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**NATIONAL SENIOR CERTIFICATE
NASIONALE SENIOR SERTIFIKAAT**

**GRADE 12
GRAAD 12**

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

**SEPTEMBER 2024
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 2024
 MARKING GUIDELINE

VRAESTEL 1
VRAAG 1: ANALITIES
 Gr. 12
 SEPTEMBER 2024
 NASIENRIGLYN

QUESTION 1 ANSWERS		
1	GOUDA	1
2	2024 - 02 - 27	1
3	SITE- 6358-24	1
4	1250 KVA	1
5	10	1
6	BLUE	1
7	STREETLIGHT	1
8	WATER METER	1
9	SECURITY REASONS/ SAFETY/ CHECKPOINT / CONTROL POINT	1
10	INSPECTION CHAMBER	1
11	2.1 M	1
12	18 X 4 = 72 STAFF	2
13	NORHT-EAST	2
14	CALCULATION BELOW	3
15	CALCULATION BELOW	3
16	CALCULATION BELOW	3
17	SKETCH BELOW	4
	TOTAL	28

VRAAG 1 ANTWOORDE		
1	GOUDA	1
2	2024 - 02 - 27	1
3	ERF- 6358-24	1
4	1250 KVA	1
5	10	1
6	BLOU	1
7	STRAATLIG	1
8	WATER METER	1
9	SEKURITEITS REDES/ VEILIGHEID/ KONTROLEPUNT	1
10	INSPEKSIE KAMER	1
11	2.1 M	1
12	18 X 4 = 72 PERSONEEL	2
13	NOORD-OOS	2
14	BEREKENINGE ONDER	3
15	BEREKENINGE ONDER	3
16	BEREKENINGE ONDER	3
17	SKETS ONDER	4
	TOTAAL	28

VRAAG / QUESTION 14

$$17.25 + 11.25 + 3.75 \\ + 20.00 = \underline{52.25 \text{ m}}$$

calculation: (+)
 correct values 1
 correct answer 1
 correct unit 1 [3]

VRAAG / QUESTION 15

Toon alle berekening / Show all calculations

$$\text{calculation: (+)} \quad 87 + 41.25 + 8.25 + 63.75 + \\ \text{correct values} \quad 93 + 93.75 (- 4.8) = \underline{382.2 \text{ m}}$$

berekening: (+)
 korrekte waardes
 korrekte antwoord
 korrekte eenheid

[3]

VRAAG / QUESTION 16

Toon alle berekening / Show all calculations

$$(l \times b) + (l \times b) \\ (12.75 \times 9.75) + (3.75 \times 6) \\ = 124.3125 + 22.5 \\ = \underline{146.81 \text{ m}^2}$$

Multiply formula
 correct answer
 correct unit m²

Both answers are acceptable
 Beide antwoorde is aanvaarbaar

OR / OF

$$(13.5 \times 12.75) - ((12.75 - 6) \times 3.75) \\ = 172.125 - (6.75 \times 3.75) \\ = \underline{146.81 \text{ m}^2}$$

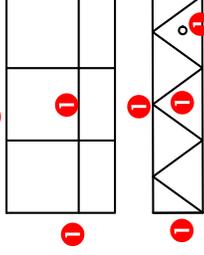
Vermenigvuldig formule
 korrekte antwoord
 korrekte eenheid m²

Both answers are acceptable
 Beide antwoorde is aanvaarbaar

[3]

VRAAG / QUESTION 17

Vryhand
 Freehand

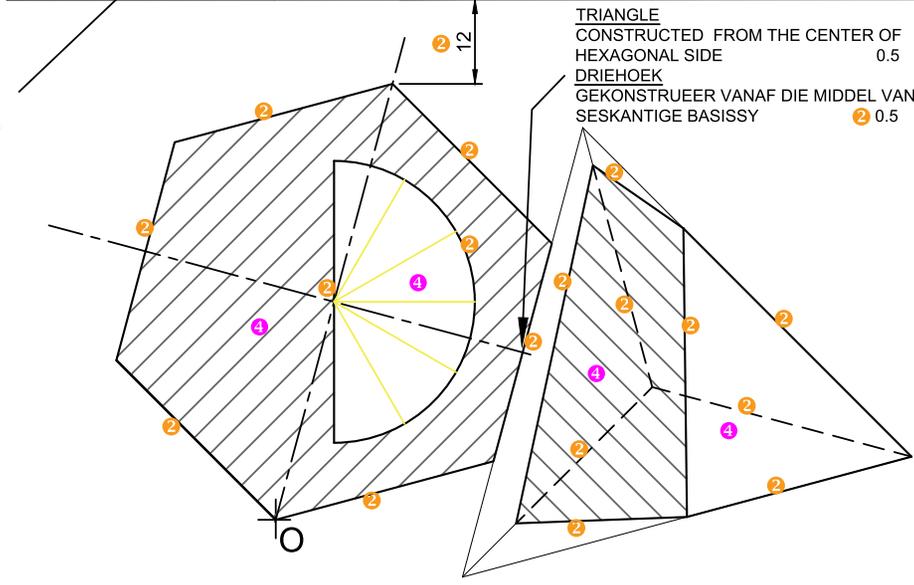
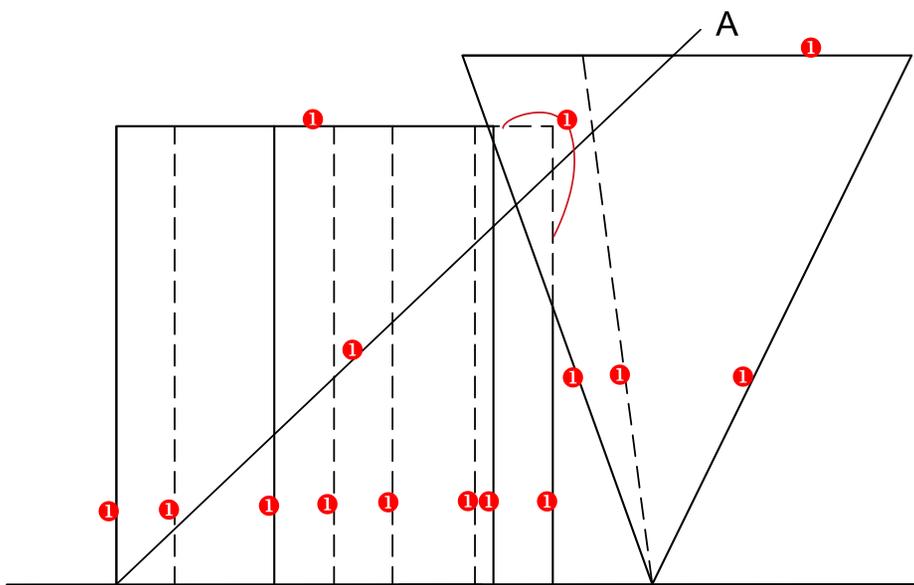


[4]

2

VRAESTEL 1
 VRAAG 1: INTERPENETRASIE EN ONTVOUING
 Gr. 12
 SEPTEMBER 2024
 NASIENRIGLYN

PAPER 1
 QUESTION 2: INTERPENETRATION AND DEVELOPMENT
 Gr. 12
 SEPTEMBER 2024
 MARKING GUIDELINE



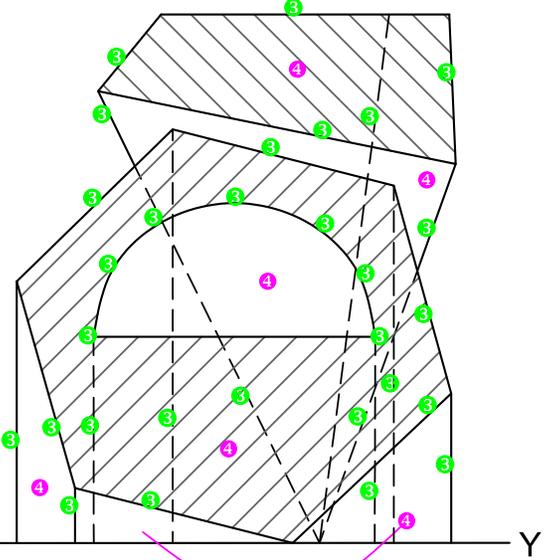
HEXAGON / SESHOEK
 FORM / VORM 2 0.5
 ROTATION / ROTASIE 2 0.5

HALF CIRCLE / HALWE SIRKEL
 CONSTRUCTION / KONSTRUKIE 2 0.5

TRIANGLE
 CONSTRUCTED FROM THE CENTER OF
 HEXAGONAL SIDE 0.5
 DRIEHOEK
 GEKONSTRUEER VANAF DIE MIDDEL VAN DIE
 SESKANTIGE BASIS 2 0.5

X1

Y1



ASSESSMENT CRITERIA / ASSESSERINGSKRITERIA			
1	FRONT VIEW VOORAANSIG	7½	
2	SECTIONAL TOP VIEW DEURSNEE BO-AANSIG	11	
3	SECTIONAL LEFT VIEW DEURSNEE LINKERAANSIG	14½	
4	HATCHING ARSEER	5	
PENALTY / PENALISERING (-)			
TOTAL TOTAAL		38	

PAPER 1 - QUESTION 4: FLOOR PLAN

Gr. 12

SEPTEMBER 2024

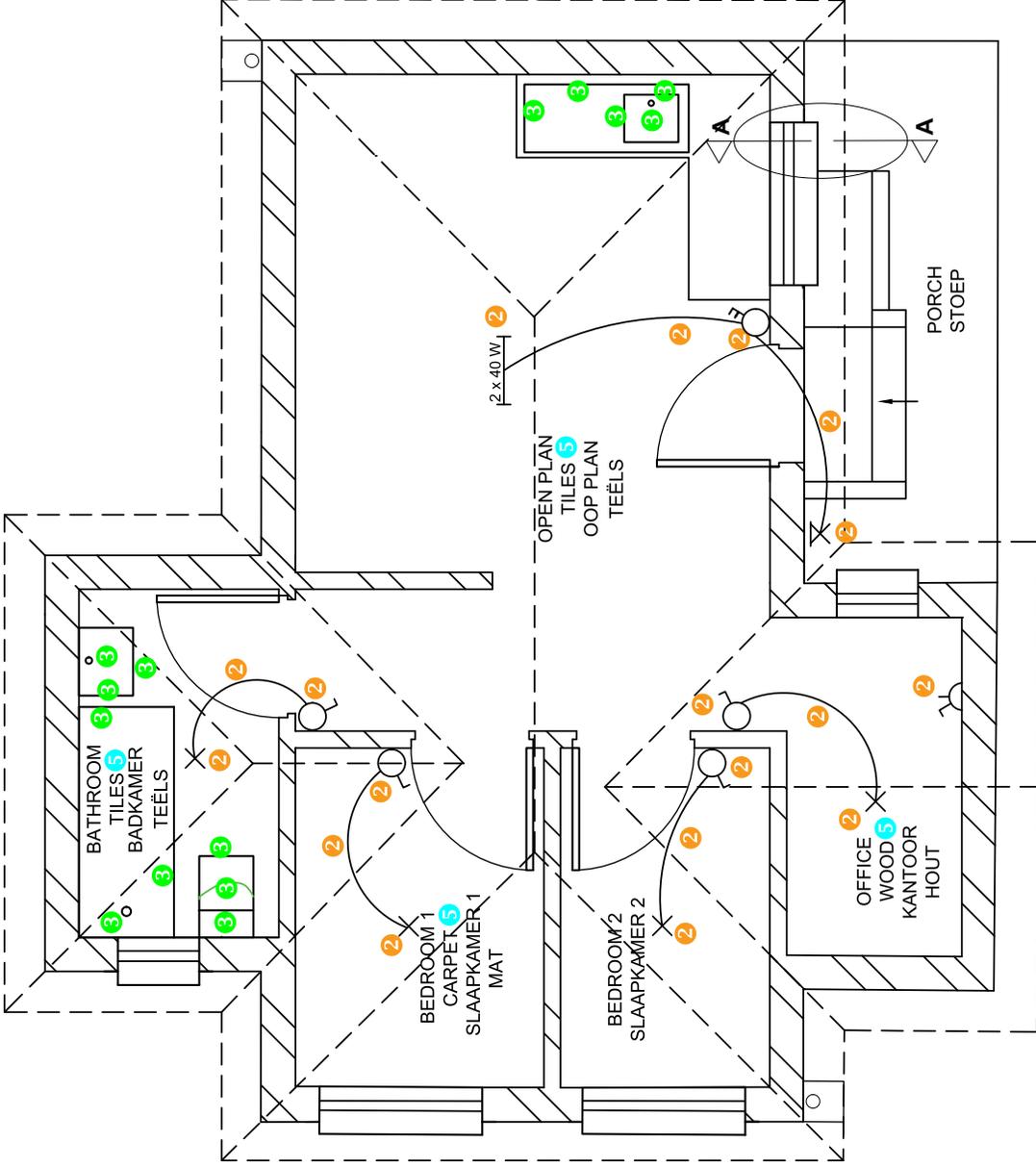
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 4: VLOERPLAN

Gr. 12

SEPTEMBER 2024

NASIENRIGLYN



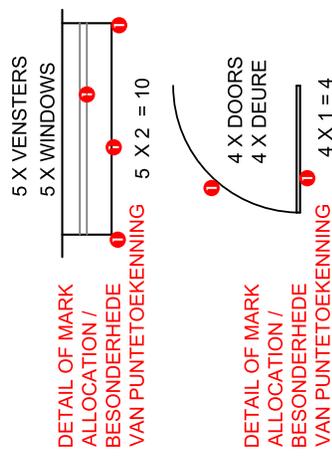
FLOOR PLAN
SCALE 1 : 50

Hatching: All hatched $\checkmark 4$ $\checkmark 4$
SANS compliant $\checkmark 4$
Instruments must be used

Arsering: Alles gearseer $\checkmark 4$ $\checkmark 4$
Volgens SANS riglyne $\checkmark 4$
Moet instrumente gebruik

ASSESSMENT CRITERIA	
FLOOR PLAN	
1	DOORS + WINDOWS 14
2	ELECTRICAL 9
3	FIXTURES 7
4	HATCHING 3
5	LABELS 2
SUBTOTAL 35	

ASSESSERINGSKRITERIA	
VLOERPLAN	
1	DEURE + VENSTERS 14
2	ELEKTRIES 9
3	TOEBEHORE 7
4	ARSERING 3
5	BYSKRIFTE 2
SUBTOTAAL 35	



PAPER 1 - QUESTION 4: ELEVATION

Gr. 12

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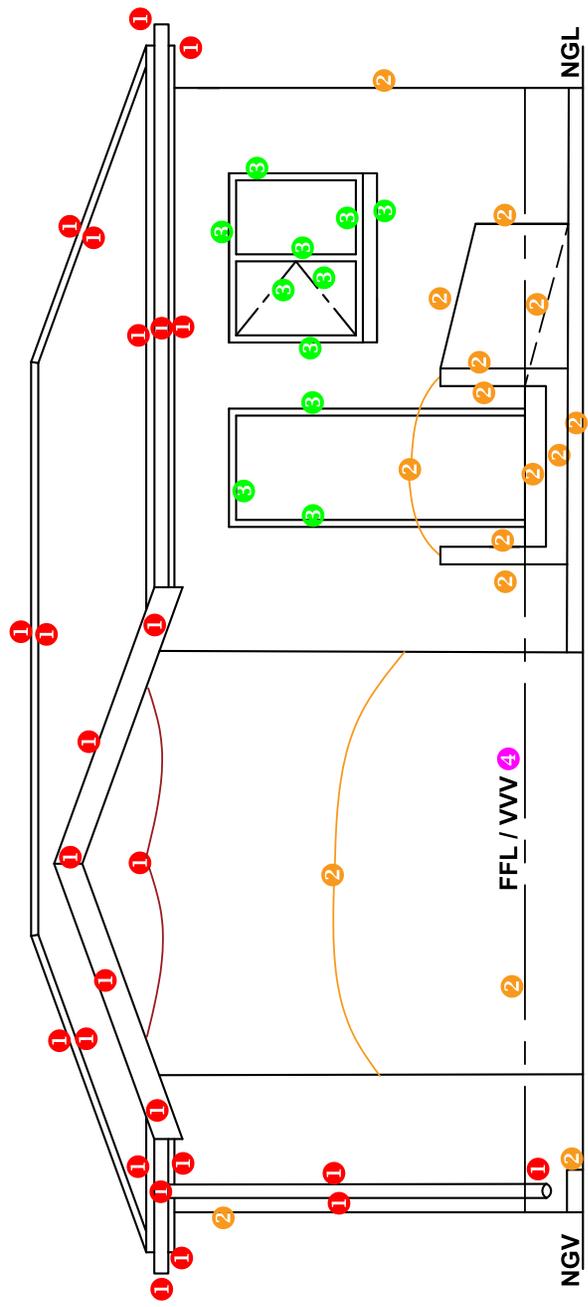
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 4: ELEVASIE

Gr. 12

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NASIENRIGLYN



OOS-AANSIG / EAST ELEVATION 4

ASSESSERINGSKRITERIA	
OOS - AANSIG	
1	DAK + FASSIE + GEUT + WINDVEER 12 ½
2	MURE + STOEP + TRAPPE + OPRIT + VVV 8
3	DEUR + VENSTER 5 ½
4	BYSKRIFTE 1
SUBTOTAAL 27	

ASSESSMENT CRITERIA	
EAST ELEVATION	
1	ROOF + FACIA + GUTTER + BARGE BOARD 12 ½
2	WALLS + PORCH + STEPS + RAMP + FFL 8
3	DOOR + WINDOW 5 ½
4	LABELS 1
SUBTOTAL 27	

PAPER 1 - QUESTION 4: SECTION

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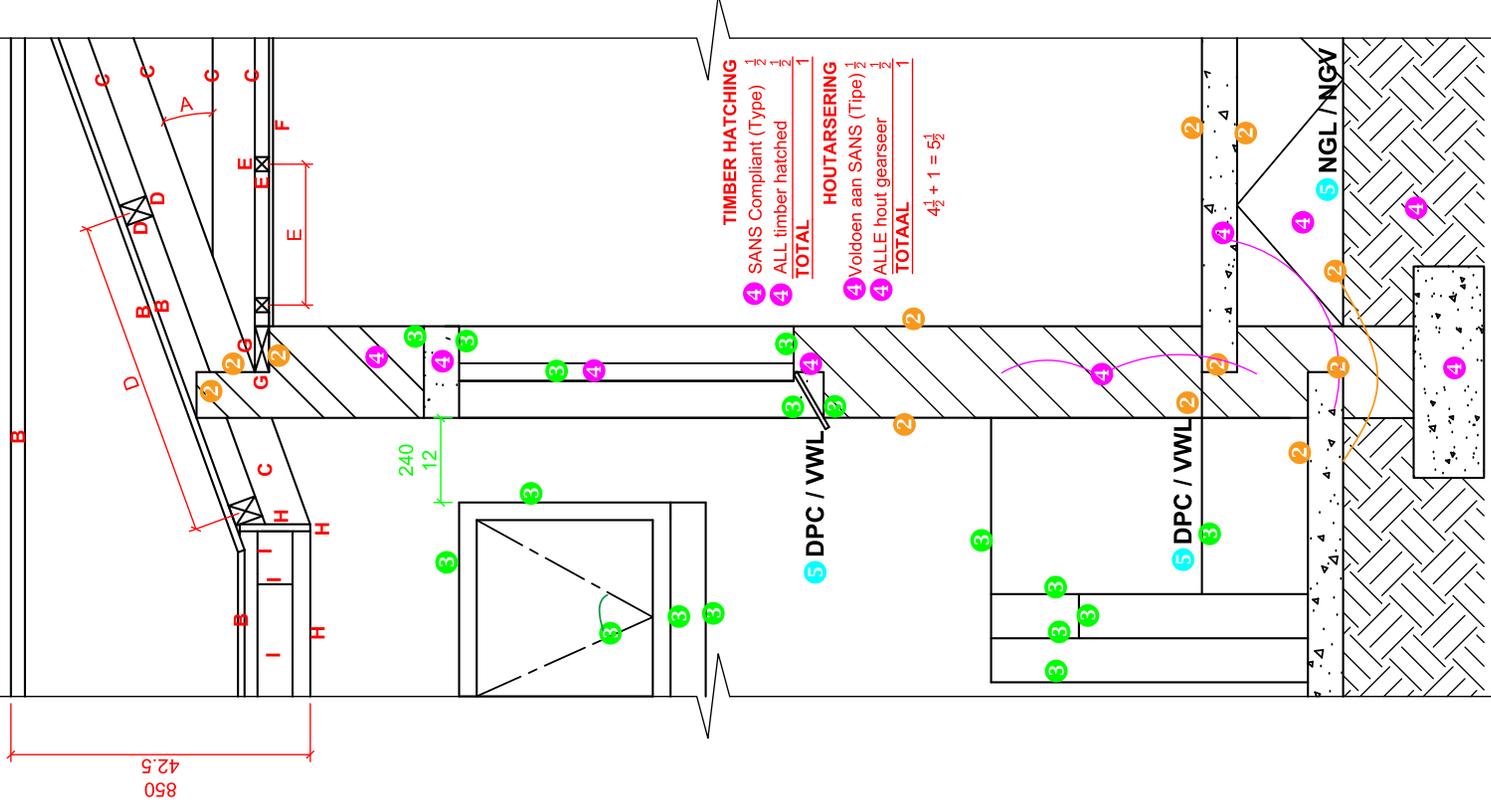
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VRAESTEL 1 - VRAAG 4: DEURSNEE

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NASIERIGLYN



ROOF DETAIL: MARK ALLOCATION DAKBESONDERHEDE: PUNTOEKENNING	
A	ROOF ANGLE / DAKHELLING
B	ROOF SHEET(SHOW THICKNESS) / DAKPLAAT(TOON DIKTE)
C	ROOF TRUSS + OVERHANG / DAKKAP+OORHANG
D	PURLIN + SPACING / DAKLAT + SPASIERING
E	BRANDING + SPACING / PLAFONLATTE + SPASIERING
F	CEILING BOARD / PLAFONBORD
G	WALL PLATE / MUURPLAAT
H	FACIA BOARD / FASSEMBORD
I	GUTTER / GEUT
TOTAL / TOTAAL	

12 1/2

ASSESSERINGSKRITERIA

GEDETAILLEERDE SNIT

1	DAKBESONDER- HEDE	12 1/2
2	FONDASIE + MURE + VLOER + BLAD	6
3	VENSTER+ TRAPPE + OPRIT	8 1/2
4	ARSERING	5 1/2
5	BYSKRIFTE	1 1/2
SUBTOTAAL		34

ASSESSMENT CRITERIA

DETAILED SECTION

1	ROOF DETAIL	12 1/2
2	FOUNDATIONS + WALLS + FLOOR + SLAB	6
3	WINDOW + STEPS + RAMP	8 1/2
4	HATCHING	5 1/2
5	LABELS	1 1/2
SUBTOTAL		34

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