



IMPORTANT – THIS COMMUNICATION AFFECTS YOUR PROPERTY

COUNCIL OF THE ISLES OF SCILLY

Town Hall, St Mary's TR21 0LW
Telephone: 01720 424455 – Email: planning@scilly.gov.uk

Town and Country Planning Act 1990
Town and Country Planning (Development Management Procedure) Order 2010

PERMISSION FOR DEVELOPMENT

Application No: P/21/049/FUL **Date Application Registered:** 30th July 2021

Applicant: Dr Stephen Swabey
Council Of The Isles of Scilly
Town Hall
St Marys
Isles Of Scilly
TR21 0LW

Site address: Porthloo Beach Porthloo St Mary's Isles of Scilly
Proposal: Construction of concrete retaining wall faced with greenheart wood to continue the existing wooden retaining wall and placement of granite rock armour revetment on the beach side of the retaining wall (EIA Development) (Major Development).

In pursuance of their powers under the above Act, the Council hereby **PERMIT** the above development to be carried out in accordance with the following Conditions:

- C1 The development hereby permitted shall be begun before the expiration of three years from the date of this permission.**
Reason: In accordance with the requirements of Section 91 of the Town and Country Planning Act 1990 (as amended by Section 51 of the Planning and Compulsory Purchase Act 2004).
- C2 The development hereby permitted shall be carried out in accordance with the approved details only including:**
- Site Location Plan, Drawing Number: PL2000
 - Block Plan: Drawing number: UA008878-ARC-XX-XX-DR-CE-0200, Rev P1
 - Site Plan: Drawing number: UA008878-ARC-XX-XX-DR-CE-0200, Rev P1
 - Design Statement, Ref: UA008878-ARC-XX-XX-RP-CE-0260, Rev P4
 - Proposed Revetment Specification, UA008878-ARC-XX-XX-SP-CE-0831
 - Proposed Revetment Plan, UA008878-ARC-XX-XX-DR-CE-0220, Rev P4
 - Porthloo Site Information: UA008878-ARC-XX-XX-SP-CE-0801
 - H&S Design Hazard: UA008878-ARC-XX-XX-HS-CE-0261-P2

These are stamped as APPROVED

Reason: For the clarity and avoidance of doubt and in the interests of the character and appearance of the Conservation Area, Area of Outstanding Natural Beauty and Heritage Coast in accordance with Policies OE1 and OE7 of the Isles of Scilly Local Plan (2015-2030).

PRE-COMMENCEMENT CONDITION: Construction Environment Management Plan

C3 No development shall take place, including any works of transporting materials to the site, until a Construction Environmental Management Plan (CEMP) in addition to the indicative method statement, has been submitted to and approved in writing by, the local planning authority. The approved Statement shall be adhered to throughout the construction period. The CEMP shall incorporate:

- The timing of intended implementation, to avoid conflicting with breeding birds or harm to biodiversity features;
- The times during construction when specialist ecologists need to be present on site to oversee works, if required;
- Responsible persons and lines of communication;
- Monitoring, reporting and emergency responses;
- The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person;
- Industry standard, best-practice measures to control site run-off, manage soils and waste, manage fuel and other materials to prevent spillages and also emergency procedures in the event of a pollution incident;
- Standard best practice construction measures to avoid significant disturbance of adjacent features (human neighbours and, consequently, nesting and wintering bird populations within the nearby Lower Moors SSSI, interest features of the SAC and SPA) arising from vibration, artificial lighting and noise effects;
- An archaeological Watching Brief during delivery of construction materials to monitor the potential for any impacts on buried remains in the inter-tidal area (in case of unforeseen ground conditions occurring),
- Details of the use and management of materials, waste management, a plan for Verification Control Documents;
- Risk assessments and method statements in light of revealed conditions (relating to Health and Safety and buried services) as well as to take account the recommendations of Foundation Works Risk Assessment (if required);
- Area(s) for the parking of vehicles of site operatives;
- Space for the loading and unloading of plant and materials;
- Storage of plant and materials used in constructing the development;
- Construction vehicles wheel washing facilities, if required;
- Measures to control the emission of dust and dirt during construction;
- A detailed scheme for reducing/re-using/recycling/disposing of waste resulting from the works.
- Details of any signage and protective barriers in relation to notifying users of the area, of the timescales of the works, including signs to re-direct or safeguard footpath users from avoiding the site works.

On completion of the development any contractors compound, temporary access and all plant, machinery, fencing, lighting and any other equipment or structures used as part of the construction process shall be removed from the site and, where appropriate, the land reinstated to its former condition within three months.

Reason: This is a pre-commencement condition that requires details that were not submitted as part of the application, but are required to fully understand the impact upon the Islands natural environment designation and to ensure that the construction of the development is adequately controlled and to protect the amenities of the area and essential infrastructure in accordance with Policies SS2, OE2 and SS7 of the Isles of Scilly Local Plan 2015-2030.

C4 Before commencing any dune planting, details of the native plant species and planting schedule, shall be submitted to and approved in writing by the Local

Planning Authority, in consultation with Natural England. Native dune species, such as Marram Grass *Ammophila arenaria* or Creeping Willow *Salix repens* should be used to provide flood defence and stabilise the dune system, whilst supporting this valuable habitat. The planting shall be carried out in accordance with the approved details and any plants which, within a period of 5 years of completion of the project, die or are washed away before successful establishment to the dune, shall be replaced with new plants.

Reason: To ensure the works safeguard the wealth of biodiversity present on the Isles of Scilly and safeguards existing habitats and features in a bio-secure manner in accordance with Policies OE1 and OE2 of the Isles of Scilly Local Plan (2015-2030).

Further Information

1. In dealing with this application, the Council of the Isles of Scilly has actively sought to work with the applicants in a positive and proactive manner, in accordance with paragraph 38 the National Planning Policy Framework 2019.
2. Please note that from the 6th April 2008 a fee is now payable for the discharge of any conditions where details are required to be submitted pursuant to that condition. Details of the exact amount and the procedure to be followed can be found on the Council's website.
3. It should be noted that some of the conditions attached to this consent are required to be complied with prior to the commencement of the development hereby approved, if those conditions are not fully adhered to, then the consent cannot lawfully be implemented, therefore a new application will be requested and consideration will be given to the expedience of enforcement action.

Signed:



Chief Planning Officer

Duly Authorised Officer of the Council to make and issue Planning Decisions on behalf of the Council of the Isles of Scilly.

DATE OF ISSUE: 20th October 2021



COUNCIL OF THE ISLES OF SCILLY

Planning Department
Town Hall, The Parade, St Mary's, Isles of Scilly, TR21 0LW
☎0300 1234 105
✉planning@scilly.gov.uk

Dear Dr Stephen Swabey

Please sign and complete this certificate.

This is to certify that decision notice: P/21/049/FUL and the accompanying conditions have been read and understood by the applicant: Dr Stephen Swabey.

1. **I/we intend to commence the development as approved:** Construction of concrete retaining wall faced with greenheart wood to continue the existing wooden retaining wall and placement of granite rock armour revetment on the beach side of the retaining wall. (EIA Development) (Major Development) at: Porthloo Beach Porthloo St Mary's Isles Of Scilly **on:**.....
2. I am/we are aware of any conditions that need to be discharged before works commence.
3. I/we will notify the Planning Department in advance of commencement in order that any pre-commencement conditions can be discharged.

You are advised to note that Officers of the Local Planning Authority may inspect the project both during construction, on a spot-check basis, and once completed, to ensure that the proposal has complied with the approved plans and conditions. In the event that the site is found to be inaccessible then you are asked to provide contact details of the applicant/agent/contractor (delete as appropriate):

Name: _____ **Contact Telephone Number:** _____
And/Or Email: _____

Print Name:.....

Signed:.....

Date:.....

Please sign and return to the **above address** as soon as possible.

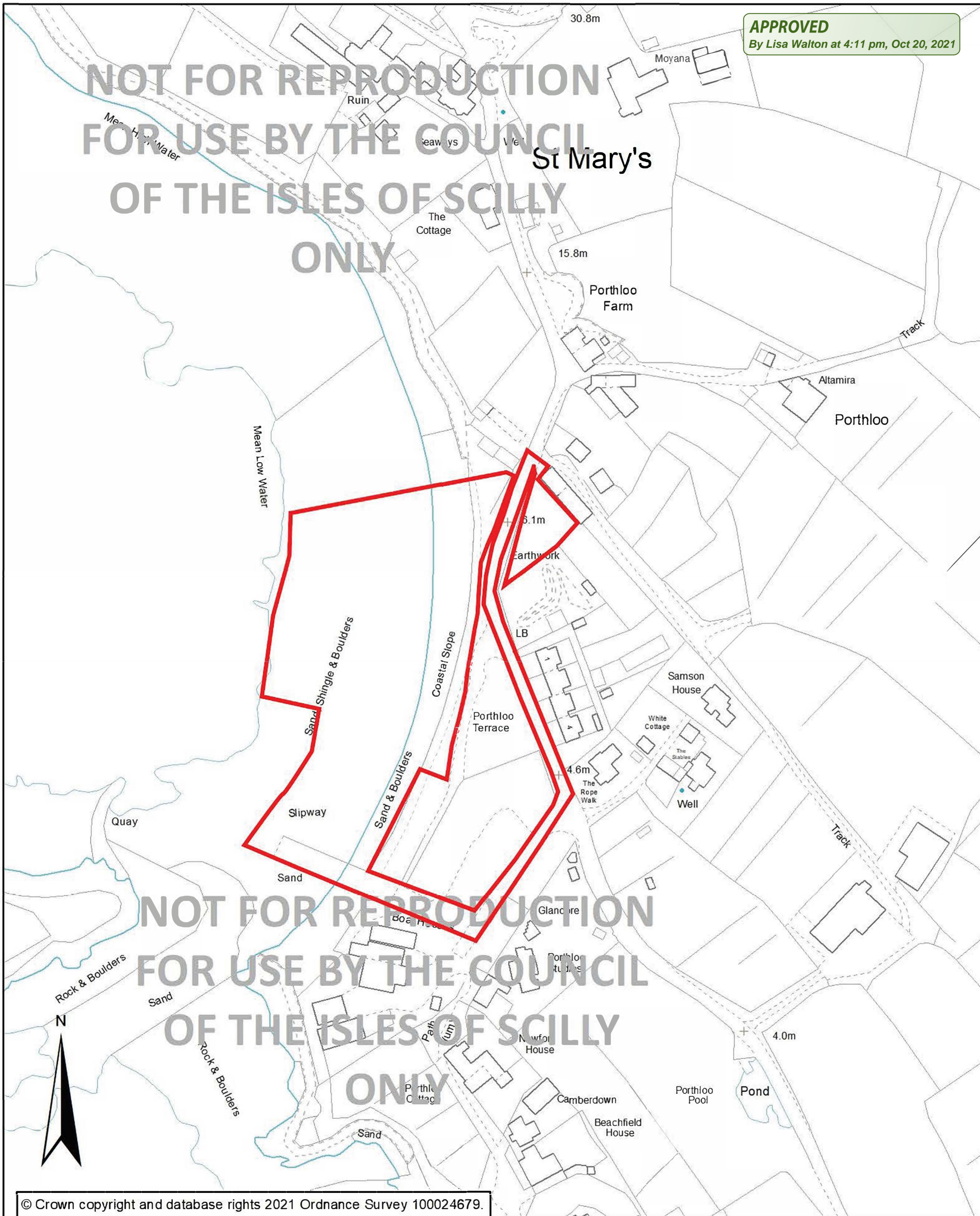
For the avoidance of doubt you are reminded to address the following condition(s) before you commence the implementation of this permission. Although we will aim to deal with any application to discharge conditions as expeditiously as possible, you are reminded to allow up **to 8 weeks** for the discharge of conditions process.

PRE-COMMENCEMENT CONDITION(S)

- C3 No development shall take place, including any works of transporting materials to the site, until a Construction Environmental Management Plan (CEMP) in addition to the indicative method statement, has been submitted to and approved in writing by, the local planning authority. The approved Statement shall be adhered to throughout the construction period. The CEMP shall incorporate:
- The timing of intended implementation, to avoid conflicting with breeding birds or harm to biodiversity features;
 - The times during construction when specialist ecologists need to be present on site to oversee works, if required;
 - Responsible persons and lines of communication;
 - Monitoring, reporting and emergency responses;
 - The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person;
 - Industry standard, best-practice measures to control site run-off, manage soils and waste, manage fuel and other materials to prevent spillages and also emergency procedures in the event of a pollution incident;
 - Standard best practice construction measures to avoid significant disturbance of adjacent features (human neighbours and, consequently, nesting and wintering bird populations within the nearby Lower Moors SSSI, interest features of the SAC and SPA) arising from vibration, artificial lighting and noise effects;
 - An archaeological Watching Brief during delivery of construction materials to monitor the potential for any impacts on buried remains in the inter-tidal area (in case of unforeseen ground conditions occurring),
 - Details of the use and management of materials, waste management, a plan for Verification Control Documents;
 - Risk assessments and method statements in light of revealed conditions (relating to Health and Safety and buried services) as well as to take account the recommendations of Foundation Works Risk Assessment (if required);
 - Area(s) for the parking of vehicles of site operatives;
 - Space for the loading and unloading of plant and materials;
 - Storage of plant and materials used in constructing the development;
 - Construction vehicles wheel washing facilities, if required;
 - Measures to control the emission of dust and dirt during construction;
 - A detailed scheme for reducing/re-using/recycling/disposing of waste resulting from the works.
 - Details of any signage and protective barriers in relation to notifying users of the area, of the timescales of the works, including signs to re-direct or safeguard footpath users from avoiding the site works.

On completion of the development any contractors compound, temporary access and all plant, machinery, fencing, lighting and any other equipment or structures used as part of the construction process shall be removed from the site and, where appropriate, the land reinstated to its former condition within three months.

LOCATION PLAN - PL2000 Porthloo, St Mary's



1:2,000 @A4 0 10 20 40 60 80 100 Meters

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Council of the Isles of Scilly, Town Hall, The Parade, St Mary's, Isles of Scilly, TR21 0LW



HAZARD WARNINGS



- A) WORKING ADJACENT TO WATER
 - B) SOFT & UNSTABLE GROUND
 - C) PUBLIC BEACH
 - D) SERVICES- EXISTING OUTFALL
 - E) UNSTABLE ROCK ARMOUR
 - F) PORTHLOO SSSI
- FOR MORE DETAILED INFORMATION PLEASE REFER TO THE DESIGNERS H&S HAZARD RECORD.
- EVERYDAY OR LOW RISK HAZARDS HAVE NOT BEEN INDICATED ON THIS DRAWING. NEITHER HAVE HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR.
- SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED THE CONTRACTOR SHOULD NOTIFY ALL THE RELEVANT PROJECT TEAM MEMBERS.

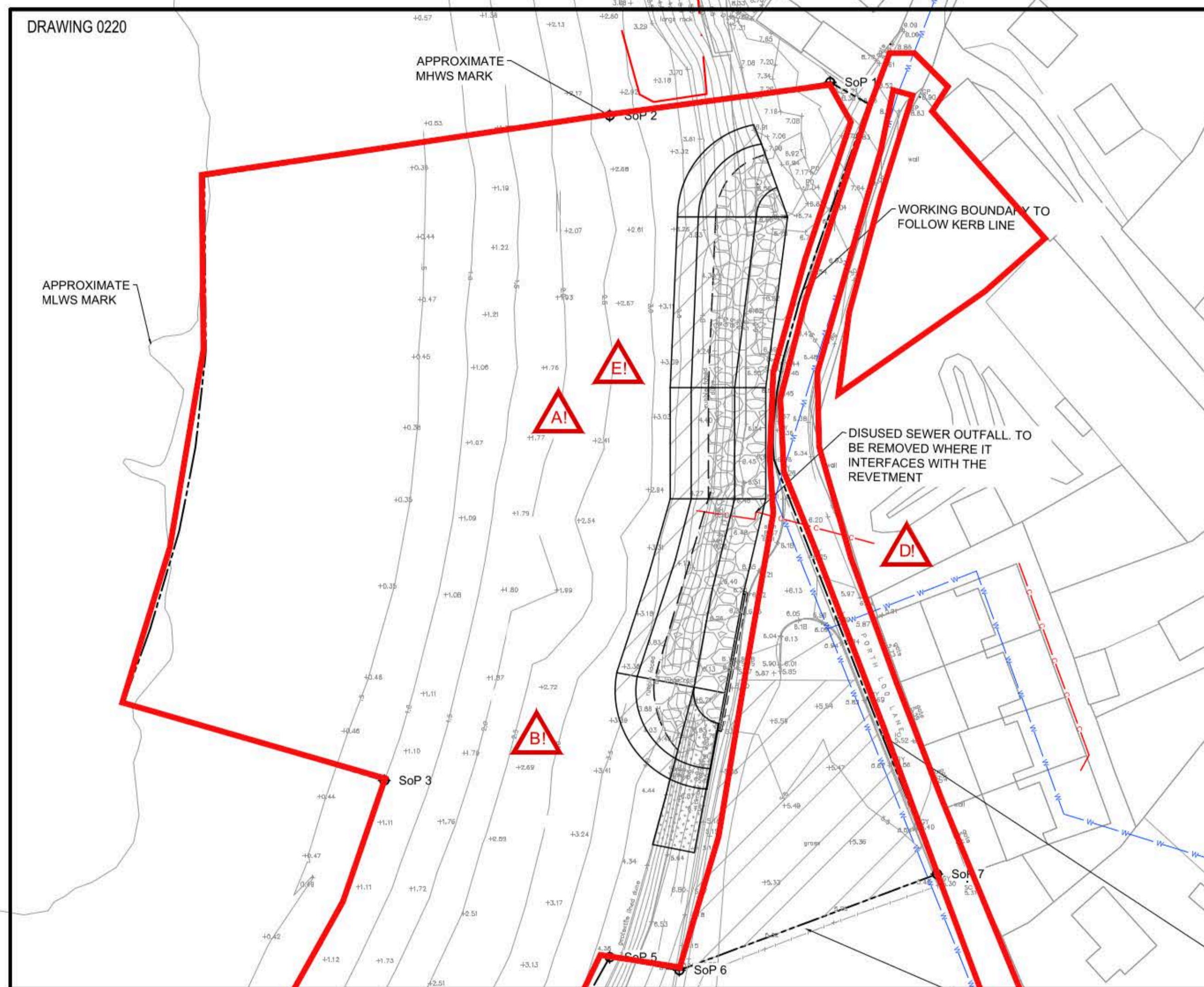
RECEIVED
By A King at 3:50 pm, Jul 28, 2021

APPROVED
By Lisa Walton at 4:11 pm, Oct 20, 2021



- NOTES:**
1. DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY
 2. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
 3. ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM LOCAL (ODL).
 4. TIDE INFORMATION RELATIVE TO ODL:
HAT 3.39m
MHWS 2.79m
MLWN 1.39m
MLWN -0.91m
MLWS -2.21m
 5. SETTING OUT POINTS (SOP) IN ORDNANCE SURVEY
SOP 1: 90910.04 ; 11395.15
SOP 2: 90878.23 ; 11390.36
SOP 3: 90845.84 ; 11294.66
SOP 4: 90813.45 ; 11236.92
SOP 5: 90878.28 ; 11269.23
SOP 6: 90888.31 ; 11267.38
SOP 7: 90925.39 ; 11281.20

- LEGEND:**
- ESTIMATED BURIED EXTENT OF REVETMENT
 - ESTIMATED EXPOSED EXTENT ROCK ARMOUR
 - SITE WON MATERIAL TO OVERLAY REVETMENT & BACKFILL ENGINEERED DEFENCE
 - PROPOSED CONTRACTOR'S COMPOUND & MATERIAL STORAGE AREA
 - COMBINED SEWER
 - WATER MAIN
 - PORTHLOO SSSI BOUNDARY
 - ESTIMATED BEACH/ REVETMENT INTERFACE
 - WORKING AREA



Rev	Date	Description	Drawn	Check	Approv
P1	01/NOV/19	FOR INFORMATION	MC	GM	PV

Client

COUNCIL OF THE ISLES OF SCILLY

PROJECT:
ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site
St. Mary's Porthloo

Client
Council of the Isles of Scilly
Address
Town Hall, St. Mary's
St Marys, Isles of Scilly, TR21 0LW
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http://www.scilly.gov.uk/

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Tel: +44 (0)1752 689 000

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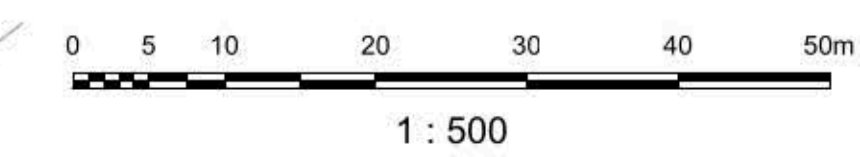
TITLE:

PORTHLOO SITE PLAN

Designed	M. CLAUSEN	Signed	[Signature]	Date	01/NOV/19
Drawn	M. CLAUSEN	Signed	[Signature]	Date	01/NOV/19
Checked	G. MCDONNELL	Signed	[Signature]	Date	01/NOV/19
Approved	P. VALVONA	Signed	PV	Date	01/NOV/19
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Original Size:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA008878		

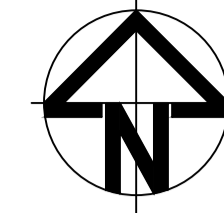
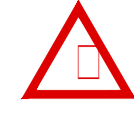
ISSUED FOR INFORMATION

Drawing Number:	UA008878-ARC-XX-XX-DR-CE-0200	Revision:	P1
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HARD WARNINGS

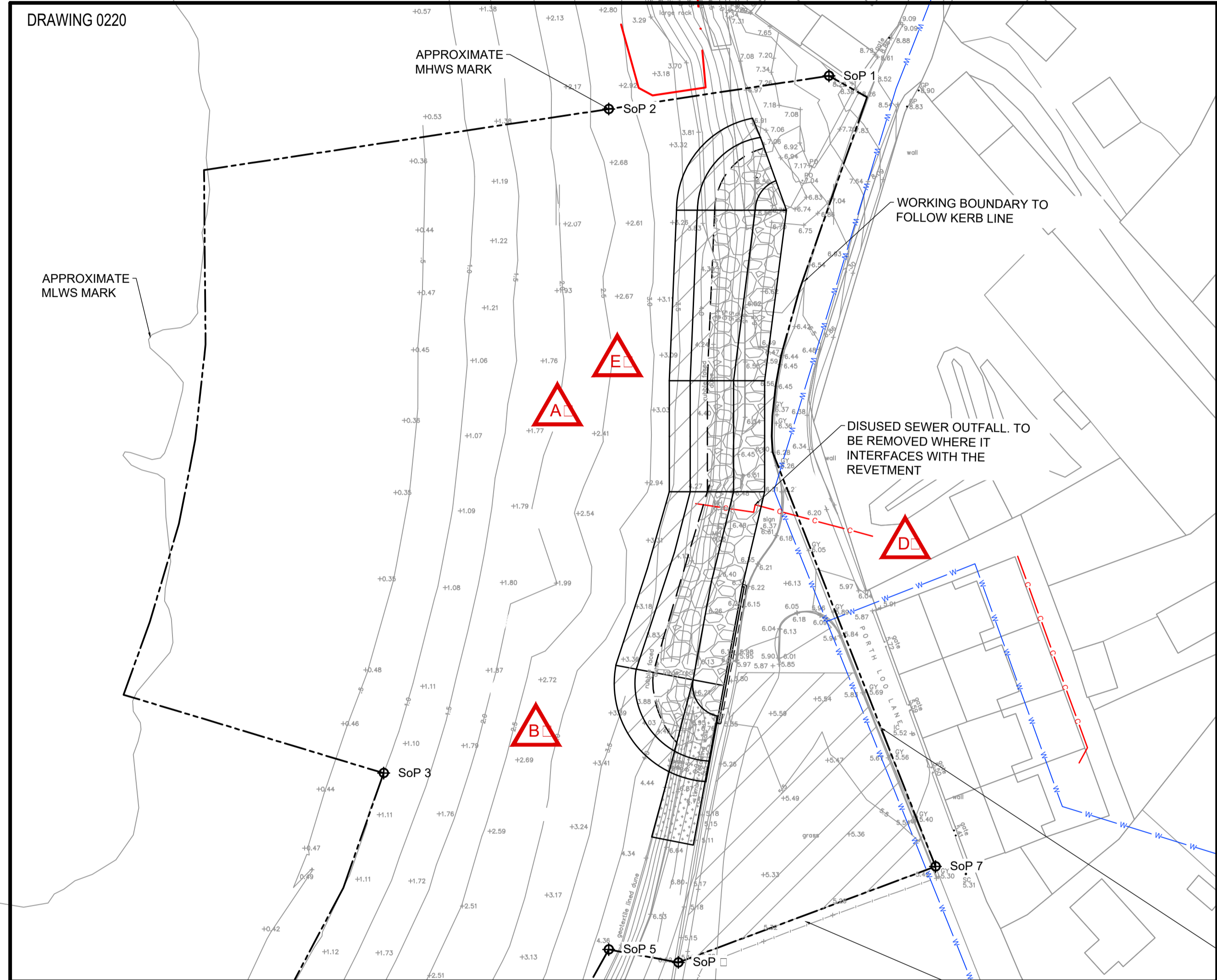
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APPROVED
By Lisa Walton at 4:11 pm, Oct 20, 2021

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LOCAL ODL
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HAT 3.3m
MHS 2.7m
MLWN 1.3m
MLWS 0.5m
MLWS 2.2m
 5. SETTING OUT POINTS (SOP) IN ORDNANCE SURVEY
SOP 1: 10.04 13.5.15
SOP 2: 07.22 13.0.0
SOP 3: 04.54 12.4.0
SOP 4: 03.45 12.3.2
SOP 5: 02.22 12.2.3
SOP 6: 00.31 12.7.3
SOP 7: 02.30 12.1.20

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 - ESTIMATED BEACH/REVETMENT INTERFACE
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Rev	Date	Description	Drawn	Check	Approv
P1	01NOV1	FOR INFORMATION	MC	GM	PV

Client
COUNCIL OF THE ISLES OF SCILLY

PROJECT:
ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME



Site
St. Mary's Porthloo

Client
Council of the Isles of Scilly
Address
Town Hall, St. Mary's
St. Mary's, Isles of Scilly, TR21 0LW
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Registered office: Arcadis House, 34 York Way, London N1 2AB
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Tel: 44 0 1752 0000

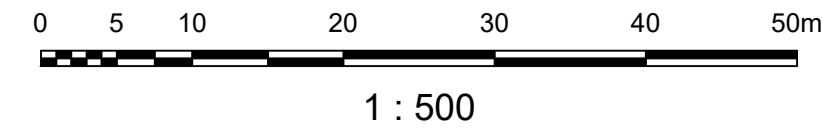
www.arcadis.com

TITLE:
PORTHLOO SITE PLAN


Designed	M. CLAUSEN	Signed	[Signature]	Date	01NOV1
Drawn	M. CLAUSEN	Signed	[Signature]	Date	01NOV1
Checked	G. MCDONNELL	Signed	[Signature]	Date	01NOV1
Approved	P. VALVONA	Signed	[Signature]	Date	01NOV1
Scale:	1:500	Datum:	ST.MARY'S		
Original Size:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA007		

ISSUED FOR INFORMATION

Drawing Number: UA007-ARC-XX-DR-CE-0200
Revision: P1



SHORT FORM DESIGN STATEMENT

 ARCADIS Design & Consultancy for natural and built assets	Project Name	Number and Activity code
	Isles of Scilly – Porthloo	UA008878-ARC-XX-XX-RP-CE-0260-P4

Brief Description:

Porthloo is located on the western side of St. Marys. The bay measures approximately 300m and is flanked to the north and south by rocky outcrops. At southern end of the beach is a boat yard which is protected from wave run-up by an engineered dune which extends half way along the beach. The northern extent of the beach is backed by an earth embankment which retains the road. The embankment is protected by an assortment of various size rocks and is currently susceptible to erosion and overtopping from wave events.



Figure 1: Porth Loo beach & wetland area which feeds into Lower Moors SSSI (Channel Coastal Observatory, 2016)

The aims of the scheme are to reduce the vulnerability of the embanked road from undermining, decrease the risk of coastal flooding to properties and the boat yard located behind the beach and to reduce saline intrusion into the Lower Moors SSSI. This will be achieved by formalising the de-facto rock defence along the northern half of the beach and tying into the existing engineered defence. Therefore the scheme will:

- Increase protection for critical infrastructure (Porthloo Road)
- Increase protection for properties and the boat yard situated behind the beach
- Increase protection for the Lower Moors SSSI

The project will not address any issues associated with the existing engineered defence protecting the boat yard.

Assumptions:

- The proposed works are located above the MHWS mark although the construction area could still be effected by storm events.
- Existing water levels:

	Chart Datum (CD)	Ordnance Datum Local (ODL)
HAT	6.3	3.39
MHWS	5.7	2.79
MHWN	4.3	1.39
MLWN	2.0	- 0.91
MLWS	0.7	- 2.21

- Numerical modelling using MIKE21 software was undertaken to identify the design parameters for the site. The design was undertaken using a 1:200yr joint probability wave and water level event with allowance for climate change, assuming a 50yr design life.
- It is assumed that the existing ground is suitable and accessible for the construction of the new revetment rock armour.
- It is assumed that ground conditions on the foreshore are suitable for placing rock armour without resulting in any significant settlement
- It is assumed that the revetment will tie into the cliffs north of the site and into the existing engineered dune to the south of the proposed works.

Design Basis:

Design water and wave conditions:

SWL (mAOD)	Hs (m)	Tm (s)	Comments
4.14	1.32	11.12	1:200yr joint probability

Retaining Wall

Ground parameters derived from Client provided trial pit logs and an Archaeological Report.

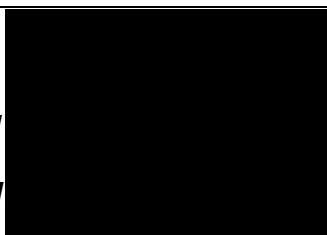
Designer’s Risk Assessment: *incl. Hazards that cannot be designed out. See Designer’s Hazard Record for further information*

- A- Working adjacent to water
- B- Soft & unstable ground
- C- Public beach
- D- Services
- E- Unstable rock armour
- F- Porth Loo SSSI

References: incl.

- CIRIA, CUR, CETMEF (2007). The Rock Manual. The use of rock in hydraulic engineering (2nd edition). C683, CIRIA, London
- Eurotop: Wave Overtopping of Sea Defences and Related Structures: Assessment Manual (2007)
- Reeve, D et al (2004). Coastal Engineering: Processes, theory and design practice. UK: Spon Press
- Kirsty McConnell (1998). Revetment systems against wave attack - A design manual. London: Thomas Telford Publishing.
- Geofabrics - Coastal and River Defence Systems: Design Guidance High Performance Square

Signed:



.....

Reviewed

.....

Approved

.....

APPROVED

By Lisa Walton at 4:11 pm, Oct 20, 2021

RECEIVED

By Emma Kingwell at 1:12 pm, Jun 22, 2021



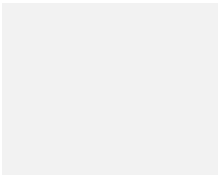
ISLES OF SCILLY DUNE & FLOOD DEFENCE SCHEME

Site Information- Porthloo

APRIL 2019



CONTACTS



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PL6 8BX
United Kingdom

Isles of Scilly Dune & Flood Defence Scheme

Site Information- Porthloo

Author M. Clausen

Checker P. Valvona

Approver P. Valvona

Report No UA008878-ARC-XX-XX-SP-CE-0801

Date APRIL 2019

VERSION CONTROL

Version	Date	Author	Changes
P1	12-04-19	MC	First Issue

This report dated 12 April 2019 has been prepared for Council of the Isles of Scilly (the "Client") in accordance with the terms and conditions of appointment dated 28 October 2016(the "Appointment") between the Client and Error! No text of specified style in document. ("Arcadis") for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

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APPENDICES

APPENDIX A

Topographic Surveys

APPENDIX B

Service Plans

APPENDIX C

Ground Investigation

APPENDIX D

Design Statement

APPENDIX E

Designer's Hazard Statement

1. Introduction

This document forms the Site Information for the *works* at Porthloo on St. Mary's island, in the Isles of Scilly. It describes the existing conditions at the site and presents information collected during the concept and detailed design phases of the scheme.

There are three *works* sites on the main island of St. Mary's, namely Porthloo, Porth Mellon and Porth Hellick with each site having separate Site and Work Information documents. See drawing & document register for details.

2. Site location & Access

Porth Loo is located on the western side of St. Marys. The bay measures approximately 300m and is flanked to the north and south by rocky outcrops. At southern end of the beach is a boat yard which is protected from wave run-up by an existing engineered dune which extends halfway along the beach. The northern extent of the beach is backed by an earth embankment which retains the road.

Nearest Postcode: TR21 0NF
Nation Grid Reference: SV9089011357



Figure 1: Porthloo beach & SSSI wetland area behind (Plymouth Coastal Observatory, 2016)

Porthloo beach is reached via Porthloo lane labelled as 'Road' in figure 1. There is no formal vehicle or pedestrian access to the northern end of the beach, but vehicular access is possible via the boat yard slipway although this will be subject to agreement with the boat yard operator/ land owner.

3. Site Photos



Figure 2: Looking south along Porthloo beach from the northern end. Note boatyard behind beach in the distance.



Figure 3: Looking toward the northern end of the beach. Note existing granite rock forming an ad-hoc revetment and Porthloo lane behind the beach.



Figure 4: Looking south at the midpoint of the beach showing the interface between the existing dune defence in the background and the ad-hoc revetment in the foreground.



Figure 5: View of the existing dune defence and its timber sleeper construction. Note the low spot of the existing bank in the foreground that was formerly used as a temporary beach access point during the St. Mary's quay extension works in 2014/15.



Figure 6: Boatyard slipway protected by stop-logs at the southern end of the beach. Logs branded with D of C (Duchy of Cornwall) who are believed to be responsible for slipway and existing dune defence.



Figure 7: Looking north along the existing informal revetment where it interfaces with the existing dune defence.

4. Topographic Survey

See Appendix A for topographic survey.

5. Services and Utility Search

See Appendix B for utility service plans

A Linesearch – ‘before u dig’ (LSBUD) search was conducted and of its members, only Western Power Distribution was found to have services but these located outside of the proposed works area.

Of its non-members, the following replies were received:

E-mail requests	Sent	Received	Utilities Found	Comments/Notes
BT	09/03/18	09/03/18	Yes	Outside of works area
CityFibre	09/03/18	-	-	Nil reply
Colt	09/03/18	20/03/18	No	
Isles of Scilly Council	09/03/18	14/03/18	Yes	
Energetics Electricity	09/03/18	14/03/18	No	
ENGIE	09/03/18	14/03/18	No	
GTC	09/03/18	-	-	Nil reply
GTT	09/03/18	-	-	Nil reply
Interoute	09/03/18	09/03/18	No	
KPN	09/03/18	12/03/18	No	
Level 3 Communications UK Ltd	09/03/18	-	-	Nil reply
Mobile Broadband Network Limited	09/03/18	-	-	Nil reply
Tata	09/03/18	-	-	Nil reply
Utility assets	09/03/18	-	-	Nil reply
Verizon Business	09/03/18	09/03/18	No	
Virgin Media	09/03/18	-	-	Nil reply
Vodafone	09/03/18	16/03/18	-	Nil reply

Vttese Networks	09/03/18	-	-	Nil reply
-----------------	----------	---	---	-----------

The Council of the Isles of Scilly is responsible for the maintenance of roads, land drainage, mains water and sewer services and details can be found in Appendix E.

See Appendix E for LSBUD results and utility service plans.

6. Ground Investigation

Trial pits were undertaken by the Council to determine the material type at the expected revetment toe foundation depth.

See Appendix C for trial pit plans & results at Porthloo.

7. Design Statements

For background information on the designs and for remaining hazards see Appendix D for design statements.

8. Designer's Hazard Record

For residual designer identified hazards that remain at the site see Appendix E.

APPENDIX A

Topographic Surveys

THIS DRAWING IS COPYRIGHT. Contractors and Consultants must check all dimensions on site. Only figured dimensions are to be used. Any discrepancies to be reported to the Project Manager before work proceeds. This drawing shall be used only for the purpose intended.

NOTES:
GENERAL:
Do not scale from this drawing

Floor Plan Legend

- B0.00 floor to beam height
- CH0.00 floor to ceiling height
- FLO.00 floor level
- C0.00 cill height
- W0.00 window head height
- D0.00 door head height

Underground Utility Legend

- Underground Services.
- Underground Comms cables
 - Underground Earthrod
 - Underground Electricity
 - Underground Foul water
 - Underground Fuel line
 - Underground Gas
 - Underground Heating ducts
 - Underground Mains water
 - Underground Storm water
- All assumed underground services are shown as dashed lines.

This information must not be solely relied upon in the event of excavation or other works carried out. No liability of any kind whatsoever is accepted by Benchmark Surveys, its servants, or agents, for any error or omission in respect of information contained on this information. The actual position of underground services must be verified and established on site before any mechanical plant is used. All information is complete at time of issue.

Remarks:

- Datum and orientation fixed by GPS to Ordnance Survey
- Red = Feature Heights

Feature Legend

- | | |
|--|--|
| <ul style="list-style-type: none"> BP — Boundary post BS — Boundary stone BT — British Telecom cover CATV — CATV cover CH — Chimney DK — Drain DR — Drainage EP — Electricity pole EV — Eave FH — Fire hydrant FL — Floor level GC — Gas cover GB — Grit box GP — Gate post GU — Gully IC — Inspection cover IL — Invert level LB — Light bollard LT — Light tower LP — Lamp post JB — Junction box MA — Manhole M — metres MO — Circular manhole OC — Overhead Cable | <ul style="list-style-type: none"> FB — Post box FO — Post / bollard RE — Roading eye RS — Ridge SC — Stopcock SP — Sign post SV — Stop valve TF — Top of fence TOW — Top of wall TL — Traffic light TP — Telegraph pole WL — Water level WM — Water meter B — Benchmark BO — Borehole CB — County boundary F — Fence H — Hedge PL — Pylon S — Slope SFR — Stone face SL — Surface level ST — Survey station TP — Triangulation pillar |
|--|--|

BENCHMARK SURVEYS Benchmark (Exeter) Limited
Unit 12, Kingfisher Court
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Exeter
EX4 8JN
TEL: 01392 467836
FAX: 01392 468617
email: sales@benchmarksurveys.co.uk
www.benchmarksurveys.co.uk

CLIENT
JacksonHyder Ltd

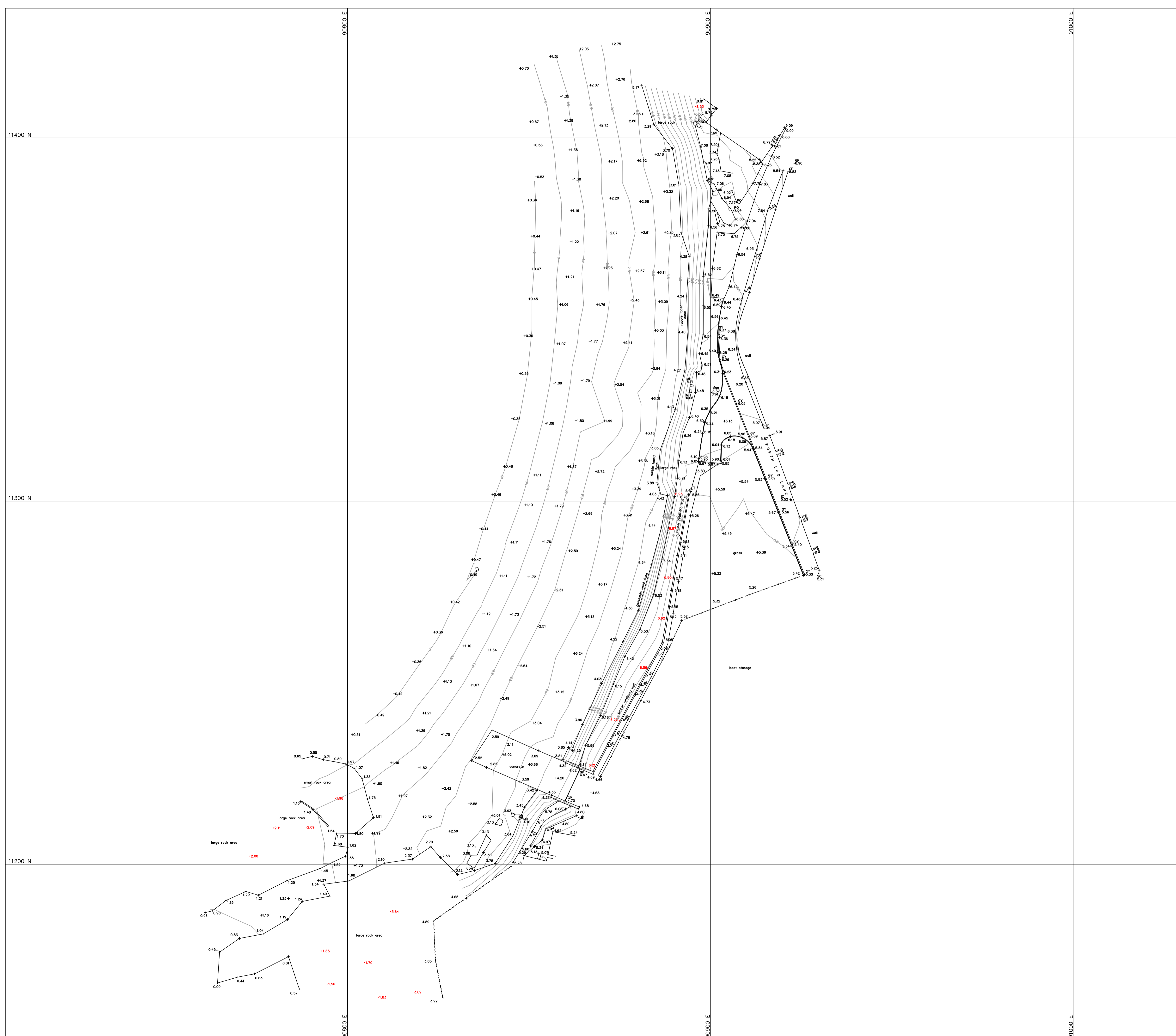
SITE LOCATION
Porth Loo, St. Mary's Island

DRAWING TITLE
Topographic Survey

SCALE 1:500 @ A1	DATE February 2017	
DRAWN BY D.W	CHECKED BY J.R.R	

DRAWING NUMBER
BS2443/02.17/02/DW

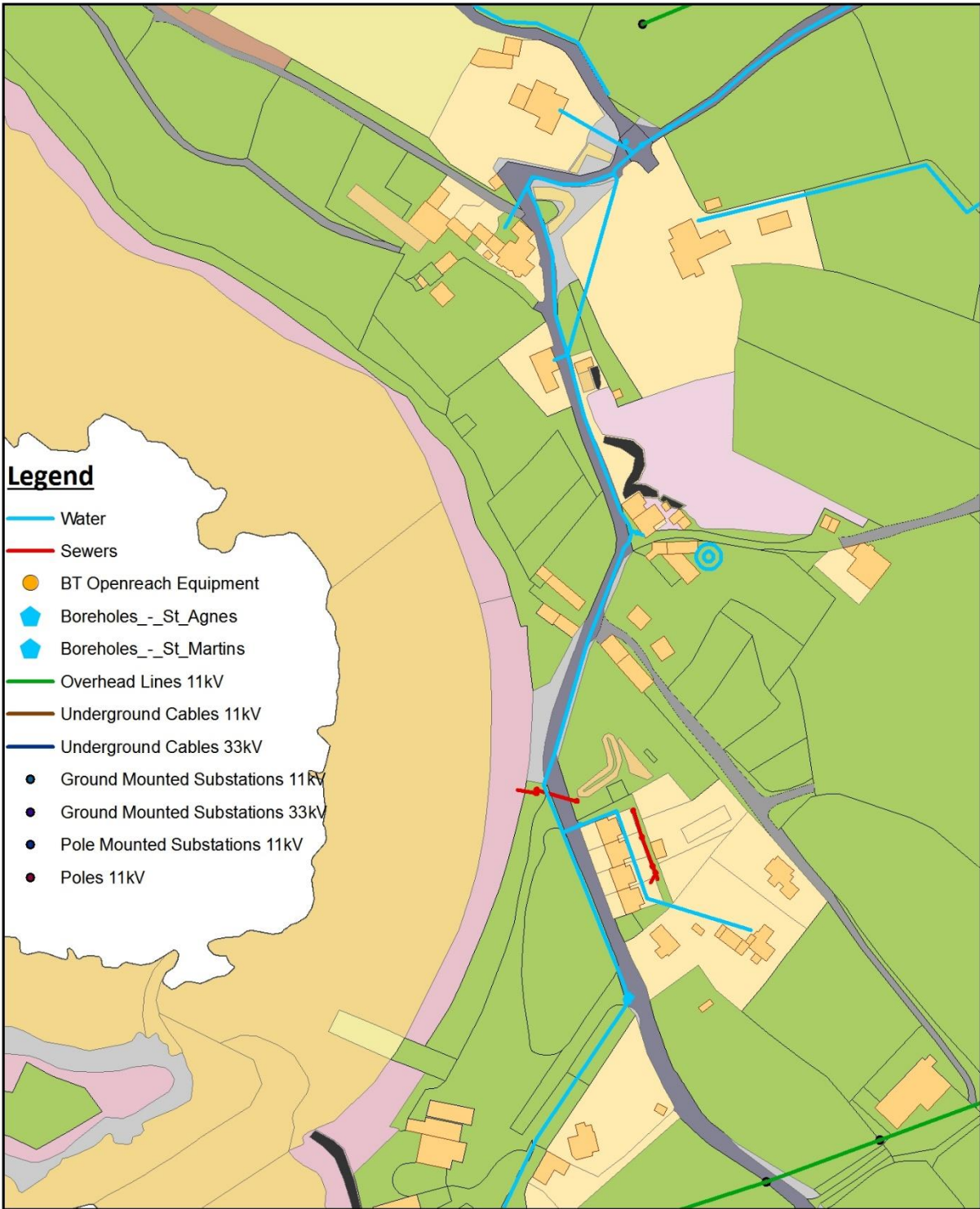
REVISION



APPENDIX B

Service Plans

Porthloo, St Mary's



0 100 200 metres

1:2,000 @ A4



Council of the
ISLES OF SCILLY

Town Hall, The Parade,
St Mary's, Isles of Scilly, TR21 0LW

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Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



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BT

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FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

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KEY TO BT SYMBOLS

DP	
Planned DP	
PCP	
Planned PCP	
Built	
Planned	
Inferred	
Building	
Kiosk	
Hatchings	

Pole	
Planned Pole	
Joint Box	
Change Of State	
Split Coupling	
Duct Tee	
Planned Box	
Manhole	
Planned Manhole	
Cabinet	
Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

openreach
a BT Group business

BT Ref : RYT09005N

Map Reference : (centre) SV90845 11372

Easting/Northing : (centre) 90845,11372

Issued : 20/07/2017 09:00:26

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

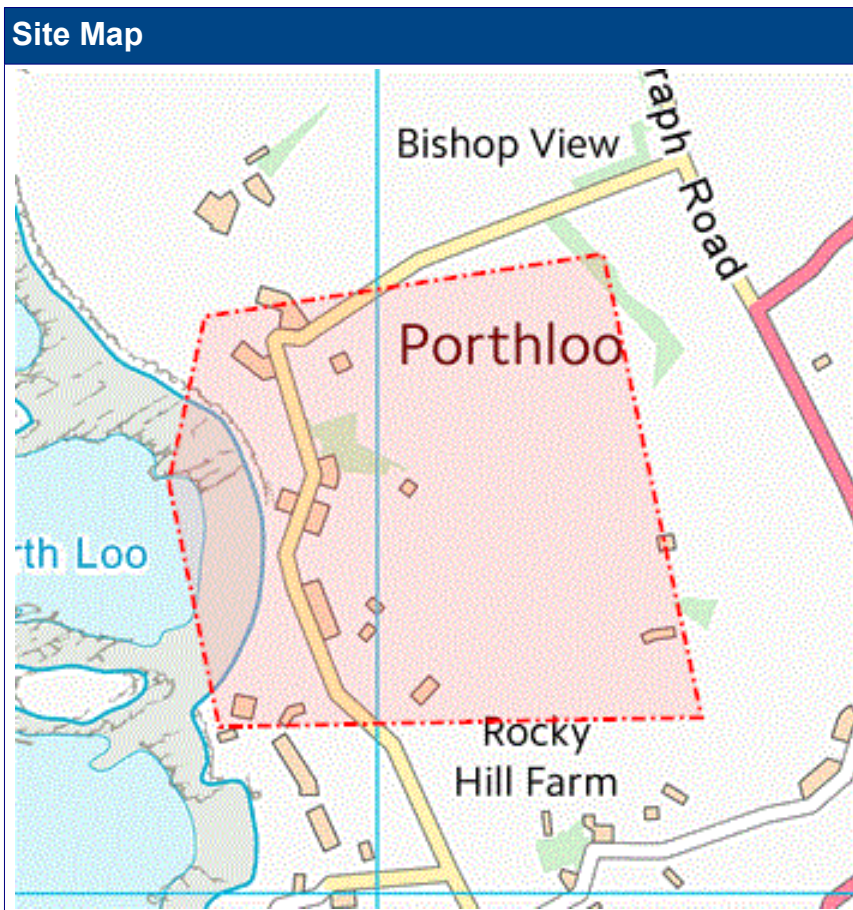
Enquirer

Name	Mr Ryan Haselden	Phone	4401752689010
Company	Arcadis	Mobile	Not Supplied
		Fax	Not Supplied
Address	Unit 7, Chamberlain House Research way, Plymouth Science Park Plymouth Devon PL6 8BT		
Email	ryan.haselden@arcadis.com		
Notes	Please ensure your contact details are correct and up to date on the system in case the LSBUD Members need to contact you.		

Enquiry Details

Scheme/Reference	isles of Scilly		
Enquiry type	Planned Works	Work category	Utility Works
Start date	09/03/2018	Work type	Multiple excavations site
End date	09/09/2018	Site size	219865 metres square
Searched location	XY= 90890, 11357 EPSG 27700 Easting/N	Work type buffer*	25 metres
Confirmed location	91038 11501		

* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.



Asset Owners

Terms and Conditions. Please note that this enquiry is subject always to our standard terms and conditions available at www.linesearchbeforeudig.co.uk ("Terms of Use") and the disclaimer at the end of this document. Please note that in the event of any conflict or ambiguity between the terms of this Enquiry Confirmation and the Terms of Use, the Terms of Use shall take precedence.

Validity and search criteria. The results of this enquiry are based on the confirmed information you entered and are valid only as at the date of the enquiry. It is your responsibility to ensure that the Enquiry Details are correct, and LineSearchbeforeUdig accepts no responsibility for any errors or omissions in the Enquiry Details or any consequences thereof. LSBUD Members update their asset information on a regular basis so you are advised to consider this when undertaking any works. It is your responsibility to choose the period of time after which you need to resubmit any enquiry but the maximum time (after which your enquiry will no longer be dealt with by the LSBUD Helpdesk and LSBUD Members) is 28 days. If any details of the enquiry change, particularly including, but not limited to, the location of the work, then a further enquiry must be made.

Asset Owners & Responses. Please note the enquiry results include the following:

1. "LSBUD Members" who are asset owners who have registered their assets on the LSBUD service.
2. "Non LSBUD Members" are asset owners who have not registered their assets on the LSBUD service but LSBUD is aware of their existence. Please note that there could be other asset owners within your search area.

Below are three lists of asset owners:

1. **LSBUD Members who have assets registered within your search area. ("Affected")**
 - a. These LSBUD Members will either:
 - i. Ask for further information ("Email Additional Info" noted in status). The additional information includes: Site contact name and number, Location plan, Detailed plan (minimum scale 1:2500), Cross sectional drawings (if available), Work Specification.
 - ii. Respond directly to you ("Await Response"). In this response they may either send plans directly to you or ask for further information before being able to do so, particularly if any payments or authorisations are required.
2. **LSBUD Members who do not have assets registered within your search area. ("Not Affected")**
3. **Non LSBUD Members who may have assets within your search area.** Please note that this list is not exhaustive and all details are provided as a guide only. It is your responsibility to identify and consult with all asset owners before proceeding.

National Grid. Please note that the LSBUD service only contains information on National Grid's Gas above 7 bar asset, all National Grid Electricity Transmission assets and National Grid's Gas Distribution Limited above 2 bar asset.

For National Grid Gas Distribution Ltd below 2 bar asset information please go to www.beforeyoudig.nationalgrid.com

LSBUD Members who have assets registered on the LSBUD service within the vicinity of your search area.

List of affected LSBUD members

Asset Owner	Phone/Email	Emergency Only	Status
Western Power Distribution	08000963080	08006783105	Await response

LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area. Please be aware that LSBUD Members make regular changes to their assets and this list may vary for new enquiries in the same area.

List of not affected LSBUD members

AWE Pipeline	Gateshead Energy Company	Prysmian Cables & Systems Ltd (c/o Western Link)
BOC Limited (A Member of the Linde Group)	Gigaclear PLC	Redundant Pipelines - LPDA
BP Exploration Operating Company Limited	Gtt	RWEnpower (Little Barford and South Haven)
BPA	Humbly Grove Energy	SABIC UK Petrochemicals
Carrington Gas Pipeline	IGas Energy	Scottish Power Generation
CATS Pipeline c/o Wood Group PSN	INEOS FPS Pipelines	Seabank Power Ltd
Cemex	INEOS Manufacturing (Scotland and TSEP)	SGN
Centrica Storage Ltd	INOVYN Enterprises Limited	Shell (St Fergus to Mossmorran)
CLH Pipeline System Ltd	Intergen (Coryton Energy or Spalding Energy)	Shell Pipelines
Concept Solutions People Ltd	Mainline Pipelines Limited	SSE (Peterhead Power Station)
ConocoPhillips (UK) Ltd	Manchester Jetline Limited	Tata Communications (c/o JSM Construction Ltd)
DIO (MOD Abandoned Pipelines)	Manx Cable Company	Total (Colnbrook & Colwick Pipelines)
E.ON UK CHP Limited	Marchwood Power Ltd (Gas Pipeline)	Total Finaline Pipelines
EirGrid	Melbourn Solar Limited	Transmission Capital
Electricity North West Limited	National Grid Gas (Above 7 bar), National Grid Gas Distribution Limited (Above 2 bar) and National Grid Electricity Transmission	UK Power Networks
ENI & Himor c/o Penspen Ltd	Northumbrian Water Group	Uniper UK Ltd
EnQuest NNS Limited	NPower CHP Pipelines	Vattenfall
EP Langage Limited	Oikos Storage Limited	Veolia ES SELCHP Limited
ESP Utilities Group	Ørsted	Westminster City Council
ESSAR	Perenco UK Limited (Purbeck Southampton Pipeline)	Wingas Storage UK Ltd
Esso Petroleum Company Limited	Petroineos	Zayo Group UK Ltd c/o JSM Group Ltd
Fulcrum Pipelines Limited	Phillips 66	
Gamma	Premier Transmission Ltd (SNIP)	

The following Non-LSBUD Members may have assets in your search area. It is YOUR RESPONSIBILITY to contact them before proceeding. Please be aware this list is not exhaustive and it is your responsibility to identify and contact all asset owners within your search area.

Non-LSBUD members (Asset owners not registered on LSBUD)			
Asset Owner	Preferred contact method	Phone	Status
BT	https://www.swns.bt.com/pls/mbe/welcome.home	08009173993	Not Notified
CenturyLink Communications UK Limited	plantenquiries@instalcom.co.uk	02087314613	Not Notified
CityFibre	asset.team@cityfibre.com	033 3150 7282	Not Notified
Colt	plantenquiries@catelecomuk.com	01227768427	Not Notified
Energetics Electricity	plantenquiries@energetics-uk.com	01698404646	Not Notified
ENGIE	nrswa@cofely-gdfsuez.com	01293 549944	Not Notified
GTC	https://pe.gtc-uk.co.uk/PlantEnqMembership	01359240363	Not Notified
Interoute	interoute.enquiries@plancast.co.uk	02070259000	Not Notified
Isles of Scilly Council	planning@scilly.gov.uk	01720424350	Not Notified
KPN (c/-Instalcom)	kpn.plantenquiries@instalcom.co.uk	n/a	Not Notified
Mobile Broadband Network Limited	mbnl.plant.enquiries@turntown.com	01212 621 100	Not Notified
Sota	SOTA.plantenquiries@instalcom.co.uk		Not Notified
Utility assets Ltd	assetrecords@utilityassets.co.uk		Not Notified
Verizon Business	osp-team@uk.verizonbusiness.com	01293611736	Not Notified
Virgin Media	http://www.digdat.co.uk	08708883116	Not Notified
Vodafone	osm.enquiries@atkinsglobal.com	01454662881	Not Notified
Vtesse Networks	https://plant.interoute.com/plant-enquiries/	01992532100	Not Notified

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LIST OF STREETS

(Highways Maintainable At The Public Expense)

Council of the Isles of Scilly

All highways maintainable at the public expense (the streets listed) in the Isles of Scilly are located on the island of St Mary's. Please refer to the Attached Maps for the linear extents of the streets listed.

This List was last updated on 1st March 2016.

List, Part I – Roads

The streets listed in Part I (i. and ii.) are public roads.

- i. Roads, classified 'A' (*with or without dedicated footway(s) forming part of the road*)

Reference	Names of street	Route
A3110	Telegraph Road, Town Lane, High Lanes, Carn Friars Lane, Tremelethen Hill, Parting Carn Lane	Circular – names listed clockwise from junction with the A3111 Pump Road to the same junction
A3111	Pump Road, Telegraph Road (Porthmellon), Carn Thomas, Higher Strand, Lower Strand, The Parade (North), Hugh Street, The Bank	A3110 Telegraph Road/Parting Carn Lane junction to the end of the public road at <i>The Quay</i>
A3112	Old Town Lane, Old Town Road, Church Road, Church Street, The Parade (South)	A3110 Parting Carn Lane to the A3111 The Parade (North)

- ii. Roads, unclassified (*with or without dedicated footway(s) forming part of the road*)

Reference	Name or description of street	Running between
U01	Garrison Hill	U03 Jerusalem Terrace and end of road at the frontage of land owned by the Duchy of Cornwall (before the <i>Garrison Gate</i>)
U02	Garrison Lane	A3111 Hugh Street and U01 Garrison Hill
U03	Jerusalem Terrace	A3111 The Bank and U02 Garrison Lane
U04	Sally Port	U01 Garrison Hill south and end of road at frontage of <i>4 Sally Port</i> and end of road at frontage of <i>29 Sally Port</i>
U05	Little Porth Road	U04 Sally Port and U14 Silver Street
U06	Parsons Field (Service Road)	U05 Little Porth Road and end of road where it meets F02 Parsons Field To Garrison Lane (Upper) and F05 Parsons Field (Estate Paths)
U07	Little Porth Slipway	U05 Little Porth Road and end of road at <i>Porthcressa Beach & Little Porth Beach</i>
U08	The Bank (Car Park)	A3111 The Bank and A3111 The Bank
U09	Atlantic Hotel Slipway	A3111 The Bank and end of road at <i>Town Beach</i>
U10	Well Lane	A3111 Hugh Street and U02 Garrison Lane
U11	Back Lane (Off Garrison Lane)	U02 Garrison Lane and U10 Well Lane

U12	Thorofare	A3111 The Parade (North) and (in two places) A3111 Hugh Street and ends of road (in two places) at <i>Town Beach</i>
U13	The Parade (East)	A3111 The Parade (North) and A3112 The Parade (South)
U14	Silver Street	A3111 Hugh Street and U16 Porthcressa Road
U15	Ingram's Opening	A3112 The Parade (South) and U16 Porthcressa Road
U16	Porthcressa Road	U14 Silver Street and U20 Buzza Street
U17	Porthcressa Road (Lane To South)	U16 Porthcressa Road and end of road where it meets F10 Porthcressa Promenade And Connecting Ways
U18	Porthcressa	U16 Porthcressa Road and U20 Buzza Street
U19	Buzza Road	U20 Buzza Street and end of road where it meets F12 Porthcressa Terrace To Buzza Road
U20	Buzza Street	A3112 Church Street and U19 Buzza Road
U21	Ram's Valley	U20 Buzza Street and end of road at a private gate (road inclusive of frontage of <i>Arden House</i>)
U22	Porthcressa Terrace	U20 Buzza Street and U21 Ram's Valley
U23	Rechabite Slipway	A3111 Lower Strand and end of road at <i>Town Beach</i>
U24	Well Cross	A3111 Lower Strand and A3112 Church Street
U25	Back Lane (Off Well Cross)	U24 Well Cross and U26 Church Road (North)
U26	Church Road (North)	A3111 Carn Thomas and A3112 Church Street
U27	Branksea Close	A3112 Church Road and end of road where it meets F15 Branksea Close (Estate Paths)
U28	Hospital Lane	A3112 Church Road and end of road where it meets F13 Mill Hill
U29	Moor Well Lane	A3111 Telegraph Road (Porthmellon) and end of road at entrance to the <i>Porthmellon waste management site</i>
U30	Porthmellon Industrial Estate Roads	A3111 Telegraph Road (Porthmellon) and all ends of road within the industrial estate
U31	Porthloo Lane	A3111 Pump Road and U33 Telegraph Road (North)
U32	Mount Flagon And Thomas' Porth	U31 Porthloo Lane and end of road at the frontage of <i>Camberdown</i> (inclusive)
U33	Telegraph Road (North)	A3110 Telegraph Road and U34 Pungie's Lane
U34	Pungie's Lane	U33 Telegraph Road (North) and A3110 High Lanes (a forked junction)
U35	McFarland's Down	U34 Pungie's Lane and end of road immediately before the junction with track leading to Long Rock
U36	Holy Vale	A3110 High Lanes and U37 Holy Vale Lane and looping onto itself
U37	Holy Vale Lane	A3110 Telegraph Road and U36 Holy Vale
U38	Ennor Close (Estate Roads)	A3112 Old Town Lane and A3112 Old Town Lane and the two ends of road which meet F19 Ennor Close (Estate Paths)

End of Part I

List, Part II – Footways

The streets listed in Part II are public footways or public footpaths (*not forming part of a road*)

<u>Reference</u>	<u>Name or description of street</u>	<u>Running between</u>
F01	The Bank To Jerusalem Terrace	A3111 The Bank and U03 Jerusalem Terrace
F02	Parsons Field To Garrison Lane (Upper)	U06 Parson's Field (Service Road) and junction of U02 Garrison Lane & U04 Sally Port
F03	Parsons Field To Garrison Lane (West)	U06 Parsons Field (Service Road) and U02 Garrison Lane
F04	Parsons Field To Garrison Lane (East)	U06 Parsons Field (Service Road) and U02 Garrison Lane
F05	Parsons Field (Estate Paths)	U04 Sally Port and U05 Little Porth Road and U06 Parsons Field (Service Road)
F06	Sally Port Steps And Passage	U04 Sally Port (in two places) and end of footway at line of boundary of housing estate with land owned by the Duchy of Cornwall
F07	Little Porth	U05 Little Porth Road and end of footway at frontage of <i>29 Sally Port</i> and U07 Little Porth Slipway
F08	Customs House To Town Beach	A3111 Lower Strand and end of footway at <i>Town Beach</i>
F09	The Parade To Porthcressa Road	A3112 The Parade (South) and U16 Porthcressa Road
F10	Porthcressa Promenade And Connecting Ways	U07 Little Porth Slipway and U14 Silver Street and U16 Porthcressa Road and U17 Porthcressa Road (Lane To South) and U18 Porthcressa and F11 Buzza Road Slipway
F11	Buzza Road Slipway	U19 Buzza Road and end of footway at <i>Porthcressa Beach</i>
F12	Porthcressa Terrace To Buzza Road	U22 Porthcressa Terrace and U19 Buzza Road
F13	Mill Hill	U19 Buzza Road and U28 Hospital Lane
F14	Hospital Lane To Dracaena	U28 Hospital Lane and end of footway at gate at the frontage of <i>Dracaena</i>
F15	Branksea Close (Estate Paths)	U27 Branksea Close and looping onto itself (within the housing estate)
F16	Rear Of Museum	A3112 Church Street and A3112 Church Street
F17	Strand Promenade And Way To Lifeboat Station	A3111 Higher Strand and A3111 Carn Thomas and ends of footway at the <i>RNLI Lifeboat Station</i> and <i>Town Beach</i>
F18	Carn Thomas To Church Road (North)	A3111 Carn Thomas and U26 Church Road (North)
F19	Ennor Close (Estate Paths)	U38 Ennor Close (Estate Roads) and U38 Ennor Close (Estate Roads) and ends of footway within the housing estate
F20	Mermaid Inn Slipway	A3111 The Bank and end of footway at <i>Town Beach</i>




End of Part II

Attached Maps

1. Hugh Town
2. Old Town
3. Mount Flagon and Thomas' Porth
4. Maypole and Holy Vale
5. St Mary's (*showing maps 1 to 4 inset*)

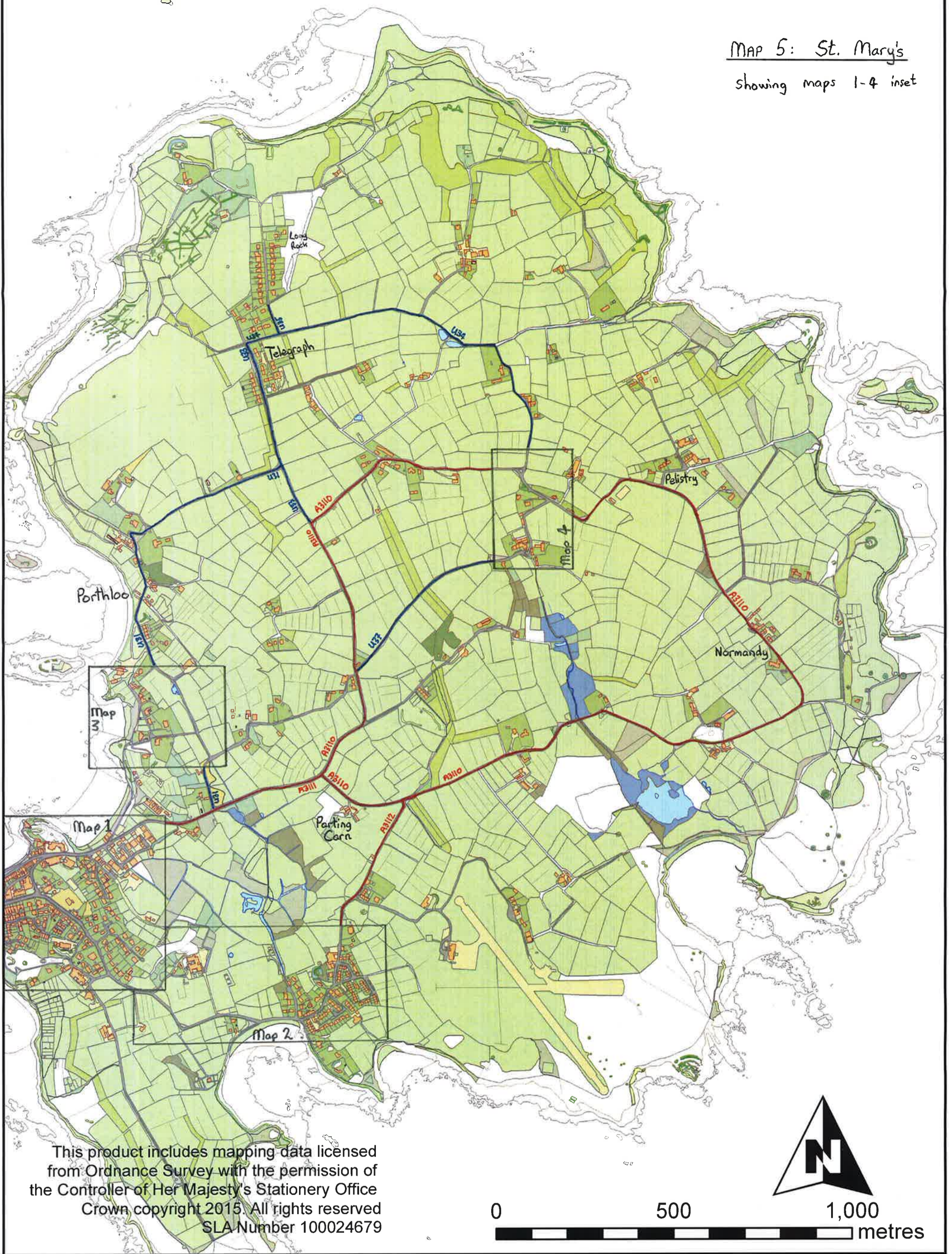
Key to the Attached Maps

Colour lines denote approximate centre lines of highway, and are intended primarily to show the linear extents of the highway and individual streets listed.

	Road, classified 'A'	<i>(with or without dedicated footway(s) forming part of the road)</i>
	Road, unclassified	<i>(with or without dedicated footway(s) forming part of the road)</i>
	Footway	<i>(not forming part of a road)</i>

The Reference for each street listed is written at least once by the particular street.

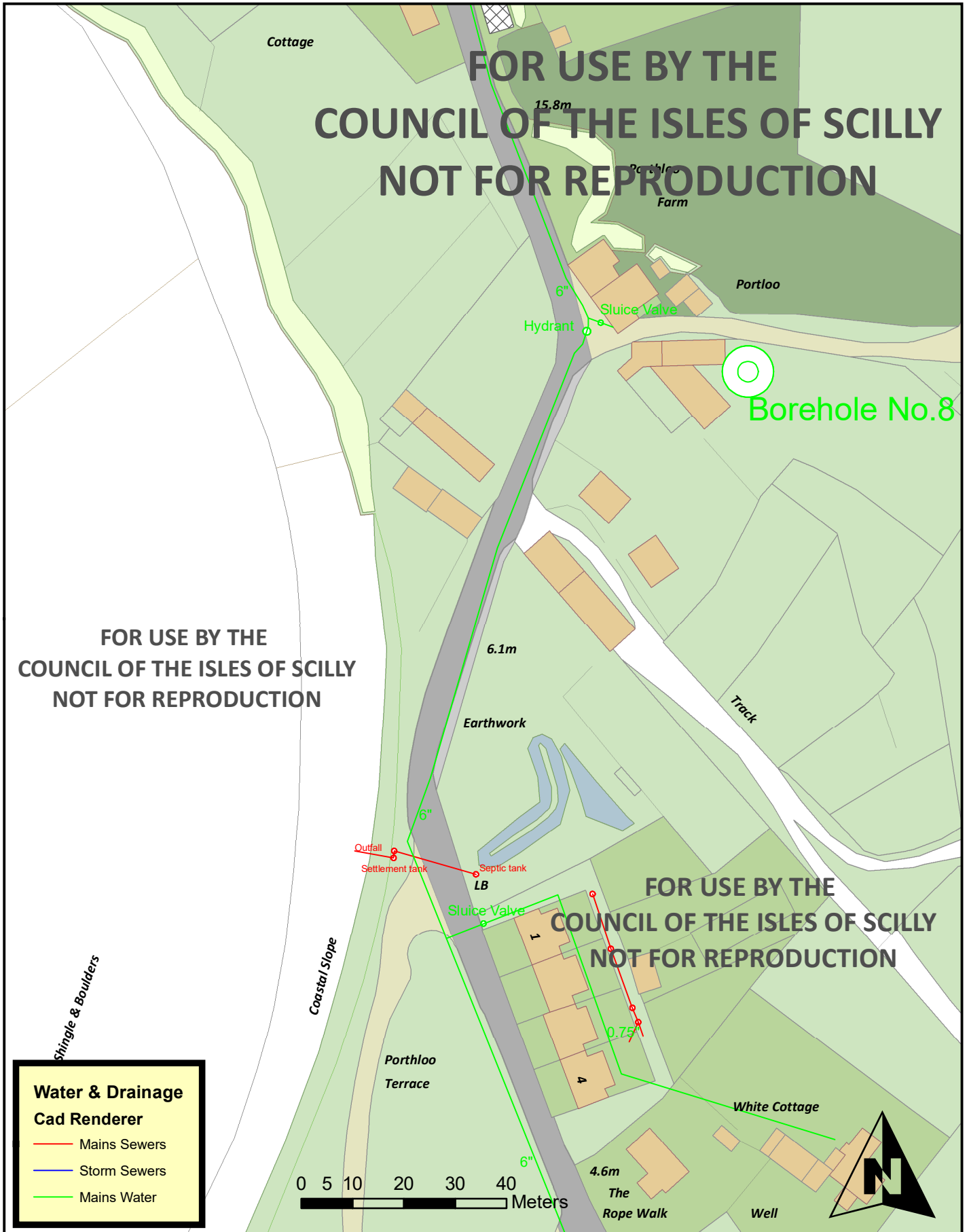
MAP 5: St. Mary's
showing maps 1-4 inset



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0 500 1,000 metres

Porthloo, St Mary's



Contact Us

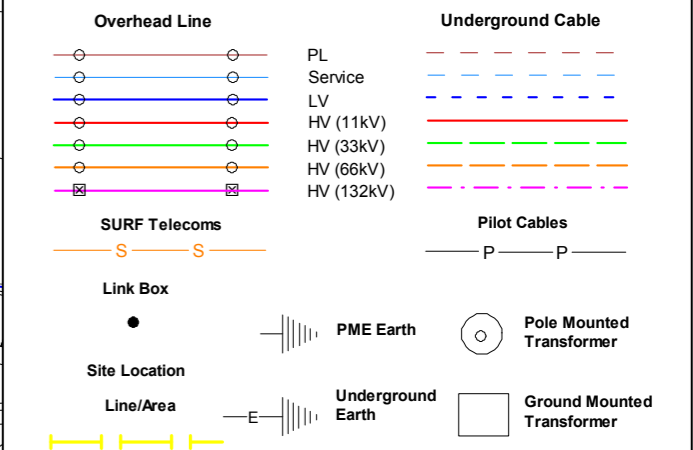
Mapping Enquiries: All areas 0121 623 9780
General Enquiries: All areas 0800 096 3080

**Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
 0800 6783 105**

Date Requested: 08/03/2018
 Job Reference: 12386257
 Site Location: 91060 11421
 Requested by: Mr Ryan Haselden
 Your Scheme/Reference: isles of Scilly

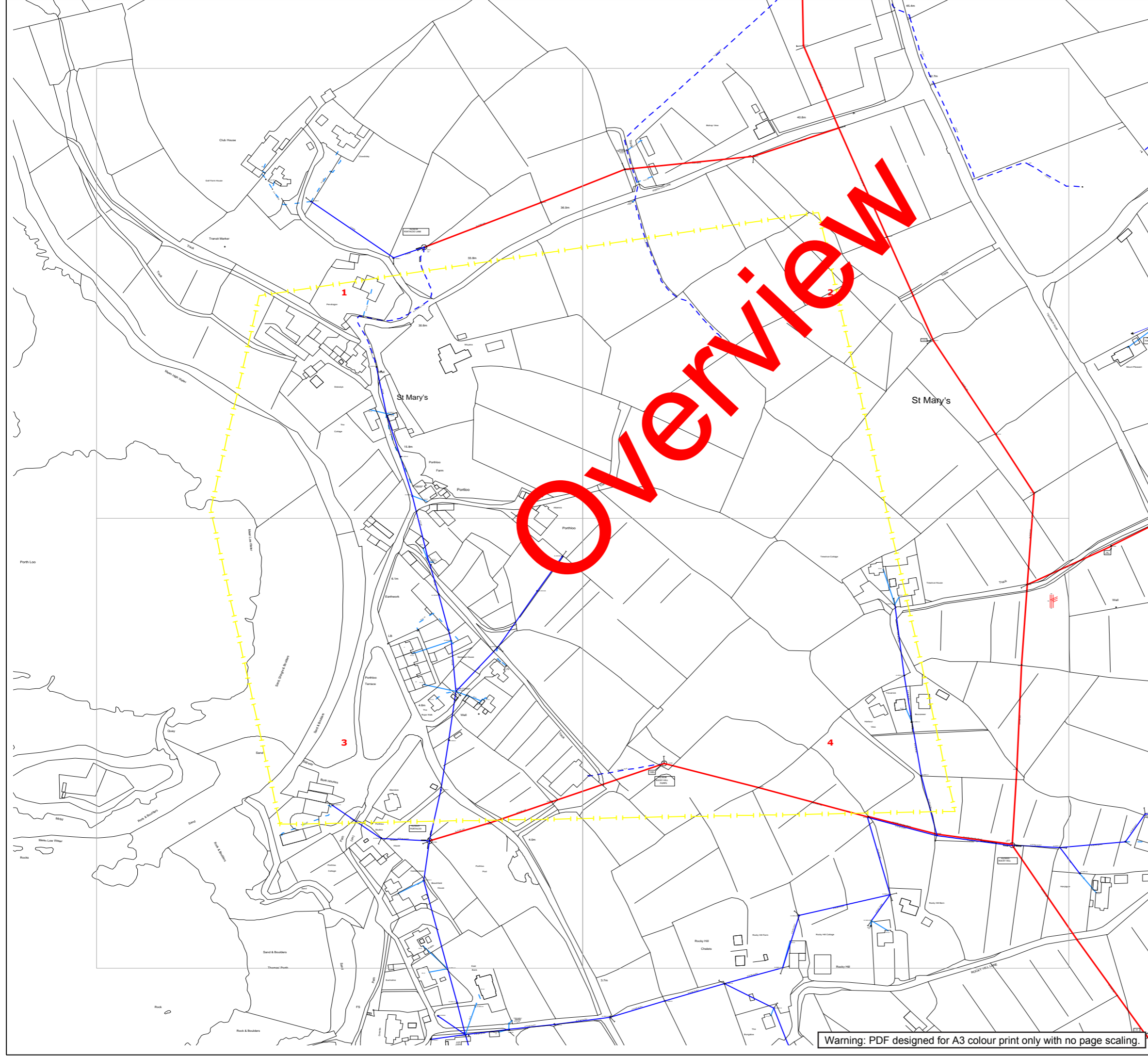
IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080



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 WPD Copyright: This copy has been made by or with the authority of Western Power Distribution (WPD) pursuant to Section 47 of the Copyright Designs and Patents Act 1988 unless that Act provides a relevant exception to copyright the copy must not be copied without the prior permission of the copyright owner

Overview



Warning: PDF designed for A3 colour print only with no page scaling.

Plans generated by DigSAFE Pro (tm) software provided by LinesearchbeforeUdig

Contact Us

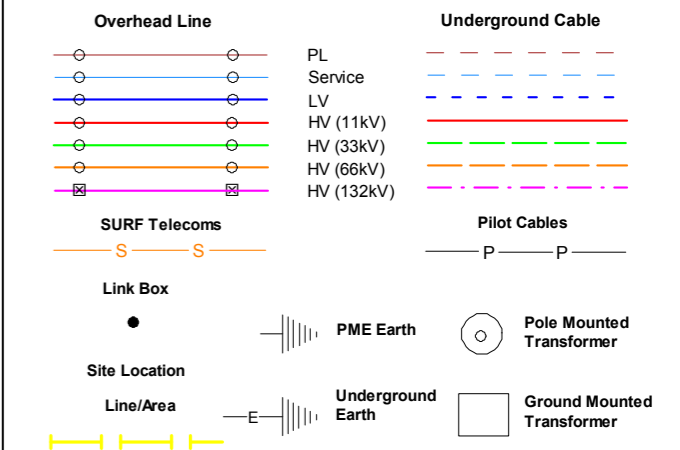
Mapping Enquiries: All areas 0121 623 9780
General Enquiries: All areas 0800 096 3080

**Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
 0800 6783 105**

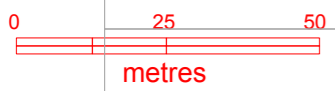
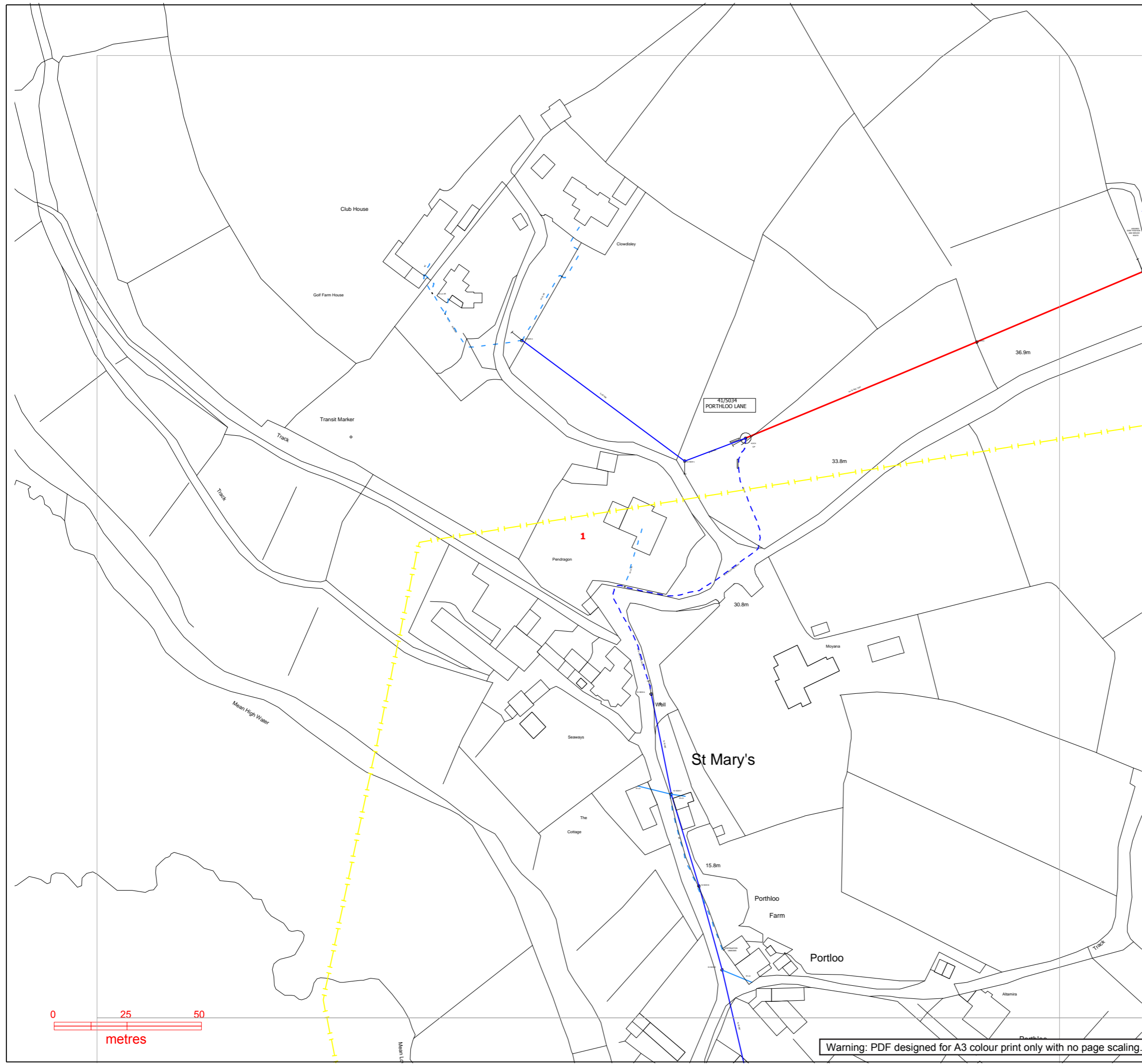
Date Requested: 08/03/2018
 Job Reference: 12386257
 Site Location: 91060 11421
 Requested by: Mr Ryan Haselden
 Your Scheme/Reference: isles of Scilly
 Exact Scales:
 1:1250 Area or Circle dig site
 1:500 Line dig site

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080



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Contact Us

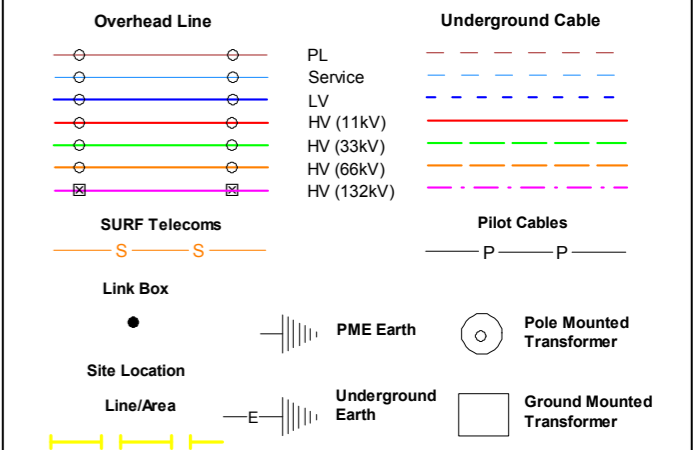
Mapping Enquiries: All areas 0121 623 9780
General Enquiries: All areas 0800 096 3080

**Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
 0800 6783 105**

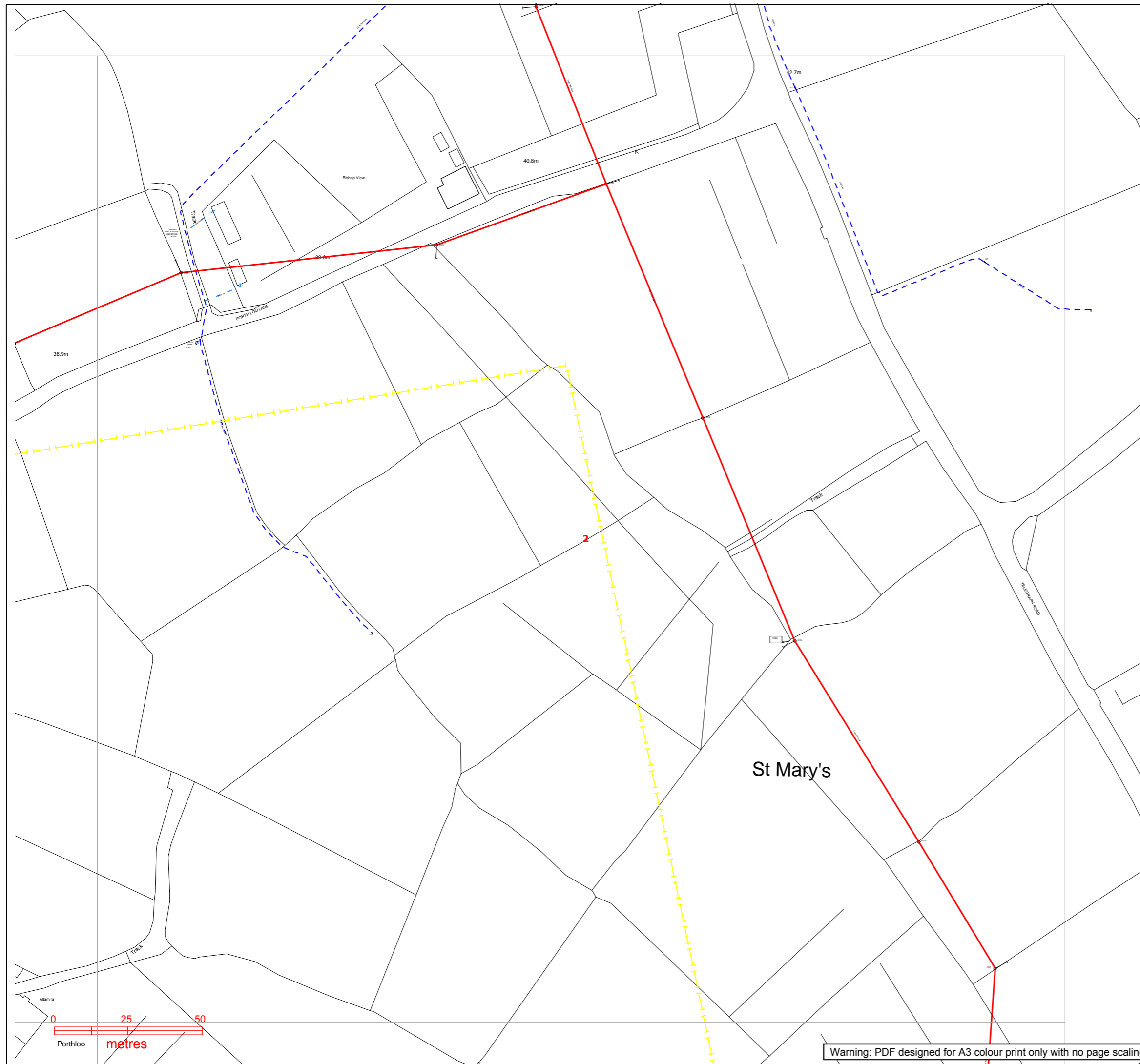
Date Requested: 08/03/2018
 Job Reference: 12386257
 Site Location: 91060 11421
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Contact Us

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All areas 0121 623 9780

General Enquiries:

All areas 0800 096 3080

**Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105**

Date Requested: 08/03/2018

Job Reference: 12386257

Site Location: 91060 11421

Requested by: Mr Ryan Haselden

Your Scheme/Reference: isles of Scilly

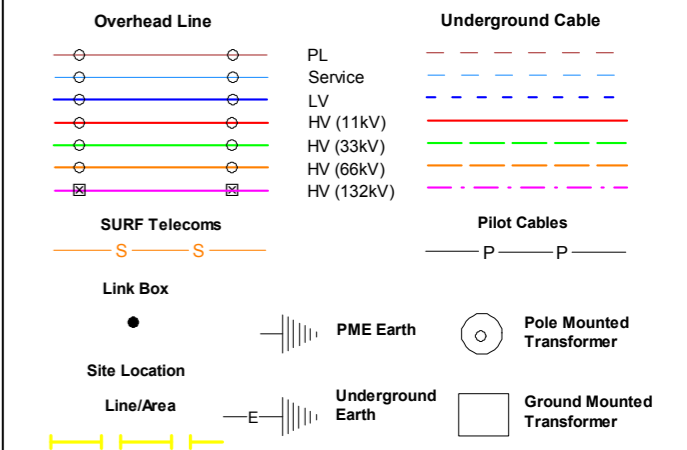
Exact Scales:

1:1250 Area or Circle dig site

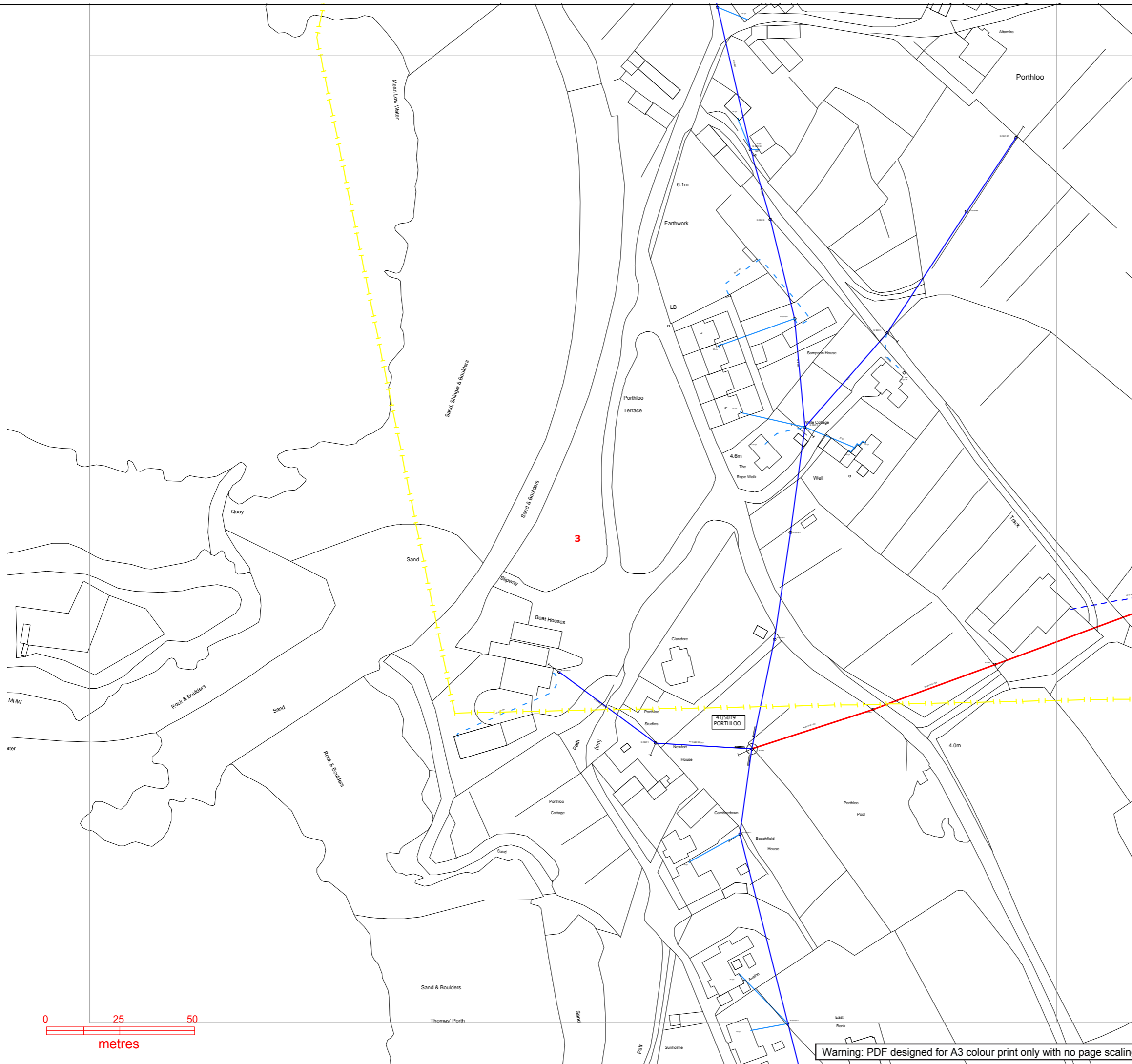
1:500 Line dig site

IMPORTANT NOTICES

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Contact Us

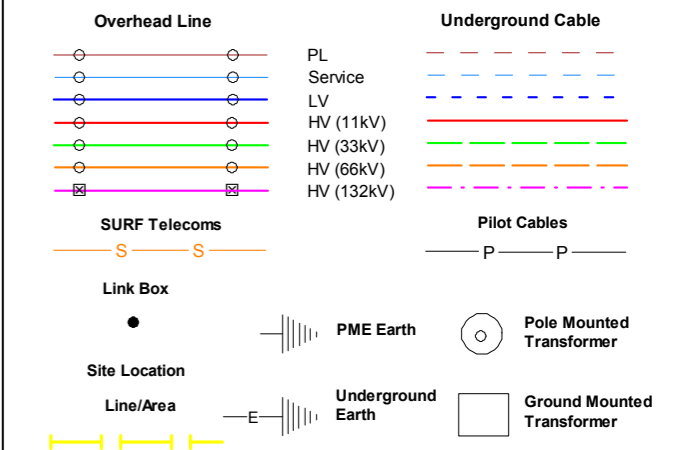
Mapping Enquiries: All areas 0121 623 9780
General Enquiries: All areas 0800 096 3080

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 0800 6783 105**

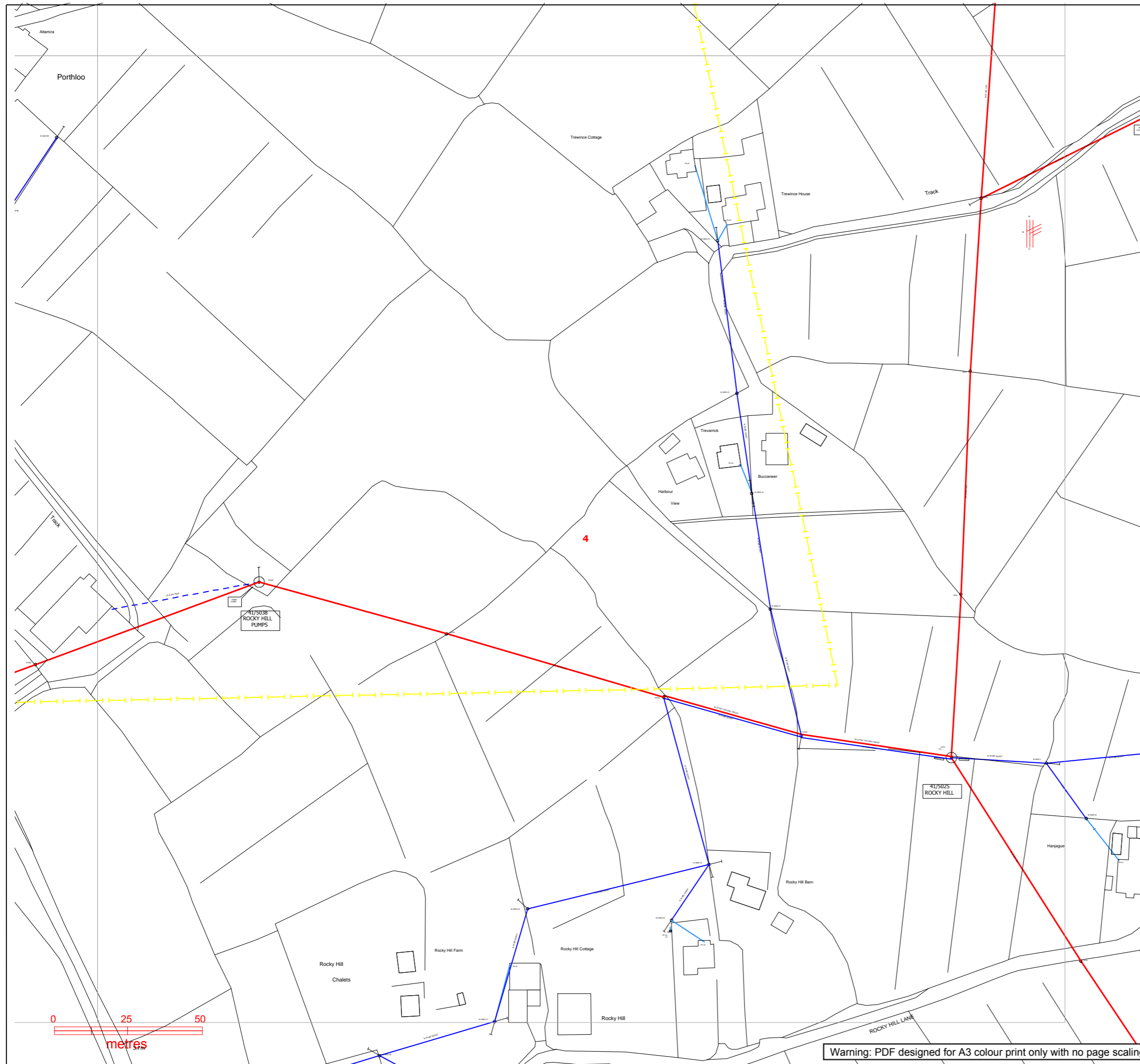
Date Requested: 08/03/2018
 Job Reference: 12386257
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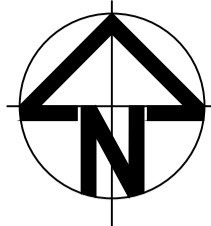


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APPENDIX C

Ground Investigation



- NOTES:**
- DO NOT SCALE FROM THIS DRAWING USE FIGURED DIMENSIONS ONLY
 - ALL DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.
 - ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (ODN).
 - SOP 01: 90889 E 11395 N
SOP 02: 90892 E 11354 N
SOP 03: 90884 E 11306 N
 - TIDE INFORMATION RELATIVE TO ODN
MHS 2.79m
MLWN 1.39m
MLWN -0.91m
MLWS -2.21m

- LEGEND:**
- PROPOSED TRIAL PIT
 - SETTING OUT POINT

Rev	Date	Description	Drawn	Check	Approv
P1	11APR17	FOR INFORMATION			

Client
COUNCIL OF THE ISLES OF SCILLY
 PROJECT:
ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site
 Isles of Scilly

Client
 Council of the Isles of Scilly
 Address
 Town Hall
 St Marys, Isles of Scilly, TR21 0LW
 +44 (0)1720 424000
 enquiries@scilly.gov.uk
 http://www.scilly.gov.uk/

ARCADIS Design & Consultancy for natural and built assets

Registered office: Arcadis House, 34 York Way, London, N1 9AB
 Coordinating office: 690 Budshhead Road, Crowthill, Plymouth PL6 5XR
 Tel: +44 (0)1752 689 000

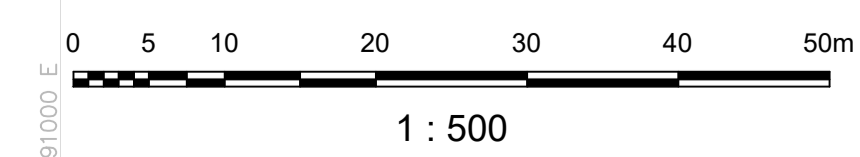
www.arcadis.com

TITLE:
PORTH LOO TRIAL PIT LOCATIONS PLAN

Designed	G.MCDONNELL	Signed	Date	19APR17
Drawn	G.MCDONNELL	Signed	Date	19APR17
Checked	M.CLAUSEN	Signed	Date	X
Approved	x	Signed	Date	X
Scale:	AS SHOWN	Datum:	NEWLYN	
Original Size:	A1	Grid:	OS	
Suitability Code:	S0	Project Number:	UA008878	

Suitability Description: **PRELIMINARY**

Drawing Number: UA008878-ARC-XX-XX-DR-CE-0210
 Revision: P01



TRIAL PIT – SUMMARY RESULTS Porthloo

PORTHLOO

Trial Pit Number	Depth from beach level to bottom of excavation	Ordnance Datum Newlyn Level of beach prior to trial pit being undertaken (See Site Plan for level info.)
1	2m	c.3.2m (note sand levels appear lower than when topo survey undertaken)
2	2m	c.3.7m (sand level locally raised at this site)
3	2m	c.3.2m (sand levels appear lower than when topo survey was undertaken)

Pit 1 Results

1.2 – 2m (Ground Level) Loose sand with loose boulders and large cobbles (local beach material)

0.4 – 1.2 Brown Ram (relatively unconsolidated) – Medium dense gravel and sandy gravel with firm/stiff clay cement

0 (base of pit)-0.4m Light Grey Claystone, stiff to firm



Figs 1 and 2 – Pit 1



Fig 3 and 4 - Pit 1 mix of lumps of clay and ram from spoil heap



Fig 5 – Pit 1 Position beyond rocks at base of Bank

PIT 2

0.9 – 2.0m (ground level) Loose sand with individual boulders and large cobbles (local beach material)

0.3-0.9 Ram – sand, gravel and clay composite deposit (firm/stiff to dense/compact)

0.0 (base of pit) – 0.3 Stiff clay



Fig 6-7 – Pit 2



Fig 8 – Pit 8 position at base of rocks



Fig 9 – Lumps of ram from spoil heap

PIT 3

1.0-2.0 (ground level) Loose sand with loose boulders and large cobbles

0(base of pit) – 1.0m Stiff Clay



Fig 10 and 11 – Pit 3



Fig 12 – Pit 3 location




Fig 13 – Pit 3 – Clay in swing shovel

APPENDIX D

Design Statement

SHORT FORM DESIGN STATEMENT

 ARCADIS Design & Consultancy for natural and built assets	Project Name	Number and Activity code
	Isles of Scilly – Porthloo	UA008878-ARC-XX-XX-RP-CE-0260-P3

Brief Description:

Porthloo is located on the western side of St. Marys. The bay measures approximately 300m and is flanked to the north and south by rocky outcrops. At southern end of the beach is a boat yard which is protected from wave run-up by an engineered dune which extends half way along the beach. The northern extent of the beach is backed by an earth embankment which retains the road. The embankment is protected by an assortment of various size rocks and is currently susceptible to erosion and overtopping from wave events.



Figure 1: Porth Loo beach & wetland area which feeds into Lower Moors SSSI (Channel Coastal Observatory, 2016)

The aims of the scheme are to reduce the vulnerability of the embanked road from undermining, decrease the risk of coastal flooding to properties and the boat yard located behind the beach and to reduce saline intrusion into the Lower Moors SSSI. This will be achieved by formalising the de-facto rock defence along the northern half of the beach and tying into the existing engineered defence. Therefore the scheme will:

- Increase protection for critical infrastructure (Porthloo Road)
- Increase protection for properties and the boat yard situated behind the beach
- Increase protection for the Lower Moors SSSI

The project will not address any issues associated with the existing engineered defence protecting the boat yard.

Assumptions:

- The proposed works are located above the MHWS mark although the construction area could still be effected by storm events.
- Existing water levels:

	Chart Datum (CD)	Ordnance Datum Local (ODL)
HAT	6.3	3.39
MHWS	5.7	2.79
MHWN	4.3	1.39
MLWN	2.0	- 0.91
MLWS	0.7	- 2.21

- Numerical modelling using MIKE21 software was undertaken to identify the design parameters for the site. The design was undertaken using a 1:200yr joint probability wave and water level event with allowance for climate change, assuming a 50yr design life.
- It is assumed that the existing ground is suitable and accessible for the construction of the new revetment rock armour.
- It is assumed that ground conditions on the foreshore are suitable for placing rock armour without resulting in any significant settlement
- It is assumed that the revetment will tie into the cliffs north of the site and into the existing engineered dune to the south of the proposed works.

Design Basis:

Design water and wave conditions:

SWL (mAOD)	Hs (m)	Tm (s)	Comments
4.18	1.31	10.72	1:200yr joint probability

Designer's Risk Assessment: *incl. Hazards that cannot be designed out. See Designer's Hazard Record for further information*

- A- Working adjacent to water
- B- Soft & unstable ground
- C- Public beach
- D- Services
- E- Unstable rock armour
- F- Porth Loo SSSI

References: *incl. references to NWR standard guides, British Standards and relevant Codes of Practice.*

- CIRIA, CUR, CETMEF (2007). The Rock Manual. The use of rock in hydraulic engineering (2nd edition). C683, CIRIA, London
- Eurotop: Wave Overtopping of Sea Defences and Related Structures: Assessment Manual (2007)
- Reeve, D et al (2004). Coastal Engineering: Processes, theory and design practice. UK: Spon Press
- Kirsty McConnell (1998). Revetment systems against wave attack - A design manual. London: Thomas Telford Publishing.
- Geofabrics - Coastal and River Defence Systems: Design Guidance High Performance Square

Signed: *G.J. McDonnell*

Reviewed: *[Signature]*

Approved: *I. Cooke*

APPENDIX E

Designer's Hazard Statement

Health & Safety - Designer's Hazard Record



Project Title
Isles of Scilly Flood Defence and Dune Management
Project – Porth Loo

Project Code
UA008878-ARC-XX-XX-
HS-CE-0261-P2

Assessment Coverage:

The installation of a 110m rock armour revetment along the northern half of Porth Loo beach

1. Scope of Commission and Assessment of Coverage:

The embankment along the northern half of Porth Loo beach is susceptible to erosion and overtopping during storm events. The loss of the embankment would lead to undermining of the road; would increase coastal flooding risk to properties and the boat yard as well increase the vulnerability of Lower Moors SSSI to saline intrusion.

Modelling of the water levels and wave environment has been undertaken for the Isles of Scilly to identify the 1 in 200-yr return events for Porth Loo beach. The modelling results have been utilised in the design of the rock armour revetment and the production of design drawings accordingly.

2. Brief Description of the Works:

1. Carry out a walkover of the site and conduct a visual inspection of the existing conditions along the beach.
2. Design of a rock revetment, to provide protection for a 1:200-yr joint probability event.
3. Installation of new rock armour in accordance with the design to provide protection for the existing embankment

3. Key Risk Reduction measures taken during design process:

1. Hazard markers added to drawings to identify know utility services or other known hazards.

4. Significant Project Specific Hazards Remaining:

- A. Working adjacent to water. Risk that access or egress could be cut off. Working in an exposed location which could expose works area to wave/storm events.
- B. Soft & unstable ground. Risk excavations within tidal zone could flood and become unstable. Beach material likely to contain soft spots that could cause issues for machinery, especially during high tides.
- C. Public Beach. Risk of public entering the works area
- D. Services. There is an existing outfall located on the beach which is believed to be discontinued but unconfirmed.
- E. Unstable armour stone. Risk rocks may be unstable when initial placed. Rocks should be placed by a machine and their stability ensured before operative's approach
- F! Porth Loo SSSI. Cliff and foreshore designated a Site of Special Scientific Interest. Works shall not impact upon designation.

5. Specific Construction Requirements

1. Site access and works will be tide dependant and should be via the slipway in the boat yard (subject to approval).


2. Neither machinery or foot traffic is to pass over the existing embankment to avoid further degradation.
3. At no time are the works to affect the ability for stop logs to be deployed across the slipway when required.

6. Means by which significant hazards conveyed to contractors and others:


1. Hazard markers added to drawings

Date of Review

Assessed by:

Name G. McDonnell Signature  Date 27/09/17

Reviewed by:

Name Ian Cooke Signature  Date 27/09/2017



Health & Safety - Designer's Hazard Record

Project Code/Doc No:

UA008878-ARC-XX-XX-HS-CE-0261-P2

Project Title:

Isles of Scilly Flood Defence and Dune Management Project – Porth Loo

Assessor (Name):

Gary McDonnell

Assessor (Signature):

Date:

27/09/17

Revision:

P2

Ref	Activity & Hazard	Level of Risk (optional)	Design Input to Eliminate or Reduce Hazards, and Hazards Remaining	Residual Hazard?
A	Working adjacent to water – machinery could be cut off & possibility of inundation of the site due to wave action		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
B	Soft & unstable ground – risk of machinery overturning		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks	Yes
C	Public beach – risk of public entering the works area.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
D	Services – existing manholes on the beach. Other services may be present.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
E	Unstable rock armour – rocks may be unstable when initial placed. Rocks should be placed by a machine and their stability ensured before operative's approach.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risk.	Yes
F	Porth Loo SSSI- Works shall not impact upon designation		This is an unavoidable consequence of the works and contractor is to mitigate the associated risk.	Yes

Unit 7, Chamberlain House
Davy Road
Derriford
Plymouth
PL6 8BX
United Kingdom
T: +44 (0)1752 689 000

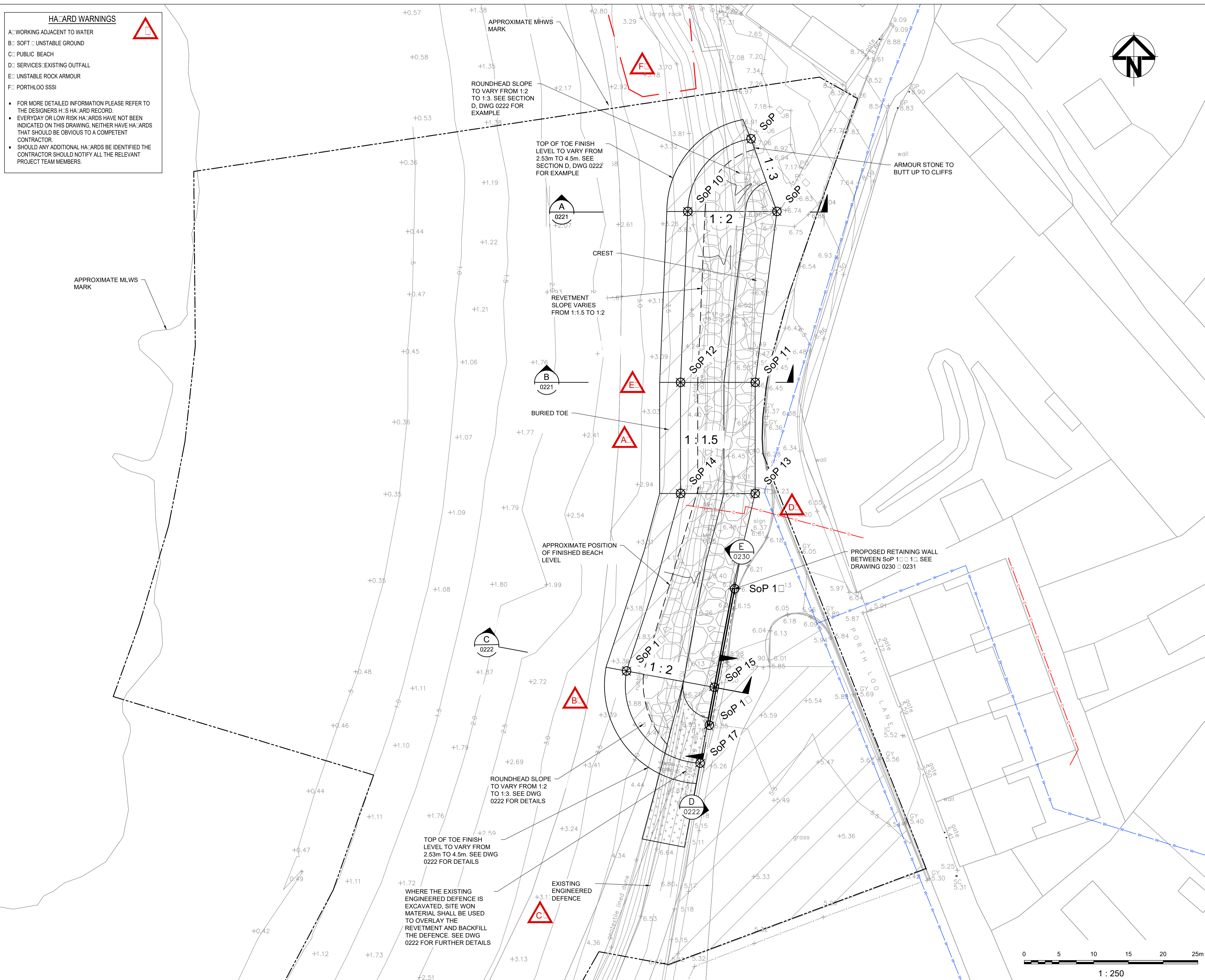
[arcadis.com](https://www.arcadis.com)



Hazard Warnings

A: WORKING ADJACENT TO WATER
 B: SOFT UNSTABLE GROUND
 C: PUBLIC BEACH
 D: SERVICES EXISTING OUTFALL
 E: UNSTABLE ROCK ARMOUR
 F: PORTHLOO SSSI

FOR MORE DETAILED INFORMATION PLEASE REFER TO THE DESIGNERS HAZARD RECORD.
 EVERYDAY OR LOW RISK HAZARDS HAVE NOT BEEN INDICATED ON THIS DRAWING. NEITHER HAVE HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR.
 SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED THE CONTRACTOR SHOULD NOTIFY ALL THE RELEVANT PROJECT TEAM MEMBERS.



- NOTES:**
- DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY
 - ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE
 - ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM LOCAL ODL
 - TIDE INFORMATION RELATIVE TO ODL:
 HAT 3.3m
 MHWS 2.7m
 MLWN 1.3m
 MLWS 0.2m
 MLWS 2.2m
 - SETTING OUT POINTS 'SOP' IN ORDNANCE SURVEY
 SOP 0: 0:03.0: 11375.7
 SOP 1: 0:00.17: 11375.25
 SOP 10: 0:01.0: 11375.7
 SOP 11: 0:00.02: 11351.20
 SOP 12: 0:00.02: 11351.20
 SOP 13: 0:00.7: 11335.20
 SOP 14: 0:00.02: 11335.20
 SOP 15: 0:04.0: 11307.2
 SOP 16: 0:02.25: 11300.3
 SOP 17: 0:02.4: 11200.37
 SOP 18: 0:04.1: 11301.2
 SOP 19: 0:07.3: 11321.4
 1 IN 200 YEAR JOINT PROBABILITY STILL WATER LEVEL RELATIVE TO ODL: SWL 4.14M

- LEGEND:**
- ESTIMATED BURIED EXTENT OF REVETMENT
 - ESTIMATED EXPOSED EXTENT ROCK ARMOUR
 - SITE WON MATERIAL TO OVERLAY REVETMENT
 - BACKFILL ENGINEERED DEFENCE
 - PROPOSED CONTRACTOR'S COMPOUND
 - MATERIAL STORAGE AREA
 - COMBINED SEWER
 - WATER MAIN
 - PORTHLOO SSSI BOUNDARY
 - ESTIMATED BEACH REVETMENT INTERFACE
 - WORKING AREA

Rev	Date	Description	Drawn	Check	Approv
P4	01NOV17	DRG TITLE: REVETMENT - SoPs	MC	GM	PV
P3	10APR17	WORKING AREA - COORDINATES	MH	MC	IC
P2	03OCT17	DRAWING - NOTES AMENDMENTS	GM	MC	IC
P1	02AUG17	FOR INFORMATION	GM	MC	IC

Client

COUNCIL OF THE ISLES OF SCILLY

PROJECT:
ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site
 Isles of Scilly
 Porthloo, St. Mary's

Client
 Council of the Isles of Scilly
 Town Hall, St. Mary's
 Isles of Scilly,
 TR21 0LW
 044 01720 424000
 enquiries@scilly.gov.uk
 http://www.scilly.gov.uk/

ARCADIS Design & Consultancy for natural and built assets

Registered office: Arcadis House, 34 York Way, London N1 2AB
 Coordinating office: Unit 7, Chamberlain House, Research Way, Plymouth Science Park, Plymouth PL6 8BT
 Tel: 044 01752 0000

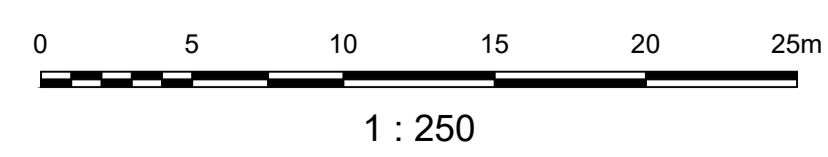
www.arcadis.com

TITLE:
PORTHLOO REVETMENT PLAN

Designed	G. MCDONNELL	Signed	G. McDonnell	Date	02AUG17
Drawn	G. MCDONNELL	Signed	G. McDonnell	Date	02AUG17
Checked	M. CLAUSEN	Signed	M. Clausen	Date	02AUG17
Approved	I. COOKE	Signed	I. Cooke	Date	02AUG17
Scale:	1:250	Datum:	ST. MARYS		
Original Size:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA0017		

ISSUED FOR INFORMATION

Drawing Number: UA0017-ARC-XX-XX-DR-CE:0220
 Revision: P4



RECEIVED
By Emma Kingwell at 1:12 pm, Jun 22, 2021

- NOTES CONTINUED
- FORMATION LEVEL TO BE INSPECTED BY GEOTECHNICAL ENGINEER OR COMPETENT PERSON TO IDENTIFY 'SOFT SPOTS'. ALTERNATIVELY, FORMATION LEVEL TO BE PROOF ROLLED AND 'SOFT SPOTS' IDENTIFIED EXCAVATED AND BACKFILLED WITH COMPACTED SITE WON GRANULAR MATERIAL.
 - FORMATION LEVEL TO BE COMPACTED TO 95% OF PROCTOR MAXIMUM DRY DENSITY, AS DETERMINED BY BS1377, PART 4.
 - THE RETAINING WALL CONCRETE CLASS AND COVER REQUIREMENTS CAN BE MODIFIED IN LINE WITH THE REQUIREMENTS OF BS:3443, TABLE 2, EXPOSURE CLASS: XS1
 - FOUNDATION A3:3 MESH REINFORCEMENT TO BE LAPPED BY MINIMUM OF 400mm.

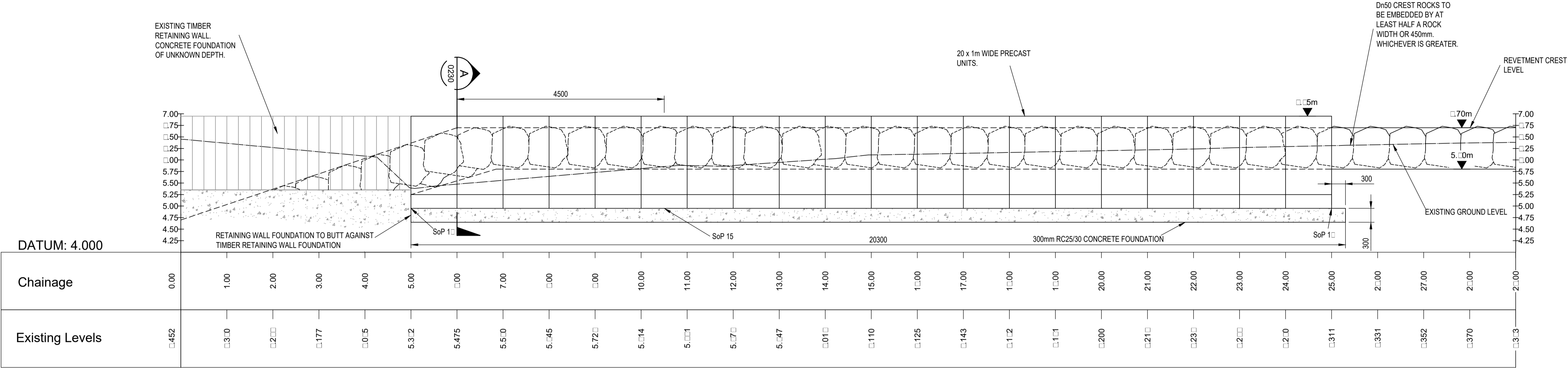
- NOTES
- DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 - ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM LOCAL 'ODL'
 - NO PLANT IS PERMITTED ON TOP OF THE EXISTING DUNE DEFENCE RETAINED BY THE TIMBER WALL.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE UNITS AND THE NEIGHBOURING TIMBER WALL DURING CONSTRUCTION.
 - PRIOR TO COMMENCING ANY CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE LOCATIONS, DIMENSIONS AND LEVELS OF ALL EXISTING ASSETS TO WHICH THE PROPOSED WORKS INTERFACE. ANY VARIATIONS BETWEEN ACTUAL AND THAT SHOWN ON THE DRAWINGS SHALL BE IMMEDIATELY DRAWN TO THE ATTENTION OF THE SUPERVISOR AND/OR THE DESIGNER.
 - THE CONTRACTOR IS TO VERIFY THE PRESENCE AND DETAILS OF ALL EXISTING PIPELINES AND OTHER SERVICES PRIOR TO COMMENCEMENT OF THE WORKS.
 - ALL EXISTING STRUCTURES AND PIPEWORK ETC. ARE SHOWN IN GREY, PROPOSED WORKS SHOWN IN BLACK.
 - ALL EXPOSED CONCRETE SURFACES TO HAVE 25 x 25 CHAMFER.
 - CONCRETE GRADE:

REINFORCED	SEE REINFORCEMENT DWGS.
BLINDING	GEN 3
MASS	C20/25
 - FORMWORK: BURIED SURFACES FAIR, ALL OTHER SURFACES FAIR WORKED UNLESS NOTED OTHERWISE.
 - ALL WORK IS TO COMPLY WITH REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS AND STANDARDS:
 - CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY, 7th EDITION (CESWI)
 - ENVIRONMENT AGENCY MINIMUM TECHNICAL STANDARDS (EA MTR)
 - RELEVANT CLAUSES OF SPECIFICATION OF HIGHWAY WORKS (SHW)
 - RELEVANT BS/EN STANDARDS.

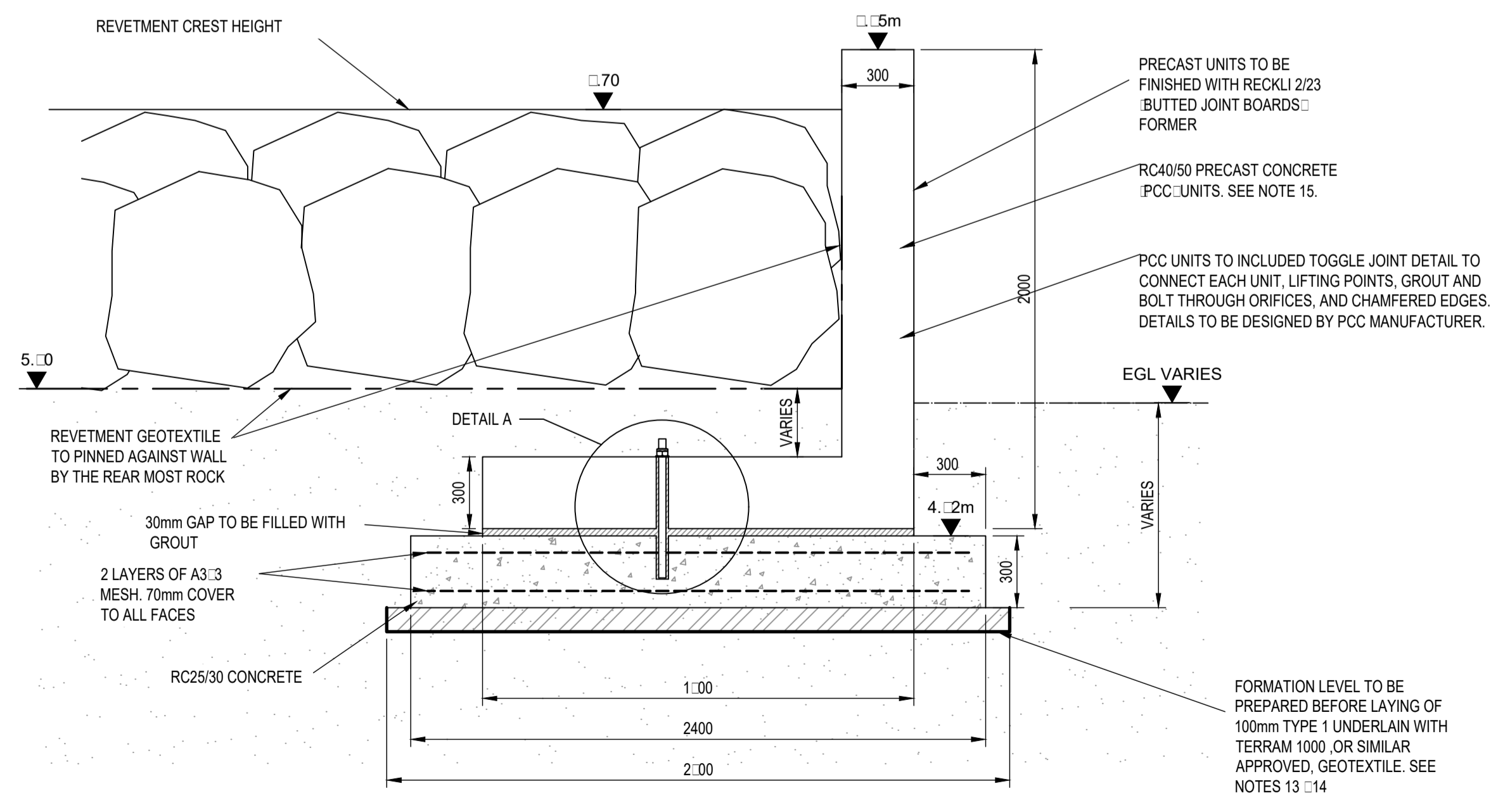
LEGEND

- EXISTING GROUND LEVEL
- RETAINMENT GEOTEXTILE
- TYPE 1 S.H.W.

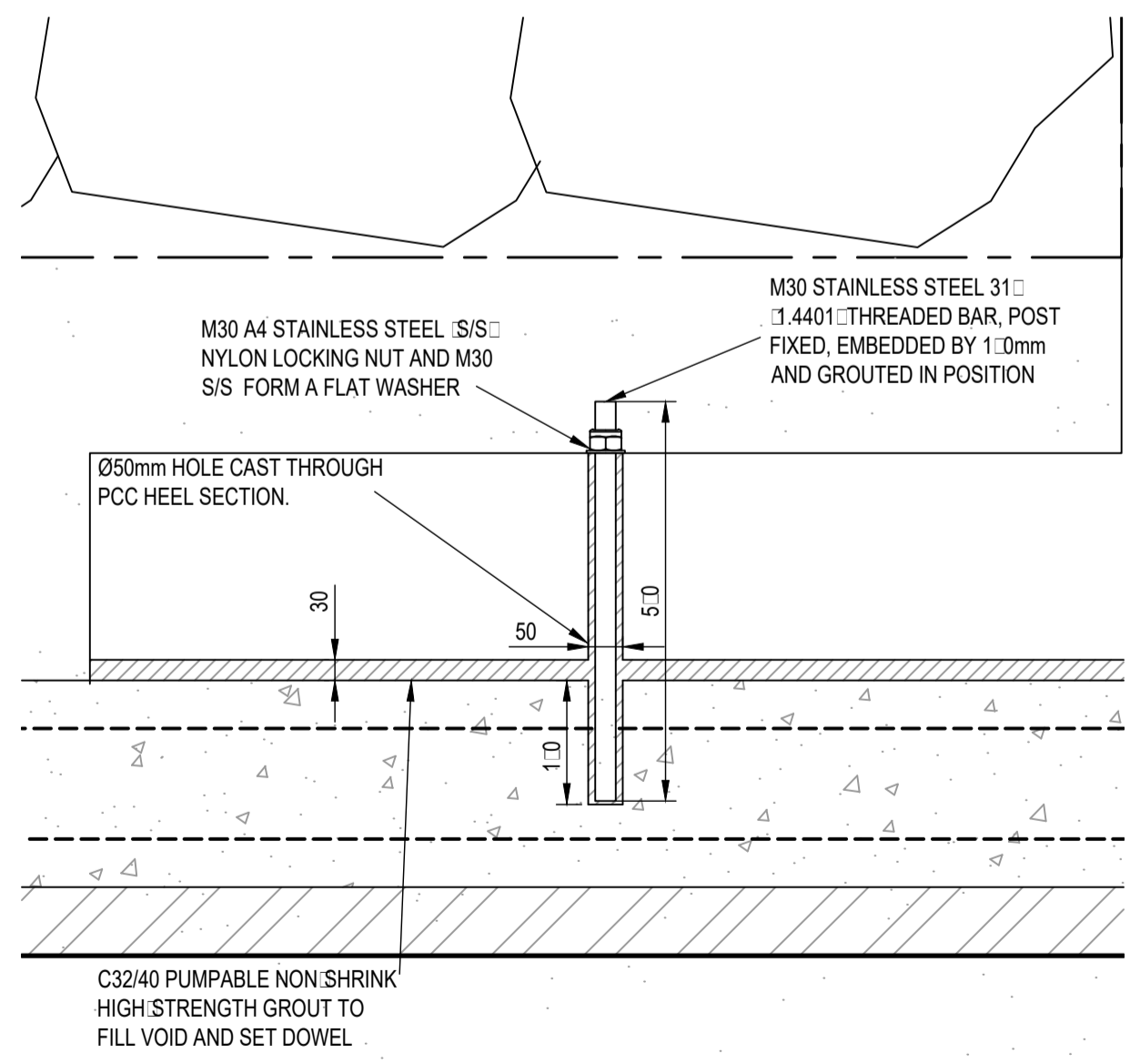
P1	01NOV11	ISSUED FOR INFORMATION	MC	GM	PV
Rev	Date	Description	Drawn	Check	Approv



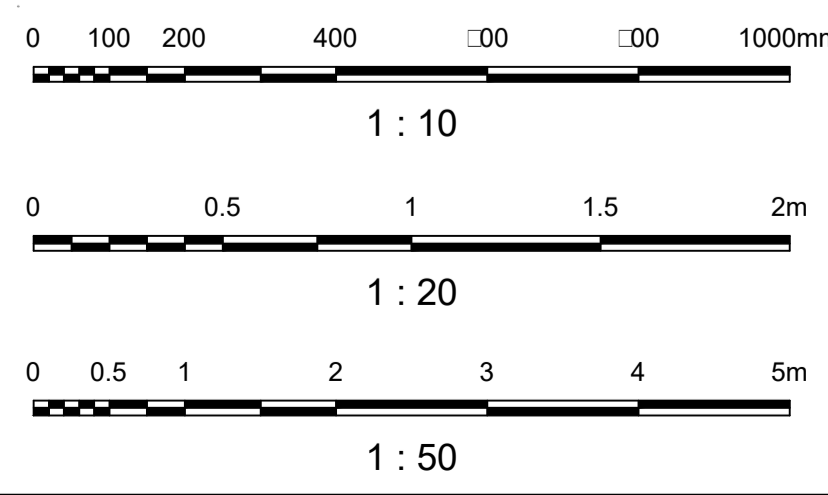
ELEVATION E
1 : 50



SECTION A
1 : 20



DETAIL B
1 : 10



Client
COUNCIL OF THE ISLES OF SCILLY
PROJECT: ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site Council of the Isles of Scilly
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Tel: 01720 424000
enquiries@scilly.gov.uk
http://www.scilly.gov.uk/

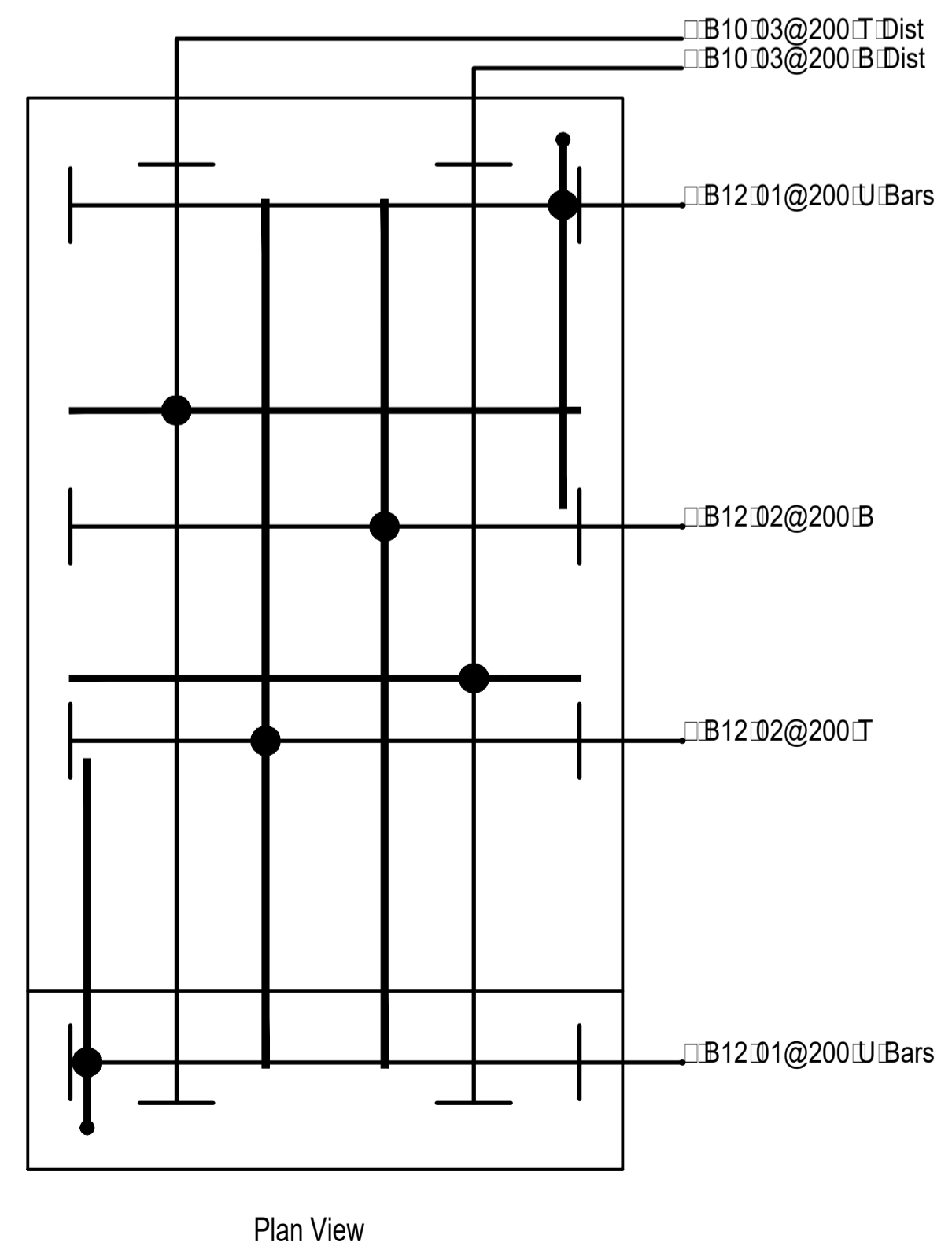
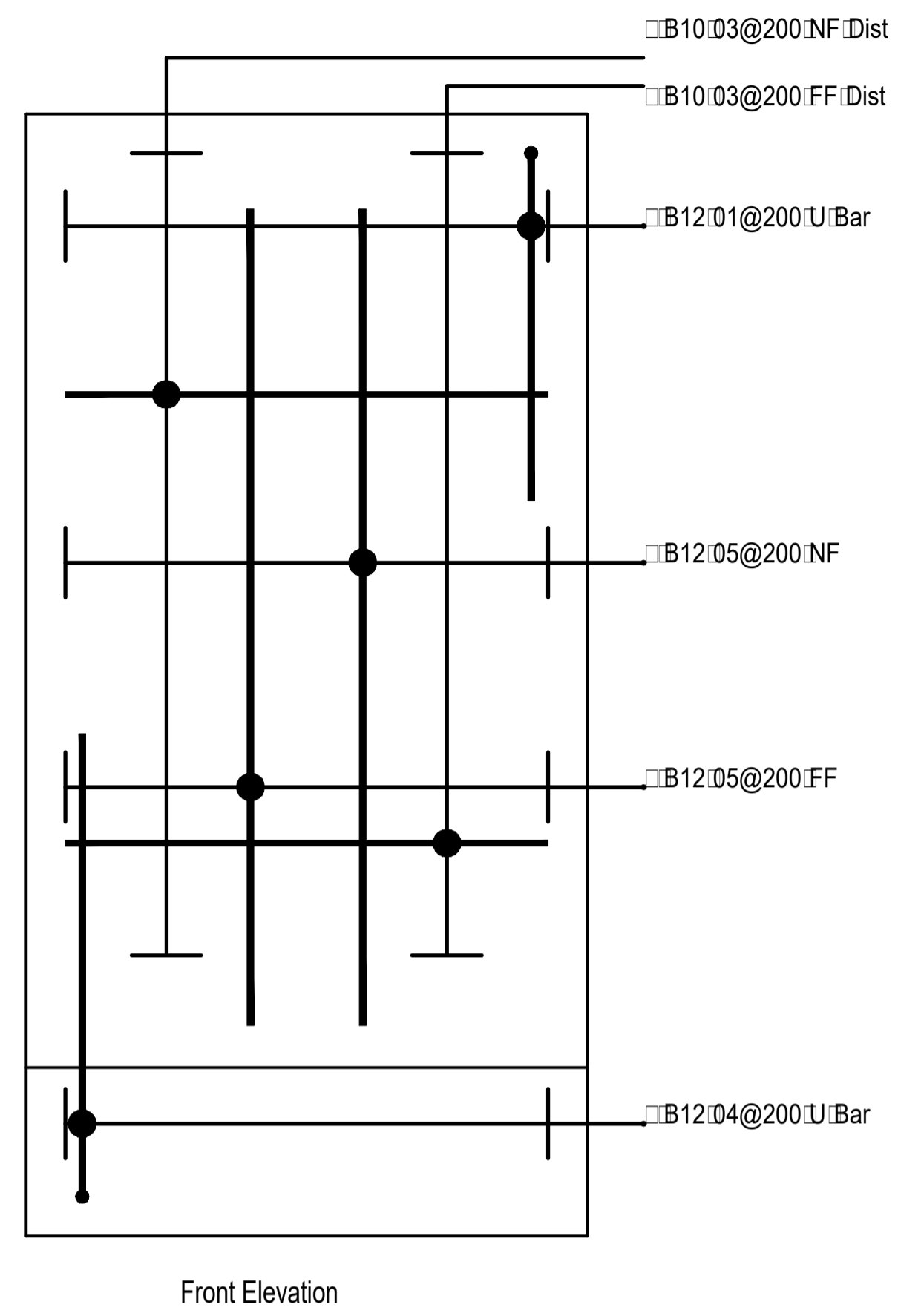
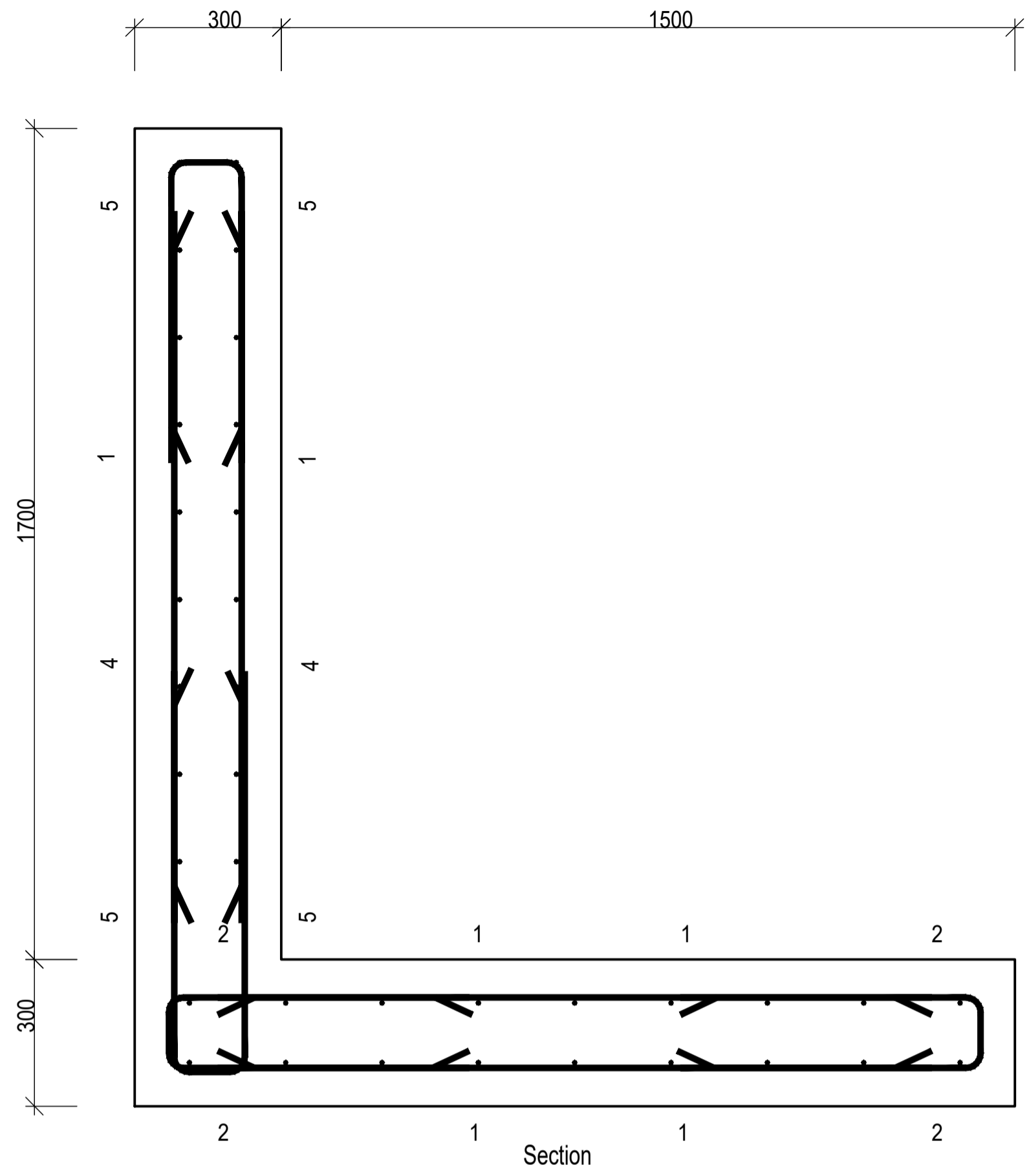
ARCADIS Design & Consultancy
Registered office: Arcadis House, 34 York Way, London N1 1AB
Coordinating office: Unit 7, Chamberlain House, Research Way, Plymouth Science Park, Plymouth PL4 8BT
Tel: 044 03752 0000
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TITLE: PORTHLOO RETAINING WALL GENERAL ARRANGEMENT

Designed	M. CLAUSEN	Signed	[Signature]	Date	01NOV11
Drawn	M. CLAUSEN	Signed	[Signature]	Date	01NOV11
Checked	G. MCDONNELL	Signed	[Signature]	Date	01NOV11
Approved	P. VALVONA	Signed	[Signature]	Date	01NOV11
Scale:	AS SHOWN	Datum:	ST.MARYS		
Original Site:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA0007		

Suitability Description: ISSUED FOR INFORMATION
Drawing Number: UA0007-ARC-XX-DR-CE-0230
Revision: P1

RECEIVED
By Emma Kingwell at 1:12 pm, Jun 22, 2021



- NOTES:**
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS DRAWINGS & SPECIFICATIONS.
 - CONCRETE COMPRESSIVE STRENGTH CLASS PROPOSED AS C40/50 WITH 70mm NOMINAL COVER. THESE PARAMETERS CAN BE MODIFIED IN LINE WITH THE REQUIREMENTS OF BS:3443, TABLE 2, EXPOSURE CLASS: XS1.
 - REINFORCEMENT DESIGNATED 'H' TO BE GRADE B500 CONFORMING TO BS 4443:2005.
 - MINIMUM LAPS TO REINFORCEMENT TO BE:
 - H1: 400mm
 - H2: 500mm
 - ABBREVIATIONS:
 - T: TOP FACE
 - B: BOTTOM FACE
 - FF: FAR FACE
 - NF: NEAR FACE
 - O/F: OUTSIDE FACE
 - I/F: INSIDE FACE
 - EF: EACH FACE
 - STG: STAGGERED
 - ABR: ALTERNATE BARS REVERSED
 - ALT: ALTERNATELY PLACED
 - ALL WORK IS TO COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS AND STANDARDS:
 - a: CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY, 11th EDITION, INCLUDING S.W.W. AMENDMENTS.
 - b: BS EN 206 INCLUDING BS 500 PARTS 1 & 2
 - c: BS 5307 DESIGN OF CONCRETE STRUCTURES FOR RETAINING AND UEBOUS LIQUIDS
 - d: BS 8110 PARTS 1 & 3 STRUCTURAL USE OF CONCRETE
 - e: CIRIA REPORT 11 EARLY AGE THERMAL CRACK CONTROL IN CONCRETE, REVISED EDITION STRUCTURAL DESIGN AND CONSTRUCTIONAL RECOMMENDATIONS
 - THE FOLLOWING ITEMS ARE NOT DETAILED OR SCHEDULED: CHAIRS, STOOLS, FABRIC REINFORCEMENT, DOWEL BARS, CONSTRUCTION JOINT POSITIONS ARE TO BE AGREED BETWEEN THE CONTRACTOR AND SUPERVISOR AND/OR DESIGNER. ALL KICKERS 150mm HIGH UNLESS NOTED OTHERWISE
 - REFER TO DRG. UA0007ARCXXDR.CE.0230 FOR DETAILS OF BOLT DOWN BARS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LIFTING, POSITIONING AND TRANSPORTATION OF THE UNITS IN THE TEMPORARY STATE.

Rev	Date	Description	Drawn	Check	Approv
P1	01NOV1	FOR INFORMATION	MC	GM	PV

Client

COUNCIL OF THE ISLES OF SCILLY

PROJECT:
ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site

Isles of Scilly
Porthloo, St. Mary's

Client

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Coordinating office: Unit 7, Chamberlain House, Research Way, Plymouth Science Park, Plymouth PL4 8BT
Tel: 44 01752 00000

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TITLE:

PORHLOO RETAINING WALL REINFORCEMENT DETAILS

Designed	M. CLAUSEN	Signed	[Signature]	Date	01NOV1
Drawn	M. CLAUSEN	Signed	[Signature]	Date	01NOV1
Checked	G. MCDONNELL	Signed	[Signature]	Date	01NOV1
Approved	P. VALVONA	Signed	PV	Date	01NOV1

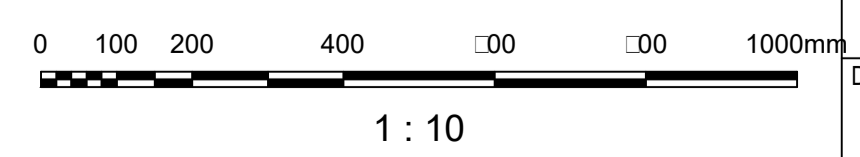
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Original Size: A1 Grid: OS

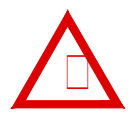
Suitability Code: S2 Project Number: UA0007

Suitability Description:
ISSUED FOR INFORMATION

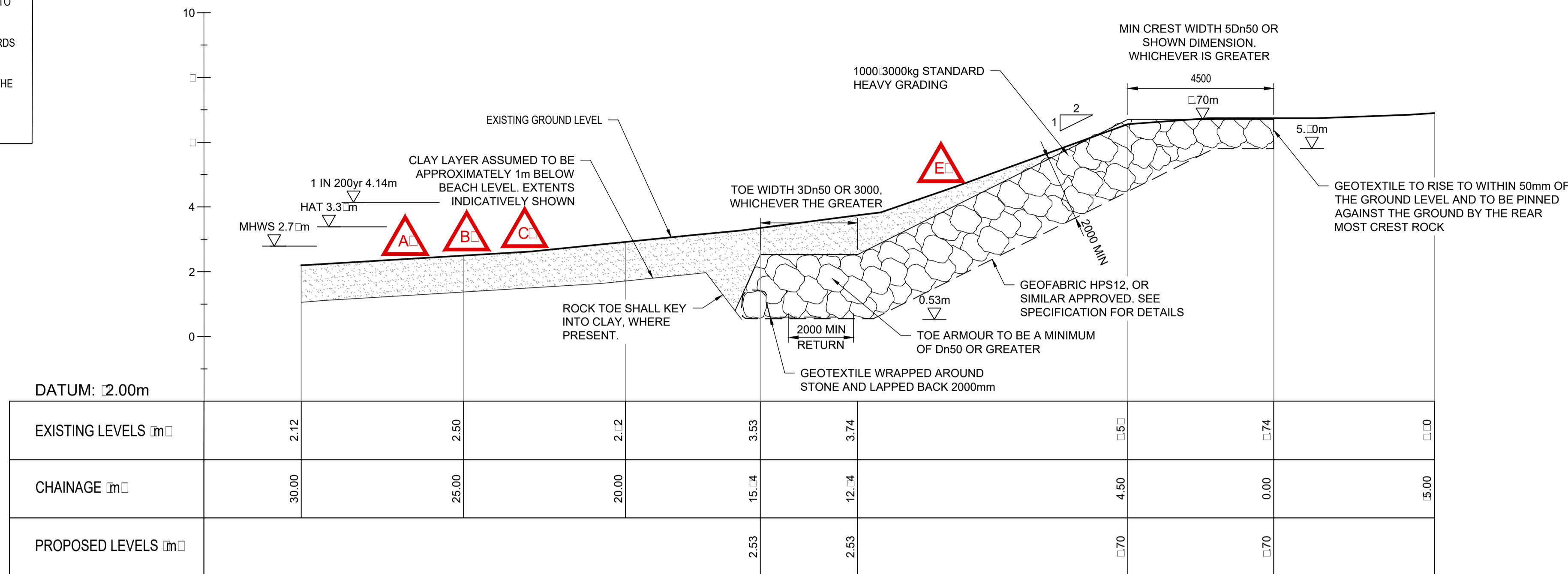
Drawing Number: UA0007ARCXXDR.CE.0231 Revision: P1



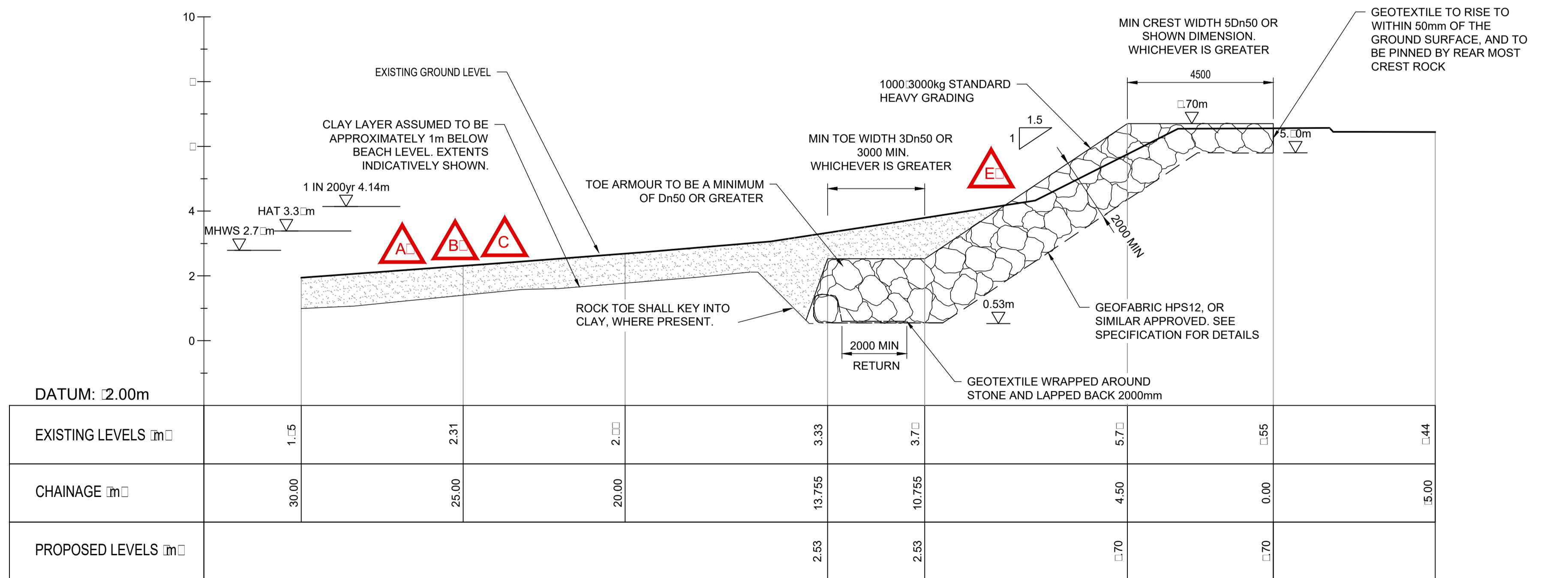
Hazard Warnings



- A: WORKING ADJACENT TO WATER
 - B: SOFT UNSTABLE GROUND
 - C: PUBLIC BEACH
 - D: SERVICES/EXISTING OUTFALL
 - E: UNSTABLE ROCK ARMOUR
 - F: PORTHLOO SSSI
- FOR MORE DETAILED INFORMATION PLEASE REFER TO THE DESIGNER'S HAZARD RECORD.
- EVERYDAY OR LOW RISK HAZARDS HAVE NOT BEEN INDICATED ON THIS DRAWING, NEITHER HAVE HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR.
- SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED THE CONTRACTOR SHOULD NOTIFY ALL THE RELEVANT PROJECT TEAM MEMBERS.



SECTION A
1 : 100



SECTION B
1 : 100

- NOTES:**
1. CONTRACTOR TO CONFIRM EXTENTS OF WORKS ONSITE.
 2. TOPOGRAPHIC DATA TAKEN FROM BENCHMARK SURVEYS, SURVEY UNDERTAKEN FEB 2017 DRAWING No. BS244302.17/02/DW
 3. DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY
 4. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
 5. ALL LEVELS IN METRES RELATIVE TO ORDNANCE DATUM LOCAL ODL.
 6. Dn50 VALUE EQUALS 100mm
 7. TIDE INFORMATION RELATIVE TO ODL:
HAT 3.3m
MHWS 2.7m
MHW 1.3m
MLWN 0.1m
MLWS 2.2m
 8. 1 IN 200 YEAR JOINT PROBABILITY STILL WATER LEVEL RELATIVE TO ODL:
SWL 4.14M

LEGEND:

Rev	Date	Description	Drawn	Check	Approved
P5	01NOV17	DRAWING AMENDMENTS	MC	GM	PV
P4	10APR17	DRAWING AMENDMENTS	GM	MC	IC
P3	03OCT17	DRAWING - NOTES AMENDMENTS	GM	MC	IC
P2	04AUG17	HARDWOOD FENCING REPLACED	GM	PV	PV
P1	02AUG17	FOR INFORMATION	EB	PV	PV

Client
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PROJECT:
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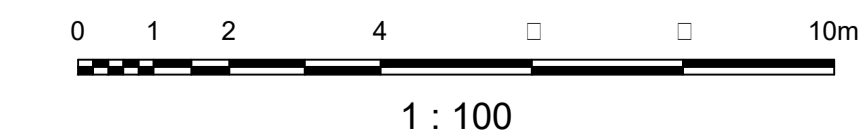
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TITLE:
PORTHLOO CROSS SECTIONS SHEET 1

Designed	G.MCDONNELL	Signed	<i>G McDonnell</i>	Date	02AUG17
Drawn	G.MCDONNELL	Signed	<i>G McDonnell</i>	Date	02AUG17
Checked	M.CLAUSEN	Signed	<i>M Clausen</i>	Date	02AUG17
Approved	I.COOKIE	Signed	<i>I Cooke</i>	Date	02AUG17
Scale:	1:100	Datum:	ST.MARYS		
Original Site:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA0017		

ISSUED FOR INFORMATION

Drawing Number:	UA0017/ARC/XX/XX/DR/CE/0221	Revision:	P5
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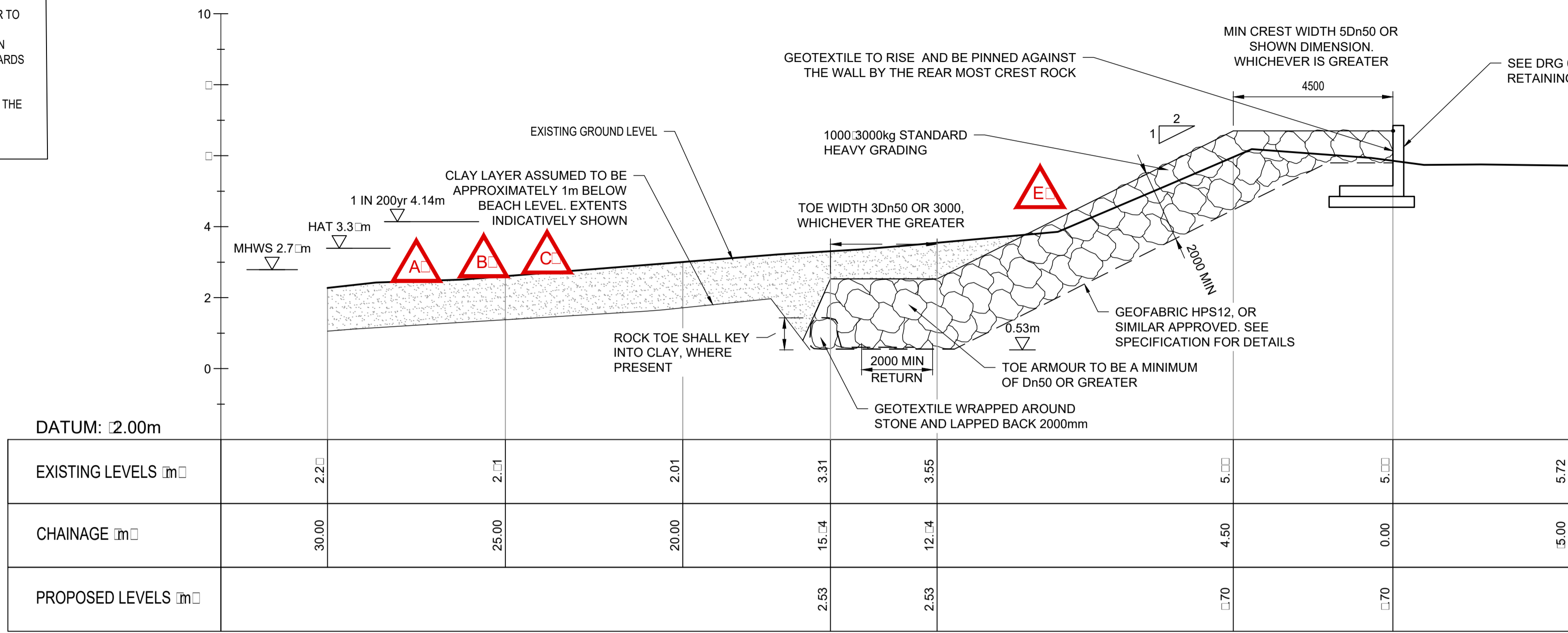


HARD WARNINGS

- A: WORKING ADJACENT TO WATER
 - B: SOFT UNSTABLE GROUND
 - C: PUBLIC BEACH
 - D: SERVICES EXISTING OUTFALL
 - E: UNSTABLE ROCK ARMOUR
 - F: PORTHLOO SSSI
- FOR MORE DETAILED INFORMATION PLEASE REFER TO THE DESIGNER'S HARD RECORD.
 EVERYDAY OR LOW RISK HARDARDS HAVE NOT BEEN INDICATED ON THIS DRAWING, NEITHER HAVE HARDARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR.
 SHOULD ANY ADDITIONAL HARDARDS BE IDENTIFIED THE CONTRACTOR SHOULD NOTIFY ALL THE RELEVANT PROJECT TEAM MEMBERS.



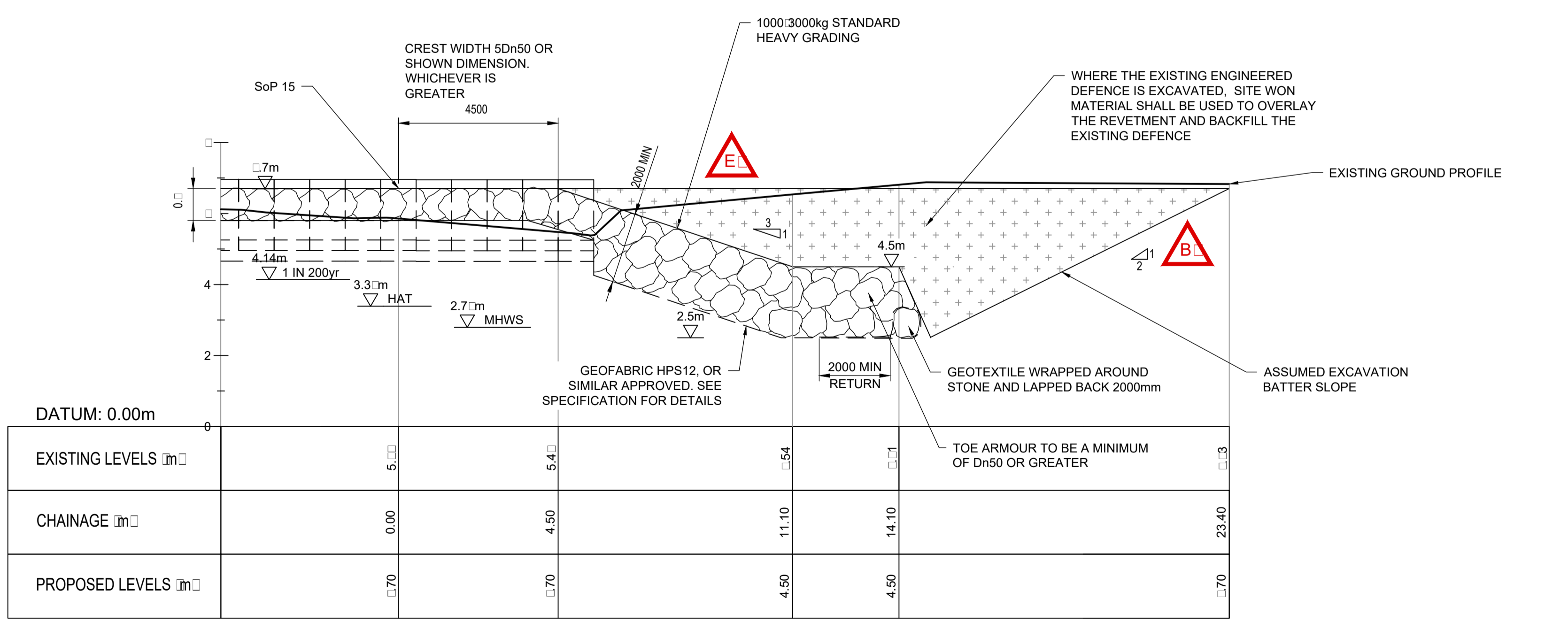
RECEIVED
 By Emma Kingwell at 1:13 pm, Jun 22, 2021



DATUM: 2.00m

EXISTING LEVELS (m)	2.2	2.1	2.0	3.3	3.5	5.0	5.0	5.7
CHAINAGE (m)	30.00	25.00	20.00	15.4	12.4	4.50	0.00	5.00
PROPOSED LEVELS (m)				2.53	2.53	0.70	0.70	

SECTION C
 1 : 100



DATUM: 0.00m

EXISTING LEVELS (m)	5.0	5.4	5.4	4.5	4.5	0.3
CHAINAGE (m)	0.00	4.50	11.10	14.10		23.40
PROPOSED LEVELS (m)	0.70	0.70	4.50	4.50		0.70

SECTION D
 1 : 100

- NOTES:**
- CONTRACTOR TO CONFIRM EXTENTS OF WORKS ONSITE.
 - TOPOGRAPHIC DATA TAKEN FROM BENCHMARK SURVEYS, SURVEY UNDERTAKEN FEB 2017 DRAWING No: BS244302.17/02/DW
 - DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY
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 - TIDE INFORMATION RELATIVE TO ODL:
 HAT 3.3m
 MHWS 2.7m
 MHW 1.3m
 MLWN 0.1m
 MLWS 2.2m
 - 1 IN 200 YEAR JOINT PROBABILITY STILL WATER LEVEL RELATIVE TO ODL:
 SWL 4.14M

LEGEND:

PS 01NOV17	DRAWING AMENDMENTS	MC	GM	PV
P4 10APR17	DRAWING AMENDMENTS	GM	MC	IC
P3 03OCT17	DRAWING - NOTE AMENDMENTS	GM	MC	IC
P2 04AUG17	HARDWOOD FENCING REPLACED	GM	PV	PV
P1 02AUG17	FOR INFORMATION	EB	PV	PV

Client
 COUNCIL OF THE ISLES OF SCILLY

PROJECT:
 ISLES OF SCILLY FLOOD DEFENCE AND DUNE MANAGEMENT SCHEME

Site
 Isles of Scilly
 Porthloo

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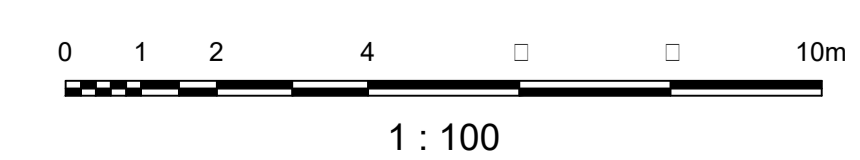
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TITLE:
 PORTHLOO CROSS SECTIONS SHEET 2

Designed	G.MCDONNELL	Signed	gmc	Date	02AUG17
Drawn	G.MCDONNELL	Signed	gmc	Date	02AUG17
Checked	M.CLAUSEN	Signed	mc	Date	02AUG17
Approved	I.COOKIE	Signed	ic	Date	02AUG17
Scale:	1:100	Datum:	ST.MARYS		
Original Site:	A1	Grid:	OS		
Suitability Code:	S2	Project Number:	UA0017		

ISSUED FOR INFORMATION

Drawing Number: UA0017ARC:XX:XX:DR:CE:0222
 Revision: P5



APPROVED

By Lisa Walton at 4:13 pm, Oct 20, 2021

RECEIVED

By Emma Kingwell at 1:11 pm, Jun 22, 2021



ROCK REVETMENT SPECIFICATION

Porthloo

Isles of Scilly Dune & Flood Defence Scheme

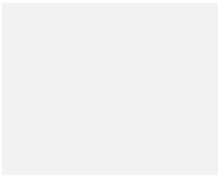
APRIL 2019

Incorporating

EC HARRIS
BUILT ASSET
CONSULTANCY



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Rock Revetment Specification

Porthloo

Author	M. Clausen	
Checker	I. Cooke	
Approver	I. Cooke	
Report No	UA008878-ARC-XX-XX-SP-CE-0831	
Date	APRIL 2019	

VERSION CONTROL

Version	Date	Author	Changes
P1	15-Apr-19	MC	First Issue

This report dated 15 April 2019 has been prepared for Council of the Isles of Scilly (the "Client") in accordance with the terms and conditions of appointment dated 11 October 2016 (the "Appointment") between the Client and **Arcadis Consulting (UK) Limited** ("Arcadis") for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

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1 Introduction

Porthloo is located on the western side of St. Marys. The bay measures approximately 300m across and is flanked to the north and south by rocky outcrops. At the southern end of the beach is a boat yard which is protected from wave run-up by an existing engineered dune which extends halfway along the beach. The northern extent of the beach is backed by an earth embankment which retains the road. The embankment currently has an assortment of various sized rocks and is susceptible to erosion and overtopping from wave events.

2 Scope of Works

The works comprise the construction of a rock armour revetment between the existing engineered dune and the cliff at the northern end of the bay. The revetment works are to minimise erosion and scour along the embankment which retains Porthloo lane and to reduce overtopping to the residential and commercial properties located behind the road.

3 Environmental Conditions

Tide Levels at St. Mary's, Isles of Scilly:

Table 1: All levels are relative to Chart Datum (CD). CD is 2.91m below local datum.

	Chart Datum	Local Datum
Highest Astronomical Tide (HAT)	6.3m	3.39m
Mean High Water Springs (MHWS)	5.7m	2.79m
Mean High Water Neaps (MHWN)	4.3m	1.39m
Mean Low Water Neaps (MLWN)	2.0m	-0.91m
Mean Low Water Springs (MLWS)	0.7m	-2.21m
Lowest Astronomical Tide (LAT)	0.0m	-2.91m

Note: the above levels are still water levels. Significant variation to these levels may be caused by atmospheric and storm conditions. In addition, wave heights will vary dependent on the sea state, which can also increase or decrease the water level.

The contractor will need to programme the works to coincide with the tidal cycle and weather conditions, to avoid the risk of people/machinery becoming trapped by the incoming tide.

4 Rock Revetment Specification (Particular Specification)

The General Specification for the rock revetment shall be The Rock Manual – The Use of Rock in Hydraulic Engineering 2nd Edition (CIRIA C683) 2007, supplemented by additional clauses contained in this section.

Where a discrepancy between the above General Specification (The Rock Manual 2nd Edition) and this Particular Specification occurs, then the clauses in this Particular Specification shall prevail.

4.1 Rock Armouring

The rock shall be pre-screened off site to remove fines prior to placement. Methods of placing rock shall be such as to minimise disturbance to the foreshore.

The areas may be adjusted by the *Supervisor* as work proceeds according to the site conditions found.

The armour stone shall comply with BS EN13383 as referenced in the Rock Manual and the particular requirements of this specification. The rock grading envelope is shown in Table 2 and shall comply with the corresponding grading below.

Primary Rock Armour

Standard Heavy Grading

Table 2: BS EN13383 grading

Class designation	Extreme Lower Limit	Nominal Lower Limit	Nominal Upper Limit	Extreme Upper Limit	Effective Mean Mass	
					Lower Limit	Upper Limit
Passing requirements	<5%	<10%	>70%	>97%		
1000-3000Kg	700kg	1000kg	3000kg	4500kg	1700	2100

Properties of suitable armour stone shall be in accordance with Table 3 to follow.

Table 3: Armour stone properties

Property	BS EN Symbol	BS EN Ref	Description	Armour Requirement	Armour Category
Process Type		3	Production method	Natural	
Petrographic Type		Annex C	Geological Classification	Igneous, metamorphic or sedimentary	
Density		5.2	Oven dried particle density	Min 2600 kg/m ³	
Length to Thickness Ratio	LT	4.3	Overall shape	Max 5% greater than 3:1	LT _A
Crushed or Broken Surfaces	RO	4.4	Amount of non-rounded surfaces	Max 5% by number with less than 50% crushed or broken surfaces	RO ₅
Water Absorption	WA	7.3	Amount of water absorbed when immersed	Max 6.2% gain in mass	WA _{1.5}

Block Integrity		Annex B	Presence of internal flaws or fissures	No significant fracture when dropped 3.0m onto horizontal test bed of secure heavy armour rock.
Colour			General colour within natural variation	To match existing rock armouring.

4.2 Transportation and Stockpiling of Armour stone

An armour stone storage area is to be confirmed with the *Project Manager* and will need to be stored in a location as not to interfere with passage of vehicles along the road or impede access to the foreshore for the commercial activities at the boat yard.

If the Contractor is transporting the rock by road then he shall:

- I. Obtain the approval of the *Project Manager* and the appropriate Authorities prior to transporting the rock to the foreshore.
- II. Ensure all vehicles are roadworthy and have the necessary safety certificate and insurance issued by the relevant authorities.
- III. The Contractor shall have an emergency procedure in place should there be an incident in which rock falls onto the highway during transportation or whilst transferring the rock to the stockpile.
- IV. Suitable plant and equipment must be on station or locally available to ensure that the road is kept clear.

If the Contractor is transporting the rock to site via barge, then he shall:

1. Obtain the approval of the *Project Manager* and the appropriate Authorities prior to transporting the rock to the site. He is also responsible for ensuring that relevant Notices to Mariners are issued as per the Harbour Master's guidelines.
2. Ensure all barges are seaworthy and have the necessary safety certificate and Insurance issued by the relevant authorities. Permission for safe mooring of sea transport vessels is obtained from the relevant authorities. The supplier shall have an emergency procedure in place should there be an imminent threat of sea and wind conditions beyond the safe mooring design conditions.
3. Ensure adequate side and deck protection is in place on the vessel to prevent any armour stone dislodged during transit from causing damage or capsizing the vessel.
4. A suitable tug must be on station or locally available while the barge is at anchor.

4.3 Placing Armourstone – General

Placing of the materials shall be one continuous operation, to ensure that none of the underlying layers are left unprotected over a distance greater than agreed or for a duration greater than agreed between the *Contractor* and *the Supervisor*. If the operation has to be interrupted, temporary protection of the underlying layers shall be provided with the same material as to be used for the final construction.

Armourstone placing for the cover layer shall comply with the following requirements:

- This armour stone shall be individually placed to achieve a dense, fully interlocked slope. Placing shall commence at the toe and proceed upwards towards the crest. Stones shall be placed in such a way that they obtain their stability from interlocking and frictional resistance, and not from friction at one contact point alone.
- Tipping of armour stone from trucks into final position shall not be permitted.
- Armour stone shall be placed according to the standard placement method summarised in Table 4 to achieve a minimum “three-point support” and be stable to the lines and levels shown on the drawings.

Table 4: Recognised Armourstone placement methods

Method	Details
Random Placement	This is without the control of orientation and should not be assumed to be any tighter than would be expected if the stones were placed out of view underwater by single cable release from a crane using a spatial positioning grid.
Standard Placement	This is where minimum orientation control is applied so that the block attitude is effectively governed by its orientation in the stockpile before lifting. However, a minimum of three points of contact within the layer being placed should be ensured.
Dense Placement	This involves the rotation of stones until the orientation achieved is expected to give the maximum number of point contacts and minimum voids. Individual stones are removed and replaced if necessary.
Specific Placement	This is when the procedures coupled with stone shape constraints are specified to be other than random, standard or dense.

- The surface of the armoured slope shall present an angular uneven face to the water to achieve the desired energy dissipation of waves. Pieces of armour stone smaller than the equivalent of the extreme lower limit value of the grading shall not be used to fill interstices or prop larger stones in order to achieve the required profile.
- Pieces of armour stone broken during handling or placing shall be removed immediately at the Contractor’s expense.
- Any void below the finished profile level as shown on the drawings in excess of 0.75 the average stone size (D_{n50}) shall be filled with an appropriate stone or stones. Determination of the acceptability of any void shall be by means of the survey probe or other test sphere or cage of diameter $0.75 D_{n50}$.

Vertical achievable placing tolerances for armour stone shall be in accordance with Table 5:

Table 5: Vertical placement tolerances

	Dry – i.e. above low water, placed using land-based plant	Below low water placed using land-based plant	Below low water, placed by water-borne equipment
Maximum allowable deviations based on individual measurements	$\pm 0.3 D_{n50}$	$\pm 0.5 D_{n50}$	$\pm 0.8 D_{n50}$

Notwithstanding the above tolerances, the following criteria shall apply to the armour stone cover layer:

- The tolerances on two consecutive mean actual profiles shall not be negative.
- Notwithstanding any accumulation of positive tolerances on underlying layers, the thickness of the layer shall not be less than 80 per cent of the nominal thickness when calculated using mean actual profiles.
- The *Contractor* shall make good any parts of the *Works* that has been subject to any settlement within the structure that is beyond the specified allowable limits and that may occur up to one year after completion of the works. Making good of settlement shall be with materials and in a manner approved by the *Supervisor*.

4.4 Revetment Geotextile

The revetment rocks shall be placed on geotextile:

2.162 (A) Geotextiles

17. **Revetment geotextile** shall have the following properties:

	Unit	Specification
Dynamic perforation (cone drop) EN ISO 13433	mm	1
Tensile strength-MD EN ISO 10319	kN/m	65
Tensile strength-CD EN ISO 10319	kN/m	65
Elongation-MD EN ISO 10319	%	80
Elongation-CD EN ISO 10319	%	80
CBR Puncture Resistance EN ISO 12236	N	1200
Opening Size O_{90} EN ISO 12956	μm	<69
Waterflow normal to the plane EN ISO 11058	l/s/m ²	30

MD= machine direction/ CD = cross direction

Clause numbering refers to the CESWI & EA. A suffix "A" on the clause number indicates an additional clause.

4.5 Test Section

At the commencement of placement of the armour stone the *Contractor* shall be required by the *Supervisor* to construct a test section of structure which shall be used to demonstrate the quality of placing of armour stone layers, for approval by the *Supervisor*. A 10m length will be adequate. The *Contractor* shall obtain approval from the *Supervisor*.

For the approved test panel the *Contractor* shall record accurately for agreement:

- The grading of the armour stone used.
- The quantity (tonnes) and volume (m³) of material used.

During the progress of the *works*, the *Contractor* may, from time to time, be required to demonstrate that the placed packing density being achieved is in accordance with the approved test panel. The visual quality achieved in test panels shall be maintained throughout the remainder of the *Works*. Areas of placed armour stone that show an appearance distinguishably different from the agreed test section in terms of quality of the

construction finish may be rejected. Block counting methods may be used to further substantiate grounds for rejection or acceptance by the *Project Manager*. Rejected sections shall be reworked until the test section quality is achieved.

4.6 Working in the Water Environment

Each placed layer shall be protected by the subsequent layer as soon as possible after placement in order to minimise wave damage in the event of storms during the construction period.

The *Contractor* shall make good any location where material has been eroded by wave and/or current action or removed by other cause before placing the appropriate material for the overlying (protective) layer.

Notwithstanding the above, the *Contractor* shall take all reasonable care to avoid disturbing a previously placed layer by avoiding dropping armour stone or any other potentially disturbing placing methods.

Preference will be given by the *Supervisor* to methods of working that progress from upstream/updrift to downstream/downdrift and thereby reduce undesirable siltation in the work area prior to stone placement. For work above low-tide level, sufficient fine material on the surface of already placed stones (including stones within the layer being placed) shall be removed from those areas where surface contact will arise between the stone being placed and those already placed to ensure sound bearing and interlock between stones. The *Contractor* shall make due allowance for the removal of such material.

4.7 Measurements of Armourstone

Measurement of armour stone layers shall be carried out using a probe with a spherical foot of diameter $0.5 \times D_{n50}$ unless for reasons such as health and safety, an alternative method is deemed necessary. If the *Contractor* intends to use an alternative method to the spherical foot probe, the alternative method for obtaining individual armour stone surface heights across the profile shall be submitted to the *Supervisor* for approval. The submission shall include the conversion factor to be used to relate the reference levels in the design drawings to that would be measured by the alternative method.

No layer shall be covered by a subsequent layer until the profile of the former layer has been approved by the *Supervisor*. The *Contractor* shall give an agreed minimum period prior notice of survey to the *Supervisor* and shall provide facilities for his attendance during surveys. The minimum period shall take into account the working method, sea state and current conditions.

4.8 Survey

Upon completion of the works the *Contractor* will undertake a level survey. Measurement profiles shall be at intervals along the length of the revetment approved by the *Supervisor*. These will generally be every 10m. The *Contractor* shall provide and maintain chainage markers at the approved measurement intervals until the level survey has been completed and accepted by the *Supervisor*. Chainage markers should be visible from both the land and seaward side of the structure.

Surveyed sections shall extend to a distance of 5m beyond the constructed toe and 2m for the other edges.

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NEC3 engineering and construction contract (ECC)

Works Information

Project / Contract information

Project Name	Isles of Scilly Dune & Flood Defence Scheme-Porthloo
Project Reference	CloS to advise
Contract Reference	CloS to advise
Date	22 February 2021
Version Number	F1
Author	Maximillian Clausen / Stephen Swabey

Revision history

Revision date	Summary of changes	Version number
15-04-2019	Draft Issue	P1
22-02-2021	Final Issue	F1



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**APPENDIX A: EMPLOYER'S MINIMUM TECHNICAL REQUIREMENTS:
EA MTR**

APPENDIX B: REVETMENT SPECIFICATION

Definitions List

Term	Description
CESWI	Civil Engineering Specification for the Water Industry, 7th Edition
EA MTR	Environment Agency Minimum Technical Requirements
SHW	Specification for Highway Works

Preamble

This Works Information describes and specifies the *works*. For details of the technical standards and the list of drawings used see **WI 2000**, *Employer's work specification*.

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WI 100 Description of the works

WI 101 Project objectives

1. The project objectives are:

To protect Porthloo lane from erosion and undermining and to reduce the risk of overtopping and coastal flooding to the domestic and commercial properties located behind the beach. The scheme also aims to decrease the vulnerability of Lower Moors SSSI to saline intrusion during storm events.

The works involve construction of a concrete retaining wall faced with wood to continue the existing wooden retaining wall and placement of a rock armour revetment on the beach side of the retaining wall. Partial deconstruction of existing works will be required to construct the revetment.

WI 102 Rock Armour Revetment

1. The rocks used in the construction of the revetment shall be similar to the natural granite bedrock found on the islands. For avoidance of doubt, this means that Cornish granite would be acceptable, but Norwegian granite would not be acceptable. The supervisor and/or Project Director will be the ultimate arbiter of what rock is acceptable.
2. The rocks used in the construction of the revetment shall be handled and placed in accordance with the requirements of the Revetment Specification. See Appendix B: UA008878-ARC-XX-XX-SP-CE-0831-P1.
3. The plan of the rock armour revetment is contained in UA008878-ARC-XX-XX-DR-CE-0220-P4, while cross sections through the revetment are contained in UA008878-ARC-XX-XX-DR-CE-0221-P5, UA008878-ARC-XX-XX-DR-CE-0222-P5 and UA008878-ARC-XX-XX-DR-CE-0223-P5.
4. Setting Out Points (SoP) correspond to the rear of the crest and the intersection between the revetment face and the toe.
5. The revetment shall be underlain with a geotextile, ensuring it meets the properties stated in the Rock Specification (see Appendix B).
6. Where the geotextile is wrapped around the foremost rock of the toe, it shall be lapped back by a minimum of 2000mm and trapped in place by the rocks which form the toe.
7. The crest & toe top level width shall be $5 \times D_{n50}$ (median nominal rock diameter) or 4500mm whichever is greater.
8. The revetment armour layer thickness, including the crest and toe, shall be a minimum of 2000mm.
9. Revetment slope grade shall vary and smoothly transition along its length from 1 in 3 at the at the extremities of the roundheads to 1 in 1:5 at its centre.

WI 103 Roundheads

1. The northern roundhead shall butt-up against the cliff face with the top toe level being 4.50m AOD and the top crest level being 7.60m AOD.
2. The southern roundhead shall be built into the existing the engineered defence and shall not butt-up against the existing vertical timber wall which retains the sand backfill for the existing defence. Rather, the rocks shall be placed so they are self-supporting within the revetment ensuring they meet the stability requirements stated in UA008878-ARC-XX-XX-SP-CE-0831-P1 (Appendix B). The roundhead crest and toe levels shall be the same the northern roundhead.

WI 104 Existing Engineered Dune

1. The existing defence is believed to comprise vertical timber sleepers (~1.6m above EGL), braced by a horizontal whaling beam at its rear. It has a sloped front face and level top surface covered by a geotextile planted with marram grass and backfilled with sand.
2. The existing engineered dune defence shall be excavated to accommodate the new southern roundhead. It is likely the timber wall foundations will become exposed during the excavation and the *Contractor* will ensure its continued stability.
3. Once the rock roundhead has been constructed, the void between the sloped revetment face and the existing cut-back engineered dune shall be backfilled with the site won rock to the pre-construction levels of the existing engineered dune.
4. The site-won rock is assumed to be the existing rock forming the existing ad-hoc revetment where the proposed revetment shall be built.
5. The site won rock shall be that which is currently being used on the embankment as an ad-hoc revetment i.e. Cornish granite of the same colour and type that naturally occurs on the islands. See Site Information (UA008878-ARC-XX-XX-SP-CE-0801-P1), 3. Site Photos for an illustration.

WI 105 Retaining Wall

1. A retaining wall shall be constructed at the rear of the revetment to interface with the existing timber retaining wall. The proposed wall shall have the same finished height as the existing timber wall of 6.75m AOD and shall continue along the same alignment.
2. L-shaped precast units shall form the retaining wall (UA008878-ARC-XX-XX-DR-CE-0230-P1) and shall be founded on a mass concrete foundation pad. The concrete shall be GEN3 as a minimum with reinforcing as designated in UA008878-ARC-XX-XX-DR-CE-0231-P1 and specified in PorthlooBBS231-P1.
3. The precast units shall be faced with Greenheart timbers to give the same aesthetic as the existing timber retaining wall. The timbers shall be of the same thickness, width and have the same finish height as the existing timber retaining wall. The finished timbers shall align with the existing timbers on the face away from the beach, so that the timber surface is not interrupted by a 'step' in the face. The timbers shall be bolted to precast units with stainless-steel fixings.

WI 107 Concrete

1. See BS 8500-1: 2015+A1:2016 designated concrete mix details. A summary of the details is as follows:

Table A.15 Summary of requirements for designated concretes^{A)}

Concrete designation	Min. strength class	De-fault slump class	Max. w/c ratio	Min. cement or combination content (kg/m ³) for 20 mm max. aggregate size	Cement and combination types
GEN0	C6/8	S3	—	120	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V
GEN1	C8/10	S3	—	180	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V
GEN2	C12/15	S3	—	200	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V
GEN3	C16/20	S3	—	220	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V
RC20/25	C20/25	S3	0.70	240	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V
RC25/30	C25/30	S3	0.65	260	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V ^{B)}
RC28/35	C28/35	S3	0.60	280	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V ^{B)}
RC30/37	C30/37	S3	0.55	300	CEM I, IIA, IIB-S, IIB-V, IIIA, IVB-V ^{B)}

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WI 200 General constraints on how the *Contractor* provides the works

WI 201 General constraints

1. The *Contractor* shall comply with the following constraints in addition to those identified in the CESWI & EA Minimum Technical Requirements.
2. The *Contractor* shall comply with the constraints and measures identified in the Construction Environment Management Plan (CEMP)

WI 202 Site Access

1. Access to site is via Porthloo lane. This road shall remain open to traffic during the works.

WI 203 Working Area

1. The *Contractor's* working area is indicated on drawing UA008878-ARC-XX-XX-DR-CE-0220-P4
2. If the *Contractor* wishes to modify these areas, he shall obtain written permission from the *Project Manager*.

WI 204 Parking

1. The *Contractor* shall provide adequate parking for site-based personnel and visitors within the working area. No parking is allowed outside of this area, unless permission is obtained from the *Project Manager*.

WI 205 Working Hours

1. No additional constraints to 1.27 EA MTR and in terms of local limits on working hours.

WI 206 Operational constraints

1. Porthloo lane shall remain open to vehicular traffic for the duration of the contact.
2. The residential properties located behind the beach shall have unhindered pedestrian and vehicular access to and from their properties.
3. The commercial boat yard, to the south of the revetment, shall not have its operational activities hinder by the *works*.
4. Sections of the work along the foreshore are at risk of being cut off by the incoming tide and are exposed to wave action. The contractor will be required to plan works around tide times and to monitor weather forecasts/conditions to make sure that the risk to staff and machinery is kept to a minimum managed in accordance with the latest H&S legislation.

WI 208 Existing services

1. All known services information is included within the Site Information. Prior to carrying out the works the *Contractor* shall independently verify the location of all known services, and actively search for any previously unidentified services prior to carrying out any intrusive ground works.
2. The *Contractor* shall undertake all discussions with Utility Companies to gain the required permissions for the works on or around services.

WI 209 Ground conditions

1. A ground investigation was undertaken on the 17th May 2017 to determine the level of the periglacial clay deposits, colloquial known as Ram, which underlie the beach material. See UA008878-ARC-XX-XX-SP-CE-0801-P1, Appendix C, for trial pit logs.

WI 210 Permanent Access

1. A footpath is illustrated on the 1:25,000 O.S. map behind the existing engineered dune. Where the working area blocks the route, the path shall be diverted temporarily along the boat yard boundary fence during construction works. The temporary path shall have a minimum width of 1.5m.
2. The original path shall be reinstated when the construction works are completed.
3. Signs shall be placed at each end of the footpath where it is diverted, to advise the public of the diversion and the reason for the diversion

WI 211 Storage of fuel and chemicals

1. No additional constraints to those identified in the MTR

WI 212 Pollution, ecological and environmental impacts

1. Debris burning shall not be permitted under any circumstances.
2. Works shall follow best practice guidance for pollution control. All materials, including machinery, shall be securely stored in the site compound when not in use. Staff shall be appropriately trained on how to use spill kits correctly. Small plant (including generators) shall be placed within drip-trays or plant nappies.
3. Detailed construction method statements will be prepared following Institute of Air Quality Management (IAQM) guidelines on dust management for medium risk-sites.
4. Out of hours works will be avoided wherever reasonably practicable.
5. Noise impacts will be minimised by adherence to measures described in BS 5228, to reduce noise impacts from construction by 5dB to 15dB.
6. Detailed construction method statements will be prepared following Institute of Lighting Practitioners guidance.
7. Waste that is recyclable will be sorted within the construction compound, placed into the relevant storage disposal container, and then removed from site for disposal at an appropriate recycling facility.
8. All potentially contaminated material will be subject to Waste Acceptance Criteria testing.
9. Any excavated clay that cannot be reused would be bulked on site and disposed of at an appropriately licenced waste management facility.
10. All residual waste material will be removed from site and disposed of at an appropriately licenced waste management facility.
11. Detailed construction method statements will be prepared following CIRIA guidance to include:
 - a. Site storage of fuel and any chemicals on site will be above Mean High Water Spring and away from high-risk locations.
 - b. All chemicals of a hazardous nature will be stored in bunded, locked containers in surfaced areas (bund to contain 110% of the capacity of the liquid stored).
 - c. Plant, equipment and vehicle refuelling will only be permitted at designated refuelling areas.
 - d. Refuelling and bulk deliveries will be supervised.

- e. Emergency spill kits will be available at all times and operatives should be trained in their use. Any spillages would be contained and reported.
- f. Drip trays will be used to prevent oil leaking from machinery when parked or stored and during refuelling.

WI 213 Archaeological requirements

1. There are no known areas of interest which interface with the works area and/or require further investigation.

WI 214 Confidentiality

1. The *Contractor* shall not disclose information regarding the works to third parties without the acceptance of the *Project Manager*.
2. All contact from third parties will be forwarded to the *Project Manager*.
3. The *Contractor* may publicise the services only with the *Employer's* written permission.

WI 215 Security and protection on the site

1. The *Contractor* is responsible for the security of the site and for vehicles and pedestrians entering and leaving the site.
2. Security measures shall include ensuring that the *Contractor's* personnel are easily identifiable.

WI 216 Protection of existing structures and services

1. The existing engineered dune defence shall be excavated at its northern most extent to accommodate the southern revetment roundhead. The excavation shall ensure the timber sleeper wall which forms the rear extent of the existing engineered dune, remains supported and intact during the works, or if it is removed to aid construction, it is to be reinstated to its original line, level and condition.
2. An existing sewer outfall for a septic tank is shown on the contract drawings. It is reported as not being live. This shall be removed if necessary.

WI 217 Protection of the works

1. The *Contractor* should state in the Method Statement any measures they will employ to protect the works in the temporary state during periods of unsettled sea states. See Appendix B for details on how the revetment works should be protected during construction.

WI 218 Cleanliness of the roads

1. No additional constraints to those identified in the MTR.

WI 219 Traffic Management

1. The *Contractor* is responsible for traffic safety and management including obtaining all approvals, e.g. road closures and openings. Before any work in, or affecting the use of, any highway or road is commenced, the *Contractor's* proposed method of working, including any special traffic requirements, is agreed with and confirmed in writing to, the *Project Manager*, and all relevant authorities.
2. The *Contractor* shall produce a Traffic Management Plan to be submitted to the *Project Manager* prior to construction of the works.

3. The Traffic Management Plan is to include, but is not limited to, the following:
 - Access routes to be taken by heavy vehicles, noting any height or weight restrictions
 - Details for keeping roads clear of dust and mud
 - Timings for heavy load movements
 - Vehicular routing
 - Parking restrictions for construction vehicles on the public highway surrounding the site
 - Pedestrian walkways around the site
 - Storage areas
 - Timetable for removal of site compound equipment
4. The *Contractor* co-operates with the relevant authorities concerning works in, or access to, the highway. The *Contractor* informs the *Project Manager* of any requirements or arrangements made with the relevant authorities.
5. The *Contractor* shall be responsible for liaising with the public regarding road closures and regular movements on the highway.

WI 220 Condition survey

1. At least two weeks prior to taking possession of the Site, the *Contractor* shall undertake condition surveys in accordance with the *Employer's* Minimal Technical Requirements.
2. The *Contractor* shall make a note of any existing damage and bring this to the attention of the *Project Manager*.
3. The *Contractor* shall repeat the condition survey on completion of the works in accordance with the *Employers* Minimum Technical Requirements and provide a copy to the *Project Manager*.
4. Photographs, surveys and inventories must be date stamped, NRG referenced, and copies held by the *Contractor*. The *Contractor* shall provide these to the *Project Manager* and the *Supervisor*.
5. The *Contractor* shall undertake condition surveys with the *Supervisor*, and any others invited by the *Contractor*, *Project Manager* or *Supervisor*. The *Contractor*, *Project Manager* and *Supervisor* notify each other in advance if any others are invited.
6. The *Contractor* is to give at least one weeks' notice to the *Project Manager* and *Supervisor* prior to undertaking any condition survey.
7. All record photographs and videos shall comply with the requirements of the Minimum Technical Requirements.

WI 221 Consideration of Others

1. No additional constraints to those identified in the MTR.

WI 222 Control of site personnel

1. The *Contractor* shall ensure that all persons working on or visiting the Site hold a valid and current Construction Skills Certification Scheme (CSCS) card. A member of the site team shall escort persons without this card at all times.

2. The *Contractor* will maintain a visitors' book recording the date, the time in, the time out, evidence of a specific Health and Safety induction, CSCS number, and the name and company of the person visiting.

WI 223 Site cleanliness

1. No additional constraints to those identified in the MTR.

WI 224 Waste materials

1. Any construction related materials shall be disposed of away from site without any contamination of the waterways or surrounding land. Disposal must be in accordance with a Site Waste Management Plan (SWMP) produced by the *Contractor* and by a licensed waste disposal *contractor* with an audit trail. Refer to 1.14 EA MTR.
2. The *Contractor* shall determine volumes of waste to be disposed of offsite and apply for the appropriate licences
3. The SWMP shall be submitted to the Project Manager for acceptance prior to works on site commencing.

WI 225 Deleterious and hazardous materials

1. No additional constraints to those identified in the MTR.

WI 226 Consents & Licencing

1. A Marine Management Organisation (MMO) Licence is required for the proposed works. Work is not to commence on site prior to the MMO licence being in place. See **WI 1002**.

WI 227 Excavating Material

1. Excavated material is to be placed in an area agreed with the *Project Manager*.
2. The *Contractor* is responsible for removing any excavated material from the site which cannot be redistributed within the working area.
3. The *Contractor* is responsible for all, permits, permissions and costs associated with removal and disposal of surplus material.

WI 228 Reinstatement

1. The works area, in particular the grassed compounded areas, adjacent to the boat yard shall be reinstated in their preconstruction condition.
2. The *Contractor* shall seed any bare soil patches within the works area behind the revetment using Mixture 4, CESWI 2.56, point 1.

WI 300 Contractor's design

WI 301 Design responsibility

1. The Contractor is not required to design any elements of the scheme.

WI 400 Completion

WI 401 Completion definition

1. The following are absolute requirement for Completion to be certified, without these items, the *Employer* is unable to use the works:
 - The whole of the *works* has been completed in accordance with the Works Information.
 - There are no Defects that prevent safe access and operation by the *Employer*.
 - There are no Defects that present a health and safety hazard to the public or landowners.
 - 1 paper copy and 1 electronic copy of the final Health and Safety File.
 - 1 hard copy of As Built drawings and one electronic version

WI 402 Access to information following Completion

1. The *Contractor* shall provide all information relevant to the works to the *Project Manager* following completion. The *Contractor* shall retain copies of all information for inspection by the *Project Manager* for the duration of the contract liability period.
2. The *Contractor* shall retain a copy of all design records, software code, supplier's details and other relevant information for a period of at least 12 years following Completion and shall make these available to the *Employer* on request.

WI 403 Final Clean

1. The *Contractor* shall leave the site in a clean, tidy condition and having removed all temporary structures, equipment, plant and materials.

WI 404 Security

1. All existing landowner security arrangements shall be reinstated upon completion unless agreed otherwise. The *Contractor* shall ensure that landowner security is maintained at a similar level to that which currently exists on the site during the implementation of the works.

WI 405 Pre-Completion arrangements

1. Prior to any works being offered for takeover or Completion the *Contractor* shall arrange a joint inspection with the *Supervisor*, *Project Manager* and the *Employer*.
2. The initial inspection shall take place a minimum of three weeks in advance of the planned Completion.

WI 500 Programme

WI 501 Programme Requirements

1. The *Contractor* shall programme the revetment construction works to make best use of tidal working periods so as to minimise the exposure of underlayers to unfavourable sea conditions.

WI 502 Revised Programmes

1. Submission of revised programmes shall be accompanied with a written explanation of the changes.

WI 600 Quality Assurance

WI 601 Samples

1. Concrete cube samples shall be required to verify the strength of the concrete. The procedure shall be in line with the minimum technical standards (4.9).

WI 602 Quality Statement

1. The *Contractor* shall submit his quality statement for the works to the *Project Manager* within 4 weeks of the starting date.

WI 603 Quality management system

1. The *Contractor's* quality management system shall comply with the requirements of ISO 9001 and ISO 14001.

WI 700 Tests and inspections

1. At the commencement of the armour stone placement, the *Contractor* shall be required by the *Supervisor* to construct a test section of the structure which shall be used to demonstrate the quality of placing of armour stone for all layers, for approval by the *Supervisor*. See Appendix B, section 4.3 for further details.
2. No revetment layer shall be covered by a subsequent layer until the profile of the former layer has been approved by the *Supervisor*. See Appendix B, section 4.5 for further details.
3. Upon completion of the works the *Contractor* will undertake a level survey of the revetment for acceptance by the *Supervisor*. See Appendix B, section 4.8 for further details.
4. The *Contractor* shall keep daily photographic records of all works carries out. All structures, pipework, formation levels, construction materials etc buried shall be photographed prior and during burying operations.

WI 800 Management of the works

WI 801 Project team - Others

1. Refer to Contract Data for details.

WI 802 Communications

1. No additional requirements to those stated in the MTR

WI 900 Working with the *Employer* and Others

WI 901 Sharing the Working Areas with the *Employer* and Others

1. The *Contractor* is required to co-operate with Others in sharing the working areas they need in connection with the works.
2. Statutory bodies (the local planning authority, MMO, Natural England etc.) may arrive at site unannounced to assess whether the *works* are being implemented within the conditions of the granted consent. The *Contractor* shall co-operate with any reasonable requests and share the working area.

WI 1000 Services and other things to be provided

WI 1001 Services and other things for the use of the *Employer*, *Project Manager* or *Others*

1. The details of services and other things for the use of the *Employer*, *Project Manager* or Others to be provided by the *Contractor* are listed in the Environment Agency Minimum Technical Requirements (1.2)
2. The *Contractor* is responsible for obtaining all temporary service connections required for the duration of the works, including power, water, gas and telecommunications. Where no fixed connection is to be used, the *Contractor* is responsible for making alternative arrangements. In the case of sewerage for instance, the *Contractor* is responsible for safely disposing of any waste generated if no connection to a public sewer is available.

WI 1002 Services and other things to be provided by the *Employer*

1. The *Employer* is responsible for the following: -
 - Obtaining permission from the landowner to use the site for the purposes of the *works*. The *Contractor* should not approach any landowner directly unless authorised to do so by the *Employer*.
 - Obtaining Marine Management Organisation consent for the *works*.
 - Giving the *Contractor* access to the site. The *Contractor* must give 5 working days' notice to the *Employer* to gain access to the site during the defects correction period.

WI 1100 Health and safety

WI 1101 Health and safety requirements

1. The *Contractor* shall comply with all applicable legislation for the health, safety and welfare of his people or any other person in or near the Site of the *works*.
2. The *Contractor* copies to the *Project Manager* into all correspondence with the *Principal Designer*.
3. The *Contractor* shall fulfil the role of Principal Contractor under the Construction Design and Management Regulations 2015 for the duration of the works.

Toolbox talks

1. The *Contractor* provides regular toolbox talks to site personnel to ensure that health and safety issues, the requirements of the contract and the design and the contents of method statements are communicated throughout the site team.

Incident reporting

1. The *Contractor* shall provide a written report within 21 days of the incident, unless otherwise agreed with the *Project Manager*.

First Aid

1. The *Contractor* shall provide first aid facilities; Materials and personnel trained in first aid, for the benefit of his own people, those of his Subcontractors and the site staff of the Project Manager, Supervisor and Employer.

Provision of Life Saving Equipment

1. The majority of the works will be undertaken immediately adjacent to water. Lifesaving equipment will be provided to the satisfaction of the *Project Manager*.

WI 1102 Method statements

1. The *Contractor* shall submit Method Statements to the *Project Manager* at least two weeks in advance of carrying out items of work including proposed method of forming the revetment profiles indicated on the drawings.
2. The Contractor shall not commence any permanent works until the *Project Manager* has approved in writing the *Contractor's* working methods for forming the works.
3. The *Contractor* provides the works in accordance with the accepted method statement.

WI 1103 Legal requirements

1. The Principal Contractor duties under the CDM Regulations 2015 shall be undertaken by the *Contractor*.
2. The Principal Designer duties under the CDM Regulations 2015 shall be undertaken by the *Employer's* consultant- Arcadis.
3. The Client duties under the CDM Regulations 2015 shall be undertaken by the *Employer*.

WI 1104 Inspections

1. The *Contractor* shall provide a competent health and safety officer whilst *works* are being carried out on the Site.

2. The *Contractor's* health and safety officer carries out weekly audits of the Site and submits copies of audit reports and proposed remedial actions to the *Supervisor* prior to the end of the following week.
3. The *Employer* may carry out site audits. The *Contractor* assists in these audits and complies with any recommendations made during such audits.

WI 1200 Subcontracting

1. The *Contractor* is responsible for all the work.

WI 1300 Title

1. Not required.

WI 1400 Acceptance or procurement produce (Option C, D, E and F)

1. Not required.

WI 1500 Accounts and records (Options C, D, E & F)

1. Not required.

WI 1600 Parent company guarantee (Option X4)

1. Not required.

WI 1700 Performance Bond (Option X13)

1. Not required.

WI 1800 Advance payment bond (Option X14)

1. Not required.

WI 1900 Low Performance damages (Option X17)

1. Not required.

WI 2000 *Employer's work specifications and drawings.*

WI 2100 *Employer's work specification*

1. The *Employer's* minimum technical requirements are the Civil Engineering Specification for the Water Industry (CESWI), 7th Edition, supplemented by the Environment Agency's Minimum Technical Requirements (EA MTR). See Appendix A.
2. The Specification for Highway Works (SHW) standards are applicable where it is referenced in the Works Information.
3. The General Specification for the rock revetment is The Rock Manual – The Use of Rock in Hydraulic Engineering 2nd Edition (CIRIA C683) 2007. This is supplemented by additional clauses contained within the Particular Rock Revetment Specification. See Appendix B.
4. In so far as any information contained within the Works Information (including the Works Specification) may conflict or be inconsistent with any provision of CESWI 7 and/or the EA MTR then the particular information contained within the Works Information shall always prevail.
5. CEWSI & EA MTR clauses should be read as those clauses which are applicable to works apply and those that are not relevant should be ignored. E.g. Clause **2.102: Precast Concrete Box Culverts** is not applicable as it is not shown on the drawings and not mentioned in the Works Information. Therefore, text relating to those clauses in CEWSI & EA MTR should be ignored. However, if the design is modified during construction to include works for such an item, the clause should be adhered to.
6. The following reports and specifications form a part of the Works Information:
 - Appendix A - Employer's Minimum Technical Requirements- (EA MTR)
 - Appendix B - Rock Revetment Specification

N.B. It is assumed the *Contractor* will have access to CESWI 7 and other industry standard references made within the Works Information and hence will not be distributed as part of the Contract Documents.

WI 2200 *Drawings*

1. The following drawings form a part of the Works Information:
 - UA008878-ARC-XX-XX-DR-CE-0200-P1-PorthlooSitePlan
 - UA008878-ARC-XX-XX-DR-CE-0220-P4-PorthlooRevetmentPlan
 - UA008878-ARC-XX-XX-DR-CE-0221-P5-PorthlooSectionSheet1
 - UA008878-ARC-XX-XX-DR-CE-0222-P5-PorthlooSectionsSheet2
 - UA008878-ARC-XX-XX-DR-CE-0223-P4-PorthlooSectionsSheet3
 - UA008878-ARC-XX-XX-DR-CE-0230-P1-PorthlooRetainingWallGA
 - UA008878-ARC-XX-XX-DR-CE-0231-P1-PortLooRetainingWallRC

APPENDIX A

**EMPLOYER'S MINIMUM TECHNICAL REQUIREMENTS-
EA MTR**

DRAFT

APPENDIX B

ROCK REVETMENT SPECIFICATION

DRAFT

Health & Safety - Designer's Hazard Record**Project Title**

Isles of Scilly Flood Defence and Dune Management Project – Porth Loo

Project CodeUA008878-ARC-XX-XX-
HS-CE-0261-P2**Assessment Coverage:**

The installation of a 110m rock armour revetment along the northern half of Porth Loo beach

1. Scope of Commission and Assessment of Coverage:

The embankment along the northern half of Porth Loo beach is susceptible to erosion and overtopping during storm events. The loss of the embankment would lead to undermining of the road; would increase coastal flooding risk to properties and the boat yard as well increase the vulnerability of Lower Moors SSSI to saline intrusion.

Modelling of the water levels and wave environment has been undertaken for the Isles of Scilly to identify the 1 in 200-yr return events for Porth Loo beach. The modelling results have been utilised in the design of the rock armour revetment and the production of design drawings accordingly.

2. Brief Description of the Works:

1. Carry out a walkover of the site and conduct a visual inspection of the existing conditions along the beach.
2. Design of a rock revetment, to provide protection for a 1:200-yr joint probability event.
3. Installation of new rock armour in accordance with the design to provide protection for the existing embankment

3. Key Risk Reduction measures taken during design process:

1. Hazard markers added to drawings to identify know utility services or other known hazards.

4. Significant Project Specific Hazards Remaining:

- A. Working adjacent to water. Risk that access or egress could be cut off. Working in an exposed location which could expose works area to wave/storm events.
- B. Soft & unstable ground. Risk excavations within tidal zone could flood and become unstable. Beach material likely to contain soft spots that could cause issues for machinery, especially during high tides.
- C. Public Beach. Risk of public entering the works area
- D. Services. There is an existing outfall located on the beach which is believed to be discontinued but unconfirmed.
- E. Unstable armour stone. Risk rocks may be unstable when initial placed. Rocks should be placed by a machine and their stability ensured before operative's approach
- F! Porth Loo SSSI. Cliff and foreshore designated a Site of Special Scientific Interest. Works shall not impact upon designation.

5. Specific Construction Requirements

1. Site access and works will be tide dependant and should be via the slipway in the boat yard (subject to approval).

2. Neither machinery or foot traffic is to pass over the existing embankment to avoid further degradation.
3. At no time are the works to affect the ability for stop logs to be deployed across the slipway when required.

6. Means by which significant hazards conveyed to contractors and others:

1. Hazard markers added to drawings

Date of Review	
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Assessed by:

Name G. McDonnell Signature _____ Date 27/09/17

Reviewed by:

Name Ian Cooke Signature _____ Date 27/09/2017



Health & Safety - Designer's Hazard Record

Project Code/Doc No:

UA008878-ARC-XX-XX-HS-CE-0261-P2

Project Title:

Isles of Scilly Flood Defence and Dune Management Project – Porth Loo

Assessor (Name):

Gary McDonnell

Assessor (Signature):

Date:

27/09/17

Revision:

P2

Ref	Activity & Hazard	Level of Risk (optional)	Design Input to Eliminate or Reduce Hazards, and Hazards Remaining	Residual Hazard?
A	Working adjacent to water – machinery could be cut off & possibility of inundation of the site due to wave action		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
B	Soft & unstable ground – risk of machinery overturning		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks	Yes
C	Public beach – risk of public entering the works area.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
D	Services – existing manholes on the beach. Other services may be present.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risks.	Yes
E	Unstable rock armour – rocks may be unstable when initial placed. Rocks should be placed by a machine and their stability ensured before operative's approach.		This is an unavoidable consequence of the works and contractor is to mitigate the associated risk.	Yes
F	Porth Loo SSSI- Works shall not impact upon designation		This is an unavoidable consequence of the works and contractor is to mitigate the associated risk.	Yes