Australian Government

Department of Education, Employment and Workplace Relations

RIICPL401A Apply the principles for the installation of underground service using open excavation

Release: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

RIICPL401A Apply the principles for the installation of underground service using open excavation

Modification History

Not applicable.

Unit Descriptor

This unit covers the supervision for the installation of underground service using open excavation tasks in Civil Construction. It includes the requirements for ensuring that the planning, preparing, initiating, monitoring, adjusting and reporting for the installation of underground service using open excavation tasks are carried out in accordance with the accepted industry principles.

Application of the Unit

This unit is appropriate for those working in a supervisory role or as a technical specialist, for the installation of underground service using open excavation tasks within:

- Civil construction

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Ensure appropriate planning and preparation of tasks is carried out	1.1. Access, interpret and apply ***compliance documentation*** relevant to the work activity 1.2. Access, interpret and clarify the ***specific task information and requirements*** relevant to undertaking the ***installation of underground service using open excavation tasks*** 1.3. Ensure a ***job plan*** is available which makes best use of the available resources and meets task requirements
2. Ensure appropriate initiation of tasks is carried out	2.1. Confirm that the necessary ***resources*** are available for the safe, effective and efficient conduct of the tasks 2.2. Ensure clear and timely ***instructions*** are communicated to ***team members*** and others involved, for the safe, effective and efficient conduct of tasks, to meet the specific task requirements 2.3. ***Set out*** tasks as required for the effective completion of the task
3. Oversee the execution of tasks	3.1. ***Monitor*** the installation of underground service using open excavation task performance to ensure it achieves the ***required outcomes*** 3.2. ***Initiate*** adjustments to work practice or job plan to ensure safe execution of work and achievement of required outcomes 3.3. Ensure plant equipment and tools maintenance requirements are carried out and recorded
4. Report on the execution of tasks	4.1. Complete and submit reports as required 4.2. Recommend changes to improve the safety, efficiency and effectiveness of the execution of tasks

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to supervise the installation of underground service using open excavation tasks:

- apply legislative, organisation and site requirements and procedures
- interpret project contract and specification requirements and procedures
- interpret project site soil and geological data
- identify soil and rock types
- interpret meteorological data
- identify drainage issues
- interpret material properties and test results, including compaction test results
- interpret project site geotechnical data
- interpret project site hydrological data
- interpret project engineering survey information
- interpret project plans and drawings
- interpret project specifications
- prepare for and conduct briefings, toolbox and site meeting
- prepare of short messages
- prepare and presenting of job reports
- prepare and maintaining of log books and diaries
- provide leadership
- apply performance monitoring skills
- apply set out requirements and procedures
- set up and use levelling devices
- establish construction offsets
- apply supervisory skills
- develop workplace relationships
- develop individuals and the team
- apply inspection requirements and procedures
- calculate quantities for the execution of tasks, including:
  - volumes
  - tonnage required
  - grades
  - percentages
  - areas
  - resource consumption figures, including required supply rates
- interpret underground service materials properties and test results

- provide recommendations for the improvement of the safe, effective and efficient execution for the installation of underground service using open excavation tasks

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to supervise the installation of underground service using open excavation tasks:

- risk assessment and management requirement and procedures
- statutory compliance requirements and procedures
- occupational Health and Safety requirements and procedures
- shoring requirements and procedures
- slope management requirements and procedures
- environmental management requirements and procedures
- quality management requirements and procedures
- work zone traffic management requirements and procedures
- contract management requirements and procedures
- communication requirements and procedures
- administrative requirements and procedures
- open excavation underground service installation plant and equipment capabilities and application
- plant, equipment and tools maintenance requirements and procedures
- operational techniques for the execution for the installation of underground service using open excavation tasks
- open excavation underground service installation resource requirements and procedures
- activities scheduling requirements and procedures
- open excavation underground service installation materials delivery requirements and procedures
- job plan drafting of and administration requirements and procedures
- reporting requirements and procedures
- workplace relationship requirements and procedures
- organisational, client and site operational requirements
- relationship between various areas of civil works
- team leadership techniques
- works planning techniques
- open excavation underground service installation monitoring methods
- engineering survey principles
- materials quality and delivery requirements and procedures
- mentoring techniques
- estimating principles
- civil works construction sequencing
- installation of underground services and related activities' terminology

- set out requirements and procedures
- drainage requirements
- works planning techniques
- monitoring methods

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for the supervision of installation of underground service using open excavation tasks • implementation of appropriate procedures and techniques for the safe, effective and efficient supervision of installation of underground service using open excavation tasks • working with others to plan, prepare and conduct for the installation of underground service using open excavation tasks • provision of clear and timely instruction and supervision by the individual of those involved in the installation of underground service using open excavation tasks • evidence of the consistent successful supervision for the installation of underground service using open excavation tasks
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Evidence for assessment is best gathered using the outcomes of products and processes in the workplace. • The assessment environment should not disadvantage the participant. For example,

	language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.

Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:
	• written and/or oral assessment of the candidate's required knowledge
	• observed, documented and/or first hand testimonial evidence of the candidate's
	  • implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes
	  • consistently achieving the required outcomes
	• first hand testimonial evidence of the candidate's:
	  • working with others to plan, prepare and conduct the installation of underground service using open excavation tasks
	  • provision of clear and timely instruction and supervision by the individual of those involved in the conduct of the installation of underground service using open

	excavation tasks
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation

Specific task information and requirements may include:	• site geological and geotechnical data, including:
	  • rock types and characteristics
	  • soil types and characteristics
	• site hydrological data, including:
	  • surface water
	  • ground water
	• site meteorological data, including:
	  • rainfall
	  • humidity
	  • temperature
	  • wind
	• site engineering survey data
	• known and potential site hazards, constraints and conditions
	• site cultural and heritage information
	• task specifications
	• task drawings
	• sources of materials
	• other organisations and contractors involved in the task or related tasks
	• coordination, timing and budgeting requirements

Installation of underground service using open excavation	• water mains pipelines • stormwater systems, including:

tasks may include:	• pipes • box culverts • pre-cast gully pits • sewage pipelines • gas pipelines • other conduits for services such as: • telecommunication cables • data cables • power cables
Open excavation may include:	• shored trenches • open trenches • excavation by trenching machine or other earthmoving equipment
Job plan is to include:	• human resource requirements • plant and machinery requirements • construction materials requirements • sub-contractor support requirements • waste disposal requirements • coordination requirements • activity scheduling • materials delivery scheduling • risk assessment and management requirements • occupational Health and Safety requirements • shoring and slope management requirements • sub-contractor support requirements • quality management requirements, including testing scheduling requirements • traffic management requirements • environmental requirements • task monitoring requirements • task performance monitoring requirements • communication requirements • reporting requirements
Resources are to include:	• labour • plant, equipment and tools • highway haulage vehicles • construction materials • shoring materials • sub-contractor services
Instructions are to include:	• briefings • handovers

	• work orders • toolbox meetings • site meetings
Team members may include:	• other members of the organisation's management team • members of the team directly involved in the task • suppliers representatives • sub-contractors representatives • supervisors or managers of other organisations who are involved in related tasks
Set out is to include:	• control lines • cleared width • batters • off-sets
Monitor is to include:	• ongoing risk assessment • engineering survey • sampling and testing • observation and recording • general supervision
Required outcomes may include:	• task specifications requirements • task drawings requirements • coordination requirements • activity scheduling requirements • unit cost requirements • overall task cost requirements • waste management requirements
Initiate is to include:	• written communication • oral communication

Unit Sector(s)

Underground Services

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.