APPENDIX F

HABITATS REGULATIONS APPRAISAL

ESSO Petroleum Company, Ltd

BOWLING MARINE STRUCTURES MAKING SAFE WORKS

Habitat Regulations Appraisal

V1
JULY 2023

ESSO Petroleum Company, Ltd

BOWLING MARINE STRUCTURES MAKING SAFE WORKS

Habitat Regulations Appraisal

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Habitat Regulations Appraisal

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EXECUTIVE SUMMARY

WSP UK Ltd was commissioned by Esso Petroleum Company, Limited (Esso) to undertake a Habitats Regulations Appraisal (HRA) of proposed maintenance works on marine structures (the 'Proposed Works') at the former Esso petroleum terminal in Bowling (hereafter the 'Site'). The Site is located within European and internationally designated sites for nature conservation ('European Sites'), namely the Inner Clyde Special Protection Area (SPA) and Inner Clyde Ramsar site. The HRA is required to support a Marine Licence for the Proposed Works.

The Inner Clyde SPA and Ramsar site are both designated for supporting overwintering redshank and largely overlap across their designated habitats (hereafter referred to collectively as the 'Inner Clyde SPA').

The HRA Stage 1 Screening Assessment identified the following Likely Significant Effects (LSE) from the Proposed Works on the Inner Clyde SPA:

- Degradation of SPA habitat through impacts on water quality during works; and
- Disturbance and displacement of redshank during works.

As LSE were identified the HRA was required to progress to Stage 2 Appropriate Assessment (AA). Impact avoidance and mitigation measures were incorporated at this stage, if required, to minimise the magnitude and extent of the identified LSE. All required mitigation will be incorporated into a Construction Environmental Management Plan (CEMP) with compliance overseen, where required, by an Ecological Clerk of Works (ECoW). The stipulated mitigation includes the following:

- Pollution prevention measures including regular maintenance of plant and storage of plant and fuel oils at least 10m from the River Clyde;
- Development of an emergency response plan to detail the response to an accidental spill of hydrocarbons. The plan will contain measures to monitor, contain and eliminate any accidental spills.
- Scheduling of works to avoid the majority of the peak overwintering period (defined as the period 16th September to 15th of March inclusive) if possible; and
- Any works scheduled during the peak overwintering period will be undertaken under the supervision of an ECoW. The ECoW will be empowered to delay the onset of works or stop works if redshank are recorded within 150m of the works site.

Following a detailed assessment of the identified LSE and stipulated mitigation, the AA concluded that the Proposed Works would not adversely affect the integrity of the Inner Clyde SPA.

The conclusions of this HRA are advisory only and are subject to review by the competent authority (Marine Scotland).

1 INTRODUCTION

1.1.1. WSP UK Ltd. was commissioned by Esso Petroleum Company, Limited (Esso) to provide consultancy support in respect of proposals for making safe works on marine structures (the 'Proposed Works') at the former Esso petroleum terminal in Bowling (hereafter the 'Site', OS Grid Reference NS 43555 73540). The Proposed Works are required to make safe marine structures, principally jetties, and ensure that no further maintenance is required for at least a 10-year period following the works.

1.1.2. The Site is located in proximity to areas subject to legal protection under European legislation Directive 2009/147/EC on the conservation of wild birds (The 'Birds Directive') and Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (The 'Habitats Directive'), namely the Inner Clyde Special Protection Area (SPA[1]), Inner Clyde Ramsar site[2] (hereafter SPAs and Ramsar sites are collectively termed 'Europeans Sites') (Appendix A – Figure 1).

1.1.3. Due to the potential of the Proposed Works to adversely affect European Sites a Habitats Regulations Appraisal (HRA) is required. Consent for the Proposed Works is required in the form of a Marine Licence from Marine Scotland. The legislative background for HRA and the assessment process is described below.

1.2 THE HABITAT REGULATIONS

1.2.1. In Scotland, the Scottish Parliament has now passed the UK Withdrawal from the European Union (Continuity) (Scotland) Bill (hereafter the EU Continuity Bill), meaning that Scottish legislation in relation to devolved matters – including environmental matters - will remain aligned with EU law. As such, the Conservation (Natural habitats &c.) Regulations 1994 (as amended) ('The Habitats Regulations'), which transposed European Council Directive 92/43/EEC 'the Habitats Directive' into Scottish law applies to plans and projects that may have significant effects on sites designated under the Habitats Directive and the Wild Birds Directive (Council Directive 79/409/EEC). Sites designated under the Directives include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).

[1] Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

[2] Ramsar sites are wetlands of international importance designated under the Ramsar Convention, an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

1.2.2. The Habitat Regulations place a duty upon 'Competent Authorities[3]' to consider the potential for effects upon European Sites prior to granting consent for projects or plans. Should likely significant effects be identified by the initial screening process it is necessary to further consider the effects by way of an 'Appropriate Assessment (AA)'. Overall, this process of assessment is known as Habitats Regulations Appraisal (HRA) and further details of the applicable legislative context are summarised below.

1.3 HABITAT REGULATIONS APPRAISAL CONTEXT

LEGISLATIVE CONTEXT

1.3.1. Article 6 (3) of the Habitats Directive sets out the need for AA of plans or projects which have potential to affect the integrity of European Sites:

- 'Any plan or project likely to have a significant effect on a Natura 2000, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned' (Article 6.3).

1.3.2. As the purpose of the Natura 2000 network is preservation of examples of species and habitats across Europe, rather than preservation of individual sites, Article 6 (4) allows for exceptional circumstances where negative effects may be permitted. This reads:

- 'In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest[4]. In such cases the Member State must take appropriate compensatory measures to ensure that the overall coherence of the Natura 2000 Network is protected.' (Article 6.4).

1.3.3. Regulation 48 (1) of the Habitats Regulations states that 'A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

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[3] The Habitats Regulations state that a competent authority "includes any Minister, government department, public or statutory undertaker, public body or any description, or person holding a public office". In the case of the Proposed Development the Competent Authority is Marine Scotland

[4] An exact definition of 'imperative reasons of overriding public interest' is not provided, but European Commission (EC) guidance states *'It is reasonable to consider that the "imperative reasons of overriding public interest, including those of social and economic nature" refer to situations where plans or projects envisaged prove to be indispensable:*
- within the framework of actions or policies aiming to protect fundamental values for the citizens' life (health, safety, environment);
- within the framework of fundamental policies for the State and the Society;
- within the framework of carrying out activities of economic or social nature, fulfilling specific obligations of public service.'

—must make an Appropriate Assessment of the implications for that site in view of that site's conservation objective.'

1.3.4. Like the Habitats Directive, the Habitat Regulations also make allowance for projects or plans to be completed if they satisfy 'imperative reasons of overriding public interest (IROPI)'[5]. Regulation 49 relates to such situations.

POLICY CONTEXT

1.3.5. It is a matter of Scottish Government policy (Scottish Government, 2014) that sites designated under the 1971 Ramsar Convention for their internationally important wetlands (commonly known as Ramsar sites) are also considered in the same way as SACs, SPAs.

1.4 STAGES OF HABITATS REGULATIONS APPRAISAL

1.4.1. Guidance on the Habitats Directive (European Commission, 2001) sets out the step wise approach which should be followed to enable Competent Authorities to discharge their duties under the Habitats Directive and provides further clarity on the interpretation of Articles 6 (3) and 6 (4). The process used is usually summarised in four distinct stages of assessment:

- Stage 1: Screening: the process which identifies whether effects upon a Natura 2000 site of a plan or project are possible, either alone or in combination with other plans or projects and considers whether these effects are likely to be significant.
- Stage 2: Appropriate Assessment: the detailed consideration of the effect on the integrity of the Natura 2000 site of the plan or project, either alone or in combination with other plans or projects, with respect to the site's conservation objectives and its structure and function.
- Stage 3: Assessment of alternative solutions: the process which examines alternative ways of achieving the objectives of the plan or project that avoid adverse effects on the integrity of the Natura 2000 site.
- Stage 4: Assessment where no alternative solutions exist and where adverse effects remain: an assessment of whether the development is necessary for IROPI and, if so, of the compensatory measures needed to maintain the overall coherence of the Natura 2000 network.

1.5 GUIDANCE

1.5.1. In undertaking this HRA, the following guidance was referred to:

- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2021);
- The Habitat Regulations Handbook (Tyldesley, D., and Chapman, C, 2015);

[5] '*(a) reasons relating to human health, public safety or beneficial consequences of primary importance to the environment; or.*
(b) any other reasons which the competent authority, having due regard to the opinion of the European Commission, consider to be imperative reasons of overriding public interest.'

- Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (European Commission, 2018);
- Communication from the Commission on the Precautionary Principle (European Commission 2000);
- SNH guidance on the handling of mitigation in Habitats Regulations Appraisal (SNH, 2018);
- SNH guidance on assessing connectivity with Special Protection Areas (SNH, 2016); and
- Scottish Environmental Protection Agency (SEPA) Guidance – The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (SEPA, 2019).

1.5.2. This HRA Report (this 'Report') presents the screening assessment and provides information to enable the Competent Authority to undertake an AA of the Proposed Works. This information is provided in the form of a 'shadow' AA. This HRA Report also incorporates sufficient information to inform the Marine Licence in respect to potential impacts of the Proposed Works on the Inner Clyde Site of Special Scientific Interest (SSSI). The SSSI notified species and designated area overlap with the Inner Clyde SPA/Ramsar site. SSSI citation details are provided in Appendix C.

1.6 ASSESSMENT BACKGROUND

1.6.1. WSP produced a HRA report to support proposals to remediate the former ESSO oil terminal at Bowling (the 'Remediation Project') in 2018 (WSP, 2018) and subsequent changes to the project design (WSP, 2020) (collectively the 'Remediation Project'). Following the implementation of appropriate impact avoidance and mitigation measures it was concluded that no adverse effects on the integrity of the SPA would occur. The HRA reports for the Remediation Project incorporated detailed information in the form of for example, wintering bird surveys and noise assessments.

1.6.2. As the Site of the Proposed Works is located along the southern extent of the Remediation Project site and therefore much of the information provided within the Remediation Project HRAs is of relevance to the Proposed Works. As such, information from the Remediation Project HRAs is included within this HRA Report, or appropriately referenced, where required.

2 THE PROPOSED WORKS

2.1 BACKGROUND

2.1.1. The Proposed Works are required to make safe marine structures and limit the requirement for further maintenance for at least 10 years. The existing marine structures at the Bowling terminal are understood to have been constructed between the 1920s and 1940s by the British Mexican Petroleum company. The dates and sequence of construction of each of the existing marine structures are not presently known. The site was operated from the 1920s until 1994 by Esso. Since 1994, a process of site dismantling and remediation has been carried out.

2.1.2. It is the intention of Esso to pass the ownership of the former Bowling terminal site, including the marine structures, to West Dunbartonshire Council (WDC), who have intentions to redevelop the site.

2.2 SCOPE OF WORKS

SCOPE OF WORKS

2.2.1. A detailed scope of works is provided in Appendix B with an associated figure showing the location of the marine structures. Marine structures that require works comprise Mooring Dolphins (MD), Berthing Dolphins (BD), Support Structures (SI), Jetty Heads (JH), Jetty Head Walkways (JHW) and Jetty Head Access Walkways (JHA). In summary the works will comprise:

- Removal of furniture attached to the marine structures including ladders, chains/rope, bollards, handrails and fenders;
- Restricting access to the marine structures through installation of fencing;
- Installation of strapping system to hold loose sheet piles together;
- Installation of appropriate warning signage on the marine structures;
- Installation of landside fencing to restrict access to marine structures; and
- Undertake investigations to confirm nature of infill material behind piles (at BD1 only).

2.2.2. A detailed breakdown of works required on each of the marine structures is provided in Appendix B.

2.2.3. The exact works methodology will be determined by the Principal Contractor on commission. For the purposes of this HRA Report it is assumed that the following outline methodology will be undertaken:

- Access to marine structures will be from a Multicat muti purpose vessel where required. The Multicat will lower ‘pin’ supports into the riverbed for support if required.
- The Proposed Works will be largely undertaken by personal using hand tools from the adjacent Multicat or from the structures themselves. Hand tools will include welders, drills and angle grinders.
- Plant operated from the Multicat may be required, such as those with cutting attachments.
- Investigations to confirm infill material at BD1 will comprise removal of a small section from the top of the structure. This will be replaced once infill material has been inspected; and
- All material removed will be transported from the Multicat to a location off site for further transport to trucks/dumpers for disposal.

2.2.4. Works personnel will utilise welfare areas on the Multicat or welfare areas onshore at least 150 m from the Inner Clyde SPA/Ramsar site. All materials removed from marine structures will be removed from Site for disposal.

2.2.5. It is anticipated that works associated with the Proposed Works will be completed within 4-6 weeks with works program determined by the consent timeline with Marine Scotland. For the purposes of this HRA Report it is assumed that works will be undertaken in the period September 2023 to March 2024, when SPA qualifying species are present in the SPA in greatest numbers.

2.3 OPERATION

2.3.1. The Proposed Works comprises no operational aspect besides the remaining modified marine structures themselves. The Proposed Works are designed to limit public access and therefore no public access to the marine structure during operation is anticipated. No further maintenance activities are anticipated for at least 10 years.

3 EUROPEAN SITE INFORMATION

3.1 RELEVANT EUROPEAN SITES

3.1.1. European Sites were screened based on proximity to the Site and the potential for connectivity with reference to published guidance (Section 1.5). Following these criteria, two European sites have been included in the Screening Assessment:

- Inner Clyde SPA; and
- Inner Clyde Ramsar site.

3.1.2. The location of the European Sites in relation to the Site are shown in Appendix A - Figure 1 with European Site information provided in Table 3-1 – European Site Information. The Inner Clyde SPA and Inner Clyde Ramsar site overlap across the majority of designated habitat and are designated for the same qualifying features (redshank *Tringa totanus*).

3.1.3. European Site information provided in Table 3-1 is taken from SNH (2020) and includes population estimates from the most recent review into the status of UK SPAs (JNCC, 2016).

3.2 EUROPEAN SITES SCREENED OUT

3.2.1. No additional European Sites are located up or down stream of the Site along the River Clyde. The Black Cart SPA, designated for supporting whooper swan *Cygnus Cygnus*, is located approximately 6.8km southeast of the Site on the Black Cart Water (a tributary of the River Clyde). As the Site is located outwith the core foraging range of this species (5km, as stated in SNH (2016)) no impact from the Proposed Works on the Black Cart SPA is anticipated. Additionally, the Site does not provide suitable foraging habitat for whooper swan.

Table 3-1 – European Site Information

European Site Name, Distance from Site and Description	Qualifying Features	Condition Assessment	Pressures and Threats	Conservation Objectives
Inner Clyde SPA Directly adjacent to Site. The Inner Clyde is a long, narrow, heavily industrialised estuary on the west coast of Scotland. The Inner Clyde SPA extends 20km westward from Newshot Island to Craigendoran Pier on the north shore and to Newark Castle on the south shore. It contains extensive intertidal flats which support large numbers of wintering waterfowl. The boundary of the Inner Clyde SPA is coincident with that of the Inner Clyde SSSI. Area - 1813.72 ha	Article 4.2 Qualification (79/409/EEC) Over winter: ▪ Redshank, 1,873 individuals, representing a 1.6% of the Great British (GB) population.	Redshank: Favourable Maintained	▪ Game/fisheries management ▪ Recreation/disturbance	To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: ▪ Population of the species as a viable component of the site ▪ Distribution of the species within site ▪ Distribution and extent of habitats supporting the species ▪ Structure, function and supporting processes of habitats supporting the species ▪ No significant disturbance of the species
Inner Clyde Ramsar site Directly adjacent to Site.	Ramsar Criterion 6 – Species/Populations occurring at levels of international importance	Redshank: Favourable Maintained	▪ Recreation/disturbance	None listed.

The Inner Clyde estuary, located on the west coast of central Scotland, is recognised as a single ecological unit. It is a long, narrow, heavily industrialised estuary on the west coast of Scotland, extending 20km westward from Newshot Island to the northern edge of Ardmore Bay adjacent to modified shore line at Craigendoran. On the southern shore the site extends westwards from Newshot Island to Newark Castle. Almost the entire Inner Clyde Ramsar site (94.6%) consists of tidal mudflat with a shoreline of unmanaged semi-natural coastal vegetation. Saltmarsh is also present, accounting for 3.6% of the total shoreline area. Area - 1824.92 ha	Species with peak counts in winter ▪ Redshank – 1,873 individuals, representing 1.6% of the GB population.			

4 STAGE 1 SCREENING

4.1.1. The Inner Clyde SPA and Inner Clyde Ramsar site cover almost identical areas of designated habitat. Designated habitat directly within and adjacent to the Site comprises intertidal habitat, river walls and marine structures. To the south the SPA habitat covers a slightly larger area than Ramsar habitat and to the east Ramsar habitat includes pontoons that are no longer present. Qualifying features of the Inner Clyde SPA are shared with those of the Inner Clyde Ramsar site (overwintering redshank).

4.1.2. Due to the above factors the assessments for the Inner Clyde SPA and Inner Clyde Ramsar site are combined (hereafter the 'Inner Clyde SPA'). It is considered that an assessment on the Inner Clyde SPA will therefore also encompass effects on the Ramsar site. As a result, and to avoid repetition, the Inner Clyde Ramsar site is not described separately further in this assessment.

4.2 CONSIDERATION OF EFFECTS IN ISOLATION

4.2.1. Utilising the information included within Sections 2 and 3 the Proposed Works was screened to identify whether potential effect pathways exist between the Proposed Works and the Inner Clyde SPA. Additionally, identified effects pathways were screened to determine if they are likely to result in significant effects upon the qualifying features of the Inner Clyde SPA.

4.2.2. The screening assessment of the identified potential effect pathways on the Inner Clyde SPA qualifying features, and final screening conclusion, is provided in Table 4-1. The following Likely Significant Effects (LSE) were identified:

- Degradation of SPA habitat through impacts on water quality during works; and
- Disturbance and displacement of redshank during works.

4.2.3. No effects pathways on the Inner Clyde SPA were identified for the operational phase of the Proposed Works.

4.3 POTENTIAL IN-COMBINATION EFFECTS

4.3.1. As potential effect pathways were either concluded to result in LSE (i.e., no minor residual effects) or screened out entirely (no effect pathway identified) no consideration as part of an in-combination assessment during the screening stage is required.

Table 4-1 – Stage 1 Screening Assessment

Potential Effect Pathway	Screening Assessment	Screening Conclusion
Loss / modification of SPA habitat (marine structures) during maintenance works (works).	The extent of the Inner Clyde SPA includes many of the marine structures included in the Proposed Works with the SPA boundary clearly following the outer extent of larger jetties. It is not known if these structures are 'site fabric' or were included specifically due to their supporting function to the redshank SPA population. The marine structures could potentially provide a structure for roosting but are unlikely to support foraging redshank. Very occasional roosting by redshank was noted on the marine structures during surveys undertaken to inform the Remediation Project HRA (undertake in 2013/14 and 2016/17). The Proposed Works comprise relatively minor works with respect to significant modifications to their structure. As such the structures will remain as a potential roosting resource post works.	No LSE No residual effects
Loss / modification of SPA habitat (intertidal habitat) during works.	The Proposed Works to not include any removal of structural supports or other installations that could be expected to impact intertidal habitat directly. Multicat used during the proposed works will lower supporting 'pins' for stability when undertaken the works. These pins will be approximately 30cm in diameter and installed into the soft sand/mud riverbed. On removal tidal and river action will infill any depressions in the substrate made by the pins.	No LSE No residual effects
Degradation of SPA habitat through impacts on water quality during works	Degradation of habitat could potentially occur due to pollution effects during the the Proposed Works. Pollution could comprise hydrocarbons accidently released during the operation of plant and equipment. The Site is located directly within the SPA. Pollution effects would be temporary in nature with a duration spanning the anticipated six-week (maximum) works period. Whilst works will be managed to control mobilisation of contamination, the Proposed Works could potentially impact on habitat that supports redshank. Degradation could comprise adverse effects on benthic invertebrates and their supporting trophic food chain (primary producers). This could affect redshank by reducing the availability of prey or contaminating prey that redshank then consume. This could affect habitat directly adjacent to Site as well as habitat up and downstream of Site.	Likely Significant Effect

	Due to the potential for indirect effects to redshank this effects pathway cannot be screened out.	
Disturbance and displacement of redshank during works.	Works described in Section 2 have the potential to disturb and displace redshank from the Site and surrounding area. Works associated with the Proposed Works have the potential to disturb and displace redshank for a distance of at least 150m from the Site (D. Lang (SNH), personal communication, 05/02/2021). This conclusion is derived based on published studies including Cutts et al, 2013. Sources of disturbance will include visual (primarily from personnel and plant) and noise (from plant and equipment). Wintering bird surveys were undertaken during 2013/14 and 2016/17 to inform the HRA for the wider Scheme. Redshank were recorded foraging and loafing around the perimeter of Dunglass Basin (where structure J1 is located) (WSP, 2018). As designated redshank are an over wintering species no, or very few, birds are present within the Clyde estuary during the peak breeding period (May to July inclusive). Overwintering redshank typically leave UK estuaries in April / May and return in August / September (Frost et al., 2019). The highest number of redshank in the Clyde estuary are typically recorded in mid-winter (October to March inclusive) (WSP, 2018). Works undertaken during the period August to April (inclusive) therefore have the potential to disturb or displace redshank. Redshank disturbed or displaced during works could be subject to increased energy expenditure or reduced foraging opportunities. This is turn could affect their survival or subsequent breeding success and thus affect site conservation objectives (e.g., population of redshank within the SPA). Due to the potential for direct effects to redshank this effects pathway cannot be screened out.	Likely Significant Effects
Loss / modification of SPA habitat (intertidal) due to changes to coastal processes – erosion and/or deposition during operation	The Proposed Works comprise no elements that could reasonably be expected to alter tidal/river flows to the extent that impacts on coastal process would occur. Most of the Proposed Works comprise works on structures above water level with works within structures below high tide level restricted to removing elements such as wooden fenders. No removal of structural supports located within the riverbed is proposed.	No LSE No residual effect

5 INFORMATION TO INFORM AN APPROPRIATE ASSESSMENT

5.1 INTRODUCTION

5.1.1. This section investigates the effect of the LSE identified in Section 4 in relation the continued integrity of the Inner Clyde SPA. Identified LSE are described in relation to details of the Proposed Works (Section 2), Inner Clyde SPA site information (Section 3), proposed impact avoidance and mitigation measures and any additional ecological supporting information (if required).

5.1.2. The Appropriate Assessment is detailed in Table 5-1. Following the implementation of impact avoidance and mitigation measures, where required, the Proposed Works alone are not anticipated to result in an adverse effect on the integrity of the Inner Clyde SPA.

Table 5-1 – Summary of the Appropriate Assessment for the Inner Clyde SPA

Likely Significant Effects	Conservation Objectives Potentially Affected	Impact Avoidance and Mitigation	AA Determination After Mitigation
Degradation of SPA habitat through impacts on water quality	▪ Structure, function and supporting processes of habitats supporting the species	All work activities will adhere to all relevant requirements of the Water Environment (Controlled Activities) (Scotland) Regulations (as amended), as detailed in SEPA guidance (SEPA, 2019). The following specific impact avoidance and mitigation measures will be adhered to: ▪ Plant and equipment will be fuelled on shore at least 10 m from the SPA. All fuel storage bowsers will be located at least 10 m from the SPA and will be bunded to at least 110% capacity; ▪ The Multicat will be fuelled at an approved local site prior to works commencing each day. Plant nappies/drip trays will be used during fuelling. ▪ Plant and equipment will be regularly maintained, checked for leaks and plant nappies will be deployed under plant at all times when operational on the Multicat; ▪ Appropriate oil spill kits will be located on Site and within the Multicat; ▪ Training will be provided to on-site personnel via Toolbox Talks -highlighting the risks of polluting the coastal environment during works; and ▪ An emergency response plan will be developed detailing the response to an accidental spill of hydrocarbons. The plan should contain measures to monitor, contain and eliminate any accidental spills, including those within the River Clyde.	The Proposed Works requires the use of no potentially polluting chemicals except for hydrocarbons associated with the use of plant and equipment. The impact avoidance will minimise the likelihood of any accidental spills. In the unlikely event of a spill an emergency response plan will be actioned to contain and eliminate the spill. **No adverse effect on site integrity** No minor residual effects
Disturbance / displacement of redshank during works	▪ Population of the species as a viable component of the site ▪ Distribution of the species within site ▪ No significant disturbance of the species	▪ Works will be scheduled to avoid the peak wintering period (16th September to 15th of March inclusive); ▪ In the event that works are required during the peak over-wintering period, such works will be undertaken in the presence of a suitably qualified ornithologist employed by the Principal Contractor as an ECoW; ▪ The ECoW will observe all areas of suitable habitat within 150 m of the works site prior to the commencement of works and during works at an interval of at least every 1 hour; ▪ The ECoW will be empowered to postpone or discontinue works whenever redshank are observed within 150 m of the works area. Works will not commence until such a time as the ECoW is satisfied that the birds are no longer utilising these areas within 150 m of the works; and ▪ The ECoW will maintain a record of observations of redshank within 150 m of the works area and subsequent impact avoidance measures (delay or cessation of works) employed.	The stipulated impact avoidance will ensure that redshank are not disturbed or displaced from foraging or roosting habitat during the peak wintering period. **No adverse effect on site integrity** No minor residual effects

5.2 IN-COMBINATION ASSESSMENT

5.2.1. As no minor residual effects were identified there are no effects from the Proposed Works, following implementation of mitigation, that could act in combination with effects from other plans or projects. As such no further consideration of potential im-combination effects is required.

6 CONCLUSIONS

6.1.1. This report provides the requisite information to enable the Competent Authority to undertake a HRA AA in relation to the potential effects of the Proposed Works on the Inner Clyde SPA. The assessment undertaken in this report is advisory only.

6.1.2. LSE from the Proposed Works on the Inner Clyde SPA were identified. Mitigation stipulated in this Report will eliminate or reduce the magnitude of these effects to ensure that no adverse effect on site integrity will result.

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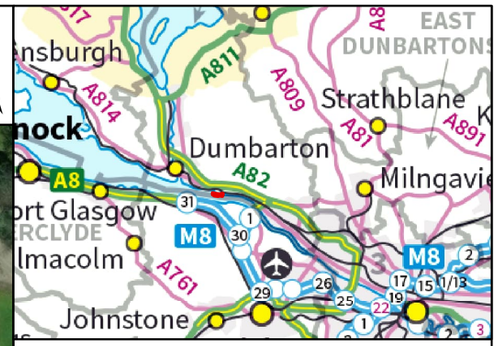
Appendix A

SITE LOCATION AND EUROPEAN SITES



Key

- Site
- Inner Clyde Special Protection Area
- Inner Clyde Ramsar site

wsp

Client: ESSO Petroleum Company, Ltd.

Project: Bowling Marine Structures Making Safe Works

Title: Figure 1 - Site Location and European Sites

Drawing No:	Layers	Drawn:	RW
Date:	20/06/2023	Checked:	HW
Scale:	3,000 @ A3	Approved:	CEM

Appendix B

SITE PLANS AND OUTLINE WORKS METHODOLOGY

Berthing Dolphins

Item	Reference
Westfield Berthing Dolphins	BD4
Westfield Jetty Head	JH2
West End Berthing Dolphins	BD1, BD2
West End Jetty Head	JH1

Mooring Dolphins

Item	Reference
Milton Island Mooring Dolphins	MD1, MD2, MD3
Westfield Mooring Dolphins	MD6, MD8, MD14
Westfield Mooring Dolphin	MD8
Westfield Mooring Dolphin	MD14
Quay wall Mooring Dolphins	MD4, MD5, MD7, MD9, MD10, MD11, MD12, MD13

Jetty Structures

Item	Reference
Basin Jetty	J1

Access Structures

Item	Reference
Westfield West Access Structure	JHA2 - 1 and 2
Westfield Jetty Head Walkway	JHW2 - 1 and 2
West End Access Support Structures	SS1, SS2
Westfield Mooring Dolphin Access Structures	MDA6, MDA8, MDA14

Quay Structures

Item	Reference
Westfield Quay Wall	QW1
Eastfield Quay Wall	QW2

Revetment Structures

Item	Reference
Westfield Revetment	R1
Basin Revetment	R2

Legend

A - Access
BD - Berthing Dolphin
J - Jetty
JH - Jetty Head
JHA - Jetty Head Access
QW - Quay Wall
R - Revetment
SS - Support Structure
JHW - Jetty Head Walkway

Note

Westfield Quay Wall (QW1) and Revetment (R1) are not included in the scope of making safe works.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
GENERAL ARRANGEMENT

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-001 Rev A

Ref	Planned Works
MD1	Install a sign type A on each of the four sides; Remove bollard (1 no) and grind down bolts Install strapping system - top and bottom Remove ladder rungs
MD2	Install a sign type A on each of the four sides Remove bollard (1 no) and grind down bolts Install strapping system - top and bottom Remove ladder rungs
MD3	Install a sign type A on each of the four sides Remove bollard (1 no) and grind down bolts Install strapping system - top and bottom Remove ladder rungs
MD4	Install one signs type C on dolphin facing river Install one sign type C on landside facing landside Install strapping system - top and bottom
MD5	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping system - top and bottom Remove bollard and grind down bolts
MD6	Install three signs type A Remove handrail, lighting poles, and any other protruding items on the deck Remove all wooden fenders and brackets from concrete dolphin Remove bollard and grind down bolts Remove any loose items from topside
MDA6	Install 3m high palisade fencing with lockable gate to fully restrict access Install one signs type C on landside
MD7	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping system - top and bottom Grind down bollard bolts
MD8	Install three signs type A on each of the South, East and West sides Remove handrail, lighting poles, and any other protruding items Remove all wooden fenders and brackets from concrete dolphin Remove bollard (1 no) and grind down bolts Remove any loose items from topside
MDA8	Install 3m high palisade fencing with lockable gate to fully restrict access Install one sign type C on landside
MD9	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping system - top and bottom Remove bollard and grind down bollard bolts
MD10	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping system - top and bottom Remove broken tie rod Remove bollard and grind down bollard bolts
MD11	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river

	Install strapping system - top and bottom Remove bollard and grind down bollard bolts
MD12	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping - only bottom Remove bollard and grind down bollard bolts
MD13	Install one sign type C on landside facing landside Install one sign type C on dolphin facing river Install strapping system - top and bottom Remove bollard and grind down bollard bolts
MD14	Install three signs type A Remove handrails, lighting poles and any other protruding items Remove all wooden fenders from concrete dolphin Remove bollard Remove rope and any loose items
MDA14	Install 3m high palisade fencing with lockable gate to fully restrict access Install one sign type C on landside
SS1	Install a sign type A on each of the four sides
SS2	Install Signs type A on each of the four sides
BD1	Undertake investigations to confirm the nature of the infill material behind the piles Install strapping system - top and bottom (only required if BD1A02 confirms infill is not concrete) Install a sign type B on each of the four sides Remove bollards (2 no) and grind down bolts Remove spot light and support Remove timber fender facing on front face Remove all chains Remove ladder Remove all timber fenders on other faces Remove handrail poles and chains Remove rope, driftwood and any other loose items
BD2	Install a sign type B on each of the four sides Remove bollards (2 no) and grind down bolts Remove timber fender facing on front face and any on other faces Remove all chains Remove ladder Remove handrail poles and chains Remove rope and any other loose items
BD3	Install 8 signs type B at equal distance from each other Remove chains Remove rope and any loose items Remove ladder
BD4	Install 8 signs type B at equal distance from each other Remove chains Remove rubber fenders Remove any loose items Remove ladder
JH1	Install a sign type B on each of the four sides Remove timber fenders above upper walling beam

	Remove protruding items on the top and grind down bolts Remove handrail poles and chains Remove rope and any loose items
JH2	Install 8 signs type B Remove timber fenders Remove bollards (2 no.) and grind down bolts Remove chains Remove ropes and any loose items Remove handrail
JHA2-1	Install 3m high palisade fencing with lockable gate to fully restrict access Install 2 signs type C on support structures
JHA2-2	Install 3m high palisade fencing with lockable gate to fully restrict access Install 2 signs type C on support structures
J1	Install 2 signs type A into concrete facing the basin Install one sign type A on the palisade fence facing the roadside Remove wooden fenders and grind off bolts Remove ladders, plastic pipes and any other items means of climbing onto jetty

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

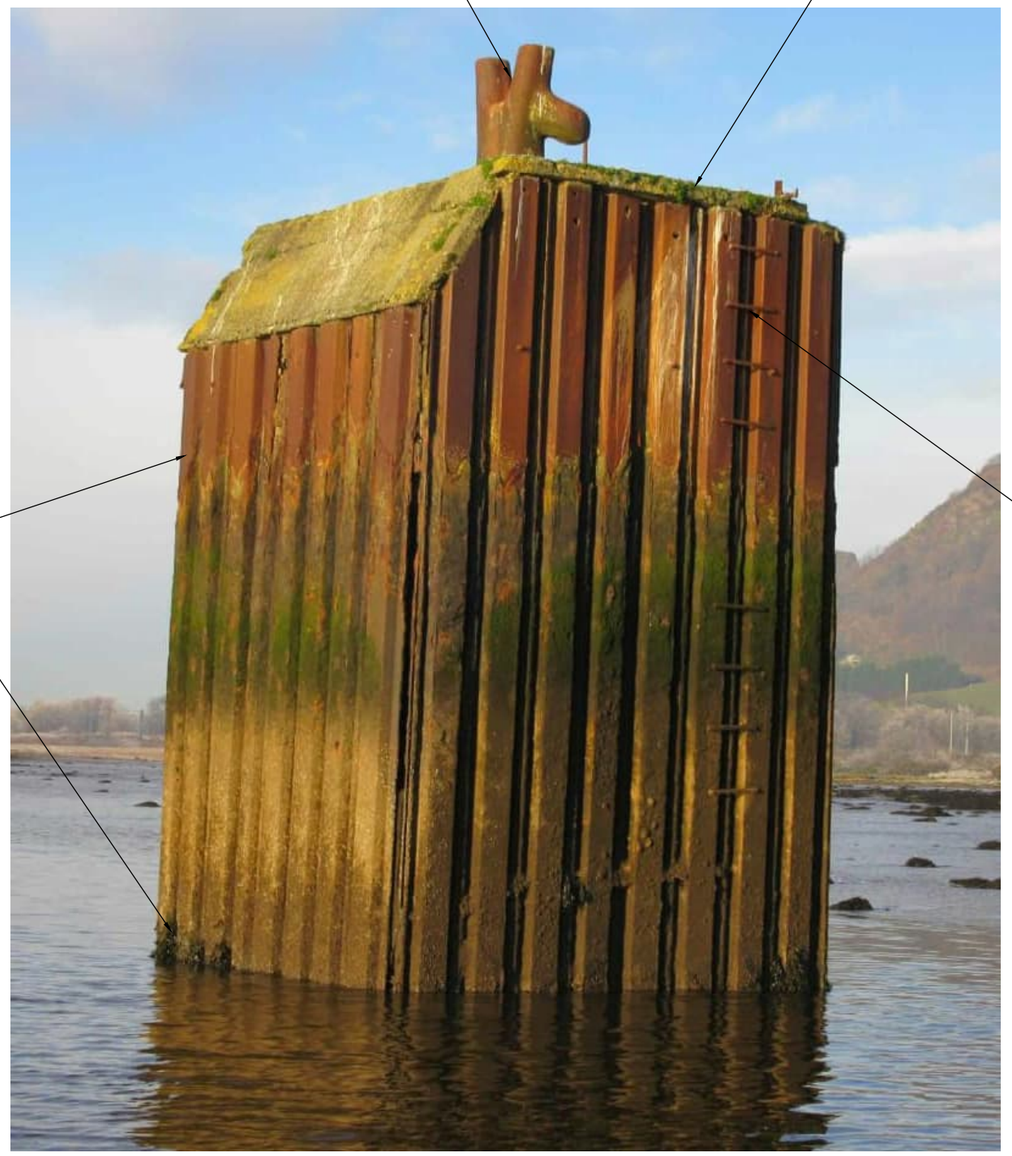
Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii



MOORING DOLPHIN 1 (MD1)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 1
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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-002 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

⚠ di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

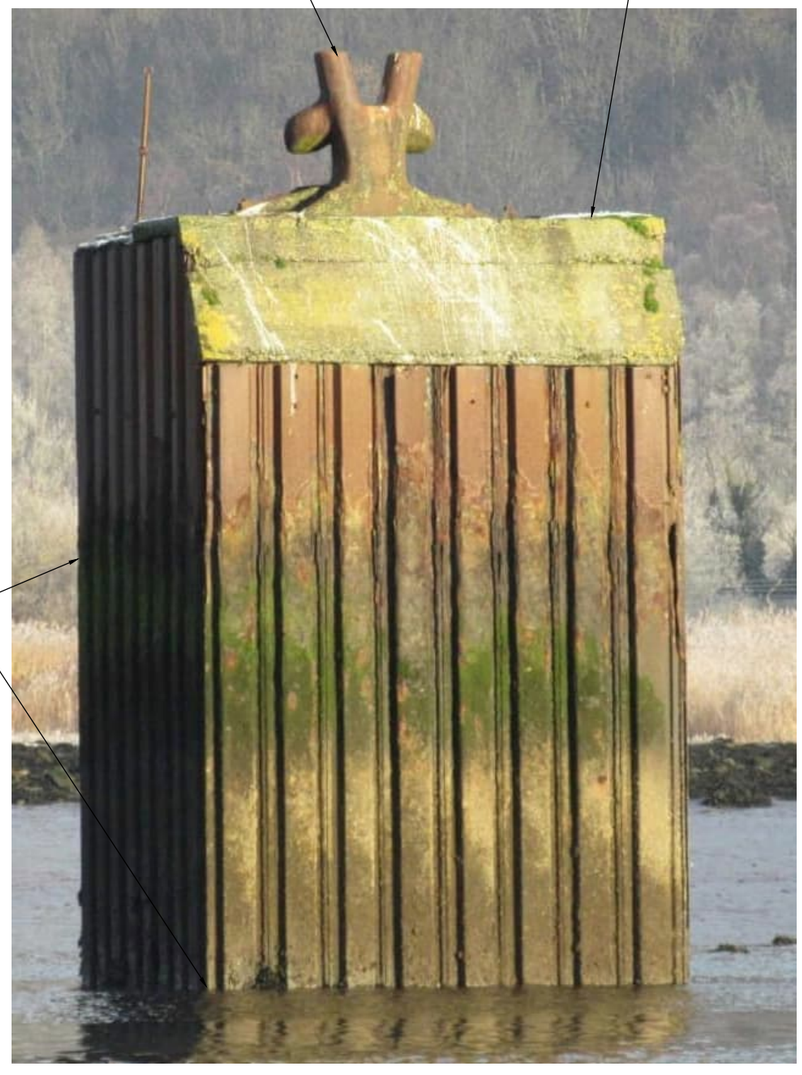
Demolition

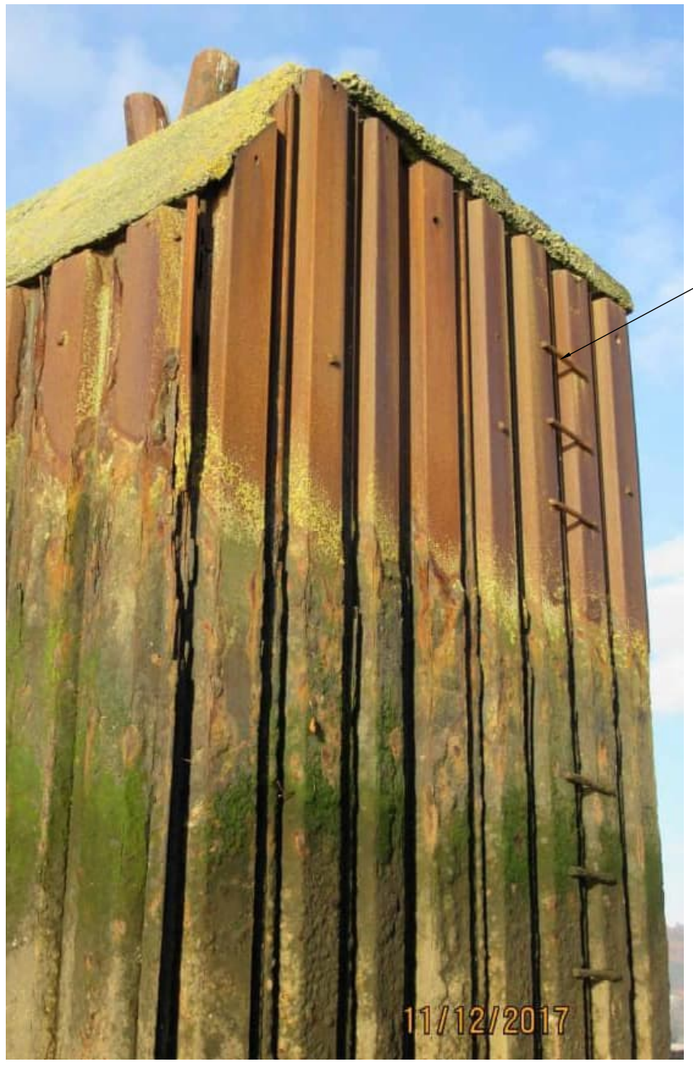
di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

⚠ di ⚠ dii ⚠ diii





MOORING DOLPHIN 2 (MD2)

TENDER

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A	31-01-19	For Comment	DFM
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MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-003 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii

MOORING DOLPHIN 3 (MD3)

TENDER

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A	31-01-19	For Comment	DFM
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Drg No : 5427-004 Rev A

BD1A01 - INSTALL SIGN TYPE B ON EACH OF THE FOUR SIDES. BOLT SIGNS INTO CONCRETE, THE FRONT FACE WHERE THE TIMBER FENDERS ARE IN THE WAY INSTALL SIGN ON DECK USING BRACKETS BOLTED TO CONCRETE DECK. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036

BD1A03 - REMOVE SPOT LIGHT AND SUPPORT

BD1A02 - REMOVE BOLLARDS (2No.) AND GRIND DOWN BOLTS

di diii

BD1A04 - REMOVE TIMBER FENDER FACING ON FRONT FACE

BD1A05 - REMOVE ALL CHAINS

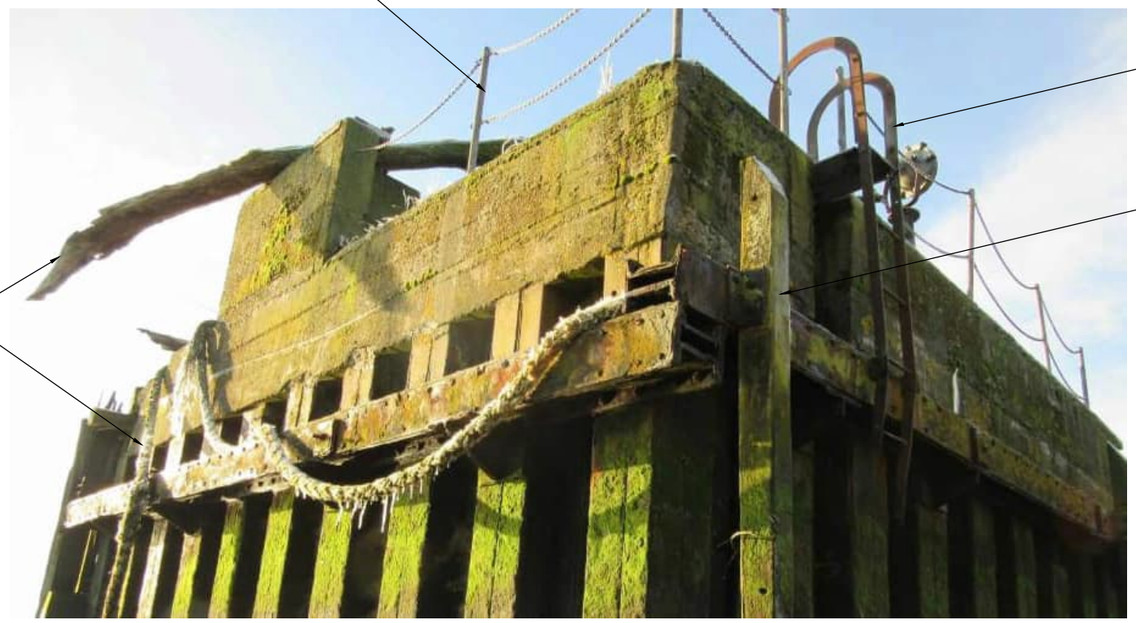
BD1A08 - REMOVE HANDRAIL POLES AND CHAINS

BD1A06 - REMOVE LADDER

dii

BD1A07 - REMOVE ALL DISCRETE TIMBER FENDERS APPROX. 2 No.

BD1A09 - REMOVE ROPE, DRIFTWOOD AND ANY OTHER LOOSE ITEMS/DEBRIS



BERTHING DOLPHIN 1 (BD1)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

div Infill material type with in structure below water level is not known. There are heavily corroded tie rods that may be structurely connecting the structure together. Contractor to take precautionary measures in their demolition methodology to account for this. For further information on the condition of the structure refer to Appendix A the Pre-construction information document.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-005 Rev A

BD2A01 - INSTALL SIGN TYPE B ON EACH OF THE FOUR SIDES. BOLT SIGNS INTO CONCRETE, THE FRONT FACE WHERE THE TIMBER FENDERS ARE IN THE WAY INSTALL SIGN ON DECK USING BRACKETS BOLTED TO CONCRETE DECK. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036

BD2A04 - REMOVE ALL CHAINS

BD2A03 - REMOVE TIMBER FENDER FACING ON THE FRONT FACE

BD2A07 - REMOVE ROPE AND ANY OTHER LOOSE ITEMS/DEBRIS

BD2A05 - REMOVE LADDER

BD2A06 - REMOVE HANDRAIL POLES AND CHAINS

di diii dii

BD2A02 - REMOVE BOLLARDS (2No.) AND GRIND DOWN BOLTS

BERTHING DOLPHIN 2 (BD2)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

div Infill material type with in structure below water level is not known. There are heavily corroded tie rods that may be structurely connecting the structure together. Contractor to take precautionary measures in their demolition methodology to account for this. For further information on the condition of the structure refer to Appendix A the Pre-construction information document.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-006 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

di

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

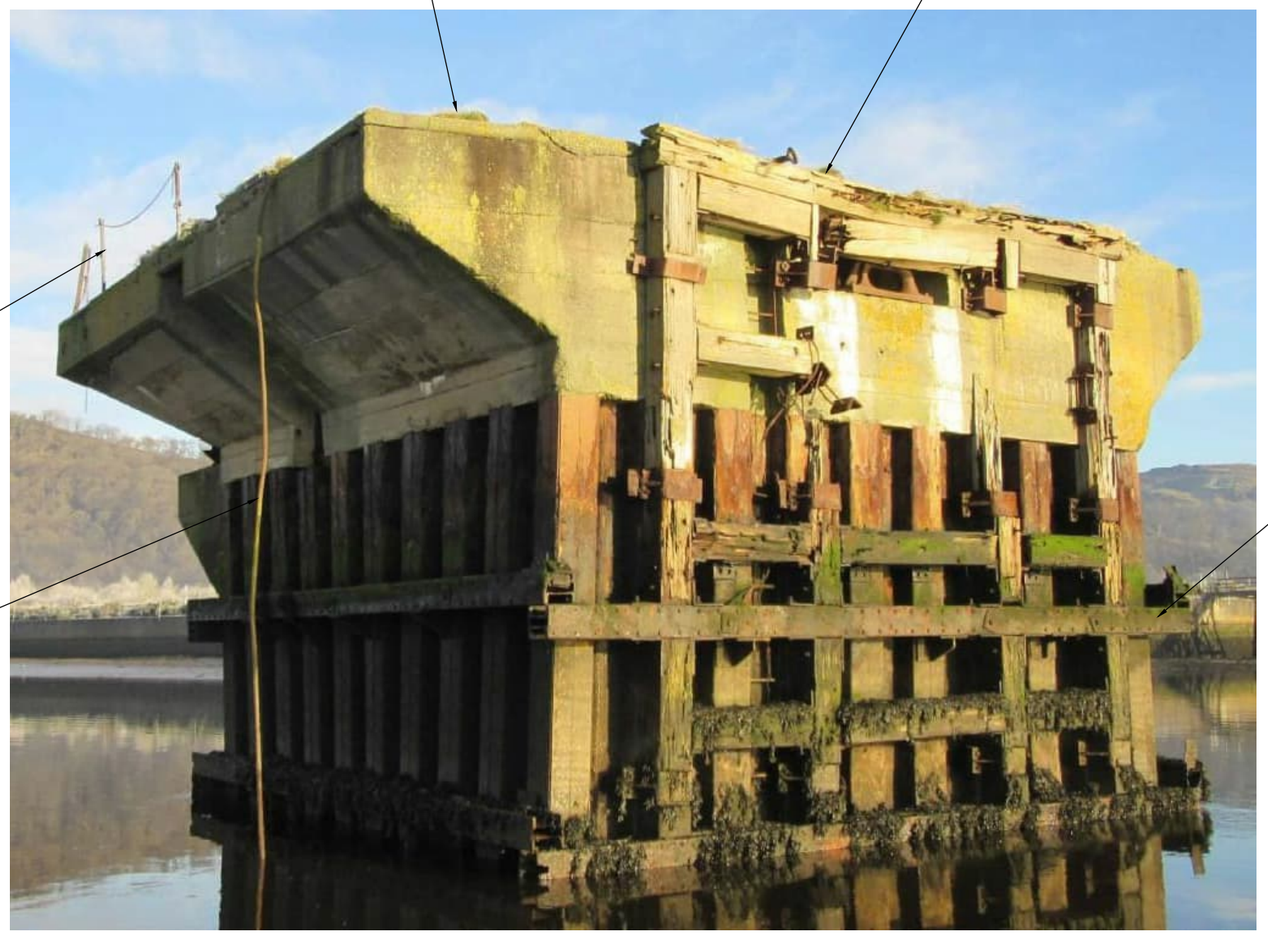
div Infill material type with in structure below water level is not known. There are heavily corroded tie rods that may be structurely connecting the structure together. Contractor to take precautionary measures in their demolition methodology to account for this. For further information on the condition of the structure refer to Appendix A the Pre-construction information document.

JH1A03 - REMOVE ANY PROTRUDING ITEMS ON THE TOP AND GRIND DOWN BOLTS

JH1A01 - INSTALL SIGN TYPE B ON EACH OF THE FOUR SIDES. BOLT SIGNS INTO CONCRETE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

di dii diii

JH1A04 - REMOVE HANDRAIL POLES AND CHAINS



JH1A02 - REMOVE TIMBER FENDERS ABOVE UPPER WALLING BEAM

JH1A05 - REMOVE ROPE AND ANY LOOSE ITEMS/DEBRIS

JETTY HEAD 1 (JH1)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
JETTY HEAD 1
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-007 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

SS1A01 - INSTALL A SIGN TYPE A ON EACH OF THE FOUR SIDES. BOLT SIGNS INTO CONCRETE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

di

SUPPORT STRUCTURE 1 (SS1)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
SUPPORT STRUCTURE 1
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-008 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

SS2A01 - INSTALL A SIGN TYPE A ON EACH OF THE FOUR SIDES. BOLT SIGNS INTO CONCRETE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

di

SUPPORT STRUCTURE 2 (SS2)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
SUPPORT STRUCTURE 2
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-009 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii

BERTHING DOLPHIN 3 (BD3)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
BERTHING DOLPHIN 3
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-010 Rev A

BD4A01 - INSTALL 8 SIGNS TYPE B AT EQUAL DISTANCE EACH OTHER. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

BD4A02 - REMOVE CHAINS

BD4A03 - REMOVE RUBBER FENDERS

di di dii diii

BD4A04 - REMOVE ANY LOOSE ITEMS/DEBRIS (IF PRESENT)

BD4A05 - REMOVE LADDER

BERTHING DOLPHIN 4 (BD4)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
BERTHING DOLPHIN 4
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-011 Rev A

JH2A03 - REMOVE BOLLARDS
(2No.) AND GRIND DOWN BOLTS

JH2A05 - REMOVE ROPES AND
ANY LOOSES ITEMS/DEBRIS

JH2A01 - INSTALL 8 SIGNS TYPE B.
ONE ON EACH FACE. BOLT SIGNS INTO CONCRETE.
FOR SIGN FIXINGS REFER TO DRGS 2427-035 & 036.

JH2A02 - REMOVE TIMBER
FENDERS ON THE SOUTH FACE

JH2A04 - REMOVE CHAINS

di dii diii

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

JH2A06 - REMOVE
HANDRAIL

JETTY HEAD 2 (JH2)

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
JETTY HEAD 2
OPTION 1

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www.nirasfraenkel.com

Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-012 Rev B

NOTES

1. NOTES FOR OPTION 2 SHOWN IN BLUE.

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

(OPTION 2) JHA2-1A03-2
DEMOLISH/REMOVE ENTIRE ACCESS TRESTLE AND CUT TIMBER PILES 1m BELOW RIVERBED

(OPTION 1) JHA2-1A01 - DEMOLISH/REMOVE FIRST SECTION OF ACCESS TRESTLE TO THE SUPPORT STRUCTURE AND CUT TIMBER PILES 1m BELOW RIVERBED

(OPTION 1) JHA2-1A02 - INSTALL 2 SIGNS TYPE C ON SUPPORT STRUCTURE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di	Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.
dii	Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.
diii	Contractor to take caution when removing access structures and utilize methods to ensure the remainder structures will not be loaded in a manner to cause instability.
div	When cutting the timber piles contractor to use methods that minimize or eliminate diving operations.

di dii diii div

JETTY HEAD ACCESS 2-1 (JHA 2-1)
OPTIONS 1& 2

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
JETTY HEAD ACCESS 2-1
OPTION 1 & 2

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-013 — Rev B

NOTES

1. NOTES FOR OPTION 2 SHOWN IN BLUE.

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

(OPTION 2) JHA2-2-A03-2 - DEMOLISH/REMOVE ENTIRE ACCESS TRESTLE AND CUT PILE 1m BELOW RIVERBED

(OPTION 1) JHA2-2A02 - INSTALL 2 SIGNS TYPE C ON SUPPORT STRUCTURES. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

(OPTION 1) JHA2-2A01 - DEMOLISH/REMOVE FIRST SECTION OF ACCESS TO THE SUPPORT STRUCTURE AND CUT TIMBER PILES 1m BELOW RIVERBED.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di	Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.
dii	Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.
diii	Contractor to take caution when removing access structures and utilize methods to ensure the remainder structures will not be loaded in a manner to cause instability.
div	When cutting the timber piles contractor to use methods that minimize or eliminate diving operations.

di dii diii div

JETTY HEAD ACCESS 2-2 (JHA2-2)
OPTIONS1 & 2

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
JETTY HEAD ACCESS 2-2
OPTIONS 1 & 2

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-014 Rev B

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

di

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii

MOORING DOLPHIN 6 (MD6)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 6
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-016 Rev A

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

(OPTION 2) MD6A08-2 - REMOVE ENTIRE WALKWAY AND CUT TIMBER PILES 1m BELOW RIVERBED

(OPTION 1) MD6A07 INSTALL ONE SIGN TYPE C ON LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

(OPTION 1) MD6A06 - REMOVE FIRST LANDSIDE SECTION OF WALKWAY

NOTES

1. NOTES FOR OPTION 2 SHOWN IN BLUE.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di — Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii — Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii — Contractor to take caution when removing access structures and utilize methods to ensure the remainder structures will not be loaded in a manner to cause instability.

div — When cutting the timber piles contractor to use methods that minimize or eliminate diving operations.

di dii diii div

MOORING DOLPHIN ACCESS 6 (MDA6)
OPTIONS 1 & 2

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MD ACCESS 6
OPTIONS 1 & 2

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Drawn	Checked	Approved	Scale (at A3): NTS
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Drg No : 5427-017 — Rev B

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii

MOORING DOLPHIN 8 (MD8)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 8
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-018 — Rev A

NOTES

1. NOTES FOR OPTION 2 SHOWN IN BLUE.

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di	Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.
dii	Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.
diii	Contractor to take caution when removing access structures and utilize methods to ensure the remainder structures will not be loaded in a manner to cause instability.
div	When cutting the timber piles contractor to use methods that minimize or eliminate diving operations.

(OPTION 1) MD8A06 - REMOVE FIRST LANDSIDE SECTION OF WALKWAY

(OPTION 2) MD8A08-2 - REMOVE ENTIRE WALKWAY AND CUT TIMBER PILES 1m BELOW RIVERBED

(OPTION 1) MD8A07 INSTALL ONE SIGN TYPE C ON LANDSIDE. FOR SING FIXINGS REFER TO DRGS 5427-035 & 036

MOORING DOLPHIN ACCESS 8 (MDA8)
OPTIONS 1 & 2

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
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BOWLING TERMINAL
MOORING DOLPHIN ACCESS 8
OPTIONS 1 & 2

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-019 | Rev B

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

MD4A01 - INSTALL ONE SIGN TYPE C ON DOLPHIN FACING RIVER. FOR SIGN FIXINGS REFER TO DRGS. 5427-035 & 036

MD4A02 - INSTALL ONE SIGN TYPE C ON LANDSIDE QUAY WALL FACING LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036

MD4A03 - INSTALL STRAPPING SYSTEM. FOR STRAPPING DETAILS REFER TO DRG 5427-032 TO 34

di dii diii

MOORING DOLPHIN 4 (MD4)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 4
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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-020 Rev A

MD5A01 - INSTALL ONE SIGN TYPE C ON LANDSIDE FACING LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 036.

MD5A02 - INSTALL ONE SIGN TYPE C ON DOLPHIN FACING RIVER. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

MD5A03- INSTALL STRAPPING SYSTEM. FOR STRAPPING SYSTEM REFER TO DRG 5427-032 TO 034.

MD5A04 - REMOVE BOLLARD AND GRIND DOWN BOLTS

di di dii diii

MOORING DOLPHIN 5 (MD5)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 5
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-021 Rev A

di dii diii

MOORING DOLPHIN 7 (MD7)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

di

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 7
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-022 Rev B

MD9A01 - INSTALL ONE SIGN TYPE C ON LANDSIDE FACING LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

MD9A02 - INSTALL ONE SIGN TYPE C ON DOLPHIN FACING RIVER. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

MD9A03- INSTALL STRAPPING SYSTEM. FOR STRAPPING DETAILS REFER TO DRG 5427-032 TO 034.

MD9A04 - REMOVE BOLLARD AND GRIND DOWN BOLTS

di di dii diii

MOORING DOLPHIN 9 (MD9)

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 9
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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-023 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii

di dii diii

MOORING DOLPHIN 10 (MD10)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 10
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-024 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

⚠ di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

MD11A02 - INSTALL ONE SIGN TYPE C ON DOLPHIN FACING RIVER. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

MD11A04 - REMOVE BOLLARD AND GRIND DOWN BOLTS

MD11A01 - INSTALL ONE SIGN TYPE C ON LANDSIDE FACING LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

⚠ di ⚠ dii ⚠ diii

MD11A03 - INSTALL STRAPPING SYSTEM. FOR STRAPPING DETAILS REFER TO DRG 5427-032 TO 034.

MOORING DOLPHIN 11 (MD11)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 11
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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-025 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

di dii diii

MOORING DOLPHIN 12 (MD12)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 12
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-026 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

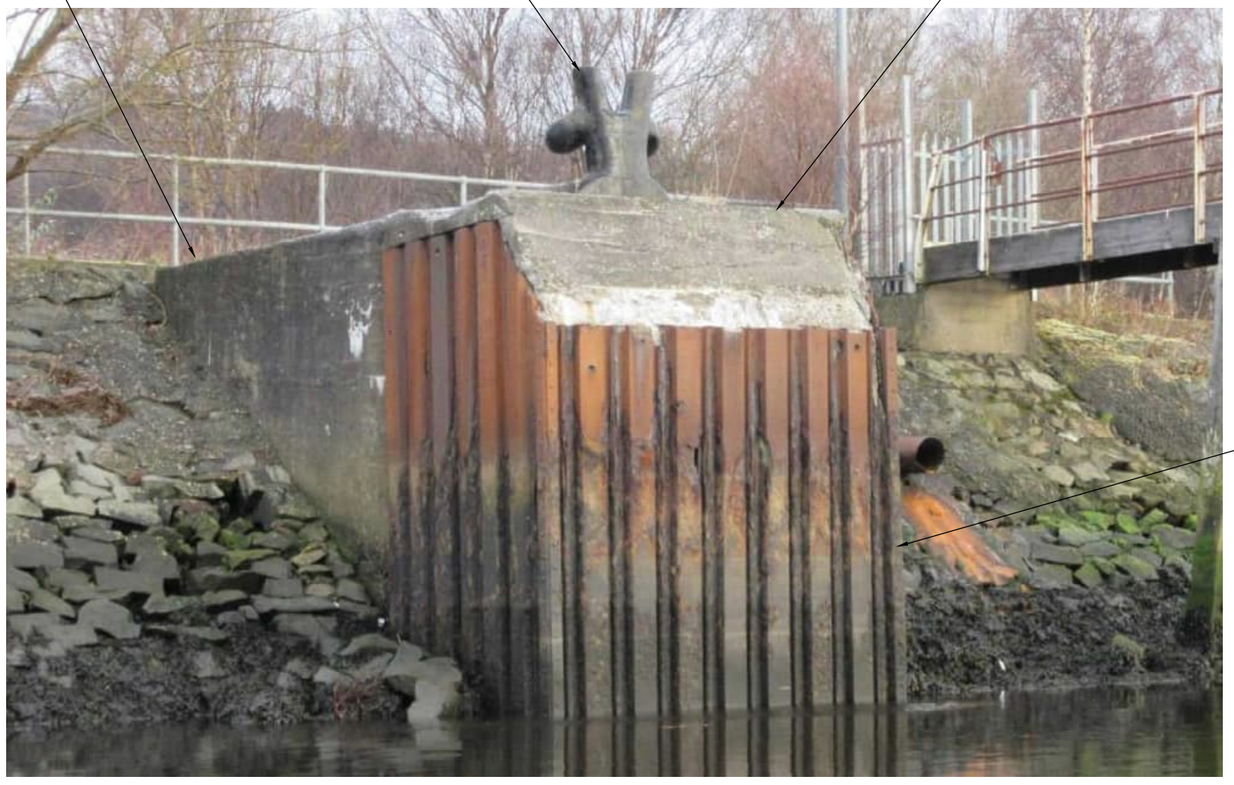
diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

MD13A01 - INSTALL ONE SIGN TYPE C ON LANDSIDE FACING LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 2427-035 & 036.

MD13A04 - REMOVE BOLLARD AND GRIND DOWN BOLTS

MD13A02 - INSTALL ONE SIGN TYPE C ON DOLPHIN FACING RIVER. FOR SIGN FIXINGS REFER TO DRGS 2427-035 & 036.

di dii diii



MD13A03 - INSTALL STRAPPING SYSTEM. FOR STRAPPING DETAILS REFER TO DRG 5427-032 TO 034

MOORING DOLPHIN 13 (MD13)

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 13
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-027 Rev A

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

⚠ di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to take caution when removing furniture to ensure the existing structure will not be loaded in a manner to cause instability.

dii Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

diii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

⚠ di ⚠ dii ⚠ diii

MOORING DOLPHIN 14 (MD14)

NOTE: BOTH OPTIONS 1 & 2 APPLY ONLY IF REQUIRED BY EMPLOYER. (i.e. ONLY IF MD14 NOT BROUGHT BACK INTO SERVICE)

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

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BOWLING TERMINAL
MOORING DOLPHIN 14
OPTION 1

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Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-028 Rev B

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di — Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di	Contractor to take caution when removing furniture and installing strapping system to ensure the existing structure will not be loaded in a manner to cause instability.
dii	Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.
diii	Contractor to take caution when removing access structures and utilize methods to ensure the remainder structures will not be loaded in a manner to cause instability.
div	When cutting the timber piles contractor to use methods that minimize or eliminate diving operations.

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

MDA14A06 - REMOVE FIRST SECTION OF WALKWAY

(OPTION 2) MDA14A08 - REMOVE ENTIRE WALKWAY ACCESS STRUCTURE AND CUT TIMBER PILES 1m BELOW RIVERBED.

M14A07 - INSTALL ONE SIGN TYPE C ON LANDSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036

di dii diii div

MOORING DOLPHIN ACCESS 14 (MDA14)

NOTE: BOTH OPTIONS 1 & 2 APPLY ONLY IF REQUIRED BY EMPLOYER. (i.e. ONLY IF MD14 NOT BROUGHT BACK INTO SERVICE)

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
MD ACCESS 14
OPTION 1 & 2

NIRAS
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Suite 18 , Merlin House
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glasgow@nirasfraenkel.com
www.nirasfraenkel.com

Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-029 — Rev B

Option 2 is no longer required. Physical access to the structure to be fully restricted through installation of palisade fencing with a lockable gate. Gates shall be 3.0m wide and 1.8m high, with suitable fencing, and installed as per manufacturer's recommendations with suitable foundations.

J1A01 - INSTALL TWO SIGNS TYPE A INTO CONCRETE FACING BASIN AND RIVER. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036

(OPTION 2) J1A05-2 - DEMOLISH JETTY, CUT-OFF PILE 1m BELOW RIVERBED AND INSTALL NEW ROCK ARMOUR AS EXISTING

J1A03 - REMOVE ALL WOODEN FENDERS AND GRIND DOWN STUDS

J1A04 - REMOVE LADDER, PLASTIC PIPES AND ANY OTHER ITEMS PROVIDING MEANS OF CLIMBING ONTO JETTY

di dii diii

J1A02 - INSTALL ONE SIGN TYPE A ON THE PALISADE FENCE FACING THE ROADSIDE. FOR SIGN FIXINGS REFER TO DRGS 5427-035 & 036.

NOTES

1. NOTES FOR OPTION 2 SHOWN IN BLUE.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

This information is based on an experienced and competent contractor carrying out the work and the risks specific to these works additional to those normally associated with this type of work.

di Where appropriate the residual risks are indicated on the drawing with the symbol and reference to the note number

Demolition

di Contractor to check the marine structure before commencing work to identify any loose objects and to incorporate them in the methodology of the works.

dii Water depth at low tide is shallow and consideration to tide levels should be taken during the works.

diii When cutting the concrete piles contractor to use methods that minimize or eliminate diving operations.

JETTY 1 (J1) OPTIONS 1 & 2

TENDER

Rev.	Date	Description	App'd
B	06-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM
-	17-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
JETTY 1
OPTIONS 1 & 2

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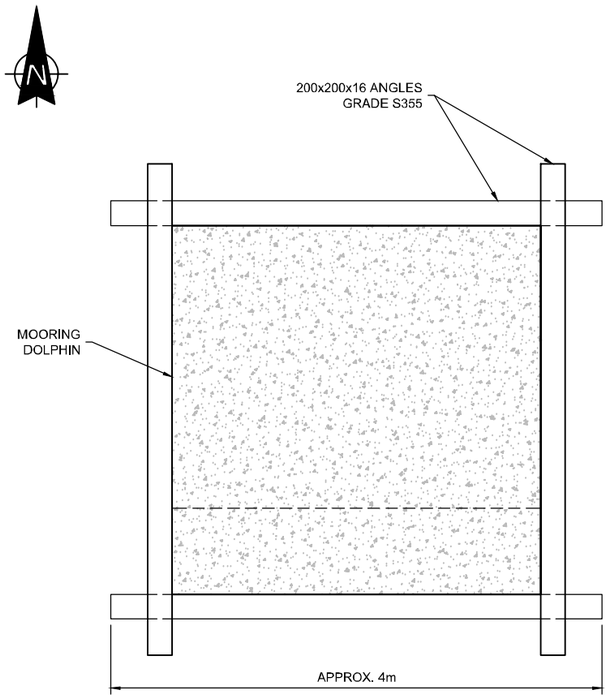
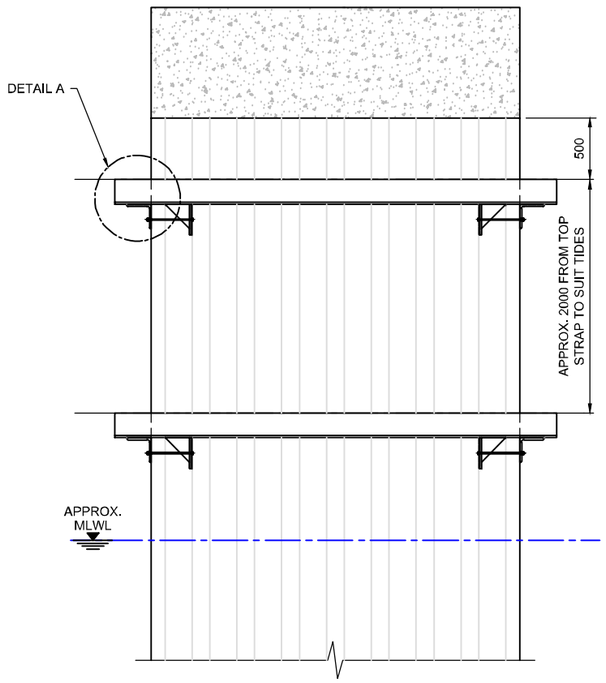
Drawn	Checked	Approved	Scale (at A3): NTS
MAP	PBA	DFM	Date: Jan 2019

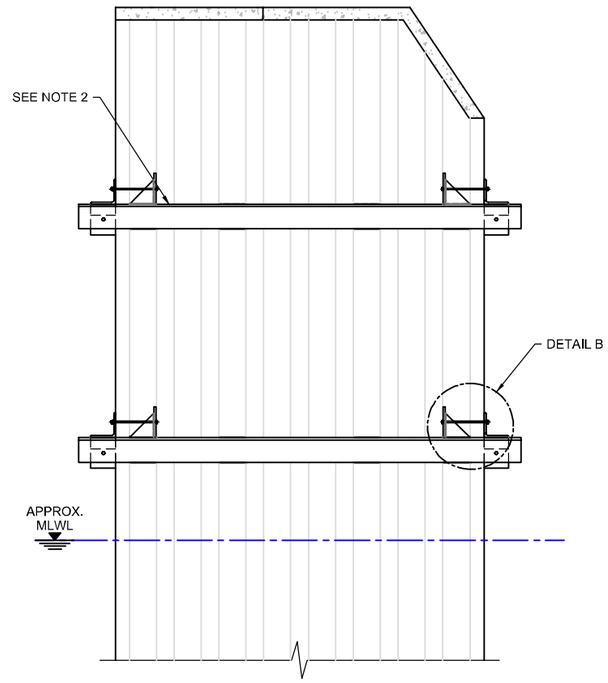
Drg No : 5427-030 Rev B



MOORING DOLPHIN PLAN
SCALE 1:50



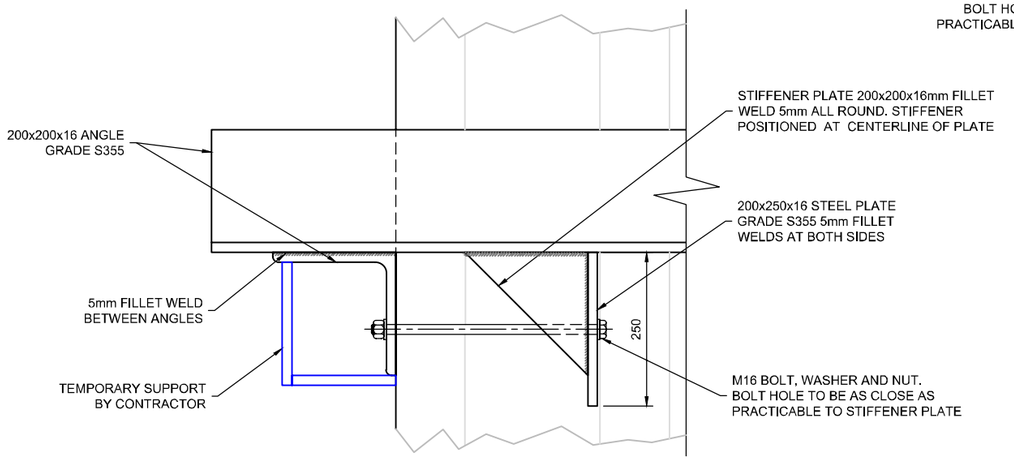
MOORING DOLPHIN SOUTH ELEVATION
SCALE 1:50



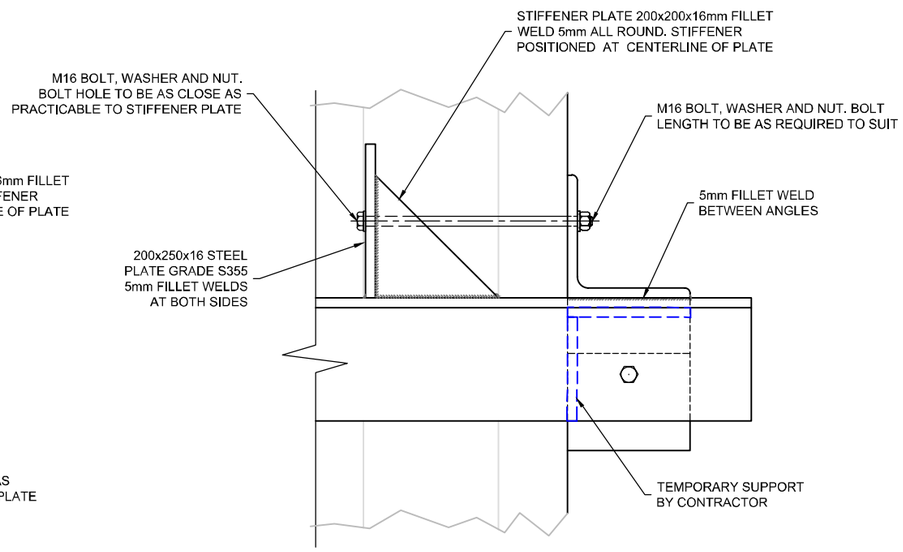
MOORING DOLPHIN WEST ELEVATION
SCALE 1:50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. 3mm FILLET WELDS TOP AND BOTTOM ON OUTPANES 1, 3, 6 AND 8 ON ALL SIDES.
3. TRIM ANGLES AT EDGES AFTER CONNECTING THEM.
4. WELD TOGETHER ANY LOOSE SHEET PILES WITH 3mm WELDS.
5. TEMPORARY SUPPORTS USED FOR INSTALLATION OF ANGLES TO BE BY CONTRACTOR.
6. CONSTRUCTION SEQUENCE:
   a. INSTALL TEMPORARY SUPPORTS.
   b. PLACE ANGLES IN POSITION.
   c. TIGHTEN BOLTS BETWEEN ANGLES TO BRING THEM TOGETHER.
   d. WELD BETWEEN ANGLES AT CORNERS.
   e. WELD BETWEEN SHEET PILES AND ANGLES.
7. ALL THE BOLTS ARE M16 GRADE 8.8, BOLTS ANCHORED IN CONCRETE TO BE HILTI HIT-RE 500V3 WITH HIT-V ROD M16 125mm EMBEDMENT LENGTH.
8. DOLPHIN STRUCTURE DIMENSIONS ARE NOT KNOWN. LENGTHS OF ANGLES ARE TO BE CONFIRMED BY CONTRACTOR. APPROXIMATE LENGTHS PROVIDED ON DRAWING.



DETAIL A
SCALE 1:10



DETAIL C
SCALE 1:10

TENDER

Rev.	Date	Description	App'd
A	06-02-19	For Comment	DFM
-	31-01-19	-	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
STRAPPING DETAILS
FOUR-SIDED DOLPHINS
MD1, MD2, MD3

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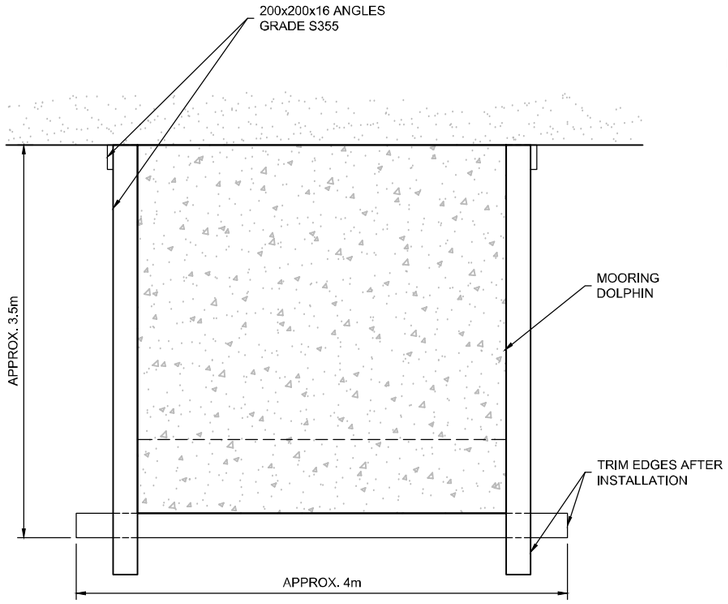
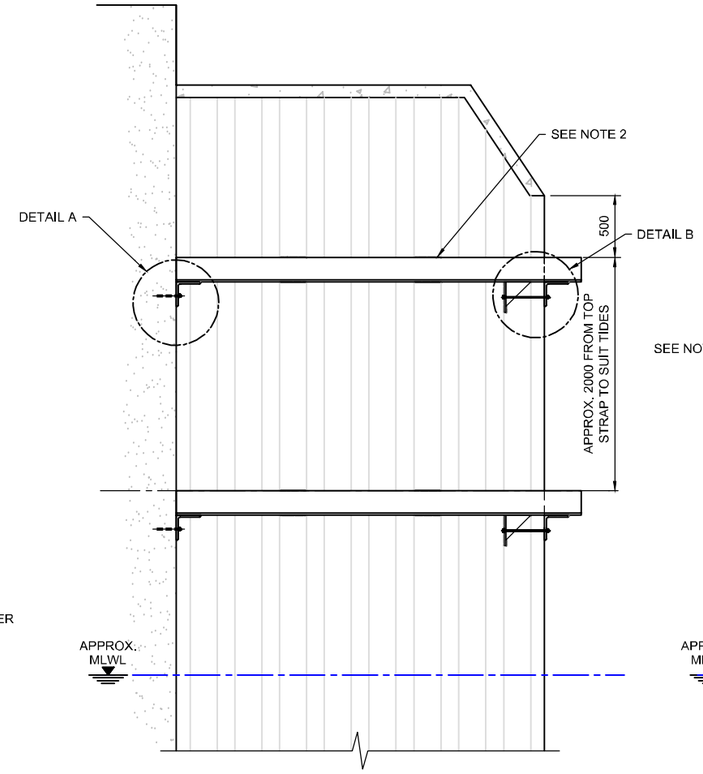
Drawn	Checked	Approved	Scale (at A3): As Shown
MAP	PBA	DFM	Date: Jan 2019

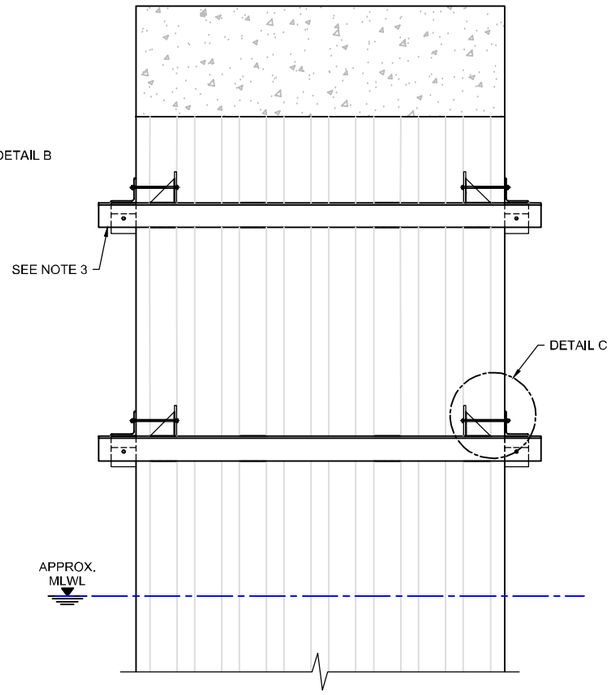
Drg No : 5427-032 | Rev A



MOORING DOLPHIN PLAN
SCALE 1:50



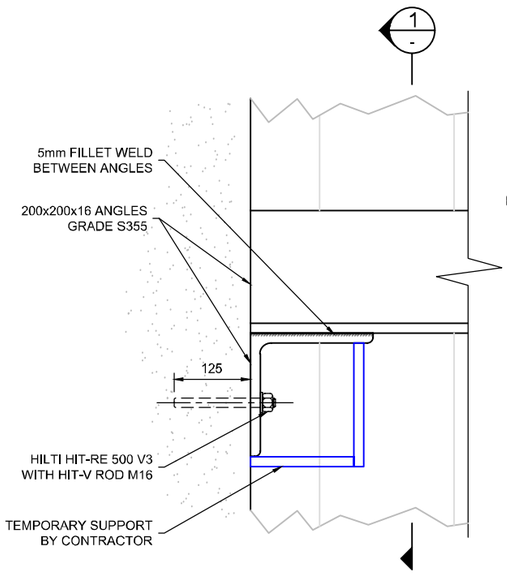
MOORING DOLPHIN WEST ELEVATION
SCALE 1:50



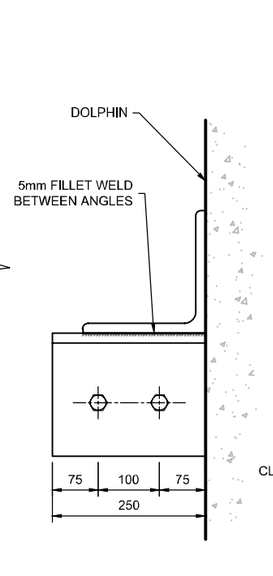
MOORING DOLPHIN SOUTH ELEVATION
SCALE 1:50

NOTES

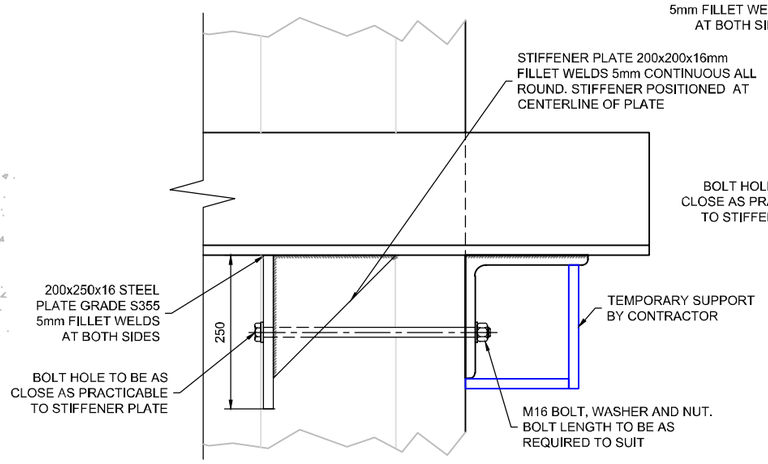
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. 3mm FILLET WELDS TOP AND BOTTOM ON OUTPANES 1, 3, 6 AND 8 ON ALL SIDES.
3. TRIM ANGLES AT EDGES AFTER CONNECTING THEM.
4. WELD TOGETHER ANY LOOSE SHEET PILES WITH 3mm WELDS.
5. TEMPORARY SUPPORTS USED FOR INSTALLATION OF ANGLES TO BE BY CONTRACTOR.
6. CONSTRUCTION SEQUENCE:
   a. INSTALL TEMPORARY SUPPORTS.
   b. PLACE ANGLES IN POSITION.
   c. TIGHTEN BOLTS BETWEEN ANGLES TO BRING THEM TOGETHER.
   d. WELD BETWEEN ANGLES AT CORNERS.
   e. WELD BETWEEN SHEET PILES AND ANGLES.
7. ALL THE BOLTS ARE M16 GRADE 8.8. BOLTS ANCHORED IN CONCRETE TO BE HILTI HIT-RE 500V3 WITH HIT-V ROD M16 125mm EMBEDMENT LENGTH.
8. DOLPHIN STRUCTURE DIMENSIONS ARE NOT KNOWN. LENGTHS OF ANGLES ARE TO BE CONFIRMED BY CONTRACTOR. APPROXIMATE LENGTHS PROVIDED ON DRAWING.



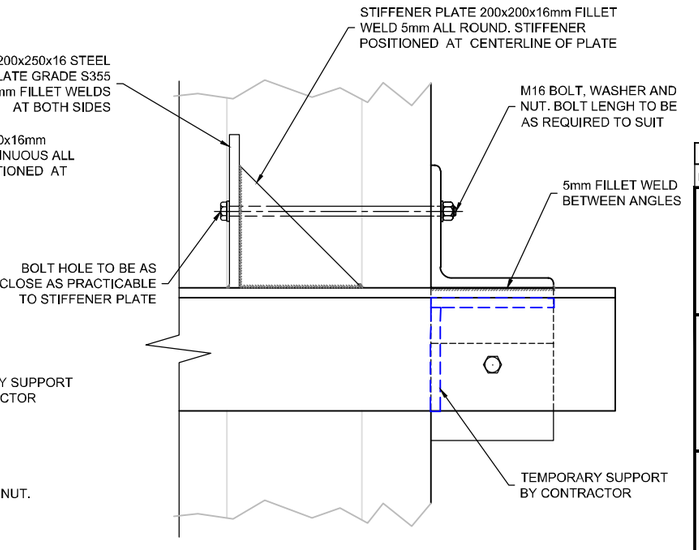
DETAIL A
SCALE 1:10



SECTION 1-1
SCALE 1:10



DETAIL B
SCALE 1:10



DETAIL C
SCALE 1:10

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
STRAPPING DETAILS
THREE-SIDED DOLPHINS
MD4, MD5, MD7, MD9 & MD10

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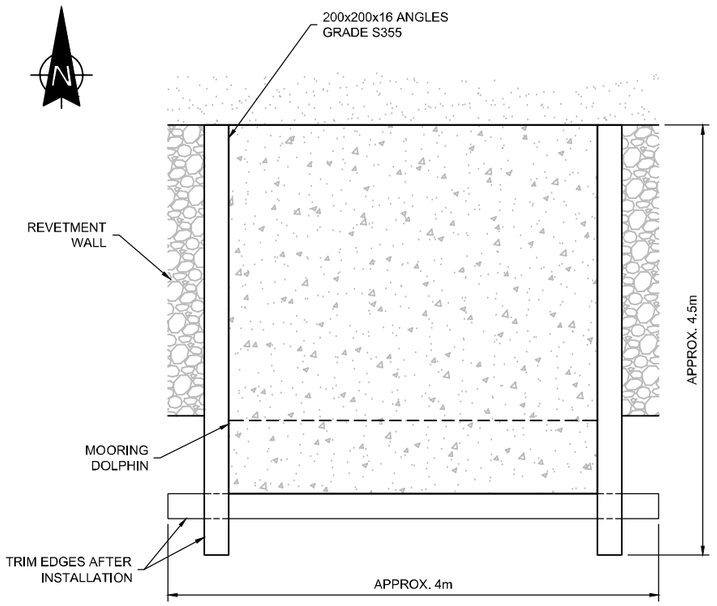
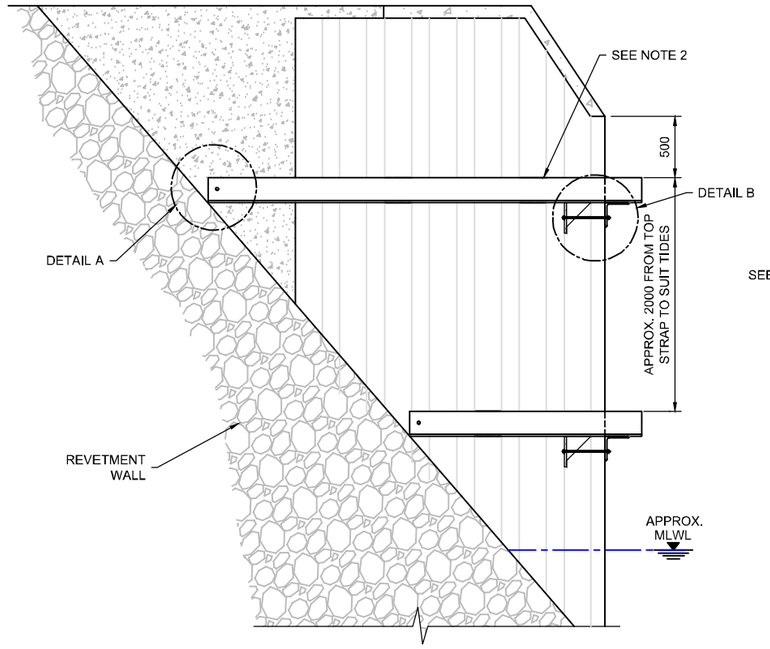
Drawn	Checked	Approved	Scale (at A3): As Shown
MAP	PBA	DFM	Date: Jan 2019

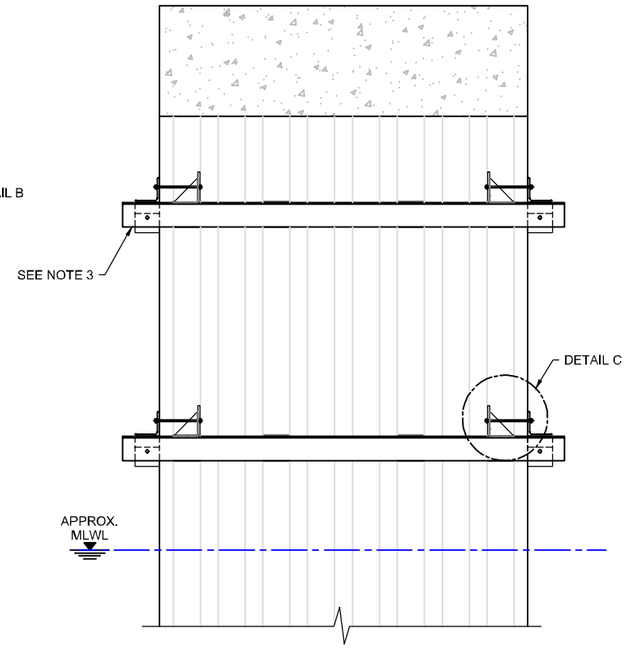
Drg No : 5427-033 | Rev A



MOORING DOLPHIN PLAN
SCALE 1:50



MOORING DOLPHIN WEST ELEVATION
SCALE 1:50



MOORING DOLPHIN SOUTH ELEVATION
SCALE 1:50

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. 3mm FILLET WELDS TOP AND BOTTOM ON OUTPANES 1, 3, 6 AND 8 ON ALL SIDES.
3. TRIM ANGLES AT EDGES AFTER CONNECTING THEM.
4. WELD TOGETHER ANY LOOSE SHEET PILES WITH 3mm WELDS.
5. TEMPORARY SUPPORTS USED FOR INSTALLATION OF ANGLES TO BE BY CONTRACTOR.
6. CONSTRUCTION SEQUENCE:
   a. INSTALL TEMPORARY SUPPORTS.
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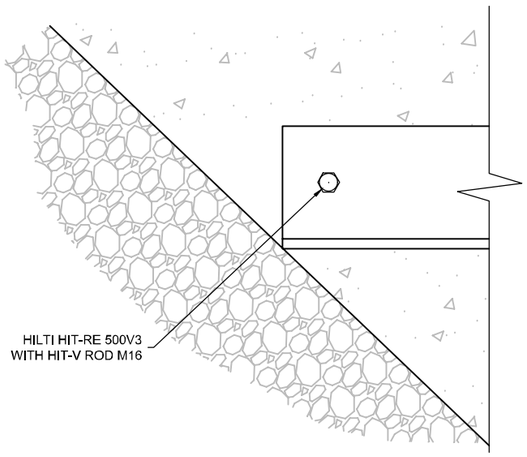
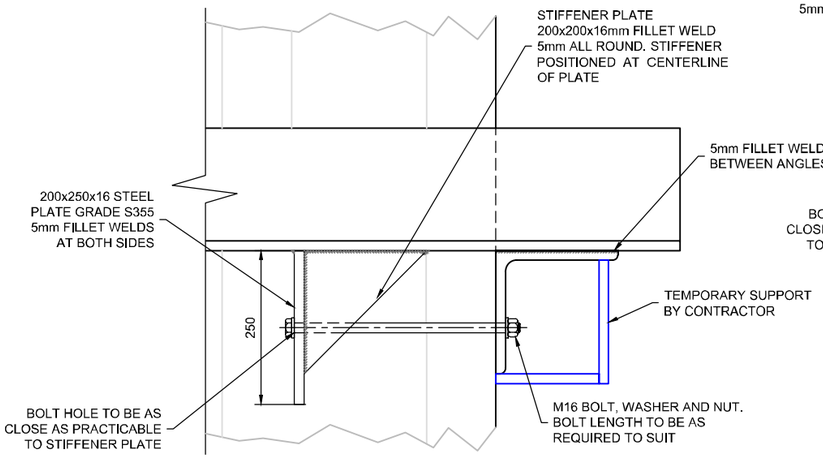
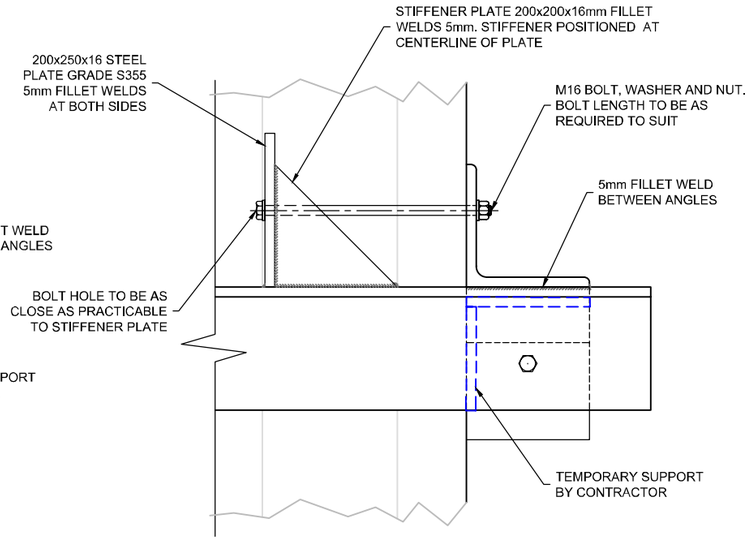
   d. WELD BETWEEN ANGLES AT CORNERS.
   e. WELD BETWEEN SHEET PILES AND ANGLES.
7. ALL THE BOLTS ARE M16 GRADE 8.8. BOLTS ANCHORED IN CONCRETE TO BE HILTI HIT-RE 500V3 WITH HIT-V ROD M16 125mm EMBEDMENT LENGTH.
8. DOLPHIN STRUCTURE DIMENSIONS ARE NOT KNOWN. LENGTHS OF ANGLES ARE TO BE CONFIRMED BY CONTRACTOR. APPROXIMATE LENGTHS PROVIDED ON DRAWING.



DETAIL A
SCALE 1:10



DETAIL B
SCALE 1:10



DETAIL C
SCALE 1:10

TENDER

Rev.	Date	Description	App'd
A	31-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
STRAPPING DETAILS
THREE-SIDED DOLPHINS
MD11, MD12 AND MD13

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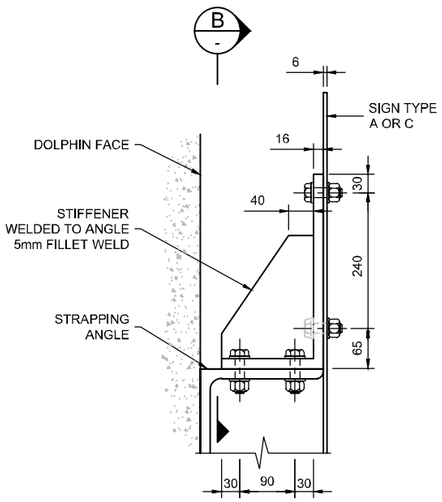
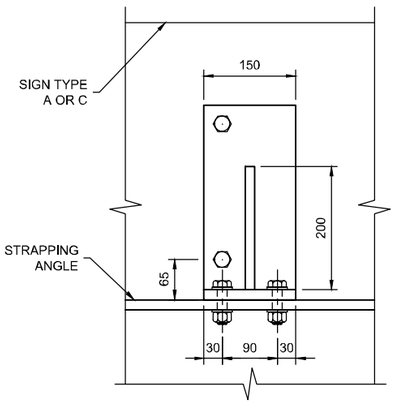
Drawn	Checked	Approved	Scale (at A3): As Shown
MAP	PBA	DFM	Date: Jan 2019

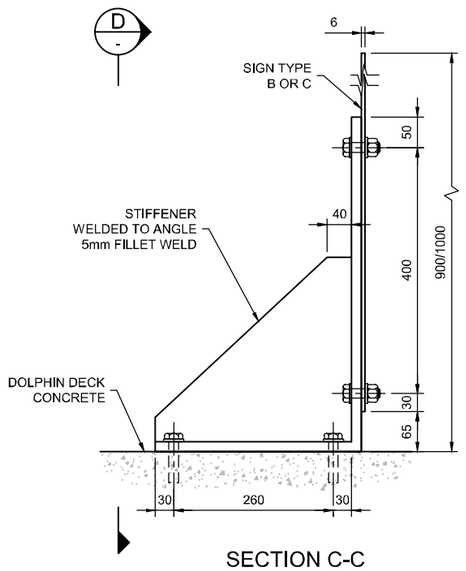
Drg No : 5427-034 Rev A



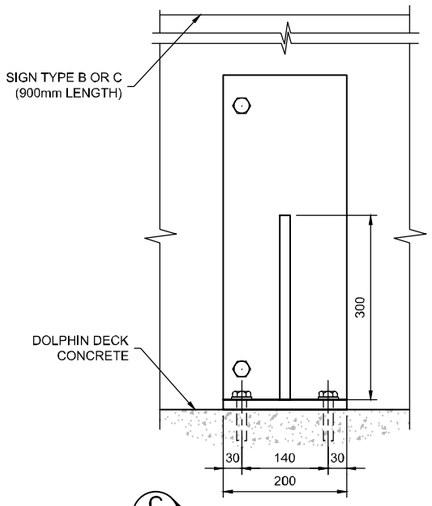
SECTION A-A



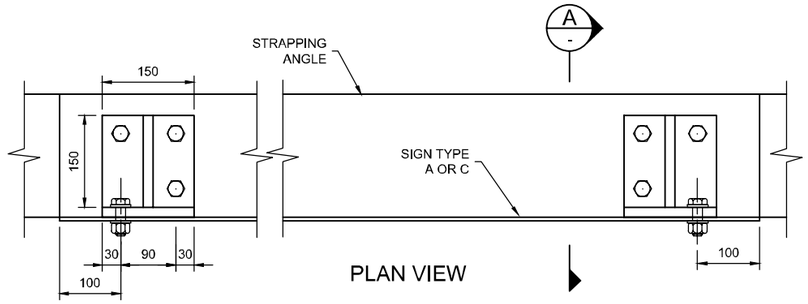
SECTION B-B



SECTION C-C

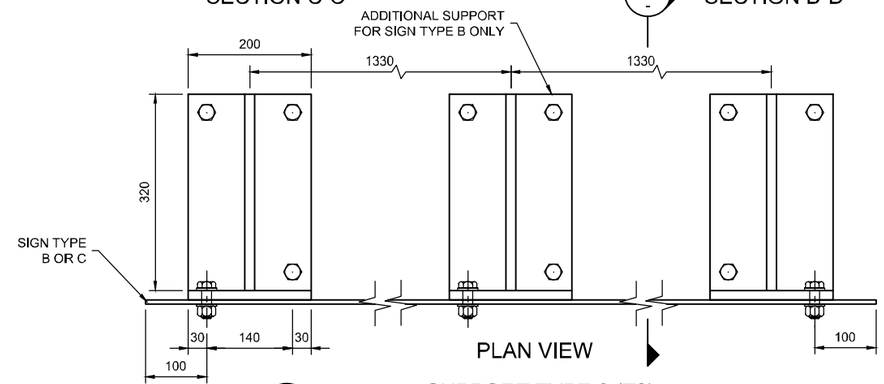


SECTION D-D



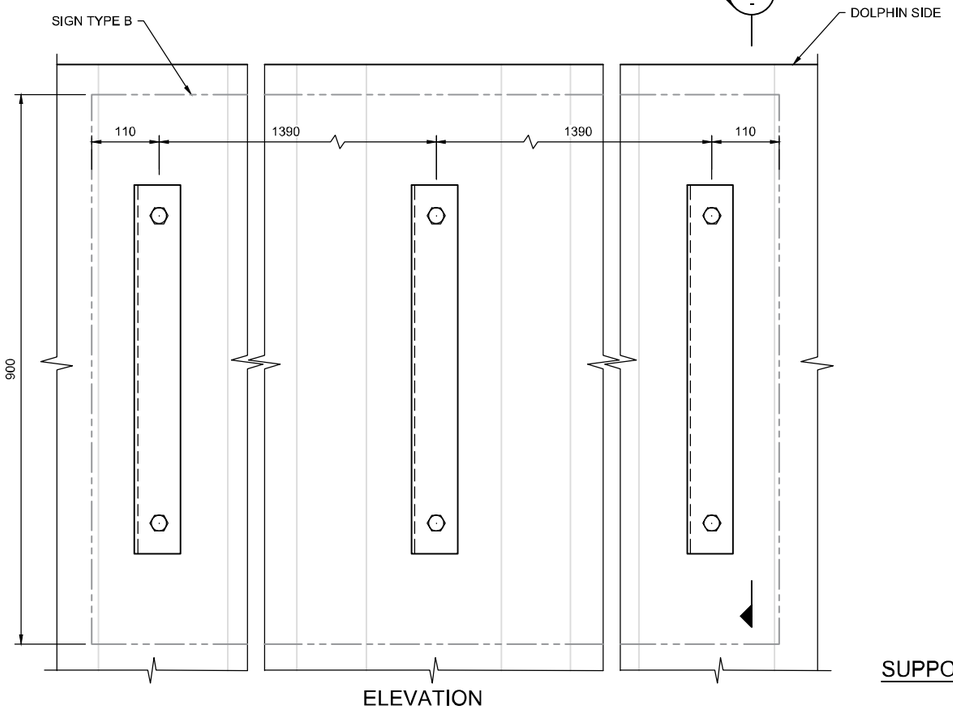
PLAN VIEW

SUPPORT TYPE 1 (T1)
SCALE 1:10



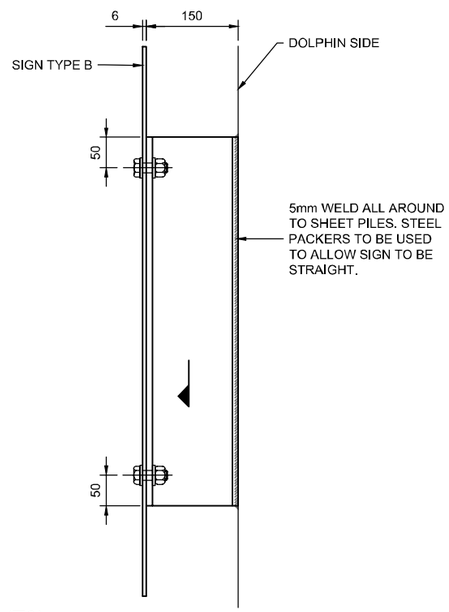
PLAN VIEW

SUPPORT TYPE 2 (T2)
SCALE 1:10

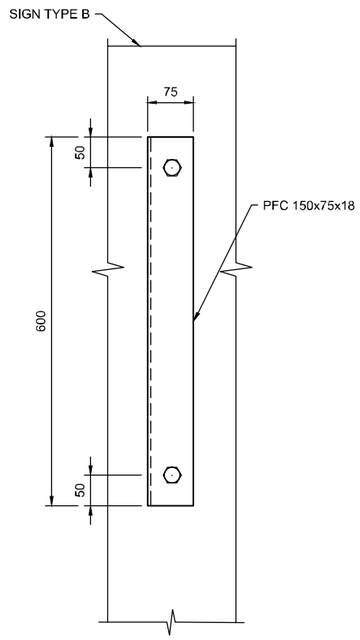


ELEVATION

SUPPORT TYPE 3 (T3)
SCALE 1:10



SECTION E-E



SECTION F-F

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL THE BOLTS ARE M16 GRADE 8.8. BOLTS ANCHORED IN CONCRETE TO BE HILTI HIT-RE 500V3 WITH HIT-V ROD M16 125mm EMBEDMENT LENGTH.
3. FIT SIGN SYMMETRICALLY ONTO SUPPORT.
4. USE RUBBER WASHERS WHERE REQUIRED TO AVOID CONTACT OF DIFFERENT METAL TYPES.
5. CONCRETE SURFACE FOR THE BOLT FIXINGS TO BE GROUTED AS REQUIRED TO MAKE FLUSH SURFACE FOR SIGN FIXINGS.
6. FOR SIGN DETAILS REFER TO THE TECHNICAL SPECIFICATIONS.
7. FOR SIGN TYPE D THEIR LAND SIDE POSITIONS AND FIXINGS ARE TO BE AGREED WITH SUPERVISOR AND EMPLOYER.
8. SIGNS TO BE REINFORCED, SUCH AS USING STEEL CHANNELS OR ANGLES ALONG THE SIGN AT APPROPRIATE VERTICAL CENTRES SUFFICIENTLY TO ACCOMMODATE WIND SPEED OF 25.5m/s IN ACCORDANCE TO THE STANDARDS FOR HIGHWAY.
   SIGN AND THEIR REINFORCEMENT TO BE AS PER MANUFACTURERS AND BS EN 12899.
9. SIGNS TO BE NON-REFLECTIVE AND ADEQUATE FOR MINIMUM 10 YEARS.

TENDER

Rev.	Date	Description	App'd
B	01-02-19	For Comment	DFM
A	31-01-19	For Comment	DFM

ESSO PETROLEUM CO. LTD

BOWLING TERMINAL
SIGN FIXINGS DETAILS
SHEET 1 OF 2

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Drawn	Checked	Approved	Scale (at A3): 1:10
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-035 | Rev B

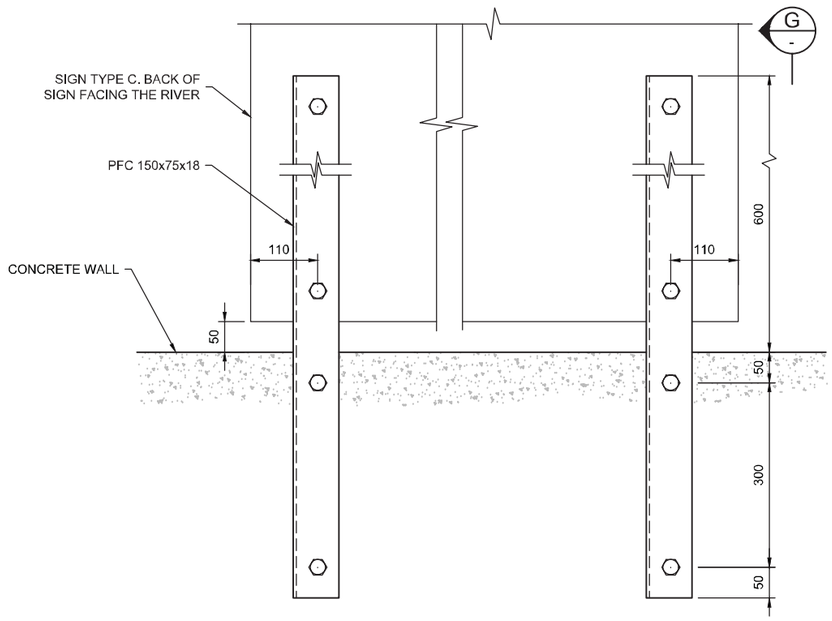
	Structure	MD1				MD2				MD3				BD1				BD2				JH1				SS1				SS2			
		South	East	West	North	South	East	West	North	South	East	West	North	South	East	West	North	South	East	West	North	South	East	West	North	South	East	West	North	South	East	West	North
SIGN TYPE AND QUANTITY	A	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0													1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	B													1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0								
	C																																
FIXING TYPE	T1- AS PER DRG	X	X	X	X	X	X	X	X	X	X	X	X																				
	T2 -AS PER DRG													X				X															
	T3 - AS PER DRG																																
	T4 - AS PER DRG																																
	T5- SIGN BOLTED INTO CONCRETE *														X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	T6 - SIGN CLAMPED ON PALISADE FENCE **																																

	Structure	BD3	BD4	JH2	JHA2-1	JHA2-2	MD6				MD8				MD4		MD5		MD7		MD9		MD10		MD11		MD12		MD13		MD14				J1	QW
							South	East	West	North	South	East	West	North	South	North	South	North	South	North	South	North	South	North	South	North	South	North	South	North	South	East	West	North		
SIGN TYPE AND QUANTITY	A						1.0	1.0	1.0		1.0	1.0	1.0																		1.0	1.0	1.0		3.0	2.0
	B	8.0	8.0	8.0																															
	C				2.0	2.0				1.0				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0				1.0		
FIXING TYPE	T1- AS PER DRG														X		X		X		X		X		X		X		X						
	T2 -AS PER DRG																	X		X		X		X		X		X		X					
	T3 - AS PER DRG	X	X	X																															
	T4 - AS PER DRG														X																				
	T5- SIGN BOLTED INTO CONCRETE *				X	X	X	X	X		X	X	X																		X	X	X		X	X
	T6 - SIGN CLAMPED ON PALISADE FENCE **									X				X																				X	X	

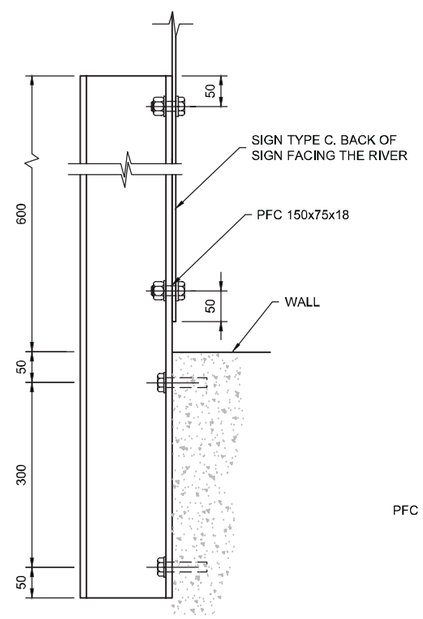
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL THE BOLTS ARE M16 GRADE 8.8. BOLTS ANCHORED IN CONCRETE TO BE HILTI HIT-RE 500V3 WITH HIT-V ROD M16 125mm EMBEDMENT LENGTH.
3. FIT SIGN SYMMETRICALLY ONTO SUPPORT.
4. USE RUBBER WASHERS WHERE REQUIRED TO AVOID CONTACT OF DIFFERENT METAL TYPES.
5. CONCRETE SURFACE FOR THE BOLT FIXINGS TO BE GROUTED AS REQUIRED TO MAKE FLUSH SURFACE FOR SIGN FIXINGS.
6. FOR SIGN DETAILS REFER TO THE TECHNICAL SPECIFICATIONS.
7. FOR SIGN TYPE D THEIR LAND SIDE POSITIONS AND FIXINGS ARE TO BE AGREED WITH SUPERVISOR AND EMPLOYER.
8. SIGNS TO BE REINFORCED, SUCH AS USING STEEL CHANNELS OR ANGLES ALONG THE SIGN AT APPROPRIATE VERTICAL CENTRES SUFFICIENTLY TO ACCOMMODATE WIND SPEED OF 25.5m/s IN ACCORDANCE TO THE STANDARDS FOR HIGHWAY.
   SIGN AND THEIR REINFORCEMENT TO BE AS PER MANUFACTURERS AND BS EN 12899.
9. SIGNS TO BE NON-REFLECTIVE AND ADEQUATE FOR MINIMUM 10 YEARS.

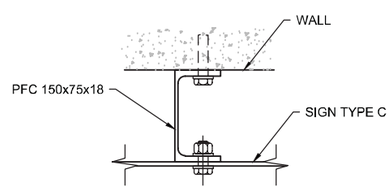
NOTES
* FOR BOLT DETAILS REFER TO NOTE 2.
** CLAMP TO BE A PROPRIETARY SYSTEM AND DETAILS TO BE AS PER MANUFACTURERS.



ELEVATION



SECTION G-G



PLAN VIEW OF SECTION G-G

MD4 - SIGN FACING ROAD SIDE ONLY
SUPPORT TYPE 4 (T4)
SCALE 1:10

TENDER

Rev.	Date	Description	App'd
C	06-02-19	For Comment	DFM
B	01-02-19	For comment	DFM
A	31-01-19	For comment	DFM

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BOWLING TERMINAL
SIGN FIXINGS DETAILS
SHEET 2 OF 2

NIRAS
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Drawn	Checked	Approved	Scale (at A3): 1:10
MAP	PBA	DFM	Date: Jan 2019

Drg No : 5427-036 Rev C

Appendix C

INNER CLYDE SSSI CITATION

CITATION

INNER CLYDE
SITE OF SPECIAL SCIENTIFIC INTEREST

Argyll and Bute / Renfrewshire / West Dunbartonshire / Inverclyde

Site code: 1701

NATIONAL GRID REFERENCE:	NS 312811 to NS 494698 (North shore) NS 300766 to NS 492696 (South shore)
OS 1:50,000 SHEET NO:	Landranger Series 63 & 64
1:25,000 SHEET NO:	Explorer Series 341, 342 & 347
AREA:	1,824.92 hectares

NOTIFIED NATURAL FEATURES

Biological: Coastlands: Saltmarsh
Biological: Birds: Cormorant *Phalacrocorax carbo* (non-breeding)
Biological: Birds: Eider *Somateria mollissima* (non-breeding)
Biological: Birds: Goldeneye *Bucephala clangula* (non-breeding)
Biological: Birds: Oystercatcher *Haematopus ostralegus* (non-breeding)
Biological: Birds: Red-breasted merganser *Mergus serrator* (non-breeding)
Biological: Birds: Red-throated diver *Gavia stellata* (non-breeding)
Biological: Birds: Redshank *Tringa totanus* (non-breeding)

DESCRIPTION

The Inner Clyde Site of Special Scientific Interest (SSSI) contains the intertidal zone of the Clyde estuary from Clydebank in the east to a line between Helensburgh on the north shore and Greenock on the south shore. The seaward boundary of the site extends as far as Mean Low Water Springs. The site is the most northerly of Britain's large west coast estuaries used by migrating birds, and is of national importance for its populations of wintering wildfowl and waders and of European importance for its wintering population of redshank. The site also supports a variety of typical estuarine plant communities with good examples of transitions from saltmarshes to brackish swamps and grassland periodically inundated with sea water.

The site provides the largest example in west central Scotland of grazed and ungrazed upper saltmarsh with relatively uninterrupted transitions to swamp and grassland vegetation. These transitions are absent from many of the major British estuaries where historical land-claim has led to their disappearance. The most extensive areas of saltmarsh, covering approximately 76 hectares, are found on the north shore between Milton Island and Dumbarton, and on the south shore at Newshot Island and Longhaugh Point. There is also a small area at Ardmore Point. In these areas the low marsh (seaward) vegetation, which is covered at almost every tide, contains large areas of the nationally scarce dwarf eelgrass *Zostera noltei*.

The Inner Clyde regularly supports nationally important wintering populations of several species of waterfowl, including redshank, red-throated diver, cormorant, eider, goldeneye, red-breasted merganser and oystercatcher. Principal roosting sites are at Ardmore, Dumbarton, Cardross, Milton Island, Longhaugh Point to West Ferry, and Newshot Island.

NOTIFICATION HISTORY

Part notified under the 1949 Act: Ardmore Point SSSI in 1955
Part notified under the 1949 Act: Erskine to Langbank SSSI in 1972 and 1975

Part re-notified under the 1981 Act: Ardmore Point SSSI on 22 March 1983
Part re-notified under the 1981 Act: Erskine to Langbank SSSI on 29 October 1984
Part notified under the 1981 Act: Dumbuck Foreshore to Pillar Bank SSSI on 11 November 1983

First notified under the 1981 Act as Inner Clyde SSSI: 21 June 1999
(At confirmation on 16 March 2000 there was a 6.74 ha decrease in area.)

Notification reviewed under the 2004 Act: 3 August 2010

REMARKS

Measured area of site corrected from 1,826.02 ha (intertidal area).

Inner Clyde SSSI is designated as the Inner Clyde Special Protection Area (SPA) for the birds listed below:

Birds: redshank *Tringa totanus* (non-breeding)

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