

Drainage Maintenance Manual

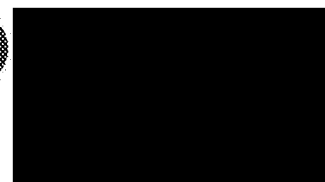


The Civil Engineering Practice
11 Tungsten Building
George Street
Fishergate
Sussex
BN41 1RA

Project	8 Manor Way, Elmer, Bognor Regis
Project Number	23605

By Martin Kempshall CEng MICE

Date 27 September 2021



1 Schedule of Maintenance

- 1.1 Upon completion of the development the management of the drainage facilities will be passed on to the homeowner.
- 1.2 The regular and corrective maintenance of all elements of the drainage system beneath the road, including the lined voided subbase will be managed by the homeowner or a third-party employed on their behalf.
- 1.3 Regular maintenance of all private drainage, channels, gutters, rainwater pipes, driveways and connections will be the responsibility of the individual homeowner and should be undertaken monthly.
- 1.4 With adequate maintenance the working design life of the system is approximately 25 years. The extent of the permeable paving is shown on Drawing 201 a copy of which is attached as part of this Drainage Maintenance Manual.
- 1.5 At a minimum interval of 25 years the permeable paving blocks shall be lifted and inspection undertaken as follows:
 - ¿ 3-6mm gravel bedding to be removed and the voided subbase stone inspected.
 - ¿ The subbase shall be replaced as required where blocked or blinded.
 - ¿ The permeable geotextile shall be inspected using a series of hand dug trial holes to assess its general condition, where damaged it should be replaced or repaired.
 - ¿ Upon completion of the inspection the voided stone subbase shall be replaced to the original specification and level.
 - ¿ The 3-6mm bedding shall be replaced with the permeable blocks reinstated after cleaning or where required replaced with new.
 - ¿ Following block reinstatement 3-6mm grit shall be swept into the joints between the permeable blocks.



- 1.6 Provisions will be made to replace any infrastructure that has reached the end of its serviceable design life and will be replaced on a like for like basis as far as reasonably practicable.
- 1.7 The suspended pipework is attached to the adjacent fence using Unistrut style fixings and brackets which can be inspected from ground level and should be monitored to ensure adequate performance during rainfall, any repairs should be undertaken by a suitably qualified person.
- 1.8 Following high tidal storm events, the integrity of the final section of surface water pipework, including the section above the seawall and at point of discharge into the beach shingle should be checked. Should any damage have occurred this should be repaired at the earliest opportunity.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from silt trap chambers, channel drains and inlet chambers	Monthly or as required
	Litter and debris removal - catch pits	Monthly or as required
	Visual inspection of suspended pipework and point of discharge to beach	Monthly or after significant pluvial or tidal storm events.
	Foul water pipework - jetting / rodding	Every 2 years or as required
	Visual inspection of permeable paving for defects and settlement	Annually, or after leaf fall
	Sweeping / brushing / vacuuming of permeable paving	Annually, or after leaf fall
Corrective Maintenance	Repairs to access chambers / manhole covers	As required
	Replace any broken permeable blocks / surface, remedial works to any depressions or rutting	As required
	Inspect inlet, outlet from downpipe and gullies for blockages, standing water and clear	As required
	Repair damage to pipework, outlet or diffuser box to beach.	As required
	Full inspection and service of Permeable Paving System	Minimum of every 25 years

Table 1: Schedule of Regular and Corrective Maintenance

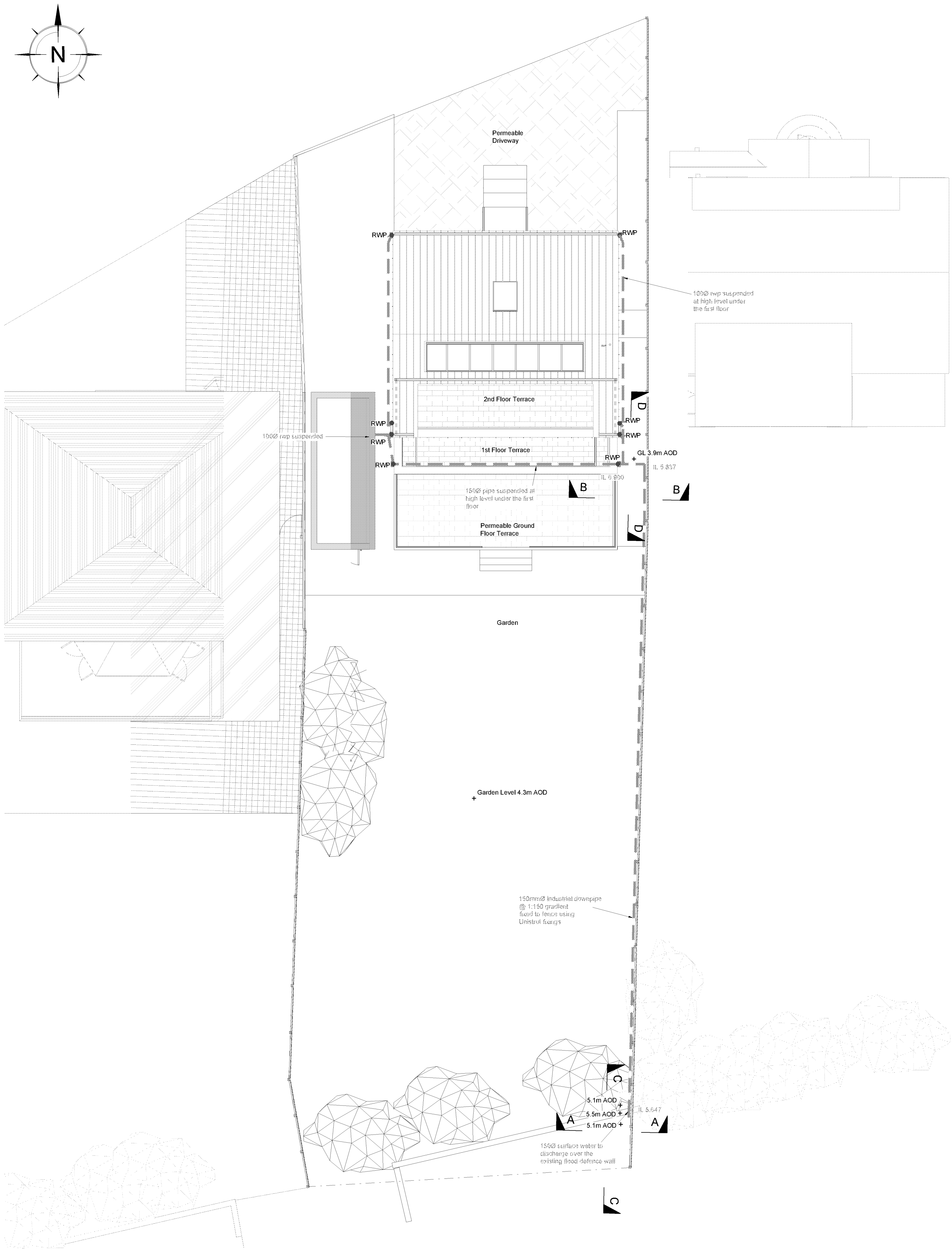
2 Financing

- 2.1 The regular maintenance of all private drainage, channels, gutters, rainwater pipes, driveways and connections will be the responsibility of the homeowner.
- 2.2 The regular and corrective maintenance of all elements of the drainage system will be managed and funded by the homeowner.

3 Maintenance Summary

Inspection / Action Required	Gullies, Channels and Gutters	Silt Traps, Channel Drainage and Inlet Chambers	Catchpit	Permeable Paving / Surfaces	Foul Water Pipework	Above Ground Surface Water Pipework
Monthly		V	V			V
3 Months	V		V	V		
1 Year				V		
After leaf fall in Autumn	V		V	V		
After significant pluvial or tidal storm event.						V
2 Years					V	
25 Years				V		

Table 2: Drainage System Maintenance Summary



SITE PLAN
(Scale 1:100)

GENERAL NOTES:

1. All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
2. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
3. The main Contractor is responsible for ensuring the stability of the structure whilst the works are in progress.
4. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority. No liability is accepted by the Consultant and the main Contractor is responsible for obtaining and checking all information and taking due care and attention whilst undertaking the works.

DRAINAGE NOTES:

1. All adoptable pipes, bends and junctions shall be vitrified clay in accordance with the current version of BS EN 295-1, with flexible joints and kitemark certified.
2. All Adoptable sewers shall be in strict accordance with the SSG Appendix C - Design and Construction Guidance. Unless otherwise stated adoptable sewers shall be 150mm diameter and shall be laid in a class S bedding. Where the depth to soffit is less than 1.2m under a public highway or 0.9m elsewhere the pipe shall be laid with a class Z bedding.
3. All private building drainage shall be constructed in strict in accordance with the current version of BS EN 752:2017. Unless otherwise specified building drainage shall be 100mm diameter and shall be laid at a minimum gradient of 1 in 40 for foul drains and 1 in 80 for surface water drains. All building drains shall be laid in class B bedding unless otherwise specified.
4. Where a pipe is within 1m of a foundation the trench shall be filled with class GEN 3 concrete up to the lowest level of the foundation. Where the trench is further than 1m from the foundation, the trench shall be filled with class GEN 3 concrete to a level below the lowest level for the foundation equal to the distance from the foundation less 150mm. In both cases the pipe shall be bedded and surrounded in 150mm thick class GEN 3 concrete.
5. Where pipes, external to the structures, have a depth to soffit from ground level of less than 450mm they shall have a class GEN 3 concrete encasement (150mm thick). In all other cases the pipes shall be bedded and surrounded with 100mm thick granular material.
6. In any circumstances where pipes are bedded and surrounded in concrete flexible joints should be provided. Compressible boards (fibroboard or polystyrene) shall be provided at a maximum of 9m centres (coinciding with pipe joints). The boards shall be pre-cut to pipe diameter and to a height and width equal to the concrete cross section. A board thickness of 18mm for pipes up to 450mm nominal diameter and 38mm for pipes over 450mm nominal diameter.
7. All svps shall have rodding access plates fitted at their bases (ground floor level).
8. Where existing pipes are to be abandoned they shall be dug out together with any abandoned manholes.
9. Any discrepancy between the drawing and site should be reported immediately to the Engineer.
10. All manhole and chamber sizes are given as a minimum to meet the SSG Appendix C-Design and Construction Guidance

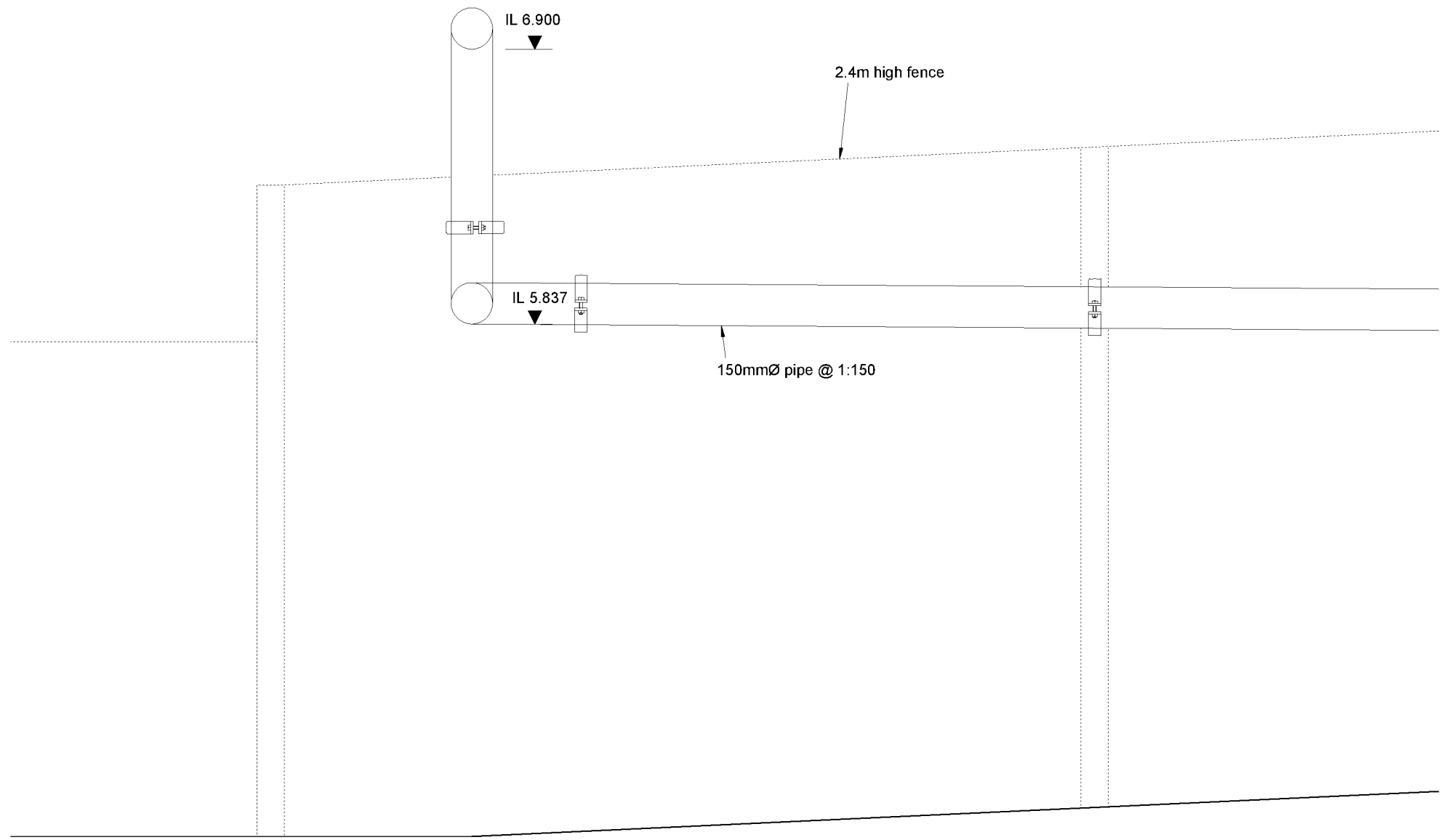
REV	DATE	BY	DESCRIPTION	CHK
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Issue Status PRELIMINARY

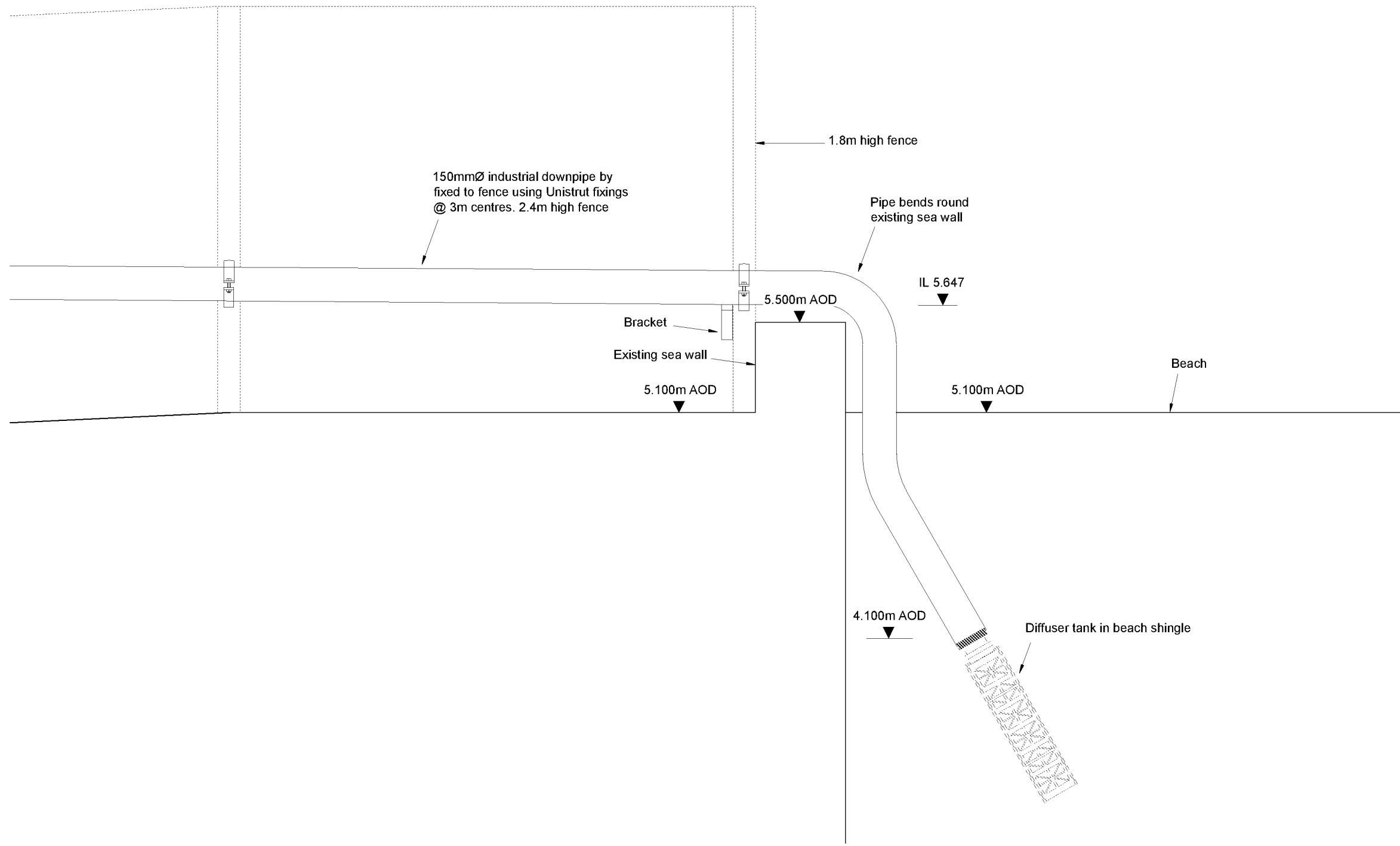


The Civil Engineering Practice
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George Street
Fishergate
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BN41 1RA
01273 424424
reception@civil.co.uk
www.civil.co.uk

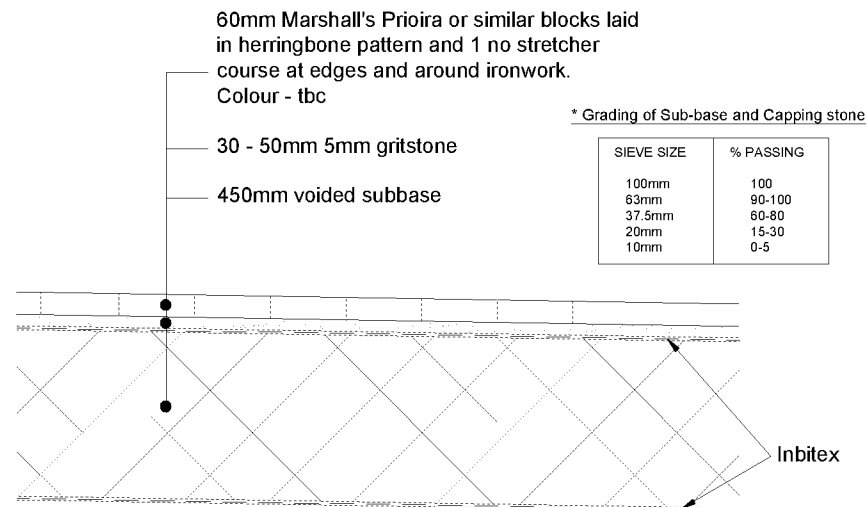
CLIENT	George Bevis		
PROJECT	Manor Way Elmer		
TITLE	Proposed Surface Water Plan		
DRAWN	DATE	PROJECT NO.	23605
PR	Sept 2021		
ENGINEER	CHECKED	DWG. NO.	
MK	MK	201	
SCALE	As Shown @ A1		



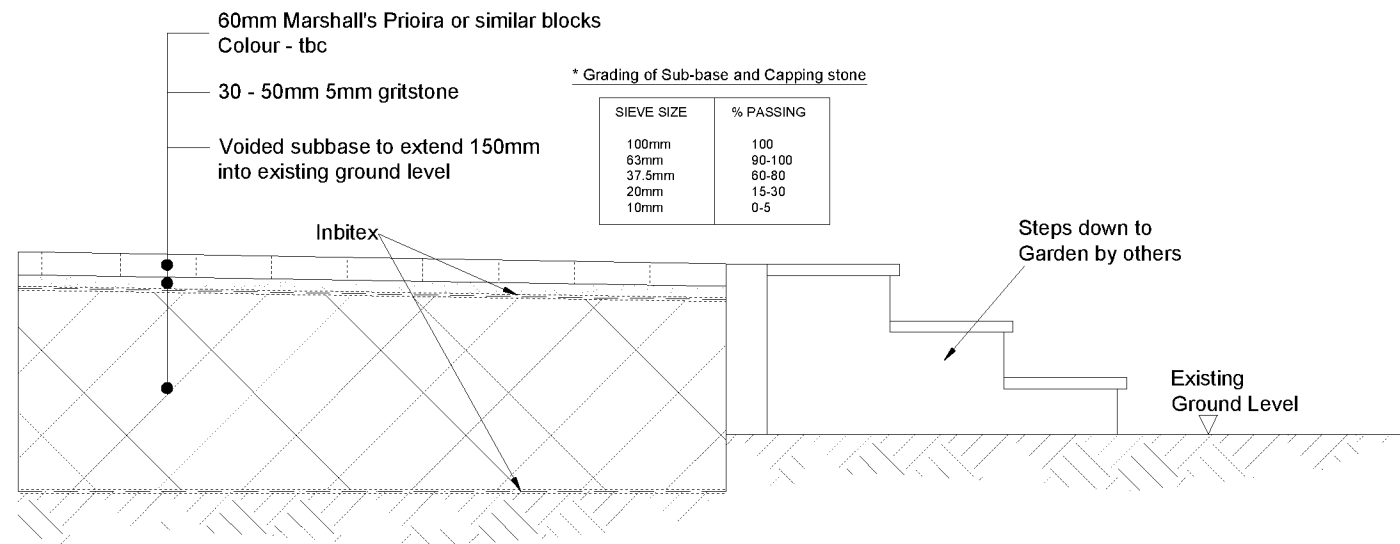
ELEVATION ON SEA WALL OUTFALL
SECTION D-D
(Scale 1:20)



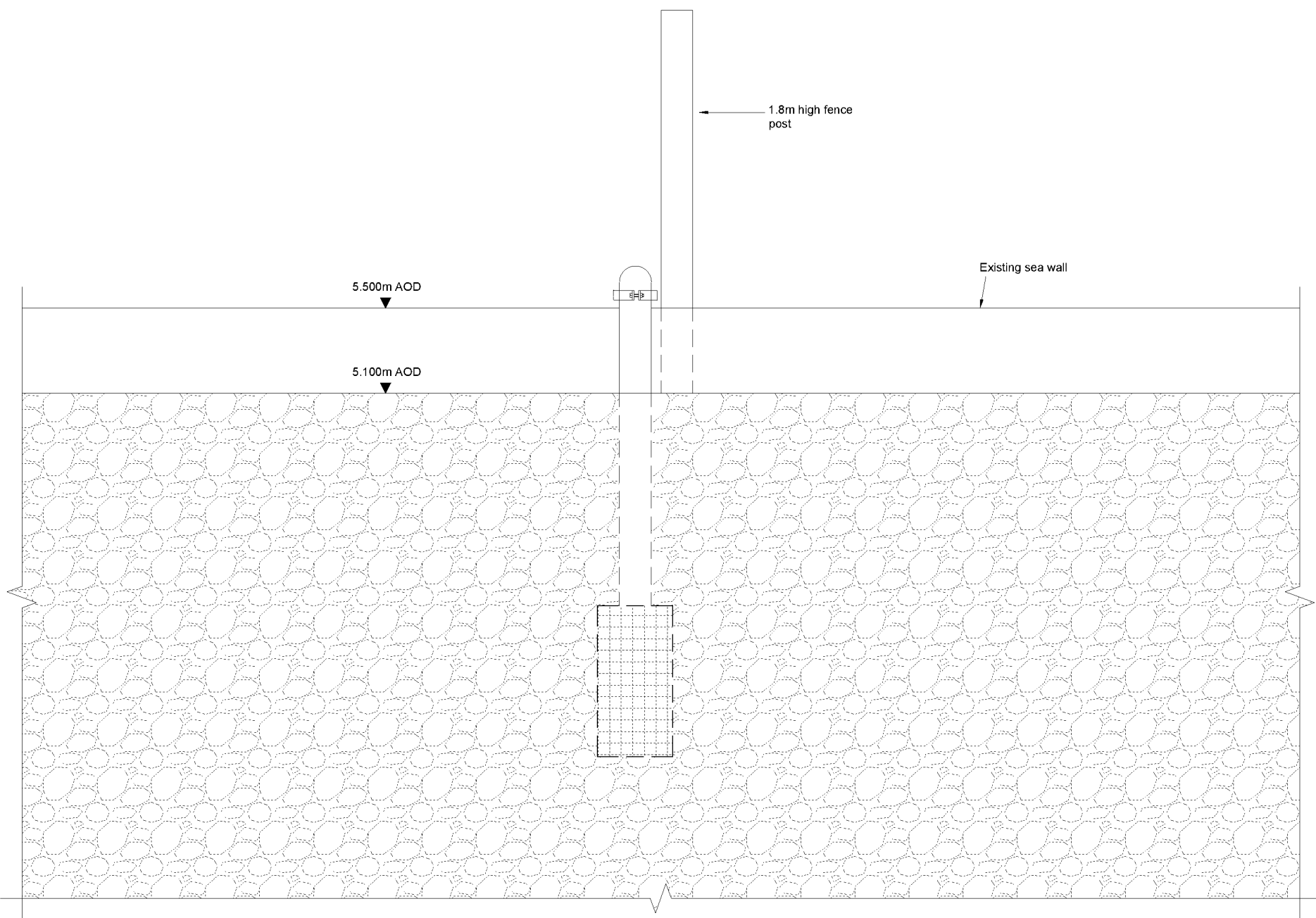
SECTION THROUGH SEAWALL OUTFALL
SECTION C-C
(Scale 1:20)



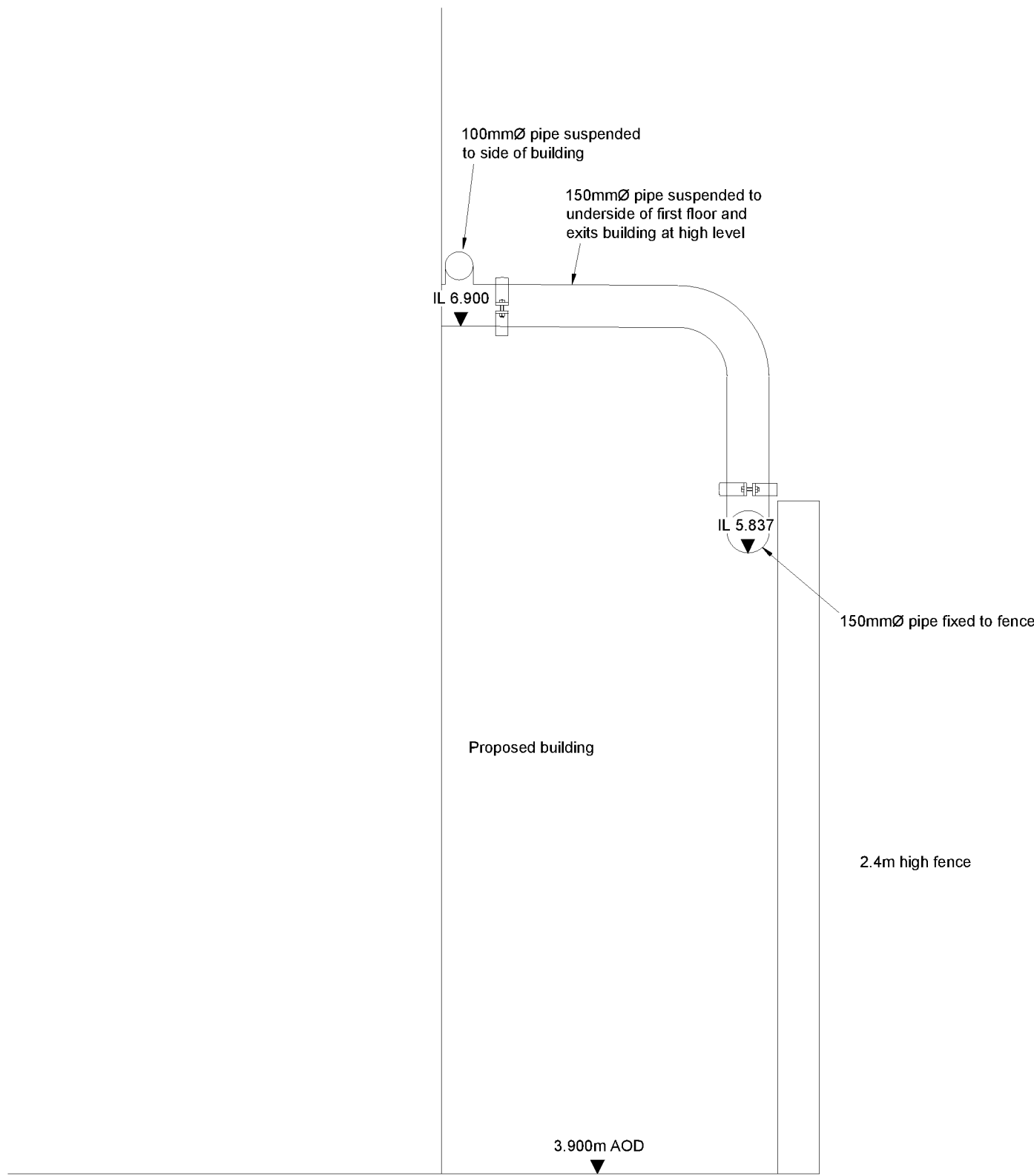
DRIVE CONSTRUCTION
PERMEABLE BLOCK PAVING
(Scale 1:20)



REAR GARDEN GROUND FLOOR TERRACE
CONSTRUCTION PERMEABLE BLOCK PAVING
(Scale 1:20)



ELEVATION ON SEA WALL OUTFALL
SECTION C-C
(Scale 1:20)



SECTION B-B
(Scale 1:20)

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CLIENT	George Bevis
PROJECT	Manor Way Elmer
TITLE	Construction Details

DRAWN	M Pacifico	DATE	Sept 2021	PROJECT NO.	23605
ENGINEER	M Kempshall	CHECKED		DWG. No.	501
SCALE	As Shown @ A1	REV.			