higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T420**(E)**(A11)T

NATIONAL CERTIFICATE: MULTI-DISCIPLINARY DRAWING OFFICE PRACTICE

COMPUTER-AIDED DRAUGHTING

(6010035)

11 April 2018 (X-Paper)
09:00–12:00

CLOSED-BOOK EXAMINATION

REQUIREMENTS: Cover folder BOE 8/15
A4 drawing sheets

This question paper consists of 4 pages, 4 diagram sheets, 1 reference sheet and 1 answer sheet.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
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NATIONAL CERTIFICATE: MULTI-DISCIPLINARY DRAWING OFFICE PRACTICE
COMPUTER-AIDED DRAUGHTING
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully
3. Answer only QUESTION 1 on the attached ANSWER SHEET.
4. ALL other questions must be answered on A4 DRAWING SHEETS. Do NOT use A3 DRAWING SHEETS.
5. Use only ONE side of the DRAWING SHEETS to plot or print the answers.
6. Each drawing must be plotted or printed on a separate DRAWING SHEET.
7. The question number must appear at the top left corner of each sheet.
8. ALL candidate information must be plotted in the title block.
9. Provide each DRAWING SHEET with a border line.
10. ALL drawings must be drawn to the given scale.
11. Use your own discretion where dimensions are not given.
12. Candidates must plot or print their own drawings.
13. A balanced layout must be maintained. Candidates must plan well in order to earn marks.
14. Insert ALL loose DRAWING SHEETS and the ANSWER SHEET in the cover folder BOE8/15. Do NOT staple the sheets.
15. Write neatly and legibly.

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QUESTION 1: COMPUTER ORIENTATION

1.1 Give FOUR advantages of using a CAD system to generate drawings. (4 × 2) (8)

1.2 Give TWO disadvantages of using a CAD system to generate drawings. (2 × 2) (4)

1.3 Give the term used in the information technology industry for each of the following:

1.3.1 Individual computer attached to a network

1.3.2 Data communication connection device used for logging on to the internet

1.3.3 Method used for sending messages or information from one computer to another via a network

(3 × 1) (3)

[15]

QUESTION 2: ELECTRICAL DRAUGHTING

FIGURE 1, DIAGRAM SHEET 1 (attached), shows a typical electrical circuit diagram.

Trace and draw a large, neat and well-proportioned layout of the given diagram on a landscape-orientated A4 DRAWING SHEET. Include ALL labels. **[15]**

QUESTION 3: STRUCTURAL STEEL DETAILING

As a draughtsperson working for a steel truss manufacturing firm, you are required to trace the structural steel roof truss detailed in FIGURE 2, DIAGRAM SHEET 2 (attached). The diagram shows a dimensioned structural steel roof truss made up of 80 × 80 × 8 rolled-steel equal angles.

Trace the exact given structural steel roof truss on a landscape-orientated A4 DRAWING SHEET and print to scale 1 : 25. Show ALL given dimensions and labels. **[20]**

QUESTION 4: GENERAL AND MECHANICAL DRAUGHTING

FIGURE 3, DIAGRAM SHEET 3 (attached), shows a section through a live centre for a lathe.

Draw, to scale 1 : 1, the exact diagram as shown in FIGURE 3 on a landscape-orientated A4 DRAWING SHEET. Show ALL given dimensions and labels. **[20]**

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QUESTION 5: BUILDING DRAUGHTING

FIGURE 4, DIAGRAM SHEET 4 (attached), shows a plan view of a three-bedroom house. For additional information refer to the timber frame window schedule on the REFERENCE SHEET (attached).

Trace, to scale 1 : 100, the given layout on a landscape-orientated A4 DRAWING SHEET. The completed plan layout must indicate the following:

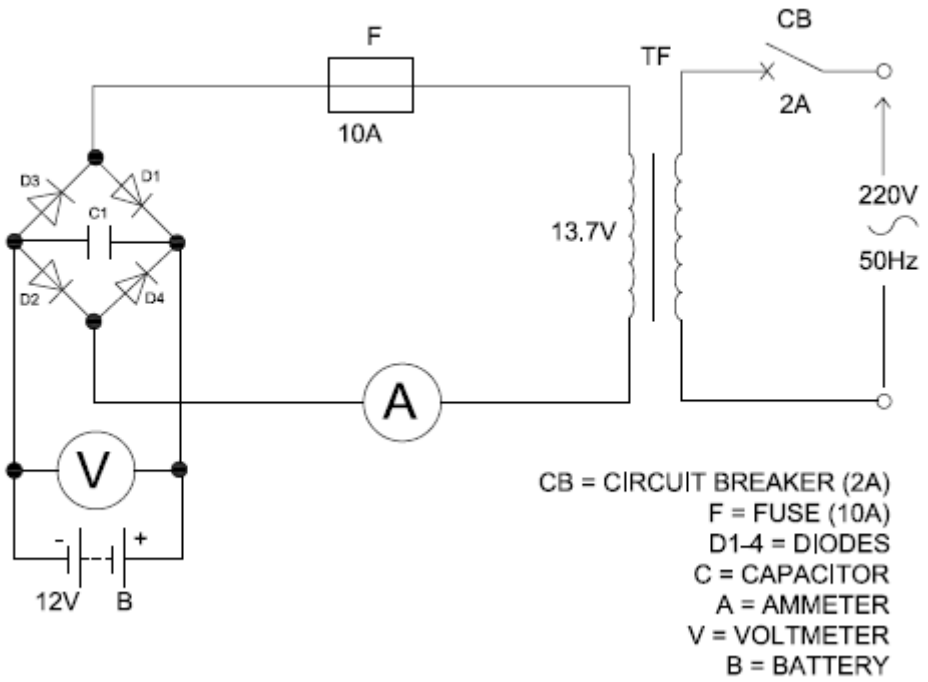
- Appropriate floor coverings for ALL rooms
- Symbol of the north indicator
- ALL dimensions and labels

The completed plan view must be fully dimensioned including ALL labels and window code numbers. Print the completed drawing on a landscape-orientate A4 DRAWING SHEET. **[30]**

TOTAL: 100

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DIAGRAM SHEET 1

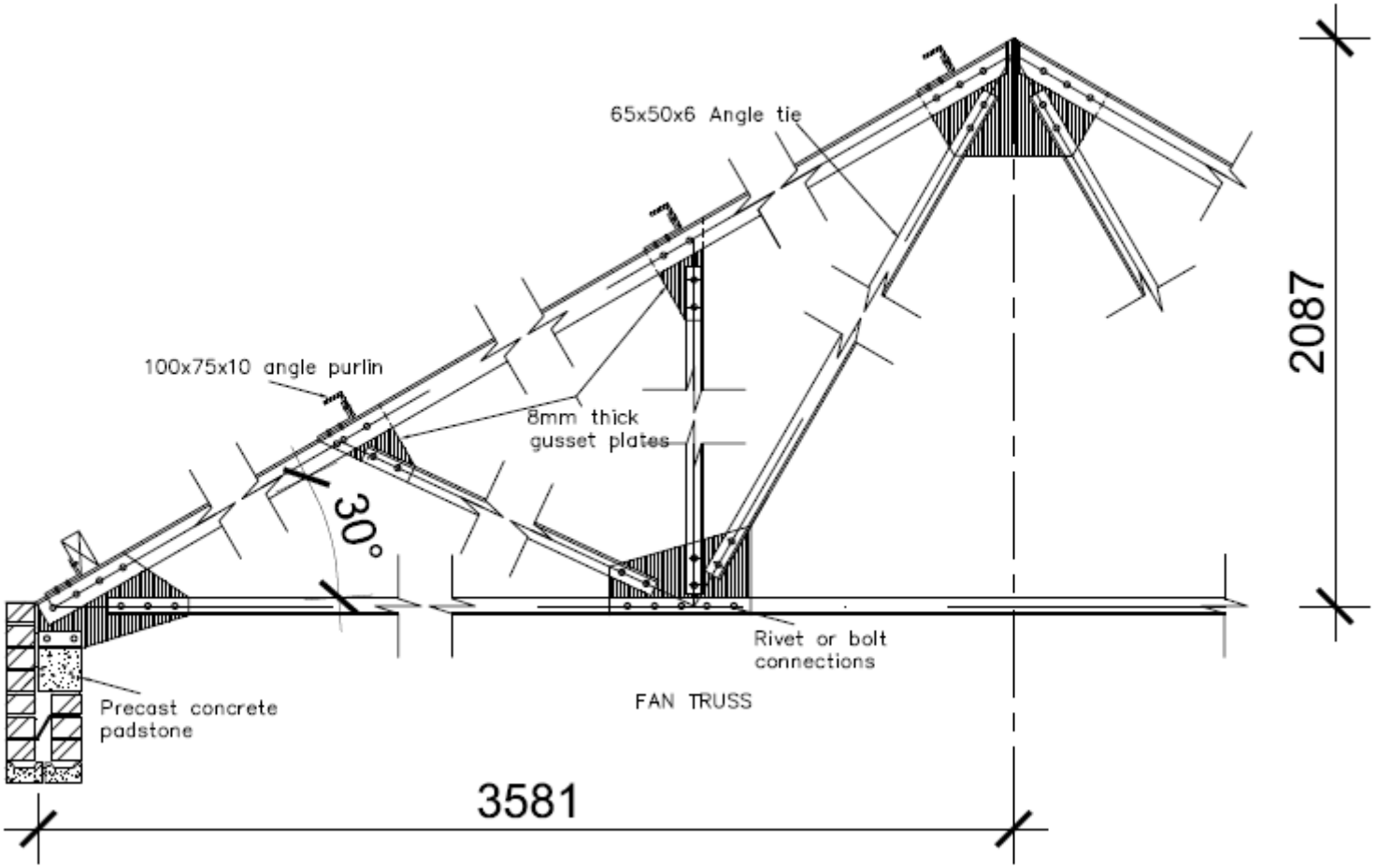


ELECTRICAL CIRCUIT DIAGRAM

FIGURE 1

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DIAGRAM SHEET 2

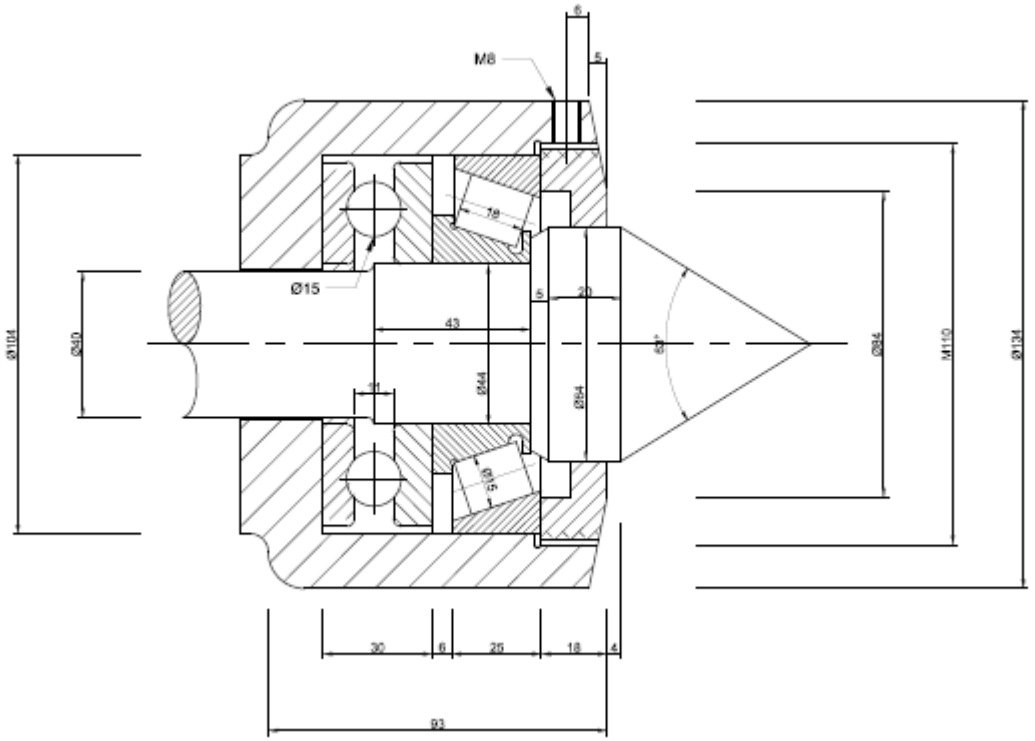


STRUCTURAL STEEL DETAILING
SCALE 1 : 25

FIGURE 2

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DIAGRAM SHEET 3

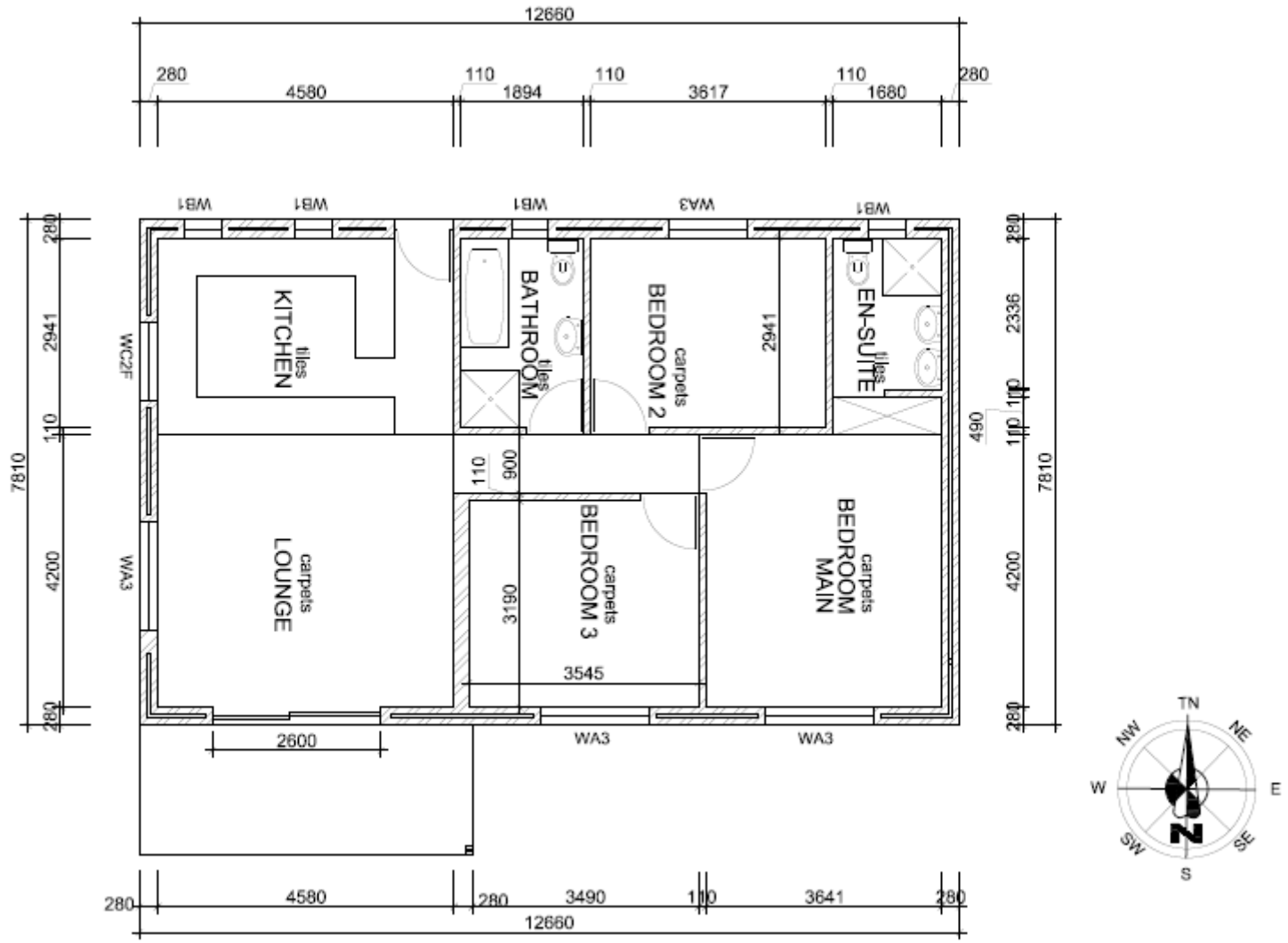


A LIVE CENTRE FOR A LATHE

FIGURE 3

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DIAGRAM SHEET 4

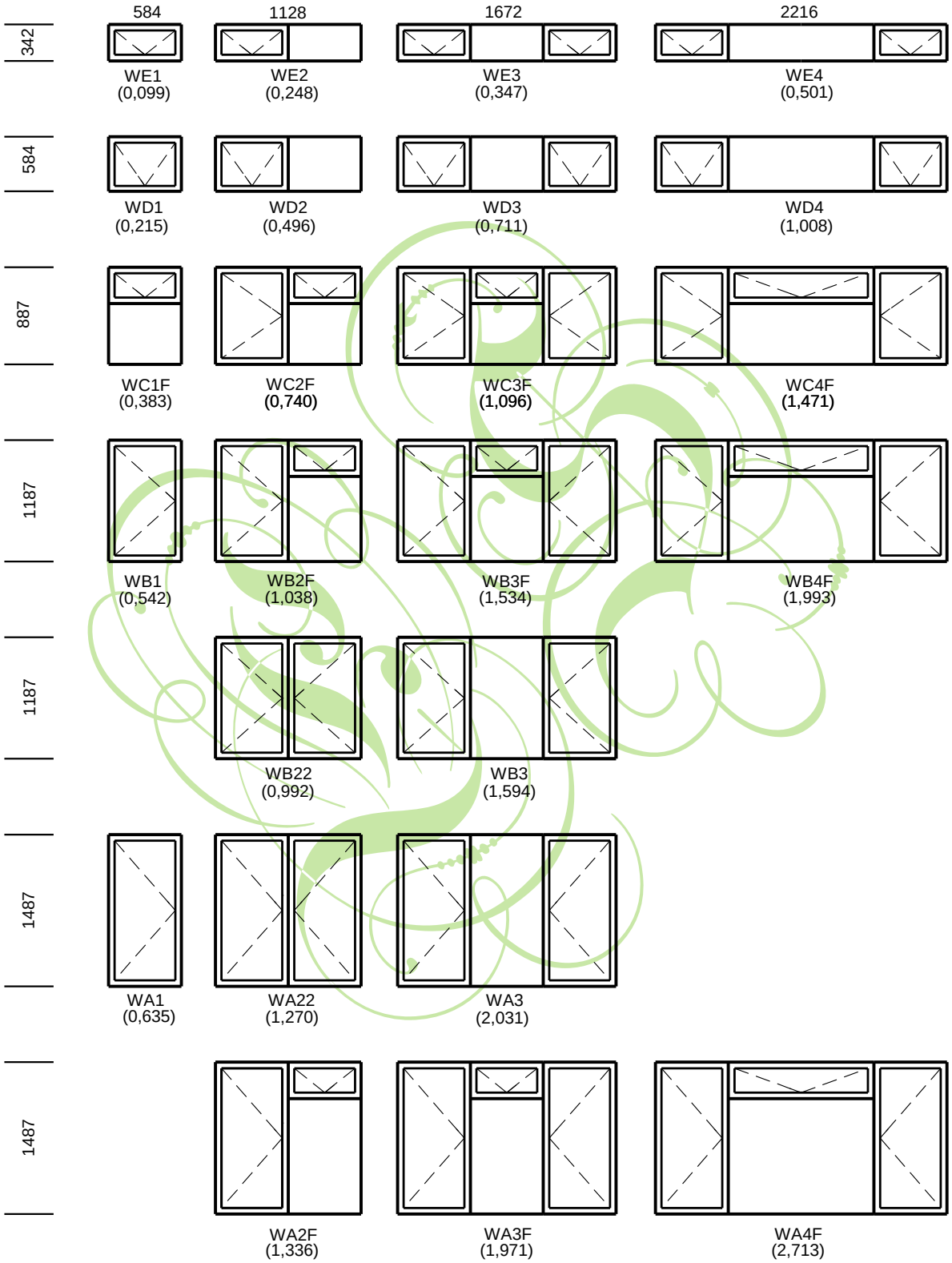


PLAN LAYOUT 1 : 100

FIGURE 4

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REFERENCE SHEET Timber frame window schedule



(Figures in brackets indicate glass area)

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ANSWER SHEET EXAMINATION NUMBER:

Candidates may use a pencil or pen.

QUESTION 1

1.1

(4 × 2) (8)

1.2

(2 × 2) (4)

1.3 1.3.1

1.3.2

1.3.3

(3 × 1) (3)

[15]

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