

# RIICCM203E

## Read and Interpret Plans and Job Specifications

### Learner Guide Instructions

Who is this document for?

The learner.

What is in this document?

- Course information that matches the PowerPoint presentation.
- Review questions.
- Practical assessment instructions for learners.

What do you need to do before you use it for the first time?

1. Rebrand the document.
2. Review the document as part of your validation process.
3. Set the reading and test time limits that are highlighted in pink at the end of the document.

**See the 'Read Me First' document for a complete set of instructions on how to use these resources.**



# LEARNER GUIDE

# RIICCM203E Read and Interpret Plans and Job Specifications

<b>Learner Name:</b>	
<b>Learner ID:</b>	
<b>Learner Contact Number:</b>	
<b>Learner Email Address:</b>	
<b>Date Training Commenced:</b>	

## This Book Contains:

- Course Information.
- Review Questions.
- Practical Assessment overview and instructions.

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## 1.1 Introduction

This course is based on the unit **RIICCM203E Read and Interpret Plans and Job Specifications.**

This unit covers the reading and interpreting of plans and specifications in the civil construction industry. It includes:

- ◆ Planning and preparing for work.
- ◆ Identifying types of drawings and their functions.
- ◆ Recognising amendments and commonly used symbols and abbreviations.
- ◆ Locating and identifying key features on a site plan.
- ◆ Reading and interpreting job specifications.



## 1.2 Plan and Prepare for Work



Plans and specifications are designed to guide the civil construction project. They outline what needs to be done and how the job should look by the end. This includes:

- ◆ Materials to be used.
- ◆ Grades of materials to be used.
- ◆ Classification of materials to be used, such as, sub-grade materials that differ to finished level materials.
- ◆ Quantities of materials that need to be used.
- ◆ Size of the project or dimensions of the project.
- ◆ Other specific information.

## 1.2.1 Working Safely

All work outlined in plans and specifications needs to be done in a safe way, in line with site and safety rules, requirements, policies and procedures. This ensures that all completed work is compliant.

There are a range of documents or sources of information that you need to understand and check regularly to make sure all work outlined in plans and specifications is done the right way. These include:

<b>Acts</b>	These are laws that you have to follow.
<b>Regulations</b>	These explain what the law means.
<b>Codes of Practice</b>	These are instructions on how to follow the law, based on industry standards.
<b>Australian Standards</b>	These tell you what the minimum requirement is for a job, product or hazard.
<b>Site Policies</b>	These are the rules that you need to follow on site to work safely and efficiently.
<b>Site Procedures</b>	These are the instructions that explain what you need to do to maintain a safe workplace including cleaning, maintenance and storage requirements for equipment, fault reporting, hazard identification and reporting requirements and traffic management.
<b>Work Instructions</b>	These explain how to complete each task and provide details for job sequence, equipment, managing hazards and any other relevant information.
<b>Emergency Procedures</b>	These are instructions on what to do in emergency situations, for example if there is fire, accident or emergency where evacuation or first aid is needed.

### 1.2.1.1 Personal Protective Equipment

Personal Protective Equipment (PPE) is clothing and equipment designed to lower the chance of you being hurt on the job. It is required to enter most work sites.

You may need to wear PPE when you are using tools, plant and equipment. Check your work instructions and safety procedures for details of the PPE you need to wear.



PPE includes:

- ◆ **Head protection** – hard hats and helmets.
- ◆ **Foot protection** – non-slip work boots.
- ◆ **Hand protection** – gloves.
- ◆ **Eye protection** – goggles, visors or glasses.
- ◆ **Ear protection** – plugs or muffs.
- ◆ **Breathing protection** – masks or respirators.
- ◆ **Hi-visibility clothing** – clothing that makes you stand out and lets other people know where you are.
- ◆ **Weather protection** – clothing that protects you from the sun or from the cold.





Make sure any PPE you are wearing is in good condition, fits well and is right for the job.

If you find any PPE that is not in good condition, tag it and remove it from service. Then tell your supervisor about the problem and they will organise to repair or replace the PPE.

When you have finished using any PPE you need to store it properly so that it stays in safe working condition.



## 1.2.2 How to Keep Everyone Safe

Work Health & Safety (WHS) laws say that all companies and workers need to keep themselves and other people safe while they work. This is called a duty of care.

To keep yourself and other workers safe you need to:

- ◆ Follow your instructions.
- ◆ Follow all workplace rules.
- ◆ Make sure all equipment is safe to use.
- ◆ Carry out your work safely.
- ◆ Report any problems.

If you think something is dangerous tell your boss or supervisor as soon as possible.



## 1.2.3 Reading and Checking Your Work Requirements

All work needs to follow worksite, environment and company safety procedures.

Procedures help to make sure that all work is done in a safe way, without damaging equipment or putting people in unsafe situations. They also help to make sure that work is done in the correct order and doesn't interrupt or get in the way of other work that is happening on the site.

Your work instructions will tell you the safest way to do the job, and the equipment that you will need to use. It is a good idea to check your work instructions with your boss or supervisor to make sure you know exactly what you need to do.



If you don't know where to get your instructions or you can't understand them, you can ask your boss or supervisor. They will tell you where to find your work instructions and explain what they mean.

Once you have confirmed your work instructions you will need to refer to the plans and specifications for the project to find out exactly where, when and how you are supposed to carry out your instructions.

### 1.2.3.1 Work Method Statements

Work Method Statements are one example of work instructions.

Many worksites require a work method statement before any work can start. A work method statement is a list of steps that outlines how a job will be done. It also includes any hazards that occur at each step, and what you need to do about them.

Work methods statements are useful for planning and organising your work activities because they break the job down into stages allowing you to work through the job in the correct order and organise any equipment, personnel or hazard controls ahead of time. This keeps your work efficient and organised.

These statements can also be known as Safe Work Method Statement (SWMS), Job Safety Analysis (JSA) or Safe Operating Procedure (SOP).



### 1.2.4 Basic Earthworks Calculations

When working on a civil construction site, it is good to know some basic earthworks calculations.

#### Area

This is calculated by multiplying Length x Width.

A graphic of a clipboard with a white sheet of paper. At the top, a yellow box contains the formula: **Area = Length (L) x Width (W)**. Below this, the text reads: 'For example: A section 4m wide and 20m long would have the following area:'. The calculation is shown as: **Area = 4m x 20m = 80m<sup>2</sup>**.

**Area = Length (L) x Width (W)**

For example:  
A section 4m wide and 20m long would have the following area:

**Area = 4m x 20m  
= 80m<sup>2</sup>**

If you were given an area, and you know one of the dimensions (e.g., Width or Length), you can work out the other factor.

A graphic of a clipboard with a white sheet of paper. At the top, a yellow box contains two formulas: **Length = Area ÷ Width (W)** and **Width = Area ÷ Length (L)**. Below this, the text reads: 'For example: An area of 50m<sup>2</sup> with a width of 5m can be worked out this way:'. The calculation is shown as: **Length = 50m<sup>2</sup> ÷ 5m = 10m**.

**Length = Area ÷ Width (W)**  
**Width = Area ÷ Length (L)**

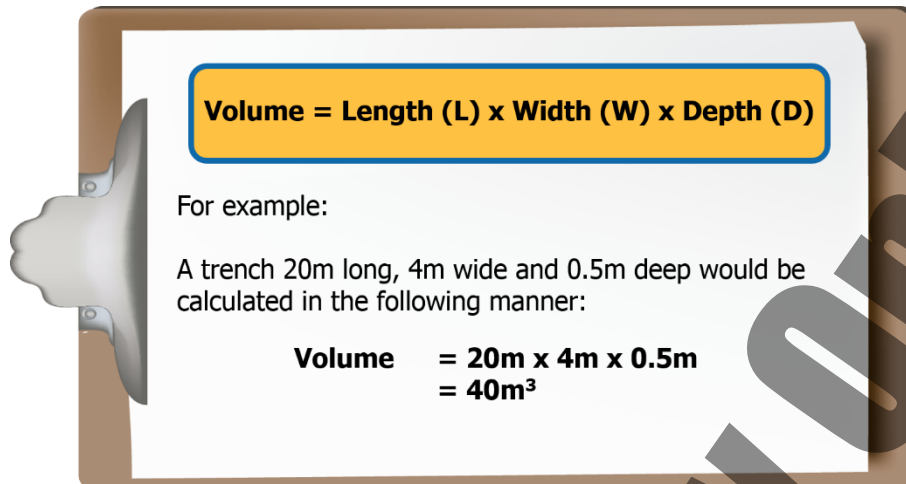
For example:  
An area of 50m<sup>2</sup> with a width of 5m can be worked out this way:

**Length = 50m<sup>2</sup> ÷ 5m  
= 10m**

(You can change the length or width in the formula depending on the factor you are trying to find).

### Volume

This is calculated by multiplying Length X Width X Depth or Height. That is, depth if it is hole or height if it is a pile.



**Volume = Length (L) x Width (W) x Depth (D)**

For example:

A trench 20m long, 4m wide and 0.5m deep would be calculated in the following manner:

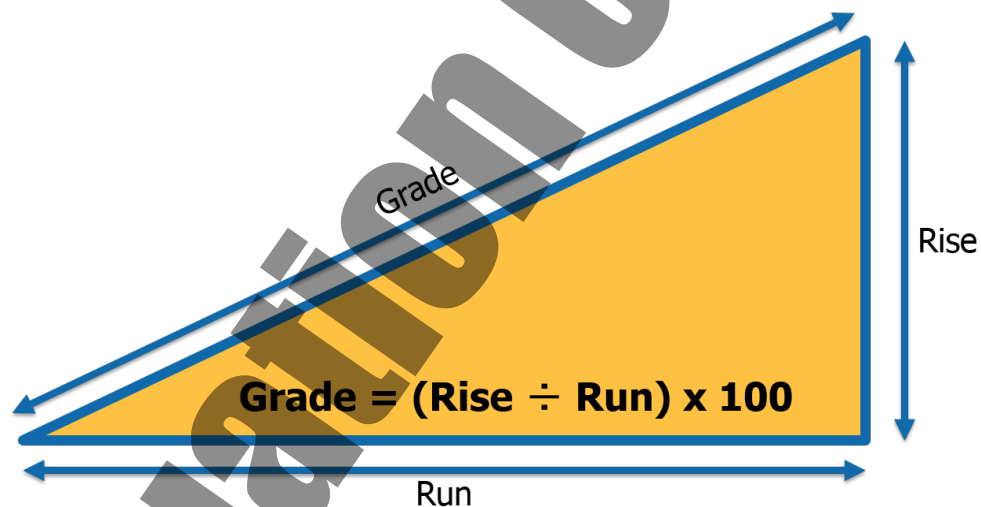
$$\begin{aligned} \text{Volume} &= 20\text{m} \times 4\text{m} \times 0.5\text{m} \\ &= 40\text{m}^3 \end{aligned}$$

### Grade

Grade calculations are used to determine how much slope is present or is needed to achieve the specifications.

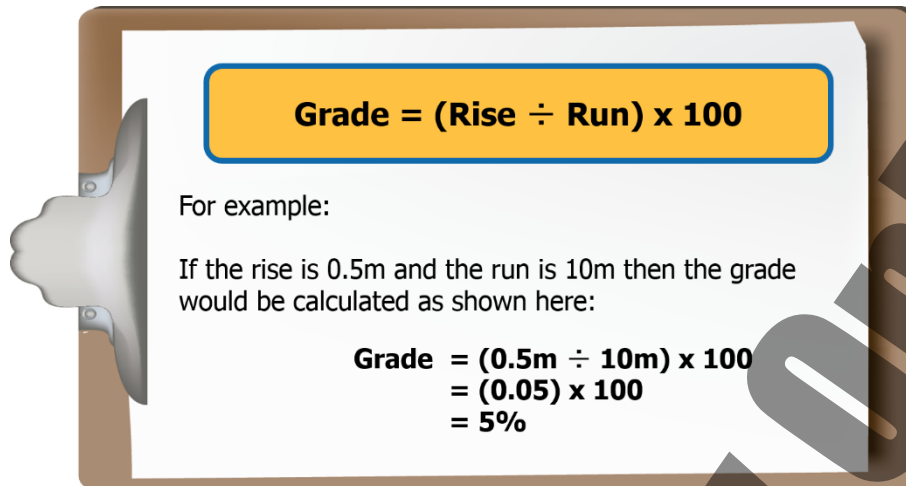
To do this you will need to know the rise and the run of the land. The rise is the distance the road or area raises over a designated distance. The run is the designated distance.

The formula is:





If you were given the rise and the run then you can work out the grade of the resulting triangle.



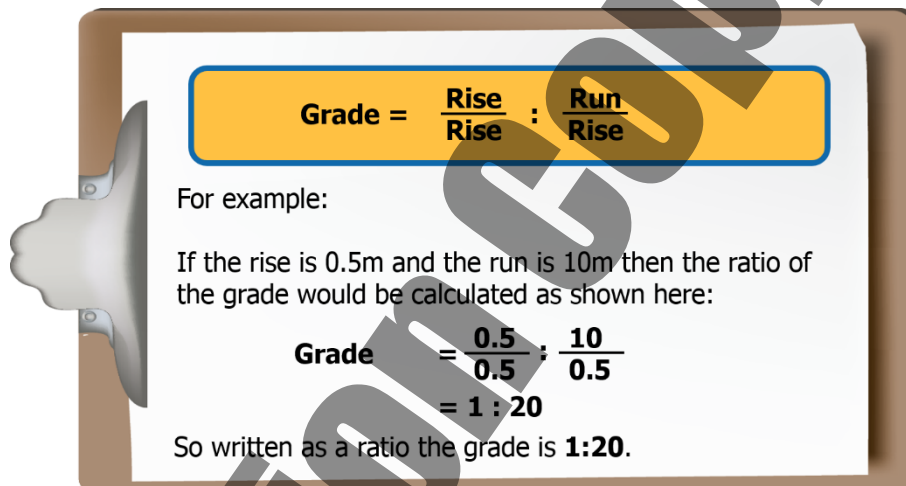
**Grade = (Rise ÷ Run) x 100**

For example:

If the rise is 0.5m and the run is 10m then the grade would be calculated as shown here:

$$\begin{aligned}\text{Grade} &= (0.5\text{m} \div 10\text{m}) \times 100 \\ &= (0.05) \times 100 \\ &= 5\%\end{aligned}$$

This can also be calculated as a ratio. To find the ratio, divide both the Run and Rise values by the Rise.



**Grade =  $\frac{\text{Rise}}{\text{Rise}}$  :  $\frac{\text{Run}}{\text{Rise}}$**

For example:

If the rise is 0.5m and the run is 10m then the ratio of the grade would be calculated as shown here:

$$\begin{aligned}\text{Grade} &= \frac{0.5}{0.5} : \frac{10}{0.5} \\ &= 1 : 20\end{aligned}$$

So written as a ratio the grade is **1:20**.

## Review Questions

<b>1.</b>	What do plans and specifications outline?	<input type="checkbox"/>

<b>2.</b>	<b>a)</b> List 3 types of documents or sources of information that you need to check regularly to make sure all work is done in the right way. <b>b)</b> List 3 kinds of PPE that you might need to wear on site.	<input type="checkbox"/>
<b>a)</b> 1.  2.  3.		
<b>b)</b> 1.  2.  3.		

<b>3.</b>	Why is it important to confirm you work details with your supervisor after you have read your work requirements?	<input type="checkbox"/>

<b>4.</b>	What is a work method statement?	<input type="checkbox"/>

**5.**

Area:



**a)** What is the formula for calculating area?

**b)** What is the area of a space 3.0m long and 1.2m wide? Show all workings.

**6.**

Using the information below, work out the volume of a space for each of the following questions.



**a)** What is the formula for calculating volume?

**b)** What is the volume of a space 1.5m long, 1.8m wide and 0.9m deep? Show all workings.

**7.**

Using the information below, work out the grade of a space for each of the following questions.



**a)** What is the formula for calculating grade?

**b)** What is the grade of a slope with a rise of 2.0m and a run of 5.0m? Show all workings.

Evaluation Copy Only

## 1.3 Identify and Report Hazards

Part of your job is to look around to see if you can find any hazards before you start any work.



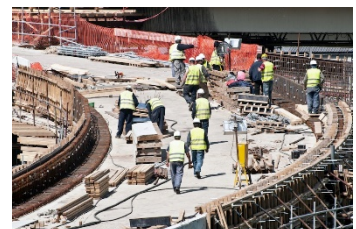
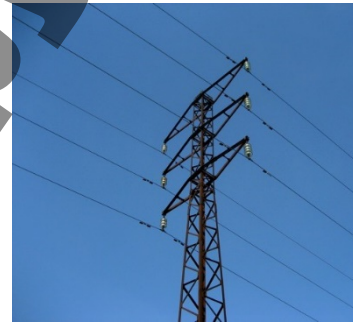
A **hazard** is the thing or situation with the potential to cause injury, harm or damage.

When you start checking for hazards, make sure you look everywhere. A good way to do this is to check:

- ◆ Up high above your head.
- ◆ All around you at eye level.
- ◆ Down low on the ground (and also think about what is under the ground).

Some hazards you should check for in the work area:

- ◆ Overhead and underground services.
- ◆ Uneven, soft, slippery or unstable terrain.
- ◆ Trees.
- ◆ Fires.
- ◆ Bridges.
- ◆ Excavations.
- ◆ Buildings.
- ◆ Traffic.
- ◆ Embankments.
- ◆ Cuttings.
- ◆ Hazardous materials.
- ◆ Structures such as site offices and scaffolds.
- ◆ The weather and environment.
- ◆ Other workers or site visitors.
- ◆ Pedestrians and other public traffic.
- ◆ On site vehicles, plant, equipment and machinery.
- ◆ Poorly maintained or faulty equipment.
- ◆ Road surface and edge solidity.
- ◆ Chemical hazards such as fuel, chemicals, contaminants, gases or dusts.



### 1.3.1 Reporting Hazards

Reporting of problems needs to be undertaken immediately if an issue is identified. This reporting could be done through any means acceptable on the site including:

- ◆ Phones.
- ◆ Email.
- ◆ Computerised logs and systems.
- ◆ Written logs.
- ◆ Forms and specific documents.
- ◆ Two-way radio.
- ◆ Communications systems.
- ◆ Fax.



Speak clearly and directly to the person who needs to know, and listen carefully to any further instructions or information.



If you have taken any action you will also need to report those details. This could include written or verbal reports. Your worksite may have different types of standard paperwork that needs to be filled out, for example:

- ◆ Hazard report forms.
- ◆ Work method statements.
- ◆ Other documents.

Your report will need to be given to a safety officer, supervisor or a member of the management team.



## 1.3.2 Identify Environmental Controls

It is very important that you identify and apply the environmental controls for the project you are working on. They can be found in:

- ◆ Job plans.
- ◆ Job specifications.
- ◆ Environmental plans and procedures for the worksite.



Environmental controls are used onsite to ensure the protection of the environment. Make sure you check with your supervisor about what environmental issues need to be managed during your work.



All environmental details should be listed in an 'Environmental Management Plan' for the site. It can include details for:

- ◆ Waste management.
- ◆ Water quality protection.
- ◆ Noise control.
- ◆ Vibration control.
- ◆ Dust management.

The plan will outline the steps and processes needed to prevent or minimise damage to the environment through the use of machinery and equipment.

Environmental controls could include:

- ◆ Soil and water management, including clearing and grubbing tasks, erosion and sediment control, drainage management and water licensing.
- ◆ Waste management.
- ◆ Environmental sensitivity and heritage factors.
- ◆ Air quality.
- ◆ Flora and fauna management, including protected species management.
- ◆ Demolition management, including dust control, noise management, vibration minimisation and blasting requirements.
- ◆ Vegetation protection.
- ◆ Stormwater management.
- ◆ Weed control measures.
- ◆ Chemical and hazardous substance storage requirements.
- ◆ Other requirement relevant to tasks and activities.

