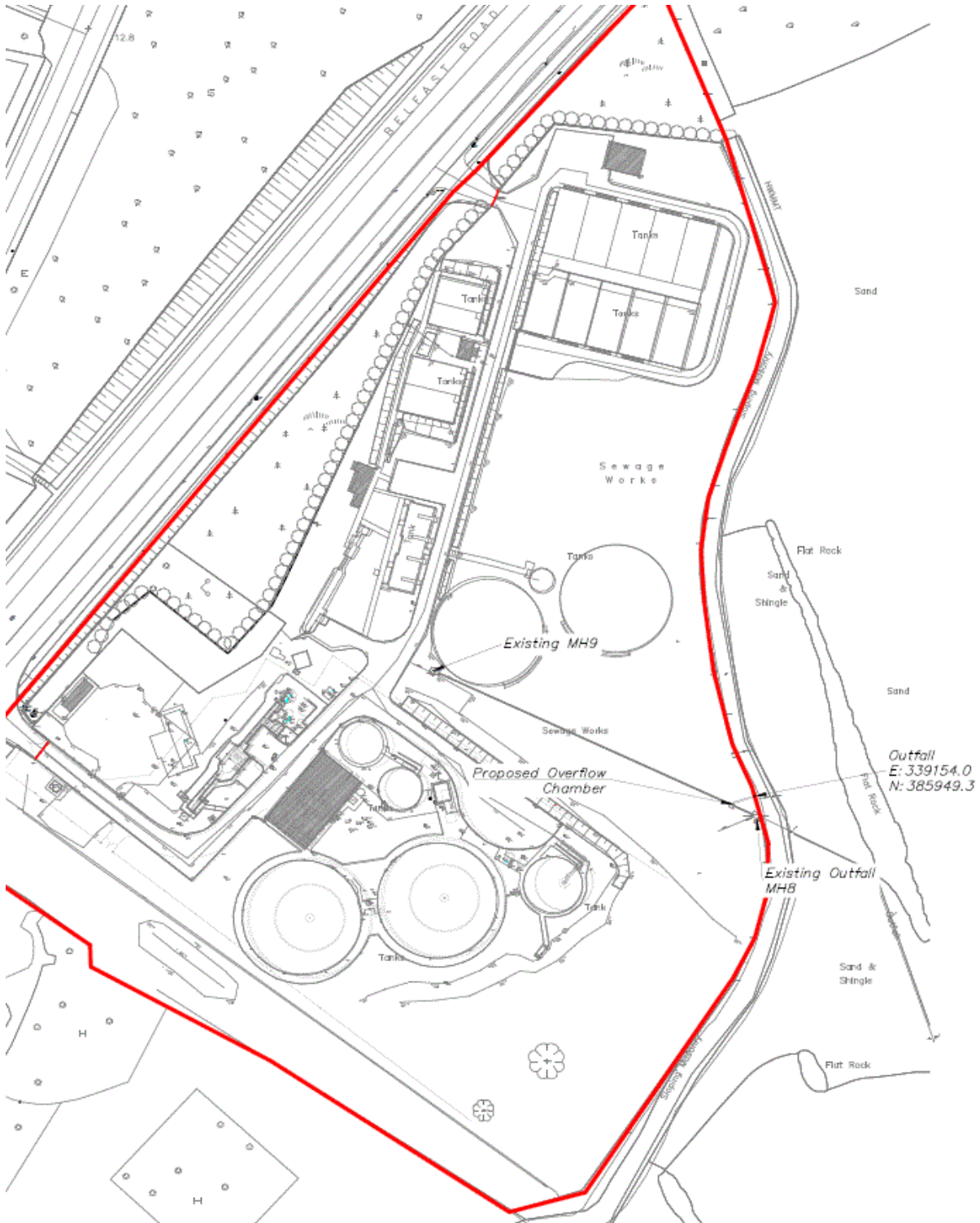




**Google map to show the location of the Greenisland site and outfall**

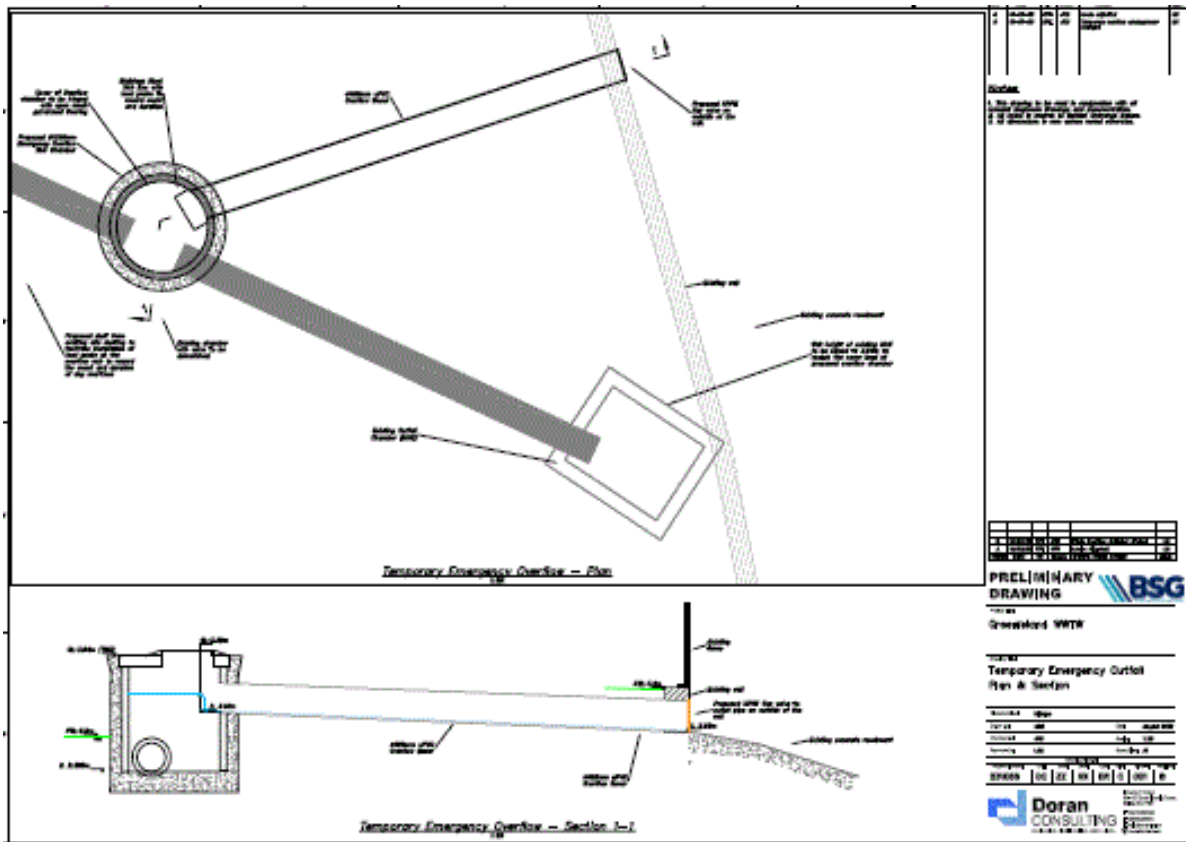
<b>Project Title</b>	<b>Greenisland WwTw – Temporary storm outfall</b>
<b>RAMS</b>	<b>RAMS 10 Rev C</b>
<b>Date:</b>	<b>14/09/2023</b>



**Greenisland WwTw site boundary and New Outfall co-ordinates – Appendix A**

### 1.0 Introduction

NI Water is undertaking a project which will alleviate flood issues at the existing outfall chamber. The project involves the design and construction of a weir, pipeline, chambers, flow measurements, adjustments to existing infrastructure to refine the hydraulic profile of the outfall. The proposed scheme will alleviate flooding and prevent flood waters from spilling uncontrolled over the existing sea wall in the future.



### Greenisland WwTw, proposed temporary storm overflow pipe – Appendix B

### 2.0 Methodology

Design all elements of the works, including:

- Overflow weir.
- Pipeline from the overflow weir to the outfall.
- Event/Duration monitoring in the new pipeline.

- Flap Valve at sea wall to prevent debris from coming up the pipe.
- Raising of cover level in existing and proposed chambers to prevent out of sewer flooding by directing flood waters through the proposed overflow arrangement.
- Investigate any pipework to be abandoned to ensure abandonment does not negatively impact the operation of the Wastewater Treatment Works.
- Ensure existing outfall chamber is sealed to allow for the proposed interim outfall to function as intended.

### **Outline Proposals**

- The existing SI survey data will be consulted prior to site attendance to ensure the ground conditions and underground services are adequately considered.
- Oil fuels on site will be handled in line with PPG2 – Above Ground Oil Storage Tanks. Any fuel storage tanks present on site will feature a bund capable of storing 110% of the tank capacity and the storage tank will be located on an impermeable surface away from drainage sewers and 10 m away from all waterways. The required plant will be inspected and refuelled a minimum of 10m away from all waterways, including the Belfast Lough. Appropriate spill kits will be present on site.
- An exclusion zone will be set up to protect members of the public and NI Water staff for the duration of the works.
- Trial pits will be dug along the length of the proposed pipe to confirm ground conditions and confirm the positions of the existing pipeline and any potential obstructions/clashes.
- Once all potential obstructions have been identified and resolved, the pipe will be laid through the existing sea wall with the use of saw cutting.
- Pipework will be laid as per the relevant specifications, ensuring the correct line and levels are used, the correct surround is placed around the pipework, and that the pipework is correctly sealed. Any chambers will also be constructed to the relevant specifications.
- The connection to the existing infrastructure will take place during a time of low incoming flows. The overflow weir will be a stainless steel box fitted within the overflow connection chamber and can be completed without the need for over pumping. Similarly, the new overflow chamber can be constructed over the existing storm pipe without affecting the flows.
- Level probe and associated cabling and ducting will be installed to record the event and duration of any overflows.
- Once the proposed infrastructure has been placed, the area will be reinstated.
- Once the works have been completed and the area is made safe, the exclusion zone will be removed.

## **Detailed design**

Extensive design will include topographic and hydraulic checks and optimisation  
CCTV and jetting of the existing outlet pipes to the boundary of the site will also be carried out to ensure optimum operation of the existing pipes

Timing of the works is essential to ensure low tide and during dry weather. The design will allow for the tideflex valve to be installed during low tide and without the need for a cofferdam.

All plant to be utilised on the scheme is to be service checked, inspected for leaks, and power washed prior to being loaded on to the low loaders for transportation to the site.

As working with the tide, it is envisaged that ground water pumping will be minimal. Any pumping will be passed through a filter sock or settlement tank before being discharged through the existing outfall pipe

## **3.0 Conclusion**

BSG Civil Engineering Ltd have significant marine construction experience with relevant local contracts completed including

- Portballintrae Harbour Refurbishment
- West Bay Strand Environmental Improvements
- Rathlin Island Ferry Terminal
- Benone Long Sea outfall
- Christie Park Pontoon, Coleraine

Lessons and experiences gained from the varied construction experience will allow the safe and controlled construction of the headwalls within the water edge.

All operatives to receive site induction identifying all H&S Issues, access arrangements and environmental control measures prior to mobilisation on site. Only competent people will be employed on site, complimented with excellent machinery with biodegradable oil. Spill kits are standard provisions on all our sites in the unlikely event of oil spill.

Weather forecast and tide levels are to be monitored throughout the work

Work will only commence when all statutory approvals are in place



**Contract Method Statement**

Hazards which create potential for harm					
Contact plant/equip	<input checked="" type="checkbox"/>	Manual handling	<input checked="" type="checkbox"/>	Undergr'd services	<input type="checkbox"/>
Moving plant/Vehicles	<input checked="" type="checkbox"/>	Lifting Operations	<input checked="" type="checkbox"/>	Lone Working	<input type="checkbox"/>
Access Scaffold etc	<input checked="" type="checkbox"/>	Small plant & Tools	<input checked="" type="checkbox"/>	Environment	<input checked="" type="checkbox"/>
Protection of Works	<input checked="" type="checkbox"/>	Biological Hazards	<input type="checkbox"/>	Confined Spaces	<input type="checkbox"/>
Electricity	<input type="checkbox"/>	Heat/Hot process	<input type="checkbox"/>	Diving Activities	<input type="checkbox"/>
Hazardous Substances	<input type="checkbox"/>	Excavation	<input checked="" type="checkbox"/>	Marine based Operations	<input checked="" type="checkbox"/>
Mandatory PPE Required					
