



Aberdeen Harbour Expansion Project

Construction Environmental Management Document

AHEP-DRA-APP-0001 Rev 3

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DRAGADOS

Contents

Chapter 1	Introduction
Chapter 2	Roles and Responsibilities of Staff
Chapter 3	Construction Method Statement
Chapter 4	Archaeology Plan
Chapter 5	Construction Lighting Management Plan
Chapter 6	Construction Traffic Management Plan
Chapter 7	Dredging and Dredge Spoil Disposal Management and Monitoring Plan
Chapter 8	Fish Species Protection Plan
Chapter 9	Habitat Management Plan and Otter Protection Plan
Chapter 10	Landscape Mitigation Compensation Plan
Chapter 11	Marine Mammal Mitigation Plan
Chapter 12	Marine Non-Native Species and Biosecurity Management Plan
Chapter 13	Noise and Vibration Management Plan
Chapter 14	Piling Management Plan
Chapter 15	Pollution Prevention Plan
Chapter 16	Nigg Bay Site of Special Scientific Interest Management Plan
Chapter 17	Vessel Management Plan
Chapter 18	Waste Management Plan
Chapter 19	Existing Abstractions and Discharges
Chapter	Ground Gas and Groundwater Report: Phase II Site Investigation Risk Assessment

Chapter 19

Existing Abstractions and Discharges

Revision Log

Revision Number	Date	Location of Revision	Revision Details
Rev 2	16/05/2018	Front of Document	Document updated to Rev 2 and Date updated
		Throughout Document	UFI updated to their new name, Pelagia (UK) Ltd.
		Section 19.2	Construction dates of Marine Scotland Intake removed Text addition under sections Temporary MSI Regime and Permanent MSI
		Section 19.2, Figure 19.1	Figure updated
		Section 19.5	Text updated and Figure 19.5 updated.
		Section 19.6	Text updated
		Figure 19.6	Figure updated
Rev 3	16/10/2019	Front of Document	Document updated to Rev 3 and date updated
		Section 19.4	Figure 19.4 updated Updated information regarding methodology for ETB realignment.

Contents

	Page
19 Existing Abstractions and Discharges	1
19.1 Introduction	1
19.2 Marine Scotland Intake	1
19.3 United Fish Industries Outfall	4
19.4 East Tullos Burn	6
19.5 Girdleness Outfall	8
19.6 New Coast Road Drainage Outfall	8

19 Existing Abstractions and Discharges

19.1 Introduction

This document outlines the plan to protect and appropriately locate existing abstractions and discharges in the vicinity of the licensed activities. The primary abstraction is the Marine Scotland (MS) abstraction point, and the three primary discharge assets are: Pelagia (UK) Ltd. outfall, East Tullos Burn and Girdleness Sewer outfall.

The requirement to produce this document is listed under the Marine Construction Licence Condition 3.2.4 and 3.2.17, the Marine Dredging and Disposal Licence Condition 3.2.4 and 3.2.11.

19.2 Marine Scotland Intake

Dragados will relocate the MS Intake from its current position in Nigg Bay to a new location at the North Breakwater (Figure 19.1). The new solution will be implemented in two different stages: temporary and permanent. Both solutions have been agreed in principle with MS, subject to the design development and final agreement.

Temporary Marine Scotland Intake Regime

Whilst Dragados are constructing the new, permanent MS intake, the existing MS intake will continue to be used. Dragados have implemented a monitoring regime to maintain the quality of the water (more specifically pH, turbidity and dissolved oxygen) received by MS from the existing intake location.

An action plan has been agreed with MS (document Reference: AHEP –DRA-PLN-0005). As part of the action plan, monitors have been installed at the Marine Laboratory and a temporary water tank installed at the junction of St Fitticks and Coast Road. Should the monitors indicate that pH, turbidity or dissolved oxygen levels are beyond/below those agreed with MS, then the water supply will be changed from Nigg Bay to the water tank. The water tank will be refilled with water abstracted from the vicinity of the North Breakwater, Stonehaven or another suitable source. To ensure the water at vicinity of the North Breakwater or Stonehaven is fit for purpose it has been subject to an ongoing programme of water quality monitoring, undertaken by Dragados. Any changes to the abstraction point will be agreed with MS and the required testing take place.

Permanent Marine Scotland Intake

A new MS Intake will be installed at the North Breakwater. Two parallel holes will be drilled through the core of the breakwater and a pump will draw seawater through the holes and then a filter unit. The pump will be located within a pumping station building as detailed in Figure 19.1. The pump station will be secure within the harbour estate and accessible to MS from the main access gate. The intake water

will be routed along a buried 125mm pipeline towards Greyhope Road and then directed northerly along the underground utilities pipelines route to join in with existing pipeline that transports water from Nigg Bay to the MS aquarium.

The permanent solution will be constructed during 2019.

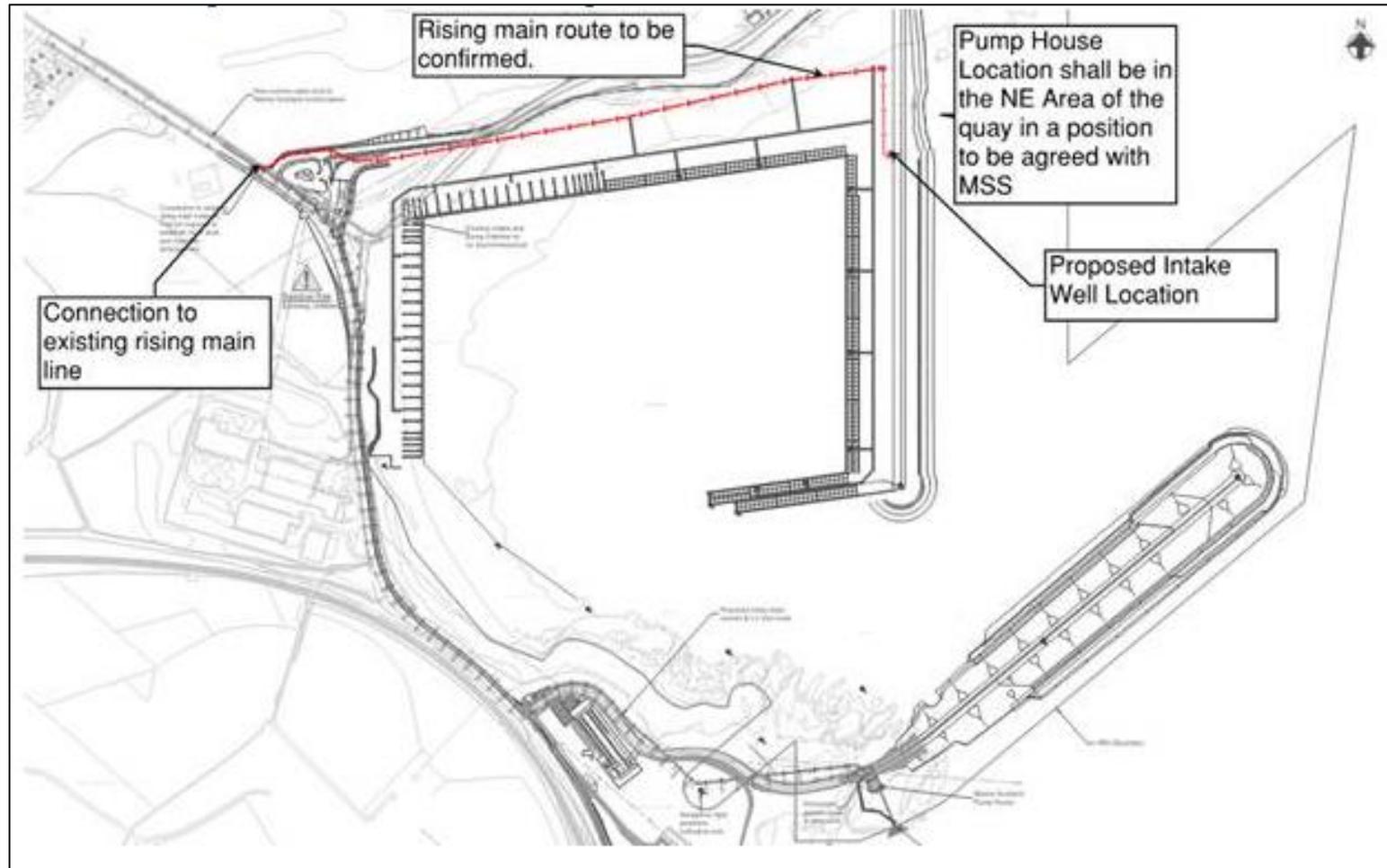


Figure 19.1: Location of relocated MS intake

19.3 Pelagia UK Ltd. Outfall

Dragados will install a temporary and permanent solution for the Pelagia (UK) Ltd. (formally United Fish Industries) outfall discharging into Nigg Bay. The full outfall system originates in the Pelagia (UK) Ltd. premises situated on Greenwell Place within the East Tullos industrial estate, running east towards the bay through a series of inspection chambers. The final chamber is located to the east of the Coast Road. Dragados will modify and realign the pipeline from this point moving eastwards through to the outfall location (Figure 19.2 current, Figure 19.3 new pipe route).

The proposals for the temporary and permanent outfalls have been agreed in principle with Pelagia (UK) Ltd., subject to design development and final agreement.

The outfall will be protected during the early phase of construction via the installation of a designated plant crossing point, this crossing will be subject to weekly visual monitoring to ensure stability and structural integrity.

The temporary diversion and the West Quay open piles will be installed simultaneously. The sequence of works will be: new route excavation, new pipeline installation and connection (this last activity will require a 24 hour shutdown operation). Flow will be established again on the same day. The system will run in its temporary state until the installation of the transversal beams of the West open quay.

Programmed for installation in 2019, the permanent outfall will transition over from the temporary on successful installation of the 9th transversal beam of the West open quay. The transition also requires a 24 hour shutdown. The activation of the new solution will also be carried out on this same date.

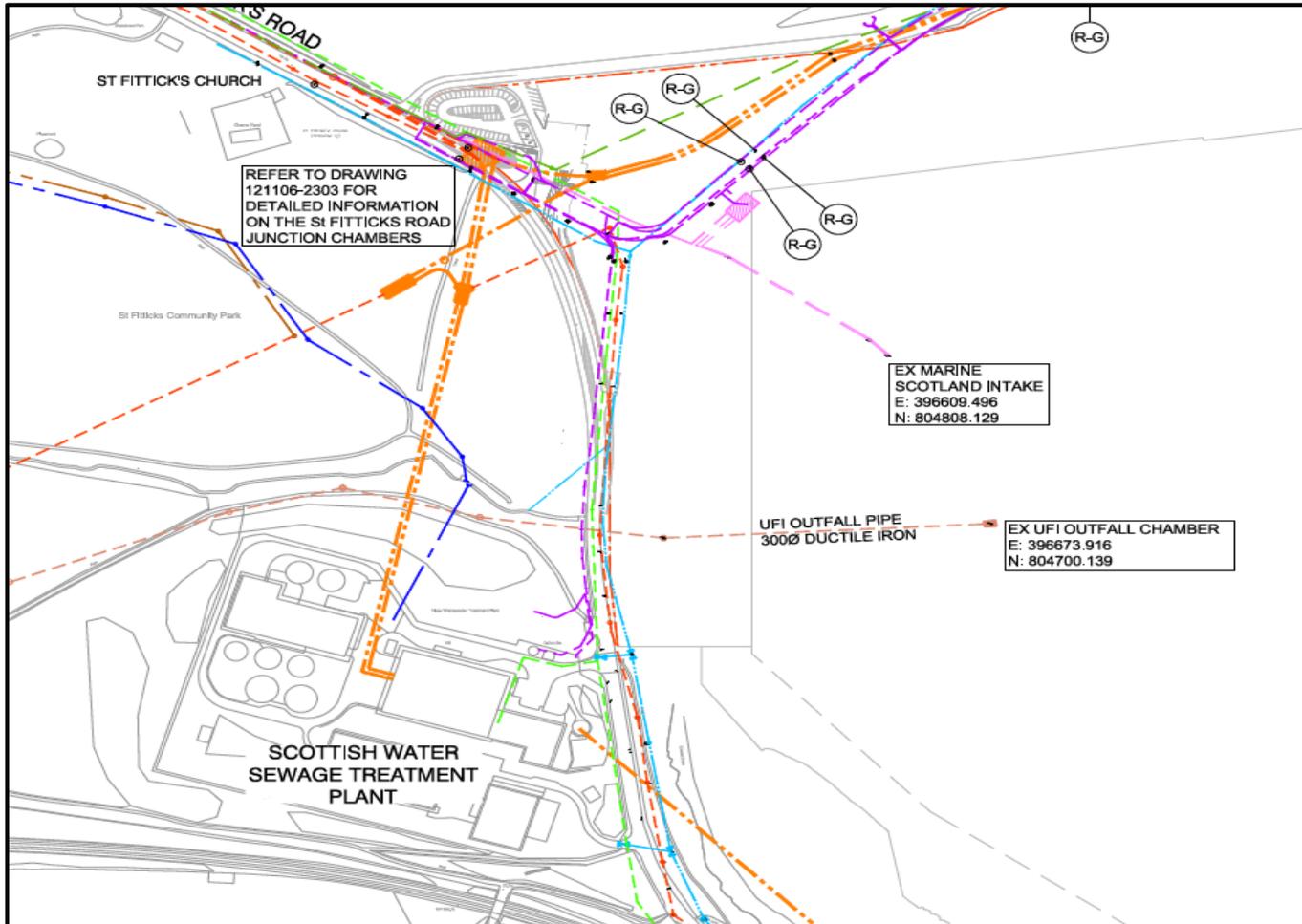
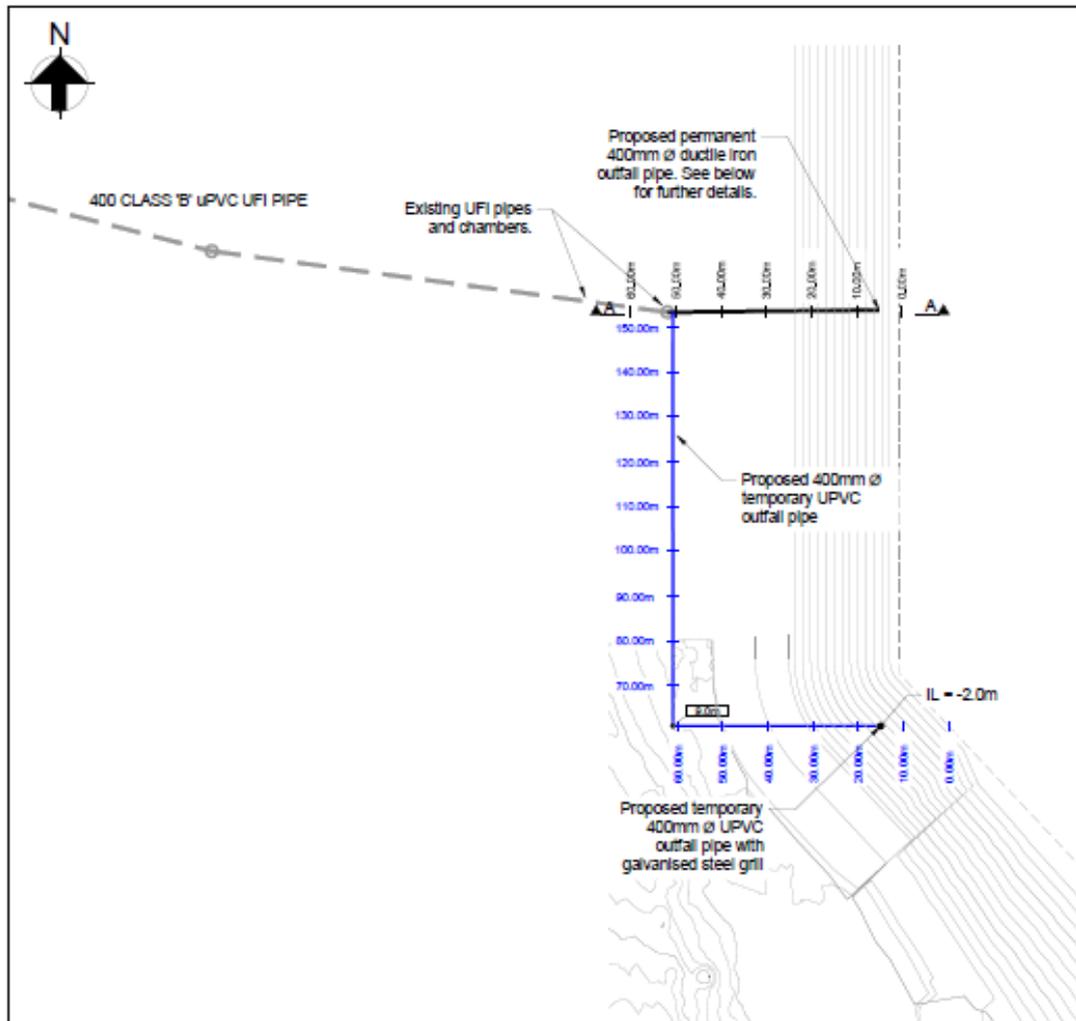


Figure 19.2: Pelagia (UK) Ltd. outfall current location



Location Plan
Scale 1:1000

Figure 19.3: Temporary and Permanent Pelagia (UK) Ltd. Location

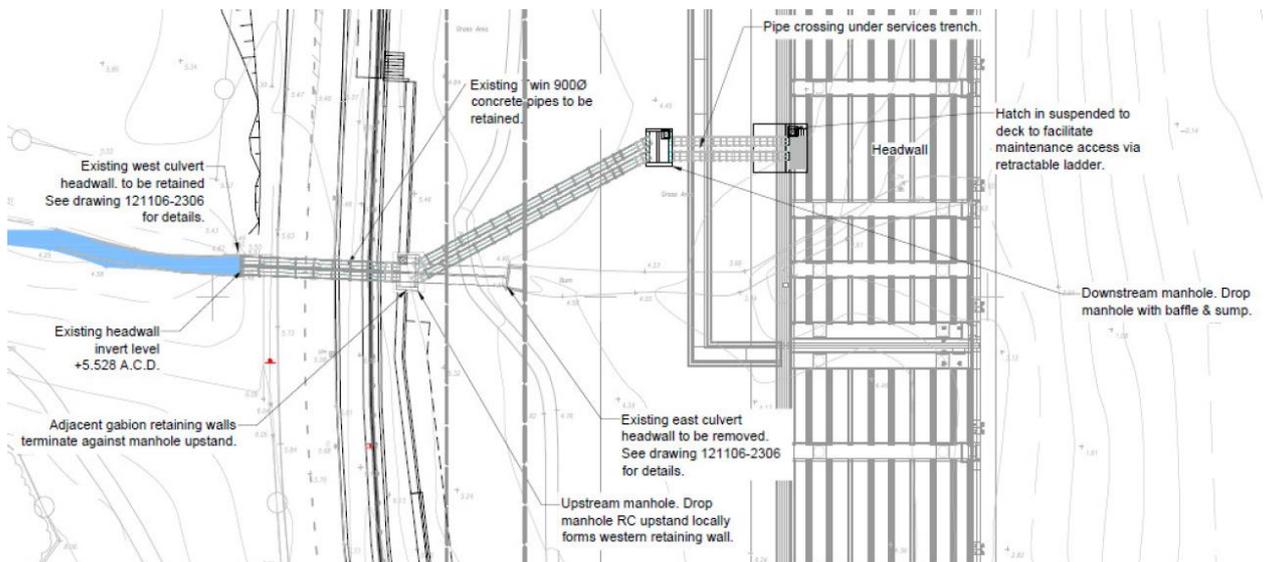
19.4 East Tullos Burn

Dragados will modify and realign the East Tullos Burn which currently flows under the Coast Road at the west end of Nigg Bay through a system of 900mm culvert pipes, discharging and filtering through the Nigg Bay beach. Modification is required by removing the existing headwall unit to expose twin concrete 900mm diameter pipes. On exposure, realignment will be carried out with the installation of a drop chamber to achieve the required levels of discharge under the West Quay open piled structure. The drop chamber will connect to twin 900mm diameter concrete pipes, protected with a headwall at the outfall.

The current system will be maintained until works on the West Quay in 2019 require that the new proposal is installed.

Removal of the existing apparatus will be limited to only the headwall unit as the remainder will be used as part of the permanent works.

Figure 19.4: ETB existing and future location



All works required for the construction of the East Tullis Burn permanent culvert diversion can be summarized in the following list, not necessarily in construction order:

- Establish exclusion zones around protected areas, utilities and assets within works area
- Set new access to the southern half of the platform from Coast Road
- Cat and genny scan for services
- Trial pits to identify location and level of utilities within works area - Scottish Water combined sewer
- Materials stored within works area to be transported to an alternative storage area or removed for disposal
- Diversion of the existing burn by an alternative route until construction of all components of the new culvert system are completed - amendment of the temporary diversion route if in collision with the permanent route
- Construction of upstream pipes laying
- Construction of the outfall structure and downstream MH together with pipes laying
- Construction of the upstream manhole
- Construction of the connection into existing East Tullis Burn pipes allowing flow into the new culvert system
- Dismantling of the temporary East Tullis Burn culvert diversion

These works have been reviewed and accepted by SEPA and are subject to the conditions described in the SEPA license CAR/S/1170838.

19.5 Girdleness Outfall

Dragados will protect the third party owned (owned by Scottish Water, operated by Kelda), combined sewer outfall, which crosses the proposed site at its northern end. The sewer acts as a CSO (Combined Sewer Overflow) when the local public drainage system, conveying flows to the Nigg Waste Water Treatment Plant, is overwhelmed. Based on the current Scottish Water model, the CSO is predicted to spill 26 times per year, giving it a 7.1% chance of spilling in any given day.

Completed in 1906, the Girdleness is of brick construction, and may need to be protected should the proposed cover to the sewer be amended, or increased loadings are anticipated above the sewer. Various solutions have been proposed and are currently being discussed with Scottish Water with a view to agreeing an appropriate solution.

During construction stage and until the permanent solution is provided, exclusion zones over the outfall and protection slabs in any crossing have been put in place, as discussed and agreed with Scottish Water.

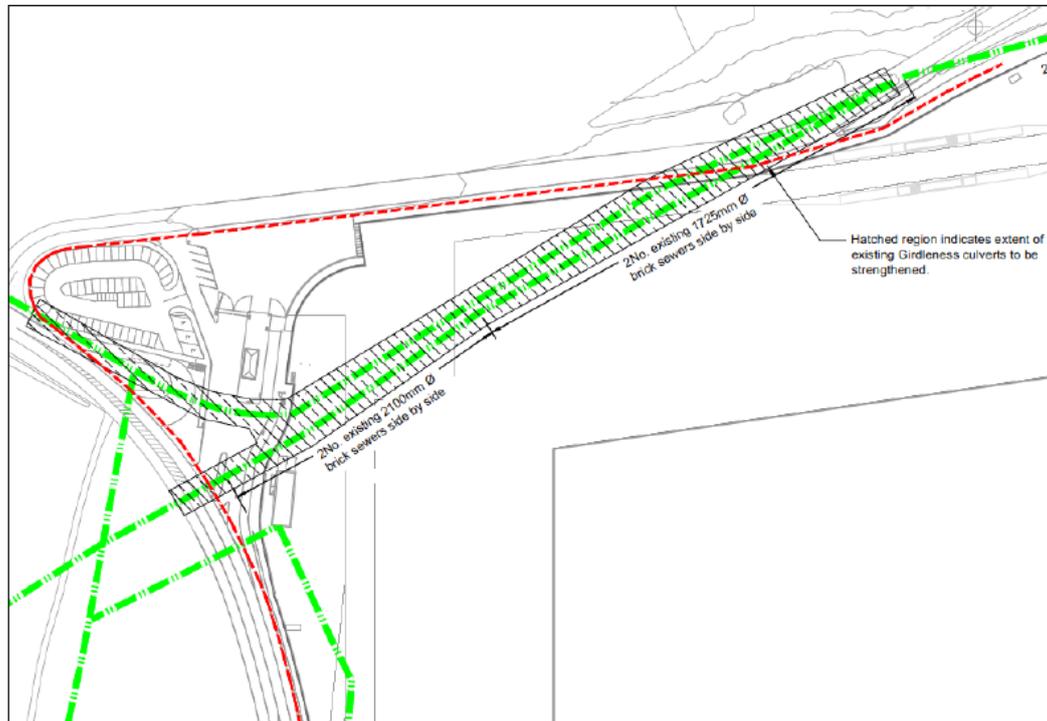


Figure 19.5: Girdleness Protection Plan

19.6 New Coast Road Drainage Outfall

The existing St Fitticks Road and Greyhope Road will be realigned to accommodate the footprint of the new harbour. As part of the road re-alignment works a new surface water drainage system to cater for run off from the re-aligned roads will be installed. A network of filter drains and carrier pipes will convey water to the lowest point on St Fitticks Road. At this point a drop chamber will be located that will facilitate a new 300mm outfall pipe to be installed under the West Quay open piled structure with the addition of a headwall at the outfall location (See Figure 19.6).

The technical detail of the proposed road drainage system is detailed in the Road Construction Consent (RCC) design, agreed with Aberdeen City Council.

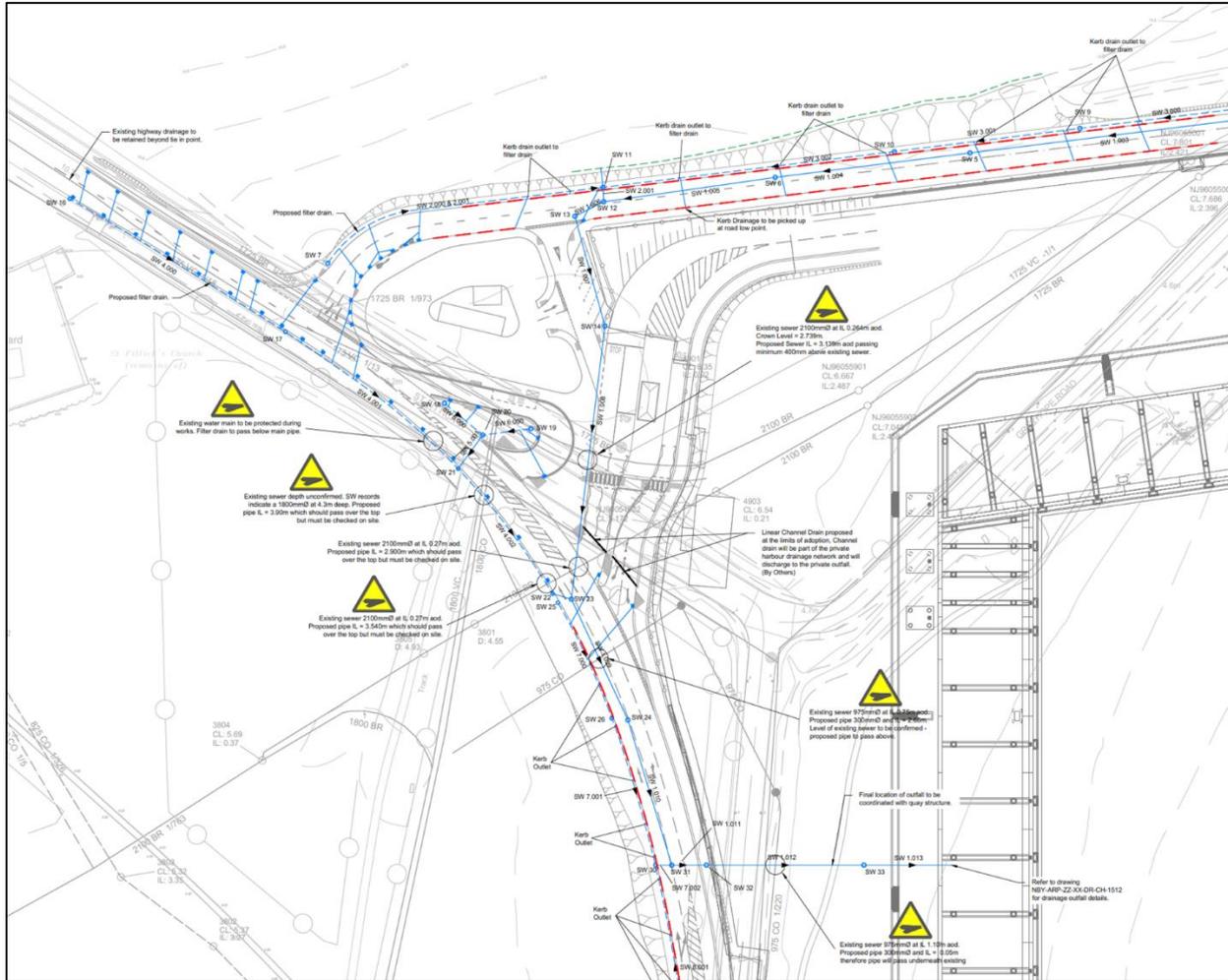


Figure 19.6: New Coast Road Drainage Outfall