

Isles
of
Scilly



Isles of Scilly Capital Delivery Programme

Environmental Impact Assessment Screening Report

St Martin's Water Supply Project

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1 Introduction

1.1 Background

1.1.1 Pell Frischmann have been commissioned by Trant Engineering Limited (Trant, the ‘Principal Contractor’), on behalf of South West Water Limited (SWWL, ‘the Undertaker’), to produce an Environmental Impact Assessment (EIA) Screening Report for the St Martin’s Water Supply Project (‘the proposed scheme’). The proposed scheme is located on the island of St Martin’s, within the Isles of Scilly archipelago. Appendix A should be referred to for details of the proposed scheme layout.

1.1.2 Potable water on St Martin’s is currently abstracted via boreholes at Lower Town, Middle Town and Higher Town. A review of existing infrastructure was undertaken by AECOM Limited (refer to: Isles of Scilly St Martin’s – Potable Water Survey Outcomes, Evaluation and Recommendations Technical Report – which was issued in 2019). The report identified that the existing potable water infrastructure and reliance on extraction of groundwater was unlikely to be sufficient to meet the needs of residents and visitors to St Martin’s in the future.

1.1.3 Post the enactment of *The Isles of Scilly (Application of Water Legislation) Order 2019 (as amended)*, South West Water Limited (SWWL; the Undertaker) was appointed as Statutory Water and Sewerage Undertaker, under the *Water Industry Act 1991 (as amended)* [the 1991 Act], for the Isles of Scilly. As such, SWWL has a statutory duty under the 1991 Act to provide an effective and economical system for the supply of wholesome drinking water and sewerage services. The Undertaker is progressing the current Isles of Scilly Capital Delivery Programme to comply with this duty by improving the resilience, quality and compliance of the existing water and sewerage infrastructure across the Isles of Scilly.

1.1.4 Additionally, the Undertaker has further duties under Section 3 of the 1991 Act to have due regard and consideration – so far as may be consistent – while conducting its function as the Statutory Undertaker for:

- The conservation and enhancement of the environment;
- The protection and conservation of elements of historical interest; and
- The effect of which proposals could have on the beauty or amenity of an area.

1.1.5 The environmental, historical and tranquil aspects of the Isles of Scilly are considered throughout the design and proposed construction process, so far as possible, while also complying with the Undertaker’s central duty to provide and maintain an effective and economical system for the residents of, and visitors to, the isles.

The Need for the Scheme

1.1.6 SWWL are investing to improve resilience and compliance, as well as investing in improving water quality to create a stable resource to improve water quality and increase supply during peak season (April to September). SWWL subsequently engaged Pell Frischmann to undertake the design of new potable water infrastructure for St. Martin’s.

Purpose of the Report

1.1.7 The purpose of this report is to provide the Council of the Isles of Scilly and the Marine Management Organisation (MMO) with sufficient information to formulate a Screening Opinion in accordance with Regulation 5(1) and (2) of *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*¹ (the

¹ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [last accessed: January 2024]. Available at: [The Town and Country Planning \(Environmental Impact Assessment\) Regulations 2017 \(legislation.gov.uk\)](https://www.legislation.gov.uk/uksi/2017/1003/contents/make)

'EIA Regulations'). and the Schedule 1 of *The Marine Works (Environmental Impact Assessment) Regulations 2007*².

1.1.8 This report accompanies a written request for an EIA Screening Opinion and aims to inform the relevant authorities about the potential for significant environmental effects from construction and operation of the proposed scheme, in accordance with the EIA Regulations.

1.1.9 Pell Frischmann have considered the proposed scheme in-line with the screening selection criteria listed under Schedule 3 of the EIA Regulations (summarised in Section 1.2 overleaf). The Undertaker is seeking to confirm that the proposed scheme **is not** an EIA development.

1.2 Environmental Impact Assessment Regulations

1.2.1 The proposed scheme does not meet the criteria for either Schedule 1 or Schedule 2 developments as per the *Town and Country Planning Environmental Impact Assessment Regulations 2017*. It most closely aligns with 'Infrastructure Projects (I) Installations of long-distance aqueducts' from Column 1 in Schedule 2. However, published government guidance on the interpretation of this legislative threshold is for pipelines over 5km in length, this project has approximately 1.07km. The project is located within identified 'sensitive areas' (as defined in Section 2.1.3) including:

- The Isles of Scilly National Landscape;
- The Isles of Scilly Complex Special Area of Conservation (SAC);
- The Isles of Scilly Special Protection Area (SPA).

1.2.2 Additionally, due to the marine aspects of the project, the Undertaker is seeking a Screening Opinion as stipulated in the *Marine Works (Environmental Impact Assessment) Regulations 2007* from the MMO.

1.2.3 This EIA Screening Report has been prepared in line with the '*Selection Criteria for Screening Schedule 2 Development*' of Schedule 3 Regulation 5(4) of the EIA Regulations. Said criteria are listed within Table 1-1 below, along with each section in which the criteria has been addressed. This EIA Screening Report has also been prepared in line with Schedule 1 of *The Marine Works (Environmental Impact Assessment) Regulations 2007*.

1.2.4 Selection criteria within Schedule 3 of the EIA Regulations considers the sensitivity of the receiving environment. The characteristics and location of the development and the characteristics of the potential impacts must be considered to determine whether the proposed scheme is likely to have significant effects on the environment. If there are no significant environmental effects, then the proposed scheme would not constitute an EIA development.

Table 1-1: Schedule 3 Selection Criteria for Screening Schedule 2 Development (as per EIA Regulations)

Schedule 3 Criteria	Report Section
Characteristics of the development	
The characteristics of development must be considered regarding -	
(a) The size and design of the whole development;	Section 2
(b) Cumulation with other existing development and/or approved development;	Section 12
(c) The use of natural resources, in particular land, soil, water and biodiversity;	Sections 3, 4, 6, 7 and 8
(d) The production of waste;	Section 10
(e) Pollution and nuisances;	Section 8 and 9
(f) The risk of major accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge;	Section 11
(g) The risks to human health (for example, due to water contamination or air pollution).	Section 7 and 11

² The Marine Works (Environmental Impact Assessment) Regulations 2007 [last accessed July 2024]. Available at: <https://www.legislation.gov.uk/uksi/2007/1518/schedule/1>

Schedule 3 Criteria	Report Section
<p>Location of development The environmental sensitivity of geographical areas likely to be affected by development must be considered, with regard, to –</p>	
<p>(a) The existing and approved land use; (b) The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground; (c) The absorption capacity of the natural environment, paying particular attention to the following areas – i. Wetlands, riparian areas, river mouths; ii. Coastal zones and the marine environment; iii. Mountain and forest areas; iv. Nature reserves and parks; v. European sites and other areas classified or protected under national legislation; vi. Areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure; vii. Densely populated areas; viii. Landscape and sites of historical, cultural or archaeological significance.</p>	<p>Section 2</p>
<p>Types and characteristics of the potential impact The likely significant effects of the development on the environment must be considered in relation to criteria set out in paragraphs 1 and 2 above, regarding the impact of the development on the factors specified in regulation 4(2), considering –</p>	
<p>(a) The magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected); (b) The nature of the impact; (c) The transboundary nature of the impact; (d) The intensity and complexity of the impact; (e) The probability of the impact; (f) The expected onset, duration, frequency and reversibility of the impact; (g) The cumulation of the impact with the impact of other existing and/or approved development; (h) The possibility of effectively reducing the impact.</p>	<p>Section 3,4,5,6,7,8,9,10,11,12 and 13</p>

Completed Surveys and Assessments

1.2.5 This EIA Screening is informed by ecological and heritage desktop assessments and walkover surveys. These include:

- Preliminary Ecological Appraisal (PEA);
- Lichen Survey;
- Invertebrate Desktop Assessment and Fieldwork Survey;
- Marine Desk Study and Benthic Environmental Survey;
- Arboricultural Assessment;
- Biodiversity Net Gain Strategy (project wide);
- Sustainability Strategy (project wide);
- Construction Desktop Assessment and Operational Noise Assessment;
- Generic Quantitative Risk Assessment (contaminated land) and Pre-Construction Soils Waste Assessment; and
- Heritage Impact Assessment.

1.2.6 The findings of these assessments are discussed throughout this EIA Screening.

1.2.7 A Habitats Regulations Assessment will be produced for the proposed scheme. A summary of the approach to this assessment is provided within the Habitats Regulations Assessment section of Section 3.

Consultation

1.2.8 The Isles of Scilly Wildlife Trust were consulted during the preliminary design of the proposed scheme. Consultation provided additional knowledge of local terrestrial and marine species and informed the scope of further surveys. Consultation with the Wildlife Trust will be ongoing throughout the development of the proposed scheme.

1.2.9 Ongoing or future consultation is proposed with the following bodies:

- Natural England (via the Discretionary Advice Service (DAS));
- Marine Management Organisation (MMO);
- Environment Agency (EA);
- Historic England;
- Isles of Scilly Council Planning Officers (including Landscape, Ecology and Archaeology);
- Isles of Scilly Wildlife Trust;
- Isles of Scilly Inshore Fisheries and Conservation Authority (IFCA); and
- Department for Environment, Food & Rural Affairs (Defra).

1.2.10 The MMO, EA and Natural England will also be consulted as part of a Coastal Concordat. Discussions with the Coastal Concordat during consultation are envisaged to include (but are not restricted to):

- The EIA Screening Report Request;
- Habitats Regulations Assessment (Stage 1 Screening and Stage 2 Appropriate Assessment);
- Marine Licence Application;
- Water Framework Directive Assessment;
- Natural England Sites of Special Scientific Interest Assent;
- Environmental permitting requirements; and
- The scope of the Ecological Impact Assessment.

1.2.11 Additionally, various other topics will be addressed, such as the necessity for pre-commencement surveys and assessment requirements related to landscape, lighting, air quality and noise.

2 The Proposed Scheme

2.1 Location and Setting

2.1.1 The proposed scheme is situated on the island of St Martin's, with the approximate central point of the site being located at National Grid Reference SV 91786 16032. The scheme crosses through a variety of habitats, including agricultural farmland and green space, farm tracks / access roads, maritime cliff and slope, beach and sea, primarily through underground pipes.

2.1.2 The full extent of the proposed scheme can be viewed in Appendix A.

Sensitive Areas

2.1.3 The EIA Regulations describe a 'sensitive area' as the following:

- A Site of Special Scientific Interest (SSSI);
- A National Park;
- The Broads;
- A property on the World Heritage List;
- A Scheduled Monument;
- An Area of Outstanding Natural Beauty (now referred to as National Landscape); and / or
- A European site.

2.1.4 The proposed scheme is located within a National Landscape. The proposed scheme is also situated partly within the following 'sensitive areas':

- The Isles of Scilly Complex Special Area of Conservation (SAC);
- The Isles of Scilly Special Protection Area (SPA).

2.1.5 In addition, the following 'sensitive areas' are located nearby:

- St Martin's Sedimentary Shore Site of Special Scientific Interest (SSSI) and Impact Risk Zone (IRZ) – the proposed intake and proposed brine discharge outfall near Lower Town is located 7m to the north of the SSSI (and is not within the SSSI itself); and

2.1.6 A plan containing an overview of sensitive areas in relation to the proposed scheme location is provided within Appendix B.

2.2 Proposed Scheme Description

2.2.1 The proposed scheme forms part of SWWL's Isles of Scilly Capital Delivery Programme. The proposed works are comprised of improvements to potable water infrastructure and wastewater network and treatment, and construction of new infrastructure throughout the archipelago.

2.2.2 The proposed works on St Martins are split across three sites;

- Lower Town Beach Seawater Intake,
- Lower Town Reverse Osmosis Treatment Works; and
- Middle Town Treated Water Storage Tank.

2.2.3 Additional below ground pipelines are proposed to connect the three sites and to connect into the existing water distribution infrastructure on the islands.

2.2.4 Lower Town Beach Seawater Intake site, located at Lower Town Quay will consist of a new below ground concrete chamber installed as an extension of the existing quay (as shown in Appendix A). This chamber will house the new intake screen and the brine outfall will be incorporated onto the side. The intake and outfall pipes will be fixed to the northern side of the existing quay, protected with a concrete surround. A short section of open cut trenching will take the intake and outfall pipes to a below ground intake pumping station in the garden of the Karma Hotel. This pumping station will be connected to the Lower Town RO Treatment Works via two directionally drilled pipelines, in order to minimise potential impacts.

2.2.5 The only above ground works associated with the pumping station will be the pump equipment housing, which will be located in the Karma hotel garden (shown in Figure 1 below).

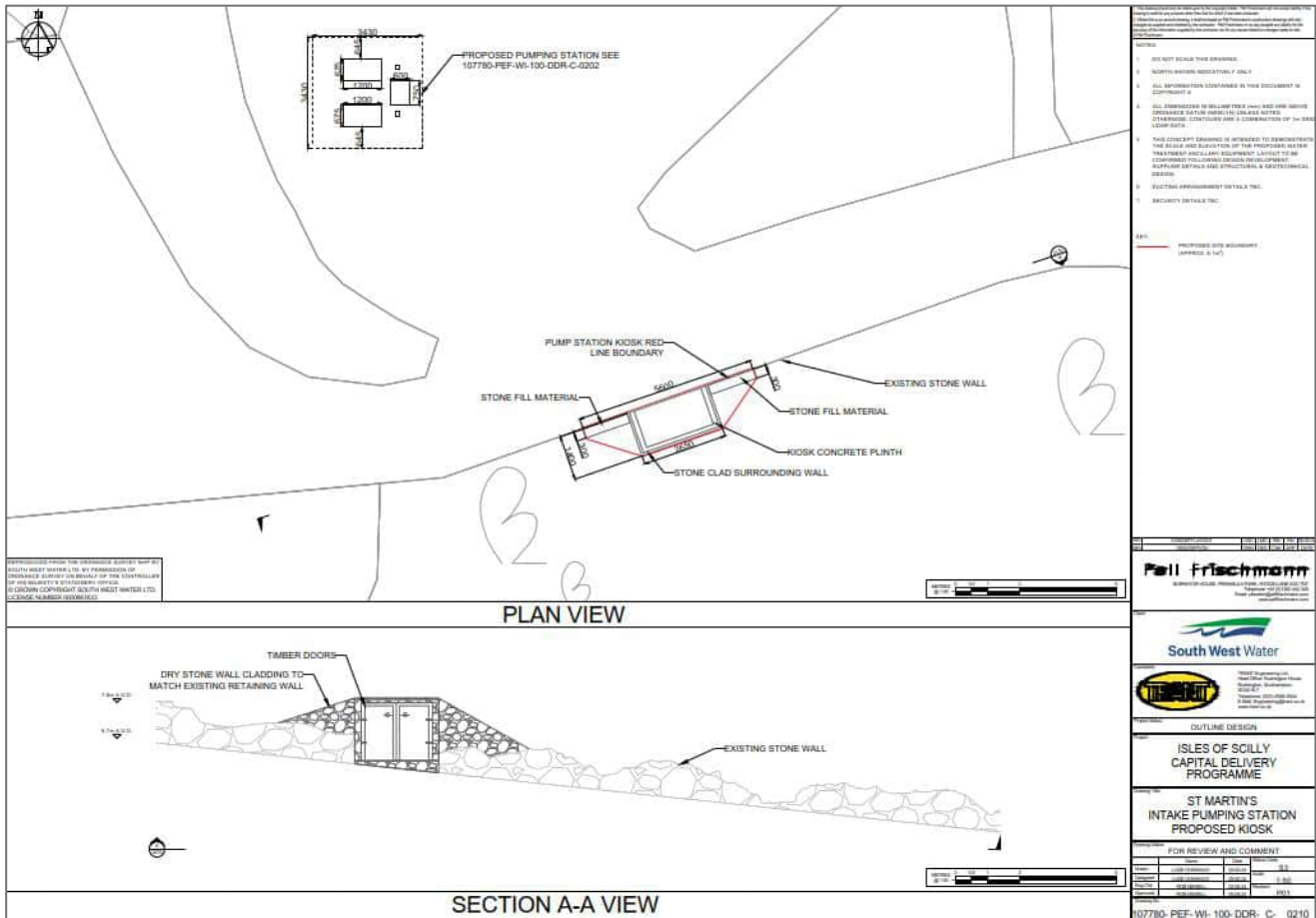


Figure 1: Pumping Station Layout

2.2.6 The Lower Town RO Treatment Works will consist of a steel frame building with timber cladding. This will contain the main water treatment processes to treat both water from the existing boreholes and seawater from the new intake. A separate pre-cast concrete raw water storage tank will be located on site along with several minor above ancillary including a radon tower, contact tanks, a treated water balance tank and an emergency power generator (shown in Figure 2). These new assets will be above-ground. The above ground assets will be sensitively placed/screened to minimise potential visual impacts, in line with the Undertaker's Section 3 duties.

2.2.7 The proposed scheme will supplement the existing small-scale RO plant SWWL already operate on St Mary's.



Figure 3: Middle Town Water Tank Site

2.2.10 Two open cut pipelines will be constructed in a shared trench between the Lower Town Reverse Osmosis Treatment Works and the Middle Town Treated Water Storage Tank. This will allow raw water from the existing borehole sites to be transferred to the new treatment works for advanced treatment and treated water to be pumped to the storage tank for distribution. Additional open cut pipework will also be constructed between the proposed Middle Town Treated Water Tank site and the existing Middle Town Treatment Works to connect into the existing distribution networks.

2.2.11 The proposed scheme will primarily be powered from a mains electrical connection. Opportunities for subsidising energy use from renewable sources will be explored throughout the design process.

2.2.12 The extent of the proposed scheme can be seen in Figure 4. Appendix A provides a breakdown of the elements for the proposed scheme, as discussed above.

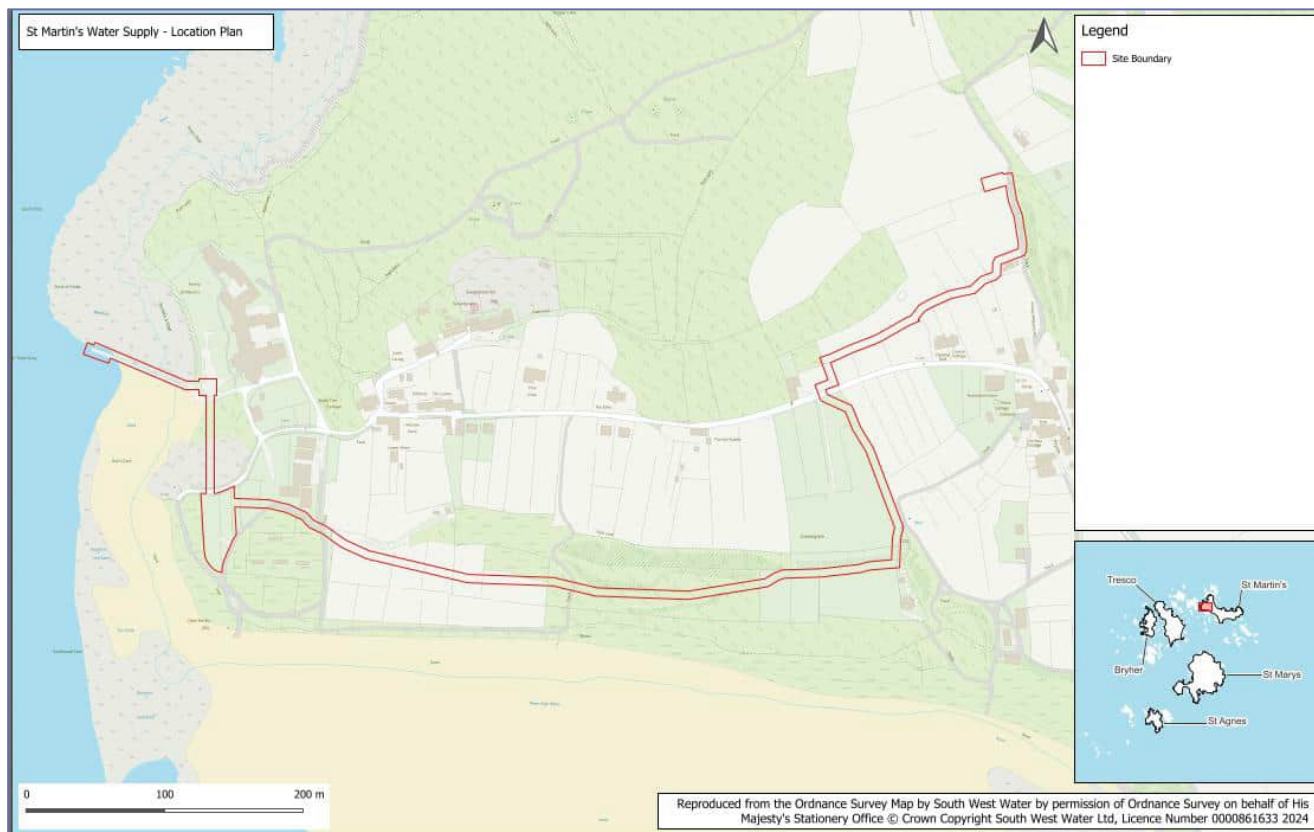


Figure 4: St Martin's Proposed Works (site boundary shown in red)

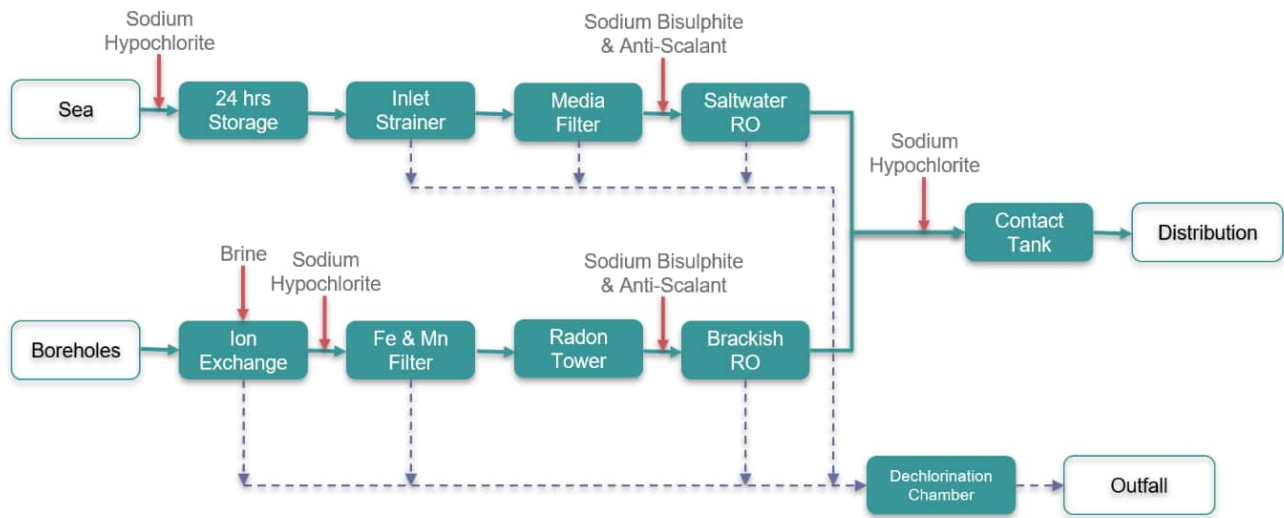
2.2.13 Additional information about various key elements of the proposed scheme is summarised within Table 2-1 below. Figure 5 presents the seawater and groundwater treatment diagram. Sodium Hypochlorite (Chlorine), displayed in Figure 5, will be used as a main chemical disinfectant. The chemicals will be stored in double bunded tanks outside the main treatment room. Dosing cabinets, within the main treatment room, will convey the Chlorine through double bunded uPVC pipework and inject the Chlorine via lances through into the inline static mixers. Table 2-2 presents the extraction, discharge and process plant parameters.

Table 2-1: Key Proposed Scheme Features Information

Proposed Scheme Feature	Location	Size (Hectares)	Length
Total pipework (intake pipework, treated water rising main, and connections to the existing network)	Various (see below boxes for specifics)	➤ 0.64ha (6,400m ²) (including 6m easement for pipework)	1,070m
Seawater intake unit and pipeline	Runs alongside Lower Town Quay encased in concrete.	<ul style="list-style-type: none"> ➤ 150 mm pipe fixed to the northern side of the quay for 90 m. ➤ New pumping station 3.5 m x 3.5 m in the garden of the Karma Hotel. ➤ 90 m directionally drilled pipe from the end of the quay to the treatment site. ➤ The footprint of the intake structure is approximately 0.0006ha (6.25m²) 	160m
Brine discharge outfall and pipeline	Runs alongside Lower Town Quay encased in concrete.	<ul style="list-style-type: none"> ➤ 150 mm pipe fixed to the northern side of the quay for 90 m. ➤ 90 m directionally drilled pipe from the end of the quay to the treatment site. ➤ The footprint of the outfall structure is approximately 0.0006ha (6.25m²). 	145m
Treated water feed pipeline (rising main)	Between Lower Town and north of Middle Town	➤ 0.52ha (5,200m ²) (including 6m easement for pipework)	860m
New booster station and treated water storage tank	North of Middle Town	➤ 0.004ha (~30m ² for the storage tank cells, ~9m ² for the booster pump kiosk)	N/A

Proposed Scheme Feature	Location	Size (Hectares)	Length
RO Treatment plant comprising raw water storage tank, pre-treatment, RO treatment, re-mineralisation, residual chlorine dosing system units and treatment water storage tanks.	Lower Town, approximately 30m east of Lower Town Beach	➤ 0.11ha (1,100m ²)	N/A
Connections to the existing distribution networks for Lower Town, Middle Town and Upper Town	Between Middle Town Treated Water Tank and existing Middle Town Treatment Works	➤ 0.05ha (500m ²) (including 6m easement for pipework)	85m

Proposed Process



RO – Reverse Osmosis

Figure 5 Seawater and Groundwater Treatment Diagram

Table 2-2 Extraction, discharge and process plant parameters

Name	Extracted Volume	Discharged Volume	Production
St Martins Process Plant	-	-	75m ³ /day in peak demand
St Martins Sea Water Reverse Osmosis	170m ³ /day in peak demand	116m ³ /day in peak demand	
St Martins Borehole Reverse Osmosis	32m ³ /day in peak demand	10m ³ /day in peak demand	

Figures within this table have been rounded to whole numbers

Optioneering

2.2.14 Numerous reviews of the design and construction methods have been undertaken to ensure minimal disturbance to the environment during the works with the following principles employed during design and construction of the proposed scheme:

- Achieve the shortest and most direct viable route for pipelines to minimise third-party land requirements and maximise value for customers;
- Avoid construction within existing road networks where possible to minimise disruption;
- Avoid environmentally sensitive habitats and areas, where feasible (such as routing the treated water feed outside of the boundary of sensitive habitats / areas) to minimise adverse impacts to environmentally sensitive habitats;

- Ensure the alignment minimises interaction with property owners and landowners to minimise disruption and third-party land requirements;
- Ensure excavations are as shallow as possible to minimise disturbance;
- Limit the number of high and low points on the rising main and position to allow access to air valve and washout points;
- Minimise the number of crossing points with roads, watercourses and services; and
- Change of pipeline route in response to feedback regarding environmental constraints, such as habitats to limit adverse effects to identified environmental constraints.

2.3 Proposed Construction Methodology

Construction Methods

2.3.1 Construction of the proposed scheme is expected to start in April 2025 and conclude by June 2026, with commissioning between August-December 2026.

2.3.2 The contracted work hours will be agreed with the Local Planning Authority prior to the start of construction with some of the inter-tidal and tidal works scheduled around tide times. A small team of workers will be on site each day.

2.3.3 The construction team will be housed at local accommodation on St Martin's and at the Welfare Compound at St Mary's (approved under planning application reference P/23/086/COU) and will travel to site daily via private transport.

2.3.4 Materials will be transported directly from the mainland to the quay at Higher Town. Landing craft will be used on the beach adjacent to Higher Town Quay which allows for better access to land from the sea. Access will be over the dunes on the cut out by the Seal Snorkelling Adventures. Consideration will also be given to using Lower Town Quay, subject to weight restrictions and the tides.

2.3.5 Storage areas have been identified on the island to support the works. Temporary vegetation and general site clearance will be required prior to this storage area being used. These storage areas will store materials to be used as part of the construction activities, as well as materials that may have been removed from the site. It is likely that the storage areas will also be used as localised construction compounds for the proposed scheme including for the storage of plant after shipment to the island. During the works, plant will be left on site within the working easement with all tracked plant moved above the high tide level when not in use. Any spoil from excavations will be stored next to the excavation for backfilling apart from any excess spoil which will be stored in the storage areas. Spoil associated with the caisson (i.e. a watertight retaining/pumping structure which enables the work environment to be kept dry) will also require removal as it will not be backfilled.

2.3.6 A hybrid lighting set up will be used at the start and end of working days due to the short daylight hours during the winter period. Chapter 8 plastic barriers and Heras fencing will be used as part of the security arrangements on site.

Intake and Outfall

2.3.7 Bedrock levels will be determined following local ground investigations (hand dug trial pits and dynamic cone penetration tests). The levels and composition of the bedrock will be assessed to determine the level in which to excavate via a backhoe dredger on board a marine works platform.

2.3.8 The chamber structure will be preconstructed and preassembled, with the intake screen and a section of adjoining pipework, protruding through the northern wall of the chamber. The chamber structure will be mobilised and transited to site via the marine working platform.

2.3.9 The intake/outfall chamber will then be lifted, slewed, lowered, and positioned, at the toe of the existing St Martins Lower Town Quay into the excavation via a crane atop of the marine works platform. The base of the intake and outfall will be drilled into the granite bedrock using rock anchors. The excavation and laid structure will be surveyed to assess the positioning of the structure. Once the precast unit has been installed, divers will be mobilised (either from shore or supporting vessel) to install the rising main onto the section of pipe protruding the external wall of the chamber. The outfall pipework will then subsequently be installed via divers, deploying the flap valve and adjoining pipework in the subtidal environment.

2.3.10 The intake rising main and outfall pipelines will be located along the northern side of the Lower Town Quay. The pipe spans will be fastened to the existing quay wall with a series of brackets and will be protected by a new in-situ concrete surround.

2.3.11 The outfall pipeline will be following the same route along the northern side of Lower Town Quay, at a slightly higher elevation than the intake.

2.3.12 The lifting and positioning of the pipes in the subtidal zone, will be facilitated by a crane atop of a marine working vessel and positioned by divers. To facilitate joining of pipe spans, electrofusion welding will be performed underwater, with the fusion welding kit on top of the marine works vessel. The pipe spans which fall within the intertidal environment will be lifted and transported by an excavator tracking across the beach accompanied by an able body, to position and weld the pipes. The fusion welding kit will be kept above the high astronomical tide elevation atop of the quay. From the higher extents of the quay wall to the pump station, pipelines will be laid via open trenching. Here the pipes will run subsurface.

2.3.13 The easement required for the intake and outfall chamber will require an area of ~4m² at the toe of St Martins Lower Town Quay, which will be guarded by the marine working platform. The working area for the open-cut excavation entry from the pump station, through to the quay, will also require a working area of ~7m², which will be fenced off using Heras fencing. An area will also be required for storage of materials, although this will be small, as most materials will be stored/moved from one of the identified storage areas, or alternatively on board the marine working platform.

Pumping Station

2.3.14 The new chamber will be constructed within the excavation using precast concrete panels and a new mass concrete surround cast. Covers will be installed on top of the pump station structure flush with existing ground level. The excavation will be backfilled to existing ground level leaving only the covers exposed.

2.3.15 A small housing will be constructed close to the proposed pumping station adjacent to the Karma Hotel. This will include excavation into an existing dry stone retaining wall and bank and construction of a new structure from conventional blockwork construction with a stone work outer finish. All spoil will be removed by excavator and tracked dumper and stored within the working easement where possible or taken to one of the identified storage areas.

2.3.16 The work area of the pumping station will be secured with Heras type fencing for safety for the duration of the works due to depth of the excavation required.

Treated Water Feed

2.3.17 The treated water feed will be placed in a trench excavated using an excavator. In sensitive areas (such as root protection zones and where known buried services are present), excavation will be completed using vacuum excavation equipment or pipe moling to reduce disturbance to hedgerows. Vacuum excavation collects the soil and rock fragments without any penetrating tool, which reduces the risk of striking any uncharted buried services and minimises impacts to root protection zones. Pipe moling displaces the soil beneath the hedgerow with minimal disturbance to the root protection zone.

2.3.18 Subject to ground conditions, where practicable, opportunities for trenchless pipe moling will be explored to avoid potential impacts and removal of hedgerows (notably 'protected hedgerows' under *The Hedgerow Regulations 1997*) and local stone walls. This is discussed in more detail at paragraph 4.2.9.

Reverse Osmosis Plant

2.3.19 The ground surface for the RO Plant will be levelled in preparation for construction. Soil will be stockpiled appropriately within the work area. New above-ground assets will consist of pre-cast, these structures will be assembled on-site, including the tanks, radon tower and structures to house equipment.

2.3.20 New above-ground structures will be constructed with timber cladding to preserve the natural amenity of the surrounding area.

2.3.21 A series of new pumps and other mechanical equipment will be installed and connected to the mains power supply. Where required, additional pipelines will also be connected to the mains water supply.

Service Reservoir

2.3.22 The service reservoir will be constructed in a similar method to the RO plant. Further details on construction are expected as the design matures.

Construction Traffic

2.3.23 It is anticipated that there would be 6-8 movements per day between the storage and working areas, which will include a small dumper transporting aggregates and materials.

2.3.24 Temporary partial road closures would be required on sections where the works are near roads (and when the works are occurring in that section of the scheme). A traffic management system will be in place, which will consist of two staff with Stop/Go signs on each side.

2.4 Construction Environmental Management Plan

2.4.1 A Construction Environmental Management Plan (CEMP) is being developed for the scheme to reduce the potential impacts upon sensitive environmental receptors, in line with current legislation and good practice guidance. The Principal Contractor will be responsible for implementing the CEMP and ensuring construction activities are completed in-line with relevant legislation and guidance.

2.4.2 The following general topics will be outlined within the CEMP:

- General construction information;
- Roles and responsibilities;
- Environmental management requirements including measures for managing the following environmental aspects;
- Dust and emissions to reduce impacts to air quality. Example measures could include spraying water to suppress dust, avoiding excavation and earthwork activities during very dry or windy weather (if feasible), applying a covering over soil stockpiles, and cleaning the road / track near to the works location to avoid spread of dust and debris particles;
- Noise, vibration and light to reduce disturbance to human and environmental receptors. Example measures could include implementation of a no idling policy for construction vehicles, erection of site fencing / hoarding prior to the commencement of construction, using construction plant and equipment which complies with UK noise emission limits), turning off lights when not in use to minimise light spill and ensuring that light scatter is minimised through light height and direction adjustment;

- Hazardous materials to avoid pollution events to watercourses and groundwaters. Example measures may include appropriate storage and management of hazardous materials, and usage of bunding at construction compound / storage areas where appropriate;
- Controls to manage noise and vibration during construction in the marine environment;
- Preventative measures to reduce the potential for impacts to previously unrecorded heritage assets, such as halting work if an unrecorded heritage asset is identified during excavation or groundworks;
- Ecological disturbance through retention of habitat and adjustments to construction methodologies where possible;
- Marine environment measures to reduce disturbance including construction methodologies;
- Maintaining high standards of biosecurity to include measures to prevent the spread of Dutch Elm disease and Invasive Non-Native Species;
- Timing of works to avoid breeding bird season;
- Protection of trees by installing root protection areas, fencing and signage; and
- Specific measures relevant to construction activities, such as methodological measures to reduce impacts associated with moling/vacuum excavation.
- Environmental constraints maps;
- Health and Safety toolbox talks;
- Incident management and investigation procedures; and
- Site environmental toolbox talks.

2.4.3 The CEMP will also secure specific site control measures to ensure the protection of the Nature Conservation Designations that make up the unique environment of St Martin's. These are detailed in Section 3.

2.5 Potential Impacts of the Proposed Scheme

Construction

2.5.1 The following adverse environmental impacts could occur during the construction phase:

- Disturbance of nearby sensitivity receptors due to increased noise and vibration (including underwater) associated with:
 - The movement / operation of construction plant and vehicles;
 - The delivery and movement of construction materials;
- Construction activities including the moling/vacuum excavation operations, installation of pipework and associated infrastructure, construction of plant building;
- Localised air quality impacts from the generation of construction dust associated with construction activities that disturb the ground, such as at the entry point of the direction drill, or from possible material cutting and stockpiling (if required);
- Disturbance of nearby sensitivity receptors from task lighting;
- Direct impact and loss of marine habitats and species, including features of the designated sites, during moling/vacuum excavation activities;
- Temporary and permanent habitat and species loss, including features of the designated sites, for installation of infrastructure and facilitation of works;
- Indirect impact of construction activities on marine habitats and species, such as via sediment disturbance;
- Spread of Invasive and Non-Native Species (INNS) during construction works from Dutch Elm disease and rats;
- Visual impact of the construction works, for the elements of the works which are above ground (such as the RO plant building) or at the entry point of the moling/vacuum excavation operation;
- The possible removal of existing vegetation at above ground locations, or to provide access;
- Disturbance of unidentified below ground archaeological artifacts as a result of directional moling/vacuum excavation works;
- Potential solid waste pollution due to littering during construction works;

- Potential pollution of soil and the underlying aquifer groundwater from:
 - Accidental spillage of chemical products (including fuels, oils and lubricants);
 - The mobilisation of existing unidentified below ground contamination; and
- Potential lighting pollution of the surrounding environment if works are undertaken at night.

Operation

2.5.2 The potential for adverse environmental impacts could occur once operational:

- Potential pollution of the Scilly Isles coastal water body due to the discharge of brine and products produced as part of the RO process; and
- Potential impacts upon the European sites from the intake and outfall and possible consequent impacts upon the sensitive features or species within such sites.

2.5.3 This report will provide suitable mitigation and controls for managing potential impacts from construction and operation of the proposed scheme using best available techniques and advice from specialist third party subcontractors.

2.6 Sustainable Design Principles

2.6.1 The following sustainable design principles and initiatives will be implemented for the proposed scheme:

- The proposed scheme is designed to ensure the most optimal use of space to reduce the footprint of the proposed scheme to reduce land-take and associated impacts to the environment;
- New infrastructure will be designed to reduce embedded and emitted carbon, as well as being designed to reduce waste generation where possible, carbon calculations will be undertaken to support the development of the proposed scheme;
- Opportunities for the use of renewable energy will be explored throughout the design process (as per the Sustainability Strategy);
- Waste soils will be reused and retained on site to reduce the amount of material sent to landfill, where feasible;
- Opportunities to use alternative fuels, electric, and hybrid plant and vehicles during construction will be explored to reduce requirements for fossil fuel sources;
- Use of construction materials that are in-keeping with the surrounding landscape and infrastructure to ensure that the proposed scheme is visually sensitive to the area, particularly considering the presence of the National Landscape and Conservation Area covering the whole archipelago. This is particularly relevant to the above ground elements of the proposed scheme; and
- Utilise existing infrastructure where possible to reduce the need to construct new elements for the proposed scheme, as well as manufacturing design elements off-site as much as is practicable to minimise on-site works.

2.6.2 The proposed scheme will be developed in-line with the Isles of Scilly Sustainability Strategy, identified for the Isles of Scilly Capital Delivery programme and will follow sustainable design and construction methods. The IoS Sustainability Strategy has previously been submitted to IoS Council for review.

3 Nature Conservation Designations

3.1.1 This section is supported by Appendix B and Appendix D.

3.2 Terrestrial

3.2.1 The proposed scheme would be situated within the following statutory designations. These are listed in Table 3-1 below:

Table 3-1: Terrestrial Designations

Designation	Related area of the Proposed Scheme	Reasons for Designation
St. Martin's Sedimentary Shore SSSI IRZ	The boundary for the SSSI is 7m to the south of the proposed sea water intake and outfall. The proposed intake, outfall feed and RO are located within the IRZ.	Whilst the Impact Risk Zone (IRZ) is not a designation itself, the SSSI for which it is associated with is designated for. There is a range of marine wildlife that is exceptionally undisturbed. Stable oceanic conditions and a wide variation in degree of exposure to wave and current action throughout Scilly produce a high diversity of marine habitats. The mild climate results in an abundance of Mediterranean-Atlantic species.
Plains & Great Bay (St Martin's) SSSI IRZ	The proposed new tank and booster station and sections of the treated water feed would be within the IRZ.	Whilst the IRZ is not a designation itself, the SSSI for which it is associated with is designated for: <ul style="list-style-type: none"> ➤ The site is sheltered from westerly gales by St Martin's and White Island, which enables an accreting dune system to develop. The dune, dune grassland and heathland habitats present support several nationally rare and uncommon plant species, and illustrates well sand dune succession; ➤ Some of the rarer species are found in the species-rich dune grassland further inland such as nationally rare Orange Bird's-foot (<i>Ornithopus pinnatus</i>) and Ramping Furmatory (<i>Fumaria capreolata</i>); and ➤ The site also supports a breeding colony of Ringed Plover (<i>Charadrius hiaticula</i>).

3.2.2 Other statutory designations located within 500m of the proposed scheme are presented in Table 3-2 below.

Table 3-2: Terrestrial Statutory Designations within 500m of the Proposed Scheme

Designation	Proximity to the Proposed Scheme	Reasons for Designation
Plains and Great Bay (St Martin's) SSSI	165m east of the proposed booster station	See the explanation included within Table 3-1, above, where the SSSI IRZ is discussed.
Isles of Scilly Ramsar and Tean SSSI and IRZ	191m to the west of the proposed seawater intake	The Isles of Scilly Ramsar covers large portions of the Isles of Scilly archipelago, with the notable exception of the island of St. Mary's. Protected habitats covered by the Ramsar include coastal cliffs, boulder beaches, heathland, and some dune grassland. <ul style="list-style-type: none"> ➤ Abundant glacial erratics on the beaches to the north and northwest of the island, demarking the approximate southern limit of soliflucted outwash gravels; ➤ Dune grassland, which support rare plant species including, the very rare Dwarf Pansy (<i>Viola kitaibeliana</i>), a plant which occurs on Scilly and nowhere else in Great Britain, and the rare four-leaved Allseed (<i>Polycarpon tetraphyllum</i>); ➤ A small area of lowland heath is present at the summit of Great Hill. Relict pasture plants are present which reflect the previously cultivated parts of the island and the considerable human influence during the 17th Century (when it was inhabited); and ➤ Five species of breeding seabirds including a small colony of Puffin (<i>Fratercula artica</i>) on the east side of the island (closest to the proposed scheme). The other breeding seabirds include Lesser Black-backed Gull

Designation	Proximity to the Proposed Scheme	Reasons for Designation
		(<i>Larus fuscus</i>), Kittiwake (<i>Rissa tridactyla</i>), Herring Gull (<i>Larus argentatus</i>) and a few Greater Black-backed Gull (<i>Larus marinus</i>).
Porth Seal (St Martin's) Geological SSSI (gSSSI)	240m to the north-west of the proposed treated water feed connects with the proposed booster station	The gSSSI is important for quaternary studies as it shows a sequence of deposits for a raised beach, a series of interbedded organic and inorganic silts and sands, and head. The organic deposits were radiocarbon dated to the Late Devensian period. The organic deposits include pollen which indicated arctic tundra environmental conditions. The gSSSI therefore provides important information about the Late Pleistocene environmental conditions in South-West England.

3.2.3 Designations more than 500m from the proposed scheme are considered highly unlikely to be affected by the proposed works. The qualifying features are not anticipated to be compromised by construction or operational activities.

3.2.4 If the construction programme is unable to avoid breeding bird season, a pre-commencement nesting bird survey will be completed to ensure that affected areas are clear of nests.

3.2.5 SSSI Assent will be sought due to the proximity to St. Martin's Sedimentary Shore SSSI. The Assent will be submitted prior to construction as stipulated in the updated programme of works.

3.2.6 As well as consultation with Natural England, consultation with the Isles of Scilly Wildlife Trust is ongoing.

Non-statutory Terrestrial Designations

3.2.7 Although no works are directly in the Wildlife Trust Reserve, the proposed RO plant is located approximately 10m to the east of the Wildlife Trust Reserve at its closest point.

Likelihood of Significant Effects

Construction

3.2.8 During construction, the proposed scheme has the potential to impact the features of the above-listed terrestrial designations through a temporary increase in dust, noise, vibration and light from increased plant and vehicle traffic. However, based on the distance of the proposed scheme from the designated habitats identified in Table 3-1 and Table 3-2 (>150m), **significant impacts to these habitats are considered unlikely.**

3.2.9 Controls for managing impacts from dust, noise, vibration and light will be captured in a CEMP. The CEMP will detail good construction practice and will be included as part of the Principal Contractor's site induction for all staff.

Operation

3.2.10 Once operational the proposed pipeline will be underground, there will be a permanent uptake of land for the proposed RO plant however as this is not located within any of the terrestrial designations set out in Table 3-1 and Table 3-2 **effects on these terrestrial designations are not considered likely.**

3.3 Marine

3.3.1 Table 3-3 below shows the marine designations which the proposed scheme falls within.

Table 3-3: On-site Marine Ecological Statutory Designations

Designation	Related area of the Proposed Scheme	Reasons for Designation
Isles of Scilly Complex Special Area of Conservation (SAC)	The brine discharge outfall and the seawater intake are located within the designation	<ul style="list-style-type: none"> ➤ Sandbanks which are slightly covered by sea water all the time (subtidal sandbanks); ➤ Mudflats and sandflats not covered by sea water at low tide (intertidal mudflats and sandflats); ➤ Reefs; ➤ <i>Halichoerus grypus</i> (grey seal); and ➤ <i>Rumex rupestris</i> (shore dock).
Isles of Scilly Special Protection Area (SPA)	The brine discharge outfall and the seawater intake are located within the designation	<ul style="list-style-type: none"> ➤ <i>Hydrobates pelagicus</i> (European storm-petrel); ➤ <i>Larus fuscus graellsii</i> (lesser black-backed gull); ➤ <i>Phalacrocorax aristotelis</i> (European shag); and ➤ <i>Larus marinus</i> (great black-backed gull).
St Martin's Sedimentary Shore Site of Special Scientific Interest (SSSI) and Impact Risk Zone (IRZ)	The brine discharge outfall is located 7m to the north of this designation. The scheme is located within the IRZ.	Designated for its dune system on windblown granite sand. The dune, dune grassland and heathland habitats support several nationally rare and uncommon plant species. The site is also of importance for illustrating the classic succession of coastal communities from embryo dunes to dune scrub. Protected scrub and habitat for Ringed Plover (<i>Charadrius hiaticula</i> ³).
Tean Marine Conservation Zone (MCZ)	The proposed seawater intake is located within the MCZ.	<ul style="list-style-type: none"> ➤ Intertidal coarse sediment; ➤ Intertidal underboulder communities; ➤ Moderate energy intertidal rock; and ➤ Intertidal sand and muddy sand.

3.3.2 Off-site marine designations are shown below in Table 3-4:

Table 3-4: Off-site Marine Ecological Statutory Designations

Designation	Related area of the Proposed Scheme	Reasons for Designation
Men a Vaur to White Island MCZ	380m north of the proposed booster station	<ul style="list-style-type: none"> ➤ Giant goby (<i>Gobius cobitis</i>); ➤ High energy intertidal rock; ➤ Intertidal coarse sediment; ➤ Intertidal sand and muddy sand; ➤ Intertidal underboulder communities; ➤ Moderate energy intertidal rock; ➤ Stalked jellyfish (<i>Calvadosia campanulata</i>); and ➤ Spiny lobster (<i>Palinurus elephas</i>).
White Island (Off St. Martin's)	Site of Special Scientific Interest (SSSI) 1.55km north east.	Maritime heathland, maritime grassland and scrub habitats also occur here whilst the isolated cliffs support small colonies of breeding seabirds.

3.3.3 An initial marine desk study was completed in February 2024 by Pell Frischmann. This noted habitats present on site to include Intertidal coarse sediment; Intertidal sand and muddy sand; intertidal underboulder communities and moderate energy intertidal rock.

3.3.4 A number of marine protected species were returned on the records within 2km of the Site, these include species of the following groups:

- Marine mammals (Common dolphin, Grey seal, Harbour porpoise, Harbour seal, Long-finned Pilot Whale, Minke whale);
- Fish (Giant goby, European eel and the SPI Lesser sand-eel, A sand-eel, Cod, Plaice);
- Reptiles (Leatherback turtle); and

³ Natural England (1986) Plains and Great Bay (St Martin's) Citation [last accessed: January 2024]. Available at: [1001923 \(naturalengland.org.uk\)](https://www.naturalengland.org.uk)

- Invertebrates (Pink sea-fan, Kaleidoscope jellyfish, Stalked jellyfish, *Calvadosia campanulata*, spiny lobster).

3.3.5 Five seaweed species listed as INNS were also identified in the desk study (Green sea fingers, Harpoon weed, *Porphyra* sp., Wireweed, California red seaweed). Mitigation measures to prevent the spread of INNS will be included in the CEMP.

Underwater Noise Modelling

3.3.6 A dedicated underwater noise assessment has been commissioned to assess the potential impacts to marine species and habitats from the proposed scheme. The assessment will quantify the distance that sound will travel underwater outside the working area. The results of the underwater noise modelling will inform the need for further controls (if required) and will be discussed with the Isles of Scilly Council as required.

Likelihood of Significant Effects

Construction

3.3.7 During construction, the proposed scheme has the potential to adversely impact the designations identified in Table 3-3 and Table 3-4. Construction is likely to result in approximately 4.54m² of permanent habitat loss within the intertidal area. Noise and vibration associated with excavation or moling / vacuum excavation of the trench for the intake and discharge structure are likely to cause some temporary disturbance to marine flora and fauna.

3.3.8 The Principal Contractor will work with the plant supplier to determine the excavation technique that will cause the least disturbance to the marine environment. The Principal Contractor will be provided with the results of the underwater noise modelling to inform this decision.

3.3.9 The Desk Study identified ecological features within and immediately adjacent to the Site boundary that would be impacted by the project proposals for the Site which involve the construction of the new intake, discharge structures and pipelines. The construction of the pipeline has the potential to affect the foreshore and sea bed in areas within the vicinity of breakout from trenched excavation and installation of the new pipes. The marine organisms most affected by the construction phase are the sessile organisms either within or on the sea bed, although there may also be temporary potential impacts related to habitat loss or degradation.

3.3.10 The works are planned to be undertaken at low tide. This will reduce the potential for noise and vibration to travel underwater outside the immediate working area and reduces the potential for disturbance. Additional mitigation will be considered following consultation with the Coastal Concordat, of which the Marine Management Organisation and other statutory bodies are members. The results of the marine field survey, underwater noise modelling and subsequent marine desk studies (if required) will all inform the need for bespoke controls during construction. This will be detailed in Water Frameworks Directive (WFD) Assessment.

3.3.11 Considering above, **during construction a significant impact is not anticipated.**

Operation

3.3.12 Once operational, discharge of reject water will be undertaken at mean low water springs (MLWS). This will increase the mixing potential and reduce the time that the discharge travels across the intertidal zone.

3.3.13 The main aspects of the operational phase of the project which require assessment in relation to environmental impact are:

- The potential scale of the impact of the seawater abstraction in terms of the entrainment of marine organisms within the seawater entering the treatment plant and the impingement of marine organisms on the screens in the intake structure; and
- The zone of impact of the discharge of reject water from the treatment plant which is defined by a specific level of dilution of the contaminants within the discharge.

3.3.14 The abstraction has the potential to impact free-swimming organisms or those suspended in the water column, particularly fish, meiofauna, zooplankton and phytoplankton. The discharge has the potential to impact the sessile or less mobile organisms unless the discharge is to an area of restricted water exchange.

3.3.15 The below shows the seawater abstraction and reject water discharges into some context of scale:

- The projected maximum seawater abstraction volume via the intake is 170 m³ per day during the summer when the population of St Martin's is at its greatest. This daily volume may be compared with the mean tidal volume of Tean Sound, which is the tidal channel between the islands of St Martin's and Tean and at the southern end of which is the proposed seawater intake (and reject water discharge). Using bathymetry data from the Admiralty Chart 883 (entitled 'Isles of Scilly Saint Mary's and the Principal Off-islands'), the mean tidal volume of Tean Sound is estimated to be about 800,000 m³. The daily volume of abstracted seawater equates to 0.02% of this mean tidal volume.
- The maximum volume of the reject water discharged from the new water treatment works is expected to be approximately 116 m³ per day which equates to a constant discharge of 1.27 l/s. This discharge rate is very small and given the expected mixing characteristics of the receiving waters of Tean Sound, dilution of the discharge will be very rapid, and the impacts are likely to extend only a few metres from the point of discharge. Details of the zones of impact will be provided in separate notes once the final discharge regime has been defined.

3.3.16 Based on the current information, once operational **significant effects on the marine environment are not considered likely.**

Habitats Regulations Assessment (HRA)

3.3.17 The proposed scheme lies within two sites within the National Site Network (hereafter referred to as Habitats Sites) and lies approximately 191m from another Habitat Site. As such there is potential for significant effects to occur which must be assessed in line with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended). Therefore, a Report to Inform HRA will be submitted as part of the planning application.

3.3.18 The purpose of the HRA process is to assess whether the proposed scheme could have an adverse effect on the integrity of a Habitats Site, considering that site's conservation objectives and qualifying features or reasons for designation.

3.3.19 A Report to Inform HRA will cover both Stage 1 and Stage 2 of the HRA process. A review of other relevant proposals will be carried out to identify if there are any pathways for potential in combination effects to occur where relevant.

3.3.20 The HRA will be supported by a number of assessments / surveys, including collation of data for qualifying features (such as species and habitat distributions), preliminary ecological appraisal, habitat surveys and assessments of noise, vibration and air quality. The scope of these requirements has been discussed with Natural England as part of the Discretionary Advice Service agreement made between Natural England and SWWL in January 2024.

4 Habitats and Species

4.1 Priority Habitat

4.1.1 It is noted that the following Priority Habitats are either located within the directional drill route or within proximity to the proposed scheme boundary:

- Maritime cliff and slope – located within the directional drill location for the brine discharge outfall and the seawater intake; and
- ‘No main habitat but additional habitats present’ – in this instance, the additional habitat that makes up this mosaic of habitats is comprised of lowland heathland and coastal sand dune. This habitat sits approximately 15m to the east of the proposed booster station and treated water storage boundary.

4.2 Terrestrial Species and Other Sensitive Habitats

4.2.1 The terrestrial PEA and site walkover were undertaken in July 2023. This identified the types of habitats and species present on-site and in the surrounding areas.

4.2.2 As reported in the PEA, the proposed scheme crosses a range of habitat types including karo (*Pittosporum crassifolium*) dominated mixed scrub, dense bracken (*Pteridium aquilinum*), neutral grassland, and arable fields used for horticulture and other non-cereal crops.

4.2.3 As noted within the PEA, there is a risk of spreading INNS during construction of the proposed scheme. As such, it will be necessary to implement specific biosecurity measures within the CEMP to prevent the spread of nuisance species such as rats or facilitate the introduction of Dutch elm disease from the mainland, as well as invasive species of seaweed that have been identified on the desk study.

4.2.4 A lichen desk study was carried out in November 2023 an updated version was completed in January 2024. The updated desk study included a site immediately north of the proposed RO plant and no sensitive lichens were noted in the near vicinity to this site. The initial desk study covered a site near the proposed booster station near Middle Town and a site near to a section of the treated water feed to the west of St Martin’s Campsite. The findings of the desk study were that there were no sensitive lichens near these sites.

4.2.5 An invertebrates scoping desk study was carried out in December and an updated version was completed in January 2024. Sand dune and uppershore habitats near Lower Town are regarded as having high potential to support species or assemblages of conservation importance. The grass and abandoned arable fields along the treated water feed pipeline route, near the St Martin’s campsite are areas with lowest potential for invertebrate species, although it is possible there could be some vegetation present which may contain higher potential. The land near the Middle Town booster station also merits some invertebrate survey.

4.2.6 In collaboration with the Isles of Scilly Wildlife Trust, a study is being produced which will review recent ground nesting ringed plovers’ data from St Martin’s and highlight the location of ringed plovers on the island. This will help identify areas of sensitivity that require avoidance during the works.

Likelihood of Significant Adverse Effects (Terrestrial)

Construction

4.2.7 Permanent and temporary loss of habitats (including habitat features of designated sites and priority habitats) are likely to occur during construction of the RO treatment works, intake/outfall pipelines and the treated water feed. The short-term duration of the works and confined work area are not likely to produce significant adverse effects during construction.

4.2.8 Where trench excavation is required, topsoil would be stripped and stockpiled separately to ensure that soil structures are maintained to enable replacement habitats to recover and regrow effectively once the topsoil has been reinstated. Other non-hazardous excavated material would also be retained, stored appropriately, and reinstated directly which would help reduce impacts. This excludes the excavated bedrock material.

4.2.9 As mentioned within paragraph 2.3.18, subject to the ground investigation findings, opportunities for moling/vacuum excavation will be explored in areas of sensitive habitats such as under hedgerows (see Appendix B).

4.2.10 However, if the opportunities are not feasible, then some disturbance may occur to the hedgerows along the route. Impacted hedgerow habitats would be reinstated like-for-like and would be returned to their original state in time as far as practicable. Hedgerow removal notices may be required.

4.2.11 In areas where habitat loss is unavoidable, affected areas would be reinstated on a like for like basis and enhanced in line with Biodiversity Net Gain (BNG) requirements. The enhancements may not be directly on effected habitats but on separate mitigation sites. In line with planning requirements the scheme will achieve a biodiversity net gain of 10%.

4.2.12 As such, the construction phase is **not expected to result in a significant impact** on habitats and species.

Operation

4.2.13 No further habitat loss is expected during normal operation of the proposed scheme. Works will be largely below ground and therefore once operational will not have a significant impact on terrestrial habitats.

4.2.14 The total permanent area of habitat lost following construction is approximately 900m². Lost habitat will be replaced with a combination of on-site and off-site replanting and enhancement in-line with BNG requirements. The total habitat value is expected to increase by a minimum of 10% following construction. As such, **permanent significant impacts from operation of the proposed scheme are considered unlikely.**

4.3 Marine Species and Other Sensitive Habitats

4.3.1 To accurately assess the potential ecological impacts of the proposed scheme in the marine environment, a desktop study was undertaken to identify the presence of sensitive habitats and ecological features within the Site and within the Ecological Zone of Influence (EZoI). The EZoI used to inform the desk study was 2km from the site boundary.

4.3.2 The desk study has identified ecological features within and immediately adjacent to the Site boundary that would be impacted by the project proposals for the site. These include habitats that are present on site or in proximity including:

- The protected habitats of the MCZ (Intertidal coarse sediment; Intertidal sand and muddy sand; Intertidal underboulder communities; Moderate energy intertidal rock); and
- The protected habitats of the SAC (Sandbanks which are slightly covered by sea water all the time (subtidal sandbanks); Mudflats and sandflats not covered by seawater at low tide (intertidal mudflats and sandflats); Reefs).

4.3.3 Notable species identified in the desk study are shown in Appendix C .

4.3.4 Several records of shorebirds were identified within 2km of the Site. The closest record is of a Great white egret (*Ardea alba*) 280m north from Site. The Site presents suitable habitat for a range of shorebirds including those listed as features of the Isles of Scilly SPA: European storm-petrel (*Hydrobates pelagicus*),

Lesser black-backed gull (*Larus fuscus graellsii*), European shag (*Phalacrocorax aristotelis*), and Greater black-backed gull (*Larus marinus*).

4.3.5 A dedicate subtidal and intertidal ecological survey was undertaken by Thomson environmental consultants in April 2024 to identify the presence of other important species and habitat types within the site and adjacencies. The survey area is shown below in Figure 6.

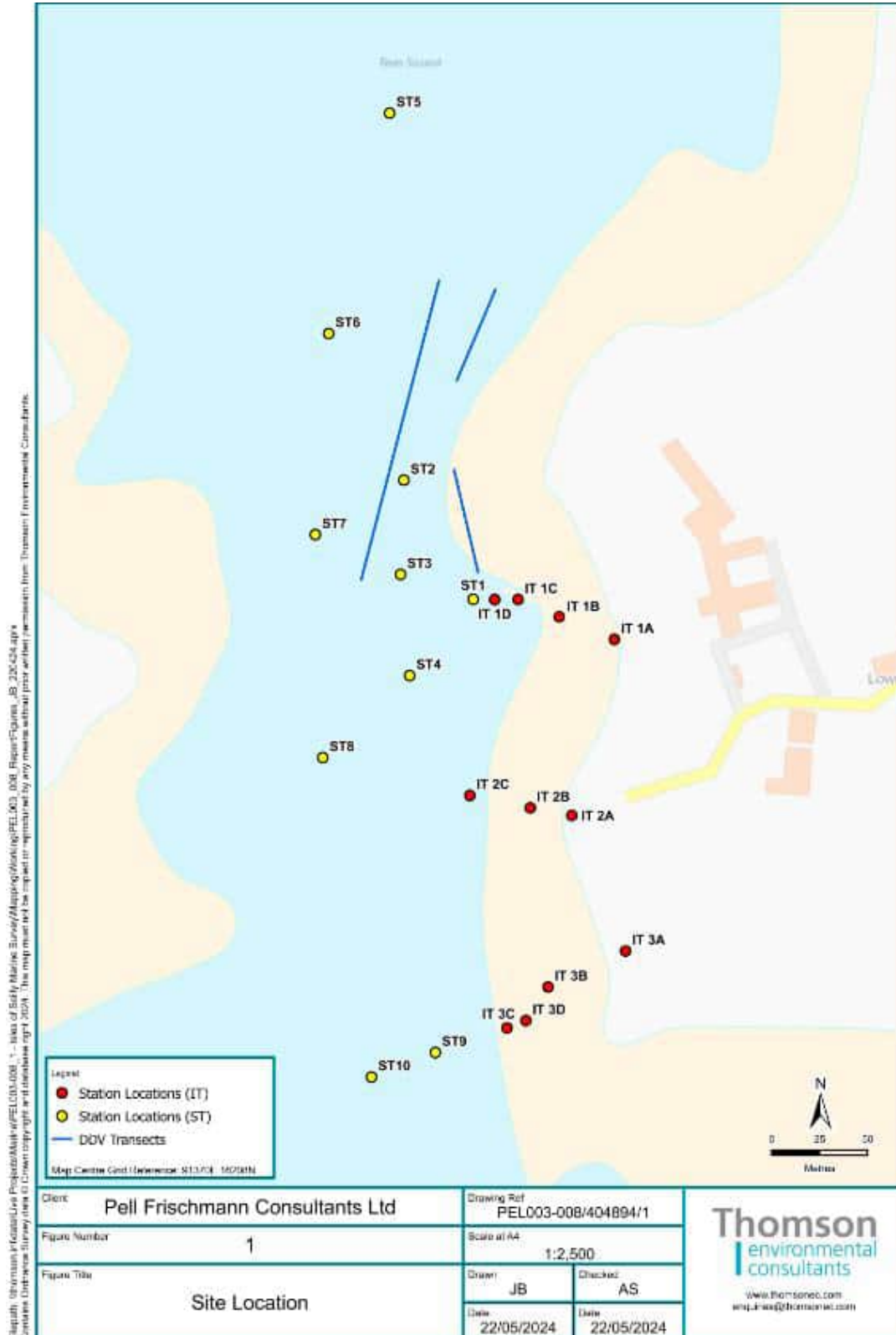


Figure 6: Marine Ecology Subtidal Survey Area

Habitats

4.3.6 A total of 13 biotopes were mapped during the subtidal walkover survey of the study area. The identified biotopes for areas within the immediate vicinity of Lower Town Quay were as follows:

- South of Lower Town Quay – mobile sandy and mixed sediments, including biotopes associated with littoral sediment and littoral rock; and
- North of Lower Town Quay – featured a narrow section of barren or amphipod-dominated mobile sandy shores, an area of littoral coarse sediment, and littoral rock biotopes.

4.3.7 Textual groups for stations located closest to the abstraction / outfall point at Lower Town Quay included slightly gravelly sand for the intertidal station (IT1 D) and gravelly sand for the subtidal station (ST1).

4.3.8 Biotope classifications for the two closest stations are provided within Table 4-1 below, along with their respective protection listings.

Table 4-1 Biotope Classifications

Station	Biotope	Protection Listing
Intertidal Station IT1 D	Littoral mixed sediment (Based on low faunal abundances and sediment characteristics)	No protection listing
Subtidal Station ST1	<i>Moerella spp. with venerid bivalves in infralittoral gravelly sand</i>	Habitat of principle importance (HPI); Priority Marine Feature (PMF); and Habitat Compression Index (HCI).

4.3.9 Two transects located within proximity to Lower Town Quay were assigned the *Saccharina latissima* and robust red algae on infralittoral gravel and pebbles biotope based on video footage from the video transects of the study area. This biotope is listed as a HPI and PMF habitat. It is important to note that the video footage was poor due to weather and tidal conditions, but examples of flora and fauna consistent with the biotope were observed throughout the transects.

Species

4.3.10 A total of 141 different taxa were recorded across all intertidal and subtidal sites. The number of taxa and individuals recorded at intertidal stations was generally lower than those recorded at subtidal stations. A total of four individuals were recorded at IT1 D, whilst 105 individuals were recorded at ST1. No scarce species were recorded at either station located within proximity to the abstraction / outfall point.

Likelihood of Significant Adverse Effects (Marine)

Construction

4.3.11 As mentioned within Section 2.3 a marine vessel will be required to dredge the seabed and to install the seawater intake structure (with the assistance of divers). Based on the marine desk study and consultation with Natural England, the potential scope of marine surveys has been defined to identify potential impacts to the marine environment and will be undertaken in advance of these works. This has ensured impacts to the marine environment associated with such activities are sufficiently addressed and mitigated with any potential impacts reduced and/or avoided.

4.3.12 Design of the intake will be compliant with EA guidelines and incorporate suitable measures to mitigate the potential entrainment and impingement of fish, including elvers, glass eels and eels. The intake velocity of the screens will not be sufficient to entrap eels onto the screens, and screens will also have protective cones installed atop them to offer potential resting places for the eels. Such measures will not impede the performance of the intake nor cause harm to eels or other fish.

4.3.13 The Thomson Marine Ecology Survey did not identify any protected species within the subtidal or intertidal environment. Based on these findings, significant permanent impacts to marine species during construction of the proposed scheme are considered unlikely. Controls to manage impacts to notable species within the subtidal and intertidal environments will be captured in a CEMP. Mitigations include, but are not limited to:

- Using a “slow start” technique to reduce the short-term impacts to marine species within the work area;
- Using a bubble curtain in proximity to plant to reduce the spread of underwater noise outside the work area;
- Undertaking the works in the shortest reasonable time to reduce prolonged exposure of noise and vibration to marine species; and
- Delineating the work area to reduce the total area of land impacted by construction.

4.3.14 As such, considering all the mitigating measures identified above, impacts from construction of the proposed scheme are likely to be mostly temporary and are **unlikely to adversely impact the marine environment** or the designated features within and adjacent to the work area.

Operation

4.3.15 The main aspects of the operational phase of the project which require assessment in relation to environmental impact are:

- The potential entrainment of marine organisms within the seawater entering the treatment plant and the impingement of marine organisms on the screens in the intake structure; and
- The discharge of reject water from the treatment plant which is defined by a specific level of dilution of the contaminants within the discharge.

4.3.16 Expected seawater abstraction and discharge volumes are discussed in Section 3.3.14. Seawater abstraction is expected to be 0.02% of tidal volume and discharge volumes are expected to be 116m³/day at a rate of 1.27l/s. These volumes are not considered to be significant as a proportion of the total tidal flow of the area.

4.3.17 A dedicated discharge water modelling assessment will be undertaken to verify the above during design of the proposed scheme.

4.3.18 The quantities of abstracted of seawater and discharged reject water are not likely to be significant during operation. As such, **impacts to marine species and habitats are considered to be negligible.**

5 Archaeology and Cultural Heritage

On-Site Heritage Designations

5.1.1 The site is located within an area classified as both Heritage Coast and a Conservation Area, which cover the entire Isles of Scilly archipelago. These are both non-statutory designations.

5.1.2 A heritage assessment was undertaken by AC Archaeology in October 2023 (including a desktop study and site walkover). The proposed scheme does not directly intersect within the footprint of a Scheduled Monument or Listed Building, however the assessment identified moderate potential for prehistoric barrows throughout the proposed scheme.

5.1.3 A review of the Isles of Scilly Council Local Plan Policies Map⁴ identified that the proposed booster station / treated water storage area and a northern section of the proposed treated water feed are located within the Top Rick Hill archaeological constraint area. South-eastern parts of the treated water feed, near St Martin's Camping Site are located within the St Martin's archaeological constraint area. The intake and outfall routes are located within The Porth, Quay and The Porth, Boathouse archaeological constraint areas.

5.1.4 There are no statutory heritage designations located on-site of the proposed scheme.

Off-Site Heritage Designations

5.1.5 There are a total of seven Scheduled Monuments within 500m of the site, with the closest of these 'Prehistoric cairn cemetery, field system and settlement on Top Rock Hill, St Martin's' located approximately 100m east of the proposed booster station / treated water storage area.

5.1.6 The only Grade Listed Building within 500m of the proposed scheme is the Grade II Listed Ashvale Farmhouse, which is located approximately 80m north of the treated water feed in Lower Town.

5.1.7 There are no World Heritage Sites, Registered Parks and Gardens, Registered Battlefields nor Protected Wreck Sites within 500m of the proposed scheme.

5.1.8 A summary of all heritage designations located within 500m of the proposed scheme is provided within Appendix E: Heritage Designations. Appendix C: Environmental Constraints Figure should also be referred to for the location of nearby heritage assets.

Likelihood of Significant Adverse Effects

Construction

5.1.9 During construction there is the potential for temporary noise and visual disturbance to on-site non-statutory heritage designations, as well as nearby statutory designations.

5.1.10 The heritage survey suggested the presence of dry-stone wall breaches throughout survey area. Potential impacts to above and below-ground heritage includes:

- Excavation of and damage to unearthed heritage assets; and
- Vibration-intensive activities causing damage to structures.

⁴ Isles of Scilly Council (2023) Isles of Scilly Local Plan Policies Map [last accessed: December 2023]. [Local Plan \(2015 - 2030\) | Council of the ISLES OF SCILLY](#)

5.1.11 A watching brief and accompanying method statement will be undertaken in areas with high potential for unearthened heritage assets. The initial watching brief will inform the need for further watching briefs on the remaining excavations throughout the proposed scheme. Watching briefs will be confirmed with the IoS Heritage Officer and Historic England. Controls to manage impacts to heritage will also be discussed in the CEMP.

5.1.12 As per the CEMP, the work area shall be delineated to ensure the smallest reasonable area of land is disturbed during construction. Where practical, the work area will also be returned to its original state to maintain the amenity of the surrounding landscape.

5.1.13 A suitably competent architect has been engaged to design the façade of the permanent above-ground structures. This will also reduce impacts to the integrity of the Conservation Area and Heritage Coast and will not adversely impact the natural character of the island and surrounding environments.

5.1.14 With the mitigation measures specified, **a significant adverse impact is not anticipated.**

Operation

5.1.15 Once operational, the proposed scheme is unlikely to have an impact upon the setting of heritage assets throughout the proposed scheme. The pipeline will be installed below ground and will therefore not directly impact the heritage setting of assets once operational.

5.1.16 Based upon the above findings, it is considered that potential impacts arising to archaeology, heritage designations and heritage assets as a result of the proposed scheme can be addressed and are **not considered to be of such significance to require an EIA.**

6 Landscape

On-Site Landscape Designations

6.1.1 The site is located within the Isles of Scilly National Landscape (formerly Area of Outstanding Natural Beauty (AONB)), which is classified as a sensitive area by the EIA Regulations, and designated for the diverse scenery that makes up the Isles of Scilly archipelago, including rugged cliffs and headlands, sandy bays, hidden coves, shifting dunes and saline lagoons⁵.

6.1.2 The site is also located within the Natural England *158: Isles of Scilly* National Character Area, which is designated for the complex seascapes, unique field and settlement patterns, and isolated nature of the Isles of Scilly archipelago.

6.1.3 Further details of these landscape designations can be found in Appendix F: Landscape Designations.

Likelihood of Significant Adverse Effects

Construction

6.1.4 There is potential for temporary impacts to landscape receptors during construction including loss of on-site features such as trees and vegetation as well as to the setting of landscape designations as a result of construction activities disturbing the natural beauty and tranquillity of the area. In addition, there is potential for temporary impacts to visual receptors including residential receptors, users of footpaths, publicly accessible areas and on views within the designations.

6.1.5 Landscape and visual impacts during construction will be considered within a landscape and visual impact assessment (LVIA) and mitigation measures will be identified within the CEMP. Construction impacts are anticipated to be **temporary and limited** in nature.

Operation

6.1.6 Once built, most of the pipework will be buried below ground and not be visible. However, the surface plant including the RO plant near Lower Town and the booster station / treated water storage area near Middle Town will be permanent above ground fixtures that may impact the landscape and visual receptors. The LVIA will inform the need for measures to mitigate any potential significant impacts such as replacement planting.

6.1.7 Opportunities to enhance views and restore vegetation in line with the SWWL Biodiversity Net Gain Strategy (terrestrial and marine) will be sought in consultation with, the Isles of Scilly Council, Natural England and the Isles of Scilly Wildlife Trust.

6.1.8 As mentioned in Section 5.1.14, a suitably competent architect has been engaged for design of the façades. The new above-ground structures will be designed to complement the surrounding landscape.

6.1.9 The applicant will continue to consult with Natural England, Isles of Scilly Council, the MMO, the Isles of Scilly Wildlife Trust and the broader Coastal Concordat to ensure compliance with requirements for building within a National Landscape and NCA. Overall, **it is not considered likely that the impacts would be of such significance to require an EIA.**

⁵ Isles of Scilly Area of Outstanding Natural Beauty (2023) About our Area of Outstanding Natural Beauty [last accessed: December 2023]. [About our Area of Outstanding Natural Beauty | Isles of Scilly \(scillyaonb.org.uk\)](https://scillyaonb.org.uk)

7 Water Environment

7.1.1 A baseline review of available information indicates that:

- The majority of the site is located within Flood Zone 1 (low probability of flooding from river and sea), with the exception of the proposed brine discharge outfall located within the coastal edge of the island, which is within Flood Zones 2 and 3 (based on the Environment Agency Flood Mapping⁶). The seawater intake is located further out to sea and therefore is located beyond the Environment Agency's flood zone boundaries;
- The site is located within varying levels of surface water flood risk ranging from very low to high risk⁷. However, the only permanent element of the works within a surface water flood risk area is the RO plant, where the south-east corner is located very slightly within a low flood risk area; and
- Part of the proposed booster station / treated water storage area and a part of the proposed treated water feed lie within the Inner Zone of a Groundwater Source Protection Zone (SPZ), with a larger section of the proposed treated water pipeline located within an Outer Zone of a Groundwater SPZ⁸. The RO plant and the intake and outfall areas are not located within a SPZ.

7.1.2 With regard to water resources, the proposed seawater intake and brine discharge outfall fall within the Scilly Isles Water Body (coastal water), which had a 'good' ecological status but received a 'fail' for chemical status in 2019. The Isles of Scilly are underlain by the Isles of Scilly Groundwater Body, which had a poor overall status in 2019.

7.1.3 A review of MAGIC⁹ identified that the only WFD higher sensitivity habitat within 500m of the proposed scheme is subtidal seagrass beds. An area of which is located approximately 30m south of the proposed seawater intake.

7.1.4 Regarding WFD lower sensitivity habitats, the proposed scheme is located within 500m of gravel & cobbles, subtidal soft sediment, rocky shore and subtidal rocky reef. The only habitat that directly overlaps with / falls immediately adjacent to the proposed scheme is gravel & cobbles at the location of the proposed brine discharge outfall.

7.1.5 Further details of all mentioned water environment designations within 500m of the proposed scheme can be found in Appendix G.

⁶ Environment Agency (2023) Flood Map for Planning [last accessed: January 2024]. Available at: [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115421/flood-map-for-planning-service.gov.uk)

As defined by the Environment Agency, land located within Flood Zone 1 is classified as having a less than 0.1% annual probability of flooding from fluvial sources, whilst land located within Flood Zone 2 is classified as having between a 1 in 100 (1%) and 1 in 1000 (0.1%) annual probability of flooding from fluvial sources. Additionally, land within Flood Zone 3 is classified as having a 1 in 100 or greater annual probability of flooding from fluvial sources.

⁷ Environment Agency (2023) Learn more about this area's flood risk – surface water extent of flooding [last accessed: January 2024]. Available at: [Learn more about this area's flood risk - Check your long term flood risk - GOV.UK \(check-long-term-flood-risk.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115421/learn-more-about-this-area-s-flood-risk-check-your-long-term-flood-risk-gov.uk)

⁸ An inner zone (SPZ1) is defined as having a 50-day travel time of pollutant to source whereas the outer zone (SPZ2) has a 400-day travel time of pollutant to source.

⁹ Defra (2023) Multi-Agency Geographic Information for the Countryside (MAGIC) Online Mapping [last accessed: January 2024]. Available at: [MAGIC \(defra.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115421/magic-defra.gov.uk)

Likelihood of Significant Adverse Effects

Construction

7.1.6 Potential impacts may arise to the coastal water body, groundwater body and SPZs, and WFD lower sensitivity habitats during construction as a result of accidental pollution events and disturbance to the ground from construction activities. Controls to manage pollution will be a requirement of the CEMP, a selection of which include:

- Storing fuels in sealed and bunded containers away from the foreshore area;
- Refuelling plant in designated areas with temporary sealed hardstanding surfacing;
- Regular monitoring and inspection of plant and equipment to ensure damage is identified as soon as possible;
- Plant and welfare facilities (particularly whilst mobile as the works progress along the pipeline route) should have plant nappies to reduce likelihood of spillage;
- Having sufficient spill kits throughout the work area; and
- Ensuring staff are suitably trained and competent to work in the marine environment.

7.1.7 It is considered **unlikely that resulting impacts would be significant** with suitable mitigation measures and approaches in place.

Operation

7.1.8 As operation of the proposed scheme involves the discharge of brine into the coastal waterbody, there is potential for impacts to marine habitats located in proximity to the outfall and reach of the discharge. Modelling will be carried out in relation to the dilution and dispersion of the discharge from the outfall. Such modelling used to inform HRA and the WFD Assessment (see below paragraph for further mention). At peak it is expected 116m³ of brine will be discharged. However, the brine discharge will be below MLWS, making it optimal in terms of dilution and dispersion mixing. It is expected that this will reduce impacts upon the intertidal zone.

7.1.9 A flood risk assessment will be completed and submitted alongside the planning application for the proposed scheme. The flood risk assessment will identify the need for mitigation (if required) including construction phase mitigation which will be included in the CEMP and be implemented by the Principal Contractor.

7.1.10 A WFD assessment will be completed to review the potential for impacts to waterbodies and sensitive habitats. The potential need for a groundwater assessment to assess the potential impacts to the underlying groundwater body beneath the proposed scheme will be investigated.

7.1.11 An MMO Licence Application will also be necessary for construction within the coastal waterbody and as such consultation will be undertaken with the MMO.

7.1.12 Based on the above findings and proposed consultation and further assessments, the potential impacts arising to the water environment as a result of the proposed scheme are **not considered to be of such significance that an EIA is required.**

8 Geology and Soils

8.1.1 A review of the British Geological Society (BGS) Geology Viewer¹⁰ identified that the site is underlain by the following geology:

- Superficial deposits: Head (Clay, Silt, Sand and Gravel) for areas underlying parts of the treated water feed and the booster station / treated water storage area, as well as eastern parts of the RO plant, Blown Sand – Sand underlying part of the treated water feed and the western part of the RO plant, and Tidal Flat Deposits – Gravel, sand and silt underly the part of the seawater intake and the brine discharge outfall pipelines; and
- Bedrock: Isles of Scilly intrusion – Granite.

8.1.2 The proposed scheme is underlain by a Secondary A bedrock aquifer and a superficial drift aquifer that varies between Secondary A and Secondary (undifferentiated) beneath those areas where superficial deposits are present. The groundwater vulnerability beneath the site varies between high and medium to high.

8.1.3 The Natural England Agricultural Land Classification¹¹ (ALC) mapping has identified that the works are within ALC Grade 4 (Poor). There would be some loss of ALC land, but as Poor grade ALC land is not considered to be best or most versatile (BMV) ALC land by Natural England, the magnitude of this effect is reduced. Consultation with relevant bodies including Natural England will be sought where necessary.

Likelihood of Significant Adverse Effects

Construction

8.1.4 There may be potential for impacts to aquifers during construction activities such as excavation and moling/vacuum excavation, due to the potential creation of pathways from sediments and pollutants to enter groundwater and underlying aquifers, however, with implementation of control measures within the CEMP, the potential for impacts to geology and soils is reduced.

8.1.5 The proposed scheme is located within and adjacent to agricultural fields. There is no significant evidence of heavy industry within or adjacent to the proposed scheme. Minor pesticides may exist within the soil surface from use as agricultural land. However, concentrations are not considered likely to warrant specific controls associated with contact with contaminated soil. As such, **adverse impacts from contaminated soil are considered highly unlikely.**

Operation

8.1.6 Once operational, **no significant impacts are considered likely.**

¹⁰ British Geological Survey (BGS) (2023) Geology of Britain Viewer [last accessed: January 2024]. Available at: [BGS Geology Viewer - British Geological Survey](#)

¹¹ Natural England (2019) Provisional Agricultural Land Classification (ALC) (England) [last accessed: January 2024]. Available at: [Provisional Agricultural Land Classification \(ALC\) \(England\) | Provisional Agricultural Land Classification \(ALC\) \(England\) | Natural England Open Data Geoportal \(arcgis.com\)](#)

9 Nuisance to Sensitive Receptors

9.1.1 There are a number of sensitive receptors that may be impacted by the proposed scheme, including residential properties, farms, businesses and community facilities located between Lower Town and Middle Town.

9.1.2 The following receptors are considered to be located within the closest proximity to the proposed scheme:

- Lower Town Quay– the proposed seawater intake and brine discharge outfall pipelines will be located along the quay,
- Karma Hotel – the proposed pumping station will be located in the Karma Hotel garden;
- Agricultural land – proposed treated water feed is located within a section of this land;
- Helen's Shepherd's Hut – approximately 35m east of the proposed booster station / treated water storage area;
- St Martin's Campsite – the proposed treated water feed will be piped underneath the middle of the campsite; and
- Fuchsia Shepherds Hut and residential properties near Lower Town Beach – the residential properties are adjacent to the treated water feed and RO plant locations.

9.1.3 There are no public rights of way on the Isles of Scilly, however, there are numerous permissive footpaths throughout St Martin's.

9.1.4 The proposed scheme is not located within an Air Quality Management Area (AQMA) or Noise Action Planning Important Area, nor are there any of the said designations within the Isles of Scilly as a whole.

9.1.5 A summary of the sensitive receptors outlined above, as well as other sensitive receptors within 500m of the proposed scheme are provided within Appendix H.

Likelihood of Significant Adverse Effects

Construction

9.1.6 Construction of the proposed scheme has the potential to result in impacts to air quality from the production of dust, as well as resulting in changes in noise and vibration levels from construction activities. An increase in construction vehicles may temporarily impact public access to areas within the vicinity of the proposed scheme. Sensitive receptors include residential areas, users of permissive footpaths and businesses along the alignment.

9.1.7 Impacts from construction will be temporary and based on the programme of works. Impacts would be sufficiently mitigated against with the implementation of the CEMP and delineated work area. Example control measures within the CEMP include:

- Restriction of working hours;
- Prioritising work during the off-season (for minimising work overlapping with tourist season where possible);
- Ensuring plant and equipment comply with noise and vibration requirements; and
- Ensuring dust suppression is applied during dry or windy weather.

9.1.8 Such measures help reduce the likelihood of long-term impacts associated with construction to nearby receptors.

9.1.9 There is potential for temporary impacts to agricultural land during the construction stage of the treated water pipeline. It is anticipated that soil would be removed via open-cutting for the installation of the pipeline, however, this would be reinstated via backfilling upon completion of installation. During construction, access to

the agricultural fields affected will be limited so access requirements for landowners will need to be discussed prior to commencement of works.

9.1.10 A specialist subcontractor will undertake a dedicated construction noise desktop assessment. The assessment will determine the impact to sensitive receptors within the vicinity of the proposed scheme and will provide suitable mitigation as required.

9.1.11 A dedicated air quality assessment will also be undertaken prior to construction. The assessment will assess the effectiveness of the above listed controls and advise further mitigation if required. **It is not anticipated that air quality will be adversely affected** during construction of the proposed works.

Operation

9.1.12 A dedicated operational noise assessment will also be undertaken prior to works commencing. The assessment will be focused on the permanent structures including the pumping station and RO plant. If required, the assessment will advise on any noise mitigation measures required to limit impacts to sensitive receptors.

9.1.13 Noise and nuisance from the pumping station is likely to be negligible given it is below-ground. The RO plant is also surrounded by vegetation and machinery will be enclosed in buildings and structures.

9.1.14 Once operational the majority of infrastructure will be underground or within buildings. As such, **adverse nuisance effects are not considered likely.**

10 Waste Materials

10.1.1 Whilst there are no landfill or historic landfill sites located within the proposed scheme location, St Martin's safeguarded waste site is located approximately 815m east of the proposed scheme, northwest of Higher Town. It is not considered likely that the proposed scheme would impact the waste site due to the distance between the sites. The nature of the proposed scheme is such that it is not likely to prejudice the waste site for future use.

10.1.2 The Principal Contractor will be responsible for separating waste streams and ensuring waste is managed appropriately.

10.1.3 Soil removed during construction of the proposed scheme will be retained for backfilling along the alignment, although it is noted that the soil to be excavated is minimal in certain locations where underlying bedrock level is close to the surface. No soil will be disposed to landfill unless unexpected contamination is identified. A separate risk assessment will be conducted to determine the reuse potential for soil with visual or olfactory signs of contamination.

10.1.4 In-line with the design principles, as stated within paragraph 2.6.1, materials with limited waste potential from packaging and residual elements will be selected where practicable for construction of the proposed scheme.

10.1.5 Opportunities for reusing inert waste outside the proposed scheme will be explored with the Principal Contractor during and following construction. This will be captured in a Materials Management Plan and managed by the Principal Contractor.

Likelihood of Significant Adverse Effects

Construction

10.1.6 Measures to reduce and manage waste, such as relating to the excavated granite, will be considered within the CEMP and a Site Waste Management Plan will be prepared for the proposed scheme.

10.1.7 Production of excess waste is not anticipated to be significant during construction of the proposed scheme. Reuse of soil would reduce the volume of material imported and reduce waste sent to landfill.

Operation

10.1.8 Once operational **no significant quantities of waste are anticipated.**

11 Major Accidents and Human Health

Risk of Major Accidents and / or Disaster

11.1.1 'A major accident is an event which threatens immediate or delayed serious environmental effect to human health, welfare and / or the environment, and requires the use of resources beyond those of the client or its appointed representatives to manage.'¹²

11.1.2 'A disaster is a manmade / external hazard with the potential to cause an event or situation that meets the definition of a major accident.'

11.1.3 As some areas of the proposed scheme are located within Flood Zones 2 and 3, such areas are at high risk of flooding from tidal sources. Appropriate safety control measures, including those proposed within the flood risk assessment, would be implemented in such areas to reduce the potential for significant flooding events. Construction compounds / storage areas will not be located within Flood Zones 2 or 3.

11.1.4 A review of Zetica Unexploded Ordnance (UXO) Online Unexploded Bomb Risk Map¹³ did not contain a risk rating for UXO on the island of St Martin's. A Pre-Desk Study Assessment was requested from Zetica. The Assessment suggested that whilst there were some World War I and World War II strategic targets within 5km of the site (including the Royal Naval Air Station Tresco, transport infrastructure, public utilities and anti-invasion defences), there was no military activity or bombing identified within the study area. The Assessment also stated that "A detailed desk study...is not considered essential in this instance." Based on the location of the proposed scheme, and the information provided, the bombing density and consequent risk of UXO is considered to be very low. Appendix I should be referred to for the Pre-Desk Study Assessment.

11.1.5 The Contractor must have an emergency plan in place during construction, in accordance with the Management of Health and Safety at Work Regulations 1999. The emergency plan must detail planned procedures that should be followed, should an emergency arise such as flooding, explosions and serious injuries. It is not likely that there would be a significant effect as a result of major accidents or disasters.

Human Health and Safety

11.1.6 Construction of the proposed scheme is likely to cause short-term disruptions to public receptors on the island. The Principal Contractor will adhere to the policies and procedures cited within their Risk Assessment Method Statement (RAMS) which will be appended to the CEMP. These will cover topics including:

- Control of Substances Hazardous to Health (COSHH);
- Safe driving;
- Digging around services; and
- Personal Protective Equipment (PPE) requirements.

11.1.7 For the duration of the proposed scheme, there are various risks to workers and other people. Risks are those that are commonly associated with working with machinery and large / heavy quantities of materials.

11.1.8 The Principal Contractor will be responsible for managing risks to health and safety. Procedures will be available on-site and regularly updated with changing project conditions. Unacceptable risks to health & safety are considered highly unlikely based on the Principal Contractor having considerable experience in civil infrastructure construction projects.

¹² IEMA (2020) Major Accidents and Disasters in EIA [last accessed: January 2024]. [IEMA - IEMA Major Accidents and Disasters in EIA Guide](#)

¹³ Zetica UXO (2023) Unexploded Bomb Risk Map [last accessed: January 2024]. [Risk Maps | Zetica UXO](#)

11.1.9 Temporary diversions will be deployed for affected roads, footpaths and other access points to ensure safety of the public. A 6m construction easement will be implemented for the proposed pipeline route, which will be secured appropriately to prevent unsafe access from the public. The works will endeavour to avoid peak tourist season which will limit disturbance to the public.

11.1.10 As stated within Section 9 potential impacts to human health due to air pollution associated with the proposed scheme are unlikely to be significant with implementation of control measures within the CEMP. Operators of the site are expected to be suitably competent and trained. Operation of the proposed scheme is **highly unlikely to cause adverse impacts** to health and safety.

Likelihood of Significant Adverse Effects

Construction and Operation

11.1.11 Overall, no unacceptable risks to human health and safety are likely during construction and operation of the proposed scheme.

12 Cumulative Effects with Other Proposed Developments

12.1.1 A review of the Isles of Scilly Council's online planning portal was completed in July 2024 to access information relating to any proposed or permitted developments on the island of St Martin's to assess cumulative effects from the proposed scheme. A review of planning applications submitted within the last three years identified one development that could result in cumulative effects with the proposed scheme. This planning application and potential cumulative effects is detailed in Table 12-1.

Table 12-1: Potential Cumulative Effects

Planning Application Number and Name	Development Description	Distance from the Proposed Scheme
P/22/078/FUL Lower Town Quay, Lower Town, St Martin's, Isles Of Scilly	<u>Description:</u> Application to construct a removable slipway at the south west end of St Martins, at Lower Town with an associated erosion protection surface and dune stabilisation works. (EIA Development) <u>Status:</u> Granted (20/04/23)	A section of the proposed intake and outfall are within the other development's boundary, whilst the RO plant is located adjacent to the other development's boundary.

12.1.2 According to the planning application's (P/22/078/FUL) Environmental Statement addendum, construction at Lower Town Quay is expected to take place over approximately one week in April 2025, which may coincide for a very small period with the proposed scheme's construction period. As the other development is an EIA development, the development's supporting Environmental Statement presents appropriate mitigation measures to reduce the potential for the proposed scheme to result in significant environmental effects, including accounting for potential cumulative effects with other developments.

12.1.3 The proposed scheme will also be informed by environmental assessments and implement appropriate mitigation based on these, as well as specific environmental management plans. Based on this, it is considered unlikely that significant cumulative effects would arise between the two developments. As the other development's construction period is small, it reduces the potential for overlapping construction activities at the same location at the same time.

12.1.4 A review of the Isles of Scilly Council Local Plan (2015 to 2030)¹⁴ did not identify any significant site allocations on the island of St Martin's.

A project undertaken by SWWL separate to the Isles of Scilly Capital Delivery Programme was recently submitted to IoSC (refer to: *EIA-24-001 Screening Opinion* dated 31st January 2024). The project involved construction of a below ground interim pipeline between Middle Town and Higher Town. The screening opinion provided by the IoSC determine that the works did not constitute an EIA development. Construction of the proposed pipeline is scheduled for winter 2024. The boundary of the works between Middle Town and Higher Town overlaps with the boundary of the proposed scheme approximately 100m north of Middle Town.

12.1.5 Construction of other developments by South West Water, as part of the South West Water Capital Delivery Programme, may be ongoing over the construction period of the proposed scheme. However, works will be programmed efficiently to limit the overlap of construction periods.

12.1.6 In addition, Nationally Significant Infrastructure Projects (NSIPs)¹⁵ were also searched for using the National Infrastructure Planning website. No NSIPs were identified on the whole Isles of Scilly archipelago and consequently, no cumulative effects with any NSIPs are anticipated. As such, **no significant cumulative effects are anticipated** following the completion of the proposed scheme.

¹⁴ Isles of Scilly Council (2021) Isles of Scilly Local Plan 2015 to 2030 [last accessed: January 2024]. Available at: [Isles of Scilly Local Plan](#)

¹⁵ Infrastructure Planning Inspectorate (2023) National Infrastructure Planning [last accessed: January 2024] [National Infrastructure Planning \(planninginspectorate.gov.uk\)](#)

13 Conclusions

13.1.1 The proposed scheme involves the construction of infrastructure to improve and increase the reliability and abundance of potable water on the island of St Martin's. The construction of the proposed scheme is expected to start in April 2025 and conclude by June 2026, with commissioning August-December 2026.

13.1.2 Additionally, under Section 3 of the 1991 Act SWWL have duties as the Undertaker. The environmental, historical and tranquil aspects of the IoS have been considered throughout the design and proposed construction process, whilst considering the Undertaker's central duty to provide and maintain an effective and economical system for residents and visitors of the isles.

13.1.3 The proposed scheme is located within several 'sensitive areas' as defined by the EIA Regulations (such as the National Landscape, SAC and SPA). Various further assessments (as discussed within Sections 3 to 11 of this report) will be carried out in order to ensure that potential impacts of the proposed scheme upon such sensitive areas, as well other designated sites, are adequately appraised and appropriate mitigative measures identified. A Report to Inform HRA will be produced, which will focus on the SAC and SPA sensitive sites.

13.1.4 With the above in mind, it is considered that the construction and operation of the proposed scheme will be assessed and mitigated to avoid significant permanent effects on the surrounding environment. Equally, many elements of the proposed works would be below ground once operational, and the above ground elements will be designed in a visually sensitive manner that would limit their impact on nearby designations.

13.1.5 Additionally, SSSI Assent and consultation will be sought with Natural England for the adjacent SSSI.

13.1.6 As noted in Table 2-1, the proposed scheme would directly impact 'No main habitat but additional habitats present' (mudflat) Priority Habitats (with a total affected area of 0.00075ha – approximately 7.5m²). This loss will occur as a result of the placement of the brine discharge outfall. Replacement habitat will be implemented in line with BNG requirements and in accordance with the BNG Strategy currently being produced for the archipelago.

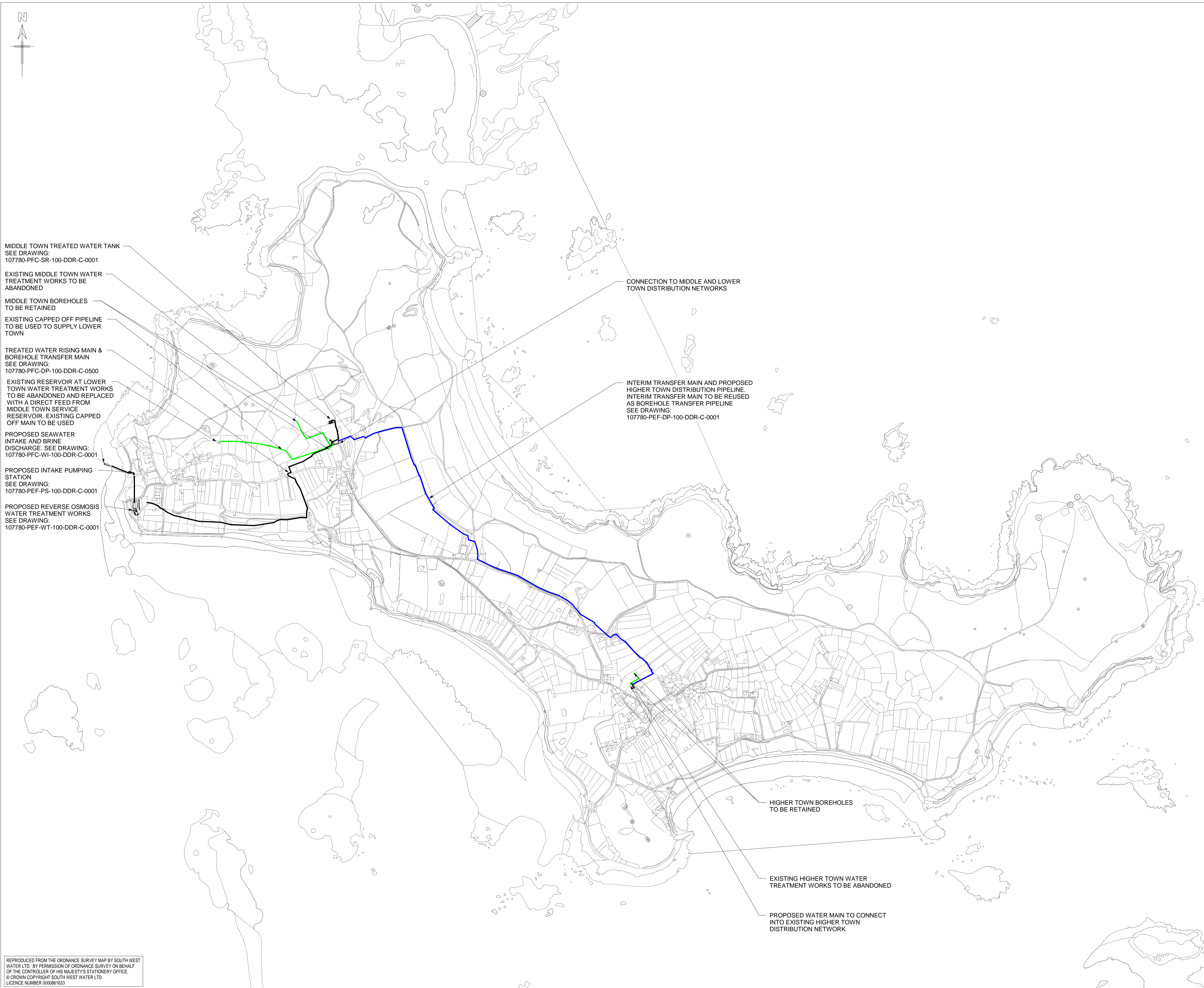
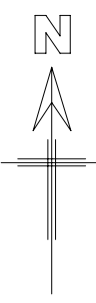
13.1.7 Mitigation to reduce the impact of the proposed scheme upon the environment will be applied as discussed within Sections 3 (Nature Conservation Designations), 4 (Habitats), 5 (Archaeology and Cultural Heritage), 6 (Landscape), 7 (Water Environment), 8 (Geology and Soils), 9 (Nuisance to Sensitive Receptors) and 10 (Waste).

13.1.8 A CEMP will be produced prior to commencing works. The CEMP will be a commitment from the Principal Contractor to ensure good practice techniques are implemented during construction, in-line with recommendations made throughout this EIA Screening. Implementation of a CEMP will reduce the potential for adverse impacts to the National Landscape and human receptors. Control measures for nuisances such as noise and vibration, dust and emissions, pollution and contamination events, and disturbances to ecology and the water environment will be managed by requirements in the CEMP.

13.1.9 Delivering on the design principles discussed in paragraph 2.6.1 would also reduce waste and promote a sustainable construction method throughout delivery of the proposed scheme. Implementation of a Site Waste Management Plan will also be a requirement.

13.1.10 Completion and implementation of the above outlined documents and assessments will inform the need for any further assessments and identify appropriate mitigation measures. Based on the findings of this Screening, the Undertaker is seeking to confirm that the proposed scheme **is not** an EIA development.

Appendix A Proposed Development



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- THIS DRAWING IS INTENDED TO DEMONSTRATE THE SCALE PROPOSED WATER TREATMENT ASSETS INCLUDED IN THE ST MARTIN'S POTABLE WATER SUPPLY PROJECT. LAYOUT TO BE CONFIRMED FOLLOWING DESIGN DEVELOPMENT, SUPPLIER DETAILS AND STRUCTURAL & GEOTECHNICAL DESIGN.

LEGEND

- EXISTING
- INTERIM WORKS
- PROPOSED WORKS

P02	FOR EIA SCREENING OPINION	IC	RN	LJW	LJW	21.05.24
P01	CONCEPT LAYOUT	IC	RN	LJW	LJW	18.12.23
REV	DESCRIPTION	DRN	DSN	CHK	APP	DATE


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 E-Mail: Engineering@trant.co.uk
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Project Status **OUTLINE DESIGN**

Project **ISLES OF SCILLY CAPITAL DELIVERY PROGRAMME**

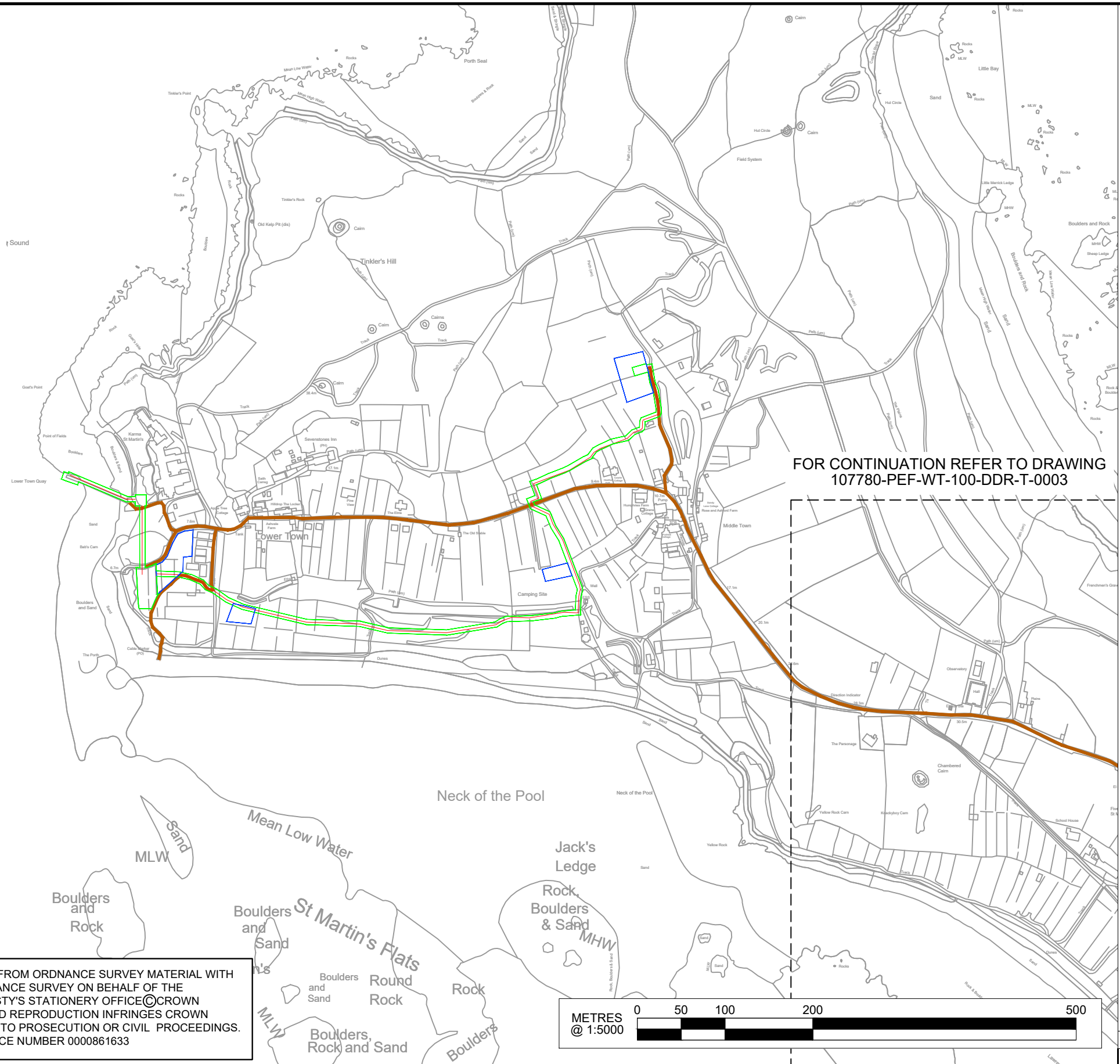
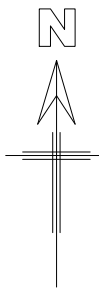
Drawing Title **ST MARTIN'S WORKS OVERVIEW**

Drawing Status **FOR INFORMATION**

	Name	Date	Status Code
Drawn	I. Cerdan	21.05.24	S2
Designed	R. Newell	21.05.24	Scale 1:5000
Eng Chk	L. Wardell	21.05.24	Revision P02
Approved	L. Wardell	21.05.24	

Drawing No. **107780-PEF-ZZ-100-DDR-C-0001**

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FOR CONTINUATION REFER TO DRAWING
107780-PEF-WT-100-DDR-T-0003

LEGEND

- ACCESS ROUTES
- PIPELINE
- EASEMENT
- NEW STORAGE AREAS

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P01	LEGAL	NG	STF	RN	RN	31.05.24
REV	DESCRIPTION	DRN	DES	CHK	APP	DATE

Drawing Status		LEGAL	
Drawn	Name	Date	Status Code
Designed	Name	Date	Scale
Eng Chk	Name	Date	Revision
Approved	Name	Date	

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Architect/Client/Contractor

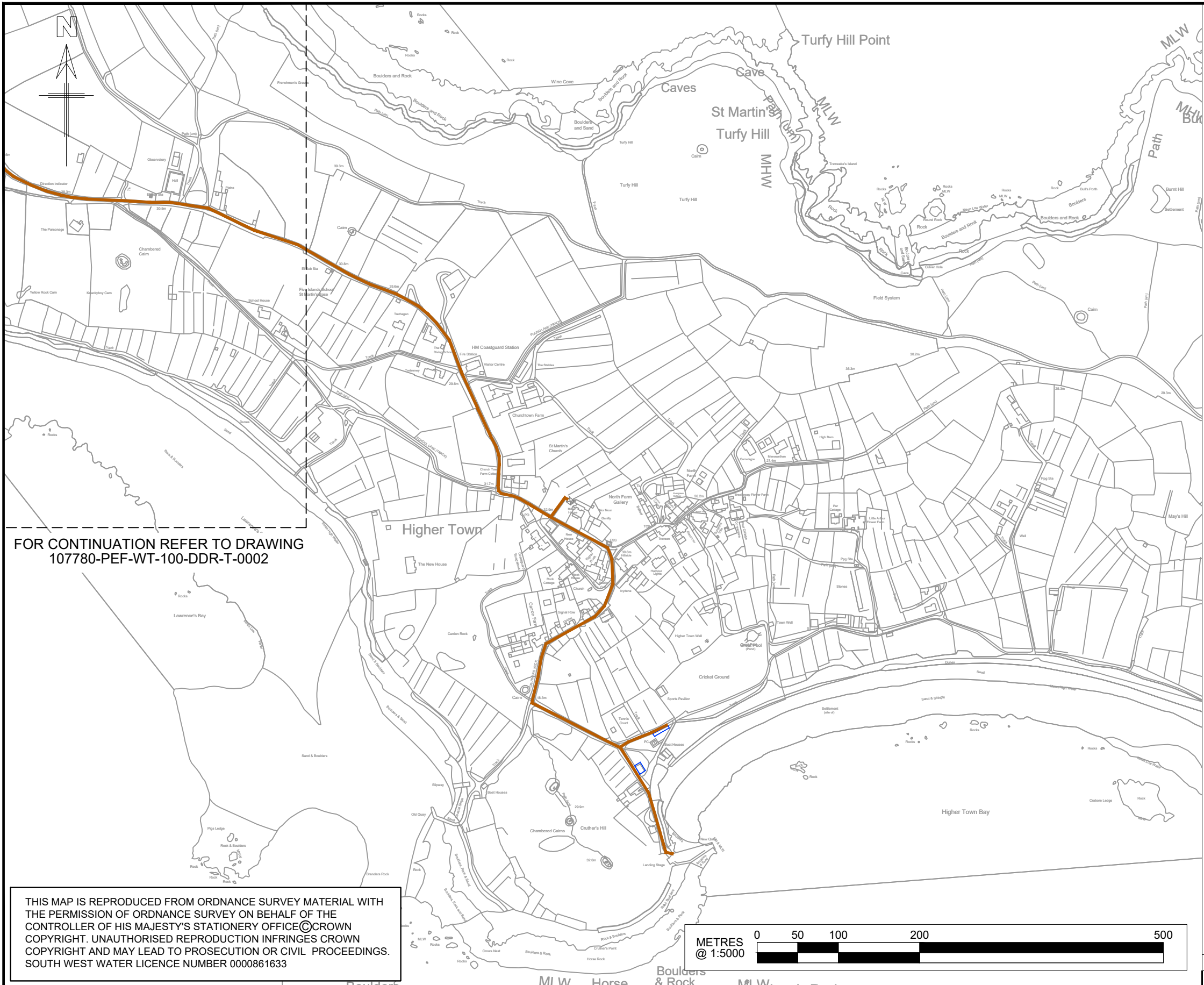



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 PROGRAMME**

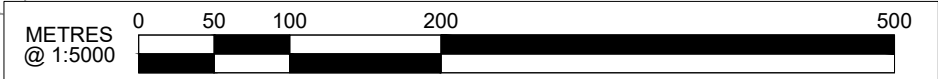
**ST MARTIN'S
 MAIN WORKS CONSTRUCTION
 ACCESS PLAN 1**

Drawing No.
107780 - PEF - WT - 100 - DDR - T - 0002



FOR CONTINUATION REFER TO DRAWING
107780-PEF-WT-100-DDR-T-0002

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LEGEND

- ACCESS ROUTES
- NEW STORAGE AREAS

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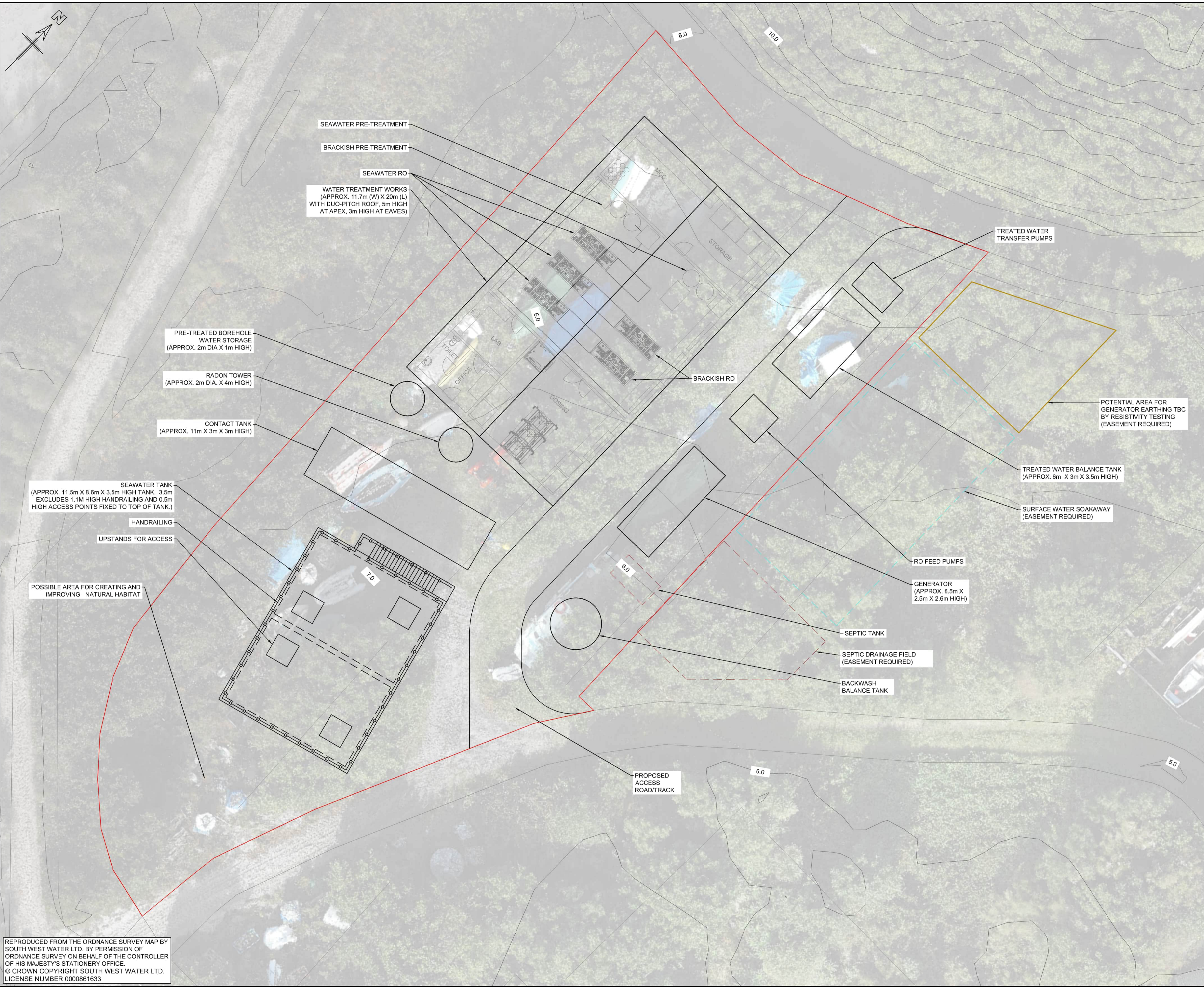
**ISLES OF SCILLY
CAPITAL DELIVERY
PROGRAMME**

**ST MARTIN'S
MAIN WORKS CONSTRUCTION
ACCESS PLAN 2**

P01	LEGAL	NG	STF	RN	RN	31.05.24
REV	DESCRIPTION	DRN	DES	CHK	APP	DATE

Drawing Status		LEGAL			
Drawn	Name	Date	Status Code		
Designed	Name	Date	Scale		
Eng Chk	Name	Date	Revision		
Approved	Name	Date	Status Code		

Drawing No.
107780 - PEF - WT - 100 - DDR - T - 0003



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- NOTES:**
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 - AERIAL IMAGERY PROVIDED BY CORMAC (2023).
 - THIS DRAWING IS INTENDED TO PROVIDE AN OVERVIEW OF THE PROPOSED WATER TREATMENT ASSETS INCLUDED IN THE ST MARTIN'S POTABLE WATER SUPPLY PROJECT. LAYOUT TO BE CONFIRMED FOLLOWING DESIGN DEVELOPMENT, SUPPLIER DETAILS AND STRUCTURAL & GEOTECHNICAL DESIGN. LAYOUT IS BASED ON SEAWATER INTAKE PUMPING STATION LOCATED OFF-SITE.
 - DIRECTLY DRILLED GRAVITY PIPELINE FOR BACKWASH BALANCE TANK PROPOSED, SUBJECT TO GEOTECHNICAL CONDITIONS.
 - AVAILABLE RECORDS DO NOT SHOW STATUTORY SERVICES WITHIN THE SITE BOUNDARY. UTILITY SERVICES SEARCH TO BE COMPLETED TO CONFIRM PRESENCE OF SERVICES.
 - SECURITY REQUIREMENTS TO BE CONFIRMED.

KEY:

— PROPOSED SITE BOUNDARY (APPROX. 1115 m²)

P05	PROPOSED SITE BOUNDARY AMENDED	KT	KT	RN	RN	31.05.24
P04	CONCEPT LAYOUT REVISED	RN	RN	LJW	LJW	07.05.24
P03	CONCEPT LAYOUT REVISED	KT	KT	RN	LJW	04.04.24
P02	CONCEPT LAYOUT REVISED	IC	RN	LJW	LJW	18.12.23
P01	CONCEPT LAYOUT	IC	RN	LJW	LJW	25.08.23
REV	DESCRIPTION	DRN	DES	CHK	APP	DATE

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Project Status OUTLINE DESIGN

Project ISLES OF SCILLY CAPITAL DELIVERY PROGRAMME

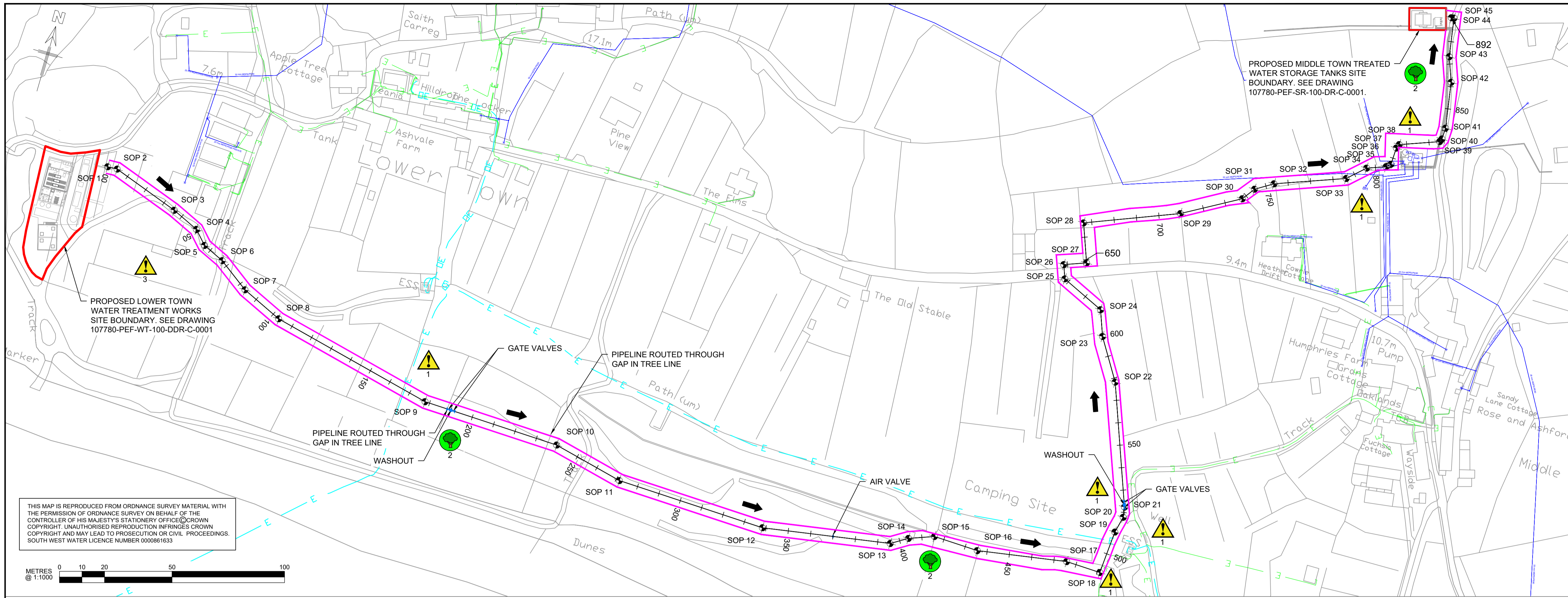
Drawing Title ST MARTIN'S PROPOSED WATER TREATMENT WORKS GA

Drawing Status FOR REVIEW AND COMMENT

Drawn	Name	Date	Status Code
Designed	K. THORNE	31.05.2024	S3
Eng Ck	R. NEWELL	31.05.2024	Scale
Approved	R. NEWELL	31.05.2024	Revision
			P05

Drawing No. 107780-PEF-WT-100-DDR-C-0001

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- HEALTH & SAFETY**
- SITE HAZARDS**
- SERVICE CROSSING AT UNKNOWN LEVEL.
 - HIGH RISK OF UNRECORDED SERVICES ALONG ROUTE. SAFE DIGGING BEST PRACTICE TO BE FOLLOWED THROUGHOUT.
 - SERVICES TO HUTS NOT SHOWN ON UTILITIES MAPPING.
- ENVIRONMENTAL HAZARDS**
- THE CEMP MUST BE REVIEWED FOR A COMPLETE OVERVIEW OF ENVIRONMENTAL HAZARDS & MITIGATIONS.
 - ALL HEDGES ON PIPELINE ROUTE ARE TO BE PROTECTED.

- NOTES**
- ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES UNLESS SHOWN OTHERWISE.
 - ALL WORKS TO BE IN ACCORDANCE WITH SOUTH WEST WATER STANDARDS AND SPECIFICATION FOR THE WATER INDUSTRY (CESWI) 7th EDITION.
 - RISING MAINS TO BE LAID AT A MINIMUM DEPTH TO CROWN OF 0.5m.
 - UNKNOWN LEVEL OF EXISTING SERVICES WHICH INTERCEPT THE RISING MAIN. CONTRACTOR TO DETERMINE LEVELS AND LOCATIONS PRIOR TO LAYING THE MAIN AND THEN CONTACT THE DESIGNER TO DISCUSS IF DEPTH OR ALIGNMENT ALTERATIONS ARE REQUIRED.
 - RISING MAINS TO BE PE80 SDR11 WITH CLASS S1 BEDDING AND SURROUND THAT CONFORMS TO BS 1610:2015.
 - TREATED WATER RISING MAIN TO BE LAID ALONGSIDE BOREHOLE TRANSFER MAIN.
 - PIPELINE TO RUN A MINIMUM OF 1500 mm AWAY FROM HEDGEROWS UNLESS A HEDGE CROSSING IS REQUIRED.

LEGEND

- EXISTING SURFACE
- ALIGNMENT
- UNDERGROUND ELECTRIC 11KV
- OVERHEAD ELECTRIC 11KV
- UNDERGROUND LV
- SERVICE PIPE
- EXISTING WATER SUPPLY
- UNTREATED WATER MAIN
- WORKING AREA
- GATE VALVE
- AIR VALVE
- WASHOUT
- FLOW DIRECTION

ST MARTINS TREATED WATER FEED TO MIDDLE TOWN TANKS CH0 - CH500
 SCALE: H 1:1000, V 1:1000 DATUM: 0.00

POINT NUMBER	EASTING	NORTHING	INVERT LEVEL	CHAINAGE
1	91496.785	16105.586	6.151	0.000
2	91501.120	16105.761	5.576	4.339
3	91530.585	16095.248	5.375	35.623
4	91542.408	16089.836	5.226	48.626
5	91547.849	16083.981	5.414	56.618
6	91557.265	16079.671	5.385	66.974
7	91570.580	16070.050	4.129	83.401
8	91588.540	16061.828	3.450	103.153
9	91661.252	16044.574	3.034	177.885
10	91722.800	16042.319	3.792	239.474
11	91753.937	16034.930	3.450	271.475
12	91820.847	16032.478	5.790	338.430
13	91877.312	16041.574	5.401	395.623
14	91884.470	16045.987	5.272	404.033
15	91895.334	16050.028	5.141	415.623
16	91915.320	16049.295	3.946	435.623
17	91954.811	16055.657	4.323	475.623
18	91970.329	16055.088	4.657	491.151
19	91971.750	16074.208	2.836	510.324
20	91973.495	16081.563	2.609	517.883
21	91972.776	16086.028	2.351	522.405
22	91953.358	16138.239	4.251	578.110
23	91942.325	16156.135	5.812	599.134
24	91938.156	16167.345	6.871	611.094
25	91919.121	16176.060	8.478	632.030
26	91916.901	16182.028	9.990	638.397
27	91926.413	16185.566	9.574	648.546
28	91920.197	16202.279	14.598	666.377
29	91980.392	16218.254	13.445	709.630
30	91984.964	16232.214	13.223	737.891
31	91988.982	16237.775	14.005	744.751
32	91996.623	16242.485	14.113	753.728
33	92026.748	16253.689	13.853	785.868
34	92034.218	16260.631	14.748	796.066
35	92042.358	16263.659	14.849	804.751
36	92044.129	16265.305	15.278	807.169
37	92044.407	16272.882	16.498	814.751
38	92045.241	16274.704	16.824	816.756

ST MARTINS TREATED WATER FEED TO MIDDLE TOWN TANKS CH500 - CH892
 SCALE: H 1:1000, V 1:1000 DATUM: 0.00

POINT NUMBER	EASTING	NORTHING	INVERT LEVEL	CHAINAGE
39	92062.108	16280.977	18.078	834.751
40	92062.752	16282.384	18.416	836.298
41	92062.938	16287.463	19.657	841.380
42	92059.678	16307.700	22.930	861.878
43	92055.701	16318.393	23.966	873.288
44	92052.954	16335.443	25.699	890.557
45	92049.441	16334.877	25.689	894.116

POINT DATA

POINT NUMBER	EASTING	NORTHING	INVERT LEVEL	CHAINAGE
1	91496.785	16105.586	6.151	0.000
2	91501.120	16105.761	5.576	4.339
3	91530.585	16095.248	5.375	35.623
4	91542.408	16089.836	5.226	48.626
5	91547.849	16083.981	5.414	56.618
6	91557.265	16079.671	5.385	66.974
7	91570.580	16070.050	4.129	83.401
8	91588.540	16061.828	3.450	103.153
9	91661.252	16044.574	3.034	177.885
10	91722.800	16042.319	3.792	239.474
11	91753.937	16034.930	3.450	271.475
12	91820.847	16032.478	5.790	338.430
13	91877.312	16041.574	5.401	395.623
14	91884.470	16045.987	5.272	404.033
15	91895.334	16050.028	5.141	415.623
16	91915.320	16049.295	3.946	435.623
17	91954.811	16055.657	4.323	475.623
18	91970.329	16055.088	4.657	491.151
19	91971.750	16074.208	2.836	510.324
20	91973.495	16081.563	2.609	517.883
21	91972.776	16086.028	2.351	522.405
22	91953.358	16138.239	4.251	578.110
23	91942.325	16156.135	5.812	599.134
24	91938.156	16167.345	6.871	611.094
25	91919.121	16176.060	8.478	632.030
26	91916.901	16182.028	9.990	638.397
27	91926.413	16185.566	9.574	648.546
28	91920.197	16202.279	14.598	666.377
29	91980.392	16218.254	13.445	709.630
30	91984.964	16232.214	13.223	737.891
31	91988.982	16237.775	14.005	744.751
32	91996.623	16242.485	14.113	753.728
33	92026.748	16253.689	13.853	785.868
34	92034.218	16260.631	14.748	796.066
35	92042.358	16263.659	14.849	804.751
36	92044.129	16265.305	15.278	807.169
37	92044.407	16272.882	16.498	814.751
38	92045.241	16274.704	16.824	816.756

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OUTLINE DESIGN

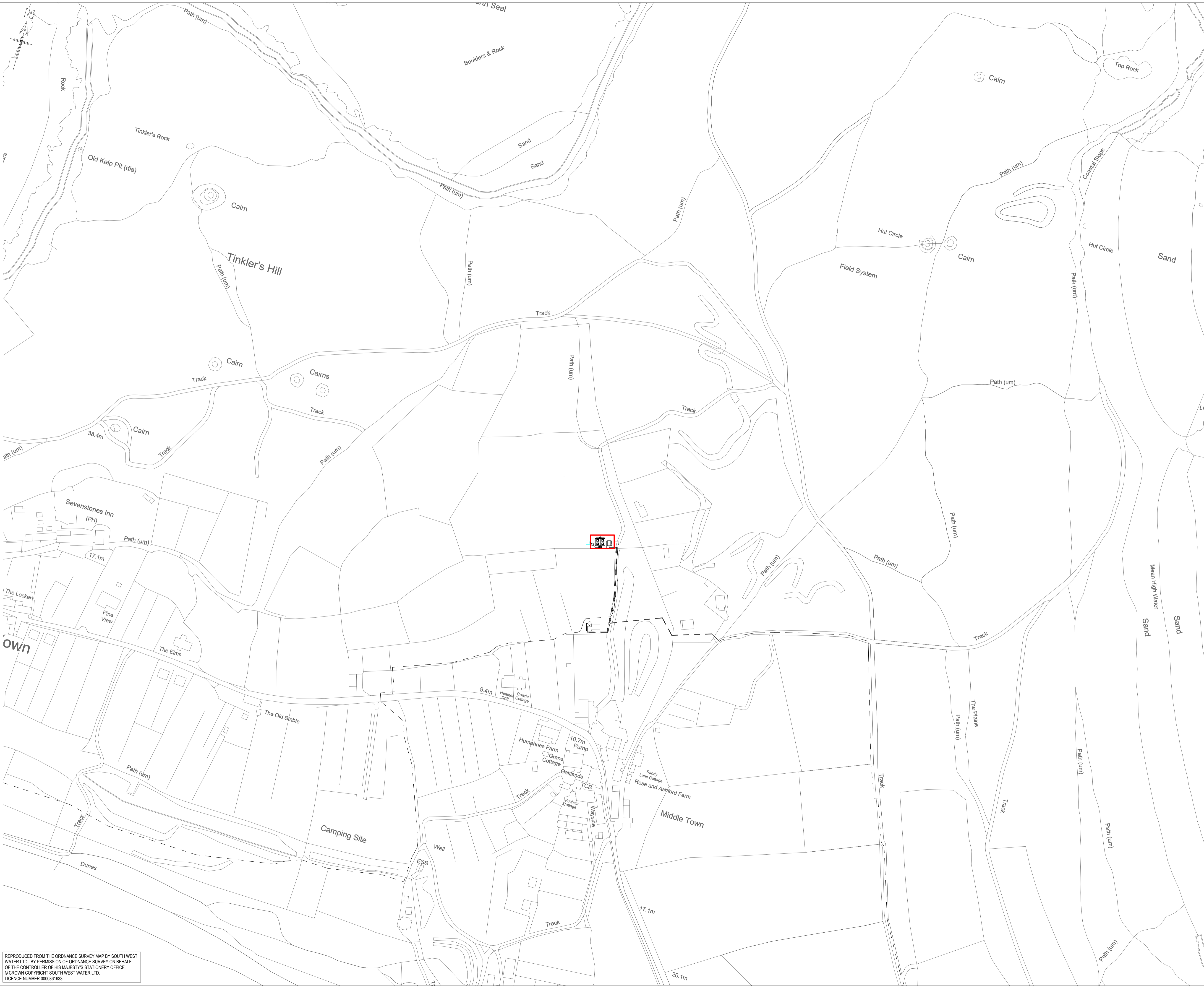
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ST MARTINS TREATED WATER FEED TO MIDDLE TOWN TANKS LONG SECTION

FOR REVIEW AND COMMENT

Drawn	Name	Date	Status Code
N. CHEUK	N. CHEUK	10.07.24	S3
Designed	S. FRAYLING	10.07.24	AS SHOWN
Eng Chk	R. NEWELL	10.07.24	Revision
Approved	R. NEWELL	10.07.24	P01

Drawing No. **107780-PEF-DP-100-DDR-C-0100**



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 - SITE AREA WITHIN RED LINE BOUNDARY IS APPROXIMATELY 170m².

LEGEND

- PROPOSED STRUCTURE
- PROPOSED BURIED PIPEWORK
- PROPOSED SITE BOUNDARY LINE
- SOAKAWAY

0m 25m 50m 75m 100m 125m

SCALE 1:1250 @ A1

NO	DESCRIPTION	DRN	DSN	CHK	APP	DATE
P02	FOR REVIEW AND COMMENT	NG	SF	RN	RN	16.05.24
P01	FOR REVIEW AND COMMENT	NG	SF	RN	RN	16.05.24
REV						

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Project Status **CONCEPT DESIGN**

Project **ISLES OF SCILLY CAPITAL DELIVERY PROGRAMME**

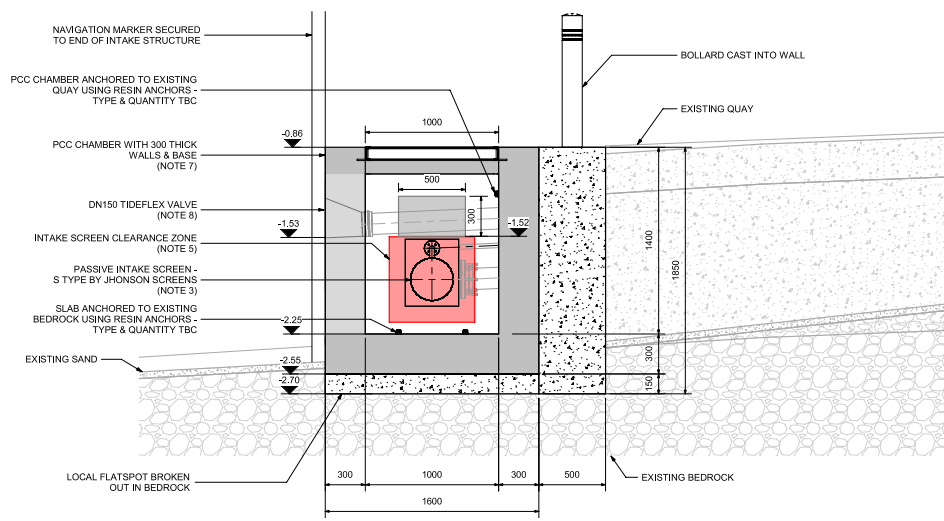
Drawing Title **ST MARTIN'S MIDDLE TOWN SERVICE RESERVOIR LOCATION PLAN**

Drawing Status **FOR REVIEW AND COMMENT**

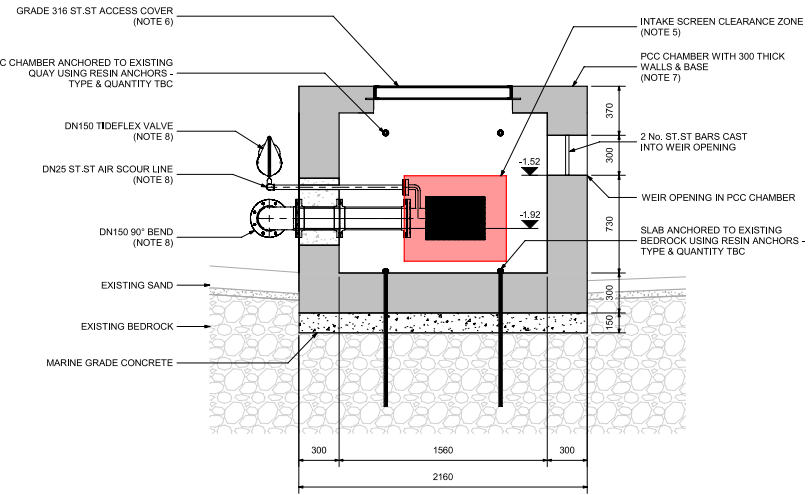
Name	Date	Status Code
Drawn N.Girach	16.05.24	S3
Designed S.Frayling	16.05.24	Scale 1:1250
Eng Chk R.Newell	16.05.24	Revision P02
Approved R.Newell	16.05.24	

Drawing No. **107780-PEF-SR-101-DDR-C-0002**

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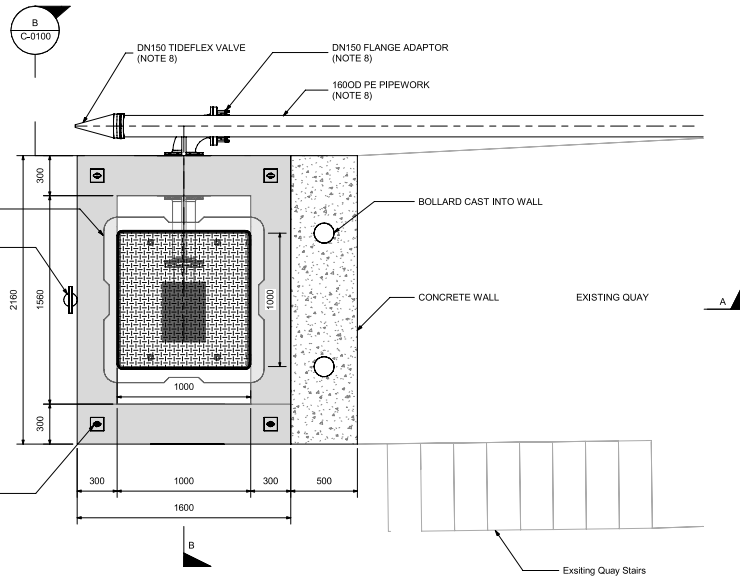


SECTION A-A
1 : 20

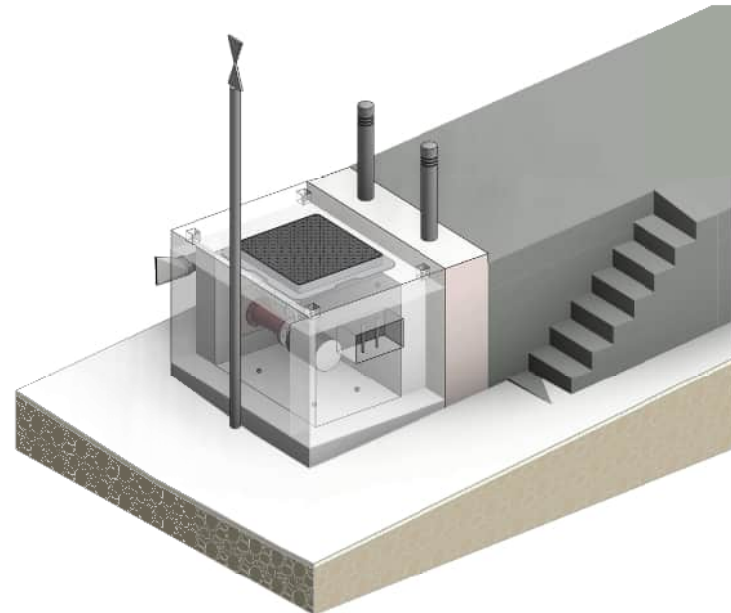


SECTION B-B
1 : 20

LEVELS	
Highest Astronomical Tide (HAT)	3.39 m OD
Mean Low Water Neap (MLWN)	-0.91 m OD
Mean High Water Neap (MHWN)	1.39 m OD
Mean Low Water Springs (MLWS)	-2.21 m OD
Mean High Water Springs (MHWS)	2.79 m OD
Lowest Astronomical Tide (LAT)	-2.82 m OD



PLAN
1 : 20



INTAKE CHAMBER ISOMETRIC

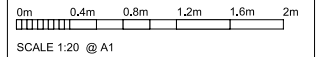
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NOTES

- UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METERS ABOVE ORDNANCE SURVEY DATUM (ST MARYS)
- THESE DRAWINGS ARE FOR OUTLINE DESIGN ONLY. ALL DETAILS ARE TO BE CONFIRMED BY THE DETAILED DESIGNER. ANY STRUCTURAL OR GEOTECHNICAL DETAILS ARE PROVIDED ON THE BASIS OF ENGINEERING JUDGEMENT ONLY AT THIS STAGE.
- THE PASSIVE SCREEN DOES NOT REQUIRE ANY SUPPORT. THE SCREEN IS SUPPORTED BY THE MOUNTING FLANGE, WITH LOADS TRANSFERRED TO THE PIPE.
- THE MASS OF THE REINFORCED CONCRETE PCC STRUCTURE (WALLS + BASE) = 8.44 TONNES.
- CLEARANCE ZONE AROUND INTAKE SCREEN AS PER SUPPLIER'S INSTRUCTIONS FOR DETAILS SEE QUOTATION - 107780-PEF-WI-XX-TQU-M-0001.
- THE FINAL COVER SELECTION IS TO BE AGREED FOLLOWING DEVELOPMENT AND DISCUSSION.
- THICKNESS OF PCC CHAMBER WALLS AND FLOOR TBC BY SUPPLIER.
- PROTECTION OF PIPEWORK TO BE AGREED AT A LATER STAGE.

REFERENCE DRAWINGS

- JHONSON SCREEN 107780-PEF-WI-XX-TQU-M-0001 QUOTATION
- ADMIRALTY TIDE TABLE (ATT) VOLUME 1 (FOR 2010)
- BATHYMETRIC CONTOURS GEBCO



REV	DESCRIPTION	DATE	BY	CHKD	APPD
P01	FOR REVIEW & COMMENT	19/06/24			

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Engineering@trant.co.uk
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Project Status: **OUTLINE DESIGN**

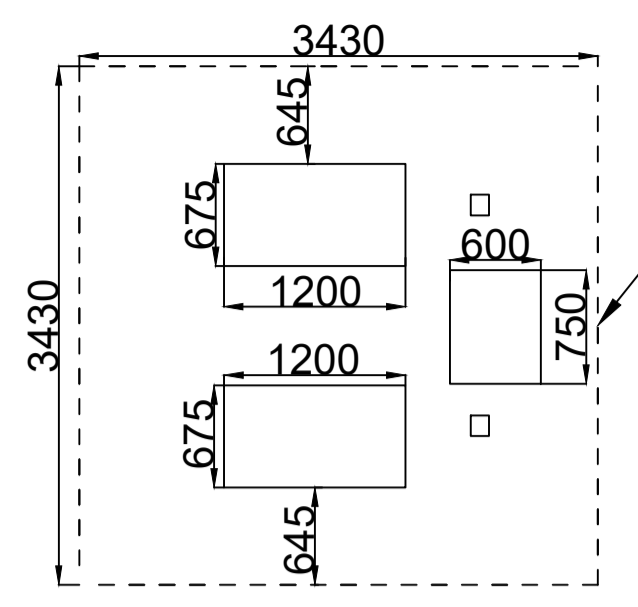
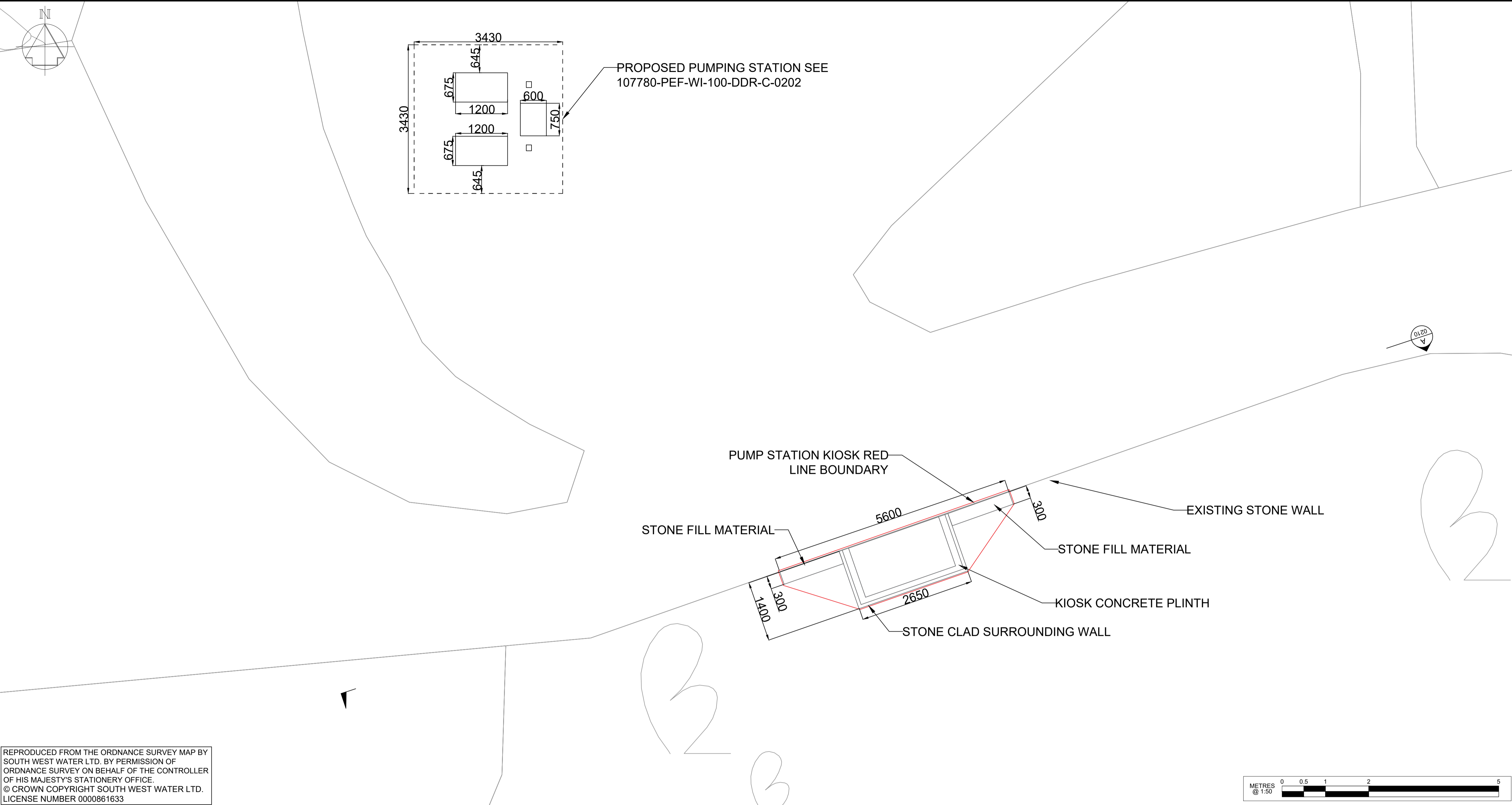
Project: **ISLES OF SCILLY CAPITAL DELIVERY PROGRAMME**

Drawing Title: **ST MARTINS INTAKE & OUTFALL CHAMBER GENERAL ARRANGEMENT**

Drawing Status: **FOR REVIEW & COMMENT**

Name	Date	Status Code	S3
Drawn: N.Zaman	19/06/24		
Designed: L.Chinnock	19/06/24	Scale:	1:100
Eng. CHK: C.James	19/06/24	Revision:	P01
Approved: R.Newell	19/06/24		

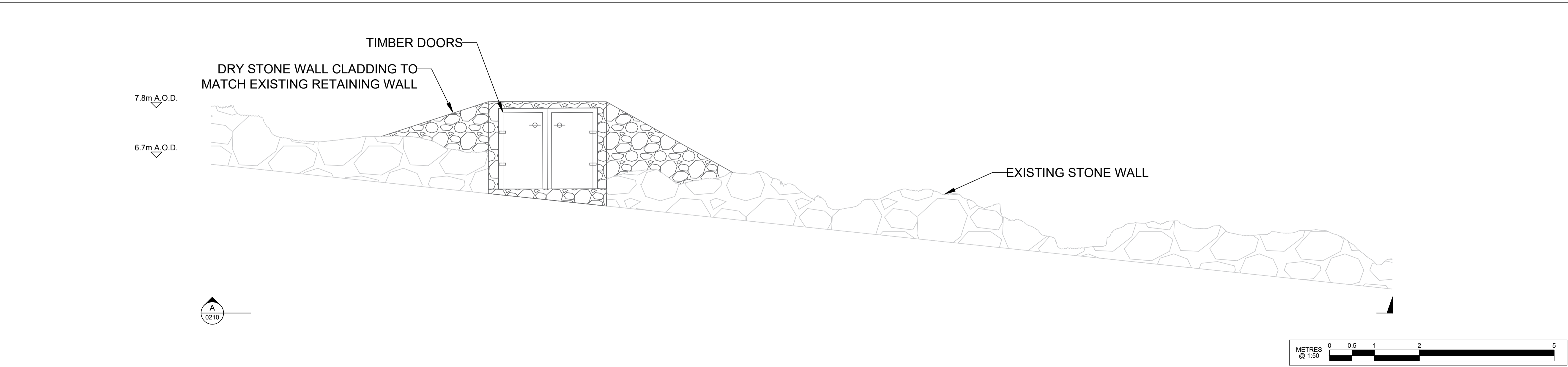
Drawing No. **107780-PEF-WI-100-DDR-C-0100**



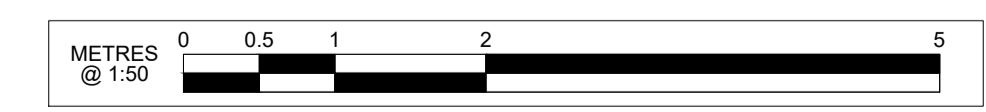
PROPOSED PUMPING STATION SEE
107780-PEF-WI-100-DDR-C-0202

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PLAN VIEW



SECTION A-A VIEW



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 - THIS CONCEPT DRAWING IS INTENDED TO DEMONSTRATE THE SCALE AND ELEVATION OF THE PROPOSED WATER TREATMENT ANCILLARY EQUIPMENT. LAYOUT TO BE CONFIRMED FOLLOWING DESIGN DEVELOPMENT, SUPPLIER DETAILS AND STRUCTURAL & GEOTECHNICAL DESIGN.
 - DUCTING ARRANGEMENT DETAILS TBC.
 - SECURITY DETAILS TBC.

KEY:
— PROPOSED SITE BOUNDARY (APPROX. 6.1m²)

P01	CONCEPT LAYOUT	LMC	LMC	RN	RN	06.06.24
REV	DESCRIPTION	DRN	DES	CHK	APP	DATE

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Project Status
OUTLINE DESIGN

Project
ISLES OF SCILLY
CAPITAL DELIVERY
PROGRAMME

Drawing Title
ST MARTIN'S
INTAKE PUMPING STATION
PROPOSED KIOSK

Drawing Status
FOR REVIEW AND COMMENT

	Name	Date	Status Code
Drawn	LUKE CHINNOCK	29.05.24	S3
Designed	LUKE CHINNOCK	29.05.24	Scale 1:50
Eng Chk	ROB NEWELL	03.06.24	Revision
Approved	ROB NEWELL	05.06.24	P01

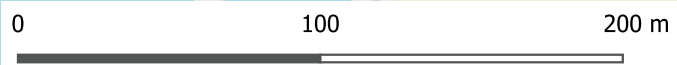
Drawing No.
107780-PEF-WI-100-DDR-C-0210

Appendix B Environmental Constraints

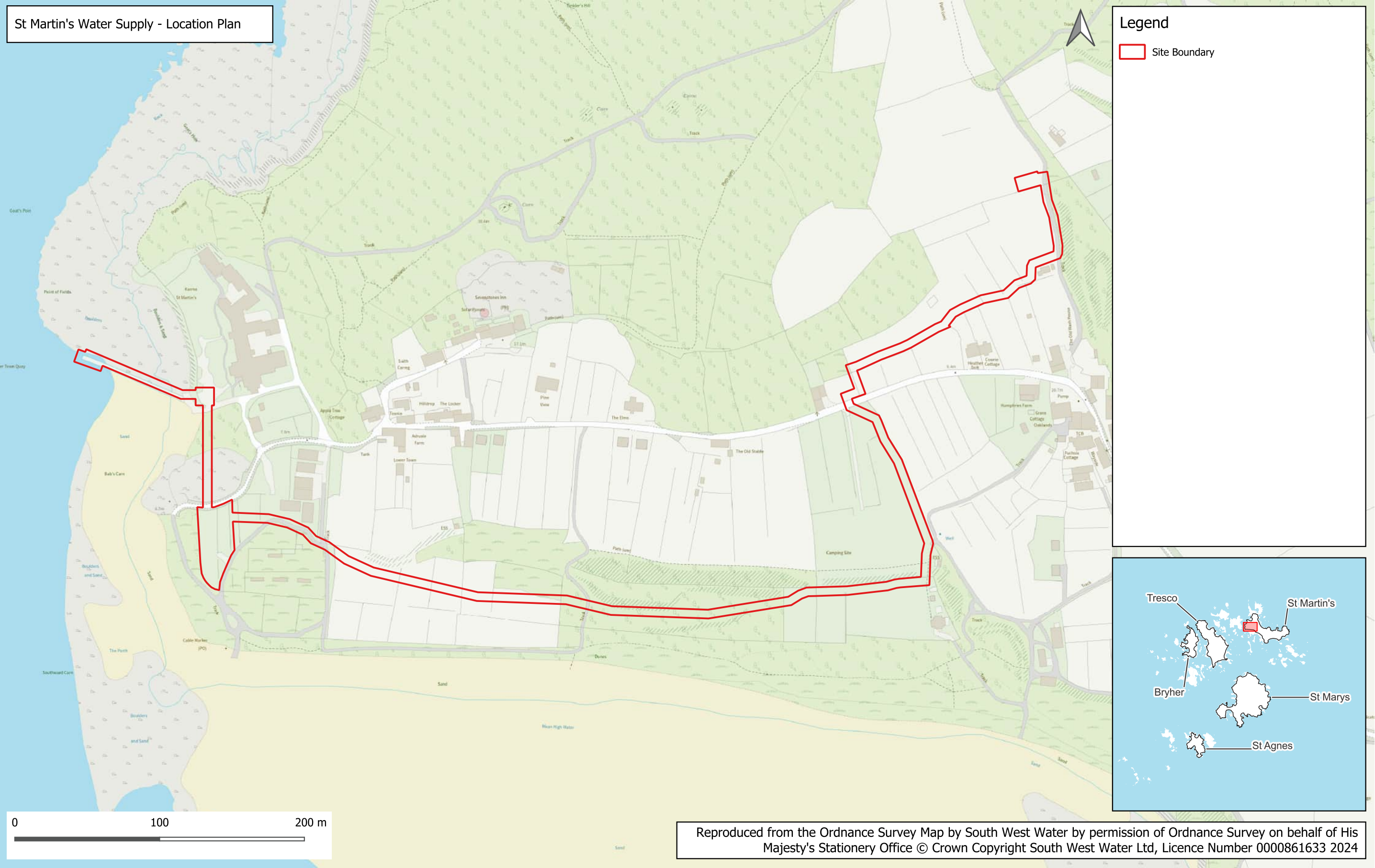
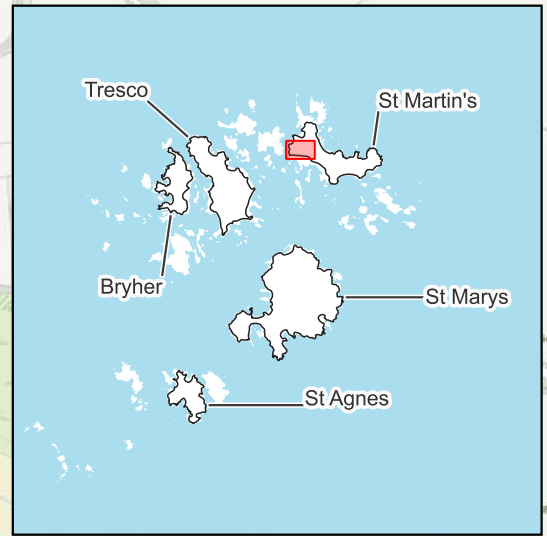
St Martin's Water Supply - Location Plan

Legend








 Site Boundary



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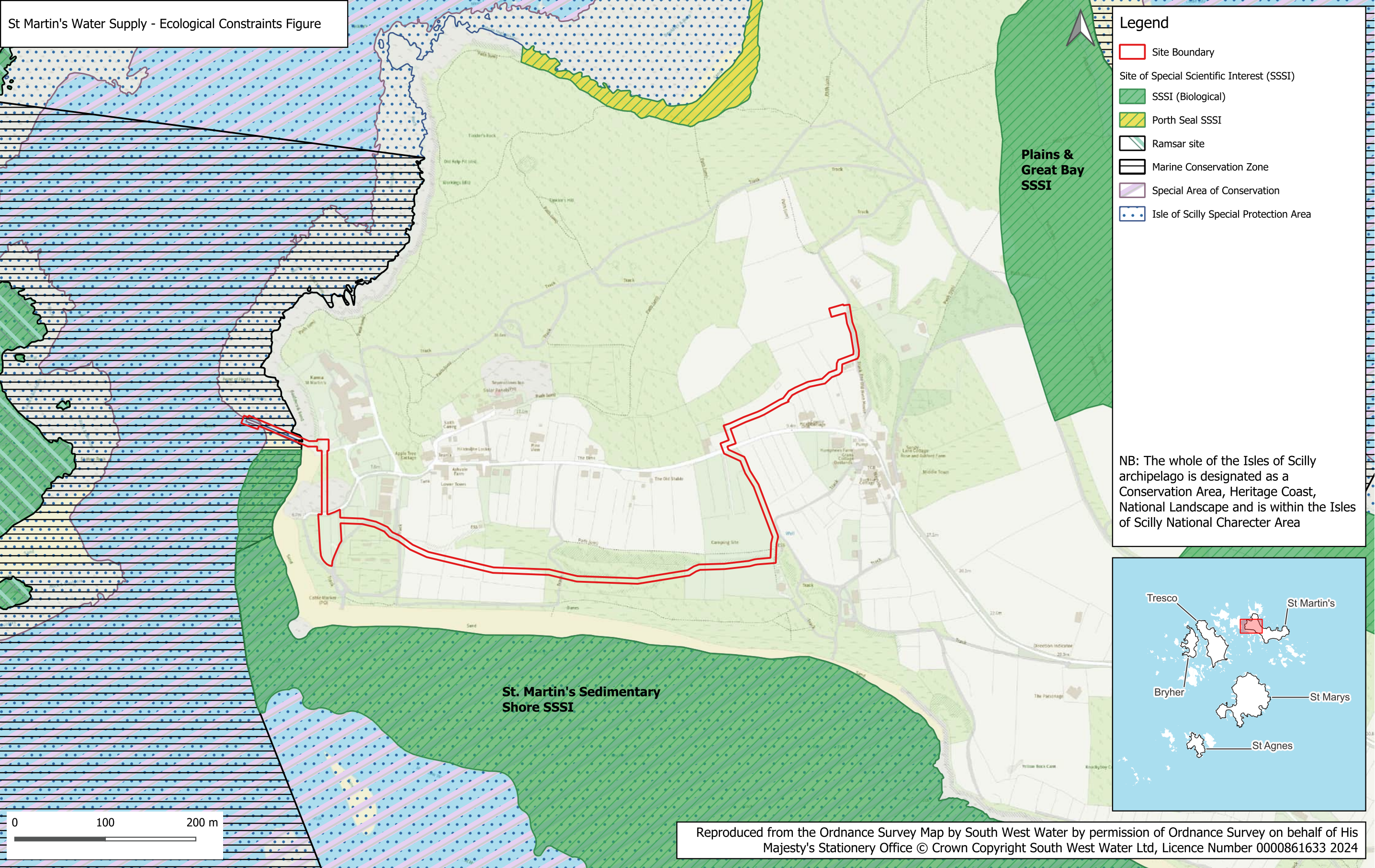
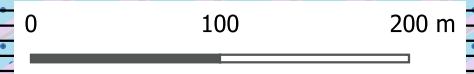
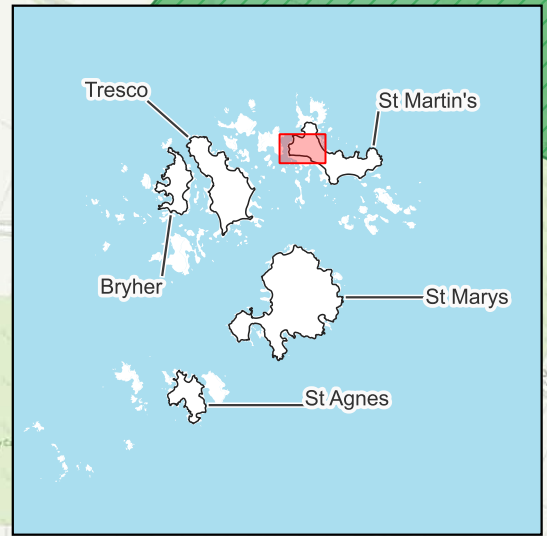


Legend

-  Site Boundary
- Site of Special Scientific Interest (SSSI)
 -  SSSI (Biological)
 -  Porth Seal SSSI
-  Ramsar site
-  Marine Conservation Zone
-  Special Area of Conservation
-  Isle of Scilly Special Protection Area




Plains & Great Bay SSSI

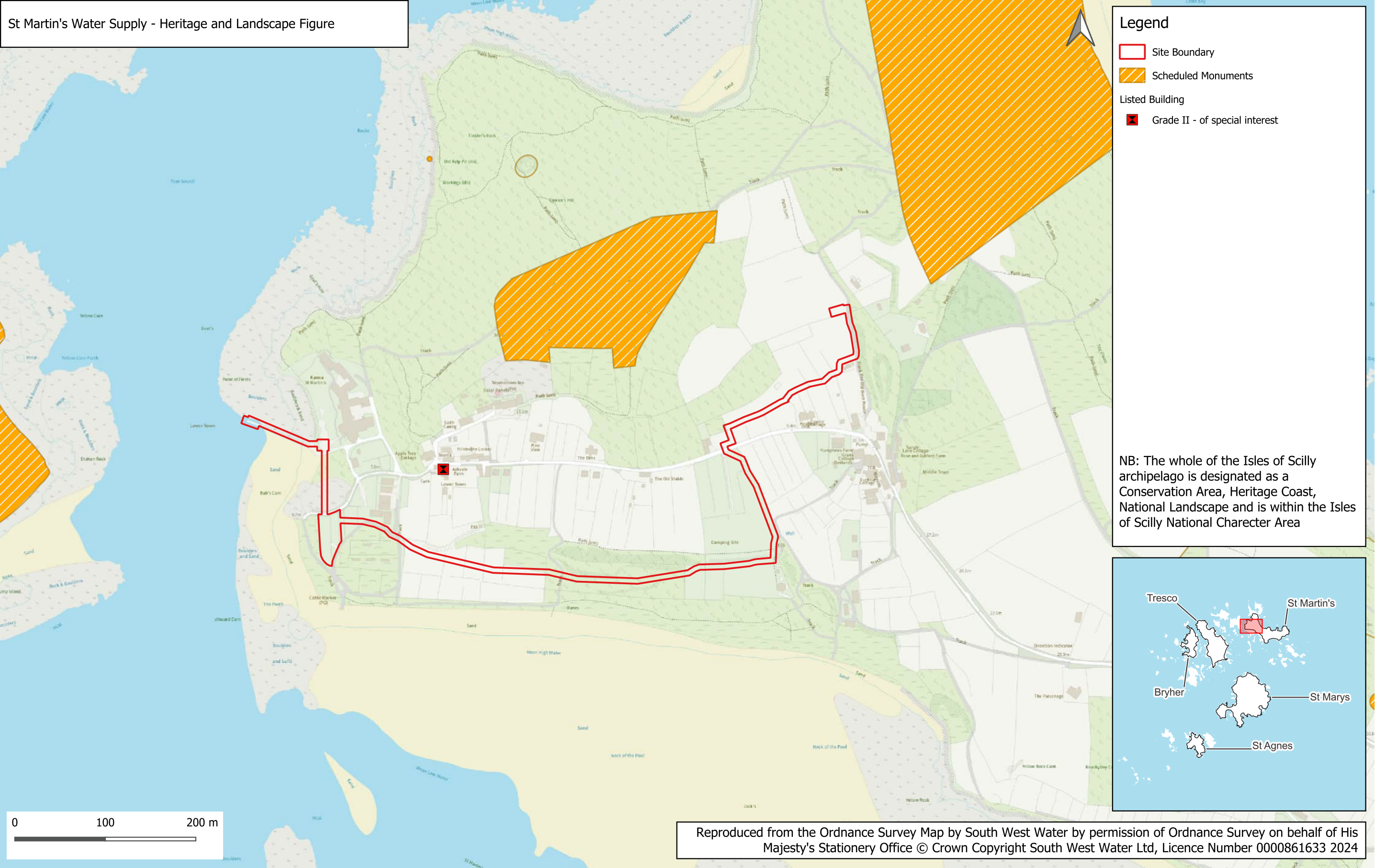
NB: The whole of the Isles of Scilly archipelago is designated as a Conservation Area, Heritage Coast, National Landscape and is within the Isles of Scilly National Character Area



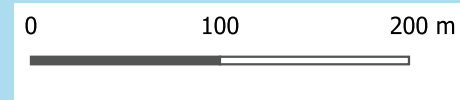
St Martin's Water Supply - Heritage and Landscape Figure

Legend

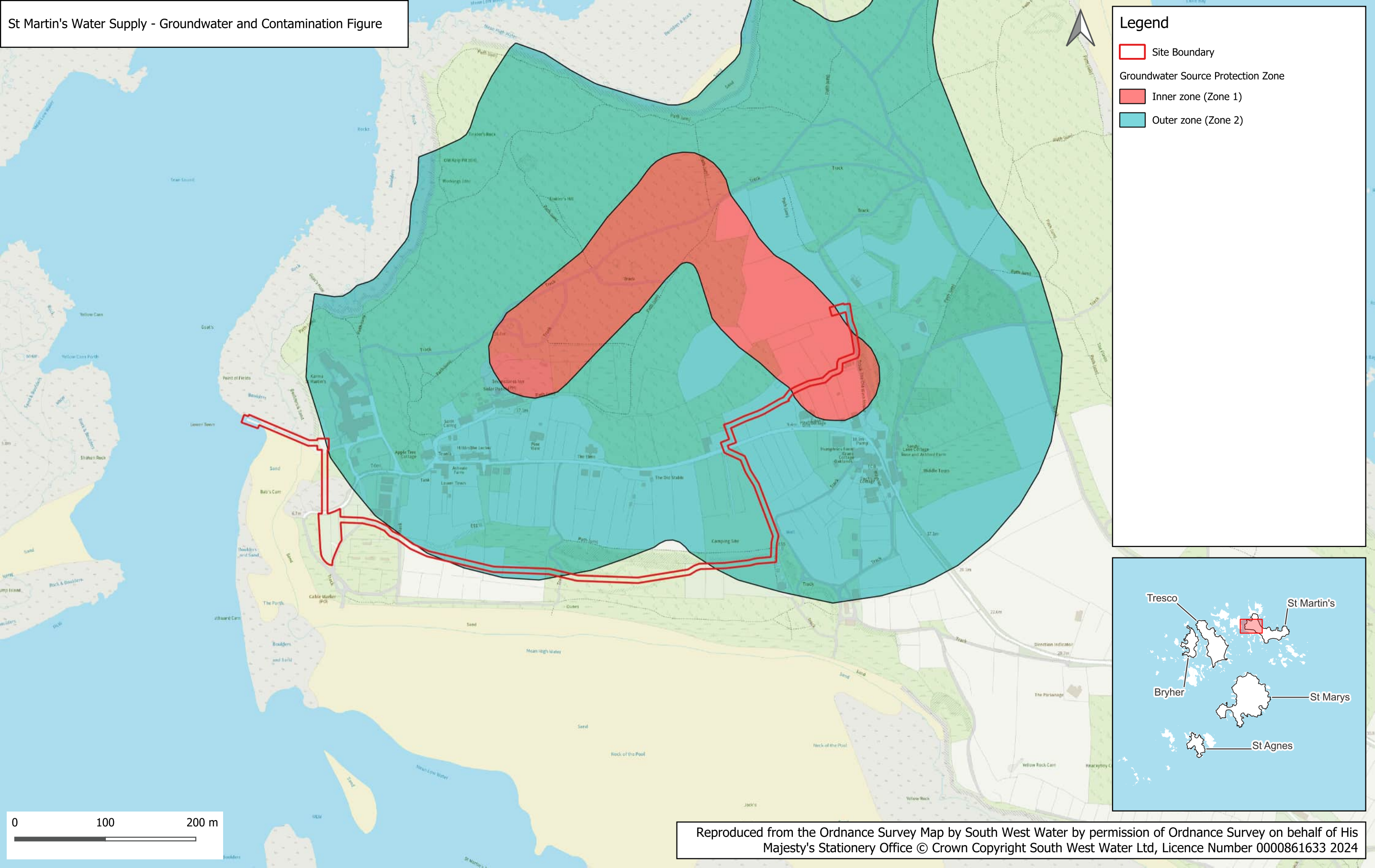
-  Site Boundary
-  Scheduled Monuments
- Listed Building
-  Grade II - of special interest



NB: The whole of the Isles of Scilly archipelago is designated as a Conservation Area, Heritage Coast, National Landscape and is within the Isles of Scilly National Character Area

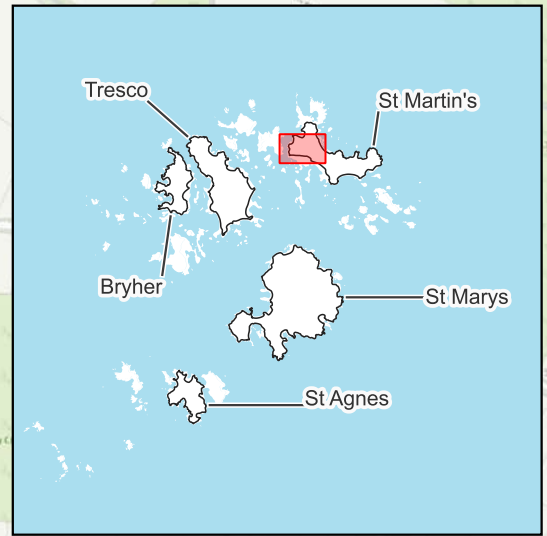


St Martin's Water Supply - Groundwater and Contamination Figure







Legend

- Site Boundary
- Groundwater Source Protection Zone
 - Inner zone (Zone 1)
 - Outer zone (Zone 2)

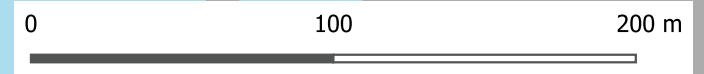
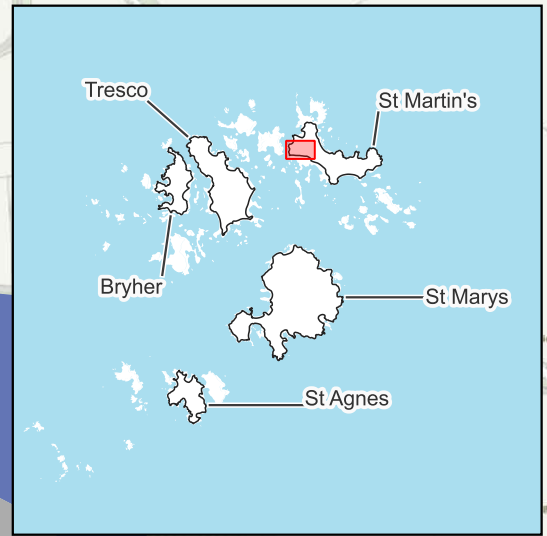


St Martin's Water Supply - Priority Habitat and Hedgerows

Legend

-  Site Boundary
- Priority Habitats Inventory**
 -  Lowland heathland
 -  Maritime cliff and slope
 -  No main habitat but additional habitats present (mudflats, lowland heathland and coastal sand dune).
- Hedgerows**
 -  Non-native and ornamental hedgerow

NB: Hedgerows and stone walls have been identified in proximity to the proposed works.



Marine Species Identified within 2km of the Proposed Scheme (refer to: St Martin's Marine Desk Study and Benthic Environment Report)

Species	Number of records	Most recent year of record	Locations in relation to the Site
Mammals			
Common dolphin (<i>Delphinus delphis</i>)	2	2018	Between 1.3km north and 1.65km northwest of the Site
Grey seal (<i>Halichoerus grypus</i>)	6	2021	Between 590m southeast and 1935m southwest of the Site
Harbour porpoise (<i>Phocoena phocoena</i>)	7	2015	Between 320m south and 1390m northeast of the Site
Harbour seal (<i>Phoca vitulina</i>)	1	2011	1.04km southwest
Long-finned Pilot Whale (<i>Globicephala melas</i>)	1	2020	110m west of the Site
Minke whale (<i>Balaenoptera acutorostrata</i>)	1	2018	1.65km northeast of the Site
Whales and dolphins (species not determined)	3	2018	885m north of the Site
Fish			
A ray-finned fish (Actinopterygii)	1	2013	1525m north
Lesser sandeel (<i>Ammodytes marinus</i>)	1	2010	365m south
A sand-eel (<i>Ammodytes tobianus</i>)	3	2010	365m south
European eel (<i>Anguilla anguilla</i>)	3	2010	1210m southeast
A dragonet (<i>Callionymus</i>)	12	2019	15m west
Reticulated dragonet (<i>Callionymus reticulatus</i>)	1	2017	30m west
Rock cook (<i>Centrolabrus exoletus</i>)	5	2011	1880m northeast
Five-bearded rockling (<i>Ciliata mustela</i>)	1	2010	1610m northeast
Conger eel (<i>Conger conger</i>)	2	2010	1450m northeast
Montagu's blenny (<i>Coryphoblennius galerita</i>)	1	2010	1450m northeast
Goldsinny wrasse (<i>Ctenolabrus rupestris</i>)	3	2010	1745m northeast
Snake pipefish (<i>Entelurus aequoreus</i>)	3	2010	145m west
Cod (<i>Gadus morhua</i>)	1	2008*	1840m north
Shore rockling (<i>Gaidropsarus mediterraneus</i>)	1	2010	1610m northeast
Three-bearded rockling (<i>Gaidropsarus vulgaris</i>)	1	2010	1610m northeast
Giant goby (<i>Gobius cobitis</i>)	5	2018	860m north
Rock goby (<i>Gobius paganellus</i>)	2	2010	1610m northeast
Two spotted goby (<i>Gobiusculus flavescens</i>)	20	2019	15m west
Ballan wrasse (<i>Labrus bergylta</i>)	15	2017	28m southwest
Cuckoo wrasse (<i>Labrus mixtus</i>)	4	2017	1660m northwest

Clingfishes genus (<i>Lepadogaster</i>)	1	2010	1610m northeast
Shore clingfish (<i>Lepadogaster lepadogaster</i>)	3	2011	1215m southeast
Shanny (<i>Lipophrys pholis</i>)	7	2011	1180m southeast
Mullet family (<i>Mugilidae</i>)	1	2010	1610m northeast
Worm pipefish (<i>Nerophis lumbriciformis</i>)	3	2010	360m south
Blenny genus (<i>Parablennius</i>)	2	2011	1990m northeast
Red blenny (<i>Parablennius ruber</i>)	1	2017	1660m northwest
Butterfish (<i>Pholis gunnellus</i>)	6	2010	145m west
Plaice (<i>Pleuronectes platessa</i>)	4	2010	360m south
Pollack (<i>Pollachius pollachius</i>)	8	2017	1660m northwest
Pomatoschistus genus (<i>Pomatoschistus</i>)	8	2019	15m west
Sand goby (<i>Pomatoschistus minutus</i>)	9	2010	185m west
Painted goby (<i>Pomatoschistus pictus</i>)	13	2019	15m west
Small-spotted catshark (<i>Scyliorhinus canicula</i>)	4	2010	145m west
Fifteen-spined stickleback (<i>Spinachia spinachia</i>)	4	2010	1210m southeast
Corkwring wrasse (<i>Symphodus melops</i>)	14	2010	360m south
Great pipefish (<i>Syngnathus acus</i>)	1	2004	510m west
Long-spined sea scorpion (<i>Taurulus bubalis</i>)	13	2019	15m west
Leopard-spotted goby (<i>Thorogobius ephippiatus</i>)	3	2010	1745m northeast
Reptiles			
Leatherback turtle (<i>Dermochelys coriacea</i>)	2	2003	1.690km northwest of the Site

Appendix D Ecological Designations Impact and Requirements

Designation	Qualifying Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
On-Site Statutory Designations				
Isles of Scilly Complex SAC	<ul style="list-style-type: none"> ➤ Sandbanks (subtidal); ➤ Mudflats and sandflats (intertidal); ➤ Reefs; ➤ Grey seal (<i>Halichoerus grypus</i>); and ➤ Shore dock (<i>Rumex rupestris</i>). 	The proposed seawater intake and the brine discharge outfall are within the designation	<p>Potential impacts upon the designation and its qualifying features, particularly during its installation through potential disturbance and pollution.</p> <p>Potential pollution impacts during operation, particularly in relation to the brine discharge outfall.</p>	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities including Natural England, Environment Agency, Marine Management Organisation and Isles of Scilly Council, amongst others; ➤ HRA; ➤ Water Framework Directive Assessment; and ➤ Ecological Impact Assessment (EclA).
Isles of Scilly SPA	<ul style="list-style-type: none"> ➤ European storm-petrel (<i>Hydrobates pelagicus</i>); ➤ Lesser black-backed gull (<i>Larus fuscus graellsii</i>); ➤ European shag (<i>Phalacrocorax aristotelis</i>); and ➤ Greater black-backed gull (<i>Larus marinus</i>). 	The proposed seawater intake and the brine discharge outfall are within the designation		<ul style="list-style-type: none"> ➤ Consultation with relevant authorities including Natural England, Environment Agency, Marine Management Organisation and Isles of Scilly Council, amongst others; ➤ Marine Conservation Zone Assessment (to support MMO licence application); and ➤ EclA.
Tean Marine Conservation Zone	<ul style="list-style-type: none"> ➤ Intertidal coarse sediment; ➤ Intertidal underboulder communities; ➤ Moderate energy intertidal rock; and ➤ Intertidal sand and muddy sand. 	The proposed seawater intake is located within the MCZ.	Potential impacts upon the designation and its habitats through potential disturbance and pollution.	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities including Natural England, Environment Agency, Marine Management Organisation and Isles of Scilly Council, amongst others; ➤ Marine Conservation Zone Assessment (to support MMO licence application); and ➤ EclA.
St Martin's Sedimentary Shore SSSI and IRZ	<p>The sedimentary shore has almost no contact with freshwater and associated water-borne pollution and suspended fine sediment. Consequently, there is a range of marine wildlife that is exceptionally undisturbed.</p> <p>The mild climate results in an abundance of Mediterranean-Atlantic species. The sediment habitats and the associated marine wildlife are considered to be of national, and potentially international, importance.</p>	The brine discharge outfall is located 7m to the north of this designation. Located within the IRZ.	<p>The proposed brine discharge outfall is located adjacent to this designation. There is potential for adverse impacts through disturbance and pollution.</p> <p>The works also fall within multiple rings of the IRZ for the SSSI. As the intake falls within the inner ring, all planning applications must consult with Natural England.</p>	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities including Natural England and Isles of Scilly Council, among others; ➤ SSSI Assent Form; ➤ EclA; and ➤ Biodiversity Net Gain (BNG) Assessment as a mandatory planning

Designation	Qualifying Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
				condition (including maintenance plan).
Plains & Great Bay IRZ	The IRZ criteria refers to planning applications for pipelines	The proposed new tank and booster station and sections of the treated water feed would be within the IRZ	A section of the proposed treated water feed falls within the IRZ for the SSSI which includes planning applications for pipelines. As such consultation with Natural England will be required to discuss potential impacts to the SSSI.	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities including Natural England and Isles of Scilly Council, among others; ➤ SSSI Assent Form; and ➤ EclA.
Maritime cliff and slope (Priority Habitat)	UK Biodiversity Action Plan (BAP) Priority Habitat	The proposed pipelines for the seawater intake and brine discharge outfall will be directionally drilled underneath this habitat. Habitat located <10m to the west of the RO plant.	Due to the method of installation of the pipelines (moling/vacuum excavation), there is not expected to be any direct loss of this habitat. Also potential for disturbance impacts to species, such as birds, utilising the habitat during construction of the RO plant which is located nearby.	<ul style="list-style-type: none"> ➤ EclA.
No main habitat but additional habitats present - mudflats (Priority Habitat)	N/A	The proposed scheme brine discharge outfall is located adjacent to this area of Priority Habitat.	There is the potential for disturbance of habitat during installation of the brine discharge outfall. Also potential for impacts to species utilising the habitat.	
Off-Site Statutory Designations (Within 500m)				
No main habitat but additional habitats present – coastal sand dune and lowland heathland (Priority Habitat)	N/A	Approximately 15m to the east of the booster station / treated water storage location	As the proposed works are located adjacent to the designation, there may be potential for construction stage impacts to occur from disturbance and pollution events.	<ul style="list-style-type: none"> ➤ EclA.
Men a Vaur to White Island MCZ	<ul style="list-style-type: none"> ➤ Giant goby (<i>Gobius cobitis</i>); ➤ High energy intertidal rock; ➤ Intertidal coarse sediment; ➤ Intertidal sand and muddy sand; ➤ Intertidal underboulder communities; ➤ Moderate energy intertidal rock; ➤ Stalked jellyfish (<i>Calvadosia campanulata</i>); and ➤ Spiny lobster (<i>Palinurus elephas</i>). 	380m north of the extents within Middle Town	As the proposed works are not hydrologically connected to the MCZ, it is considered unlikely that construction or operation of the works would give rise to significant impacts to the designation.	No further actions required.
Plains & Great Bay (St Martin's) SSSI	<ul style="list-style-type: none"> ➤ The site is sheltered from westerly gales by St Martin's and White Island, which enables an accreting dune system to develop. The 	165m east of the proposed booster station.	Whilst the works do not directly enter the designation, there may be potential for	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities, such as Natural England; and

Designation	Qualifying Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
	<p>dune, dune grassland and heathland habitats present support several nationally rare and uncommon plant species, and illustrates well sand dune succession;</p> <ul style="list-style-type: none"> ➤ Some of the rarer species are found in the species-rich dune grassland further inland such as nationally rare Orange Bird's-foot (<i>Ornithopus pinnatus</i>) and Ramping Furmatory (<i>Fumaria capreolata</i>); and ➤ The site also supports a breeding colony of Ringed Plover (<i>Charadrius hiaticula</i>). 		<p>construction stage impacts through disturbance and pollution.</p> <p>The built structure is unlikely to significantly impact the designation as works closest to the SSSI will be below ground, with the except of the booster station, however this will not give rise to any nuisances that would otherwise negatively impact the SSSI.</p>	<ul style="list-style-type: none"> ➤ EclA.
Lowland heathland (Priority Habitat)	UK BAP Priority Habitat	70m north of the proposed booster station / treated water storage area	<p>Whilst the works do not directly enter the designation, there may be potential for construction stage impacts through disturbance and pollution.</p> <p>The built works are not anticipated to negatively impact the designation.</p>	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities, such as Natural England; and ➤ EclA.
Isles of Scilly Ramsar	The Isles of Scilly Ramsar covers large portions of the Isles of Scilly archipelago, with the notable exception of the island of St. Mary's. Protected habitats covered by the Ramsar include coastal cliffs, boulder beaches, heathland, and some dune grassland.	191m west	Whilst the Ramsar site does fall within 500m of the proposed intake, it is located on the island of Tean which is separated from St Martin's by an area of sea. This therefore reduces the potential for direct impact, although there is the potential for noise and disturbance to the Ramsar and the bird species which utilise or live on Tean.	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities, such as Natural England; ➤ HRA; and ➤ EclA.
Tean SSSI	<ul style="list-style-type: none"> ➤ Abundant glacial erratics on the beaches to the north and northwest of the island, demarking the approximate southern limit of soliflucted outwash gravels; ➤ Dune grassland, which support rare plant species including, the very rare Dwarf Pansy (<i>Viola kitaibeliana</i>), a plant which occurs on Scilly and nowhere else in Great Britain, and the rare four-leaved Allseed (<i>Polycarpon tetraphyllum</i>); ➤ A small area of lowland heath is present at the summit of Great Hill. Relict pasture plants are present which reflect the previously cultivated parts of the island and the considerable human influence during the 17th Century (when it was inhabited); and 	225m west	Whilst the SSSI site does fall within 500m of the proposed intake, it is located on the island of Tean which is separated from St Martin's by an area of sea. This therefore reduces the potential for direct impact, although there is the potential for noise and disturbance to the SSSI bird species which utilise or live on Tean.	<ul style="list-style-type: none"> ➤ Consultation with relevant authorities, such as Natural England; and ➤ EclA.

Designation	Qualifying Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
	<ul style="list-style-type: none"> ➤ Five species of breeding seabirds including a small colony of Puffin (<i>Fratercula artica</i>) on the east side of the island (closest to the proposed scheme). The other breeding seabirds include Lesser Black-backed Gull (<i>Larus fuscus</i>), Kittiwake (<i>Rissa tridactyla</i>), Herring Gull (<i>Larus argentatus</i>) and a few Greater Black-backed Gull (<i>Larus marinus</i>). 			
Porth Seal gSSSI	<p>The gSSSI is important for Quaternary studies as it shows a sequence of deposits for a raised beach, a series of interbedded organic and inorganic silts and sands, and head.</p> <p>The organic deposits were radiocarbon dated to the Late Devensian period. The organic deposits include pollen which indicated arctic tundra environmental conditions.</p> <p>The gSSSI therefore provides important information about the Late Pleistocene environmental conditions in South-West England.</p>	240m northwest of the point where the proposed treated water feed connects with the proposed distribution pipe	This SSSI is designated for geological interest (as opposed to biological / ecological interest) and is not located within immediate proximity of the works. The IRZ for the SSSI is also limited to just around the site and is therefore not within proximity to the works either. As a result, no significant adverse effects are predicted for this SSSI.	No requirements but may be mentioned in the EclA.
Coastal vegetated shingle (Priority Habitat)	UK BAP Priority Habitat	450m north of scheme extends within Middle Town	This habitat is not located within proximity to the works and therefore no significant adverse impacts are considered or to the species which may live on or utilise the habitat.	No specific assessment required
Off-Site Non-Statutory Designations				
Isles of Scilly Wildlife Trust Reserves	The Isles of Scilly Wildlife Trust cares for approximately 60% of the landmass of Scilly which includes all the uninhabited islands. The Wildlife Trust is the only locally run conservation charity.	Closest of these is located 10m south of the Proposed Scheme	<p>Whilst the proposed scheme does not directly enter the designation, there is potential for construction stage impacts to occur through potential disturbance and pollution.</p> <p>The built structure is unlikely to significantly impact the designation as the intake will be taking up water as opposed to releasing fluids.</p>	<ul style="list-style-type: none"> ➤ Consultation with Isles of Scilly Wildlife Trust; and ➤ EclA.

Appendix E Heritage Designations Impact and Requirements

Heritage Asset Name	Designation Features	Distance from the Proposed Scheme	Potential Impacts	Actions and Requirements
Direct Overlap with the Proposed Scheme				
Heritage Coast	The Isles of Scilly Heritage Coast is unique in terms of environmental quality and beauty of its coastal landscape, ranging from sandy beaches to dunes and sheer rugged cliffs. The islands are important for rare migrating birds and the warm lagoons support seals and porpoises, along with extensive marine habitat areas.	The proposed scheme is within designation	The proposed works involve installing a seawater intake pipeline and brine discharge outfall pipeline at a coastal location. The works will also involve installing a treated water feed, tank and booster station, and RO plant. This could have an adverse impact on the heritage coast both in terms of direct impacts during installation from disturbance, noise and production of dust and once built for the seawater intake, as well as indirect impacts upon the heritage setting.	<ul style="list-style-type: none"> ➤ Consultation with relevant organisations including Historic England and Isles of Scilly Council; ➤ An archaeological or heritage specialist may also need to be liaised with, particularly regarding the potential to disturb unburied and unknown archaeological remains underlying the proposed development site;
Conservation Area	The special architectural and historic interest of the islands was recognised when all inhabited islands were designated as a Conservation Area. It is therefore necessary for the character and appearance of each island to be preserved or enhanced by any development.	The proposed scheme is within designation	Any construction works have the potential to adversely impact a conservation area through impacting the setting. Noise and vibration, production of dust, and loss of land can impact an area. During operation, the pipes will be out of sight (as they will be underground), with the exception of the surface plant required for the RO activities. It is expected that the design of any surface plant will aim to fit in with the vernacular style as far as possible, which should help reduce impacts upon the Conservation Area.	<ul style="list-style-type: none"> ➤ Heritage Impact Assessment / Heritage Statement; and ➤ Impacts upon heritage and views will also be considered within a landscape and visual impact assessment.
Scheduled Monuments				
Prehistoric cairn cemetery, field system and settlement on Top Rock Hill, St Martin's	Prehistoric cairn cemetery and field system on the ridge and flanks of Top Rock Hill. The scheduling also includes prehistoric settlements behind the headland's east coast and a hut on its southern plateau. A 2m boundary is recommended around the designation to support and preserve the monument's integrity.	100m east of the proposed booster station	The potential for impact varies depending on the proximity of a designation to the works. Whilst no direct physical impacts are anticipated, there are likely to be impacts upon heritage setting including potential for temporary noise and vibration, production of dust, and potential changes in views	<ul style="list-style-type: none"> ➤ Consultation with relevant organisations including Historic England and Isles of Scilly Council; and ➤ Heritage Impact Assessment / Heritage Statement.

Heritage Asset Name	Designation Features	Distance from the Proposed Scheme	Potential Impacts	Actions and Requirements
<p>Prehistoric cairn cemetery and field system on Tinkler's Hill, St Martin's</p>	<p>Prehistoric cairn cemetery and field system on the plateau and upper southern slope of Tinkler's Hill. The scheduling is divided into two separate areas. The prehistoric field system extends across the south and south east of the Tinkler's Hill plateau and adjacent upper southern slope.</p> <p>A 2m boundary is recommended around the designation to support and preserve the monument's integrity.</p>	<p>105m north-west of the proposed treated water feed</p>	<p>(particularly if a works area needs to be established).</p>	
<p>Post-medieval kelp pit on the western coast of Tinkler's Hill, St Martin's</p>	<p>Post-medieval kelp burning pit situated on the coastal margin at the foot of the western slope on Tinkler's Hill, visible as a rounded hollow, shaped as an inverted bowl.</p> <p>A 2m boundary is recommended around the designation to support and preserve the monument's integrity.</p>	<p>390m to the north of the RO plant</p>		
<p>Prehistoric chambered cairn 60m north of Knackyboy Carn, St Martin's</p>	<p>Large prehistoric chambered cairn built on around a large bedrock outcrop which rises towards the centre of the platform.</p> <p>A 2m boundary is recommended around the designation to support and preserve the monument's integrity.</p>	<p>420m southeast of the proposed treated water pipeline</p>		
<p>Prehistoric platform cairn, settlement and field system at Pernagie, St Martin's</p>	<p>Prehistoric platform cairn and nearby settlement and field system on a small knoll at the south of Pernagie. The cairn is visible on the summit of the knoll as a circular mound.</p> <p>A 2m boundary is recommended around the designation to support and preserve the monument's integrity.</p>	<p>465m to the north of the works area where the proposed booster station</p>		
<p>Prehistoric cairn and prehistoric to post-medieval field systems between The Plains and Wine Cove, St Martin's</p>	<p>Prehistoric platform cairn and a prehistoric to early post-medieval field system between The Plains and Wine Cove, on the ridge top and northern slope of the western side of St Martin's. An area referred to as Frenchmen's Graves is also included within the scheduling.</p> <p>The platform cairn survives on flattish ground that is visible as a low rounded mound.</p>	<p>460m southeast of the proposed booster station</p>		

Heritage Asset Name	Designation Features	Distance from the Proposed Scheme	Potential Impacts	Actions and Requirements
	<p>The northern coastal slope and crest of the island contains extensive remains of early field systems whose known extent ranges from the slope below The Plains on the slope behind Wine Cove. The field system is visible both as low vegetation-covered banks and low rubble ridges crossing the footpaths of the area.</p> <p>The remains in this scheduling are defined visibly from those areas by deep medieval and later deposits of blown sand and by dense surface vegetation, both of which obscure surface traces of the field system on the intervening land. The discovery beyond this scheduling of some early medieval artefacts at the base of the blown sand layer south of Top Rock Hill indicate continued activity into that period.</p> <p>Ground beneath the land is also included within the scheduling.</p> <p>A 2m boundary is recommended around the designation to support and preserve the monument's integrity.</p>			
<p>Prehistoric cairns, prehistoric to post-medieval settlements and field systems, an early Christian focus, post-medieval kelp pits and quay on Tean and Old Man</p>	<p>Prehistoric cairns, prehistoric to post-medieval settlements and field systems, an early Christian focus, post-medieval kelp pits and quay on Tean and Old Man</p> <p>The scheduling includes a succession of settlement, funerary, religious and industrial remains ranging from prehistoric to post-medieval in date, encompassing much of the uninhabited islands of Tean and Old Man and their intertidal shores. One cairn lies between outcrops of a small knoll on the south of the islet, whilst another is located on the lower middle shore of West Porth, off the south west coast of Tean, surviving as a shallow-domed rubble mound.</p> <p>A prehistoric field system extends over much of the western extents of Tean and Old Man, adjacent intertidal zones of St Helen's Porth and West Porth, and into East Porth. On land the system is comprised of low rubble banks often with a midline row of spaced edge-set slabs,</p>	<p>265m to the north-west of the seawater intake</p>	<p>Whilst within 500m, it is located on Tean which is separated by sea. Therefore, potential disturbance impacts to heritage setting are limited.</p>	<p>No requirements</p>

Heritage Asset Name	Designation Features	Distance from the Proposed Scheme	Potential Impacts	Actions and Requirements
	<p>whilst banks within the intertidal zone attract aggregations of beach cobbles. The system's boundaries give a regular pattern whose alignment is influenced by local landforms.</p> <p>There are remains of a seventh century cemetery and eight century chapel surviving with lower walls and doorway, and to the west of the chapel, rubble foundations of a later 17th century house overlie the earlier midden which is attributed to the Nance Family. The scheduling also includes remains of two kelp pits visible as inverted-conical hollows and located by the cliff edge and south-west of the southern islet of Old Man. Remains of a quay and slipway also relate to the 17-19th century kelp industry. The quay extends across the middle shore, edged by blocks, and infilled by rubble, whilst the slipway is in East Porth and is only visible over 4.5m before being masked by beach sand. A field system associated with the present post medieval houses present on Tean includes a belt of eight plots across central Tean.</p>			
Grade II Listed Building				
Ashvale Farmhouse	Mid-19 th Century, incorporating older former dwelling	80m north of the treated water feed in Lower Town	<p>Whilst no direct physical impacts are anticipated, there are likely to be impacts upon heritage setting including potential for temporary noise and vibration, production of dust, and potential changes in views (particularly if a works area needs to be established in proximity to the asset).</p> <p>Operation of the proposed scheme is not anticipated to impact the setting of the asset as the treatment plant will be screened from view via nearby buildings and the treated water pipeline near the building will be below ground. Scheme elements near the building will not give rise any operational nuisances that may otherwise impact the asset.</p>	<ul style="list-style-type: none"> ➤ Consultation with relevant organisations including Historic England and Isles of Scilly Council; and ➤ Heritage Impact Assessment / Heritage Statement.

Appendix F Landscape Designations Impact and Requirements

Designation Name	Designation Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
Isles of Scilly National Landscape	Despite the small scale, the Isles display a large diversity of scenery such as a combination of rugged granite cliffs and headlands, sandy bays, hidden coves, shifting dunes and saline lagoons. The Isles of Scilly National Landscape website states that <i>“over 6,000 years of human occupation has led to the development of lowland heath, enclosed pasture, hedged bulb-strips, small harbours and quays, and scattered rural settlement punctuated by tiny townships”</i> .	The proposed scheme is located within designation	<p>Potential impact upon the natural beauty and characteristics of the National Landscape, particularly during installation / construction due to activities which generate noise (reducing tranquillity) and dust, such as excavation of trenches to place pipework.</p> <p>Once built, the pipework will be buried below ground and thus out of sight, which would prevent visible impacts. The exception to this is any surface plant, such as for the desalination activity, which will remain permanently and could have an impact upon views.</p>	<ul style="list-style-type: none"> ➤ Consultation with Natural England and Isles of Scilly Council; ➤ Gain consent from the Secretary of State for permission to build within National Landscape; ➤ BNG to restore any lost vegetation or enhance existing features; and ➤ Landscape and Visual Impact Assessment.
158: Isles of Scilly NCA	<p>Some of the key characteristics of the area include:</p> <ul style="list-style-type: none"> ➤ Low-lying granite islands with a strong maritime influence; ➤ Complex seascapes; ➤ The area is isolated from the UK mainland, with a strong sense of remoteness and tranquillity; ➤ The unique pattern of small fields enclosed by evergreen hedges, called fences locally, protects the bulb and vegetable fields from salt spray and strong winds; ➤ Settlement patterns of the off islands (Tresco, Bryher, St Martin’s, St Agnes and Gugh) vary, with small clusters of buildings around quays or in sheltered spots and solitary farmhouses located in the centre of smallholdings; ➤ White sandy beaches, embryonic sand dunes and unenclosed areas of maritime heath and grassland fringe the islands; some heathland is dominated by gorse and bracken; ➤ There are outstanding examples of long-term human occupation, including chambered barrows and standing stones with forts and castles prominent on areas of higher ground; and ➤ A network of roads and tracks and about 200km of permissive paths provide access to all parts of the islands. 	The proposed scheme is located within designation	Like impacts upon the National Landscape, the potential works could impact the natural beauty and characteristics through activities such as excavation which can disturb the local environment and tranquillity. Works could potentially impact upon the ability of the NCA to reach its Statement of Environmental Opportunity goals.	<ul style="list-style-type: none"> ➤ Consultation with Natural England and Isles of Scilly Council.

Appendix G Water Environment Designations Impact and Requirements

Designation Name	Designation Features	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
Flood Zones 2 and 3	N/A	Parts of the proposed scheme are within these designations	As parts of the works are located within Flood Zone 2 and 3, as well as areas at risk of flooding from surface water, it will need to be demonstrated that the proposed works do not increase this risk and that the works can remain safe during operation.	<ul style="list-style-type: none"> ➤ Consultation with the Environment Agency; and ➤ Flood Risk Assessment.
Groundwater Source Protection Zones	Inner Zone (SPZ1) and Outer Zone (SPZ2)	The proposed treated water feed and western parts of the distribution pipe lie within the Inner Zone and Outer Zone	As the proposed works is partially within a SPZ, certain restrictions may be in place to avoid impacts to the SPZ. There may be potential for contamination during construction activities.	The CEMP should include measures to reduce the risk of pollution to the ground.
Isles of Scilly Water Body (groundwater body)	Poor overall status in 2019	The proposed scheme is within designation	Potential for contamination during construction activities	
Scilly Isles Water Body (coastal water)	Good ecological status; Fail chemical status in 2019	The proposed seawater intakes fall within this water body.	Potential for contamination during construction activities	<ul style="list-style-type: none"> ➤ Consultation with the Environment Agency and MMO; and ➤ Potential impacts to be assessed within a WFD assessment.
WFD higher sensitivity habitat	Subtidal seagrass beds	30m south of the seaward end of the proposed seawater intake	Although the proposed scheme is not located within the designation, there may be potential for construction phase impacts from pollution and disturbance. Potential impacts during operation are not anticipated due to the structure seeing the intake of liquid, rather than the discharge of potentially harmful substances.	
WFD lower sensitivity habitats	Gravel & cobbles	The proposed scheme is within / immediately adjacent to the designation	There may be potential for impacts to the designation during construction of the seawater intake through pollution and disturbance. Potential impacts during operation are not anticipated due to the built structure intaking liquids rather than discharging.	
	Rockyshore	50m north of the proposed brine discharge outfall	There may be potential for impacts to the designations during the construction phase, however these would be limited due to the distance between the site and the designations.	
	Subtidal soft sediment	35m north-west of the proposed seawater intake	No impacts during operation are anticipated.	
	Subtidal rocky reef	45m south of the proposed seawater intake		

Appendix H Sensitive Receptors Impact and Requirements

Sensitive Receptor	Distance from the Proposed Scheme	Potential Impact	Actions and Requirements
Lower Town Beach	Proposed seawater intake and brine discharge outfall pipelines will be located underneath the beach, and the RO plant will be located approximately 30m to the east.		
Agricultural land	A section of the proposed treated water feed is located within the receptor	During construction, there is the potential for some disturbance / nuisance to occur such as noise and vibration, production of dust, some construction traffic and potentially some localised and temporary changes in access particularly because some of the proposals involve works within more urbanised parts of the island (i.e. Middle Town and Lower Town). No adverse impacts are predicted for the built structure.	<ul style="list-style-type: none"> ➤ Consultation with Isles of Scilly Council; ➤ Construction Environmental Management Plan to include mitigation measures to reduce impacts, such as restrictions on hours of working; and ➤ Air quality and noise and vibration assessments.
Helen's Shepherd's Hut	Approximately 35m to the east of the proposed booster station		
St Martin's Campsite	Proposed water treated feed will be piped underneath the middle of the campsite.		
Fuchsia Shepherds Hut and residential properties near Lower Town Beach	Shepherds Hut is approximately 35m to the south of the proposed treated water feed and the residential properties are adjacent to the treated water feed.		
Nearby Sensitive Receptors (e.g. residential properties and farms, leisure facilities and businesses)	Varying distances up to within 500m of the Proposed Scheme		

Appendix I Zetica Pre-Desk Study Assessment

Pre-Desk Study Assessment	
Site:	St Martins, Isles of Scilly Intake/Outtake, Cornwall
Client:	Pell Frischmann
Contact:	Lizzie Handy
Date:	9 th November 2023
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Royal Naval Air Station (RNAS) Tresco. ■ Anti-invasion defences.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Military camps and training areas. ■ Anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	No official statistics for bombing in the Isles of Scilly have been found, the bombing density is believed to be very low. No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: www.zeticauxo.com . Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found here . If you have any further queries, please don't hesitate to get in contact with us at uxo@zetica.com or 01993 886 682.
<p>This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.</p> <p>It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.</p>	