Sample Pearson BTEC Set Assignment Brief

Single Part Assessment

Unit 4 – Safe Working Practice

For use with:

Pearson BTEC International Level 3 qualifications in Building Services Engineering, Civil Engineering, Construction and the Built Environment

Diploma / Extended Diploma

Supervised hours	6

For completion by the centre

Qualification (select as appropriate)	Certificate / Extended Certificate / Foundation Diploma / Diploma / Extended Diploma
Assessment date	

Instructions to Teachers/Tutors and/or Invigilators

The Pearson Set Assignment will be assessed internally by the centre using the unit Assessment Criteria detailed in the qualification specification. The assignment will be sampled by the Standards Verifier as part of the standards verification annual centre visit.

Conditions of supervision

The Pearson Set Assignment should be carried out under supervised conditions. We advise that the Set Assignment be taken in more than one supervised session.

The Set Assignment should not be shared with learners before the supervised session arranged by the centre. Teachers/tutors and invigilators should note that they are responsible for maintaining security and for reporting issues to Pearson.

Outcomes for Submission

Learners may submit handwritten or word-processed evidence. Learners must also complete this set assignment on a computer using CAD. Learners must save their work regularly and ensure that all materials can be identified as their work.

Learners must submit their own, independent work as detailed in the set assignment. Each learner must complete an authentication sheet.

Instructions to Learners

Read the Set Assignment Information carefully.

You will be asked to carry out specific written activities, under supervised conditions, using the information provided.

At all times you must work independently and must not share your work with other learners. You must complete an authentication sheet and submit this along with your work.

Read the Set Assignment Information carefully, then complete the activities detailed in the Set Assignment

Set Assignment Information

Scenario

You are a construction site foreperson supervising the work of a team of five labourers. You are employed by the contracting company 'Ground Engineering Solutions Limited' who undertake small-scale civil engineering projects.

Project

Your contracting company have been asked to construction an open channel to provide water to irrigate crops similar to the channel shown in Figure 1. Your company has taken over midway through the project from another contractor 'Irrigation and Drainage Contractors Limited', who were instructed to cease working following an accident. The project requires that you construct an open channel to the dimension shown in Figure 2 below. The channel sizes and bed will be formed from 150mm thick in-situ concrete, reinforced with two layers of A393 mesh. The exposed faces of the concrete irrigation channel are to be finished with irregular stone blocks. The stone blocks are to be sourced from the local area.

Figure 1: Typical irrigation channel crossing a field

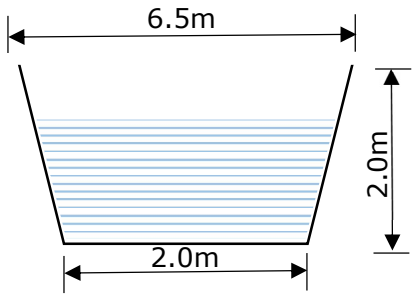

Figure 2: Typical cross-section of an irrigation channel

Site description

- The site is located on the outskirts of a city in open flat ground within a 0.2 square kilometre field used at present for rearing cattle.
- The cattle cannot be moved and will remain in the field during the construction of the irrigation channel.
- An overhead power pylon is present on the site, being situated 5 metres from the proposed channel.
- It is not known if other services for the nearby city such as water, electricity or gas cross the field.
- The site has restricted access, with an opening into the field presently being provided by a narrow 1.2m wide wicket gate.
- From the main highway, there is a rough track 2m wide heading up to the wicket gate across an adjacent field.
- A heap of local stone has been provided to line the channel. The stones are large, irregularly shaped and typically have a weight in excess of 23kg.
- The site has no streams or other source of visible surface water. A cattle water drinking container is present and appears to be serviced by a main water supply.

Ground conditions

Depth (m)	Description of the ground
0	Ground level
0.600	Topsoil
1.000	Made ground
1.700	Stiff sand clay
4.000	Loose sand

The ground water table level was found to be present at a depth of 1.9m.

Details of accident occurring during excavation works completed by Irrigation and Drainage Contractors Limited

We had been on site for three days when the accident occurred which led to the death of my colleague John. Five of us started to dig out the required trench for the irrigation channel by hand using spades. We had positioned our spoil heap close to the edge of the trench for ease of access. The ground was reasonable until we reach a depth of 1.8m, being until then a stiff clay material. At 1.8m sand started to run into the trench and we noticed some water ingress at the bottom of the trench. When the water began to enter the trench two of my colleagues decided to get out, scrambling up the trench's clay vertical sides. Myself and my remaining two colleagues (which included John) were keen to complete the trench quickly, as we were being paid by the hour, and carried on. The sand and water continued to seep into the trench and after a further 20 minutes, the sides of the trench collapsed adjacent to the spoil heap. John was working in that area and unlike us he was not able to scramble out of the trench in time. He was buried completely in the arising from the trench, and suffocated before we were able to dig him out.

Set Assignment

You must complete ALL activities

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ACTIVITY 1
As the foreperson taking over the work from 'Irrigation and Drainage Contractor Limited' you have been asked to investigate the previous accident on site. You are required to ascertain the factors that contributed to the accident and to consider their relative importance and impact on the outcome and severity of the accident. As part of the review you are to evaluate how regulation controlling health and safety in construction and appropriate planning, might have prevented the accident by promoting good standards of safe working practice.
This activity covers learning aims A. A. A.P1, A.P2, A.P3, A.M1, A.D1

ACTIVITY 2
Having reviewed the accident you have been given you the task of completing on behalf of 'Ground Engineering Solutions Limited' a risk assessment for the construction of the irrigation channel, and a method statement to support it, that will explain how the works should be carried out to ensure that safe and effective systems of work are used. To ensure your risk assessments and method statements are going to be effective and suitable, you also need to produce a report that provides an evaluation of your safe system of work and the processes involved in its production. This report will cover all aspects of the process involved in the production of safe systems of work. Including hazard identification, minimising risk and an explanation of the reasons why your selected safe systems of work are effective and appropriate.
This activity covers learning aims B. B. B.P4, B.P5, B.M2, B.D2

ACTIVITY 3
You are going to be joined on site by two new labourers who will work with you to complete the irrigation channel. You have been asked to produce a presentation explaining the safe working practices which will control health and safety on-site during the works. This presentation will be used for new worker inductions. As part of the presentation you should explain the importance of training and education. In order to do this, you need to discuss the main principles of safe working practice, you will provide an assessment of how effective each principle is at controlling health, safety and welfare risks for on-site construction operations with reference to health, safety and welfare, training and education. By considering the benefits and drawbacks of each principle, with consideration to the education and training that should be provided, you should produce valid and relevant conclusions about the effectiveness of safe working practice and the training used in controlling and minimising the hazards and risks for on-site construction operations.

This activity covers learning aims C. C. C.P6, C.P7, C.M1, C.D1

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