

Section 1.0 Introduction

Carmarthenshire County Council's (CCC) Flood Defence and Coastal Protection team (FDCP) have commissioned Pebble Engineering Ltd to design a new outfall as part of the wider Ferryside outfall improvement project. This project has arisen from ongoing challenges with the existing surface water outfall, which has been adversely affected by tidal activity, sediment movement, and associated maintenance difficulties. Previous remedial works, including the introduction of a duckbill valve within a concrete chamber have provided temporary relief, however CCC now requires a sustainable, long-term solution that maintains discharge capacity, reduces flood risk, and minimises future maintenance demands.

The preferred option has an excavation of a trench along the length of the outfall. The pipe is proposed to be HDPE with buoyancy collars. The concrete collars

shall be of precast concrete construction, measuring 1m x1m x0.3m. Atop the pipe shall be a

concrete mattress. The pipe shall be buried along its entire length. At the end of the outfall shall

be an upturned pipe with a vertical riser, with 4 port diffuser head

Section 1.1 Supporting Documents

Preliminary Design Drawings Issued by Pebble Engineering Ltd:

- 251201-PEB-01-ZZ-D-C-0001-P1
- 251201-PEB-01-ZZ-D-C-0002-P1
- 251201-PEB-01-ZZ-D-C-0003-P1
- 251201-PEB-01-ZZ-D-C-0004-P1
- 251201-PEB-01-ZZ-D-C-0005-P1

Section 2.0 Site Location

Nearest Address	St. Ishmael, Ferryside, Carmarthenshire, Wales, SA17 5ST, United Kingdom
Grid Reference	SN 36397 09703
X (Easting) , Y (Northing)	236397 , 209703
What3Words://	awaiting.drop.palettes
Link for point	https://gridreferencefinder.com?gr=SN3639709703 Point_s_C 1&t=Point%20C&v=r

Section 3.0 Outline Method Statement

The below sequence is provided as an outline construction phase method statement for the Ferryside outfall remedial works.

This is a preliminary sequence, and the awarding contractor is to provide their own detailed method statement to include:

1. Concrete supply arrangements and all associated temporary works.
2. Precise and final sequencing of tasks.
3. All assumptions, caveats and clarifications.

Any task defined below with "as specified", refers to that task being completed in specific accordance with the Preliminary Design Drawings provided by Pebble Engineering (listed in Section 1.1 of this document).

1. Mobilisation.

- a. Site compound setup including offices, welfare & storage as required.
- b. Temporary works arrangements.
- c. Traffic management systems.
- d. Taking deliveries of all plant, equipment and machinery.
- e. Equipment transportation from compound to work area.

2. Preparation of Pipe Assembly.

- a. Assemble pipe into appropriate sections either within site compound or at work area. (Assembly and transport arrangements TBC by contractor).
- b. Thrust blocks, 45° elbows and pipe collars to be incorporated into pipe assembly in accordance with drawings and in a sequence that suits contractor.

3. Buried Pipe Installation (inside trench)

- a. Install all temporary works as necessary
- b. Complete trench excavation to accommodate buried pipe between existing chamber and outfall discharge location. Excavation sides to have gradients that are suitably safe and as specified. Termination depths founded on medium dense sandy gravel or firm clay.
- c. Install pipe bedding layer in trench foundations as specified.
- d. Transport to work area and install horizontal pipe assembly within trench, combined with all ancillary items as specified such as thrust blocks and 45° elbows. Assembly sequence to suit contractor.
- e. Install and fill 150mm thick individual Proserve mattresses over pipe between each collar.
- f. Backfill trench with compacted granular material and site won material and re-distribute rocks across beach profile as specified.

4. Construct Outfall Discharge Assembly

- a. Excavate beach material to expose top of medium dense sandy gravel or firm clay layer.
- b. Excavate slope to accommodate riser pipe between horizontal pipe within trench and Wastop valve diffuser. Excavation sides to have gradients that are suitably safe and as specified. Termination depths founded on medium dense sandy gravel or firm clay.
- c. Transport to work area and install new discharge pipe assembly and riser connection section to pipe situated within trench. Assembly to include all ancillary items as specified such as 45° elbows, S/S couplers, thrust blocks etc. Assembly sequence to suit contractor.
- d. Mass pour concrete infill to encapsulate riser pipe section in specified area.
- e. Install all reinforcement as specified for Proserve mattress connection.
- f. Install and fill 600mm thick Proserve mattress under pipe for outfall discharge slab.
- g. Install all reinforcement as specified for mass pour pipe protection concrete.

- h. Assemble formwork for mass pour pipe protection concrete surround (above ground & situated on top of Proserve mattress base).
- i. Pour concrete for pipe protection concrete surround.
- j. Redress edges of new pipe protection concrete with cobbles and boulders.

5. Existing Chamber – Pipe Connection Detail

- a. Survey existing headwall reinforcement.
- b. Core headwall with suitably sized diameter to accommodate new outfall pipe.
- c. Remove existing temporary diffuser arrangement from chamber side panel.
- d. Install concrete benching as specified to support existing pipe.
- e. Arrange temporary isolation of existing outfall and break open existing outfall pipe. Temporary isolation arrangements to suit contractor.
- f. Excavate slope to accommodate riser pipe between existing chamber and trench. Excavation sides to have gradients that are suitably safe and as specified. Termination depths founded on medium dense sandy gravel or firm clay.
- g. Transport to work area and install new pipe assembly for existing chamber and connection section to pipe situated within trench. Assembly to include all ancillary items as specified such as 45° elbows, S/S couplers, thrust blocks, Projex sleeves and mechanical link seals. Assembly sequence to suit contractor.
- h. Mass pour concrete infill to encapsulate riser pipe section in specified area.
- i. Install all reinforcement as specified for Proserve mattress connection.
- j. Install and fill 800mm Proserve mattress base in specified area to encapsulate riser pipe section.
- k. Install all reinforcement as specified for mass pour pipe protection concrete.
- l. Assemble formwork for mass pour pipe protection concrete surround (above ground & situated on top of Proserve mattress base).
- m. Pour concrete for pipe protection concrete surround.
- n. Redress edges of new pipe protection concrete with cobbles and boulders.

6. Existing Chamber – Side Wall Concrete Pour

- a. Prepare and install all reinforcement for concrete chamber wall including all ancillary items as specified such as 150x10 Equal Angles and mesh etc.
- b. Assemble formwork for RC chamber wall including weephole as specified.
- c. Pour 300mm thick concrete for RC chamber wall.
- d. Replace chamber cover plate with open mesh flooring (steel grating) as specified.
- e. Full As-Built Survey to be executed upon completion of all permanent works construction activities. Survey approach and sequencing to suit contractor.

7. Demobilisation

a. Full and complete demobilisation from site in appropriate sequence to suit contractor.
Demobilisation to include (but not be limited to):

- i. Temporary works arrangements
- ii. Traffic management
- iii. Site compound including offices, welfare & storage as required.
- iv. All plant, equipment and machinery

Section 4.0 Outline Activity Schedule

Please see document: 309519_OAS_V1.xlsx

Section 5.0 Outline Construction Programme

The construction programme is indicative and awarding contractor is to provide their own detailed construction programme.

Pre-Construction Phase:

To include actions such as materials lead time & all other associated planning works.

CCC are making the arrangement for an MMO Marine licence, Water Framework Directive application, Habitat Risk Assessments and other associated engagement.

Total estimated duration from Instruction to start = 8 weeks.

Construction Phase:

To include but not limited to all actions as outlined in the method statement (Section 3.0). Work to be planned around suitable tidal windows. Total estimated duration = 14 weeks.

Post-Construction Phase:

Preparation and completion of all required Quality Assurance documentation including but not limited to the Operating and Maintenance Manual and Health and Safety File, redline mark ups for production of As Built drawings. Total estimated duration = 4 weeks