



Australian Government

RIICTB203E Produce bridge drawings and sketches

Release: 1

RIICTB203E Produce bridge drawings and sketches

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to produce bridge drawings and sketches in civil construction, including two-dimensional, three-dimensional, and orthographic sketches as well as the development of specifications.

It applies to those working in operational roles. They generally work under supervision to undertake a prescribed range of functions involving known routines and procedures and take some responsibility for the quality of work outcomes.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to Produce drawings and sketches	1.1 Access, interpret and apply documentation required to produce bridge drawings and sketches 1.2 Confirm and apply safety requirements according to job and site requirements 1.3 Select plant, tools and equipment required to carry out tasks and check for faults 1.4 Identify, confirm, and locate materials required for work application 1.5 Obtain, interpret and comply with quality requirements, format and

ELEMENT	PERFORMANCE CRITERIA
	drawing conventions 1.6 Select drawing type according to job requirements 1.7 Identify bridge features, site dimensions and orientation, structures and services according to job requirements
2. Create sketches, orthographic drawings and sectional views	2.1 Select drawing medium according to job requirements 2.2 Prepare two dimensional drawings and sketches according to job requirements 2.3 Prepare three dimensional drawings and sketches according to job requirements 2.4 Prepare sectional details of structural elements and elevations according to job requirements 2.5 Include symbols and abbreviations 2.6 Prepare title panels to confirm drawing used is the current version
3. Develop specifications	3.1 Identify purpose of specifications as they relate to bridge drawings 3.2 Identify elements as suitable for use in specifications according to job requirements 3.3 Prepare specifications for a bridge project according to job requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Calculates basic measurements, including scale and dimension
Oral communication	- Identifies and interprets information from verbal instructions - Conveys information and instructions to others verbally

Unit Mapping Information

Supersedes and is equivalent to RIICTB203D Produce drawings and sketches.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICTB203E Produce bridge drawings and sketches

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- produce bridge drawings and sketches for at least three different projects, including:
 - at least one of each of the following per project in compliance with standard drawing conventions:
 - orthographic drawing and sectional view drawing, and
 - elevation, plan and end view
 - developing specifications for at least two of these projects.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- identify, report and record hazards and risks
- work with others to produce bridge drawings and sketches that meets required outcomes, including:
 - communicating with others to receive and clarify work instructions
 - using communication techniques and equipment to advise others of work activity.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to produce bridge drawings and sketches
- policies, procedures and documentation required to produce bridge drawings and sketches, including those related to:
 - hazard and risk management
 - site and equipment safety
 - work health and safety

- communication techniques and equipment
- project quality requirements
- operational, maintenance and basic diagnostic procedures
- job plans and specifications
- workplace reporting requirements
- principles and techniques required to produce bridge drawings and sketches, including those relating to:
 - drawing mediums
 - symbols and abbreviations
 - kinds of drawings
 - key features
 - orientation, including:
 - relationship to north compass point
 - location of roads
 - relationship to neighbouring properties
 - drawing specifications
 - service identification
- types, characteristics, technical capabilities and limitations of plant and equipment required to produce bridge drawings and sketches including:
 - pencil, pen and ink
 - computer aided drafting
 - graph paper
 - cartridge paper
 - tracing paper
- materials safety data sheet (SDS) compliance processes
- components of job safety analyses (JSAs), job safety requirements (JSEAs), and safe work method statements (SWMs)
- civil construction terminology relating to producing drawings and sketches.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - equipment required to produce bridge drawings and sketches
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and	

	infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.
--	---

*Guidance on simulated environments has been stipulated in the RII Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>