	17 1
7	PIVOT - SINGLE TOWER 1
8	CONTOUR LINES 1
9	ENOUGH SPACE FOR THE MILK TANKER/TRUCK TO BE ABLE TO TURN / MOVE 1
10	RODDING EYE 1
11	2 X 32 = 64 TON 1
12	R3570 X 2 = 7140 mm = Ø7,14 m 2
13	SOUTH - WEST 2
14	CALCULATION BELOW 3
15	CALCULATION BELOW 3
16	CALCULATION BELOW 3
17	SKETCH BELOW 4
TOTAL 28	

VRAAG 1 ANTWOORDE	
1	MARITZ EN POTGIETER 1
2	2025 - 06 - 18 1
3	VOEG DIE STAAL SEKURITEITS-SKUIFHEK BY 1
4	4 BEESKRALE 1
5	GEEN KLEUR 1
6	17 1
7	SPILPUNT - ENKEL TORING 1
8	KONTOERLYNE 1
9	GENOEG SPASIE VIR DIE MELKTROK OM TE KAN DRAAI / BEWEEG 1
10	STEEKOOG 1
11	2 X 32 = 64 TON 1
12	R3570 X 2 = 7140 mm = Ø7,14 m 2
13	SUID-WES 2
14	BEREKENINGE ONDER 3
15	BEREKENINGE ONDER 3
16	BEREKENINGE ONDER 3
17	SKETS ONDER 4
TOTAAL 28	

QUESTION/VRAAG 14

$$51.73 + 1.8 \text{ BL} \\ = \underline{53.53\text{m}}$$

calculation: (+) berekening: (+) 1
 correct values korrekte waardes 1
 correct answer korrekte antwoord 1
 correct unit korrekte eenheid [3]

QUESTION/VRAAG 15

Show all calculations/Toon alle berekeninge

$$\text{calculation: (+)} \quad 20 \times 2000 = \underline{40\,000 \text{ mm}} \\ \text{correct values} \quad = \underline{40 \text{ m}} \\ \text{correct answer} \\ \text{correct unit}$$

berekening: (+)
 korrekte waardes
 korrekte antwoord
 korrekte eenheid

[3]

QUESTION/VRAAG 16

Toon alle berekeninge / Show all calculations

$$(l \times b) + (l \times b) \\ (32.4 \times 17.5) + (14 \times 19.3) \\ = 567 + 270.2 \\ = \underline{837.2 \text{ m}^2}$$

Both answers are acceptable
 Beide antwoorde is aanvaarbaar

OR / OF

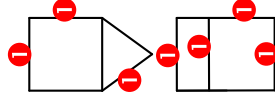
$$(32.4 \times 31.5) - ((32.4 - 19.3) \times (31.5 - 17.5)) \\ = 1020.6 - (13.1 \times 14) \\ = \underline{837.2 \text{ m}^2}$$

Both answers are acceptable
 Beide antwoorde is aanvaarbaar

Multiply formula
 correct answer
 correct unit m²

Vermenigvuldig formule
 korrekte antwoord
 korrekte eenheid m²

[3]

QUESTION/VRAAG 17

Vryhand 1
 Freehand 1

[4]

2

PAPER 1

QUESTION 2: INTERPENETRATION AND DEVELOPMENT

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MARKING GUIDELINE

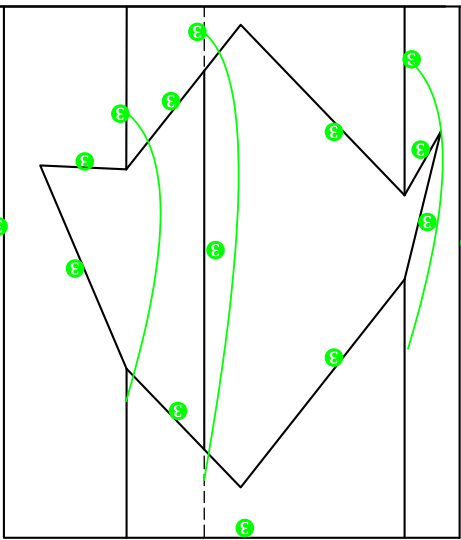
VRAESTEL 1

VRAAG 1: DEURDRINGING EN ONTWIKKELING

Gr. 12

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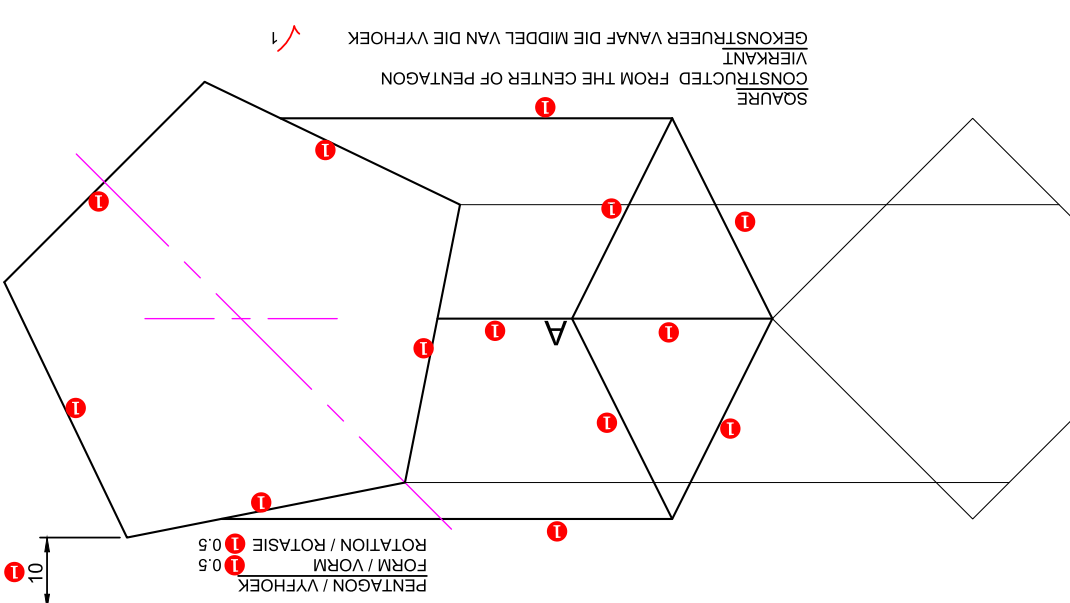
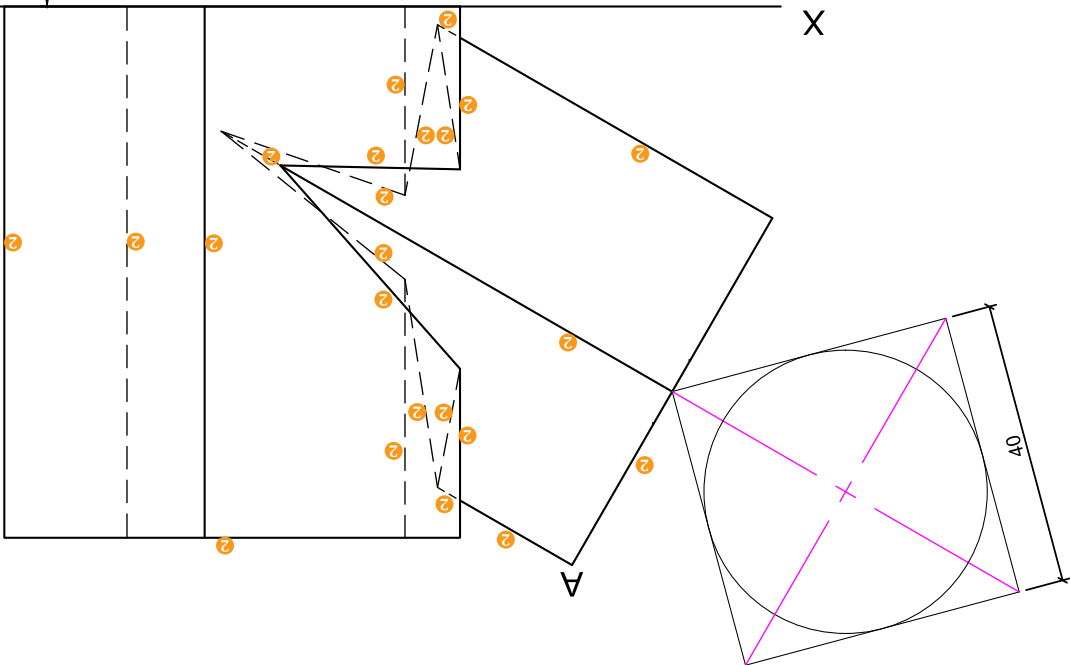
NASIENRIGLYN



ASSESSMENT CRITERIA / ASSESSINGSKRITERIA				
1	TOP VIEW / BO-AANSIG	9		
2	FRONT VIEW / VOORAANSIG	11½		
3	LEFT VIEW / LINKERAANSIG	7½		
4	DEVELOPMENT / ONTWIKKELING	7		
PENALTY / PENALISERING (-)				
TOTAL		35		

X1

Y1



PAPER 1

QUESTION 2: INTERPENETRATION AND DEVELOPMENT

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MARKING GUIDELINE

VRAESTEL 1

VRAAG 1: DEURDRINGING EN ONTWIKKELING

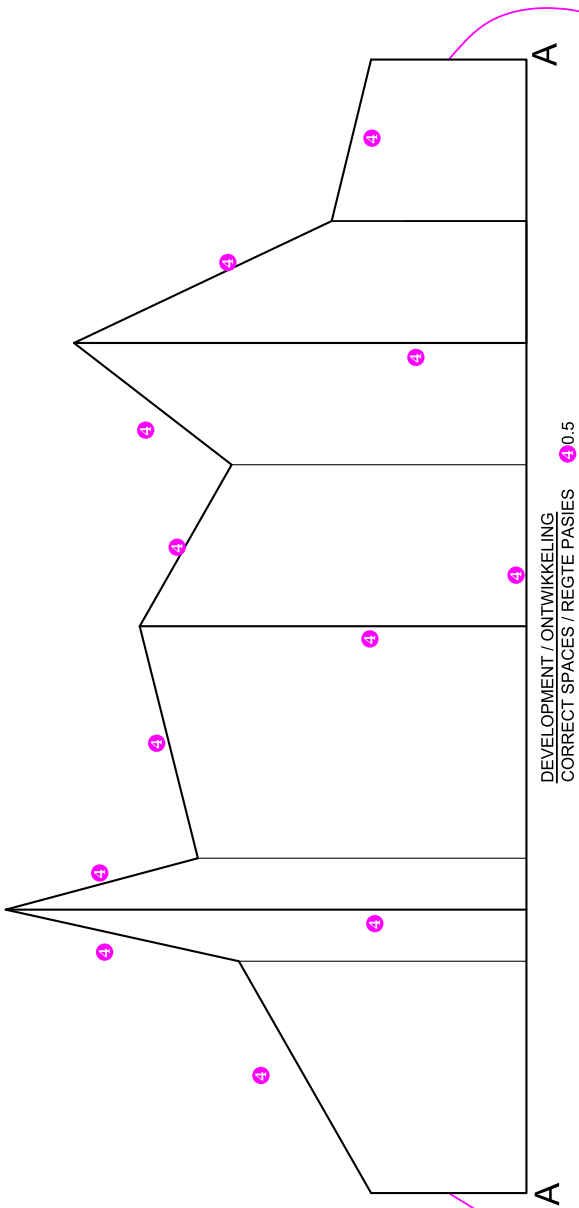
Gr. 12

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NASIENRIGLYN

IF NOT 100% ACCORDING TO MARKING GUIDELINE:
Follow the learner's construction on the front view and mark with the mistake.

"INDIEN NIE 100% VOLGENS NASIEN RIGLYN:
Volg leerder se konstruksie op vooraansig en merk saam met die fout.



DEVELOPMENT / ONTWIKKELING
CORRECT SPACES / REGTE PASIES

0,5

ASSESSMENT CRITERIA / ASSESSERINGSKRITERIA		
1	TOP VIEW / BO-AANSIG	9
2	FRONT VIEW / VOORAANSIG	11½
3	LEFT VIEW / LINKERAANSIG	7½
4	DEVELOPMENT / ONTWIKKELING	7
PENALTY/PENALISERING (-)		
TOTAL TOTAAL		35

PAPER 1 - QUESTION 3: PERSPECTIVE

Gr. 12

SEPTEMBER 2025

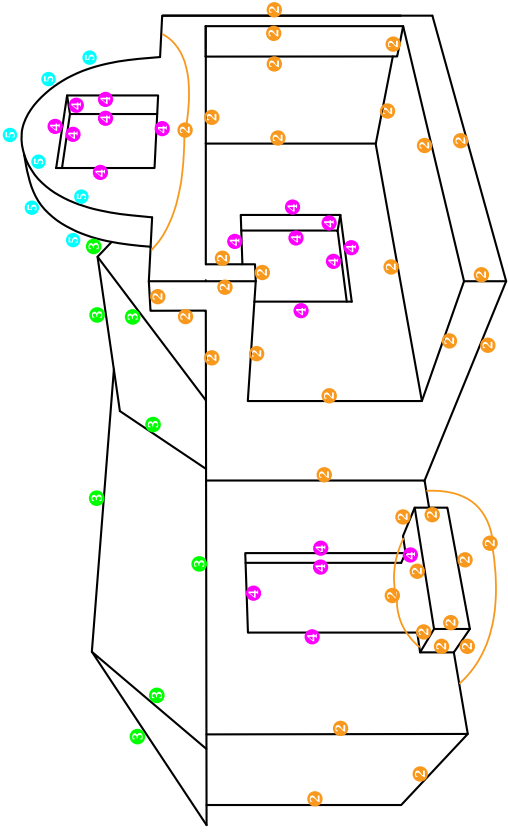
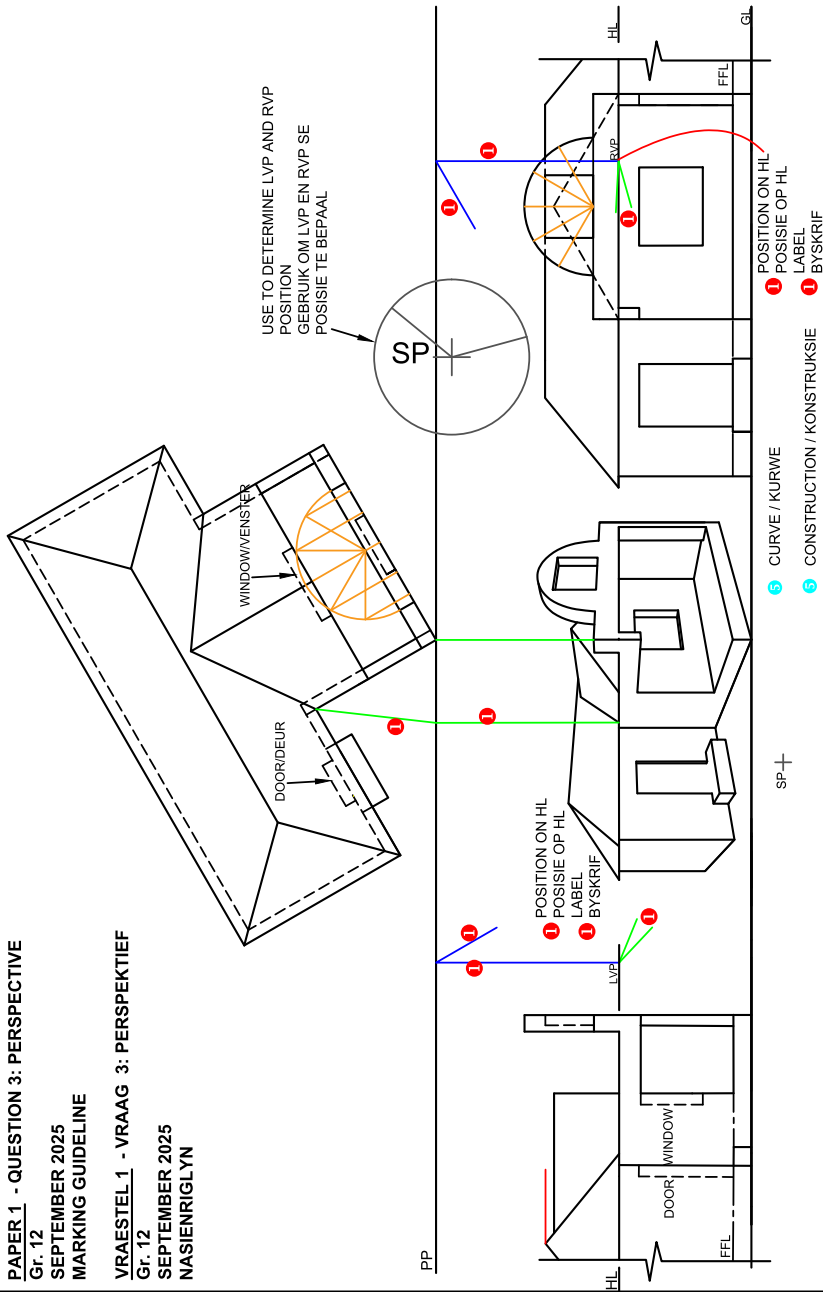
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 3: PERSPEKTIEF

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NASIENRIGLYN



SP +

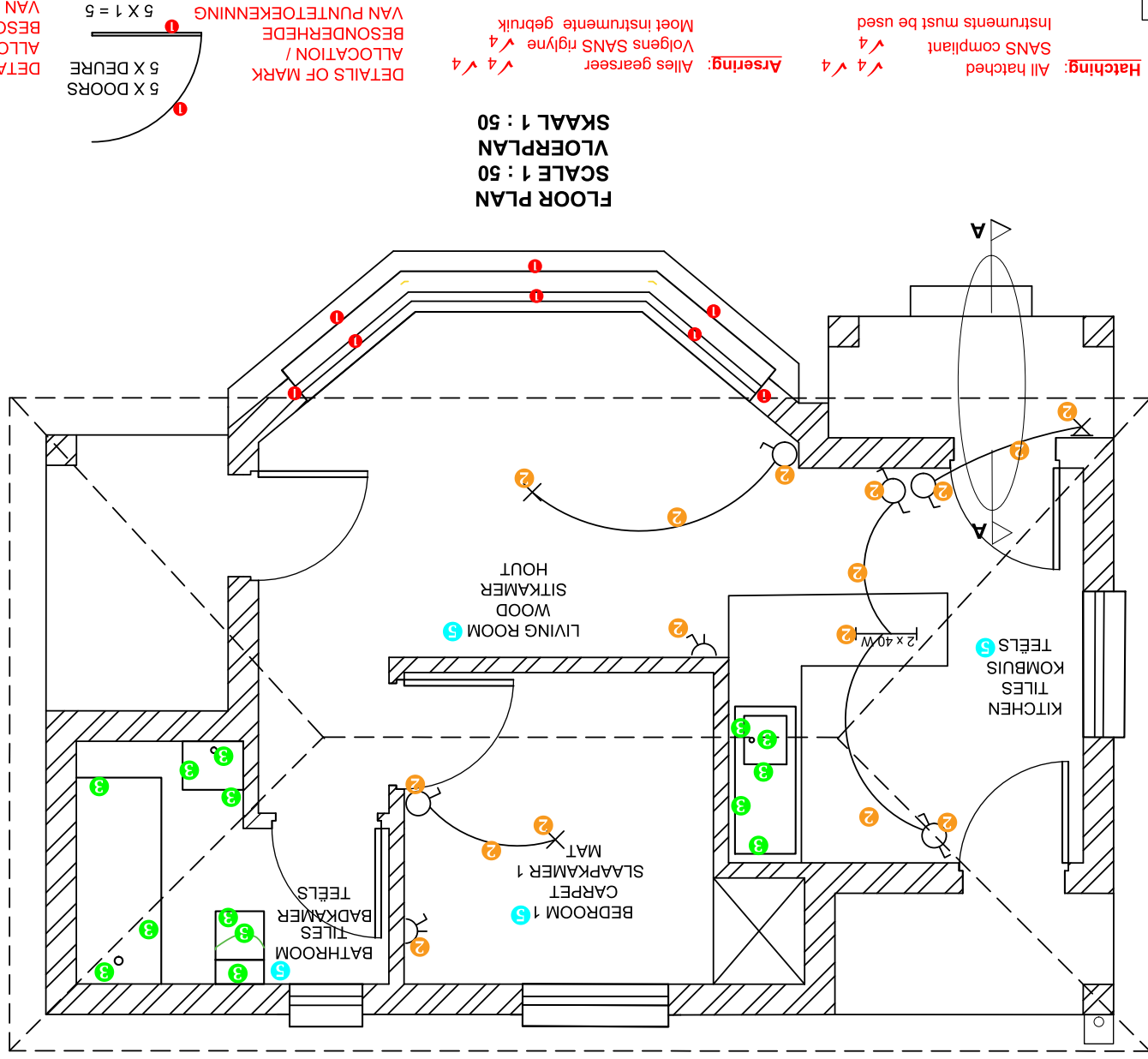
ASSESSMENT CRITERIA		
1	CONSTRUCTION + VP's	6
2	WALLS + PORCH + STEP	18
3	ROOF	4
4	WINDOWS + DOOR	9½
5	ARCH + CONSTRUCTION	4½
TOTAL		42

ASSESSERINGSKRITERIA		
1	KONSTRUKSIE + VP'te	6
2	MURE + STOEP + TRAP	18
3	DAK	4
4	VENSTERS + DEUR	9½
5	BOOG + KONSTRUKSIE	4½
TOTAAL		42

5

FLOOR PLAN			ASSESSMENT CRITERIA
15	DOORS + WINDOWS	2	
8	ELECTRICAL	3	
7	FIXTURES	4	
3	HATCHING	5	
2	LABELS		
35	SUBTOTAL		

ASSESSERINGSKRITERIA	
VLOERPLAN	
1	DEURE + VENSTERS
2	ELEKTRIS
3	TOEBEHORE
4	ARSERING
5	BYSKRIFTE
35	SUBTOTAAL



PAPER 1 - QUESTION 4: ELEVATION

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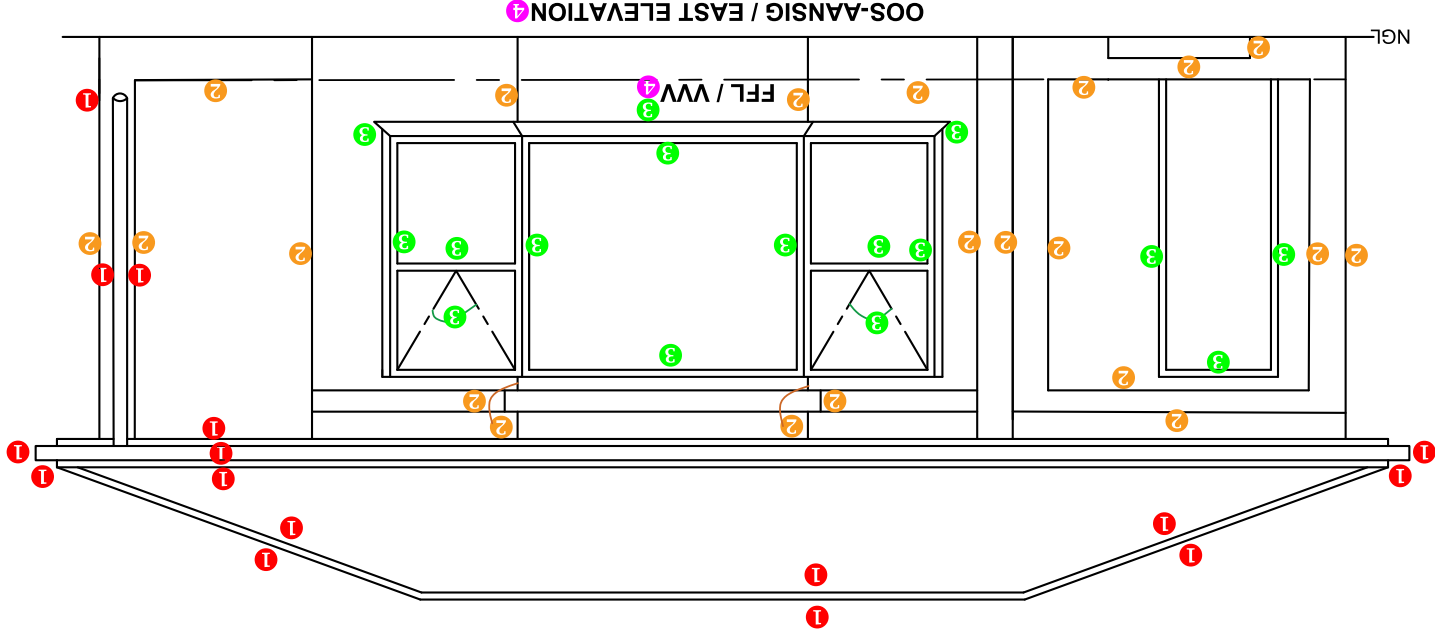
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 4: ELEVASIE

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SEPTEMBER 2025

NASIENRIGLYN



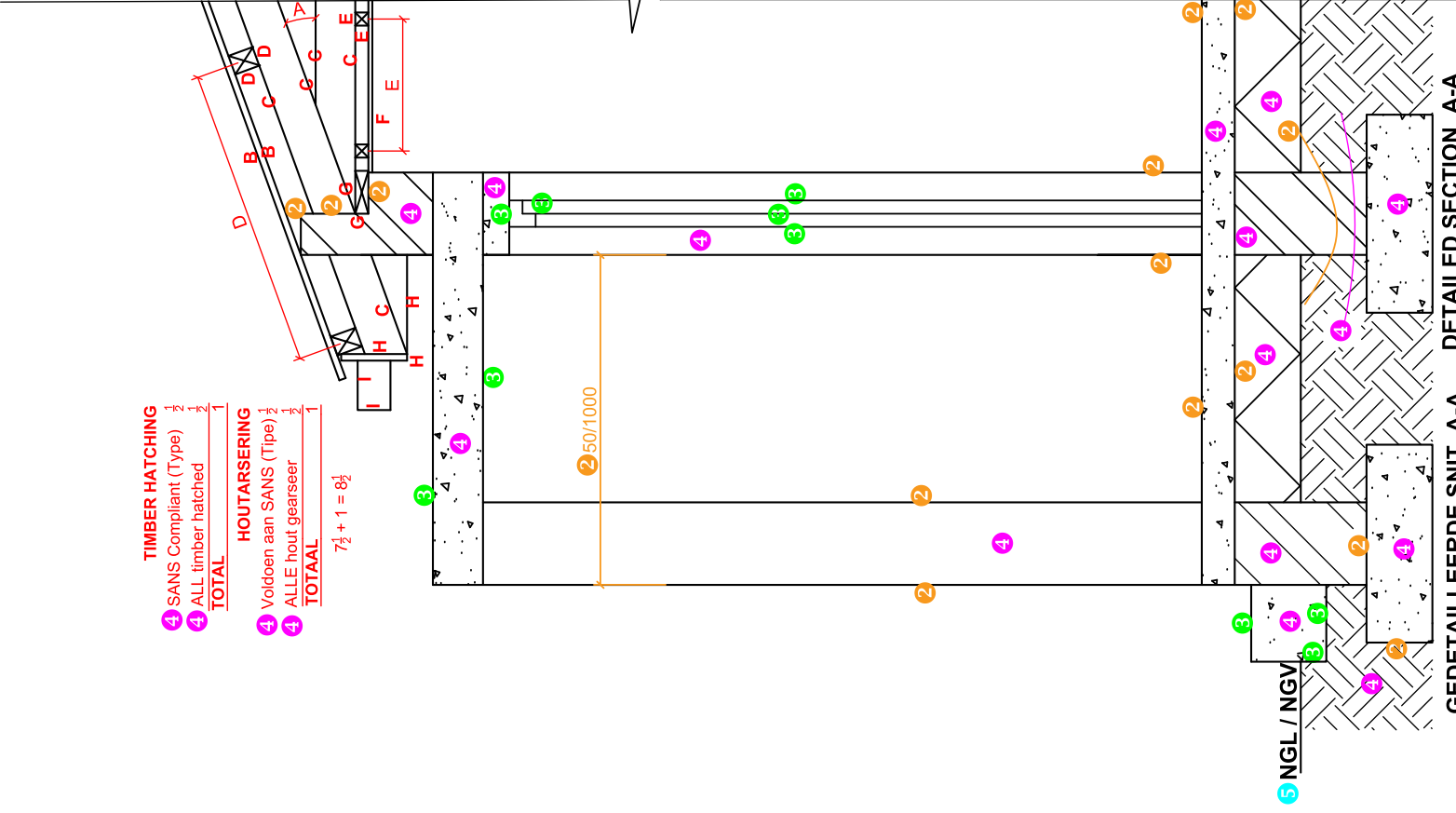
ASSESSERINGSKRITERIA			
OOS - AANSIG			
1	DAK + FASSIE + GEUT + VORSES	8	SUBTOTAAL 27 ¹ / ₂
2	MURE + STOEP + BETONLAAG + TRAPPE + PILARE + VV	10 ² / ₁	
3	DEUR + VENSTER	8	
4	BYSKRIFTE	1	

ASSESSMENT CRITERIA			
EAST ELEVATION			
1	ROOF + FACIA + GUTTER + COVERS	8	SUBTOTAL 27 ¹ / ₂
2	WALLS + PORCH + CONCRETE SLAB + STEPS + PILLARS + FFL	10 ² / ₁	
3	DOOR + WINDOW	8	
4	LABELS	1	

ROOF DETAIL: MARK ALLOCATION DAKBESONDERHEDE: PUNTOEKENNING		
A	ROOF ANGLE / DAKHELLING	1 ½
B	ROOF SHEET DAKPLAAT	1
C	ROOF TRUSS + OVERHANG / DAKKAP+ OORHANG	2 ½
D	PURLIN + SPACING / DAKLAT + SPASIERING	1 ½
E	BRANDING + SPACING / PLAFONLATTE + SPASIERING	1 ½
F	CEILING BOARD / PLAFONBOORD	1 ½
G	WALL PLATE / MUURPLAAT	1
H	FACIA BOARD / FASIEBOORD	1 ½
I	GUTTER / GEUT	1
TOTAL / TOTAAL		11

TIMBER HATCHING
4 SANS Compliant (Type) 1 ½
4 ALL timber hatched 1 ½
TOTAL 7 ½ + 1 = 8 ½

HOUTARSERING
4 Voldoen aan SANS (Type) 1 ½
4 ALLE hout gearseer 1 ½
TOTAAL 7 ½ + 1 = 8 ½



ASSESSERINGSKRITERIA		
GEDETAILLEERDE SNIT		
1	DAKBESONDER- HEDE	11
2	FONDASIE + MURE + VLOER + PILAR	7 1/2
3	DEUR + TRAP + BETONBLAD	5
4	ARSERING	8 1/2
5	BYSKRIFTE	1 1/2
SUBTOTAAL		32 1/2

ASSESSMENT CRITERIA		
DETAILED SECTION		
1	ROOF DETAIL	11
2	FOUNDATIONS + WALLS + FLOOR + PILLAR	7 $\frac{1}{2}$
3	DOOR + STEP + CONCRETE SLAB	5
4	HATCHING	8 $\frac{1}{2}$
5	LABELS	$\frac{1}{2}$
SUBTOTAL		32 $\frac{1}{2}$

GEDETAILLEERDE SNIT A-A DETAILED SECTION A-A
SKAAL 1 : 20 SCALE 1 : 20