LEARNER GUIDE

Read and interpret plans and job specifications

Training support material for:

RIICCM203E Read and interpret plans and job specifications

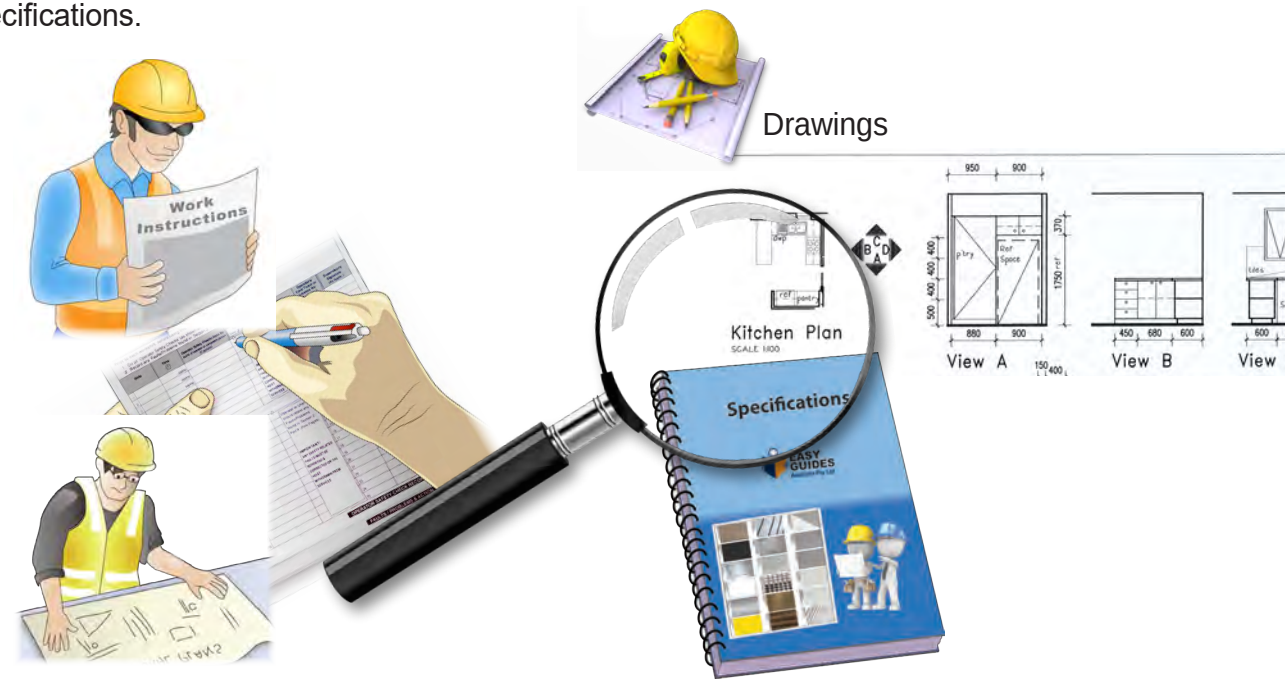
Produced by:

EASY GUIDES
Australia Pty Ltd

What is RIICCM203E Read and interpret plans and job specifications about?

This unit is about reading and interpreting plans and job specifications in civil construction, including recognising amendments and understanding commonly used symbols and abbreviations. It involves locating and identifying key features on site plans and accurately reading job plan specifications.

You will learn to locate and identify key features on site plans and accurately read job plans and specifications.



Contents

About work instructions

What is the role of Work Instructions for Workers?

Work instructions serve as detailed guides, providing workers with step-by-step directions to perform tasks accurately and safely, ensuring consistency and quality.

Where do Work Instructions Come From?

Work instructions are typically developed by subject matter experts, project managers, or safety officers and are derived from engineering plans, industry standards, and safety protocols specific to the task at hand.

How Do We Interpret Work Instructions?

Workers interpret work instructions by carefully reading and understanding the provided information, including steps, safety precautions, and any accompanying visual aids, to ensure accurate task execution.

How Do We Clarify Work Instructions?

Workers clarify work instructions by seeking guidance from supervisors or relevant experts, asking questions to resolve uncertainties, and ensuring a clear understanding of the task requirements before proceeding.

How Do We Confirm Work Instructions?

Confirmation of work instructions involves cross-referencing the provided guidance with project plans, checking for any updates or changes, and obtaining approvals or sign-offs to affirm that the instructions are understood and ready for execution.

Question 1

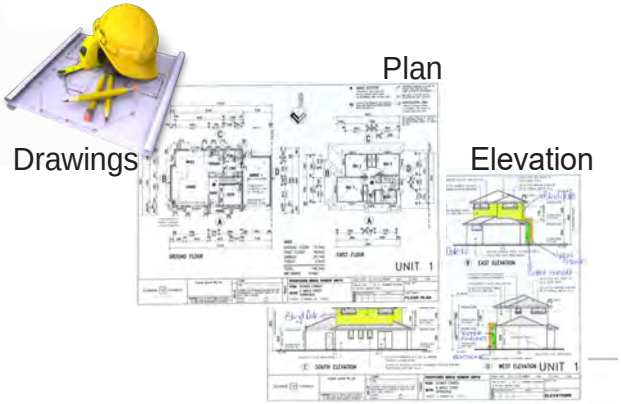
Work Instructions?

i). What is the primary purpose of work instructions in a workplace setting?
a). To provide general information about the company
b). To give clear, step-by-step guidance for specific tasks ensuring consistency, safety, and quality
c). To outline the company's history and mission statement
d). To summarize meetings and discussions
Answer: b.) To give clear, step-by-step guidance for specific tasks ensuring consistency, safety, and quality.

ii). How do workers ensure they accurately interpret and confirm work instructions?
a). By reading the instructions and seeking clarification from supervisors when needed
b). By guessing the steps based on experience
c). By ignoring visual aids and focusing only on text
d). By relying solely on informal communication with colleagues
Answer: a). By reading the instructions and seeking clarification from supervisors when needed.

What are plans, drawings, elevations?

In the context of construction and architecture, drawings, plans, and elevations / views are essential components used to communicate design and construction details.

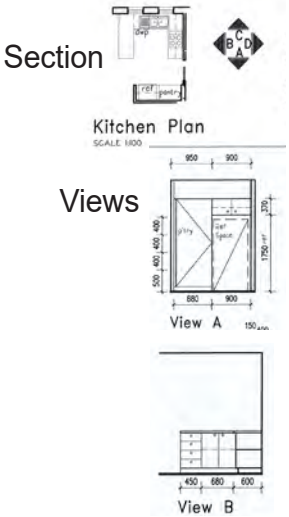


Drawings

Definition: Drawings is a general term that encompasses various types of visual representations used in construction and design. This category includes plans, elevations, sections, and details.

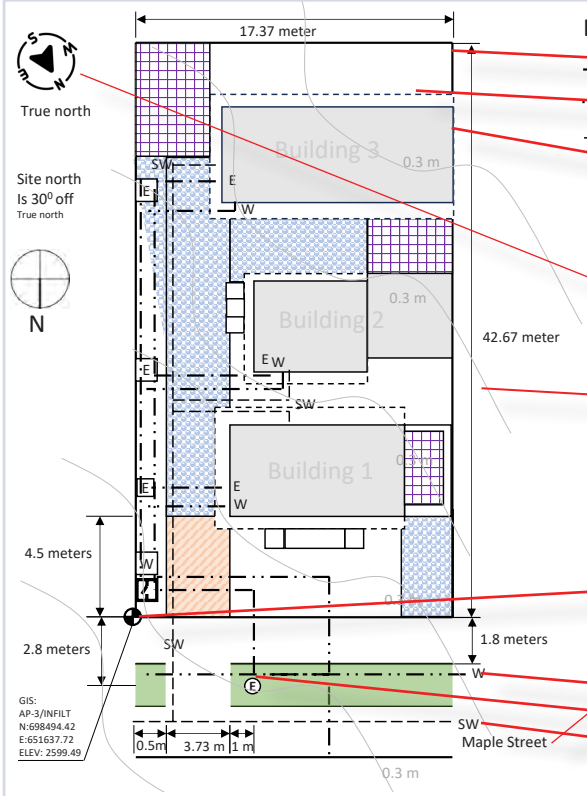
Purpose: They provide detailed information about different aspects of a project. Drawings are used to communicate design intent, dimensions, materials, and construction methods.

Example: An architectural drawing might include a floor plan, elevation views, and detailed drawings of specific components like staircases or fixtures.



Question 26

Identify key features on the site plan by drawing lines from the feature list items to the corresponding features on the plan.



Feature list items

- **Building footprints:**
  - boundaries (property line)
  - easement
- **Setbacks:**
  - no setback
  - distance -property line
- **Access points:**
  - street name
- **Topography:**
  - contours
  - true north
  - north
- **Zoning information:**
  - datum point
  - (dimensions)
- **Landscaping:**
- **Utilitie's / Lines:**
  - water
  - electrical
  - sanitary water

Question 27

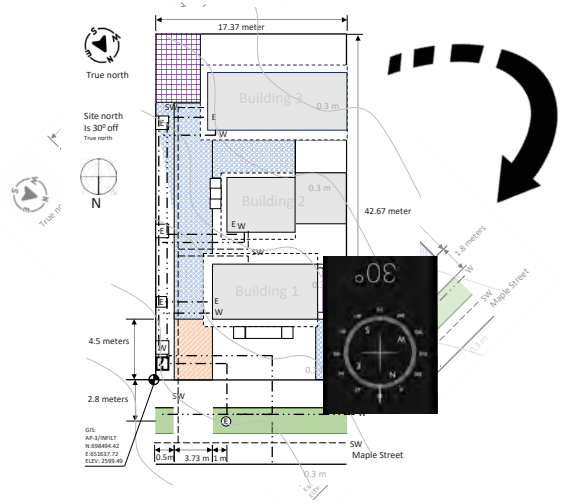
What are the three main steps to orient a site plan to a site?

The correct order of steps to orient a site plan is;

a). Determine True North → Align the Site Plan → Obtain the Site Plan
b). Align the Site Plan → Obtain the Site Plan → Determine True North
c). Obtain the Site Plan → Determine True North → Align the Site Plan

Correct Answer:

c). Obtain the Site Plan → Determine True North → Align the Site Plan



Sample: Project Specifications Scenario (Calculations)

Scenario:

Project Title: Site Development for XYZ Construction

1. Specifications and Calculations Overview
1.1 Specifications

Scope of Work: Site preparation, including clearing, grading, and excavation for building foundations and infrastructure development.

Technical Specifications:

Excavation Depth: 1.5 meters for foundation.
Grading Slope: Minimum 2% for drainage.
Concrete Grade: 30 MPa for footings.
Fill Material: Clean granular fill for backfilling.
Frost Line Adjustment: 0.5 meters (if applicable)
Dimensions of Slab: 10 m x 8 m
Footing Dimensions:
1 m wide x 0.5 m deep x 10 m long

- Required Slope: 2%
- Distance for Drainage: 50 m

Question 35

Calculate the following from the project specification scenario.
i). **Height Calculation:** Total height of foundation including frost line adjustment.
ii). **Area Calculation:** Area of the concrete slab for foundations.
iii). **Volume Calculation:** Volume of concrete needed for footings.
iv). **Grade Calculation:** Height drop required for drainage slope.

i). Total Height = Excavate Depth + Frost Line Adjustment
1.5m + 0.5m = 2.0m

ii). Area = Length × Width
10 m × 8 m = 80m2

iii). Volume = Width × Depth × Length
1m × 0.5m × 10m = 5m3

iv). Height Drop = Distance × (Slope/100)
50m × (2/100) = 1m

Sample: Project Specifications - Error Scenario (Calculations)

Project Title: Construction of a One-Story House with a Concrete Slab Floor for Level 1

Scenario Introduction: XYZ Builders is tasked with designing and constructing a one-story house featuring a ground floor and an upper level (Level 1) constructed with a concrete slab floor. The design incorporates concrete pillars to support the slab, which must withstand the weight of the structure and additional loads.

Specifications for the Concrete Slab

- **House Dimensions:**

Length = 10 m
Width = 8 m
Thickness of Slab = 0.15 m (to support the loads of the upper level)

- **Concrete Grade:** 25 MPa
- **Density of Concrete:** 2400 kg/m³
- **Expected Load on Slab:** 250 kN (including furniture, occupants, etc.)
- **Load Capacity of Each Pillar:** 100 kN

Engineering Calculations:

1. Volume Calculation for the Concrete Slab
Volume = Length x Width x Thickness
Volume = 10 m x 8 m x 0.15 m = 12 m3

2. Weight Calculation for the Concrete Slab
Weight = Volume × Density
Weight Calculation: 12 m3 x 2400kg/m3 = 28800kg
Gravity = 9.81m/s2 = Convert mass (in kilograms) into weight (in newtons).
(Conversion kg to kilonetons (kN) = 1000
Weight in kN: (28800kg x 9.81m/s2) / 1000 = 282.5kN

3. Total Load on the Concrete Slab
Total Load = Weight of Slab + Expected Load
Total Load = 282.48 kN + 250kN = 532.48kN

4. Number of Pillars Required:
Total Load: 532.48 kN
Load Capacity of Each Pillar: 100 kN
Number of Pillars Required: Total Load / Load Capacity of Each Pillar
Number of Pillars Required: 532.48 kN / 100 kN = 5.32
Number of Pillars required: 5 pillars

Question 36

So from the specifications document how many pillars are required according to the engineering calculations. The engineer has ordered 5 pillars. - Check if correct. i). Is this correct Yes / No? If not then how many pillars should be ordered. ii). Also what must you do before you commence work?

ii). Verify the calculations, inform the architect of the error via email, and await the revised drawings and updated specification document. i). Error - Need 6 pillars actually.

Sample Site Plan