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# International Standard



# 4172

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Building and civil engineering drawings — Drawings for the assembly of prefabricated structures

*Dessins de bâtiment et de génie civil — Dessins d'assemblage des structures préfabriquées*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4172 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in February 1979.

It has been approved by the member bodies of the following countries :

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Austria  
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Italy  
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Netherlands  
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Spain  
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Switzerland  
USA  
USSR

The member body of the following country expressed disapproval of the document on technical grounds :

United Kingdom

# Building and civil engineering drawings — Drawings for the assembly of prefabricated structures

## 1 Scope and field of application

This International Standard lays down general rules for the preparation of working drawings intended for the field assembly of prefabricated structures for building and civil engineering works.

## 2 References

ISO 1046, *Architectural and building drawings — Vocabulary*.

ISO 4157/1, *Building drawings — Part 1: Designation of buildings and parts of buildings*.

## 3 Definitions

**3.1 prefabricated structure** : A structure erected out of prefabricated structural components.

**3.2 prefabricated structural component** : A component of a prefabricated structure delivered to the construction site as a purpose made part.

## 4 Documentation

### 4.1 General

The documentation of prefabricated structures consists of :

- a) location drawings (general arrangement drawings);
- b) detail drawings;
- c) component schedules (and component range drawings);
- d) additional specifications and lists for incidental materials, special shipping instructions, etc.

These shall be prepared in accordance with the relevant International Standards.

### 4.2 Location drawings

**4.2.1** A location drawing is a simplified representation of a prefabricated structure and the location of marked structural components. The components may be represented usually by one extra thick line (see figures 1, 3 and 4) or by their simplified outlines.

For each group of components for prefabricated structures, connected by similar construction conditions, the location drawings should be given in the sequence of their application during the assembly.

If necessary, design charts or loading schemes shall be given on location drawings, which shall indicate loading limitations, erection procedures, and other details concerning erection and assembly such as joints and jointing and temporary works, and shall refer to documents giving such information.

The location drawings for prefabricated structures shall show the following :

- a) layout grid lines of buildings;
- b) marks of structural components;
- c) relationship of components to the layout grid lines;
- d) specific levels of structural components;
- e) reference to the detail drawings.

The structural components should be shown in plans (or) sections or views, as illustrated in figures 1 to 6.

The location drawings for complicated three-dimensional structures should be made in different planes.

The preferred scales for location drawings are 1 : 50, 1 : 100 and 1 : 200.

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**4.2.2** On the location drawings of prefabricated foundations and other underground structures it is also recommended to show :

- a) outline of foundation beds;
- b) foundation sublayers (broken line);
- c) their dimensions;
- d) their relationship to layout axes;
- e) foundation beams;
- f) basement walls.

Location drawings for foundation and other underground structures shall be represented on the assumption that the ground is transparent.

**4.2.3** In the title of the location drawing for a prefabricated floor, reference should be made to the number of the floor or to the level of an intermediate floor or a stair landing, in accordance with ISO 4157/1.

**4.2.4** In drafting the location drawings for prefabricated panel wall structures the component shall be shown with the outlines in thick lines (see figure 6).

### 4.3 Detail drawings

Details may be shown on separate drawings or may be included as additional information on the location drawings.

The preferred scales for details are 1 : 20, 1 : 10 and 1 : 5.

Details shall be properly annotated on the relevant location drawings. Details should be given in the same sequence of the order of the respective section on the drawing.

### 4.4 Component schedules

**4.4.1** A component schedule is a document listing components of prefabricated structures.

**4.4.2** A component schedule shall contain the following information in the sequence listed below :

- a) mark unique reference of a component;
- b) denomination of a component;
- c) number of components.

The component schedule should also contain the following information and, if so, in the sequence listed below :

- a) mass, in kilograms or tonnes;
- b) dimensions;
- c) total mass, in kilograms or tonnes;
- d) special references;
- e) remarks.

If the component schedule is prepared on one or several separate sheets, each sheet shall have its own title block, placed below the schedule.

## 5 Designation of prefabricated structural components

**5.1** On the location drawing the prefabricated components shall be denoted by marks.

The components that are identical should have identical marks.

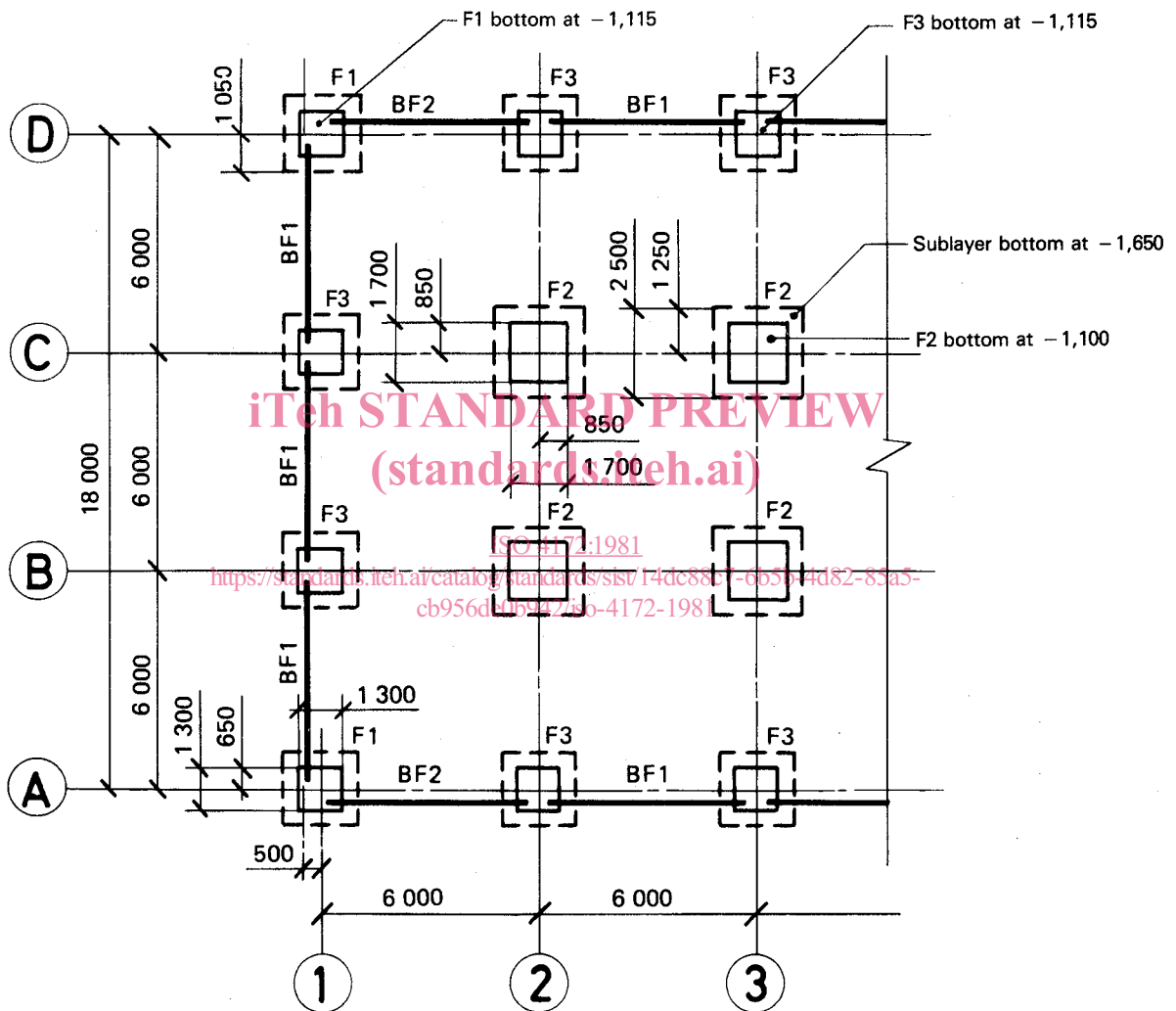
Structural components which are handed shall be designated with independent marks.

The marks of components on the location drawings and detail drawings shall be shown adjacent to the graphical representation of a component [see figures 7 a) and b)], or with leader lines [see figure 7 c)].

Marks given in the following figures are only examples.

NOTE — These figures relate to a single typical structure and are for illustrative purposes only.

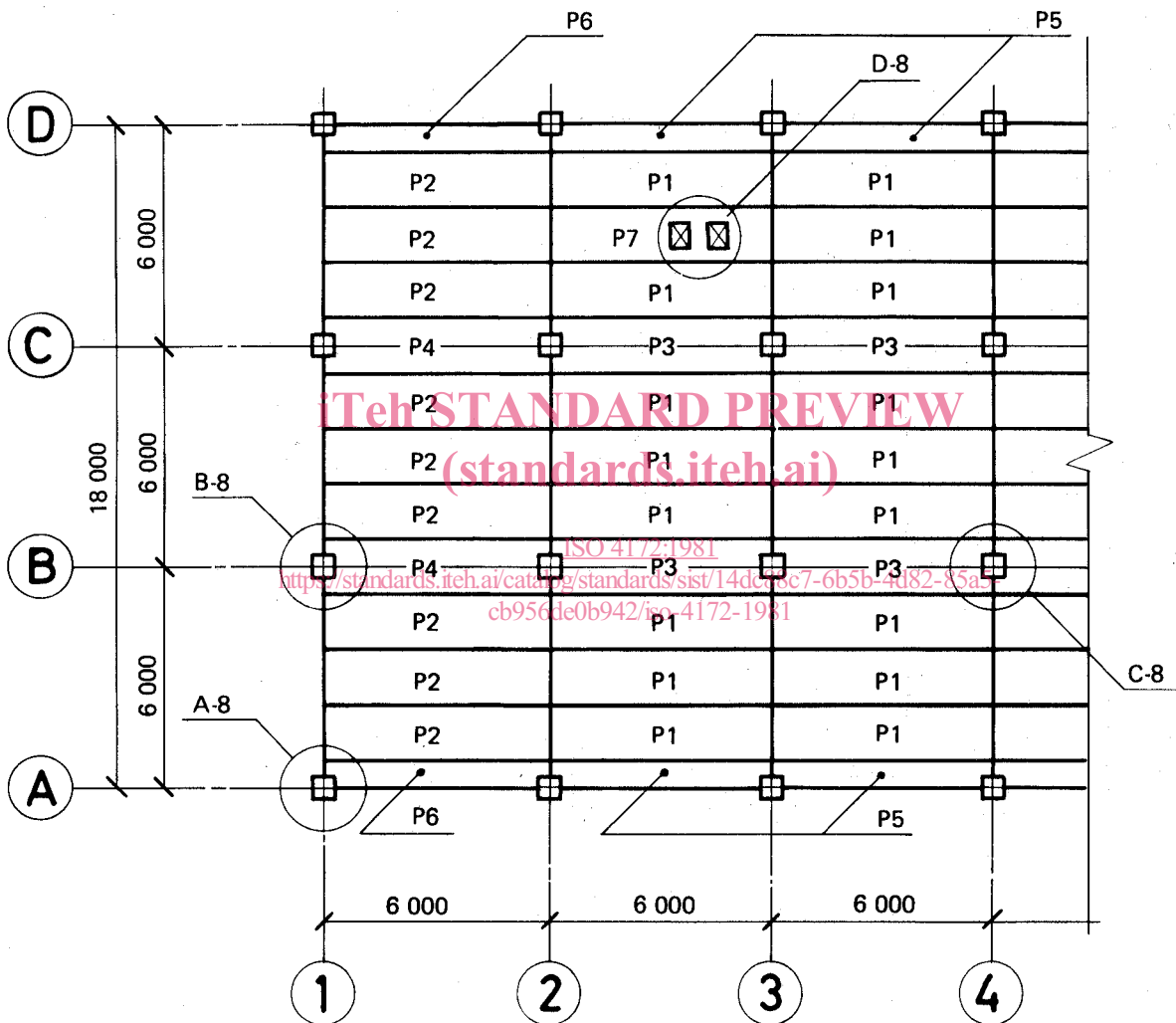
All dimensions in millimetres, except elevations in metres



NOTE — The setting out dimensions of F1, F2 and F3 bases have been included by way of example and will apply to bases with similar references.

Figure 1 — An example of a location drawing for foundations and foundation beams  
Scale 1 : 200

Dimensions in millimetres



NOTE — The use of leader lines is deprecated except where absolutely necessary.

Figure 2 — An example of a location drawing for floor slabs  
Scale 1 : 200

Dimensions in millimetres

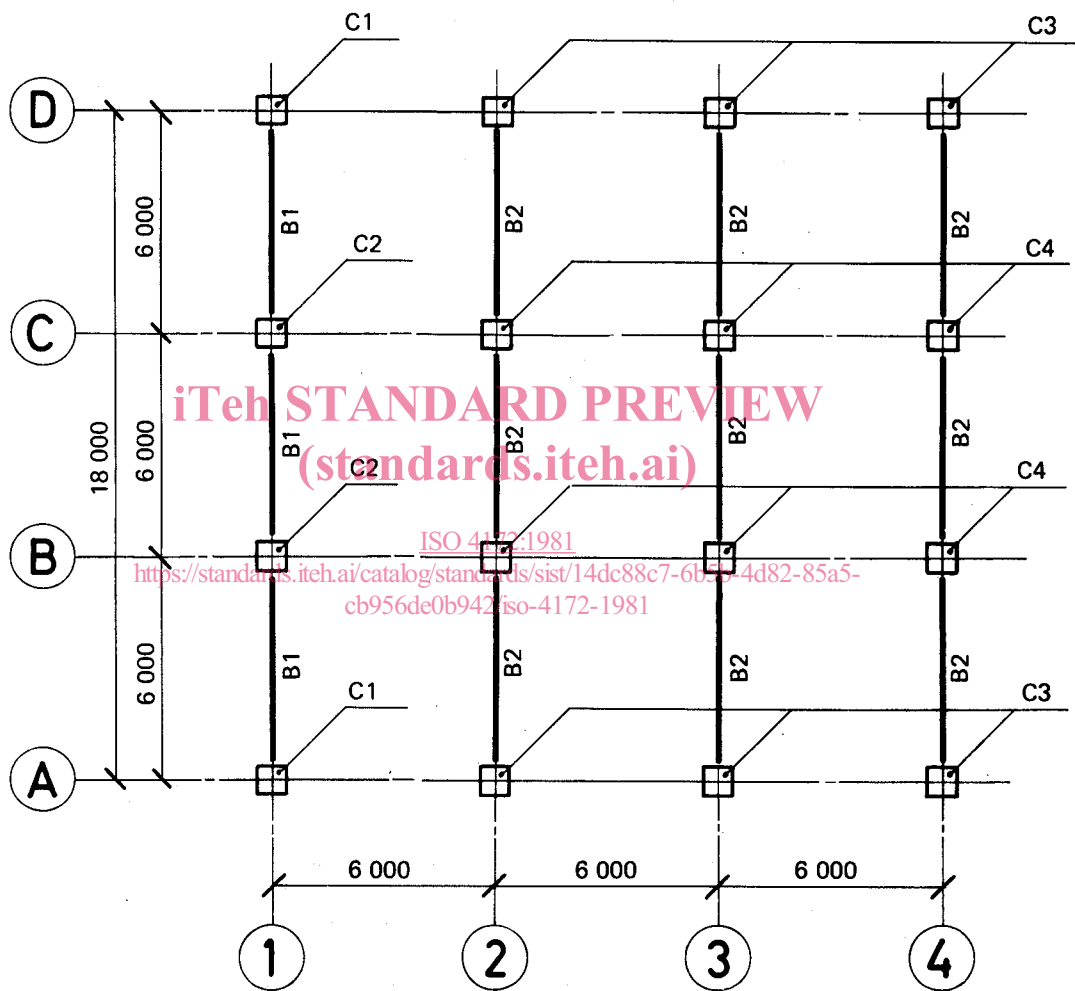


Figure 3 — An example of a location drawing for the components of a frame  
Scale 1 : 200

All dimensions in millimetres, except elevations in metres

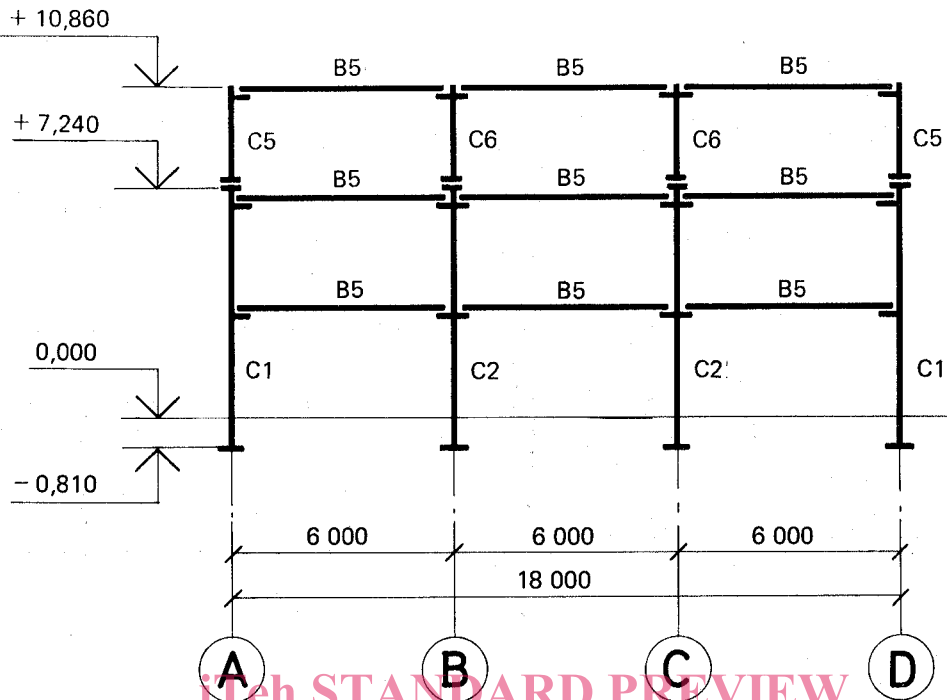


Figure 4 (An example of a typical section)  
Scale 1 : 200

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All dimensions in millimetres, except elevations in metres

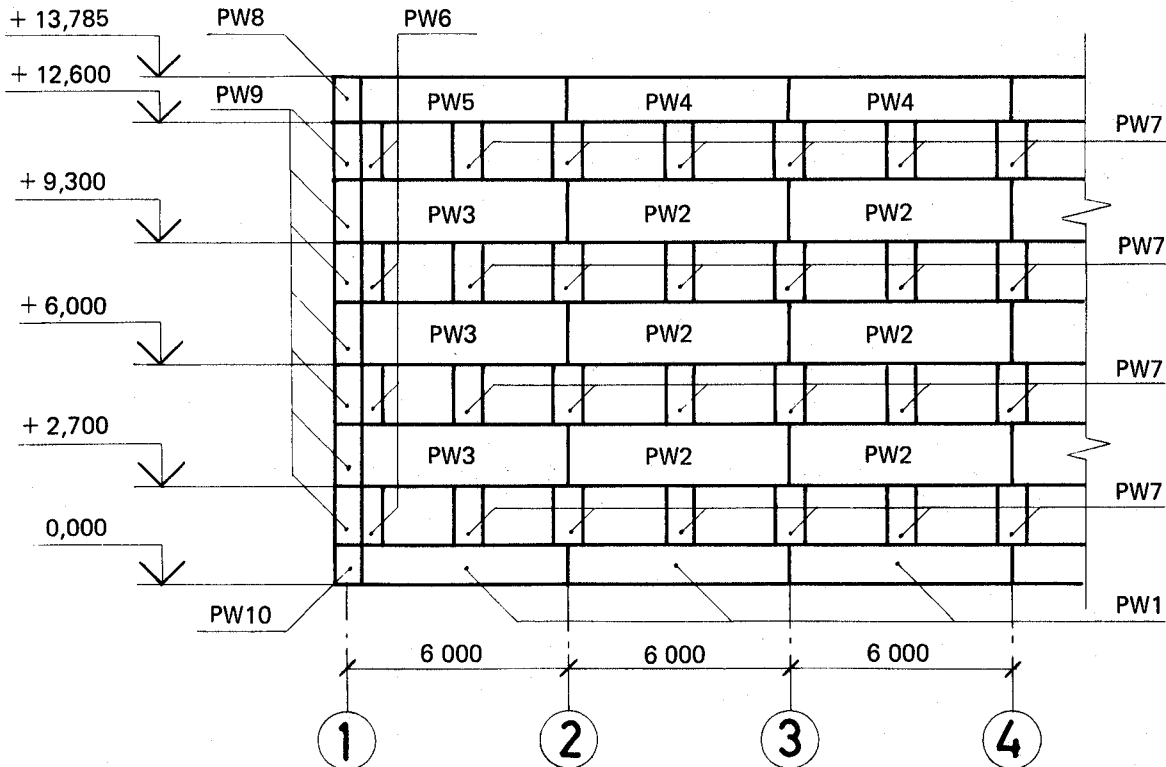


Figure 5 – An example of a location drawing for wall panels  
Scale 1 : 200



Dimensions in millimetres

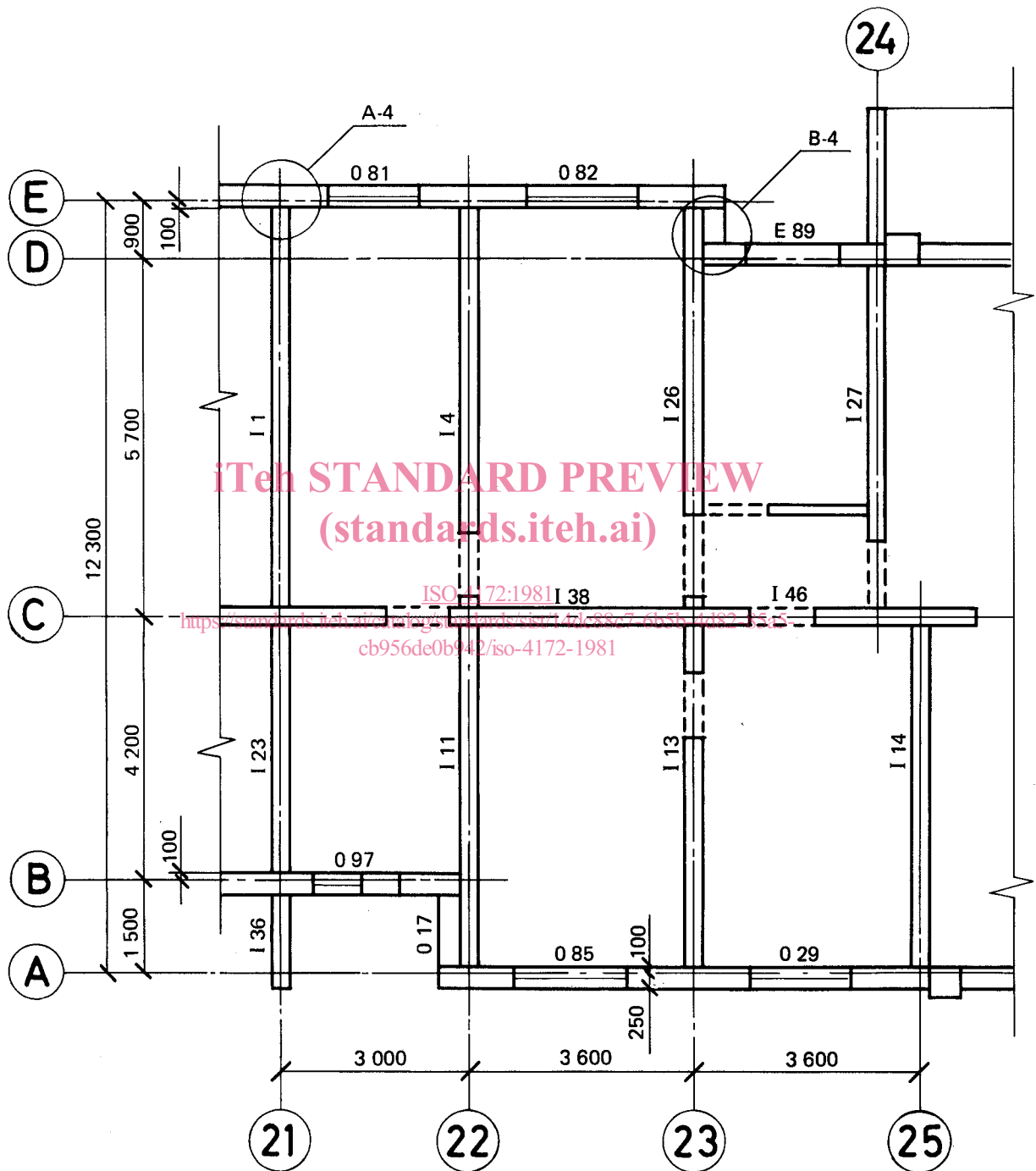


Figure 6 — An example of a location drawing for wall panels  
Scale 1 : 200