higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECHTURAL GRAPHICS AND TECHNOLOGY

(First Paper**)**

NQF LEVEL 4

(12050644)

8 March 2018 (X-Paper)
09:00–13:00

REQUIREMENTS: **CAD Software**
SIX A3 drawing paper

Candidates will require drawing instruments.

Calculators may be used.

This question paper consists of 5 pages and 6 diagram sheets.

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TIME: 4 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. ALL drawing work, including candidate information, must be done using an approved CAD software package and must be printed and titled correctly.
5. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
6. Brick sizes should be taken as 220 mm × 110 mm × 75 mm.
7. ALL the abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
8. A balanced layout is very important and candidates will be penalised for poor planning.
9. Write neatly and legibly.

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QUESTION 1: STAIRCASES

Draw, to scale 1 : 10 on an A3 sheet of paper, a sectional view of a concrete staircase detail, showing at least 5 stairs.

The drawing must clearly show the following annotations and dimensions:

- Riser @ 170 mm
- Tread @ 275 mm + 50 mm going
- 220 × 70 stringer
- 925 mm high handrai/balustrade with vertical balustrading min 90 mm gap
- 75 mm newel posts every 3rd tread

Print a suitable title and scale beneath the sectional view.

[10]

NCN

QUESTION 2: BUILDING PLANS – FLOOR PLAN LAYOUTS – levels 1 and 2

DIAGRAM SHEETS 1 and 2 show the rough layout of levels 1 and 2 of a double storey dwelling and DIAGRAM SHEET 4 shows a site plan with key dimensions.

SPECIFICATIONS

Single pitch roof = 5 degrees

Roof cover IBR treated sheeting – dolphin grey
Level 1 floor to underside concrete slab 2400 mm
Level 2 floor to top of wallplate height 2400 mm

Roof rafter	220 × 70 @ 800 mm c/c
Concrete foundations	700 mm × 250 mm
External walls	280 mm cavity wall
Internal walls	110 mm brick wall
Concrete floor level 1	100 mm concrete on 250 mcm polythene dpm lapped and sealed on 50 mm blinding on 250 mm hardcore
Concrete slab level 2	200 mm reinforced concrete slab to engineer's detail
Fascia boards	220 mm × 32 mm SA pine

Windows and doors as on DIAGRAM SHEET 5.

You have to compile a finished set of working drawings. By using the information above and the rough sketches provided, complete the set of working drawings. You can scale off from the rough layout sketches the dimensions not given, however, key dimensions must be the same as in DIAGRAMS 1 and 2.

Draw, to a scale 1 : 100 on an A3 sheet of paper, full details of the following:

2.1.1 Level 1 plan layout (20)

2.1.2 Level 2 plan layout (20)

Include the following:

- Room names and floor finishes level 1 and 2
- All dimensions level 1 and 2 – according to the recommended code of drawing practice
- Symbols on all windows and doors as shown
- Section lines and direction of section arrows AA
- Suitable title and scale for both level 1 and level 2 plan layouts
- Suitable north point
- Kitchen sink and stove
- Dog-leg staircase with correct number of risers numbered for height

[40]

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QUESTION 3: SECTION AA THROUGH DWELLING

Draw, to scale 1 : 50 on an A3 sheet of paper, section AA through the dwelling as shown on DIAGRAM SHEET 6 (attached). Indicate the following specifications:

- The correct pitch , roof covering , rafters and heights
- Gutter and fascia
- Strip foundations
- Level 1 concrete slab , level 2 concrete slab

[20]

QUESTION 4: ELEVATIONS

Draw, to a scale 1 : 100 on an A3 sheet of paper, any TWO elevations. Indicate the specifications below. DIAGRAM SHEET 3 will help give an overview of the style of home being drawn.

- Correct pitch, roof covering, truss and heights.
- Types of finishes
- Correct windows drawn

[30]

TOTAL: 100

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PAPER 1
EXAM NQF LEVEL4

DIAGRAM SHEET 1

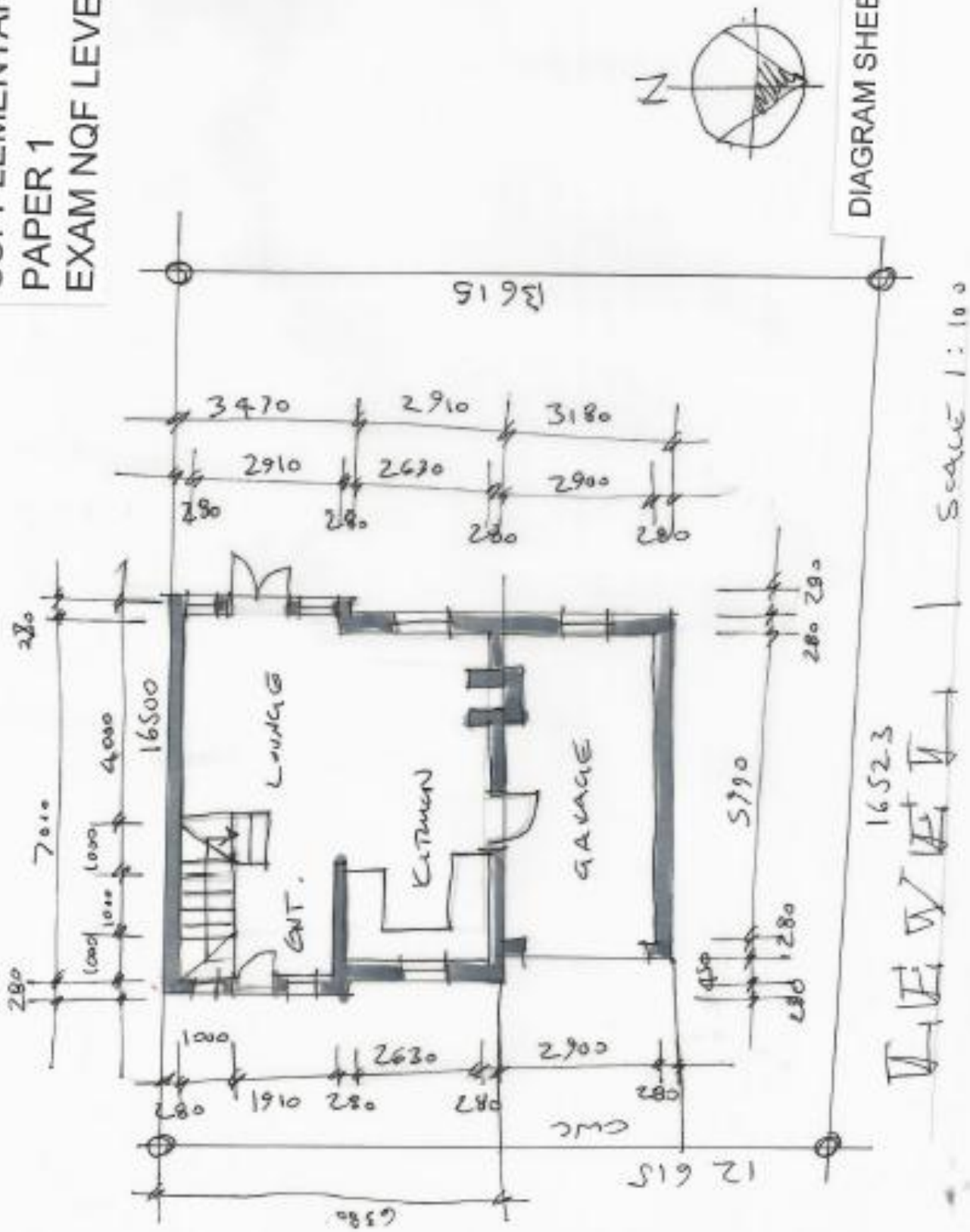

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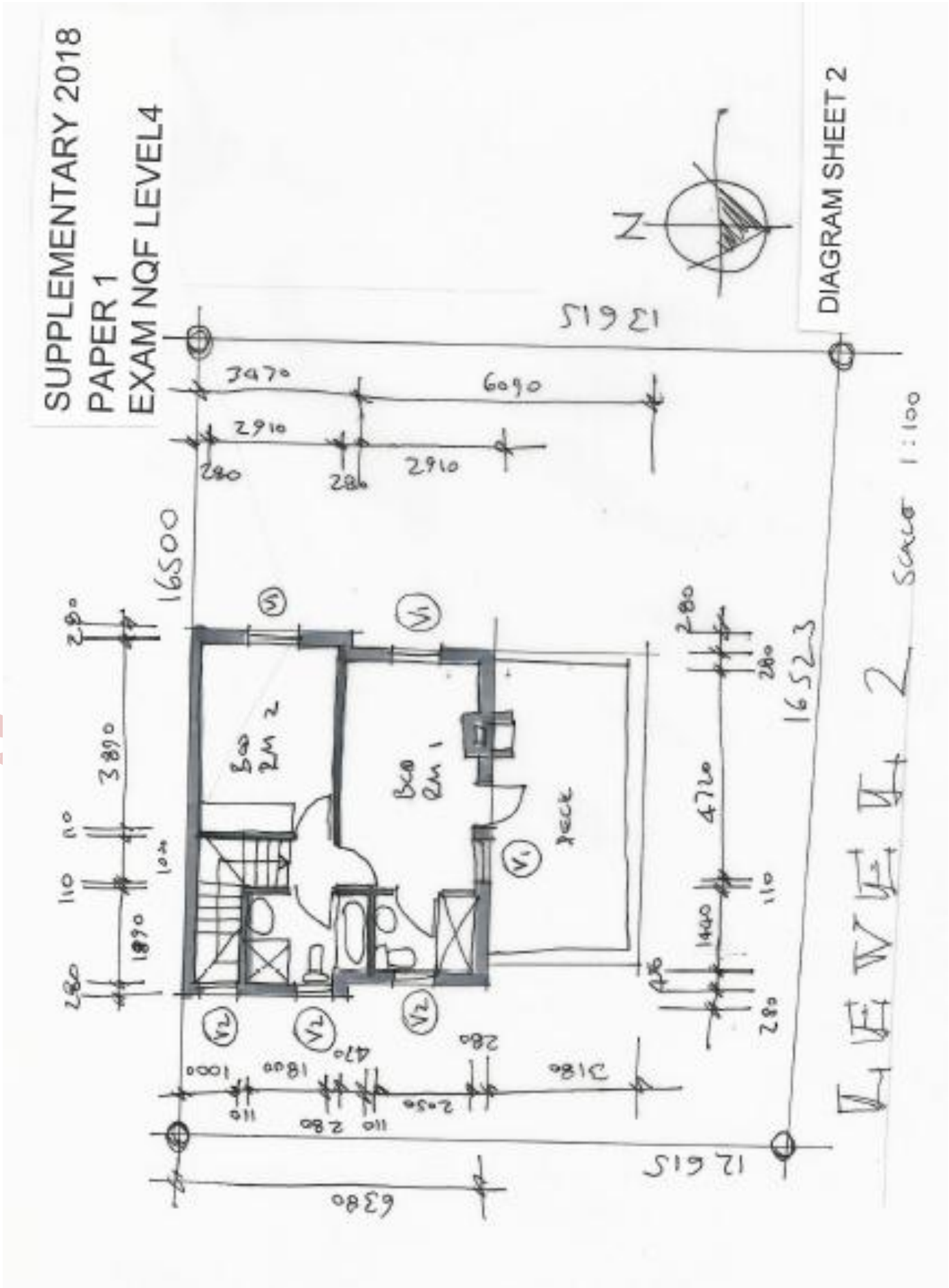
DIAGRAM SHEET 2



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ARCHITECTURAL GRAPHICS AND TECHNOLOGY
PAPER 1
SUPPLEMENTARY 2018 EXAMINATION NQF LEVEL 4

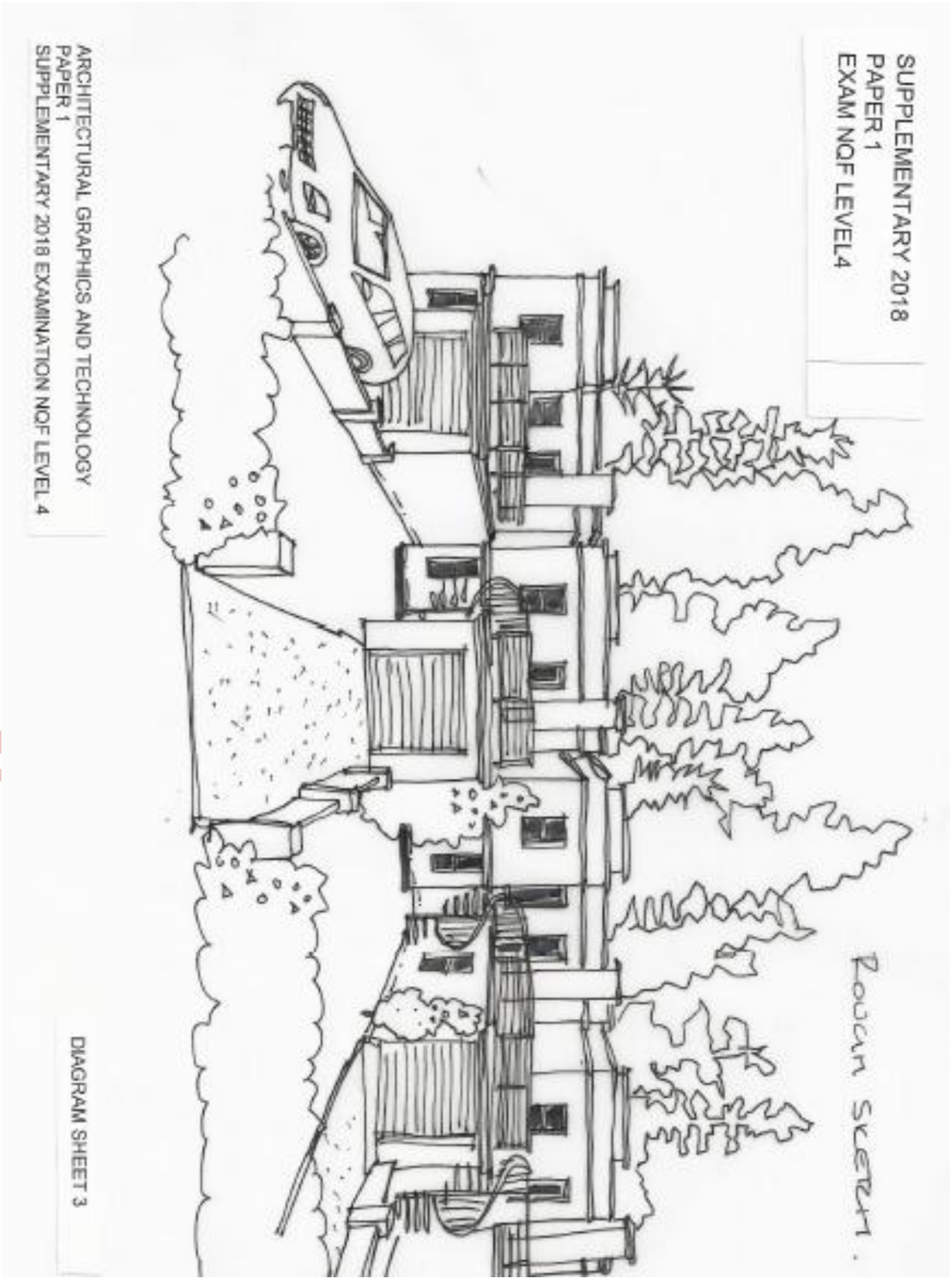

DIAGRAM SHEET 3

DIAGRAM SHEET 4

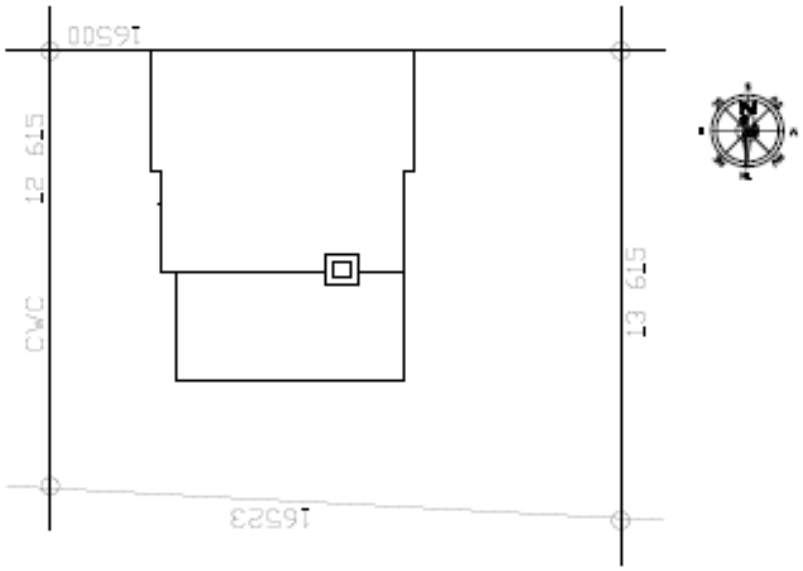

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DIAGRAM SHEET 5

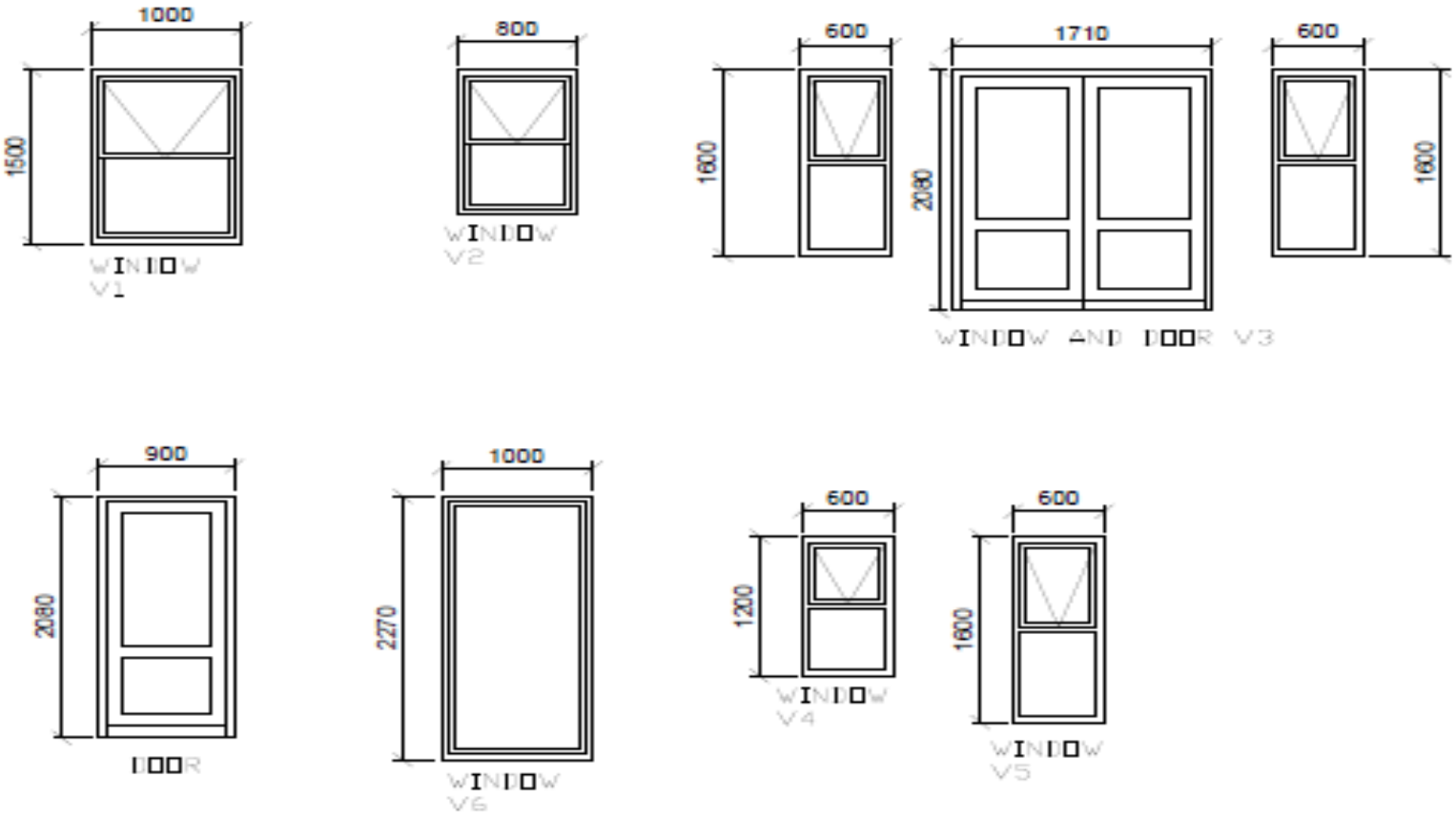

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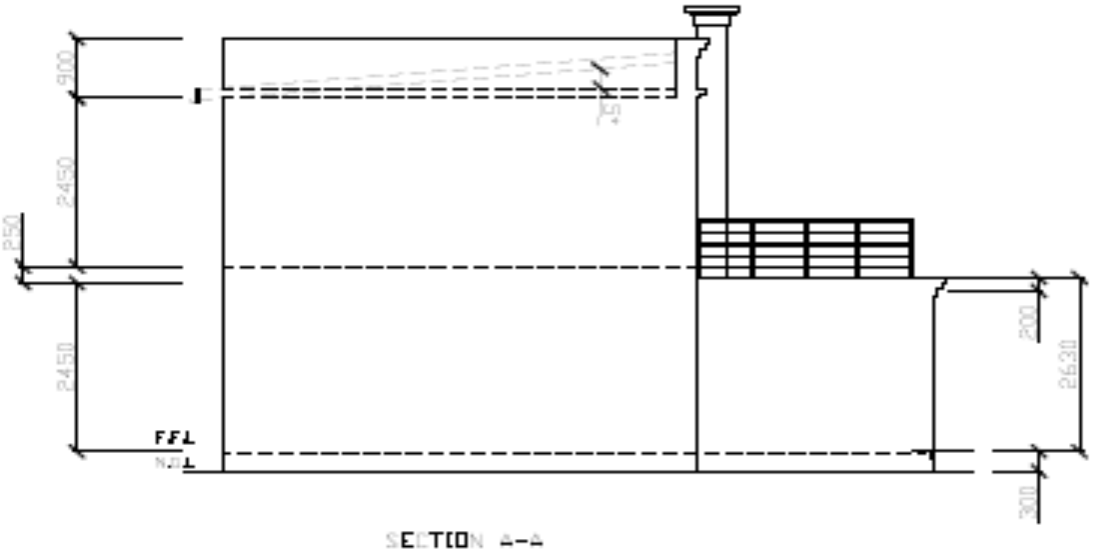
DIAGRAM SHEET 6



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