The St Kilda Centre

Client: Ionad Hiort

Surface and Foul Water Drainage Strategy

Address: Mangersta,
Uig,
Isle of Lewis

Project No. 21.1883

Project Number: 21.1883
Project Title: The St Kilda Centre

Revision and Amendment Register

Date	Issue	Rev	Revision Details
Dec' 2023	1.0	-	First Issue- Planning Submission

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Contents

1. Introduction

The following report has been prepared to outline the proposals for the surface water and foul water drainage scheme for the proposed development by the client Ionad Hiort.

2. Existing and Proposed Development

The approximate 0.10 Ha Visitor Centre site plus associated parking is situated on the west coast of the Isle of Lewis at Mangersta (100067 E, 929482 N) and looks west towards the Atlantic Ocean.

The visitor centre and associated parking area are split east (parking) / west (centre) by a local, unnamed, single-track road, that terminates approximately 4.0 miles south of the development site.

The natural topography of the area is generally undulating but falls from East to West from 68.0m AOD to 56.0m AOD. The site mostly comprises rough, rocky ground with a patchwork of grassed topsoil and subsoil 0.6m to 1.80m deep.

The proposed development comprises a proposed 2 story visitor centre with integrated viewing areas / platforms and café facilities for visitors. A detached parking area will also be provided 80.0m to the east comprising, vehicle bays suitable for motorhomes and family cars. In addition, a segregated coach drop-off area will be provided for visiting coach parties. Lay-by bays are to be incorporated to the edge of the existing road for service vehicles and disabled parking adjacent the proposed centre.

Vehicular access is proposed from the North of the parking area and will circulate clockwise, exiting via the southern junction and returning north.

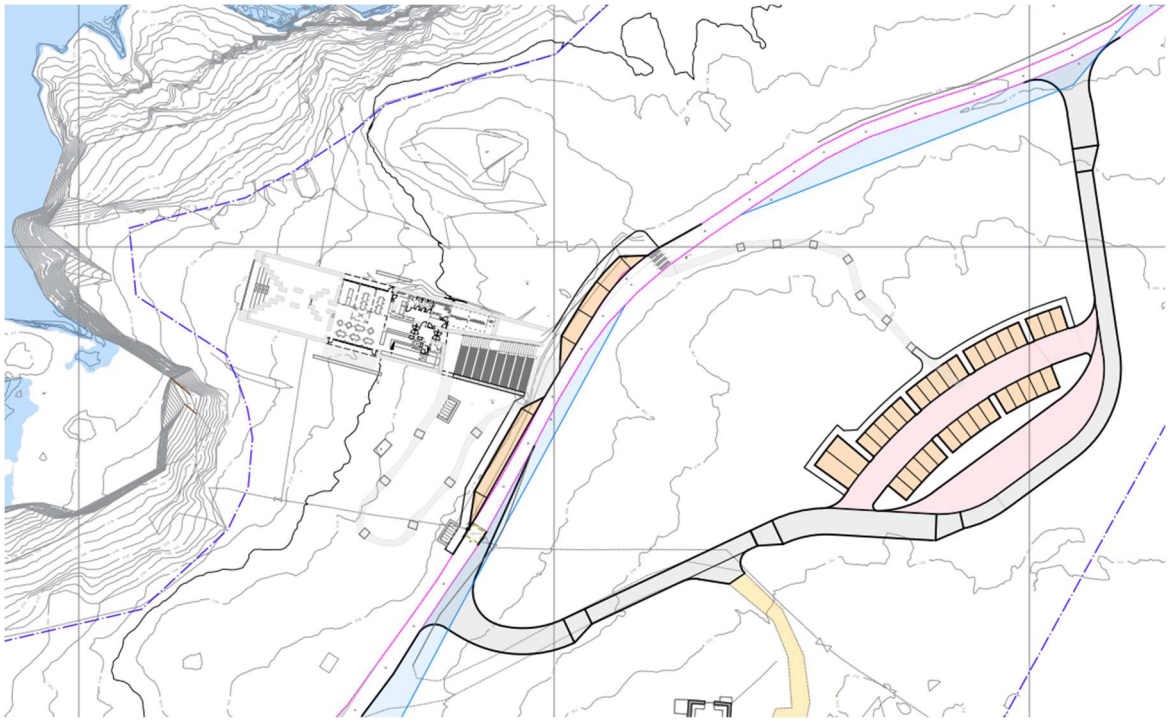


Figure 1 - Site Location Proposed Plan

3. Existing Drainage Infrastructure

Scottish Water records indicate no existing foul or surface water infrastructure is located locally or within the surrounding area of the development. The existing ground surface does present areas of overland surface flows and road ditches with culverts crossing under roads.

4. Design Principles

The detailed design will be undertaken in accordance with SEPA guidelines and current SUDS practice in accordance with CIRIA C753 where possible.

Outline Drainage proposals are included within Appendix A.

4.1 Surface Water

It is proposed that surface water run-off from roofs and hard standing areas relating to the visitor centre will be directed to perimeter swales via a short, piped network, where it shall be collected and treated within receiving swales to the north and south of the proposed visitor centre. Surface water run-off shall naturally soakaway through the upper, surrounding subsurface. Excess flows shall be directed away from the building where they shall naturally combine with existing overland flow routes throughout the site area.

Existing road network drainage shall remain unaltered however necessary maintenance work will be carried out to reinstate / improve functionality.

The proposed carparking area shall be constructed using a porous construction where all surface water run-off shall be collected, providing two levels of treatment and shall soakaway to the immediate, surrounding subsurface. Excess flows would be incorporated with the existing overland flow network.

Typical deep soakaways are not considered viable due to the site conditions and the potential for shallow rockhead; but may be incorporated where possible as an alternative.

4.2 Surface Water Treatment Requirements

All roofs and hard landscaping proposed to receive a single stage of treatment, with new roads proposed to receive two stages of treatment in line with Highland Council and SEPA requirements, surface water treatment methods will be designed in accordance with Ciria C753 at the detailed design stage.

4.3 Foul Water

A new foul drainage and treatment system will be required to service the proposed development.

The proposal shall be to install a new foul water treatment plant capable of servicing a capacity equivalent PE of 43. The treated discharge shall be pumped to a suitable location circa 60.0m south of the visitor centre where it shall discharge to a shallow stone filled

dispersion soakaway that will additionally incorporate an existing road culvert that will offer further dilution to the treated discharge.

5. SUDs

In line with The Landscape Institute, Interim Technical Guidance Note 01/2014, 2014 together with Ciria SUDS guidance the following outline maintenance is proposed.

5.1 Monitoring and Inspection Procedures

The implementation of monitoring and inspection procedures shall be required, generally every 6 months (maximum), in order to evaluate the ongoing maintenance regimes and alter to suit the local conditions that shall prevail.

Swales

The following maintenance regime is proposed:

- Regular grass cutting regime, generally monthly during the growing season.
- Regular removal of dead plants, tree fall and waste products generally monthly.
- Sediment removal generally every 6 months and also after storms.

Filter Strips

The following maintenance regime is proposed:

- Regular grass cutting regime, generally monthly during the growing season to keep strips clear.
- Regular removal of dead plants, tree fall and waste products generally monthly.
- Sediment build up inspection on an annual basis, initially after 6 month period to evaluate conditions

Permeable Paving

The following maintenance regime is proposed:

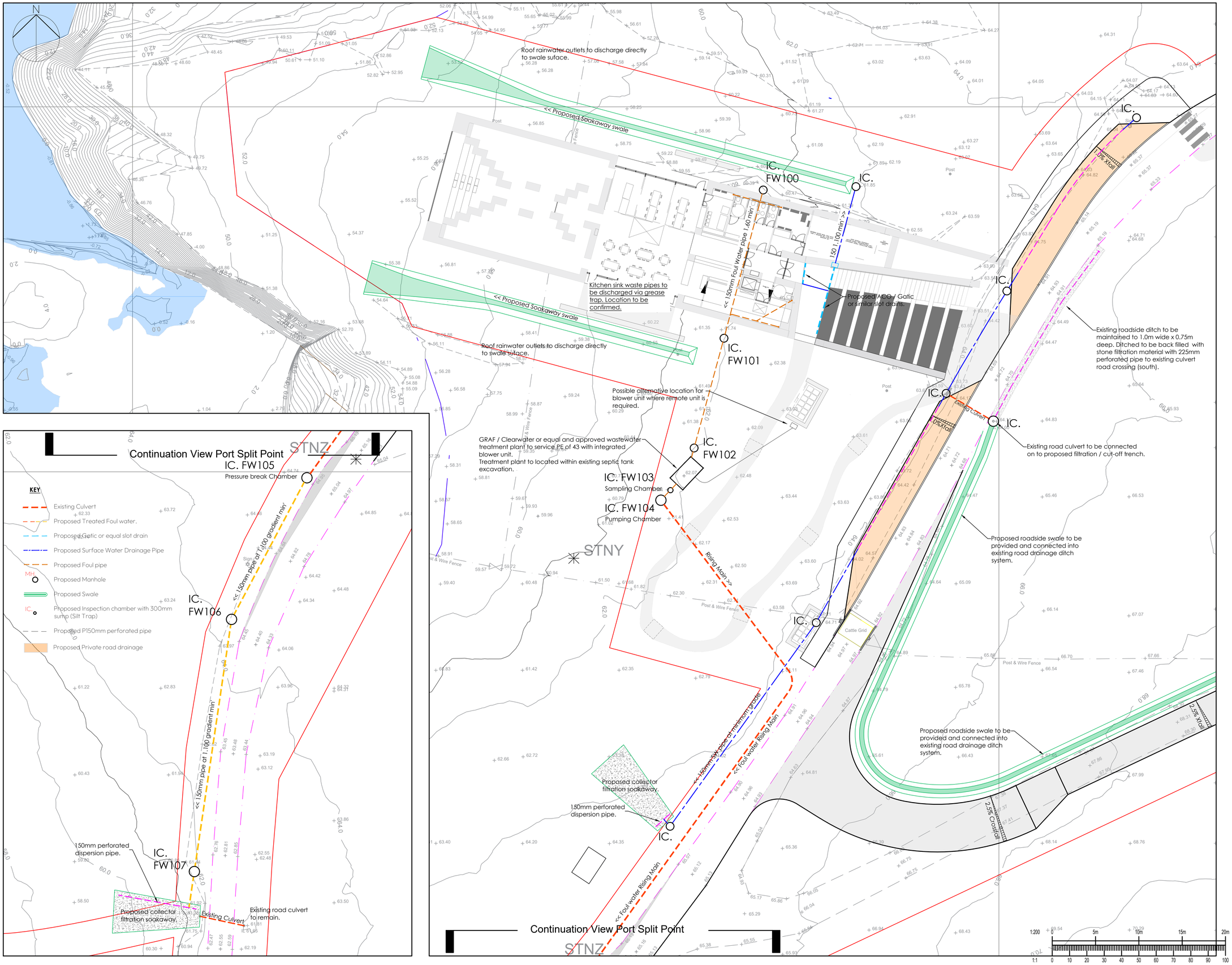
- The Permeable paving should be brushed\vacuumed once a year to prevent clogging of the paving. Remedial works as required.

6. Appendices

Appendix A

Project Outline Scheme Drainage Layouts :

Drawings Location Plan	**21.1883-NAR-XX-XX-DR-C-9002**
Visitor Centre Layout	**21.1883-NAR-XX-XX-DR-C-9400**
Parking Exit Junction Layout	**21.1883-NAR-XX-XX-DR-C-9401**
Parking Layout	**21.1883-NAR-XX-XX-DR-C-9402**
Parking Entrance Junction Layout	**21.1883-NAR-XX-XX-DR-C-9403**



Notes

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4. Drawing to be read in colour.

Drainage Notes

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2. The minimum size of gravity pipe to be vested is 150mm diameter including building drainage tails.
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7. Property connections shall be constructed at the same time as the main sewers with disconnecting chambers (DMH) located as near as possible to the curtilage boundary or heelkerb. Connections shall be laid at a maximum gradient of 1:60 and a maximum gradient of 1:10.
8. The Contractor will be responsible for setting out and constructing drainage pipelines and manholes in such positions that they do not coincide with proposed fence lines, kerbing etc. and are mainly laid within the confines of the carriageway and footpaths as required.
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14. All pipework should be tested before and after backfilling, and Scottish Water reserves the right to witness these tests. The tests require to fully comply with Scottish Water specifications and the contractor shall keep a record of all test undertaken by them.

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P01	INITIAL ISSUE	DT	ADP	13.11.23

Status: Planning

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Client: Ionad Hiort

Architect: Dualchas / Reiulf Ramstad

Job Title: The St Kilda Centre
Isle of Lewis

Sheet Title: Proposed Drainage Layout
Visitor Centre

Project Reference		
21.1883		
Drawn by: ADP	Designed: ADP	Checked: -
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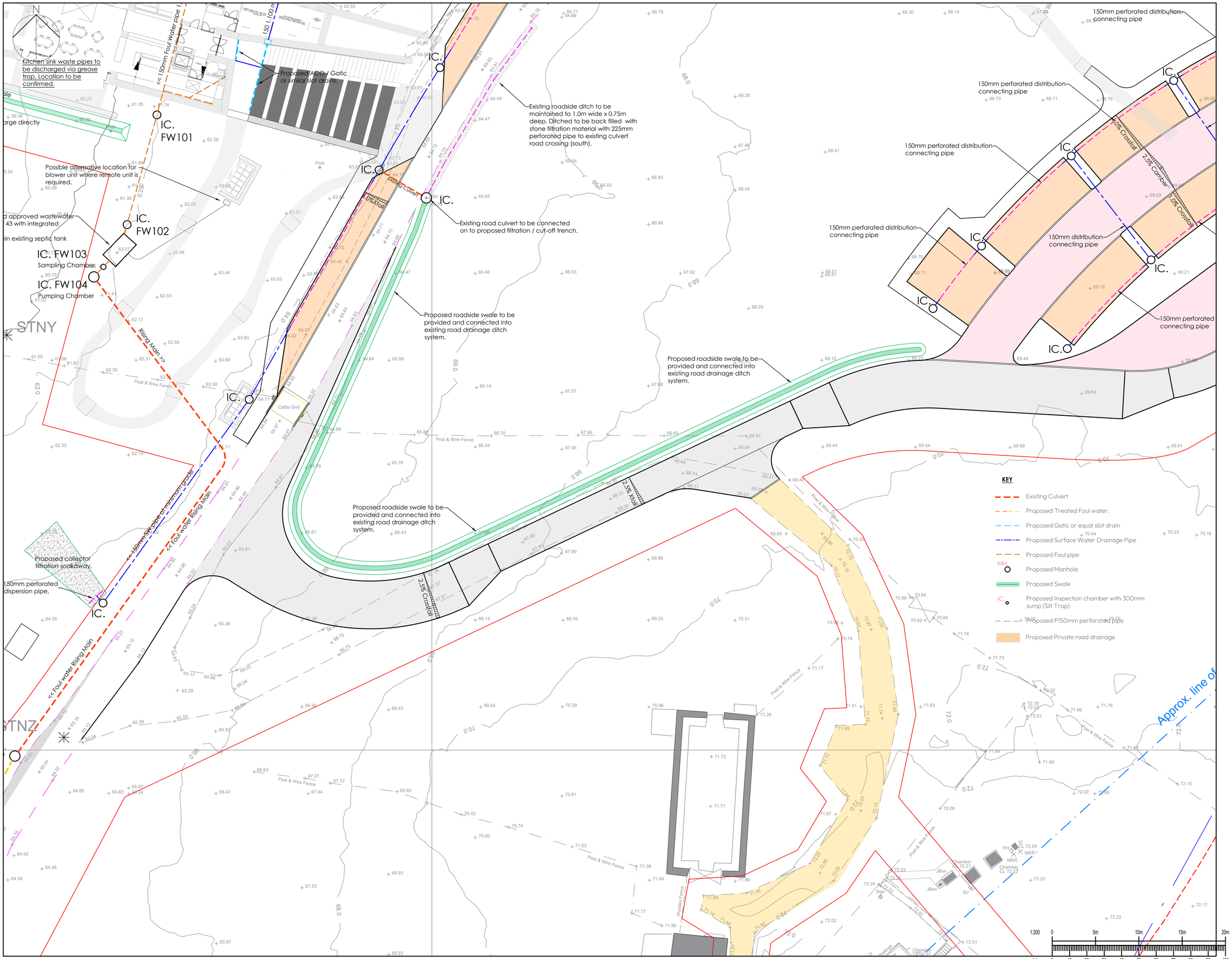
File Name: 21.1883-NAR-XX-XX-DR-C-9400	Revision: P02	



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Job Title: The St Kilda Centre
Isle of Lewis

Sheet Title: Proposed Drainage Layout
Parking Exit Junction

Project Reference: 21.1883

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N

Existing Culvert

IC.

2.5% Xfall

Sign

Existing roadside ditch to be maintained to 1.0m wide x 0.75m deep. Ditched to be back filled with stone filtration material with 225mm perforated pipe to existing culvert road crossing (south).

be connected
n / cut-off trench.

Proposed roadside swale to be provided and connected into existing road drainage ditch system.

150mm perforated distribution connecting pipe

150mm distribution connecting pipe

4.0% crossfall

2.5% Crossfall

2.5% Xfall

Post & Wire Fence

Proposed roadside swale to be provided and connected into existing road drainage ditch system.

Overhead power lines

Ø125mm MDPE Water Main

KEY

- Existing Culvert
- Proposed Treated Foul water.
- Proposed Gatic or equal slot drain
- Proposed Surface Water Drainage Pipe
- Proposed Foul pipe
- MH Proposed Manhole
- Proposed Swale
- IC. Proposed Inspection chamber with 300mm sump (Silt Trap)
- Proposed P150mm perforated pipe
- Proposed Private road drainage

STNA 66.73

1:200 0 5m 10m 15m 20m

1:1 0 10 20 30 40 50 60 70 80 90 100

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Parking

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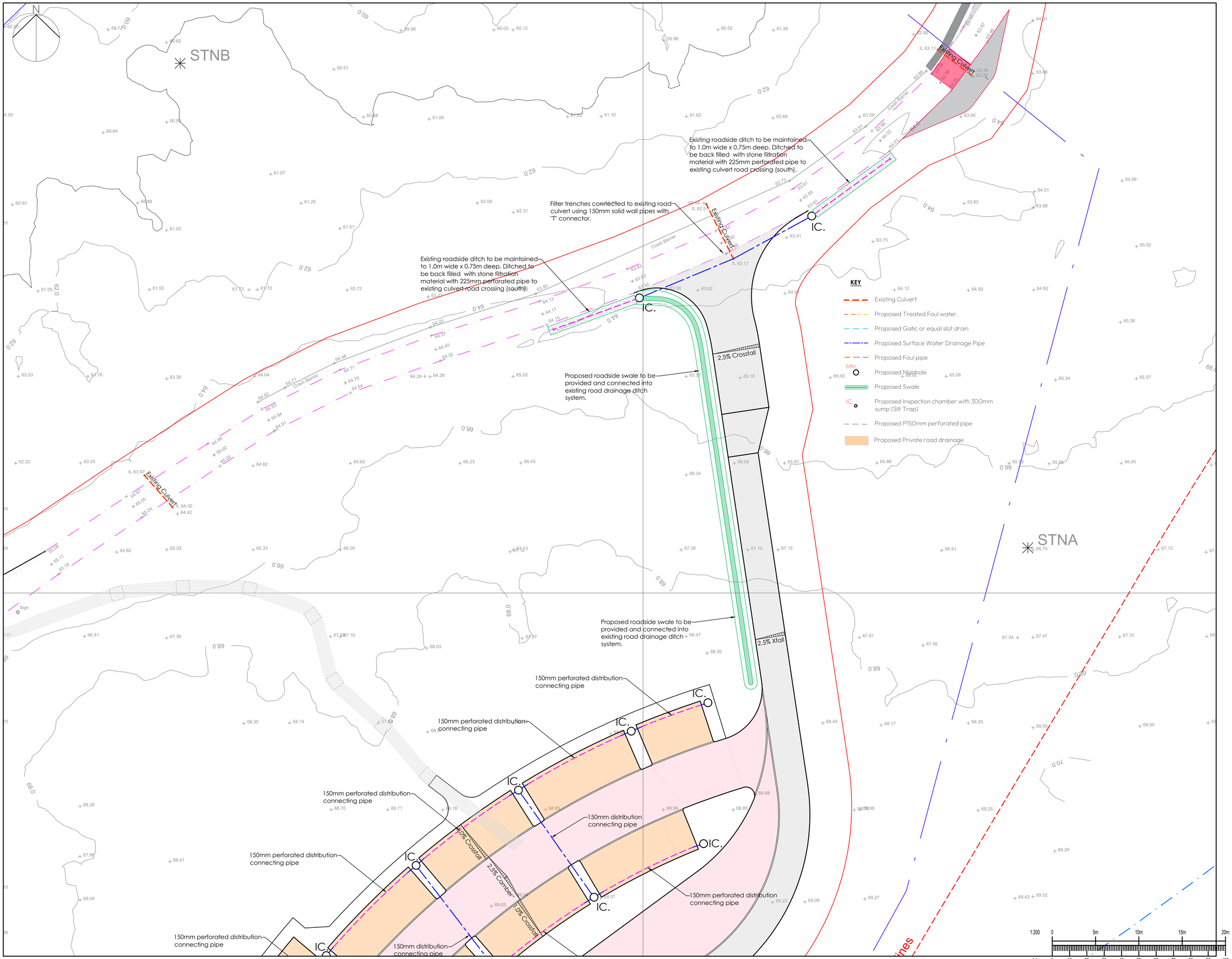

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Parking Entrance Junction

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