



**CITY DEVELOPMENT DEPARTMENT
CITY ENGINEER'S DIVISION**

BROUGHTY FERRY FLOOD PROTECTION SCHEME

2018 – SCHEME DOCUMENTS

Appendix 2 – Description of Operations



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1. Introduction

Dundee City Council is promoting a Flood Protection Scheme under powers granted in the Flood Risk Management (Scotland) Act 2009, with the purpose of reducing the risk of flooding to the Broughty Ferry area of Dundee, and subsequent damage to local residential and commercial properties of such an event. Refer to Drawing 15700-500-0 for Location Plan.

This project is included in the Scottish Environmental Protection Agency's (SEPA) Flood Risk Management Plan and Flood Risk Management Strategy PVA (Potentially Vulnerable Area) 02/23. It is also included in the Tay Estuary and Montrose Basin Local Flood Risk Management Plan.

This report contains a list of the flood protection operations to be undertaken as part of the scheme.

2. Operations

The operations to be carried out as part of the scheme listed below with corresponding notation on the drawings listed below:

15700-500-0 Location Plan

15700-501-0 Operations General Arrangement 1 of 10

15700-502-0 Operations General Arrangement 2 of 10

15700-503-0 Operations General Arrangement 3 of 10

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15700-511-0 General Arrangement Sections 1 of 3

15700-512-0 General Arrangement Sections 2 of 3

15700-513-0 General Arrangement Sections 3 of 3

2.1 Description of Flood Operations

General

The location of Public Utility provider assets have been assessed through the initial design. There is no anticipated requirement for diversions at this time. All existing statutory undertakers' apparatus will be protected throughout the operations.

Scottish Water existing sewer mains are in close proximity to the works. Any approvals required for works or agreements required will be organised and confirmed by the relevant authority prior to starting the works. There is no anticipated requirement for diversions at this time.

An indication of the location of Flood Gates has been provided in the General Arrangement drawings. These will be closed during future flood events but remain open when not in use.

The main site compound will be located out with the area of construction.

A new surface water drainage system is to be installed to replace existing outlets through sea wall and remove surface water from the existing combined sewer system. Surface water from the carriageway, footways and other hard standing will be collected and discharge through the new sea wall via non-return valve at outfall.

Carriageway and Footway improvement works will be undertaken along Douglas Terrace, James Place, Fisher Street and Breach Crescent.

The scheme will provide a new 4 m wide promenade combined footway / cycleway between Douglas Terrace and Fisher Street.

The scheme will provide a new 5m wide promenade combined footway / cycleway at Fisher Street (east of the lifeboat shed) and Beach Crescent.

Refer to Drawings 501 to 504

- | | |
|-------|---|
| 1A 01 | Construction of a setback flood wall along the length of Douglas Terrace, James Place and Fisher Street. The wall will be approximately 1m high above footpath level. The location of which, is shown on the general arrangement drawings, total length 685m or thereby |
| 1A 02 | Construction of new sea wall (Primary Wall) to facilitate the construction of the setback flood wall and creation of new pedestrian footway. |
| 1A 03 | Construction of new Pedestrian Balustrade on top of new sea wall. |

- 1A 04 Sewer pipes that cross the new sea wall will be protected at all times and build over structure will be agreed with Scottish Water.
- 1A 05 Construction of pedestrian access steps. These will correspond to existing access points to the beach.
- 1A 06 Construction of pedestrian access gate that will be closed during flood events.

Refer to Drawing 505 to 506

- 2A 01 Construction of a setback flood wall along the length of Fisher Street. The wall will be approximately 1m high above footpath level. The location of which, is shown on the general arrangement drawings, total length 160m or thereby.
- 2A 02 Construction of new Sea wall (Primary Flood Defence) to facilitate the construction of the setback flood wall and creation of new pedestrian footway.
- 2A 03 Construction of new Pedestrian Balustrade on top of new sea wall.
- 2A 04 Historically listed bollards at pilot pier to be retained.
- 2A 05 Construction of ramp to allow vehicle access to beach.
- 2A 06 Sewer pipes that cross the new Sea wall will be protected at all times and build over structure will be agreed with Scottish Water.
- 2A 07 Scour protection to be provided for the west side of the Lifeboat Shed. This is to be agreed with the owner of the property.
- 2A 08 Install Flood Gate at Lifeboat Shed.
- 2A 09 New Setback Wall to abut existing property wall. The Structure of the existing will not be affected.
- 2A 10 Grass Area to be reinstated to match new level of footpath.

2A 11 The decorative boat planter located on the grass beach at Fisher Street will be protected during the works and be retained within the final design.

Refer to Drawing 507 to 509

3A 01 Construction of a setback flood wall along the length of Beach Crescent. The wall will be approximately 1m high above footpath level. The location of which, is shown on the general arrangement drawings, total length 268m or thereby.

3A 02 Glass Panel structures are to be installed at 1 Gray Street and 18 Fisher Street. These panels are to be 750mm high and supported by a structure separate from the existing boundary walls.

3A 03 Pedestrian Access Steps to maintain access to the beach.

3A 04 Overhead telephone cable and post to be removed. The phone box is to remain but be repositioned within the proposed design. The phone box is historically listed and appropriate approvals will be sought before moving.

3A 05 historically listed Street lighting columns to be retained. One column is to be repositioned to allow construction of the flood protection measures.

3A 06 Construction of ramp to allow vehicle access to beach.

3A 07 Construction of stepped revetment. Step sizes 1.2m step width with 0.45m rise or thereby.

3A 08 The existing stone wall at the castle pier is to be shortened to provide continuity of the footpath and improve existing road widths. The existing stone pillar will be reconstructed in a new position. Appropriate approvals will be sought before moving.

3A 09 Condition of old swimming baths wall to be improved. Details of this are to be agreed with adjacent land owner.

3A 10 Existing earth bund to be extended and landscaped. Flood Protection Setback wall to tie into existing earth bund.

3A 11 Construction of new pedestrian crossing buildout.

Refer to Drawing 510

- 4A 01 Construction of a setback flood wall along the length of Windmill Carpark. The wall will be approximately 1m high above footpath level. The location of which, is shown on the general arrangement drawings, total length 105m or thereby.
- 4A 02 Flood protection setback wall to tie into existing earth bund.
- 4A 03 Flood protection setback wall to tie into existing dunes.
- 4A 04 New Setback Wall to abut existing property wall. The Structure of the existing will not be affected.

3. Land

The land which the Council considers may be affected by the operations and the land on which the Council would require to enter (whether temporarily or otherwise) for the purposes of carrying out the operations are shown on the plans listed below and executed as relative hereto.

- 15700-501-0 Operations General Arrangement 1 of 10
- 15700-502-0 Operations General Arrangement 2 of 10
- 15700-503-0 Operations General Arrangement 3 of 10
- 15700-504-0 Operations General Arrangement 4 of 10
- 15700-505-0 Operations General Arrangement 5 of 10
- 15700-506-0 Operations General Arrangement 6 of 10
- 15700-507-0 Operations General Arrangement 7 of 10
- 15700-508-0 Operations General Arrangement 8 of 10
- 15700-509-0 Operations General Arrangement 9 of 10
- 15700-510-0 Operations General Arrangement 10 of 10

4. Cost

The estimated cost of the said operations is approximately Thirteen Million Five Hundred Thousand Pounds. (£13,500,000.00).