higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

NQF LEVEL 4

(Second paper)

(12050644)

20 November 2024 (X-paper)
09:00–12:00

This question paper consists of 5 pages and 5 diagram sheets.

287Q2N2420

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

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ARCHITECTURAL GRAPHICS AND TECHNOLOGY
(Second paper)
NQF LEVEL 4
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Sketches must be large, neat and fully labelled.
5. Write neatly and legibly.

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QUESTION 1: ADMINISTRATION, LEGISLATION AND REGULATIONS

1.1 The following acronyms refer to important professional councils such as architectural councils, voluntary associations, building councils and engineering councils in the SA building environment.

Write out the following building-related acronyms in full:

1.1.1 NHBCR

1.1.2 SABS

1.1.3 VA

1.1.4 SACAP

1.1.5 SAIBD

(5 × 2) (10)

1.2 State TWO ways to demonstrate compliance with the application of the South African National Building Regulations. (2 × 2) (4)

1.3 Name the professional who takes responsibility for the following obligations on a site:

1.3.1 The professional financial consultants of the construction industry whose training and experience qualify them to advise on cost and contractual arrangements and to prepare contract documents.

1.3.2 The professional who is able to advise on title deed restrictions and is able to change any issues related to the title deeds of a property in SA.

1.3.3 The professional who signs off the structure and makes sure the builder has complied with all the specifications connected to the structure of the building.

(3 × 2) (6)

[20]

QUESTION 2: STAIRCASES AND LADDERS

2.1 Refer to DIAGRAM SHEET 1 (attached) and name the following elements on the staircase shown:

2.1.1 A

2.1.2 B

2.1.3 C

2.1.4 D

2.1.5 E

(5 × 2) (10)

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2.2 Refer to DIAGRAM SHEET 2 (attached) and name the THREE types of typical staircases shown:

2.2.1 A

2.2.2 B

2.2.3 C

(3 × 2) (6)

2.3 Name TWO materials that are used to manufacture and build staircases.

(2 × 2) (4)

[20]

QUESTION 3: BUILDING PLANS

3.1 Determine the percentage coverage of the following FOUR examples and show the calculations:

3.1.1 ERF SIZE 750 m^2, AREA of level 1 = 210 m^2, AREA of level 2 = 210 m^2 and AREA of garage = 36 m^2.

3.1.2 ERF SIZE 420 m^2, AREA of level 1 = 120 m^2, AREA of level 2 = 80 m^2 and AREA of garage = 36 m^2.

3.1.3 ERF SIZE 1 520 m^2, AREA of single-level dwelling is 430 m^2, AREA of outbuildings is 300 m^2 and AREA of garage is 52 m^2.

3.1.4 ERF SIZE 638 m^2, AREA of single-level dwelling is 180 m^2, AREA of outbuildings is 120 m^2 and AREA of garage is 40 m^2.

(4 × 5) (20)

3.2 Refer to DIAGRAM SHEET 3 (attached) of a typical site plan and name the following items shown:

3.2.1 A

3.2.2 B

3.2.3 C

3.2.4 D

3.2.5 E

(5 × 2) (10)

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3.3 Refer to DIAGRAM SHEET 4 (attached) of a typical DRAINAGE SECTION and work out the value and/or name each of the following:

3.3.1 A

3.3.2 B

3.3.3 C

3.3.4 D

3.3.5 E

(5 × 2) (10)
[40]

QUESTION 4: QUANTITIES AND COSTING IN A BUILDING PLAN

4.1 Name 10 of the typical expenses that a small building contractor will incur while getting ready to start building a house. Only name the types of costs that do not include the material and labour costs of the build. (10 × 1) (10)

4.2 Refer to DIAGRAM SHEET 5 (attached) and name the following items shown:

4.2.1 A

4.2.2 B

4.2.3 C

4.2.4 D

4.2.5 E

(5 × 2) (10)
[20]

TOTAL: 100

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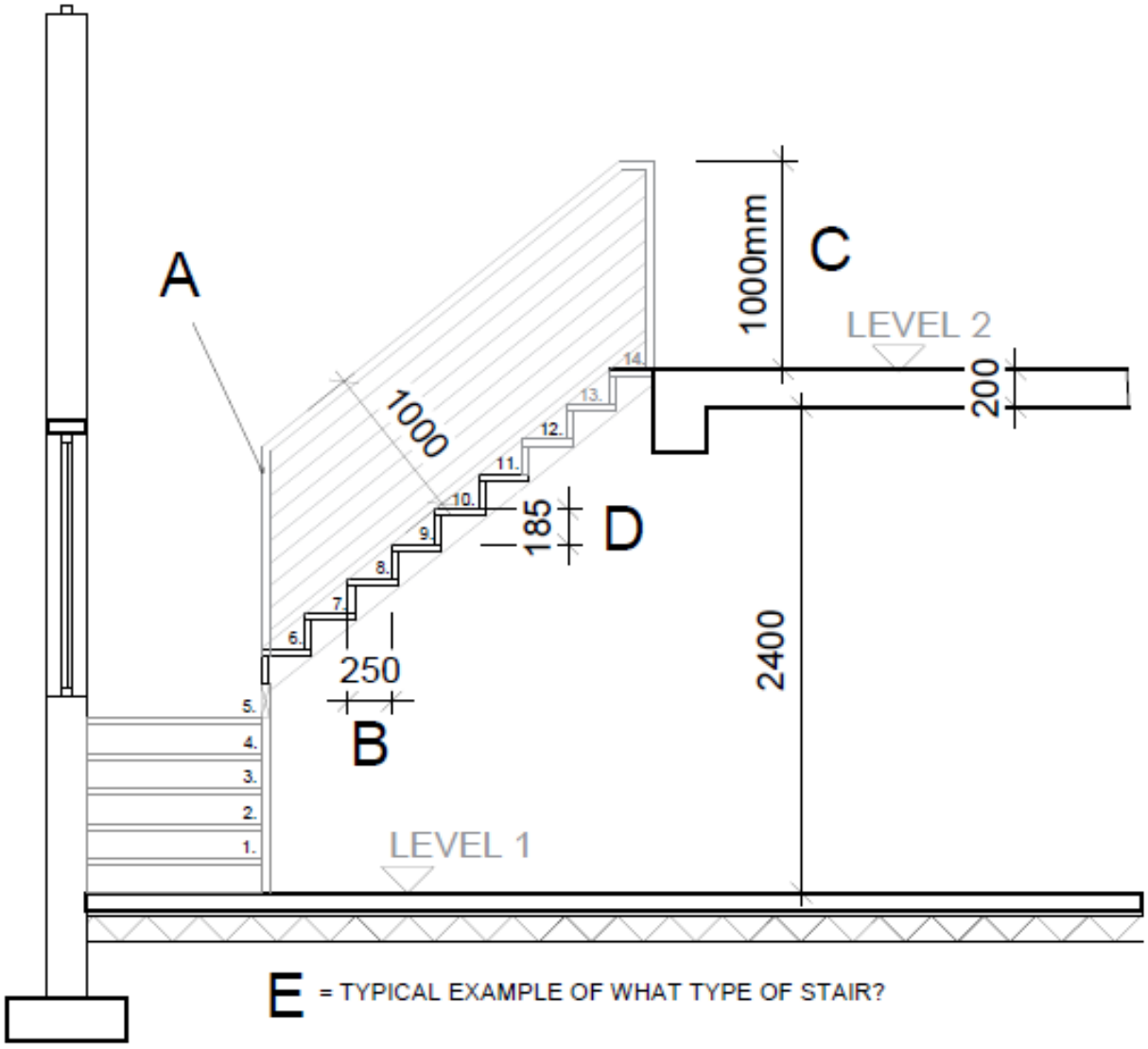
ARCHITECTURAL GRAPHICS AND TECHNOLOGY L4P2

DIAGRAM SHEET 1

EXAM NQF LEVEL4
PAPER 2

P2E1 2023/24



E = TYPICAL EXAMPLE OF WHAT TYPE OF STAIR?

P2E1

TYPICAL STAIR SECTION SCALE NTS

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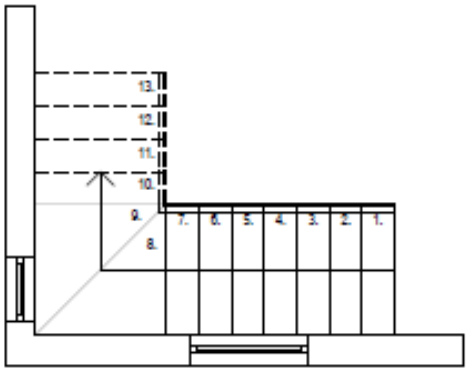
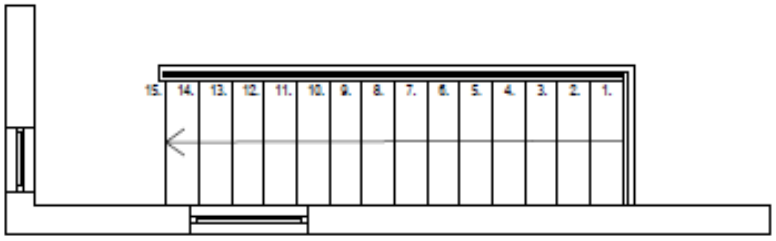
ARCHITECTURAL GRAPHICS AND TECHNOLOGY L4P2

DIAGRAM SHEET 2

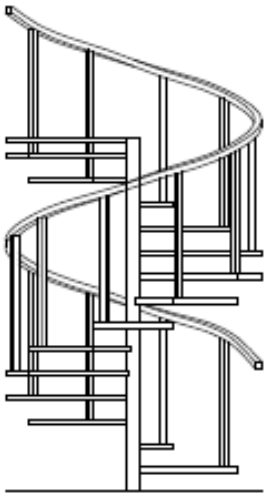
EXAM NQF LEVEL4
PAPER 2



A = TYPICAL PLAN VIEW EXAMPLE OF WHAT TYPE OF STAIR?



B = TYPICAL PLAN VIEW EXAMPLE OF WHAT TYPE OF STAIR?



C = TYPICAL ELEVATION VIEW EXAMPLE OF WHAT TYPE OF STAIR?

SITE PLAN SCALE NTS

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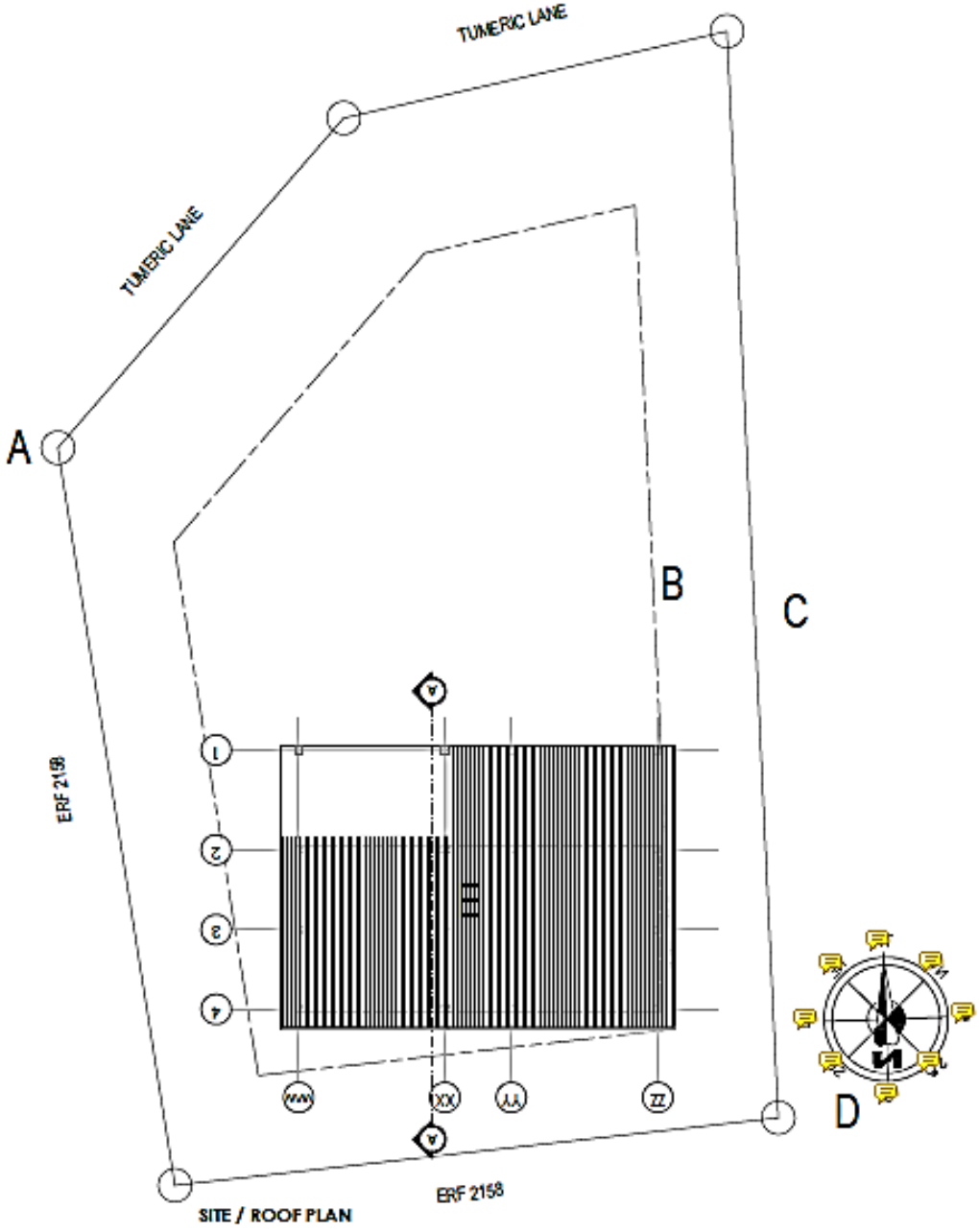
ARCHITECTURAL GRAPHICS AND TECHNOLOGY L4P2

DIAGRAM SHEET 3

EXAM NQF LEVEL4
PAPER 2



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TYPICAL WALL SECTION SCALE NTS

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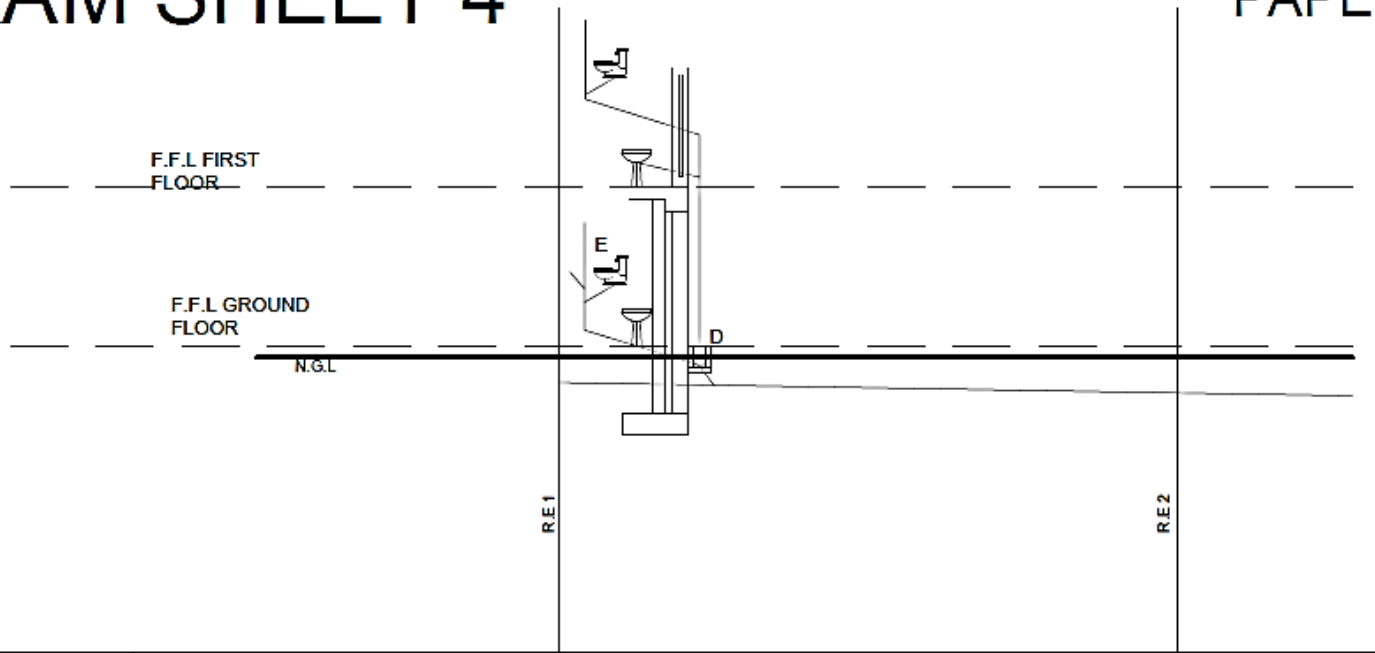
ARCHITECTURAL GRAPHICS AND TECHNOLOGY L4P2

DIAGRAM SHEET 4

EXAM NQF LEVEL4
PAPER 2



GROUND LEVEL	12 000	12 000	
INVERT LEVEL	11 450	B	
DEPTH	A	800	
DISTANCE		15 000	
C		1:60	
PIPE	100Ø UPVC		

DRAINAGE SECTION

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TYPICAL DRAINAGE SECTION SCALE NTS

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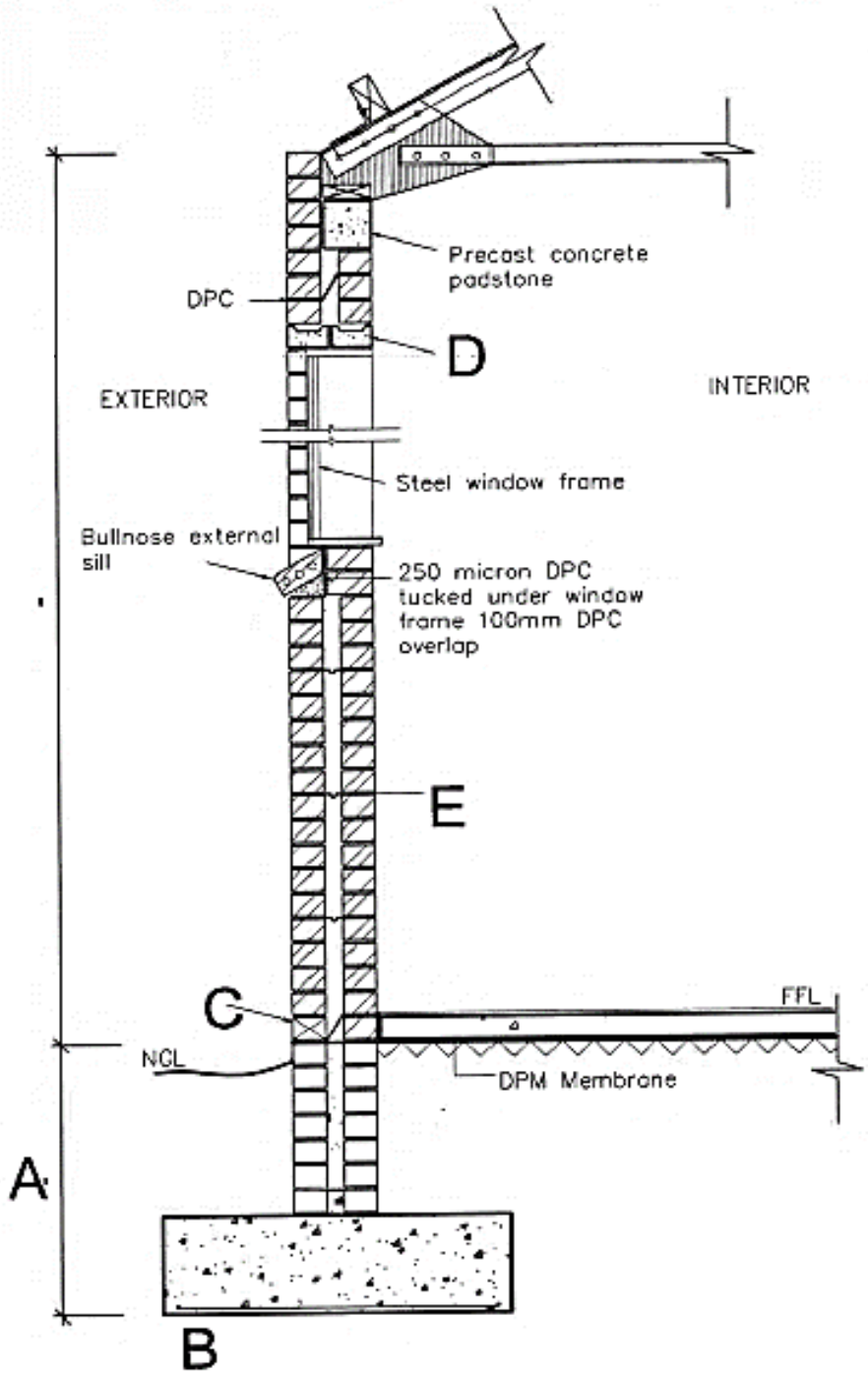
ARCHITECTURAL GRAPHICS AND TECHNOLOGY L4P2

EXAM NQF LEVEL4
PAPER 2

DIAGRAM SHEET 5



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TYPICAL WALL SECTION SCALE NTS

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