



# **Kishorn Dry Dock Abutment Maintenance Marine Licence Supporting Document**



**Report No. 132\_REP\_01\_1**

**Date: 02/05/2024**



## Document Control

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**Effective Date:** 02/05/2024

Revision No:	Signature	Comments	Date
1A	[Redacted]	Internal review	21/04/2024
1B	[Redacted]	Client review, comments received	23/04/2024
1C	[Redacted]	Client comment amendments	30/04/2024
1	[Redacted]	For issue to regulator	02/05/2024



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## 1 Introduction

This Supporting Document has been produced on behalf of Kishorn Port Limited (KPL), to support the Marine Licence application for the proposed dry dock abutment maintenance works.

The purpose of this report is to ensure that an appropriate level of information is provided to allow the licence to be determined, whilst demonstrating compliance with the legal framework and policies in Scotland.

This report provides a description of:

- The location of the proposed development;
- The proposed development and construction methodology;
- Relevant marine policies and how the project aligns with them;
- Environmental sensitivities;
- Potential environmental effects; and
- Mitigation in place to minimise any negative effects on the environment.

## 2 Project Overview

### 2.1 Location and Background

Kishorn Port (National Grid Reference (NGR): NG 8174 3991) is located near the head of Loch Kishorn (Drawing 55.01) and lies 8 kilometres (km) west of the village of Lochcarron along the A896. Kishorn Port falls within the Community Council boundary of Lochcarron. The dry dock area itself is situated within the northeast of the port, with the abutments located on the coastal frontage, supporting the dry dock gates.

Initially developed in the 1970s, Kishorn Yard was used to serve as a construction site for oil platforms to support the North Sea oil and gas industry. In 2008, Ferguson Transport & Shipping and Leiths established a joint venture, KPL, to re-generate Kishorn Yard and Dry Dock. Further developments have seen the emergence of Kishorn Port as a location suited to the provision of essential shipping and logistics services, oil, and gas support, as well as providing high-quality aggregates as a result of the creation of Kishorn Quarry.

After many years of disuse, KPL commissioned a contract to assess the operational abilities of the dry dock in 2017. Following the required upgrades, a licence was applied for and granted to permit the breaking of shipping vessels at Kishorn Yard. This has facilitated the inclusion of Kishorn Port on the European List of Approved Ship Recycling Facilities. Kishorn Dry Dock has gained recognition for its decommissioning capabilities and has received a number of enquiries from companies within the renewable energy sector to support the move towards net zero. The dry dock has become a key offering for KPL, and as such, in 2021 KPL gained consent to extend the dry dock to accommodate larger structures and vessels.

### 2.2 Development Description

The front of the dry dock consists of two abutments (an eastern abutment of 35 metres (m) in length and a western abutment of 25m in length) and two dry dock caisson gates. The width of each abutment is approximately 11m giving ample room for vehicular access. The abutments are faced with steel sheet piling, secured in place with waling and tie rods (as shown

in the Plan View in Drawing 2000-802A), and infilled with rock. An existing concrete facing is in place at the lowest point of the abutments (-8m chart datum (CD)) to -4.1m CD. The sheet piles are showing signs of degradation including corrosion and delamination, which will lead to a loss of structural integrity in time if left to continue to degrade.

In order to ensure the continuous structural integrity of the abutments, which are an integral part of the dry dock gates, KPL now needs to carry out this important maintenance work, thus ensuring that the dry dock can continue to be used as the one of port's key assets. The maintenance will consist of removing the build-up of sand against the existing concrete and sheet piles and refacing the abutments on both the landward and seaward side, with the use of concrete, reinforcing mesh and steel bars. This method means that the sheet piles will not need to be replaced as they corrode over time. Figures 2.1 and 2.2, provided by KPL, show the location of the dry dock abutments and the area requiring refacing, respectively.



Figure 2.1: Dry Dock Abutment Locations (KPL, 2024)

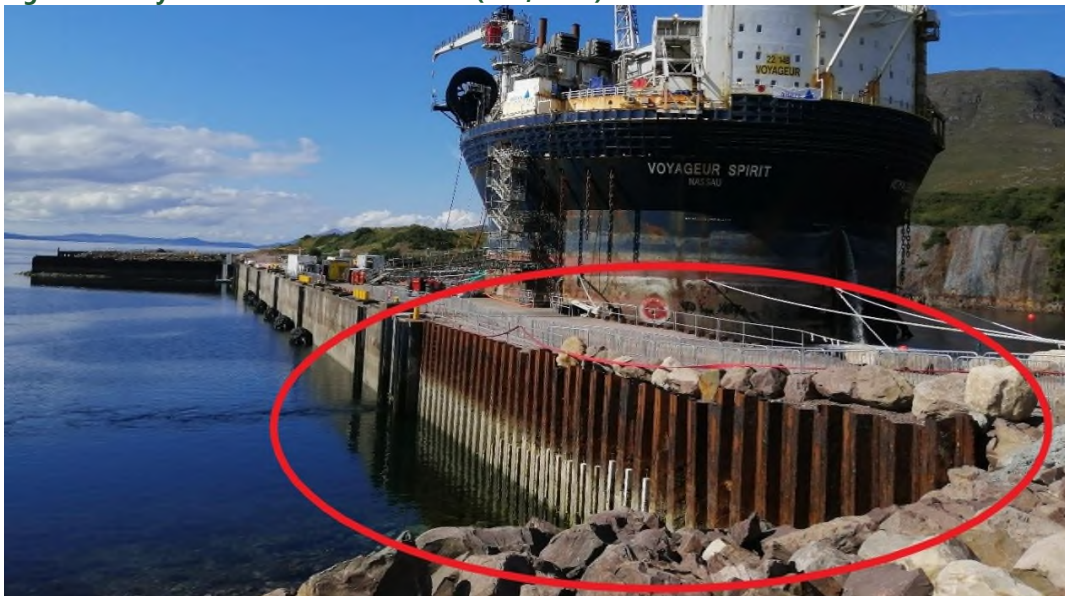


Figure 2.2: Area of Refacing Works Required. Photo shows the Easterly Abutment. (KPL, 2024)

Drawing 2000-901 illustrates the area of the works in relation to the site and the red line boundary for the purpose of this application.

### 2.3 Construction Methods

Where possible, works will be completed from the existing abutments using long-reach plant (as required). Discussions with KPL and reference to Drawing 2000-801A, Drawing 2000-802A and Drawing 2000-803A were used to gain an understanding of the construction methods described in this section.

Prior to the refacing works, any attached infrastructure and furniture will be removed from the abutments and lifted out of the abutment area by crane. Existing sheet piles will have any



corroded or de-laminated material removed down to sound steel. Where required, this will be completed by a combination of high-pressure jet washing, brushing, scraping and other suitable means. It is expected that there will be minimal corroded or scaled areas which need tended to prior to works, in part because wave action has already eroded surface materials. The refacing works will prevent any further corrosion from the sheet piles going forward.

Steel reinforcement bars and mesh will be placed and welded into position (Section B-B of Drawing 2000-803A depicts this) prior to a concrete pour to face the existing abutments. Fixing of the reinforcement bars, mesh and shuttering will be completed either from the abutments or via hyperbaric welding conducted by divers in the water for areas below the water level at the time of welding. Divers will enter the water and work from a man-riding basket lowered from a long-reach excavator located on the land.

The build-up of sand/gravel deposits against the existing concrete and sheet piles will be air uplifted to allow access and to create a stepped base for the installation of the shuttering to approximately 0.5m below the seabed. Elevation A (Outside) of Drawing 2000-801A illustrates this. Approximately 30m<sup>3</sup> of material will be air-uplifted which will be deposited on the adjacent seafloor for the duration of the concreting works.

Shuttering will be placed over the existing abutments, and the newly affixed mesh and reinforcement bars, to create an enclosed area to isolate the concrete works. Approximately 188m<sup>3</sup> of marine concrete will then be poured from a concrete skip into the shuttering. As marine concrete is denser than seawater, seawater will be forced up and out of the shuttering as the concrete fills the desired space. Upon completion, the concrete will sit approximately 0.5m below the seabed or on top of the existing concrete facing, in order to provide a stable foundation and prevent erosion. Redundant waling and tie rod ends will be encased in the concrete on the seaward side of the abutments, as shown in the Detail at Waling view on Drawing 2000-803A. Following the concrete pour, the bed profile will be reinstated using the air uplifted material to the same contour as previously exhibited.

A capping beam will also be installed atop the sheet piles and concrete facing, spanning the length of the refacing works. Timber shuttering will be installed to facilitate the required structure of the capping beam. It will be constructed of steel reinforcement bars welded in-situ and concrete, which will be poured into the shuttering to encase the reinforcement bars. Drawing 2000-803A provides detailed illustration of the capping beam.

Following concrete facing works, any attached infrastructure and furnishings will be relocated onto the newly instated concrete facing.

### **3 Statutory Context**

#### **3.1 Legislation**

Please note that this document and associated Marine Licence application will cover the works on the seaward side of the abutment, the onshore element of the work is classed as maintenance and hence do not require planning consent.

### 3.1.1 Marine (Scotland) Act 2010

Under the Marine (Scotland) Act 2010 activities listed in Part 4, Section 21 of the Act require a Marine Licence issued by the Marine Directorate Licensing Operations Team (MD-LOT). The maintenance works below Mean High Water Springs (MHWS) fall under paragraph 5:

*To construct, alter or improve any works within the Scottish marine area either—*  
*(a) in or over the sea, or*  
*(b) on or under the seabed*

Accordingly, the seaward side of the dry dock abutments will require a Marine Construction Licence.

### 3.1.2 The Habitats Directive and Habitats Regulations

The European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (commonly known as 'The Habitats Directive'), led to the establishment of European Sites and European Protected Species (EPS). The Habitats Directive is transposed into Scottish law via the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland) (commonly known as the 'Habitat Regulations').

The Habitats Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade EPS (i.e. animals listed in Schedule 2). However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Relevant EPS to this project are otter (*Lutra lutra*) and cetaceans, which are discussed in further detail in Section 4.2.4: Otter and 4.2.2 Marine Mammals (respectively).

In addition, The Habitats Regulations determines that, if a plan or project could affect a European Site (i.e. any Special Protection Area (SPA), Special Area of Conservation (SAC), candidate SAC (cSAC), Marine Protection Area (MPA) or proposed MPA (pMPA)), then there are certain considerations that must be made before the proposal can proceed. In particular, Regulation 48 of the Habitats Regulations dictates that any plan or project, which may result in a 'Likely Significant Effect' (LSE) to any qualifying interest(s) or feature(s) associated with a European Site (either alone or in combination with other plans or projects), and is not directly connected with or necessary to the management of the site, shall be subject to an Appropriate Assessment (AA). The AA must demonstrate that the proposal will not adversely affect the integrity of the European Site. Where required, it is the responsibility of the competent authority to carry out a Habitats Regulation Assessment (HRA) based on robust, scientific information provided by the project developer, to determine whether there will be any LSE. If no LSE is anticipated, it is likely that an AA will not be required.

It is understood that the proposed dry dock abutment maintenance works are not directly connected with, or necessary to the management of, any European Site. We consider the information provided within this Environmental Supporting Document, (in particular Section: 4.1 Designated Sites and Section 4.2: Biodiversity), to be sufficient evidence to show that there are unlikely to be any adverse effects to qualifying interests or features of any European Sites, which could impact upon the conservation objectives. However, it is noted that it is not the role of the developer to make an assessment on whether the proposal will have an adverse effect on any qualifying interest(s) or feature(s) associated with European Sites, and that this should be determined by the competent authority.



### 3.2 Policy

As the project is partly below MHWS and within 12 nautical miles (nm) of the Scottish Coastline, it falls within the remit of the Marine (Scotland) Act 2010. The 2015 Scottish National Marine Plan (NMP) covering inshore waters is a requirement of the Act. The NMP lays out the Scottish Minister's policies for the sustainable development of Scotland's seas and provides General Planning Principles (GENs), some of which apply to this development, as presented in Table 3.2.

**Table 3.2: Applicable Scottish National Marine Plan GENs (Marine Scotland, 2015)**

General Planning Principles	Requirements	Kishorn Abutments Considerations
GEN 2: Economic benefits	Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.	KPL provides direct and indirect employment within the local community and wider area. The maintenance of the dry dock safeguards employment and continues to provide local economic benefit.
GEN 4: Co-existence	Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision-making processes, when consistent with the policies and objectives of the Plan.	The dry dock maintenance activities will not affect other activities in the local area.
GEN 7: Landscape/seascape	Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape, and visual impacts into account.	The maintenance of the existing structure will give rise to minimal change to the seascape.
GEN 8: Coastal process and flooding	Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.	This development will make the dry dock abutments more resilient to coastal processes by ensuring that they are appropriately maintained, whilst not impacting the existing coastal processes or contributing to coastal flooding.
GEN 9: Natural Heritage	Development and use of the marine environment must: <ul style="list-style-type: none"> <li>(a) Comply with legal requirements for protected areas and protected species; and</li> <li>(b) Not result in a significant impact on the national status of Priority Marine Features (PMF).</li> </ul> Protect and, where appropriate, enhance the health of the marine area.	Designated sites and PMF identified in the local area have been considered in Section 4: Baseline.  These considerations are discussed further in Section 5: Environmental Effects, but in summary the proposed works are highly unlikely to give rise to any significant impacts to any protected species or habitats.

General Planning Principles	Requirements	Kishorn Abutments Considerations
GEN 10: Invasive non-native species	Opportunities to reduce the introduction of invasive non-native species (INNS) to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made.	This development will take all reasonable action to prevent the likelihood of the introduction of INNS. Mitigation for INNS is included in Section 6: Mitigation.
GEN 13: Noise	Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.	The proposed development is not expected to have an adverse effect on sensitive species. Mitigation will be implemented to reduce man-made noise, see Section 6: Mitigation.

## 4 Baseline

### 4.1 Designated Sites

Table 4.1 details the Statutory Nature Conservation Designation Sites of MPAs, Sites of Special Scientific Interest (SSSI), SPAs, SACs and Nature Reserve sites within 20km of the proposed development (NatureScot, 2024). Table 4.1 identifies the sites most likely to be affected by the development, due to their location and/or associated designated features. Those highlighted in grey are considered unlikely to be affected by the proposed works. No SPAs or Nature Reserves were found within 20km of the proposed development, and thus are not considered in Table 4.1.

**Table 4.1: Statutory Nature Conservation Designations within 20km of the Development Site**

Site	Designation	Distance and Direction	Designated Feature Category/Feature	Requires Consideration?
Beinn Bahn	SSSI	1.05km N	Tall herb ledge and upland assemblage.	No. Lack of connectivity to both abutments due to immobile species and localised effects of works and thus not considered.
	SAC		Acidic scree, alpine and subalpine heaths, dry heaths, montane acidic grasslands, plants in crevices on acidic rocks, tall herb communities and wet heathland with cross-leaved heath ( <i>Erica tetralix</i> ).	
Loch Carron	MPA	2.69km WSW	Flame shell ( <i>Limaria hians</i> ) beds and maerl ( <i>Phymatolithon calcareum</i> ) beds.	No. There is a lack of connectivity between the construction activities involved in the marine works and this MPA due to the localised works and the considerable distance and topography. The nearest feature (flame shell bed) is located approximately 3km away (National Marine Plan Interactive (NMPi), 2024). In addition, mitigation measures will be implemented to minimise effects on water quality (see Section 6.2: Biodiversity) which will in turn prevent water quality-related effects on designated features of the MPA.
Rassal	SSSI	3.87km NE	Bryophyte assemblage, flies, lichen assemblage, limestone pavement, moine, subalpine calcareous grassland, upland assemblage, upland mixed ash ( <i>Fraxinus</i> sp.) woodland and wood pasture and parkland.	No. Lack of connectivity due to immobile species and localised effects of works and thus not considered.
	SAC		Alpine and subalpine calcareous grasslands, base-rich fens, hard-water springs depositing lime, limestone pavements, mixed woodland on base-rich soils associated with rocky slopes, mountain	

Site	Designation	Distance and Direction	Designated Feature Category/Feature	Requires Consideration?
			willow ( <i>Salix monticola</i> ) scrub and plants in crevices on base-rich rocks.	
Inner Hebrides and the Minches	SAC	3.88km WSW, 16.4km S & 16.9km N	Harbour porpoise ( <i>Phocoena phocoena</i> ).	Yes. The mobile feature harbour porpoise has the potential to be in Loch Kishorn at the time of the works; considered further in Section 5: Environmental Effects under marine mammals.
Allt nan Carnan	SSSI	8.65km E	Upland birch ( <i>Betula</i> sp.) woodland.	No. This site is too far from the development to be affected and the qualifying features are immobile, thus, there is a lack of connectivity.
Coille Mhor	SSSI	9.85km S	Dragonfly assemblage, oligotrophic loch and upland oak ( <i>Quercus</i> sp.) woodland.	No. Dragonfly are mobile species but only have a range of up to 1.5km (British Dragonfly Society, 2024). This site is too far from the works to be affected. Immobile features are too from the development to be affected.
	SAC		Western acidic oak woodland.	
Doire Damh	SSSI	11.4km NE	Upland oak woodland.	No. This site is too far from the works with no mobile features to be affected.

Site	Designation	Distance and Direction	Designated Feature Category/Feature	Requires Consideration?
Loch Maree Complex	SAC	11.4 – 18.7km NE	Acidic scree, alder ( <i>Alnus</i> sp.) woodland on floodplains, alpine and subalpine heaths, blanket bog, bog woodland, Caledonian forest, clear-water lakes, or lochs with aquatic vegetation and poor to moderate nutrient levels, depressions on peat substrates, dry heaths, montane acidic grasslands, otter ( <i>Lutra lutra</i> ), plants in crevices on acid and base-rich rocks, tall herb communities, western acidic oak woodland and wet heathland with cross-leaved heath.	Yes. The mobile feature otter has the potential to be nearby at the time of the works, considered further in Section 5.
Shieldaig Woods	SSSI	11.8km N	Beetles, bryophyte assemblage, flies, native pinewood ( <i>Pinus</i> sp.), upland birch woodland.	No. Beetles are mobile species, however, the qualifying feature of beetles at Shieldaig Woods are a native pinewood beetle species and are localised. The site does not offer suitable habitat and is too far from the works to be affected.
Lochs Duich, Long and Alsh (Reefs)	SAC	14.0km S 15.4km SE & 15.2km SW	Reefs.	No. There is a lack of connectivity between the maintenance activities involved in the marine works and this SAC and MPA due to the considerable distance. In addition, mitigation measures will be implemented to minimise effects on water quality (see Section 6.2: Biodiversity) which will in turn prevent any water quality-related effects on designated features.
	MPA		Burrowed mud and flame shell beds.	
Kinloch and Kyleakin Hills (Monadh Chaol)	SSSI	16.6km SSW	Alpine heath, blanket bog, bryophyte assemblage, otter, lichen assemblage, subalpine dry heath, subalpine wet heath, torridonian and upland oak woodland.	No. Immobile features are located a considerable distance away and there is therefore no connectivity. Although otters are mobile species, there is no connectivity between these sites and

Site	Designation	Distance and Direction	Designated Feature Category/Feature	Requires Consideration?
Acainn is (Cheann Loch)	SAC		Alpine and subalpine heaths, blanket bog, dry heaths, mixed woodland on base-rich soils associated with rocky slopes, otter, western acidic oak woodland and wet heathland with cross-leaved heath.	the area of development, given the lack of commuting habitat between the development and the designated site location on the Isle of Skye.
Abhainn Alligin	SSSI	18.4km N	Subalpine dry heath, tall herb ledge and upland mixed ash woodland.	No. Qualifying features are immobile species and as such, this site is too far from the development to be affected.
Ob Lusa to Ardnish	SSSI	18.5km SW	Hettangian, Sinemurian and Pliensbachian.	No. Qualifying features are immobile species and as such, this site is too far from the development to be affected.
Torridon Forest	SSSI	18.7km NE	Alpine heath, alpine moss heath and associated vegetation, beetles, mass movement, quaternary of Scotland, sawflies, wasps and ants, siliceous scree (includes boulder fields), spiders, subalpine calcareous grassland, subalpine dry heath and vascular plant assemblage.	No. Qualifying features are immobile species or have limited ranges and as such, this site is too far from the development to be affected.
Loch Maree	SPA	18.7km NE	Breeding black-throated diver ( <i>Gavia arctica</i> ).	No. There is a lack of connectivity between the qualifying interest and the development as there is a lack of suitable breeding habitat for black-throated diver. Additionally, the species are unlikely to range more than 10km from their nest site during the breeding season (Scottish Natural Heritage (SNH) (now NatureScot), 2016).



## 4.2 Biodiversity

In order to understand the ecological baseline of the KPL dry dock abutment site, a desk-based assessment was conducted. This included an assessment of the ecological features which may be utilising or present within the proposed development area and surrounding waters.

The following data sources have been consulted:

- NatureScot SiteLink Portal (NatureScot, 2024);
- National Biodiversity Network (NBN) Atlas (2024);
- The UK PMF list (Tyler-Walters *et al.*, 2016.);
- Scotland's Environment Map (Scotland's Environment, 2024);
- NMPi (Marine Scotland, 2024);
- Hebridean Whale and Dolphin Trust (HWDT) Sightings Map (HWDT, 2024);
- Existing site survey data; and
- A variety of relevant literature and government publications.

### 4.2.1 Benthic Ecology

Rocky coastline surrounding the dry dock supports a number of macroalgal species including bladderwrack (*Fucus vesiculosus*), channelled wrack (*Pelvetia canaliculate*), spiral wrack (*Fucus spiralis*) and serrated wrack (*Fucus serratus*) (Dalglish Associates Ltd., 2013), none of which are afforded protection under the Wildlife and Countryside Act 1981 (as amended) (WCA).

The nearby Loch Carron MPA affords protection to flame shell beds and maerl beds (NatureScot, 2024), which are PMFs.

Although not a designated site, the following shellfish, invertebrates, and intertidal/shelf habitat PMFs are found within the limits of Loch Kishorn (Marine Scotland, 2024):

- Burrowed mud;
- Kelp beds;
- Kelp and seaweed communities on sublittoral sediment;
- Tide swept coarse sands with burrowing bivalves;
- Native oysters (*Ostrea edulis*);
- Northern feather star (*Leptometra celtica*); and
- Ocean quahog (*Arctica Islandica*).

The majority of the above PMFs are considered as habitats, meaning that they are fixed in a location. Ocean quahog and Northern feather star are classified as low or limited mobility species, making it unlikely that the recorded populations would migrate to the dry dock area. The typical depths for ocean quahog are deeper than 10m, and northern feather stars can be found at 20m in some sheltered areas although typically they are found much deeper (Tyler-Walters *et al.*, 2016). It is unlikely that the depths of the dry dock abutments (-8m CD at the lowest point) could support Ocean quahog or Northern feather star communities.

Of the above list of PMFs, with the exception of burrowed mud and native oyster, all features are recorded in locations near Kishorn Island, approximately 1.6km to the Southeast of the dry dock at the extremity of Loch Kishorn. The closest burrowed mud record observed on NMPi shows it to be 550m from the abutments. Native oyster is classified as both a species and a broad habitat type, the shells provide substrata for a variety of marine species, such as sea

squirts, sponges, polychaete worms, and starfish, to name a few. The native oyster layer on NMPi covers a large portion of the West coast of Scotland, including Loch Kishorn.

#### 4.2.2 Marine Mammals

As well as the designated harbour porpoise discussed in Table 4.1, short-beaked common dolphin (*Delphinus delphis*) have also been recorded on the HWDT Sightings Map (HWDT, 2024) and the NBN Atlas, within a 10km buffer of the Kishorn Port. The area has potential to be utilised by a variety of marine mammal species.

Kishorn Island and the Strome Islands are designated as a seal haul-out site (under the Protection of Seals (Designation of Haul-Out Sites) (Scotland) 2014 Order 2014). This haul-out site is over 1.5km from the westernmost point of the dry dock abutments.

#### 4.2.3 Fish Species

A total of 54 fish species have been recorded within a 10km radius of the proposed development (NBN Atlas, 2024). Records on NBN Atlas show that Atlantic salmon (*Salmo salar*) are present in Loch Kishorn and the surrounding area which may indicate that Loch Kishorn is a migratory pathway for Atlantic salmon. Further to this, the Atlantic salmon layer on NMPi indicates that Atlantic salmon are present in River Kishorn, and “likely present” in Allt Mòr, which flows into the North of Loch Kishorn. While the River Kishorn is currently ungraded on the Scottish Government’s salmon fishing grading publication, the nearby River Carron is set as a Grade 2 (Scottish Government, 2024), indicating that it has a 60-80% probability of meeting its conservation limit over a five-year period.

Other fish species which are classified as PMFs that are recorded as being present in Loch Kishorn on NMPi’s “[species] distribution in Scotland’s seas” map layers include:

- Whiting (*Merlangius merlangus*);
- Saithe (*Pollachium virens*);
- Mackerel (*Scomber scombrus*);
- Ling (*Molva molva*);
- Horse Mackerel (*Trachurus trachurus*);
- Cod (*Gadus morhua*);
- Sandy Ray (*Leucoraja circularis*);
- Porbeagle Shark (*Lamna nasus*);
- Spiny dogfish (*Squalus acanthias*);
- Flapper skate (*Dipturus intermedia*);
- Blue skate (*Dipturus batis*); and
- Sandeels (*Ammodytes spp*).

Scotland’s Environment Map (Scotland’s Environment, 2024) was used to establish the presence of aquaculture sites on Loch Kishorn. There are four active aquaculture sites operating on Loch Kishorn, including two finfish sites and two shellfish sites. The two finfish farms are operated by Scottish Sea Farms Limited which farm Atlantic salmon, lumpsucker (*Cyclopterus lumpus*) and wrasse (*Labrus spp*). One of the shellfish farms is operated by Seafield Oysters harvests native and Pacific oysters ((*Ostrea edulis* and *Magallana gigas*, respectively), the other shellfish farm is operated by Loch Kishorn Oysters which harvests Pacific oysters only. The Northeast of Loch Kishorn is designated as a shellfish water protected area by the Food

Standards Scotland (FSS) for the production of common mussels (*Mytilus edulis*) and Pacific oysters.

#### **4.2.4 Otter** [Redacted]

As part of the dry dock extension (as discussed in Section 2.1: Location and Background), included a pre-construction PSS, including the abutment maintenance area and species specific buffer zones, was carried out on the 17<sup>th</sup> of April 2024 by competent and experienced ecologists. One fresh spraint and two old spraints were identified on the dry dock gate; however, no resting sites were identified in the nearby area of the abutment maintenance works.

#### **4.2.5 Terrestrial**

The Environmental Impact Assessment (EIA) Addendum for the dry dock extension assessed ornithological species present around the dry dock area (Affric Limited, 2020). Bird species were recorded during site visits in October 2011, November 2012, and March 2013. A total of 29 species were identified, 11 of those species on the Birds of Conservation Concern (BoCC) 3 Amber List and 4 species on the BoCC3 Red List. Within a 5km radius of the proposed development, 131 bird species have been recorded (NBN Atlas, 2024). A single Statutory Nature Conservation Designation within 20km of the Development Site was designated for the ornithological qualifying interests (Table 4.1). However, there is a lack of connectivity between the qualifying interest (black-throated diver) and the port, as there is a lack of suitable breeding habitat for divers within the vicinity of the port (Affric Limited, 2020) and black-throated diver do not generally range at distances greater than 10km (SNH, 2016). Furthermore, although nesting birds may utilise a variety of different substrates as nest types, the abutment maintenance area itself is not considered an important site for breeding bird species. Nonetheless, it is possible that a low number of nesting birds may be present within the dry dock and abutments area of Kishorn Port during breeding bird season (typically March-September).

An ecological survey conducted in 2019 identified evidence of badger (*Meles meles*) in three locations of the Kishorn Quarry and Kishorn Yard boundary (which includes the dry dock area). The identification of three badger setts in rocky areas was recorded, albeit not within or close to the dry dock (Direct Ecology, 2020). During the same survey, pine marten (*Martes martes*) presence was also recorded on-site, namely a scat and anecdotal evidence from port workers. No den was found in or around the dry dock area during the survey (Direct Ecology, 2020).

The pre-construction PSS for the dry dock extension as mentioned above, which included the abutment maintenance area, was carried out on the 17<sup>th</sup> April 2024 by a competent and experienced ecologist. No evidence of badger or pine marten was found during the survey. No evidence of breeding birds within the area of the abutment maintenance works was identified (Affric Limited, 2024).

#### **4.2.6 Invasive Non-Native Species**

To date, there has been no comprehensive survey conducted for INNS in Scottish waters. As such, data on INNS in Scotland is mostly based on incidental finds, records from monitoring programmes, or targeted local surveillance following an INNS report.

The Scottish Marine Assessment, produced by Marine Scotland in 2020, summarises the known occurrence of non-native species (NNS) in Scottish waters across Scottish Marine Regions (SMRs). Within the report NNS are classified as High, Medium, Low or Unknown-Impact species, based on their likelihood to impact upon biodiversity classification status under the Water Framework Directive (WFD). The assessment determined the West Highlands SMR to be a “region of many concerns.” Within Loch Kishorn, the INNS Japanese wireweed (*Sargassum muticum*) is recorded on NMPi at the western boundary of Kishorn Island. This is approximately 1.6km southeast of the proposed abutment works.

#### **4.3 Water Quality**

The most recent WFD classification record, from 2022, afforded “good” overall status to Loch Kishorn (Scottish Environment Protection Agency (SEPA), 2022).

The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) licences are in operation for the aquaculture sites present on Loch Kishorn for marine cage discharge, abstractions and wellboat activity. Residential and commercial premises have CAR licences for sewage and treatment systems. Four public sewage emergency overflow CAR licences are in place for Scottish Water, all of which are at the northern end of Loch Kishorn, in Courthill, Sanachan, Ardarroch and Achintraid.

## 5 Environmental Effects

Environmental receptors of the proposed dry dock abutment maintenance works, and potential effects of the construction phase, have been considered. Potential impacts were identified using the source, pathway, receptor approach, as outlined in Table 5.1.

**Table 5.1: Potential Environmental Effects Resulting from Construction Activity**

Source	Sensitivities	Potential Effect
Partial cleaning of existing sheet piles.	<ul style="list-style-type: none"> <li>Water quality.</li> </ul>	Removal of corroded or scaled area of the sheet piles has the potential to result in a reduction in water quality, however the works are not anticipated to generate a significant volume of material which could have an effect. Mitigation to minimise materials entering the water column have been included in Section 6: Mitigation.
	<ul style="list-style-type: none"> <li>Marine biodiversity – fish, marine mammals, benthic ecology</li> <li>Otter.</li> </ul>	Disturbance may arise as a result of noise associated with jet washing and the presence of divers in the water, however it is unlikely that noise sensitive ecological receptors would be in close enough proximity to be affected. The dry dock area does not offer optimal habitat for fish, marine mammals, or otter. Material generated from the cleaning of the piles may enter the water column and has the potential to settle on the seabed though no benthic communities or PMFs have been identified within the immediate area of the proposed works and the area of seabed is likely to be an already disturbed area due to the nature of the site.
Installation of steel reinforcement bars and mesh.	<ul style="list-style-type: none"> <li>Marine biodiversity – fish, marine mammals.</li> <li>Otter</li> </ul>	Disturbance may arise as a result of noise associated with welding and the presence of divers in the water, however noise levels associated with underwater welding are not anticipated to cause significant disturbance. As noted above, the immediate area of the dry dock does not offer optimal habitat for sensitive ecological receptors.
Installation of shuttering.	<ul style="list-style-type: none"> <li>Benthic ecology.</li> </ul>	Physical harm/mortality of benthic organisms and an area of permanent habitat loss of approximately 60m <sup>2</sup> in the footprint of the works is expected to occur. This area is proportionally very small and localised and is not significant in terms of Loch Kishorn as a whole. The area has also been previously disturbed by works during the 1970's. The installation of shuttering is not anticipated to affect any PMFs located a considerable distance away.

Source	Sensitivities	Potential Effect
Airlifting of sand/gravel deposits from seabed.	<ul style="list-style-type: none"> <li>• Water quality;</li> <li>• Benthic ecology; and</li> <li>• Fish.</li> </ul>	Sedimentation associated with seabed disturbance has the potential to result in a temporary reduction in local water quality, due to suspended solids, which in turn can affect sensitive ecological receptors. However, this is not anticipated to be significant, due to the relatively small scale and localised nature of the works. It is therefore not expected that there will be any impacts on fish or benthic ecology in the wider area.
	<ul style="list-style-type: none"> <li>• Benthic ecology.</li> </ul>	A small area of temporary habitat loss for benthic organisms while the airlifted deposits are out of situ, however no benthic communities or PMFs have been identified within the immediate area of the proposed works.
Storage, mixing and washing of marine concrete.	<ul style="list-style-type: none"> <li>• Water quality.</li> </ul>	Washing of residual concrete from skips accidentally released into the marine environment has the potential to cause temporary sediment loading of the water column, however concrete washing will be carried out in a dedicated area, away from the marine environment. Additionally, it would not be expected that the relatively small volumes of material, and therefore resultant washings, would not cause a significant effect. Mitigation measures will also be implemented to minimise the risk of washings being released into the marine environment (see Section 6: Mitigation).
Pouring of marine concrete.	<ul style="list-style-type: none"> <li>• Water quality; and</li> <li>• Benthic ecology.</li> </ul>	Concrete is a corrosive material and will be used in designated areas only, though it should be noted that specific marine concrete is to be used. In the unlikely event that there was an uncontrolled release in the marine environment, this could smother benthic communities and have an impact on water quality. However, no benthic communities or PMFs have been identified within the immediate vicinity of the dry dock and due to the weight of the concrete, it would be expected to drop out quickly and be contained to the area of the works.
Seabed reinstatement.	<ul style="list-style-type: none"> <li>• Water quality; and</li> <li>• Benthic ecology.</li> </ul>	Sedimentation associated with seabed disturbance has the potential to result in a temporary reduction in local water quality, due to additional suspended solids. However, the works cover a very small area and sedimentation is expected to be localised. As such, sedimentation levels will be low and unlikely to have a noticeable direct or indirect effect on sensitive ecological receptors.



Source	Sensitivities	Potential Effect
General works – use of plant and heavy machinery.	<ul style="list-style-type: none"> <li>• Water Quality;</li> <li>• Biodiversity – Benthic Ecology, Fish, Marine Mammals and Ornithological; and</li> <li>• Otter.</li> </ul>	The use of plant and machinery has the potential to cause a decrease in water quality due to any unplanned release of hydraulic oil, fuel, or construction material which can in turn have an effect on sensitive ecological receptors. It is, however, unlikely that there will be a spill of a magnitude that could noticeably reduce water quality or affect biodiversity due to the localised nature of the works. Standard construction site mitigation to prevent pollution will be employed see Section 6.1.
	<ul style="list-style-type: none"> <li>• Biodiversity – All.</li> </ul>	The use of plant and machinery in the marine environment has the potential to cause the spread of INNS, however it is expected that local plant will be used and will be cleaned prior to entering the water. INNS can also be introduced from vessels, though no vessels will be used in the maintenance works. KPL also have a biosecurity management plan where they follow procedures to prevent the spread of INNS.

## 6 Mitigation

### 6.1 Water Quality

When descaling the existing sheet piles, debris may enter the marine environment. Where possible, this will be collected and disposed of appropriately on-site. It is important to note that debris from pile degradation currently enters the water due to the persistent wave climate, and that the maintenance works will provide mitigation in preventing this going forward through refacing of the existing sheet piles and preventing further scaling or delamination.

A relatively small quantity of concrete is being poured ( $\sim 188\text{m}^3$ ) into the shuttered area. The density of the concrete means that, in the event of an accidental release, it would be expected to sink and not disperse from the works site. Nonetheless, appropriate mitigation will be taken to minimise the likelihood of concrete entering the marine environment, including assurance that all operatives are trained in concrete pouring operations and that shuttering is checked and any gaps filled.

Concrete washing will be carried out in a dedicated area, away from the marine environment and appropriately bunded. Washing arisings will be collected for onsite treatment. This will include settlement and, if required, pH correction. Where possible, the washings will be re-used on-site as grey water. The solids should be reused on site where possible and disposed of as solid waste where not required.

Bunded fuel, oil and chemical storage will be provided, and will be locked when not in use. In addition, refuelling will only be carried out away from the marine environment, by trained operatives following site refuelling procedures. Spill kits and oil booms will be available on-site to minimise the impact of any fuel or oil spillages that may arise from the plant associated with the maintenance works, and operatives will be trained in their use.

### 6.2 Biodiversity

Due to the evidence of otter near the dry dock, and the potential for birds to nest on site, environmental toolbox talks will be delivered to all operatives. This will ensure that everyone on-site is aware of the protection afforded to wildlife which may be impacted by the proposed abutment maintenance works. Additionally, pre-construction wildlife checks will be conducted prior to construction commencement, to ensure that no nesting birds or otter will be disturbed or injured by the maintenance works. If a previously undiscovered nest, holt, couch or layup is identified during construction, all works within disturbance distance must cease and advice will be sought from a suitably competent and experienced ecologist. An exclusion zone of at least 20m for birds nest and 30m from any holt, ouch or layup should be implemented until an ecologist has been consulted.

The majority of works will be conducted from land (on the abutments), so effects in the marine environment are expected to be limited. However, the air uplift of seabed sediment will be carried out underwater, though only in areas where sediment is required to be moved. This material will be reinstated at the earliest available opportunity to minimise impact on the seabed. Movements should also be limited to prevent excess sedimentation.

To minimise any disturbance to biodiversity caused by noise, machinery and plant will not be left to idle and will be switched off when not in use. Good maintenance of machinery and plant will be encouraged to stop any loose parts producing additional noise.

All plant and equipment brought to site will be free of material, to prevent the import of INNS from other sites to Kishorn Port. Any equipment which arrives to site carrying excessive sediment deposits will be returned to the supplier.

## 7 Conclusion

The maintenance of the KPL dry dock abutments is deemed critical to ensuring the longevity of the dry dock abutments, facilitating the continued use of the dry dock. Potential environmental impacts have been considered with relation to the dry dock abutment maintenance, and appropriate mitigation measures have been proposed to minimise the impact of the works on the surrounding environment.

It has been identified that there is potential ecological connectivity between the proposed works and two European Sites. In particular, potential ecological connectivity was identified with the population of harbour porpoise associated with the Inner Hebrides and the Minches SAC, and the population of otter associated with the Loch Maree Complex SAC. However, the localised scale and short duration of the project and appropriate mitigation is proposed to ensure that adverse effects to harbour porpoise and otter are minimised. It is not expected that there will be any adverse effects on either of these species that could impact upon the conservation objectives of either SAC.

In conclusion, with mitigation in place, the proposed KPL dry dock abutment maintenance works will have minimal adverse effects on the surrounding environment and will safeguard the longevity of the dry dock at Kishorn Port.

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## 9 Glossary

Acronym	Definition
AA	Appropriate Assessment
BOCC	Birds of Conservation Concern
CAR	The Water Environment (Controlled Activities) (Scotland) Regulations 2011
CD	Chart Datum
cSAC	Candidate Special Area of Conservation
EIA	Environmental Impact Assessment
EPS	European Protected Species
FSS	Food Standards Scotland
GEN	General Planning Principles
HRA	Habitat Regulations Assessment
HWDT	Hebridean Whale and Dolphin Trust
INNS	Invasive Non-Native Species
km	Kilometre
KPL	Kishorn Port Limited
LSE	Likely Significant Effect
m	Metres
MD-LOT	Marine Directorate Licensing Operations Team
MHWS	Mean High Water Springs
MPA	Marine Protected Areas
NBN	National Biodiversity Network
NGR	National Grid Reference
nm	Nautical Miles
NMP	National Marine Plan
NMPi	National Marine Plan Interactive
NNS	Non-Native Species
PMF	Priority Marine Feature
pMPA	Proposed Marine Protected Area
PSS	Protected Species Survey
SAC	Special Area of Conservation
SEPA	Scottish Environmental Protection Agency
SMR	Scottish Marine Regions
SNH	Scottish National Heritage
SPA	Special Protected Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act 1981 (as amended)
WFD	Water Framework Directive



## Drawings





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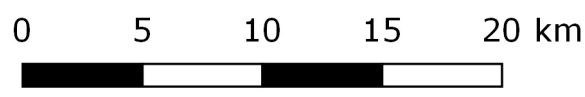
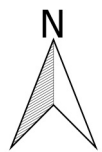
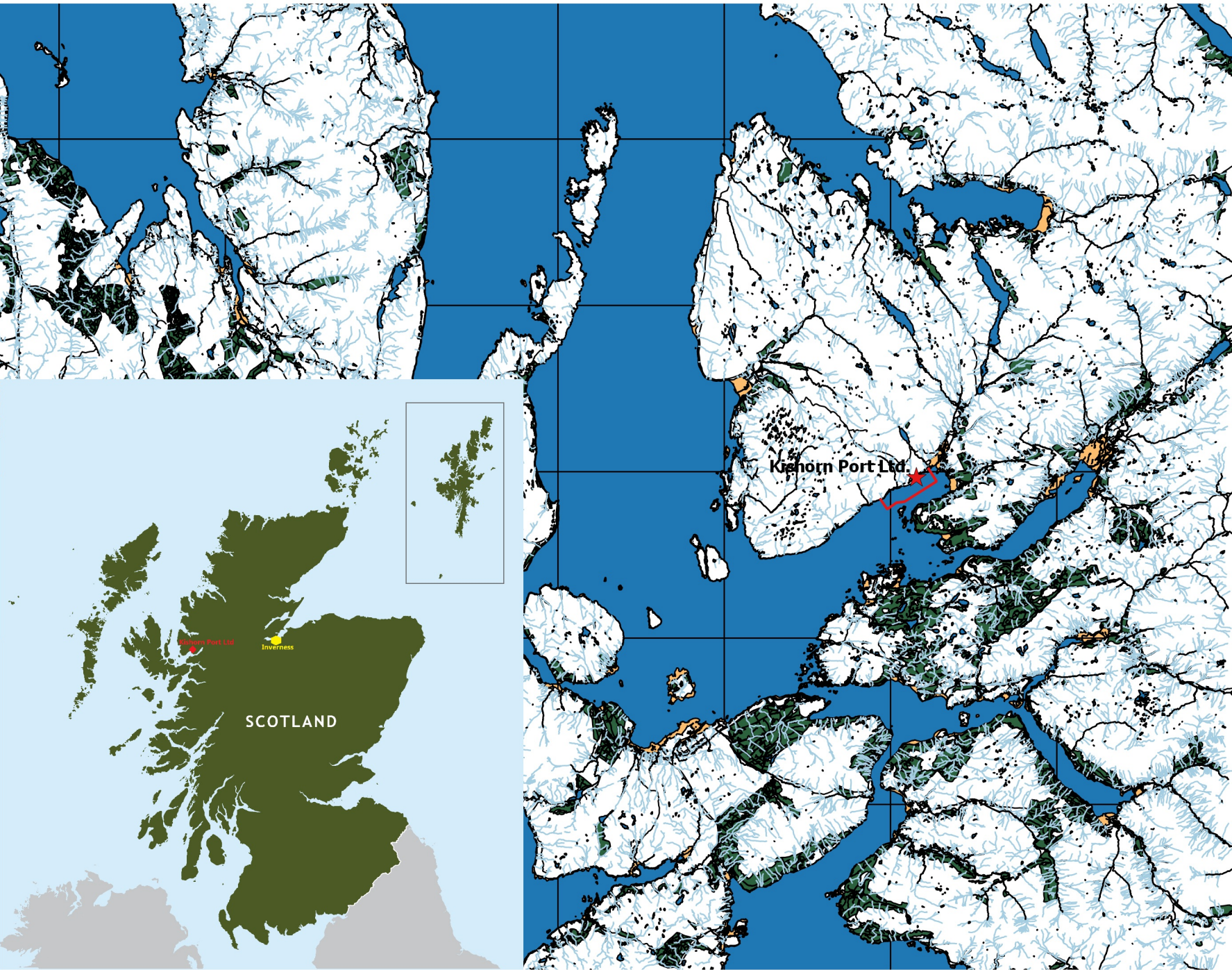
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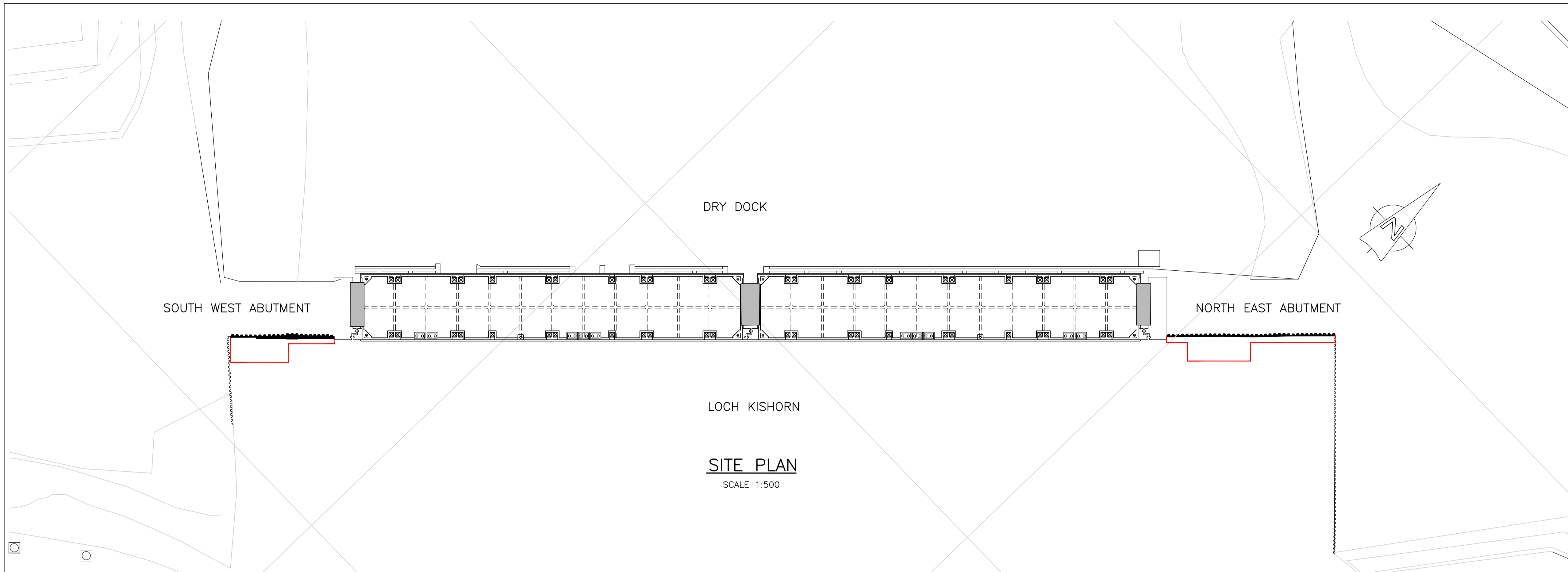
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- Tidal Water
- Road
- Woodland
- Kishorn Location
- Kishorn Red Crown Estate Lease





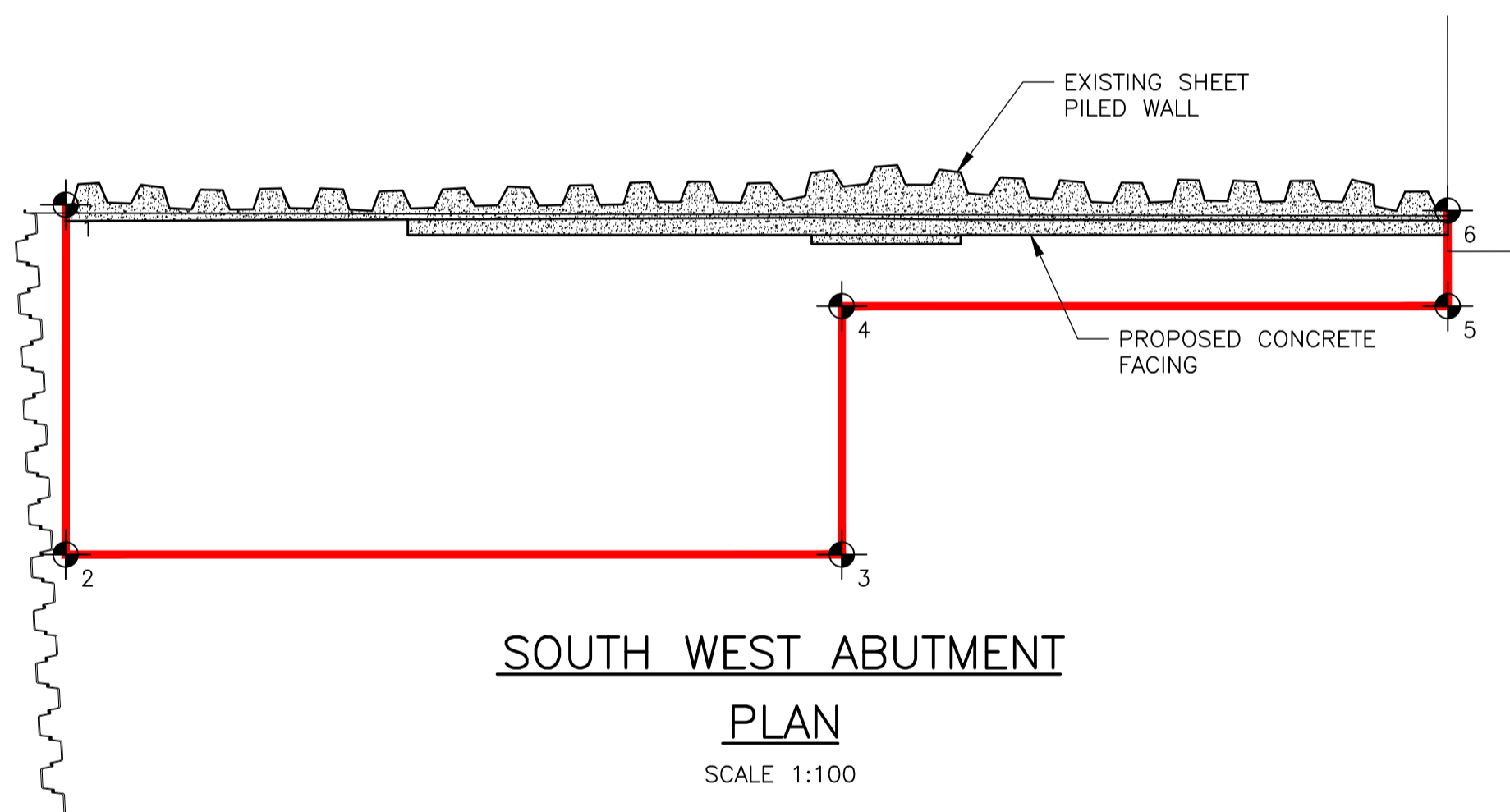




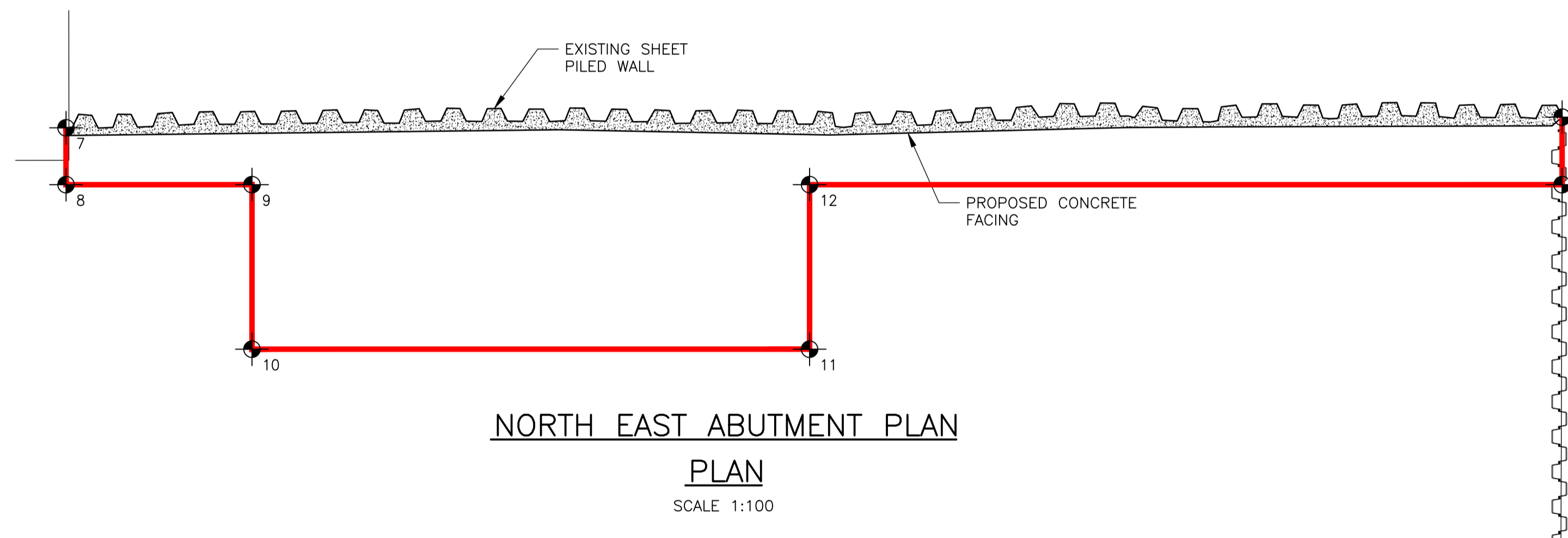


LOCH KISHORN

**SITE PLAN**  
SCALE 1:500



**SOUTH WEST ABUTMENT PLAN**  
SCALE 1:100



**NORTH EAST ABUTMENT PLAN**  
SCALE 1:100

MARINE LICENCE RED LINE BOUNDARY				
POINT	EASTING	NORTHING	LAT	LONG
1	181358.565	839415.779	57° 23.545'	-5° 38.406'
2	181362.616	839411.866	57° 23.543'	-5° 38.401'
3	181371.302	839420.860	57° 23.548'	-5° 38.393'
4	181368.425	839423.639	57° 23.550'	-5° 38.396'
5	181375.207	839430.661	57° 23.554'	-5° 38.390'
6	181374.098	839431.728	57° 23.554'	-5° 38.391'
7	181498.593	839561.050	57° 23.628'	-5° 38.274'
8	181499.588	839560.090	57° 23.627'	-5° 38.273'
9	181502.725	839563.339	57° 23.629'	-5° 38.270'
10	181505.603	839560.560	57° 23.627'	-5° 38.267'
11	181515.014	839570.306	57° 23.633'	-5° 38.258'
12	181512.137	839573.084	57° 23.634'	-5° 38.261'
13	181524.838	839586.236	57° 23.642'	-5° 38.249'
14	181523.658	839587.375	57° 23.642'	-5° 38.250'

GENERAL NOTES

1. ALL LEVELS ARE IN METRES RELATIVE TO CHART DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
3. MHWS +5.5mCD  
MLWS +0.9mCD  
OD +3.1mCD

MARINE LICENCE RED LINE BOUNDARY



**LOCATION PLAN**  
SCALE 1:50,000

REV	DATE	DETAILS	DRAWN	CHK'D	APP'D

AMENDMENTS

CLIENT  
**KISHORN PORT LTD**

PROJECT  
**KISHORN DRY DOCK REPAIRS**

**Wallace Stone**  
Consulting Civil Engineers

GLASGOW 0141 554 8233 glasgow@wallacestone.co.uk  
DINGWALL 01349 866775 dingwall@wallacestone.co.uk

HEBRIDES 01851 612454 hebrides@wallacestone.co.uk

DRAWING TITLE  
**PROPOSED CONCRETE FACING  
MARINE LICENCE BOUNDARY**

DRAWN JHG	CHECKED PM	APPROVED TR
DATE 24.04.24	DATE 24.04.24	DATE 24.04.24

SCALE (A1) AS SHOWN STAGE **CONSENTS**

REVISION									
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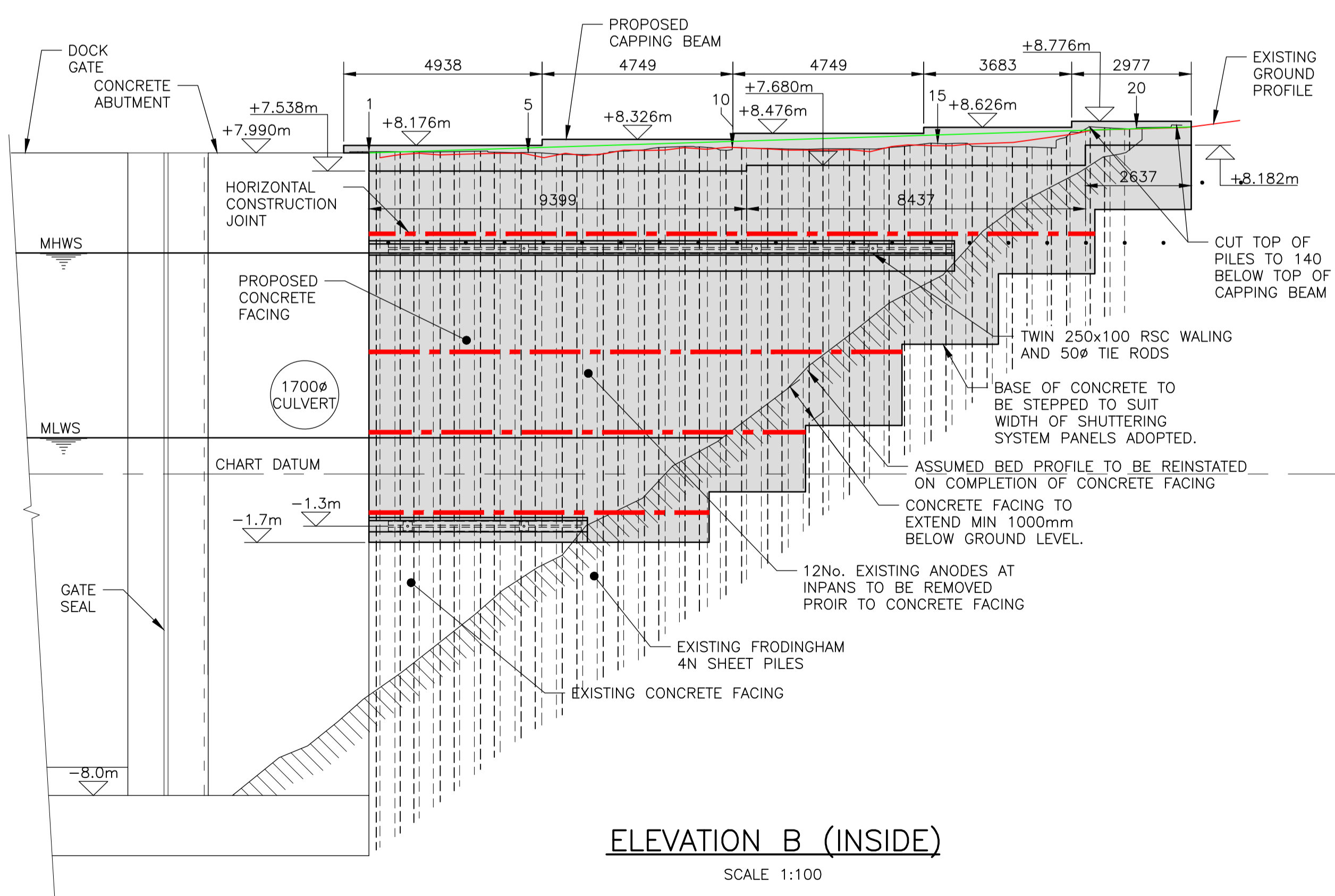
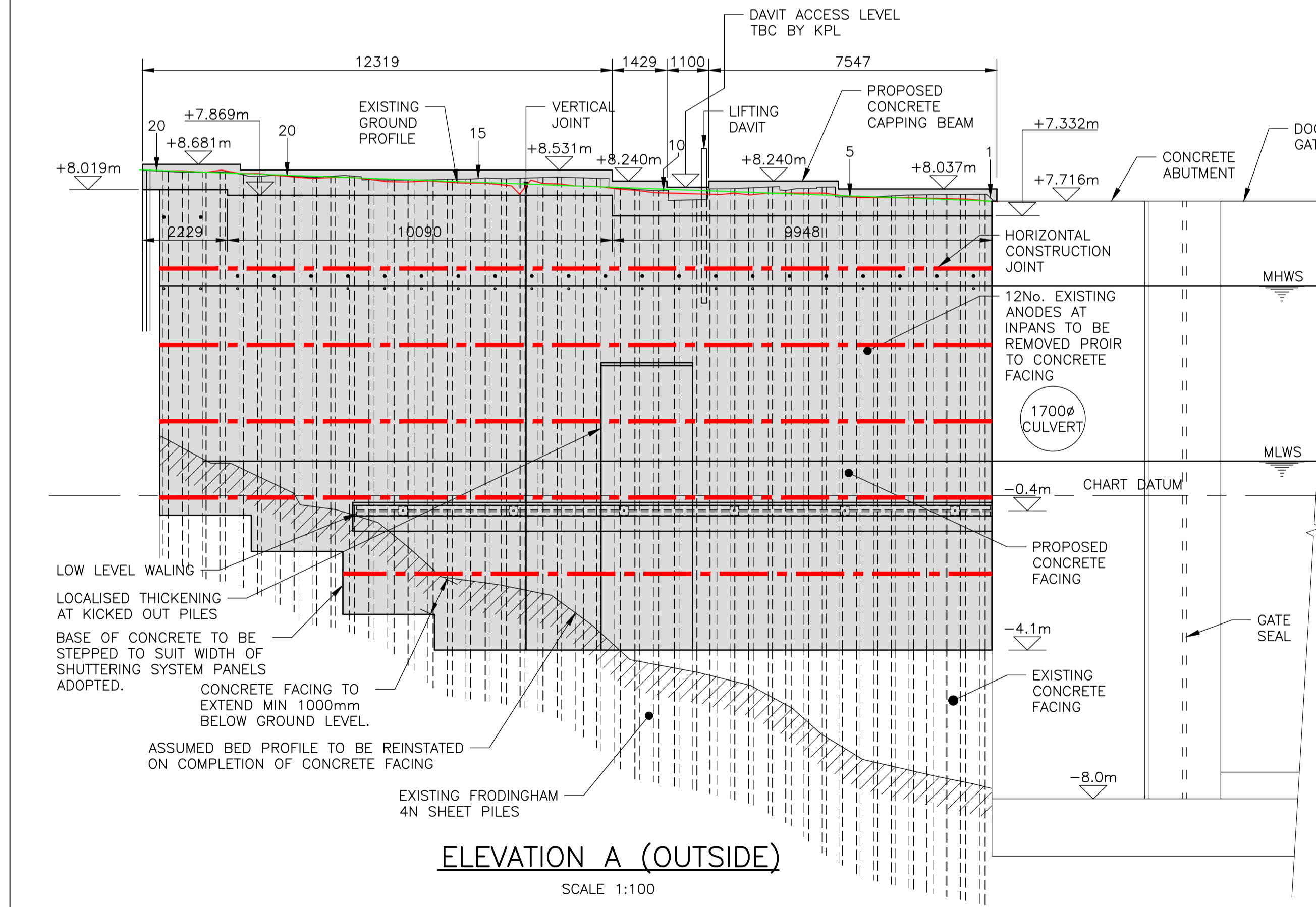
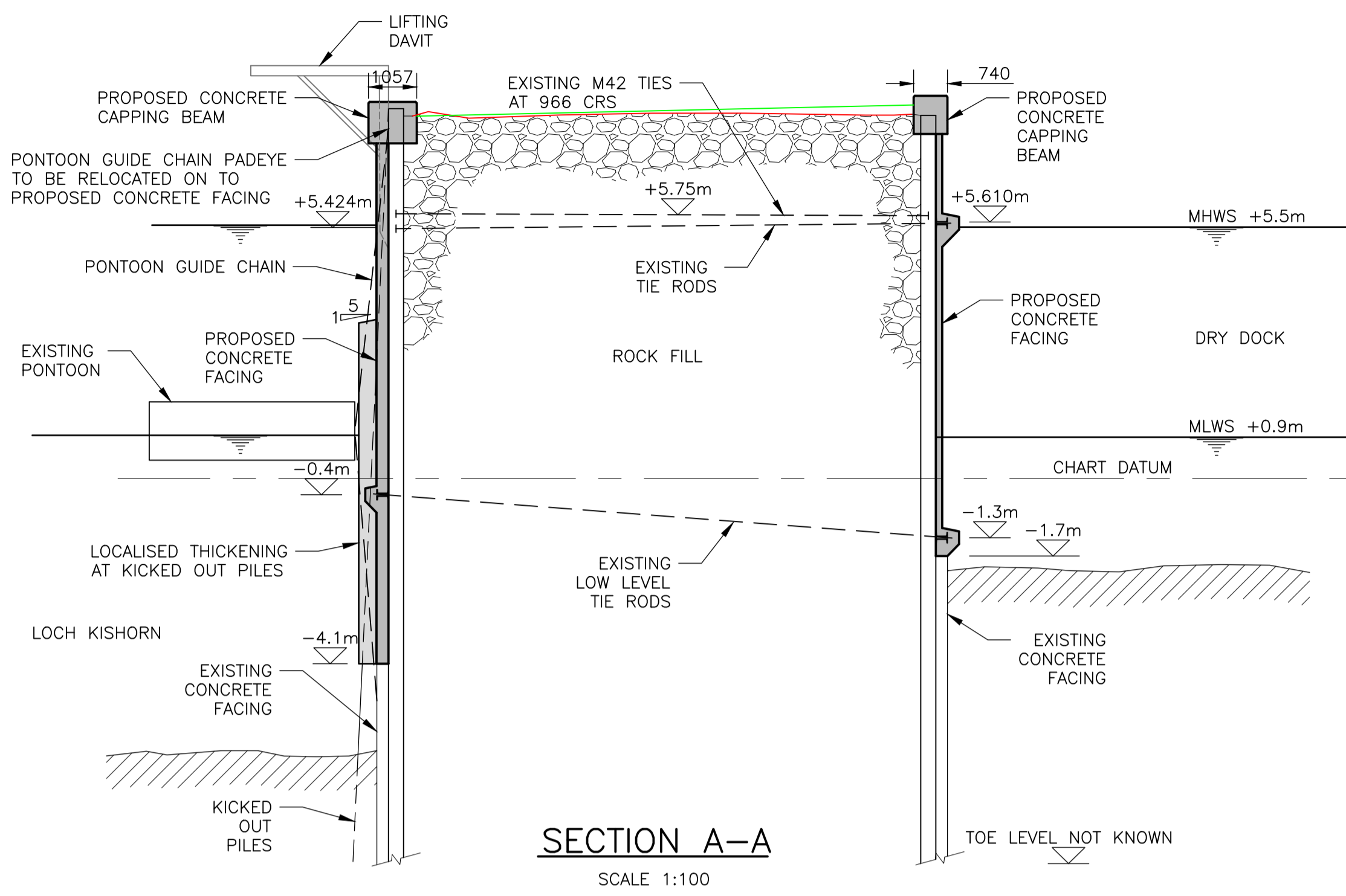
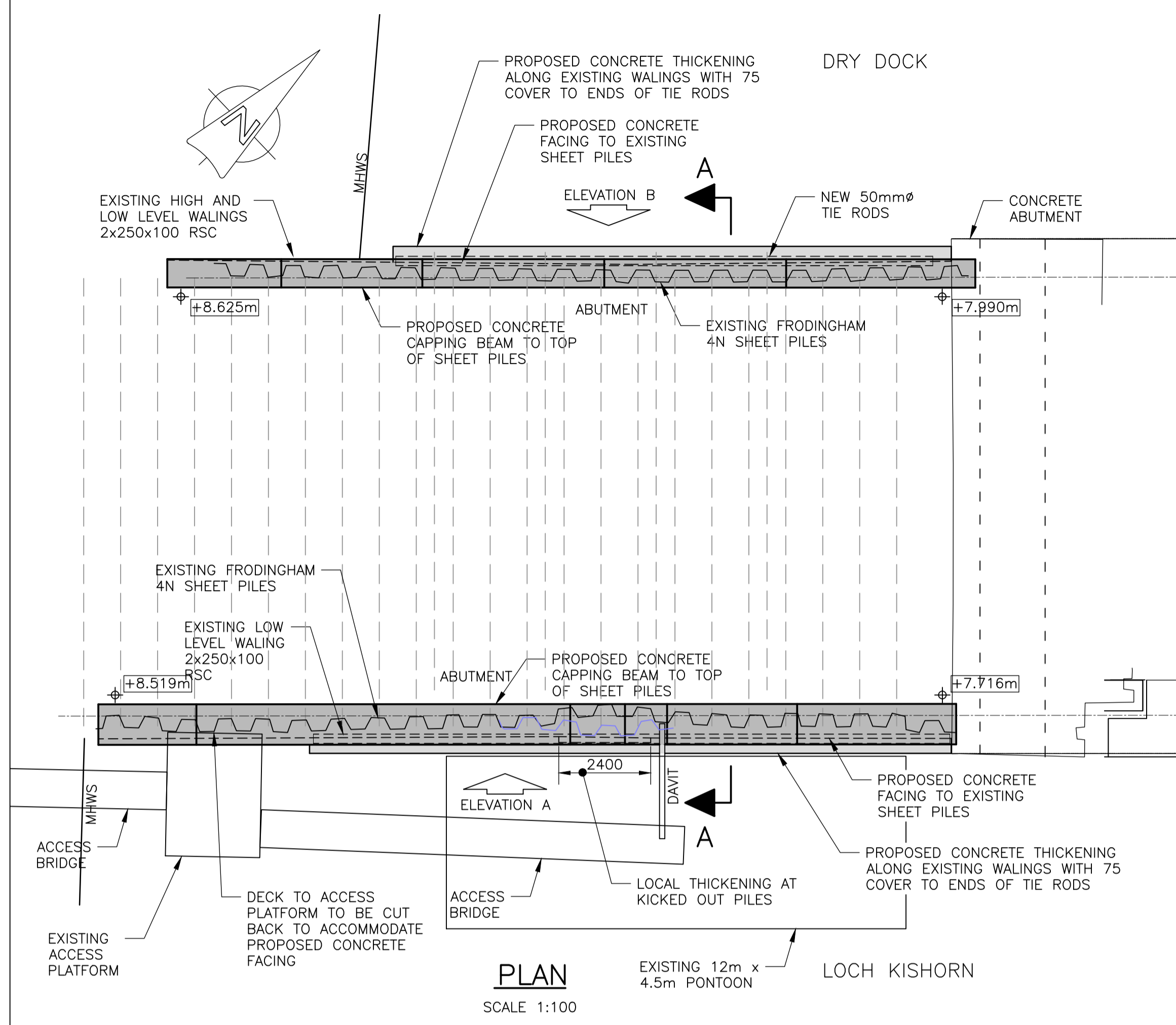


GENERAL NOTES

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2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
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OD +3.1mCD
4. FOR EAST APPROACH REMEDIAL DETAILS REFER TO DRAWING 2000/812
5. FOR CONCRETE FACING DETAILS REFER TO DRAWING 2000/803

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- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE
- - - HORIZONTAL CONSTRUCTION JOINTS, APPROXIMATELY AT 2m CENTRES VERTICALLY, AND TO SUIT WALING LEVELS



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AMENDMENTS

CUSTOMER: KISHORN PORT LTD

PROJECT: KISHORN DRY DOCK REPAIRS

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HEBRIDES 01851 612454  
hebrides@wallacestone.co.uk

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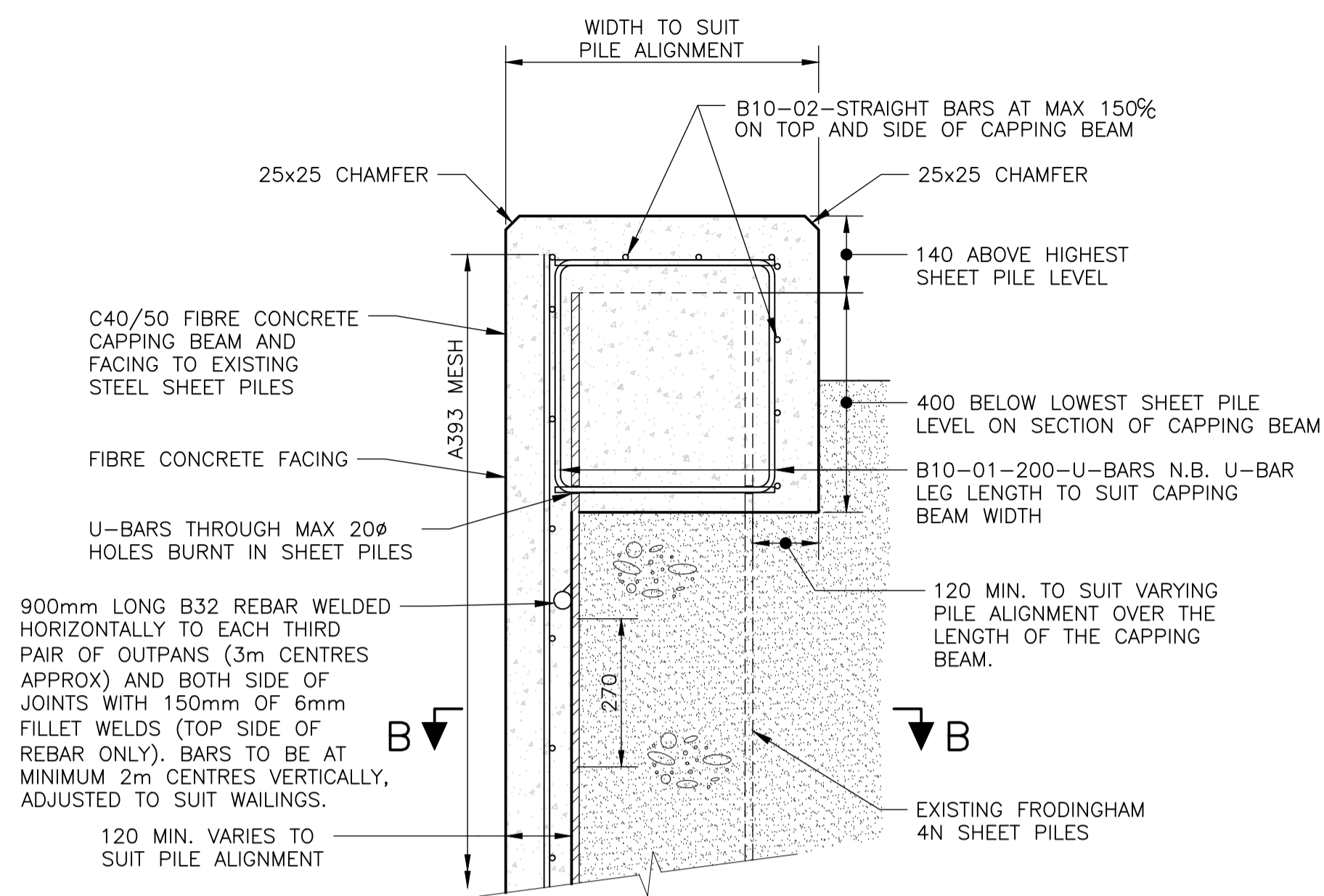
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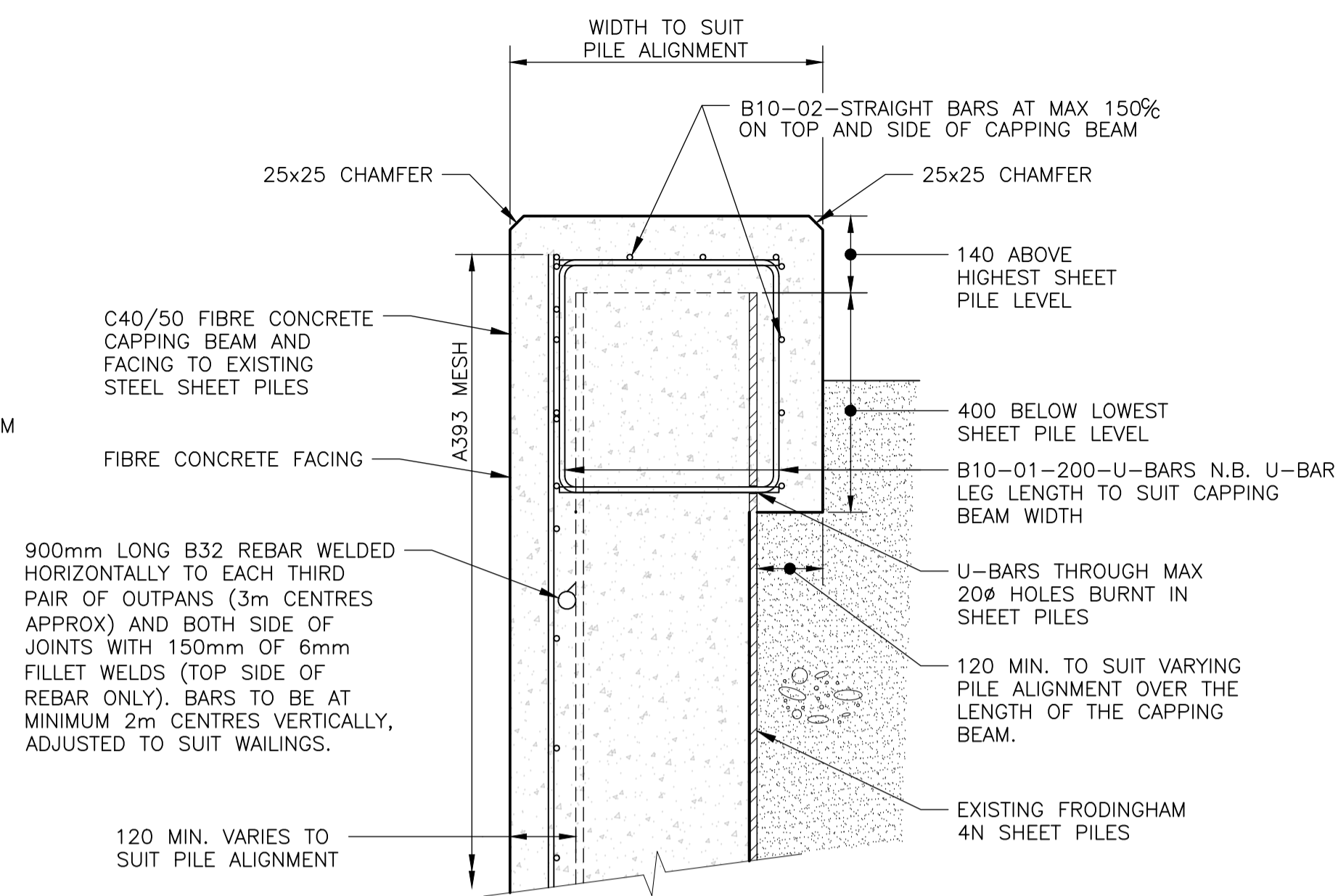
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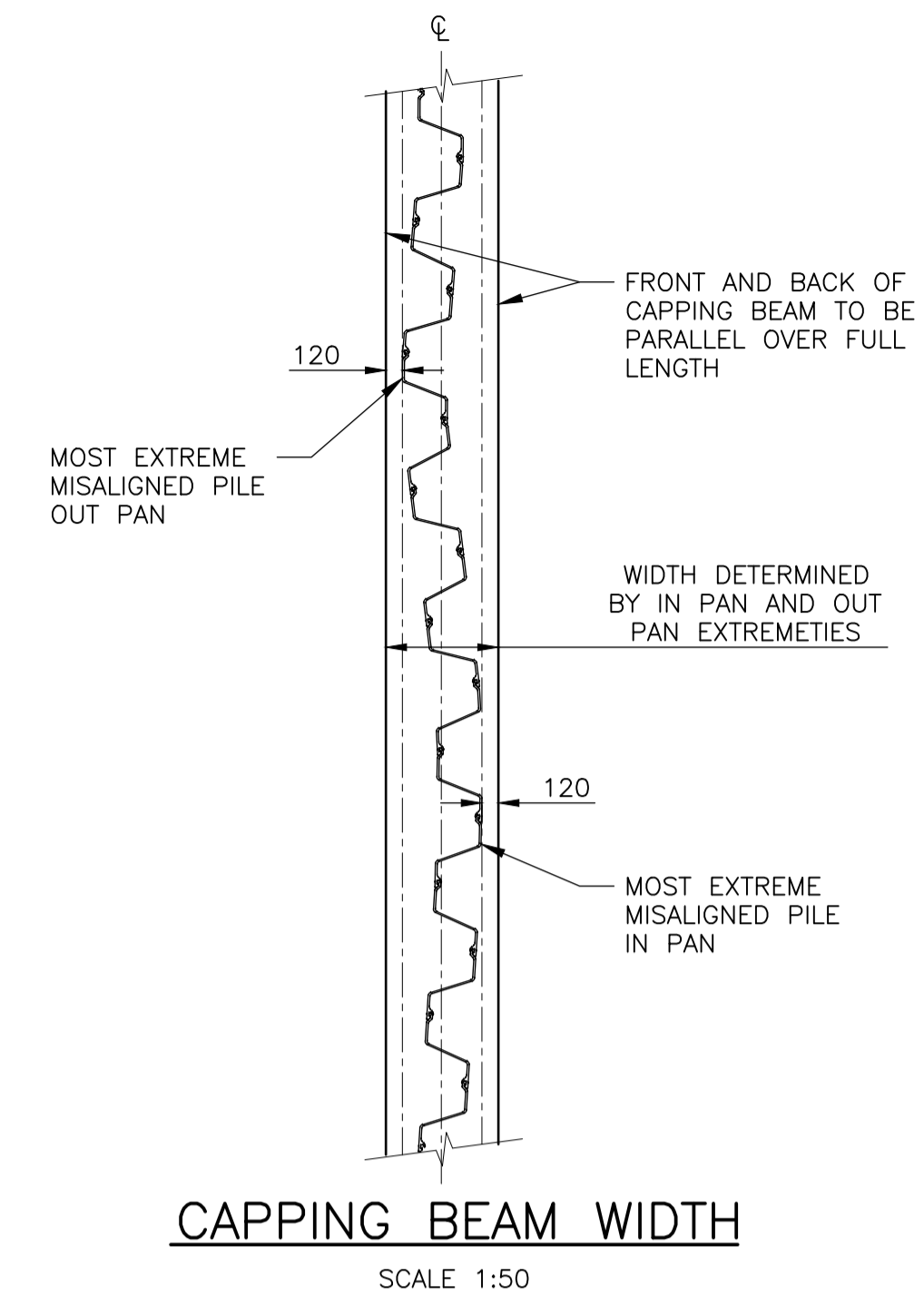




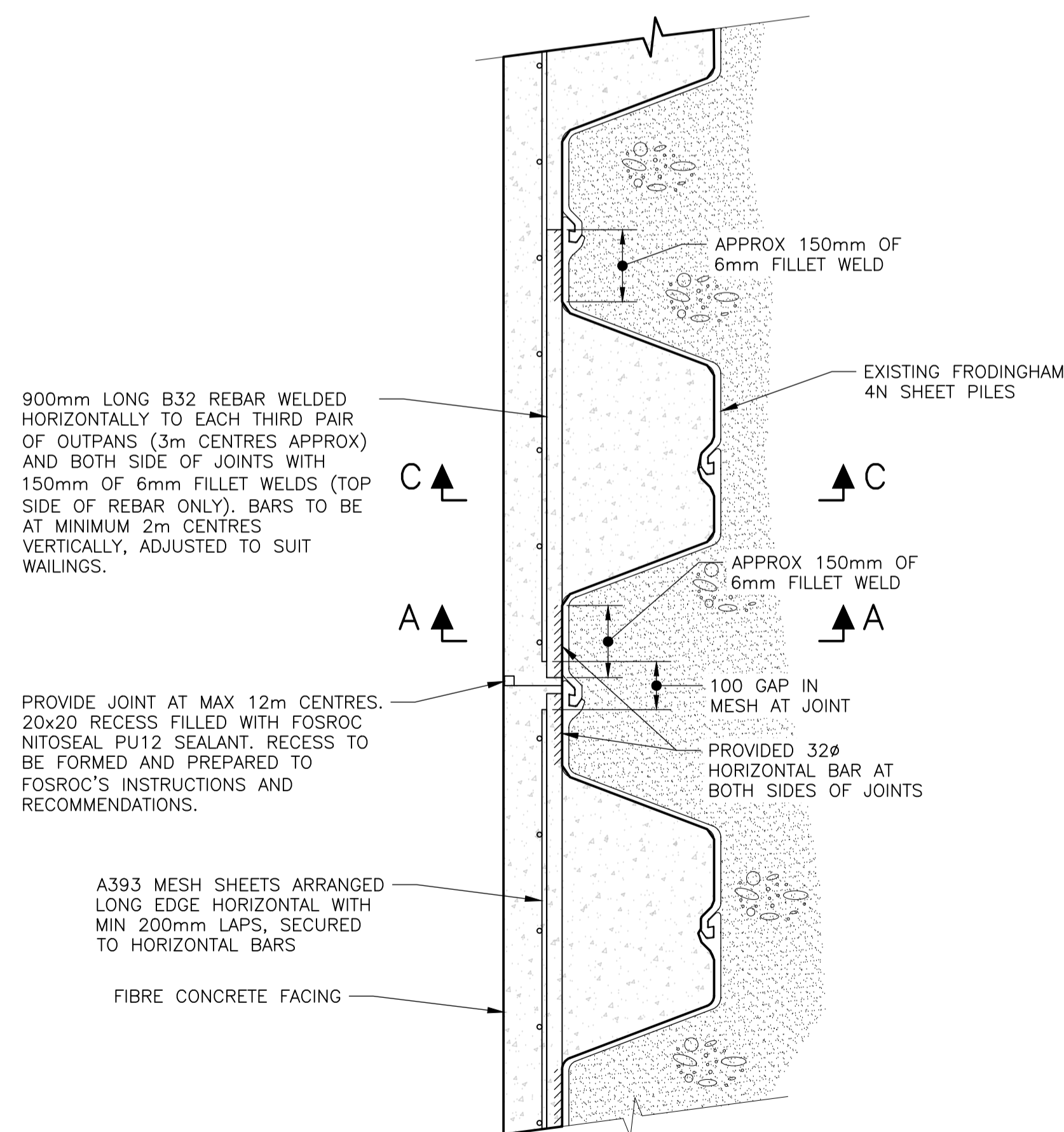
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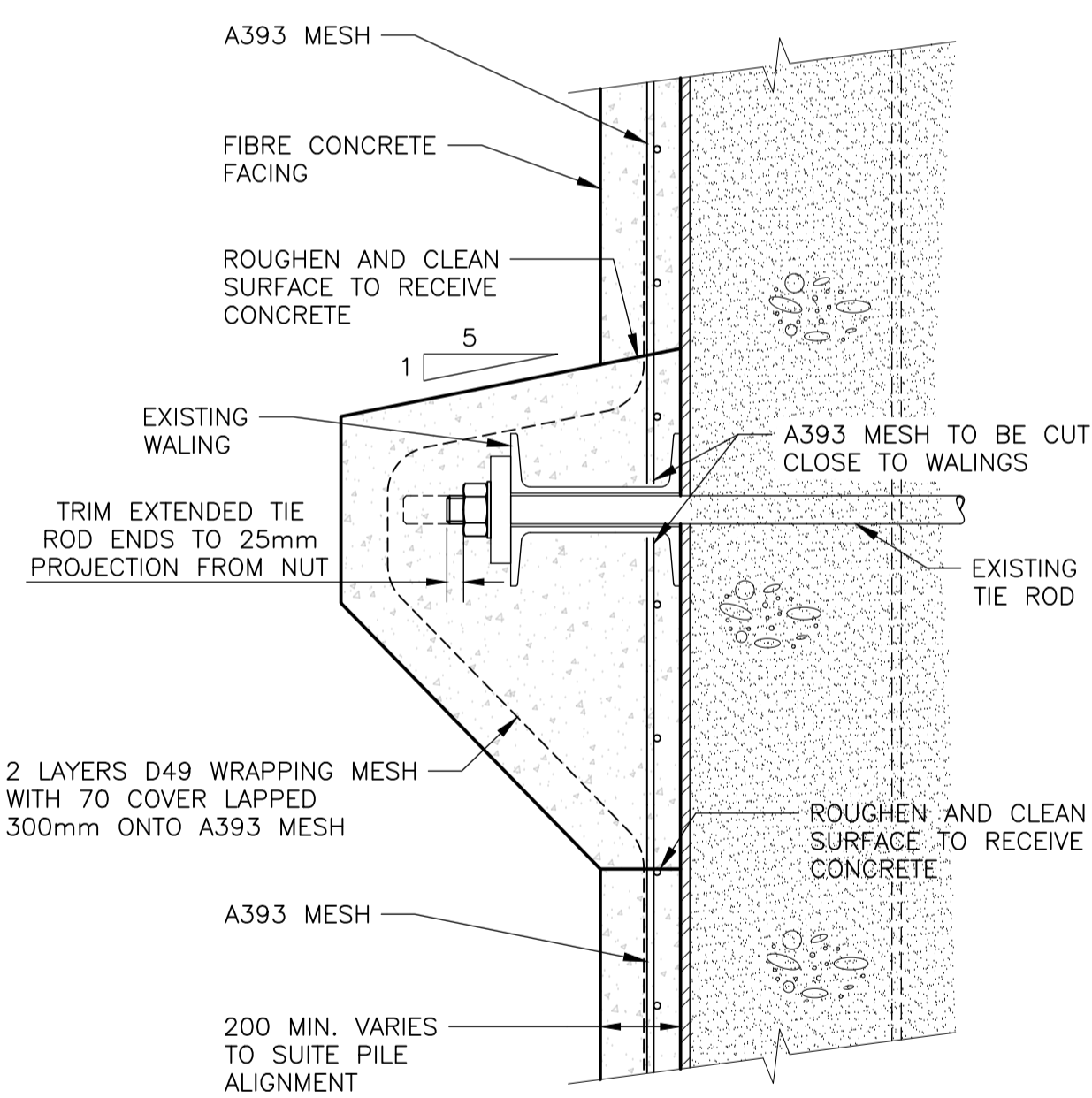
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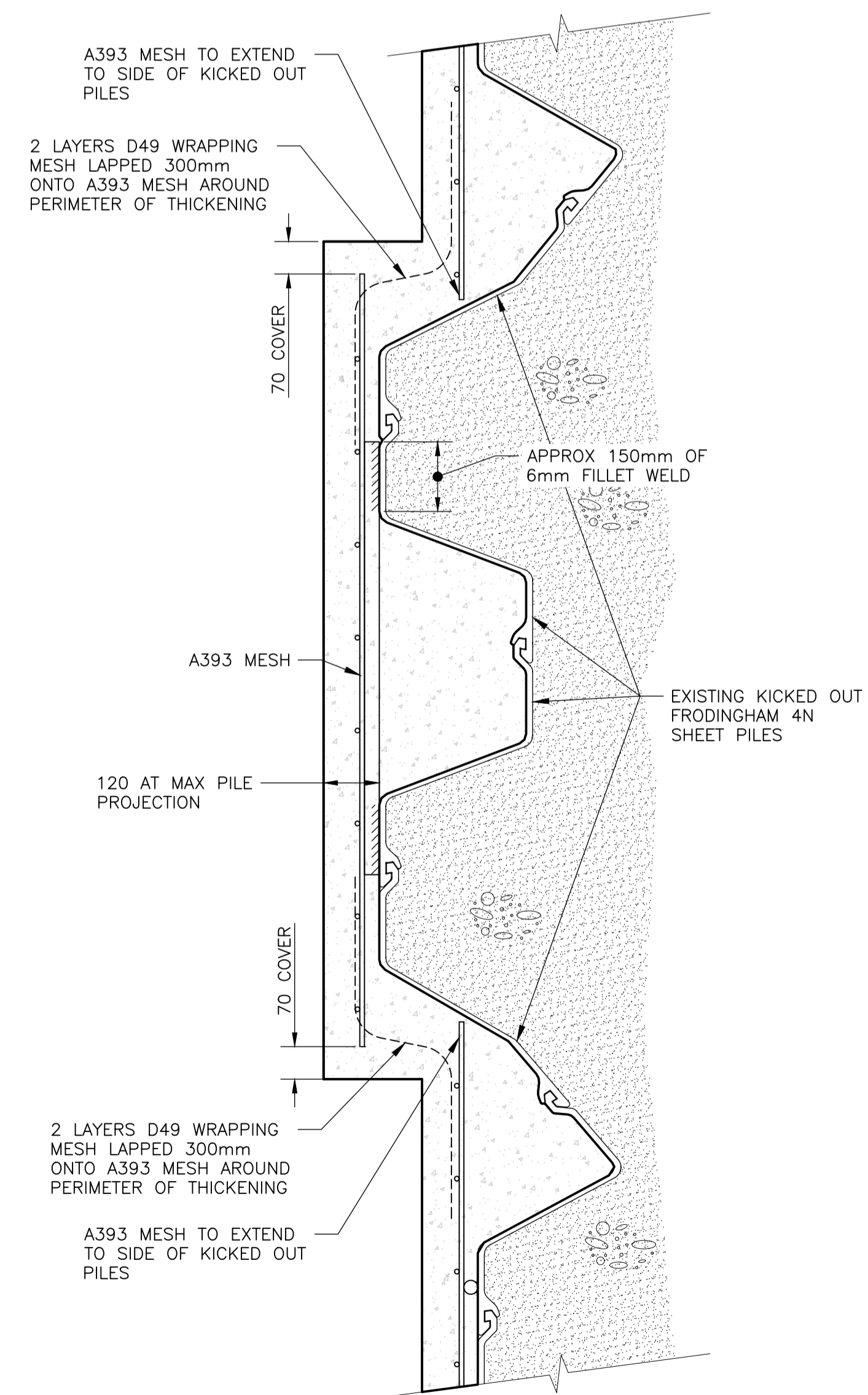
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**SECTION B-B**  
SCALE 1:10



**DETAIL AT WALING**  
SCALE 1:10



**THICKENING DETAIL AT KICKED OUT PILES**  
SCALE 1:10

- GENERAL NOTES**
- ALL LEVELS ARE IN METRES RELATIVE TO CHART DATUM.
  - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
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MLWS +0.9mCD  
OD +3.1mCD
  - FOR WEST APPROACH REMEDIAL DETAILS REFER TO DRAWING 2000/801
  - FOR EAST APPROACH REMEDIAL DETAILS REFER TO DRAWING 2000/802
  - COVER TO REINFORCEMENT STEEL 70mm.
  - LAP LENGTH FOR B10 STRAIGHT BARS AND A393 MESH 500mm.
  - CONCRETE COMPRESSIVE STRENGTH CLASS C40/50. MAX WATER/CEMENT RATIO 0.45. MIN CEMENT/COMBINATION CONTENT 360kg/m<sup>3</sup>. ALLOWABLE CEMENT/COMBINATION TYPES:  
11B-V  
111A  
111A+SR  
111B  
111B+SR  
(DC-1)  
MAX AGGREGATE SIZE 20mm  
FREEZE/THAW RESISTANT AGGREGATE  
CHLORIDE CONTENT CLASS CL 0,30  
CONSISTENCE CLASS S3  
ALL CONCRETE FULLY COMPACTED
  - FIBRES TO BE PROPEX ENDURO HPP45 DOSED AT 5kg/m<sup>3</sup> PLUS PROPEX FIBRECAST 500 19mm FIBRES DOSED AT 0.9kg/m<sup>3</sup> OR EQUIVALENT OF THE ABOVE FIBRES. ALL FIBRE LEFT EXPOSED ON UNFORMED SURFACES AFTER CASTING SHALL BE REMOVED.
  - EXISTING SHEET PILES TO BE PREPARED AS FOLLOWS PRIOR TO WORKS:  
ALL LOOSE AND DELAMINATED MATERIALS TO BE REMOVED DOWN TO SOUND STEEL BY A COMBINATION OF HIGH PRESSURE JET WASHING, BRUSHING AND SCRAPING AND OTHER SUITABLE MEANS. ALL OILS, GREASE, SILT, MARINE GROWTH ETC. TO BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF SHUTTERS. N.B. IT IS NOT NECESSARY TO ACHIEVE SA2½ GRADE OF SURFACE PREPARATION. ADDITIONAL SURFACE PREPARATION MAY BE REQUIRED AT LOCATION OF WELDS TO THE PILES TO ENSURE GOOD QUALITY WELDS TO PILES ARE ACHIEVED.

A	26.01.24	A393 MESH FIXING ARRANGEMENT REVISED	JG	DA	TR
REV	DATE	DETAILS	DRAWN	CHK'D	APP'D

AMENDMENTS

CLIENT  
**KISHORN PORT LTD**

PROJECT  
**KISHORN DRY DOCK REPAIRS**

**Wallace Stone**  
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DRAWING TITLE  
**ABUTMENT SHEET PILES CONCRETE FACING DETAILS**

DRAWN	CHECKED	APPROVED
JG	RF	TR
DATE	DATE	DATE
01.12.22	16.12.22	16.12.22

SCALE (A1) AS SHOWN  
STAGE **CONSTRUCTION**

REVISION	A						
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PROJECT No.	DRAWING No.
2000	803