



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 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
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 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 berekeninge / Show all calculations

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

berekening: (+)
 korrekte waardes
 korrekte antwoord
 korrekte eenheid

[3]**VRAAG / QUESTION 16**

Toon alle berekeninge / Show all calculations

$$(l \times b) + (l \times b) \\ (12.75 \times 9.75) + (3.75 \times 6) \\ = 124.3125 + 22.5 \\ = \underline{146.81 \text{ m}^2} \\ = \underline{146.8125 \text{ m}^2}$$

Multiply formula
 correct answer
 correct unit m²

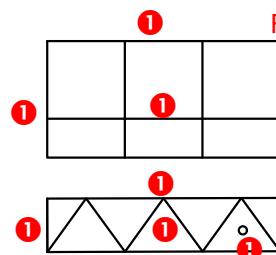
Both answers are acceptable
 Beide antwoorde is aanvaarbaar

OR / OF

$$(13.5 \times 12.75) - ((12.75 - 6) \times 3.75) \\ = 172.125 - (6.75 \times 3.75) \\ = \underline{146.81 \text{ m}^2} \\ = \underline{146.8125 \text{ m}^2}$$

Vermenigvuldig formule
 korrekte antwoord
 korrekte eenheid m²

Both answers are acceptable
 Beide antwoorde is aanvaarbaar

[3]**VRAAG / QUESTION 17**Vryhand
Freehand**[4]**

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

VRAESTEL 1
VRAAG 1: INTERPENETRASIE EN ONTVOUING
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NASIENRIGLYN

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

HALF CIRCLE / HALWE SIRKEL
CONSTRUCTION / KONSTRUKIE 2 0.5

Y1

A

X

A

X1

Y

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

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 TOTAL		38

3

PAPER 1 - QUESTION 3: PERSPECTIVE

Gr. 12

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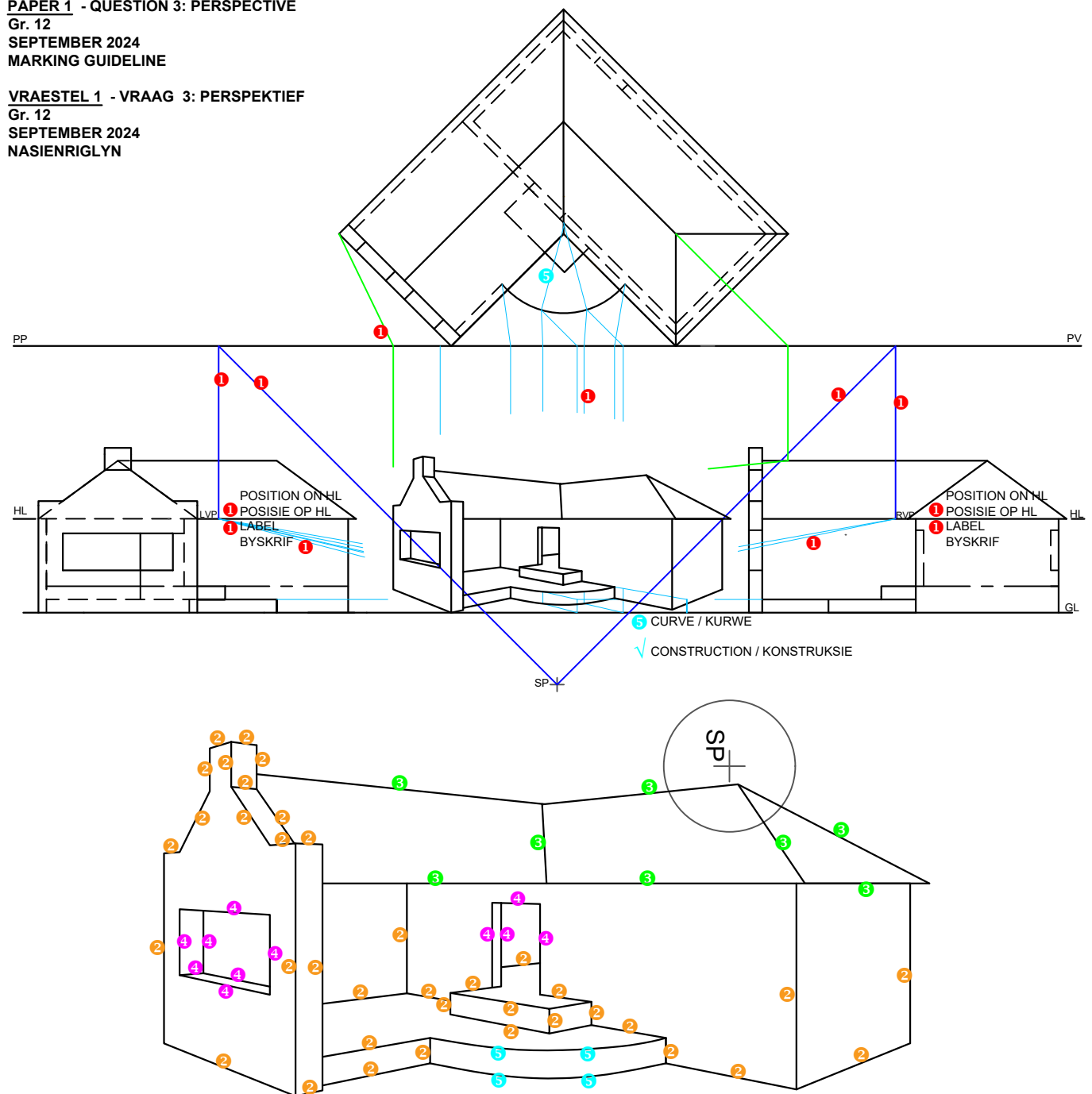
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 3: PERSPEKTIEF

Gr. 12

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ASSESSMENT CRITERIA		
1	CONSTRUCTION + VP's	6
2	WALLS + PORCH + STEP	18½
3	ROOF	4
4	WINDOWS + DOOR	5½
5	ARCH + CONSTRUCTION	4
TOTAL		38

SP +

ASSESSERINGSKRITERIA		
1	KONSTRUKSIE EN VP'te	6
2	MURE + STOEP + TRAP	18½
3	DAK	4
4	VENSTERS + DEUR	5½
5	BOOG EN KONSTRUKSIE	4
TOTAAL		38

PAPER 1 - QUESTION 4: FLOOR PLAN

Gr. 12

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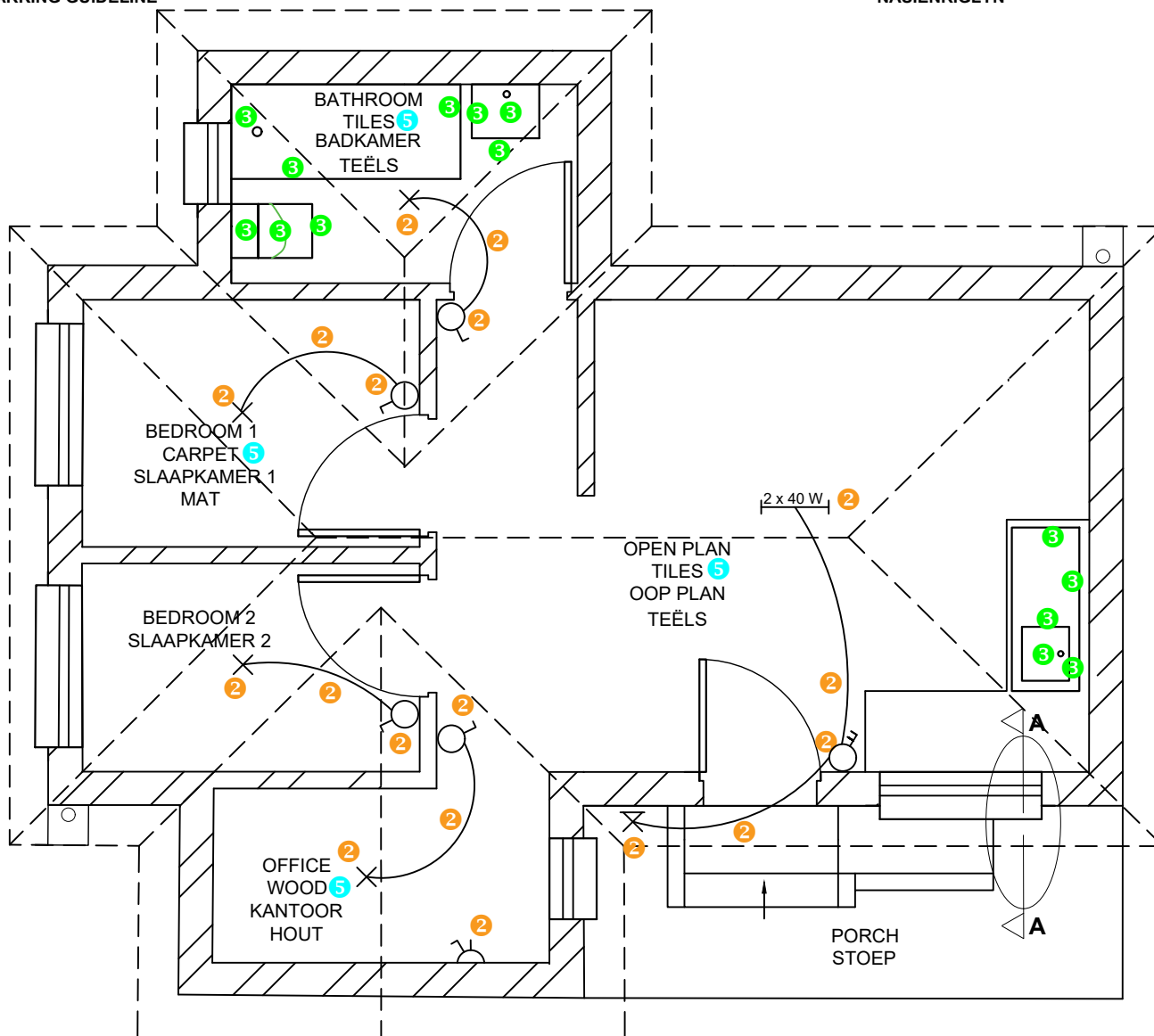
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VRAESTEL 1 - VRAAG 4: VLOERPLAN

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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	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

5 X VENSTERS
5 X WINDOWS

DETAIL OF MARK ALLOCATION / BESONDERHEDE VAN PUNTETOEKENNING

5 X 2 = 10

4 X DOORS
4 X DEURE

DETAIL OF MARK ALLOCATION / BESONDERHEDE VAN PUNTETOEKENNING

4 X 1 = 4

PAPER 1 - QUESTION 4: ELEVATION

Gr. 12

SEPTEMBER 2024

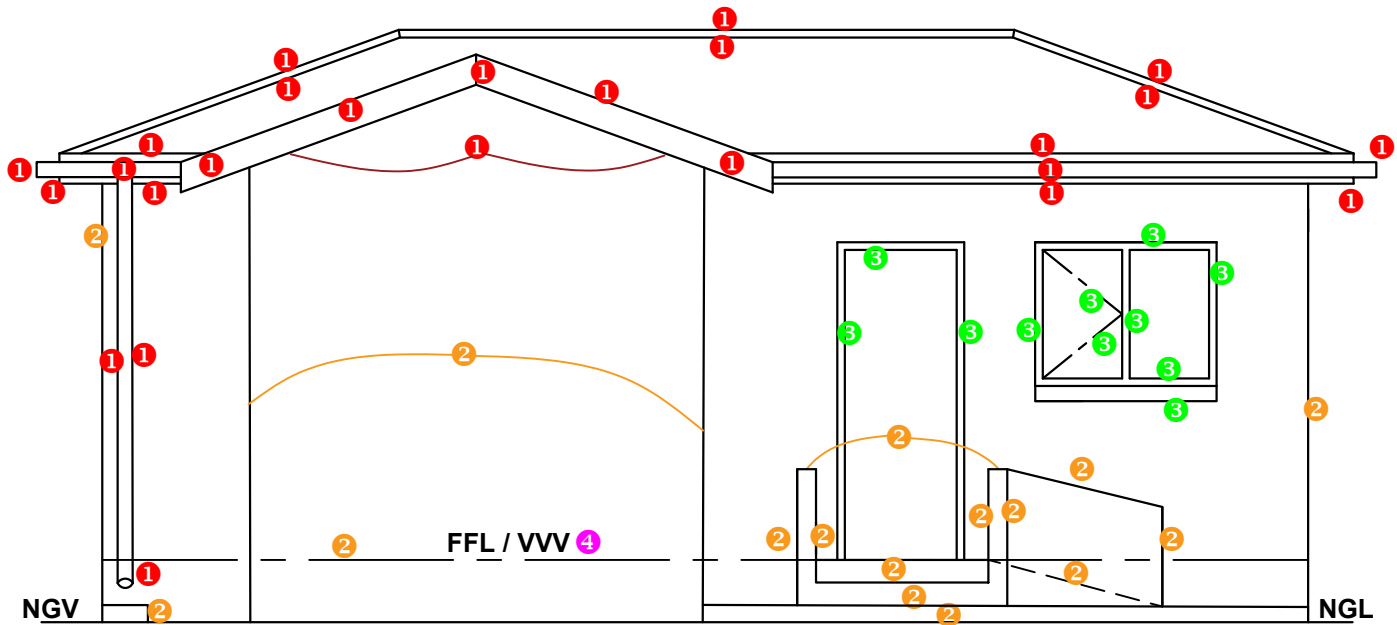
MARKING GUIDELINE

VRAESTEL 1 - VRAAG 4: ELEVASIE

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NASIENRIGLYN

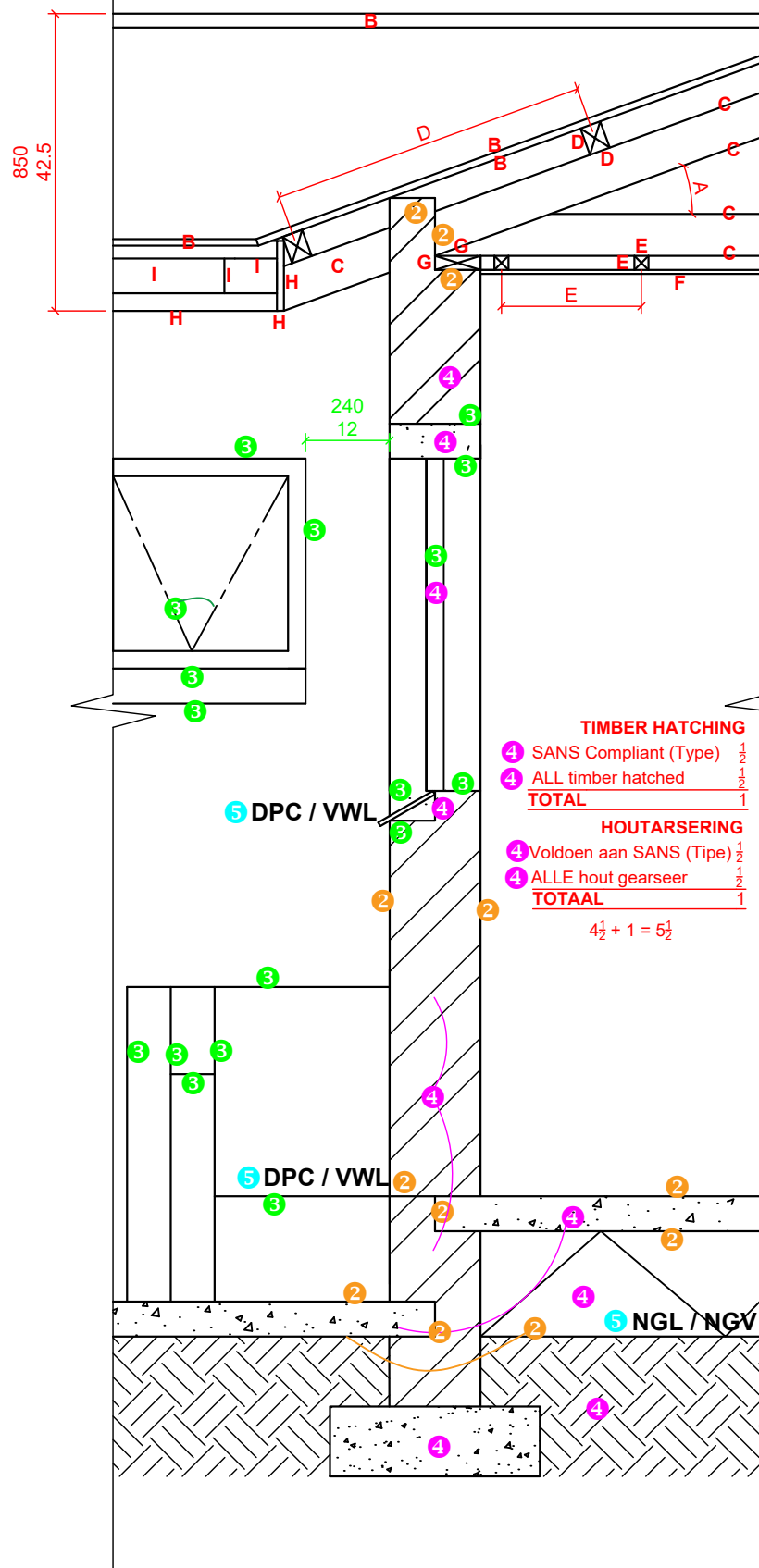
**OOS-AANSIG / EAST ELEVATION 4**

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

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

PAPER 1 - QUESTION 4: SECTION
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VRAESTEL 1 - VRAAG 4: DEURSNEE
Gr. 12
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GEDETAILLEERDE SNIT A-A
SKAAL 1 : 20

DETAILED SECTION A-A
SCALE 1 : 20

ROOF DETAIL: MARK ALLOCATION DAKBESONDERHEDE: PUNTTOEKENNING		
A	ROOF ANGLE / DAKHELLING	1 1/2
B	ROOF SHEET(SHOW THICKNESS) / DAKPLAAT(TOON DIKTE)	2
C	ROOF TRUSS + OVERHANG / DAKKAP+ OORHANG	2 1/2
D	PURLIN + SPACING / DAKLAT + SPASIERING	1 1/2
E	BRANDERING + SPACING / PLAFONLATTE + SPASIERING	1 1/2
F	CEILING BOARD / PLAFONBORD	1 1/2
G	WALL PLATE / MUURPLAAT	1
H	FACIA BOARD / FASSIEBORD	1 1/2
I	GUTTER / GEUT	1 1/2
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