Govan Basin Infill
EIA Screening Report

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1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd has been appointed by Arch Henderson on behalf of BAE Systems Ltd to submit an Environmental Impact Assessment (EIA) Screening Request to Glasgow City Council (GCC) and Marine Scotland (MS-LOT) in relation to the proposals to infill the wet basin at Govan Shipyard and Maintenance Facility (Govan Shipyard) (Refer to Drawing No 175756-GIS001).

1.2 Scope of Report

The Environmental Impact Assessment (EIA) Screening Report has been prepared in accordance with the requirements of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017[1] (hereafter referred to as 'the EIA Regulations') and The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017[2] (hereafter referred to as 'the Marine EIA Regulations').

This EIA Screening Report provides a desk-based study of the potential for the proposals to have effects on the site and surrounding environment. It provides environmental information compiled through a desktop review of readily available environmental information. The purpose of this document is to provide the relevant environmental information to assist both GCC and MS-LOT in reaching a Screening Opinion.

The EIA Screening Report has been prepared to ensure it conforms to both the marine and land-use planning regimes as follows.

1.2.1 The EIA Regulations

In accordance with Part 2/8(2) of these regulations, a request for a screening opinion must be accompanied by:

(a) a description of the location of the development, including a plan sufficient to identify the land;

(b) a description of the proposed development, including in particular—

(i) a description of the physical characteristics of the proposed development and, where relevant, of demolition works;

(ii) a description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected;

(c) a description of the aspects of the environment likely to be significantly affected by the proposed development; and

[1] *The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017* (SSI 2017/102). Available at: https://www.legislation.gov.uk/ssi/2017/102/contents
[2] *The Marine Works (Environmental Impact Assessment) (Scotland) Regulations (SSI 2017/115).* Available at: https://www.legislation.gov.uk/ssi/2017/115/contents

(d) a description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—

(i) the expected residues and emissions and the production of waste, where relevant;

(ii) the use of natural resources, in particular soil, land, water and biodiversity.

1.2.2 The Marine EIA Regulations

In accordance with Part 2/10(2) of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017, a request for a screening opinion must be accompanied by:

(a) a description of the location of the proposed works, including a plan sufficient to identify the area in which the works are proposed to be sited;

(b) a description of the proposed works, including in particular—

(i) a list of all of the regulated activities which are proposed;

(ii) a description of the physical characteristics of the proposed works and, where relevant, works to be decommissioned; and

(iii) a description of the location of the proposed works, with particular regard to the environmental sensitivity of geographical areas likely to be affected;

(c) a description of the aspects of the environment likely to be significantly affected by the proposed works; and

(d) a description of any likely significant effects, to the extent of the information available on such effects, of the proposed works on the environment resulting from either, or both, of the following:—

(i) the expected residues and emissions and the production of waste, where relevant;

(ii) the use of natural resources, in particular soil, land, water and biodiversity.

1.3 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

Whilst the Client has a right to use the information as appropriate, EnviroCentre do not accept liability to any third party for the contents of this report unless written agreement is secured in advance, stating the intended use of the information. EnviroCentre accept no liability for use of the report for purposes other than those for which it was originally provided, or where EnviroCentre have confirmed it is appropriate for the new context.

2 EIA SCREENING

Under both the EIA and Marine EIA Regulations, proposals are screened to determine whether they fall within one of the types or scales of development which would require an Environmental Impact Assessment Report (EIAR) to support applications to both GCC and MS-Lot for infilling of the wet basin at Govan Shipyard. In screening an application, consideration is given to whether the proposal would fall into any of the categories set out in Schedules 1 or 2 of the Regulations.

The EIA Regulations do not attempt to define 'significant effects' as each development must be dealt with on its own merits.

Schedule 1 of the Regulations lists types and scales of development for which an EIA will always be required. Schedule 2 of the Regulations lists types and scales of development for which an EIA might be required, subject to assessment under Schedule 3.

2.1 Assessment in Relation to Schedule 1

The proposed development is not of a type/scale listed in Schedule 1 of the Regulations; it is therefore necessary to assess the proposal in terms of Schedule 2.

2.2 Assessment in Relation to Schedule 2

There is potential the proposals may be classed as a Schedule 2 development under the EIA and Marine EIA Regulations. The Table within Schedule 2 specifies the classes in which the proposed development could fall under are:

10. Infrastructure projects

a) Industrial estate development projects; The area of the development exceeds 0.5 hectare

As such it is considered necessary to assess the proposed development against the criteria contained in Schedule 3 in order to establish whether or not an EIA will be necessary.

2.3 Assessment in Relation to Schedule 3

Schedule 3 of the Regulations provides selection criteria for the screening of Schedule 2 developments. It must be noted that there are no rigid thresholds providing a universal test of whether or not an EIA is required. The proposal must be considered on a case-by case basis by virtue of factors such as its nature, size or location. The fundamental test to be applied in each case is whether that particular type of development proposed, and its specific impacts are likely, in that particular location, to result in significant effects on the environment.

3 SITE SETTING AND PROPOSED CONSTRUCTION WORKS

3.1 Site Location

Govan shipyard is situated in an urban area to the southwest of Glasgow City Centre. The surrounding area comprises a mixture of uses including industrial, business, commercial, residential along with a large health institution complex.

The Govan shipyard is located on the southern bank of the River Clyde and is bounded to the south by Govan Road, Elder Park and a residential area with another residential area to the east. Glasgow Harbour residential area lies opposite the site on the northern bank of the River Clyde. To the west of the site is the A739, the Queen Elizabeth University Hospital, and a large area comprising industrial, business and commercial activities.

The site has been used for ship building since the middle of the 19th century. It is located within an urban environment and covers approximately 10 hectares of land adjacent to the River Clyde with an existing waterfront 590m in length (Refer to Drawing No. 175756-GIS001 for site location). A combination of inclined slipways, masonry walls, sheet piled wharf structures and an extent of informal riverbank forms the water frontage to the site (northern boundary) with the wet basin located on the western area.

3.2 The Proposed Development

Bae Systems are currently considering their options for developing the Govan shipyard to support the long-term future of ship building at the site. The company has identified that the infilling of the existing wet basin will allow the expansion of the assembly line within a controlled environment. Options for how the newly created working platform can best be utilised in the shipbuilding assembly line are still being developed.

This screening request relates to Phase 1 of the development which is the infilling of the existing wet basin located at Grid Reference 254624 666109 to create a working platform.

The development site area (infilling area of the dock) is 1.70 hectares (below the threshold of 2 hectares for a major development and is therefore a local development with respect to planning). Arch Henderson Drawing 225010-BAE-AHN-ZZ-XX-DR-C0007 provided in Appendix A details the infill and new quay wall area that is proposed to be developed.

The area of the construction works is 4.57 hectares which includes the wet basin working area, access road and contractor compound. It is anticipated circa 190,000 m^3 of material will be required to infill the wet basin and that it will be brought to site primarily by barge (~95%) but also by road (~5%).

3.2.1 Plans

Illustrative layouts of the proposed construction works showing the wet basin, contractors compound and contractors access road are provided in Appendix A.

3.2.2 Construction Works Description

It is anticipated the works will comprise:

1. Enabling works including:
    a. Area to west of the site to be cleared of all debris to set up the contractor compound;
    b. Separate contractor access to be created from entrance roadway to allow construction traffic to be segregated from operational shipyard traffic;
2. Deployment of a silt curtain across the wet basin entrance (including a demountable section to allow passage of the barge);
3. Initial infill by long reach excavator from a barge which will place a 2 m layer of fill to cover existing sediment on the basin bed;
4. Infilling continuing using a combination of barge and excavators or self-discharging vessels. The infill material will extend beyond the line of the proposed quay wall;
5. An alternative option for infilling will incorporate construction of a stone bund at the entrance of the basin (to contain suspended solids). Infill would then incorporate placement of fluidised sand via pumping from a barge and distribution via spreader pontoon and dissipation bar.
6. Installation of a carrier drain around the existing basin quay wall to collect discharge from existing outfalls and direct to new outfalls protruding through the coffer dam;
7. Hydraulic compaction of infill material below mean sea level and dynamic compaction using rollers above mean seal level;
8. Land based piling through the infill material to create the outer quay wall. The work entails:
    a. Tubular piles being driven/vibrated into deep strata. These piles may need anchored by using a concrete pile toe bored into the rock through the tubular pile section;
    b. Sheet piles installed between the steel tubular piles. Sheet piles expected to be driven to shallower depths than the tubular piles;
    c. Reinforced concrete capping beam is installed to complete the quay wall.
9. Existing quayside at tie locations will be broken out and new tie ins installed between existing quay and the new cofferdam;
10. Basin infill taken up to design level by barged material placed over the new cofferdam and pushed into place by dozers;
11. Fill in front of cofferdam wall removed and berth pocket dredged to design level.

3.2.3 Construction Works Timing

It is anticipated that construction works will take a total of circa 34 weeks. Within this period piling to create the outer quay wall is estimated to last circa 14 weeks.

4 LOCAL SENSITIVITIES

This section notes some of the local sensitivities apparent from a high-level desk based review.

4.1 Ecologically Designated Areas

The site is not located within or in close proximity to a Special Area of Conservation (SAC), Special Protection Area (SPA) or a Site of Special Scientific Interest (SSSI).

4.2 Biodiversity

The following species and habitats are listed in the UK BAP (N) and the GLBAP and are potentially relevant to the site:

- Otter (N);
- Bats (various species) (N);
- Atlantic salmon (N);
- Common sturgeon (N);
- Allis shad (N);
- Twaite shad (N);
- European eel (N);
- River lamprey (N);
- Smelt (sparling) (N);
- Sea lamprey(N);
- Brown/sea trout (N);
- Swift; and
- Rivers (N).

4.2.1 Terrestrial

Otter
Despite the availability of food resources in the river, the wet basin and shipyard is considered sub-optimal for otters due to the lack of opportunity for holt creation along the bank. The majority of the quay-side is constructed of metal piling sheets with a concrete top and is therefore considered unsuitable.

The derelict area to the west of the site has gently sloping banks to the River Clyde with willow and birch trees present. However, the banks are heavily dominated by old building materials and has been subjected to fly-tipping. This reduces the banks suitability for holt creation.

Bats
The proposal does not include demolition of any buildings within the shipyard.

Badger
The derelict area to the west of the proposed construction compound could be suitable for badger but due to the high proportion of waste building material within the substrate it reduces the areas suitability for sett creation.

4.2.2 Marine Mammals

Although marine mammals are known to habituate the Clyde Estuary they are unlikely to regularly frequent the Inner Clyde Estuary where the Govan shipyard is located. Historically there have been very infrequent reports of individual marine mammals in the upper reaches of the Clyde. The most recent sighting was a Northern bottlenose whale spotted in the River Clyde around the Partick area in October 2020[3]

4.2.3 Migratory Fish

Atlantic salmon and Sea trout are known to migrate into the Clyde estuary and coastal streams and rivers. On returning to spawn, salmonids follow the coast. In the Inner Clyde estuary there are several salmon rivers, including the Kelvin, Clyde and Leven with large salmon and sea trout runs. Lamprey species also occur and migrate through the Inner Clyde Estuary.

4.3 Water Quality

4.3.1 Estuarine Classification

The shipyard is part of a waterbody (ID: 200510) identified as being heavily modified with overall classification of Moderate ecological potential.

4.3.2 Flood Risk

The SEPA flood risk maps were reviewed to ascertain whether the site was located in an area at risk from flooding.

Coastal Flooding

Figure 4-1 indicates that the shipyard is located within an area where each year there is a 10% chance of flooding.

[3] Source: https://www.heraldscotland.com/news/18820857.glasgow-northern-bottlenose-whale-spotted-river-clyde/

Figure 4-1 Coastal Flooding
Source: https://map.sepa.org.uk/floodmaps/FloodRisk/Risk

Surface Water Flooding

Figure 4-2 indicates that the shipyard is located within an area where each year there is a 10% chance of flooding.

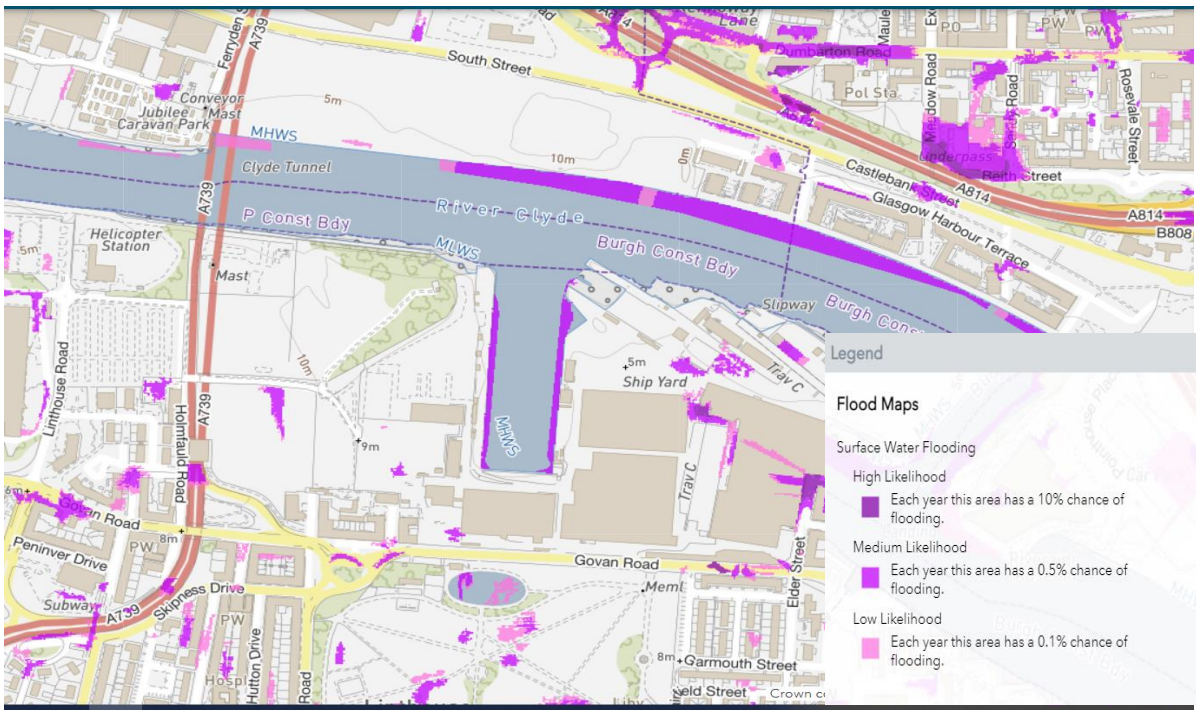


Figure 4-2 Surface Water Flooding
Source: https://map.sepa.org.uk/floodmaps/FloodRisk/Risk

River Flooding

There is no specific likelihood of river flooding identified for the shipyard area but there could still be localised effects from flooding in some places.

Future Flooding

Figure 4-3 indicates that the shipyard is located within an area where by the 2080's, each year there is a 0.5% chance of coastal flooding.

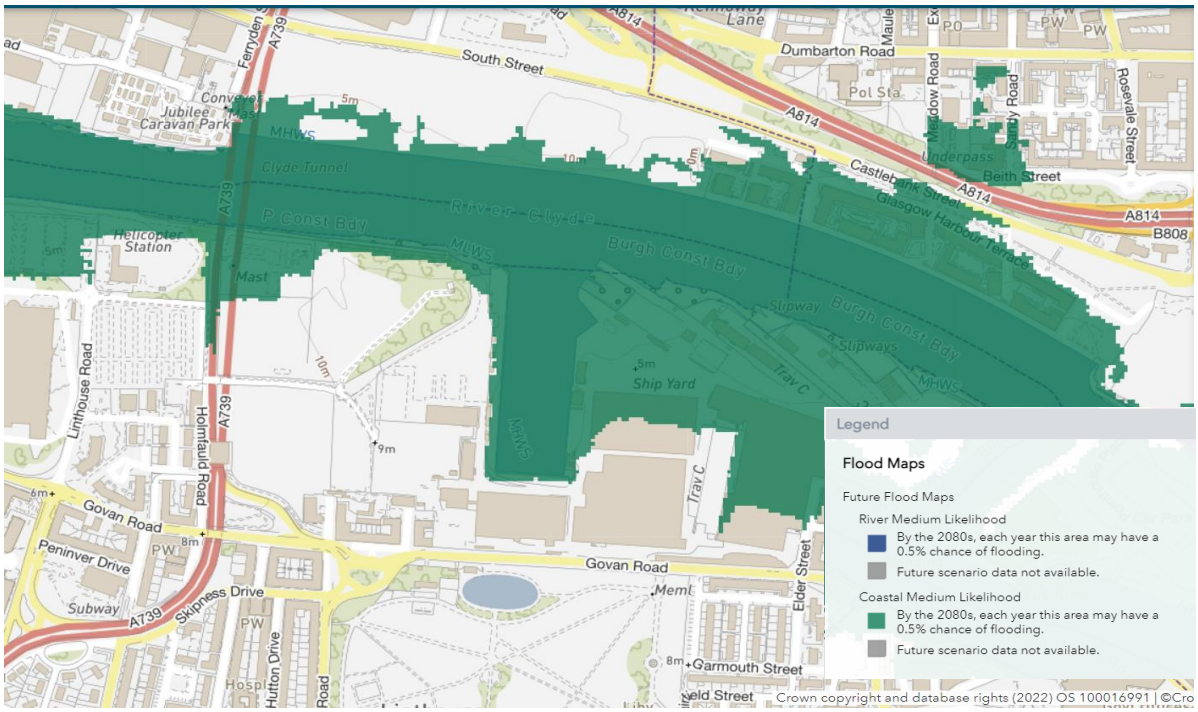


Figure 4-3 Future Year Flooding
Source: https://map.sepa.org.uk/floodmaps/FloodRisk/Risk

4.3.3 Groundwater

The shipyard is located within an area which has 2 groundwater classifications, namely; Govan Sand and Gravel and Glasgow and Motherwell, both of which have an overall classification of Poor.

4.4 Archaeology and Cultural Heritage

4.4.1 Scheduled Monuments

There are no scheduled monuments located within 500 m of the works site.

4.4.2 Canmore Terrestrial

There is a plethora of Canmore points located not only on the site but in the surrounding area as shown in Figure 4-4.

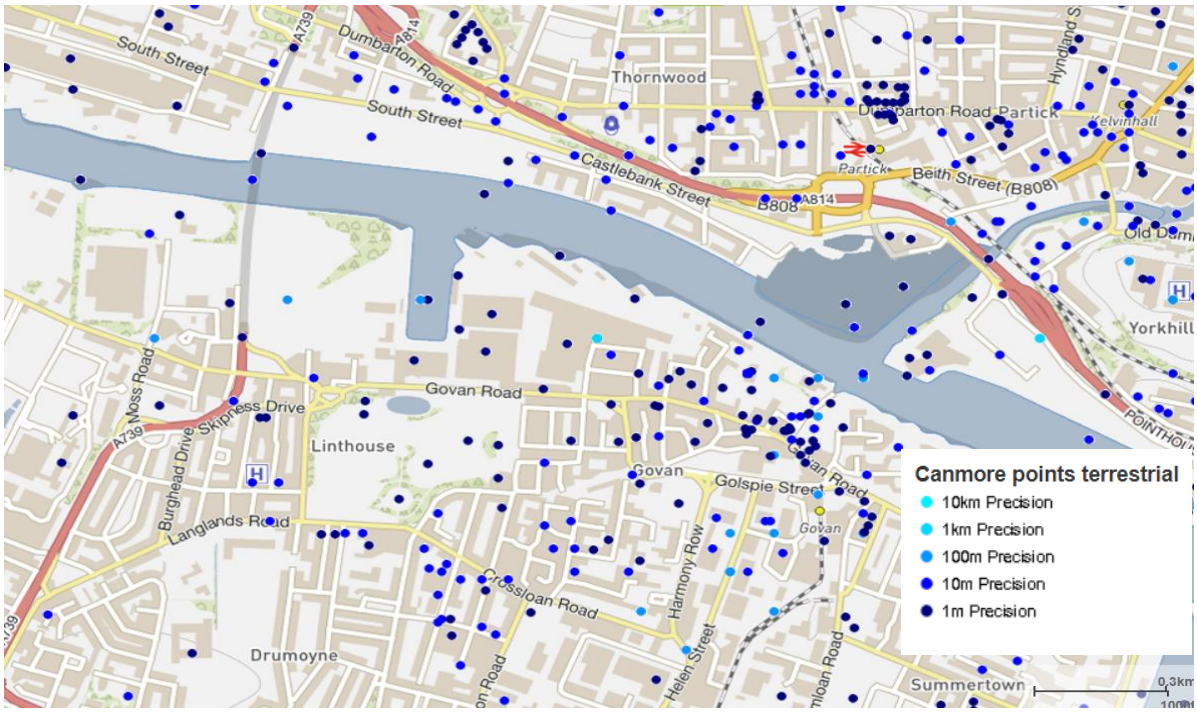


Figure 4-4: Canmore Terrestrial Points
Source: https://map.environment.gov.scot/sewebmap/

There are two Canmore points located within the construction site; namely Cranes (ID: 333983) and fit-out basin (ID: 270305) (both located in the wet basin). The Canmore points located within the surrounding shipyard area are associated with the shipyard in general (ID: 270305) and also for several individual structures relating to the shipyard including, the giant cantilever crane (ID: 79701), fabrication shed (ID: 79702), engine works (ID: 44196 and 270303), hammer stone (ID: 44228) etc.

4.4.3 Canmore Maritime

There are no Canmore Maritime points noted within 500m of the construction site.

4.4.4 Listed Buildings

There are two listed buildings located within the shipyard as shown in Figure 4-5.

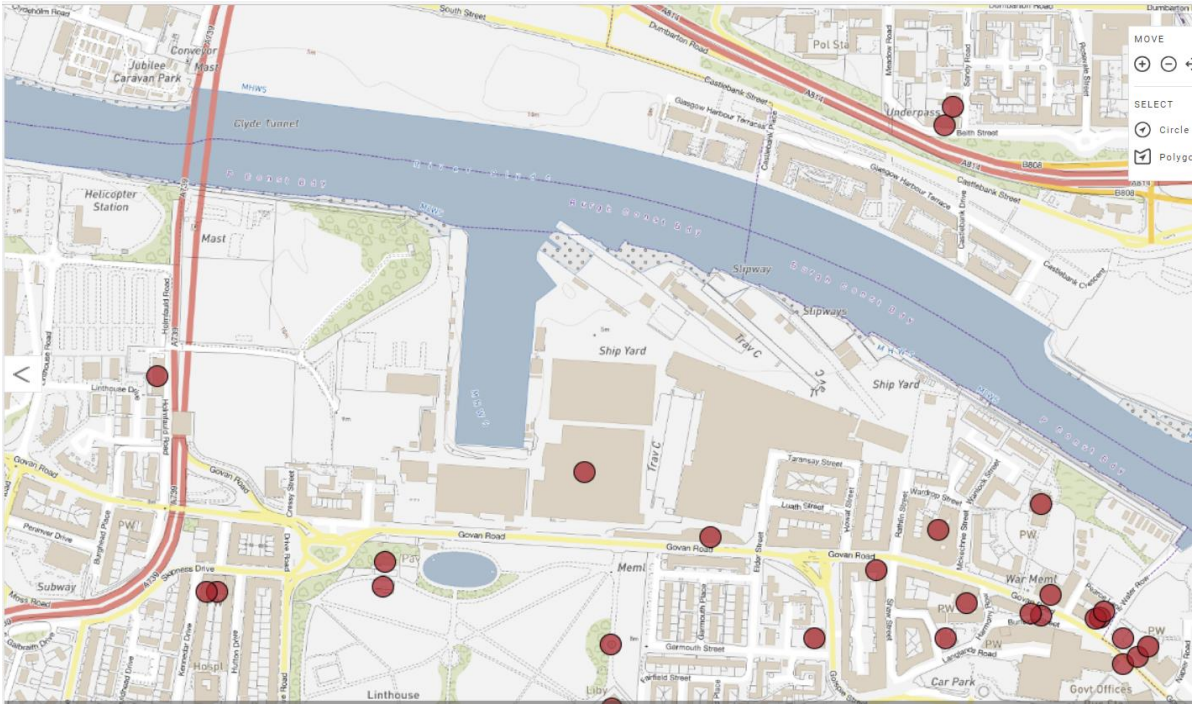


Figure 4-5: Listed Buildings
Source: https://pastmap.org.uk/map

The one on the left of the figure is identified as being the Former Engine Works of Fairfield Shipbuilding and Engineering Company (ID 1048). The other building on the right bounding Govan Road pertains to the General Offices (Excluding 1956 extension to the West) (ID 1030 and 1048).

Within the surrounding area there are numerous listed buildings identified with either A, B or C Listed Building Category's.

4.4.5 Conservation Areas

The Govan Conservation Area is located to the south of the shipyard.

4.5 Landscape and Visual

The site is located within an existing operational shipyard within an urban area of Glasgow City. It is considered unlikely that the proposal will significantly alter the landscape character or visual amenity of the area.

4.6 Noise

The shipyard is located within Glasgow City which is characterised by an urban noise environment. Figure 4.6 provides a strategic overview of the annual average noise levels at 4m above ground level on a 10m calculation grid associated with road, rail, industrial and aircraft within Scottish agglomerations such as Glasgow City.

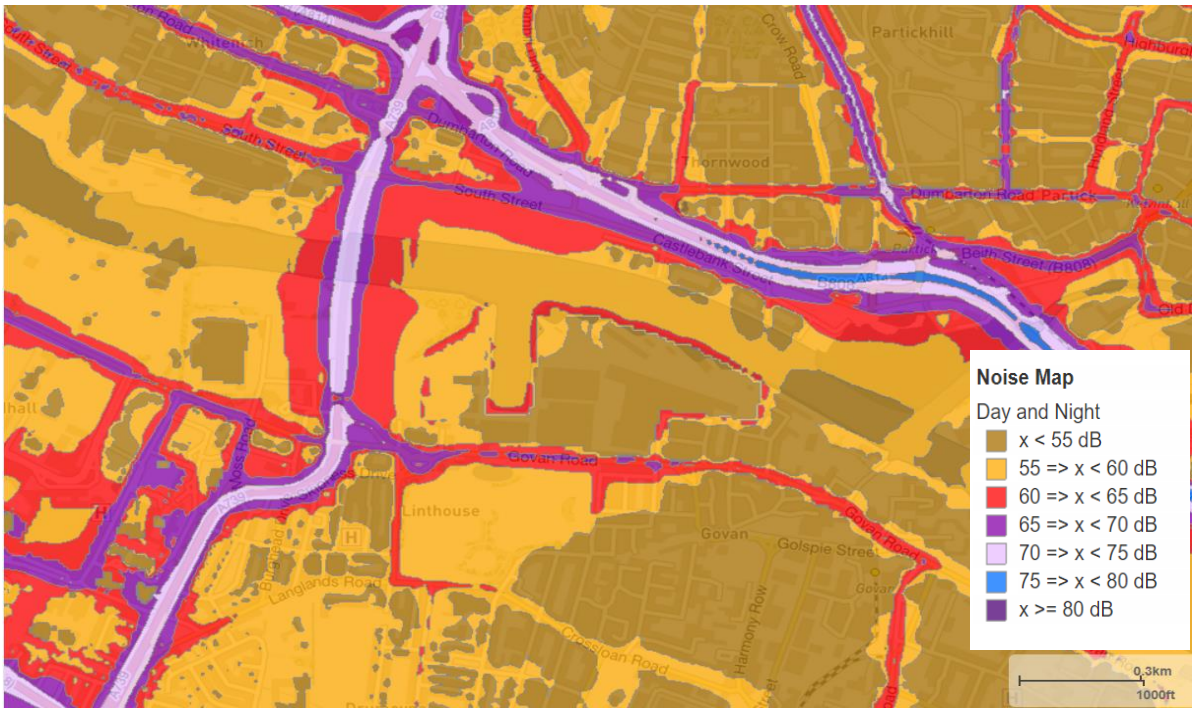


Figure 4-6: Consolidated Day, Evening and Night (Lden)
Source: https://noise.environment.gov.scot/noisemap/

On review of the noise map, it is noted that noise levels vary in the surrounding area, with the variations largely associated with road transport links. The shipyard is shown to have relatively low noise levels when compared with the surrounding area with the wet basin itself being slightly higher.

4.7 Air Quality

Glasgow City Council (GCC) have declared 3 AQMAs within their boundary, the closest being Dumbarton Road / Byres Road AQMA, declared for NO_2 and PM_{10}. This AQMA is circa 380m north of the shipyard.

Background air quality pollutant concentrations available from Air Quality Scotland[4] and DEFRA[5] websites were obtained for the OS 1 km grid square the shipyard is located in (Grid Square 254500 666500). The background pollutant concentrations for this square are outlined in Table 4-1 below.

Table 4-1: Background Air Quality Pollutant Concentrations

Year	Total Pollutant Concentration (µg/m³)		
	NO_2	PM_{10}	$PM_{2.5}$
2019	17.95	11.14	6.42

Note: 2020/21 pollutant concentrations are considered to have been influenced by the COVID 19 lockdown measures. To provide a conservative overview 2019 pollutant concentrations have been used for this report.

On review of the NO_2, PM_{10} and $PM_{2.5}$ pollutant concentrations for 2019 it is noted all are below the relevant Air Quality Objectives of 40µg/m³, 18 µg/m³ and 10 µg/m³.

The Scottish Pollutant Release Inventory (SPRI) data[6] was reviewed and the closest industrial / health operations that are required to report their air emissions to SEPA are identified as Thales Optronics

[4] Available at: https://www.scottishairquality.scot/data/mapping/data
[5] Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018
[6] Available at: https://map.environment.gov.scot/sewebmap/

Ltd and the Queen Elizabeth University Hospital both located over 430m to the west of the construction site.

4.8 Population and Human Health

The shipyard is currently operational and located in an urban area. Given the nature of the proposals it is unlikely there will be significant issues associated with population and human health.

4.9 Waste

Due to the nature of the construction works, it is unlikely it will generate significant waste. A Site Waste Management Plan shall be prepared to ensure adequate measures for waste management are in place prior to and during construction.

4.10 Material Assets

The formation of the working platform will utilise material for infill but given the scale, this is not considered to be substantial. As such, significant effects are considered to be negligible.

4.11 Climate Change

Climate change has taken a prominent position within policy and legislation at a national level, with the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[7] amending the Climate Change (Scotland) Act 2009[8]. The 2019 Act sets a target date of 2045 for Scotland reaching net-zero emissions.

In addition, under Schedule 4(4), of both EIA Regulations require:

> "*A description of the factors …….. likely to be significant affected by the development… (Including) climate (for example greenhouse gas emissions, impacts relevant to adaption)*"

With Schedule 4(5) (f) of the EIA Regulations requiring:

> "A *description of the likely significant effects of the development on the environment resulting from…the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change*"

It is considered that the proposals would not result in a significant effect upon climate given the nature of the shipyard. Any increase in emissions created during either construction or operation is likely to be negligible, and pollution and emissions control during construction would be discussed within a detailed Construction Environmental Management Plan (CEMP).

[7] *Climate Change (Emission Reduction Targets) (Scotland) Act 2019 (asp 15).* Available at: https://www.legislation.gov.uk/asp/2019/15/enacted
[8] *Climate Change (Scotland) Act 2009 (asp 12).* Available at: https://legislation.gov.uk/asp/2009/12/contents

Discussion of the vulnerability of the project to climate change is primarily concerned with the water environment, including flood risk. Climate Change will be assessed as part of the Flood Risk Assessment.

4.12 Major Accidents

The construction and operation of the working platform are not likely to give rise to major accidents.

5 ASPECTS OF THE ENVIRONMENT POTENTIALLY AFFECTED AND POTENTIAL MITIGATION MEASURES

The table below provides commentary on each of the environmental topics considered with information on:

- Local setting and any key known features;
- Potential effects of development; and
- Any mitigation, avoidance or enhancement measures that could be implemented.

Table 5-1: Aspects of the Environment Potentially Affected and Potential Mitigation Measures

Topic	Potential Effects	Context and Observations	Potential Mitigation
Air Quality	Construction Dust Emissions	No residential receptors immediately adjacent to the proposed construction works. No AQMA within close proximity of the site.	Industry standard measures will be employed during the construction works which will be managed through the Construction Environmental Management Document (CEMD).
Archaeology and Cultural Heritage	Infilling of the wet basin	There are two cultural assets identified within the wet basin.	The wet basin will be documented prior to construction commencing. No mitigation proposed, nevertheless, it is recommended that suitable protocols for the recording of previously unrecorded cultural heritage assets are introduced.
Biodiversity, Flora and Fauna	Habitat Loss	Habitat is considered suboptimal for otter, bats and badger. Breeding birds (seasonal) could be present on the site between April to September.	Ecological surveys will be undertaken prior to construction works commencing. Should any species be found using the area then suitable mitigation measures shall be devised to mitigate accordingly.
Biodiversity, Flora and Fauna	Light nuisance	Minimise light nuisance on faunal species	Powerful night-time lighting should be avoided as this could potentially disturb faunal species and reduce potential foraging and commuting routes.
Biodiversity, Flora and Fauna	Damage to the Biodiversity, flora and fauna.	Degradation of water quality during infilling works through small accidental release of fuel and associated impacts on flora and fauna.	The following good practice guidelines shall be adhered to and incorporated into the CEMD: • GGP 1: GPP 1: A general guide to preventing pollution • GGP 5: Works and maintenance in or near water; • PPG 6: Working at construction and demolition sites; • PPG 7: Safe Storage – The safe operation of refuelling facilities; • GPP 21: Pollution and incident response planning; and

Topic	Potential Effects	Context and Observations	Potential Mitigation
			• GPP 22: Incident response – dealing with spills.
Biodiversity, Flora and Fauna	Noise and visual impact.	Noise impact resulting in disturbance to fish.	Piling through the temporary coffer dam will dampen down underwater noise generation. No piling will be undertaken during the hours from dusk to dawn. Piling is not a continuous process and there will be quiet periods between when one piling activity is completed and setting up the next. A soft start technique will be adopted where the source level of the sound source is increased gradually before use at operational power. The expectation is that nearby fish/marine mammals respond to the increasing sound level by swimming away from the sound source.
Biodiversity, Flora and Fauna	Sediment Suspension	Increased suspended solids in water column of River Clyde impacting migratory fish.	A silt curtain will be deployed at the basin entrance prior to construction works commencing.
Biodiversity, Flora and Fauna	Marine Mammal Collision	Increased marine traffic during the infilling leading to an increased risk of collision with marine mammals.	Develop a Marine Mammal Protection Plan to assess and manage the risks of causing injury or disturbance to marine mammals (cetaceans and seals), as a result of the increased traffic.
Biodiversity, Flora and Fauna	Introduction of new invasive species.	Minimising the spread of Non-Native Species.	Works will be undertaken in line with the Scottish Governments “Non-native species: code of practice[9] (2012)”

[9] https://www.gov.scot/publications/non-native-species-code-practice/

Topic	Potential Effects	Context and Observations	Potential Mitigation
Climate Change	Flooding on site and the surrounding area.	The infilling of the basin will decrease the water capacity of the River Clyde.	Discussion of the vulnerability of the project to climate change is primarily concerned with the water environment, including flood risk. It should be noted that the development is a Water Compatible Use as defined within The SEPA Flood Risk and Land Use Vulnerability Guidance (LUPS-GU24 v.4) and land use with such a classification in an area with a 10% chance of flooding each year is considered to be generally suitable for development by SEPA. A flood risk assessment will be undertaken to inform the working platform design.
Landscape	Minor impact on visual amenity of the area during construction.	Impact on visual amenities to local populations in particular the Glasgow Harbour residents which over-look the shipyard.	Construction activities are occurring within an existing operational shipyard and are considered to be temporary in nature. No mitigation proposed in relation to visual impacts.
Major Accidents	Minimise major accidents	The construction works is not likely to give rise to major accidents.	No mitigation proposed
Material Assets	Promote the sustainable use and management of material assets.	Proposal will be protecting and enhancing existing assets and ensuring sustainable use.	No mitigation proposed.
Population and Human Health	Protect and improve human health and wellbeing.	Degradation of air quality on local communities, through emissions during construction.	The CEMP will contain standard construction site dust suppression techniques.
Population and Human Health	Protect and improve human health and wellbeing.	Degradation of the noise environment of local communities, through noise	It is considered that construction works are temporary in nature and the noise environment will return to pre-construction levels once work is completed. It is anticipated that construction works including piling will be

Topic	Potential Effects	Context and Observations	Potential Mitigation
		emissions during construction works.	restricted to the daytime period. A noise assessment will be undertaken to support the planning application.
Waste	Zero Waste	Adhere to the waste hierarchy wherever possible	A Site Waste Management Plan shall ensure adequate measures for construction waste management will be in place prior to and during construction.
Water	Protect and enhance the state of the water environment.	Potential degradation of water quality during construction and operation.	Potential degradation of the water environment during construction would be managed by the CEMD.
Water	Flooding	Potential flooding as a result of the infilling works.	A flood risk assessment will be undertaken to determine likely flooding effects and support the planning application.

6 ENVIRONMENTAL IMPACT ASSESSMENT: SCREENING CHECK LIST

6.1 Introduction

An Environmental Impact Assessment: screening check list has been completed to support the screening request. The check list has been developed taking cognisance of the Scottish Government guidance document available from the government website[10]. The screening check list considers the following:

- Characteristics of the Development;
- Location of the Development; and
- Characteristics of Potential Impact.

6.2 Characteristics of the Development

The assessment on the Characteristics of the Development is provided in Table 6-1.

Table 6-1 Characteristics of the Development

Criteria	Observations
The magnitude and spatial extent of the impact	
Will the effect extend over a large area?	The impacts of the construction works will be confined within the shipyard. There will be no effect on designated sites. Site level construction matters could be managed by implementation of a specific CEMP.
Will many people be affected?	There is potential for residents of Glasgow Harbour overlooking the shipyard to be impacted by construction noise during the works.
The nature of the impact	
Will there be the potential for a significant environmental impact as a result of the proposal?	During the works construction will be restricted to daytime hours. On completion the noise environment of Glasgow Harbour residents will return to pre-construction levels.
The transboundary nature of the impact	
Will there be any potential for transboundary impact? (nb. Development which has a significant effect on the environment in another Member State is likely to be very rare. It is for	No

[10] Based on: www.gov.scot/publications/environmental-impact-assessment-screening-checklist/

the Scottish Ministers to consider whether there is likely to be such an effect in each case).	
Intensity and complexity of the impact	
Will there be a large change in environmental conditions?	No, temporary impacts associated with construction noise only.
Will the effect be unusual in the area or particularly complex?	No
Will many receptors other than people (fauna and flora, businesses, facilities) be affected?	No, potential for short term temporary effects during construction and dredging.
Will valuable or scarce features or resources be affected?	No
Is there a risk that environmental standards will be breached?	No
Is there a risk that protected sites, areas, features will be affected?	Best practice construction and dredging methods will be employed with strict adherence to regulations and guidance.
Probability of the impact	
Is there a high probability of the effect occurring?	Yes, although the effect will be temporary.
Is there a low probability of a potentially highly significant effect?	No
Expected onset, duration, frequency and reversibility of the impact	
Will the onset of the impact be sudden?	No, residents will be informed of the anticipated date of construction works commencing and will be updated throughout the project.
Will the effect continue for a long time?	During the works construction will be generally restricted to daytime hours, however the basin infill may require 24 hour working for the barge and distribution mechanisms should pump ashore methodology be adopted. On completion the noise environment of Glasgow Harbour residents will return to pre-construction levels.
Will the effect be permanent rather than temporary?	No
The cumulation of the impact with the impact of other existing and/or approved development	
Will the cumulative impact of this effect along with the impacts of other existing or approved	No

development result in a significant environmental impact?	
The possibility of effectively reducing the impact	
Has the developer detailed proposed mitigation measures to prevent significant adverse effects on the environment?	Mitigation measures have been identified.
Are the mitigation measures proposed by the developer, or different mitigation measures that may be proposed by the local authority, sufficient to mitigate adverse effects on the environment?	Yes

6.3 Location of the Development

The assessment on the Location of the Development is provided in Table 6-2.

Table 6-2: Location of the Development

Criteria	Observations
Existing land use	
Are there existing land uses, or approved uses which have yet to be implemented, on or around the location which could be affected by the development	No.
Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected?	None in the immediate vicinity of the shipyard. Elder Park is located on Govan Road directly opposite the shipyard entrance. The Queen Elizabeth University Hospital is located over 430m to the west.
Is the development located in a previously undeveloped area where there will be loss of greenfield land?	No
The relative abundance, quality and regenerative capacity of natural resources in the area	
Are there any areas on or around the location which contain important, high quality or scarce resources which could be affected by the development?	The site is located within an operational shipyard located within an urban area of Glasgow City comprising a mixture of industrial/residential/commercial uses.
The absorption capacity of the natural environment	
Are there any areas on or around the location which are protected under international or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the development?	No.
Are there any other areas on or around the location which are important or sensitive for reasons of their ecology?	Migratory Fish in the River Clyde.

Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected?	No.
Are there any inland, coastal, marine or underground waters on or around the location which could be affected?	Yes, the River Clyde is still designated as an estuary at this point.
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources?	No.
Are there any areas or features of high landscape or scenic value on or around the location which could be affected?	No.
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected?	No (short term restrictions during construction)
Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected?	No, the works are within an existing shipyard. The infill material will be brought to site by barge.
Is the development in a location where it is likely to be highly visible to many people?	No, although there is a view from the northern bank of the Clyde with some residents of Glasgow Harbour overlooking the current shipyard. However, there is no change of use proposed as a result of the proposals.
Are there any areas or features of historic or cultural importance on or around the location which could be affected?	Yes, the wet basin itself is identified as a historical feature on the Canmore database. There are a number of features also identified in the shipyard associated with historical shipbuilding also identified on the Canmore database.
Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected?	No.
Is the location of the development susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the development to present environmental problems?	No.

6.4 Characteristics of Potential Impacts

The assessment on the Characteristics of Potential Impacts are provided in Table 6-3.

Table 6-3: Characteristics of Potential Impacts

Criteria	Observations
The magnitude and spatial extent of the impact	
Will the effect extend over a large area?	The impacts of the proposals will be confined to the shipyard footprint. Site level construction matters could be managed by implementation of a specific CEMP.
Will many people be affected?	No
The nature of the impact	
Will there be the potential for a significant environmental impact as a result of the proposal?	No, site will continue to operate as a shipyard.
The transboundary nature of the impact	
Will there be any potential for transboundary impact? (nb. Development which has a significant effect on the environment in another Member State is likely to be very rare. It is for the Scottish Ministers to consider whether there is likely to be such an effect in each case).	No
Intensity and complexity of the impact	
Will there be a large change in environmental conditions?	No
Will the effect be unusual in the area or particularly complex?	No
Will many receptors other than people (fauna and flora, businesses, facilities) be affected?	No, potential for short term temporary effects during construction and dredging.
Will valuable or scarce features or resources be affected?	Yes, the wet basin is identified as a cultural heritage feature however it is not designated.
Is there a risk that environmental standards will be breached?	Best practice construction and dredging methods will be employed with strict adherence to regulations and guidance.
Is there a risk that protected sites, areas, features will be affected?	Yes, the wet basin is identified as a cultural heritage feature however it is not designated.
Probability of the impact	
Is there a high probability of the effect occurring?	No
Is there a low probability of a potentially highly significant effect?	No
Expected onset, duration, frequency and reversibility of the impact	
Will the onset of the impact be sudden?	No
Will the effect continue for a long time?	No
Will the effect be permanent rather than temporary?	Any contamination of the site would be subject to necessary remediation.
Will the impact be continuous rather than intermittent?	No
If intermittent, will it be frequent rather than rare?	Rare
Will the impact be irreversible?	No
Will it be difficult to avoid or reduce or repair or compensate for the effect?	No
The cumulation of the impact with the impact of other existing and/or approved development	
Will the cumulative impact of this effect along with the impacts of other existing or approved	No

development result in a significant environmental impact?	
The possibility of effectively reducing the impact	
Has the developer detailed proposed mitigation measures to prevent significant adverse effects on the environment?	Mitigation measures have been identified.
Are the mitigation measures proposed by the developer, or different mitigation measures that may be proposed by the local authority, sufficient to mitigate adverse effects on the environment?	Yes

7 CONCLUSIONS

It is expected that there will be some normal residues/emissions during the construction stage associated with the development works proposed which include infilling of a basin with association installation of drainage and outfalls.

Standard mitigation measures will be employed and monitored. These are set out in the Construction and Demolition Waste Management Plan accompanying the application. As such residues and emissions are not considered likely to have potential to cause significant effects on the environment.

Resources used will be construction materials which will be typical raw materials used in the infilling operation. The scale and quantity of the materials used will not be such that would cause concern in relation to significant effects on the environment. The construction or operation of the scheme would not use such a quantity of water to cause concern in relation to significant effects on the environment. The use of natural resources in relation to the proposed development is not likely to cause significant effects on the environment.

Biodiversity

A Preliminary Ecological appraisal Report will be submitted to the Council as a supporting document as part of the planning application. In addition a Marine Mammal Risk Assessment and Protection Plan will be produced detailing proposed mitigation requirements with respect to protection of marine mammals. As part of this assessment risk to migratory fish will also be considered.

Landscape and Visual

Given the proposed works relate to infilling of a dock in an operational industrial facility there is considered to be limited issues associated with landscape and visual impact. Therefore, it is unlikely to constitute grounds to require an EIA to be carried out

Archaeology and Cultural Heritage

There are no designated sites within the proposed working area As such, there would likely be minimal significant effects as a result of the development and it is therefore not considered to constitute grounds to require an EIA to be carried out.

Air Quality

Air quality is unlikely to be significantly altered as a result of the works. Dust can be controlled during construction via a Construction Environmental Management Plan/ Dust Management Plan.

Noise

Management control measures would be put in place to limit noise during construction and particularly related to the piling exercise. The previously noted Marine Mammal Risk Assessment will primarily consider risk associated with noise.

Water Environment

A flood risk assessment will be undertaken in support of the planning application, however, it is unlikely to constitute grounds to require an EIA to be carried out.

Population and Human Health

Given the nature of the development it is unlikely there will be significant issues associated with population and human health.

Waste

A Site Waste Management Plan shall ensure adequate measures for waste management will be in place prior to and during construction.

Material Assets

The construction and operation of proposed development will utilise material assets (access road) but given the scale of the development this is not considered to be significant.

Climate Change

Discussion of the vulnerability of the project to climate change is primarily concerned with the water environment, including flood risk. Flooding is not considered to be significant as it does not constitute a significant environmental aspect.

Major accidents

The construction and operation of the proposed development are not likely to give rise to major accidents.

In summary, it is not considered that the proposed development is likely to give rise to significant adverse effects on the environment requiring an EIA to be carried out.

Cumulative Effects

There are no known other zoned sites coming forward for development at this time in the immediate vicinity.

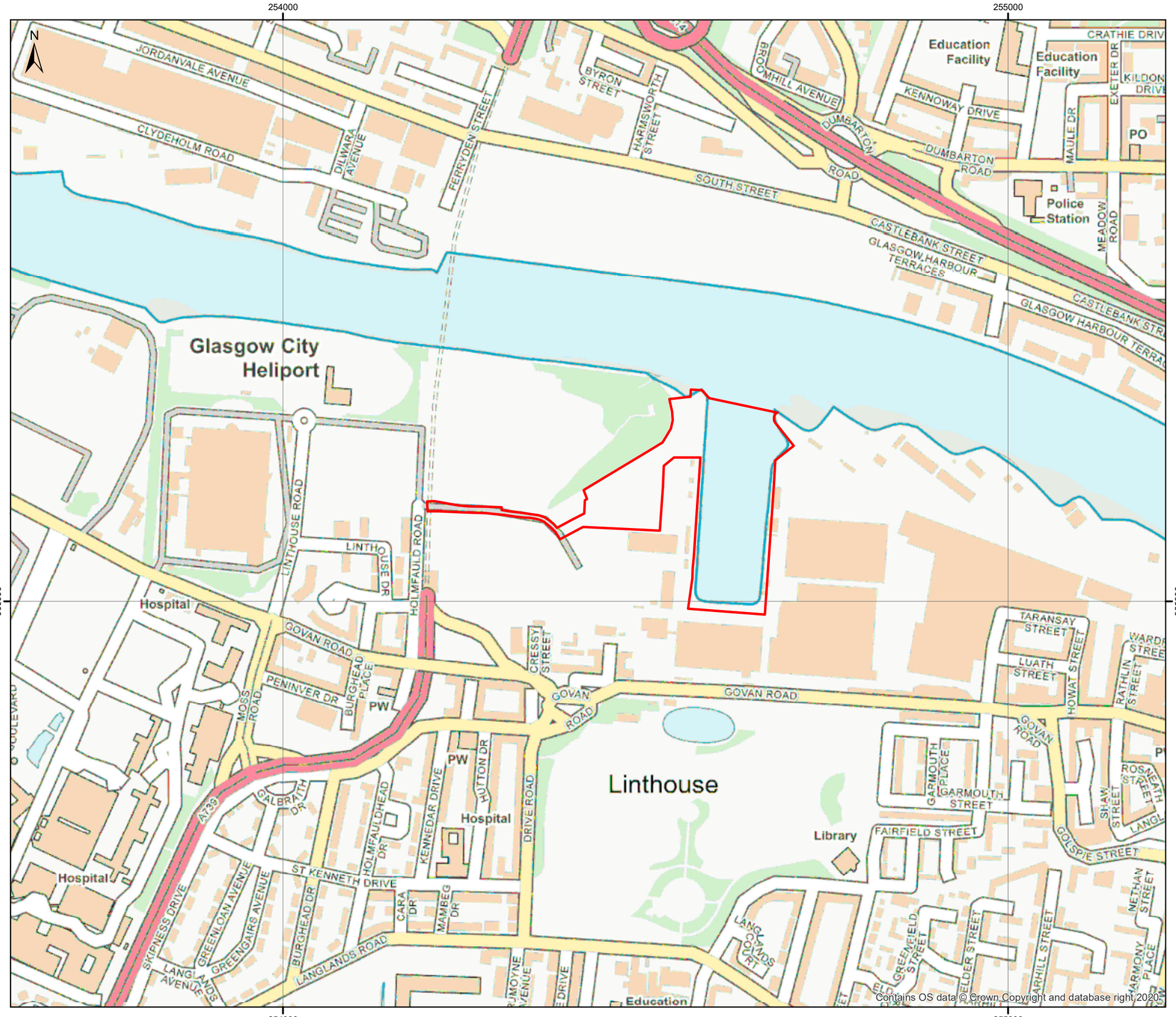
In conclusion, it is respectfully submitted that the proposed development is below the thresholds for a mandatory EIAR. The screening exercise has been completed in this report and the methodology used has been informed by the available guidance and legislation.

It is also considered that the proposed development, as described in detail in this application, will not result in significant impacts on the local environment to the extent that warrant an EIA being required.

All recommended mitigation measures and standard practices outlined in the application documents will be employed throughout the construction (and operational) phase of the development to ensure that the proposed development will not create significant impacts on the quality of the surrounding environment.

APPENDICES

A DRAWINGS



Legend

Site Boundary

Do not scale this map

Client
Arch Henderson

Project
Govan Facilities Investment

Title
Site Location Plan

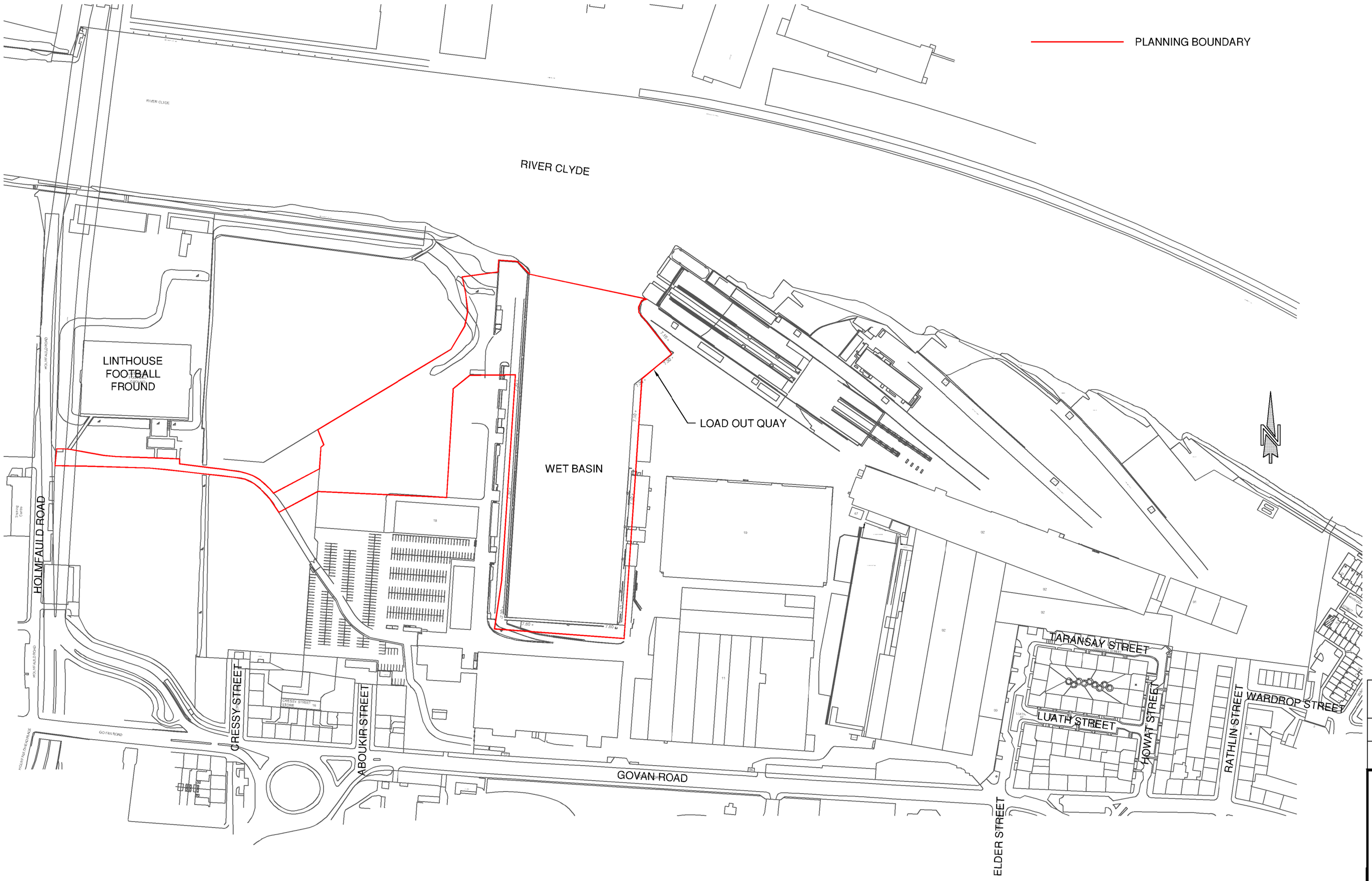
Status
Final

Drawing No.	Revision	Date
175756-GIS001	-	18 May 2022
Drawn	**Checked**	**Approved**
AH	GD	GD

Scale
1:5,000 @A3
0 25 50 100 150 Metres

Rev	Date	Amendment	Initials

envirocentre
Craighall Business Park, Eagle Street, Glasgow, G4 9XA
T: 0141 341 5040 E: info@envirocentre.co.uk W: www.envirocentre.co.uk



NOTES

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P01	11.05.22	ISSUED FOR COMMENT	CAB	TR

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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Location Plan

DRAWN :	DATE :	VERIFIED :	APPROVED :
CAB	17.05.22	TR	GB

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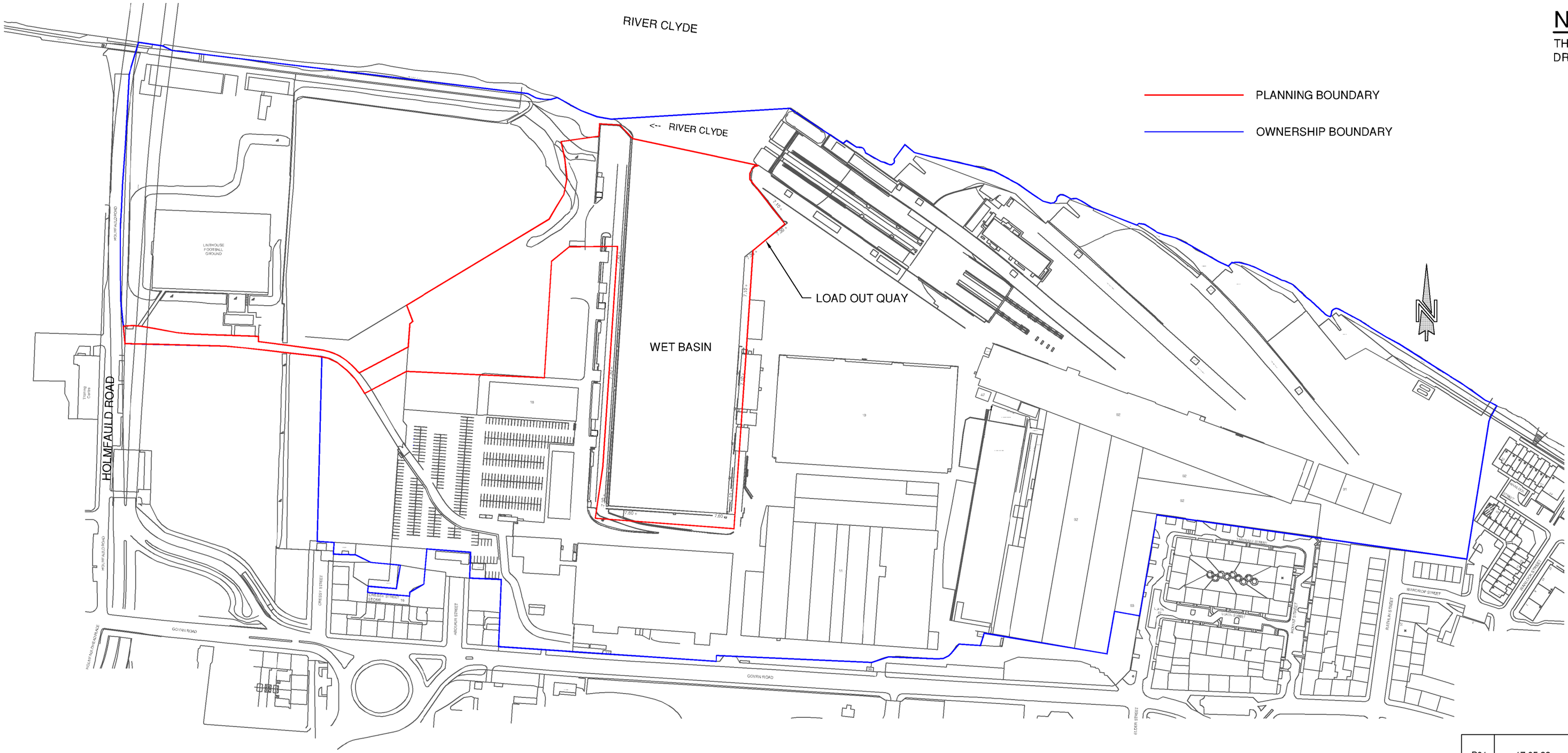
DRAWING No : 225010-BAE-AHN-ZZ-XX-DR-C-0001

REV : P01



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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Site Ownership Boundary

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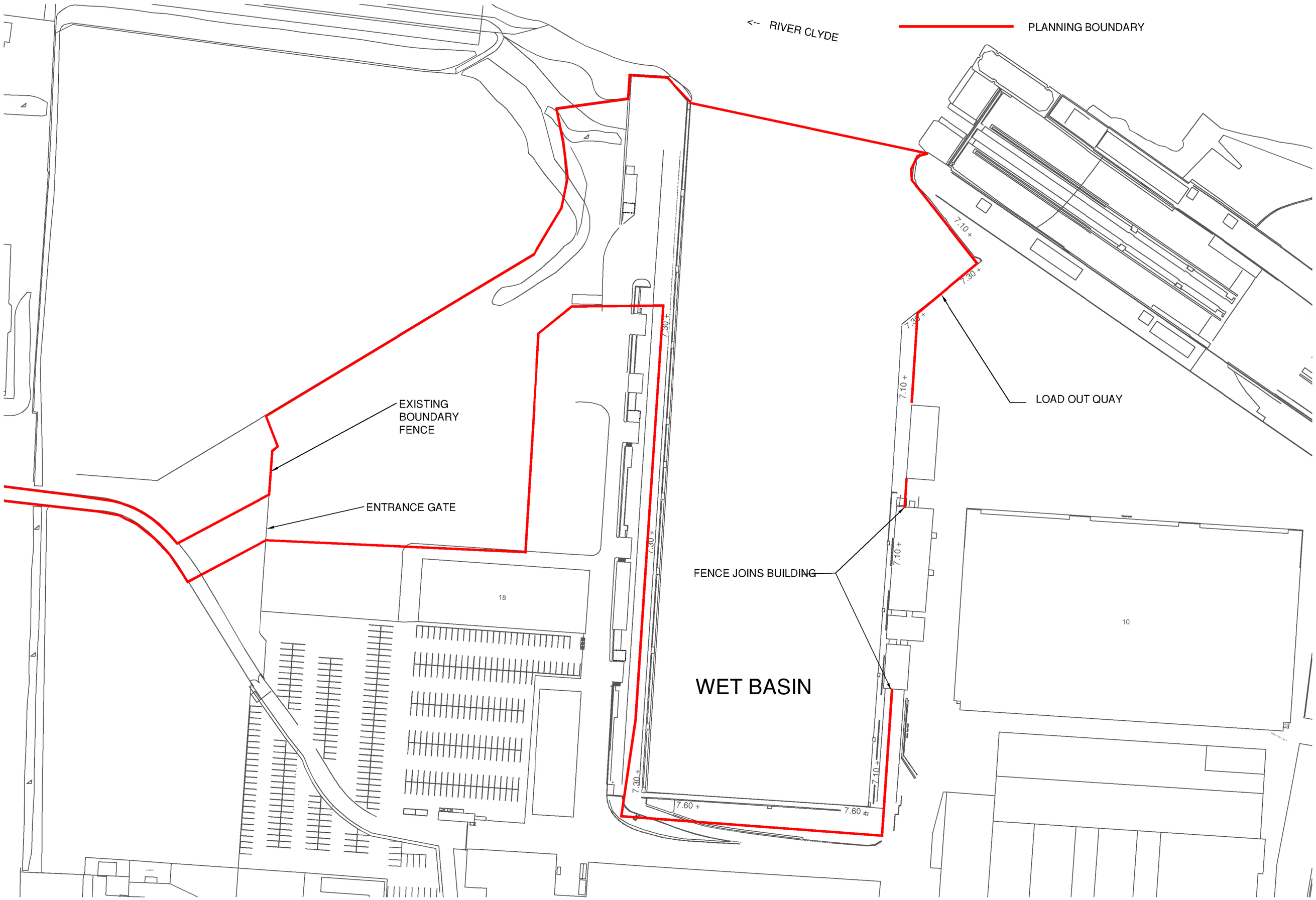
REV : P01



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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Site Compound and Access

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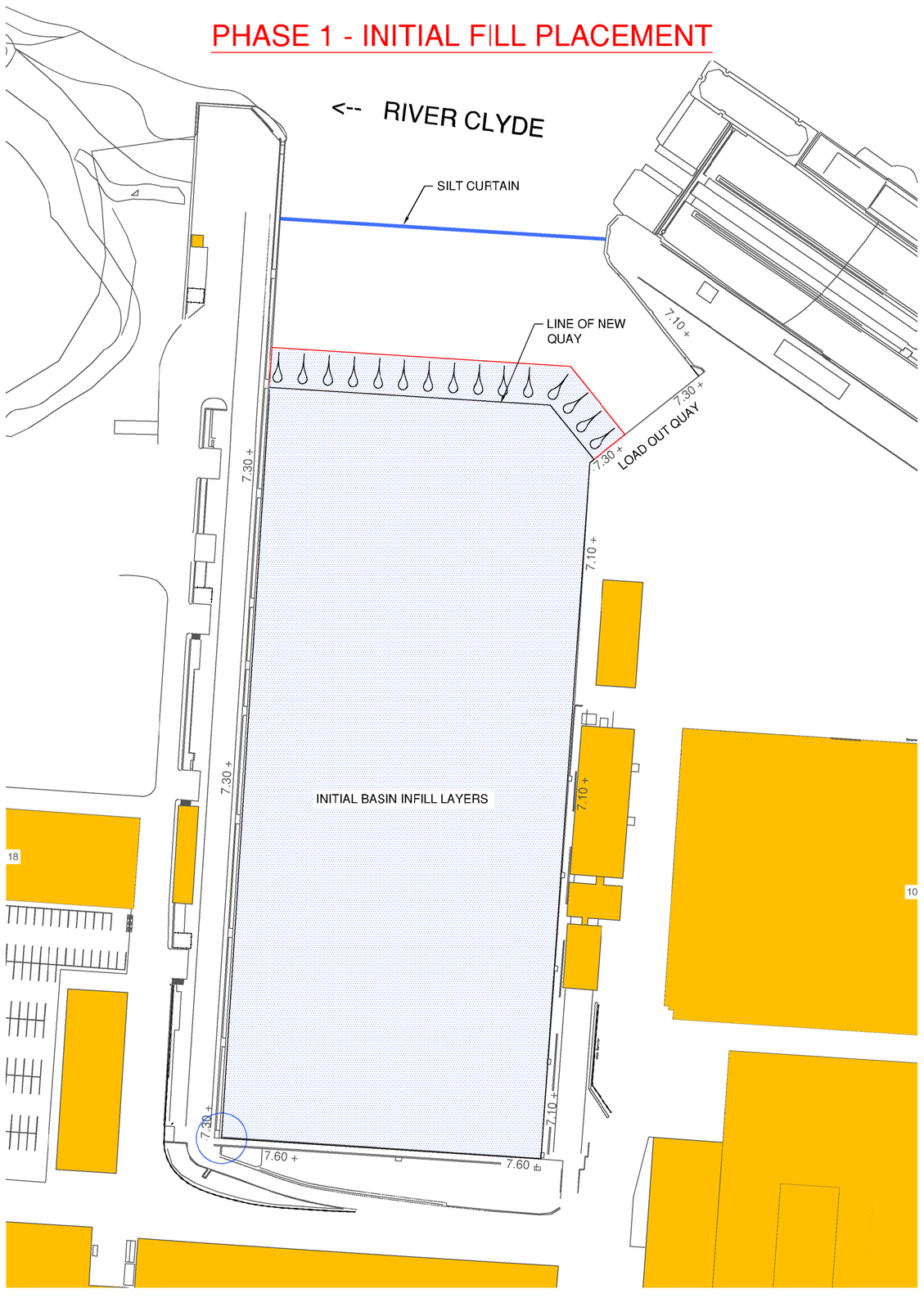
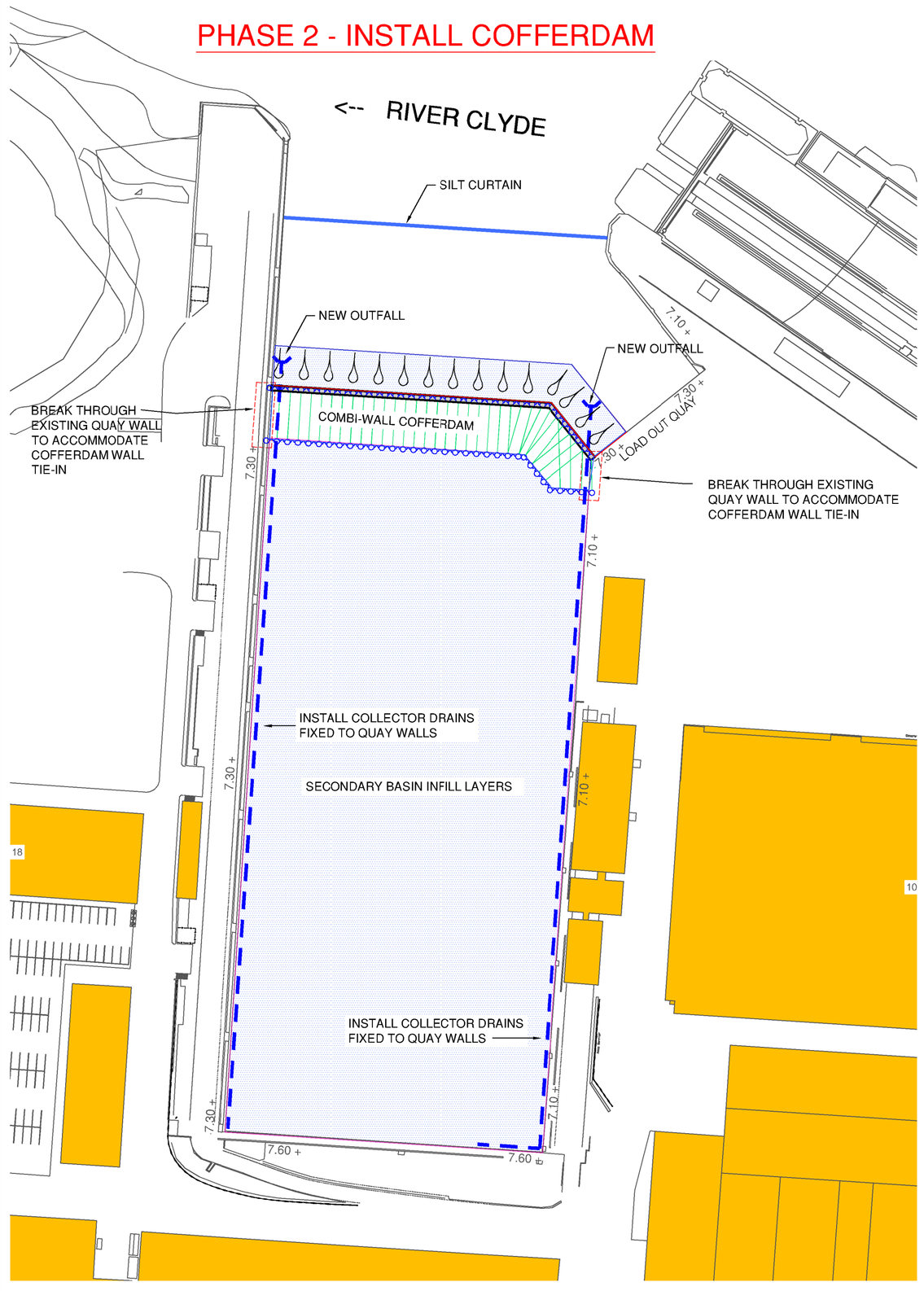
DRAWING No : 225010-BAE-AHN-ZZ-XX-DR-C-0003 REV : P01

DO NOT SCALE

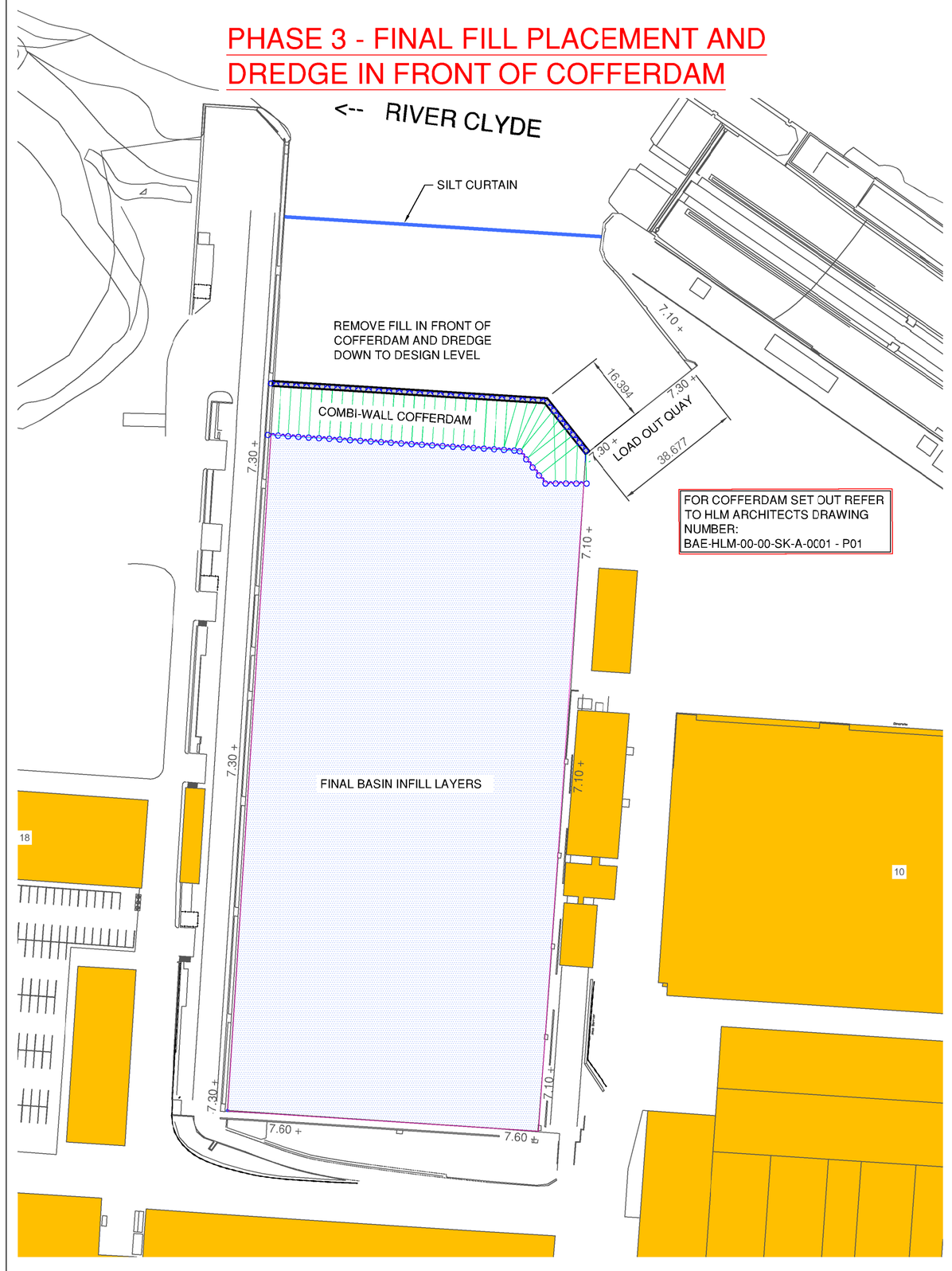
PHASE 1 - INITIAL FILL PLACEMENT



PHASE 2 - INSTALL COFFERDAM



PHASE 3 - FINAL FILL PLACEMENT AND DREDGE IN FRONT OF COFFERDAM



1a INSTALL SILT CURTAIN AT ENTRANCE TO BASIN INCLUDING DEMOUNTABLE SECTION TO ALLOW PASSAGE OF BARGE.

1b INITIAL INFILL PLACEMENT BY LONG REACH EXCAVATOR FROM BARGE WHERE A 2m LAYER OF FILL WILL BE CAREFULLY PLACED TO COVER EXISTING SEDIMENT ON THE BASIN BED.

1c INFILL CONTINUING USING A COMBINATION OF BARGE, EXCAVATORS OR SELF DISCHARGING VESSELS. INFILL MATERIAL WILL EXTEND BEYOND THE LINE OF THE NEW QUAY WALL IN A TEMPORARY CONDITION.

1d HYDRAULIC COMPACTION BELOW MEAN SEA LEVEL , ROLLERS OF DYNAMIC COMPACTION ABOVE MEAN SEA LEVEL.

2a INSTALL CARRIER DRAIN AROUND EXISTING BASIN QUAY WALL TO COLLECT DISCHARGE FROM EXISTING OUTFALLS. CARRIER DRAIN WILL RUN TO NEW OUTFALLS PROTRUDING THROUGH THE NEW COFFERDAM.

2b PILE COFFERDAM STRUCTURE FROM NEWLY PLACED INFILL MATERIAL. THE EXISTING QUAYSIDE AT TIE IN LOCATIONS WILL HAVE TO BE BROKEN OUT TO ALLOW FOR A ROBUST CONNECTION TO BE CREATED BETWEEN EXISTING QUAY AND NEW COFFERDAM.

3a BASIN INFILL TAKEN UP TO DESIGN LEVEL, EITHER BY BARGED MATERIAL PLACED OVER THE COFFERDAM AND PUSHED INTO PLACE BY DOZERS OR BY ROAD DELIVERY.

3b FILL IN FRONT OF COFFERDAM WALL REMOVED AND BERTH POCKET DREDGED TO DESIGN LEVEL.

GENERAL NOTES

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FOR SECTION THROUGH WORKS, REFER TO DRAWING NUMBER BAE-AHN-XX-XX-DR-C-0005

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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Draft Phasing Plans

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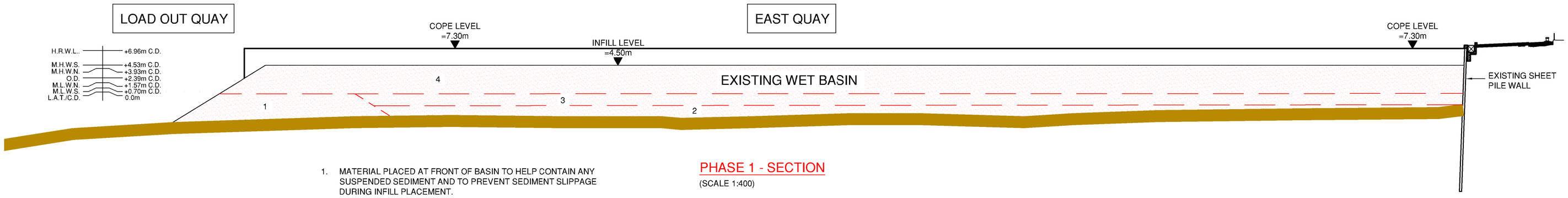
DRAWING No : 225010-BAE-AHN-ZZ-XX-DR-C-0004 REV : P01



1. MATERIAL PLACED AT FRONT OF BASIN TO HELP CONTAIN ANY SUSPENDED SEDIMENT AND TO PREVENT SEDIMENT SLIPPAGE DURING INFILL PLACEMENT.
2. 2m INFILL PLACEMENT USING LONG REACH EXCAVATOR TO COVER EXISTING BASIN SEDIMENT.
3. CONTINUE TO FILL USING BARGE AND EXCAVATOR OR SPLIT HOPPER BARGE.
4. PLACE MATERIAL PLACEMENT BY BARGE AND EXCAVATOR AND PUSHING MATERIAL TO BACK OF BASIN USING DOZER IF NECESSARY.

PHASE 1 - SECTION

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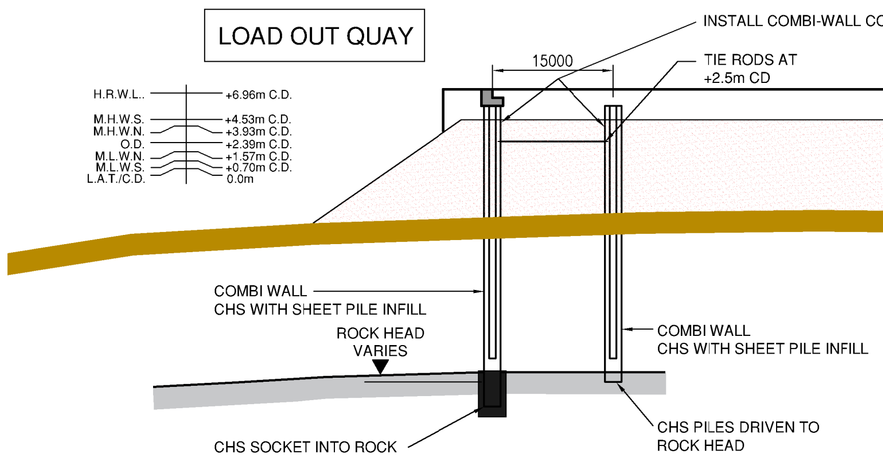

PHASE 2 - SECTION

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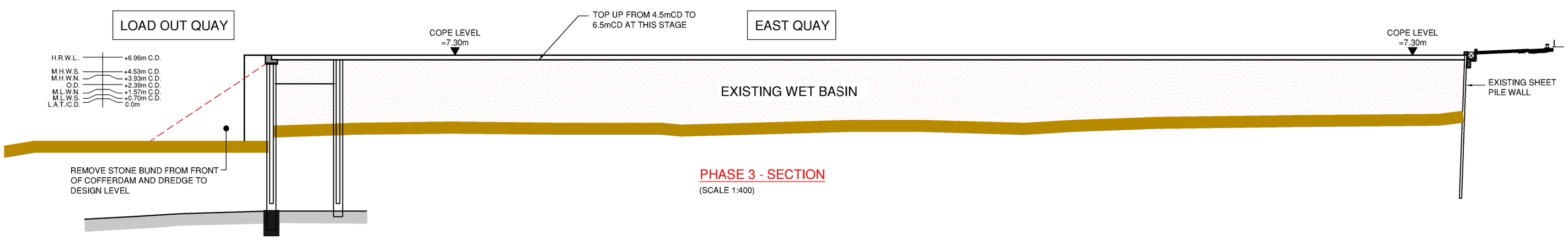

PHASE 3 - SECTION

(SCALE 1:400)

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL DRAWINGS IN THE 225010 SERIES.
2. FOR SECTION LOCATION, REFER TO DRAWING NUMBER 225010-BAE-AHN-ZZ-XX-DR-C-0004

AN ALTERNATIVE INFILL METHODOLOGY USING PUMPED SAND WILL BE CONSIDERED AT CONCEPT DESIGN STAGE. IF ADOPTED, THIS STRATEGY WOULD SEE AN INITIAL STONE BUND PLACED AT THE ENTRANCE OF THE BASIN TO CONTAIN ALL SUSPENDED SEDIMENTS WITHIN THE BASIN. INFILL BEHIND THE BUND WOULD BE THEN BE PLACED USING FLUIDISED SAND PUMPED FROM A BARGE, OVER THE BUND AND DISTRIBUTED VAI SPREADER PONTCON AND DISSIPATION BAR.

REV	DATE	REVISION DESCRIPTION	DRN	VER
P01	19.05.22	ISSUED FOR COMMENT	CAB	TR

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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Draft Phasing Sections

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GENERAL NOTES

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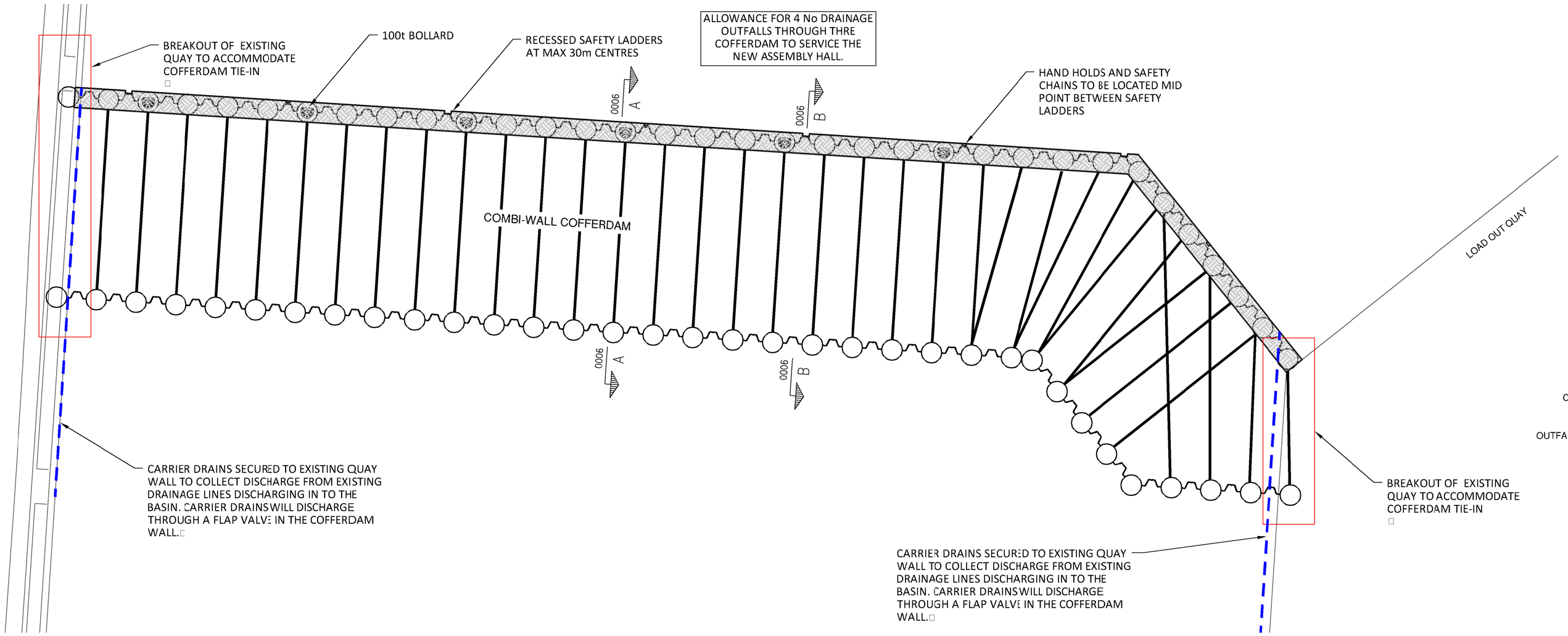

PLAN ON COFFERDAM

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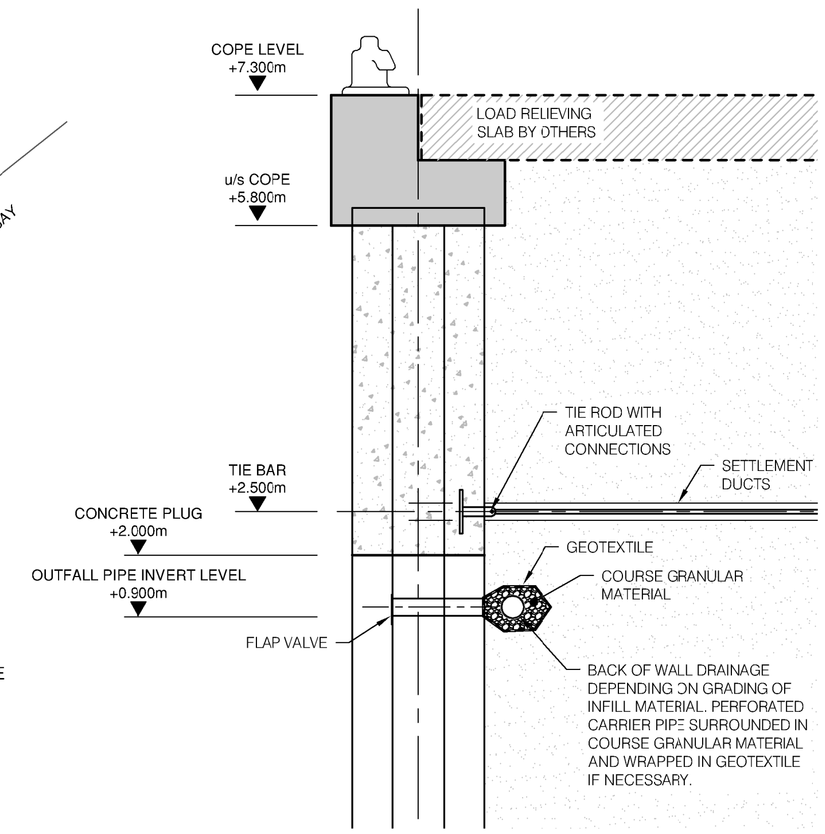
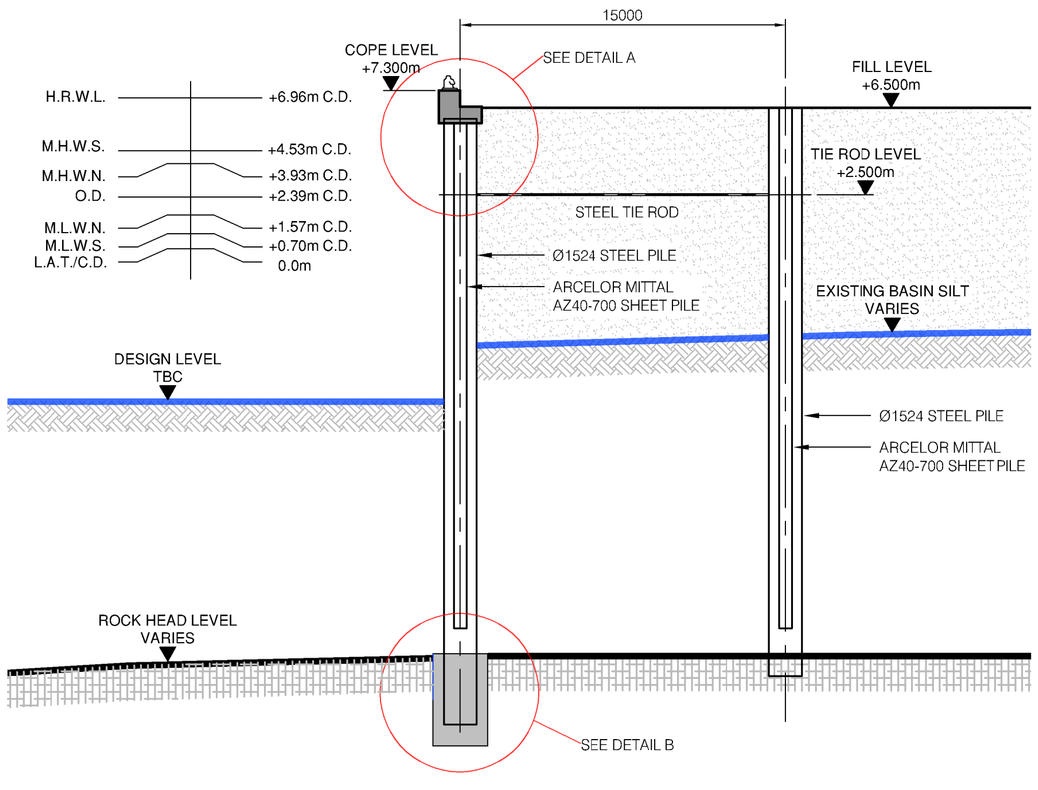


DETAIL A

(PILE HEAD)

SCALE 1:50



SECTION A-A

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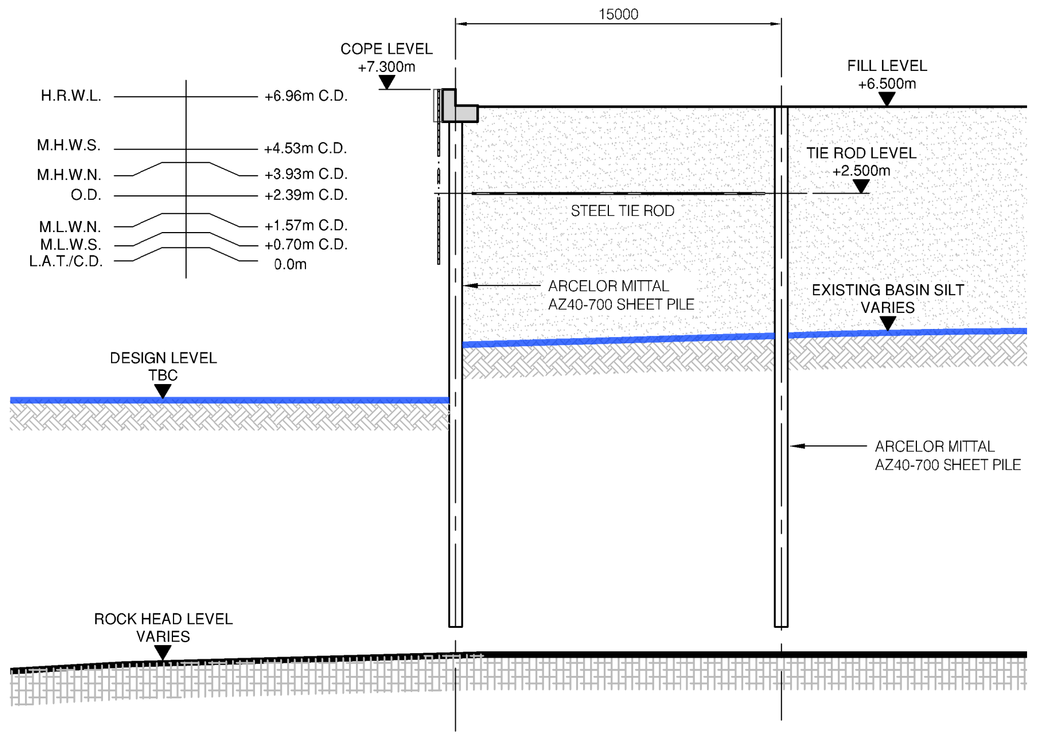
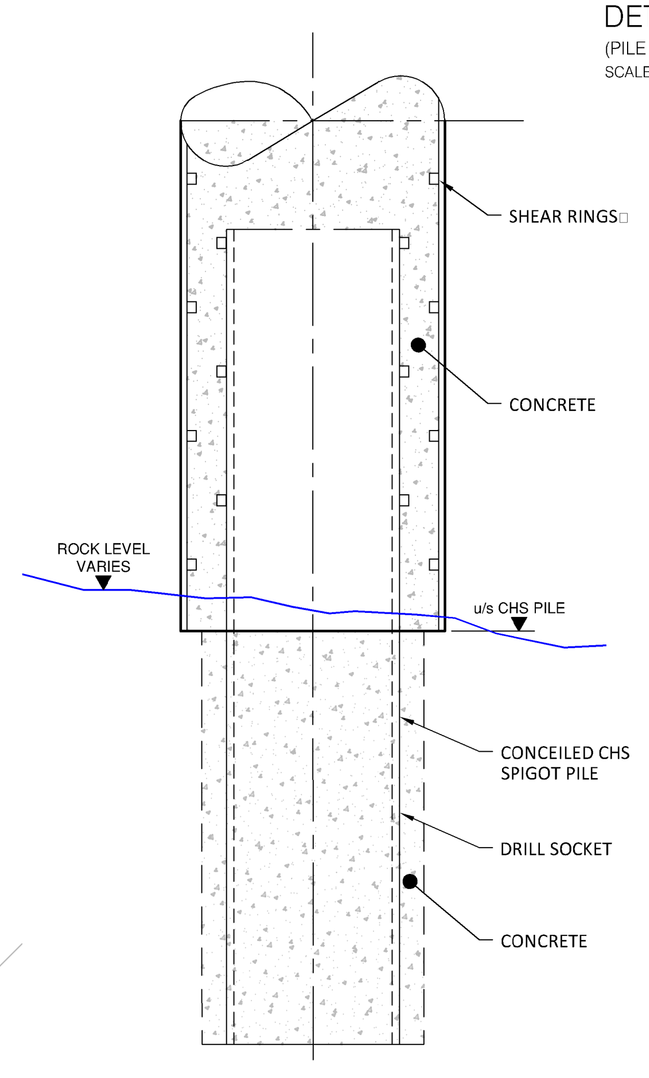


SECTION B-B

SCALE 1:200



PILE TOE

SCALE 1:25

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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Cofferdam
Sections and Details

DRAWN :	DATE :	VERIFIED :	APPROVED :
CAB	19.05.22	TR	GB

SCALE : (A1)	DRAWING STATUS :
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DRAWING No : 225010-BAE-AHN-ZZ-XX-DR-C-0006 REV : P01

DO NOT SCALE

NOTES

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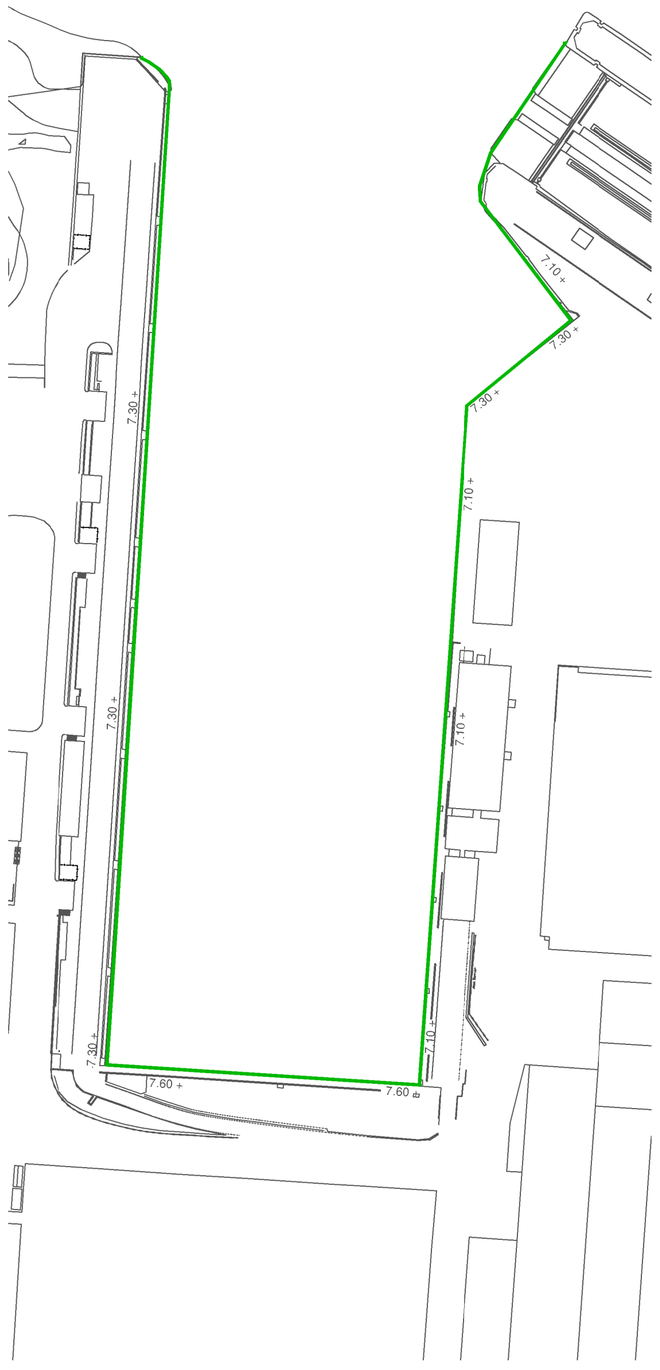
KEY:

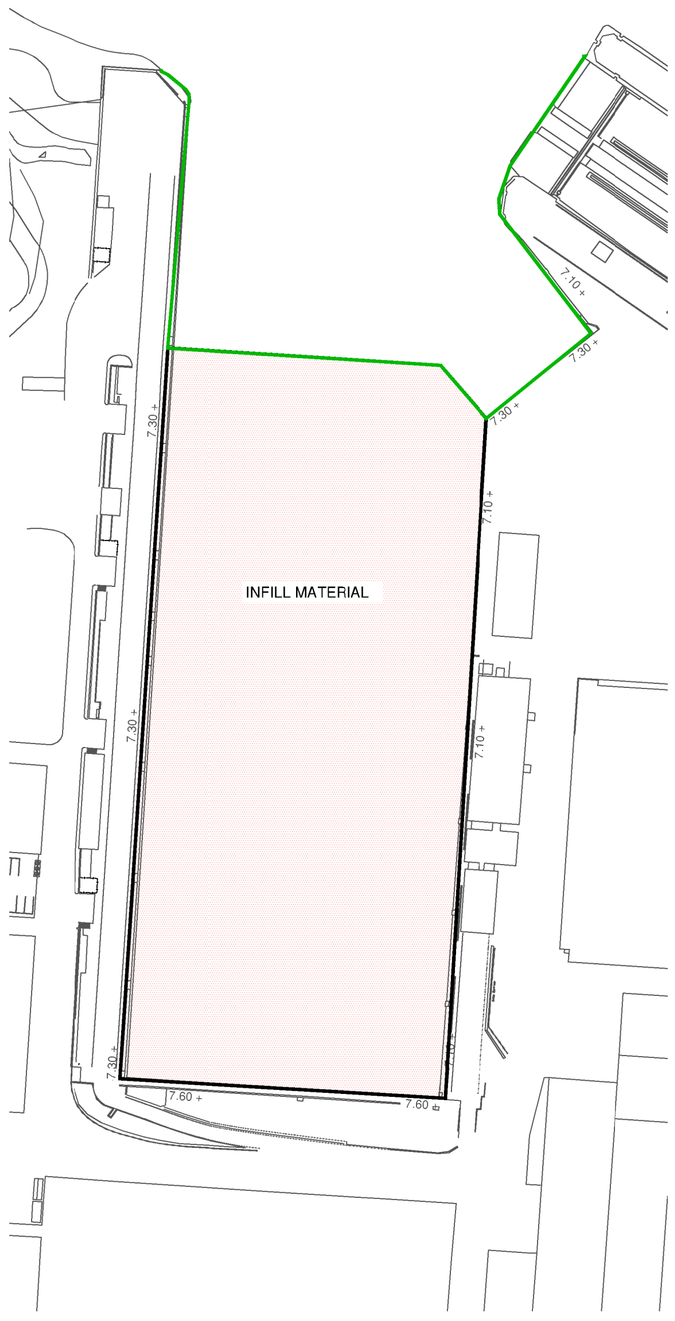
SEA COVERAGE AT MHWS

OVER WATER SITE BOUNDARY



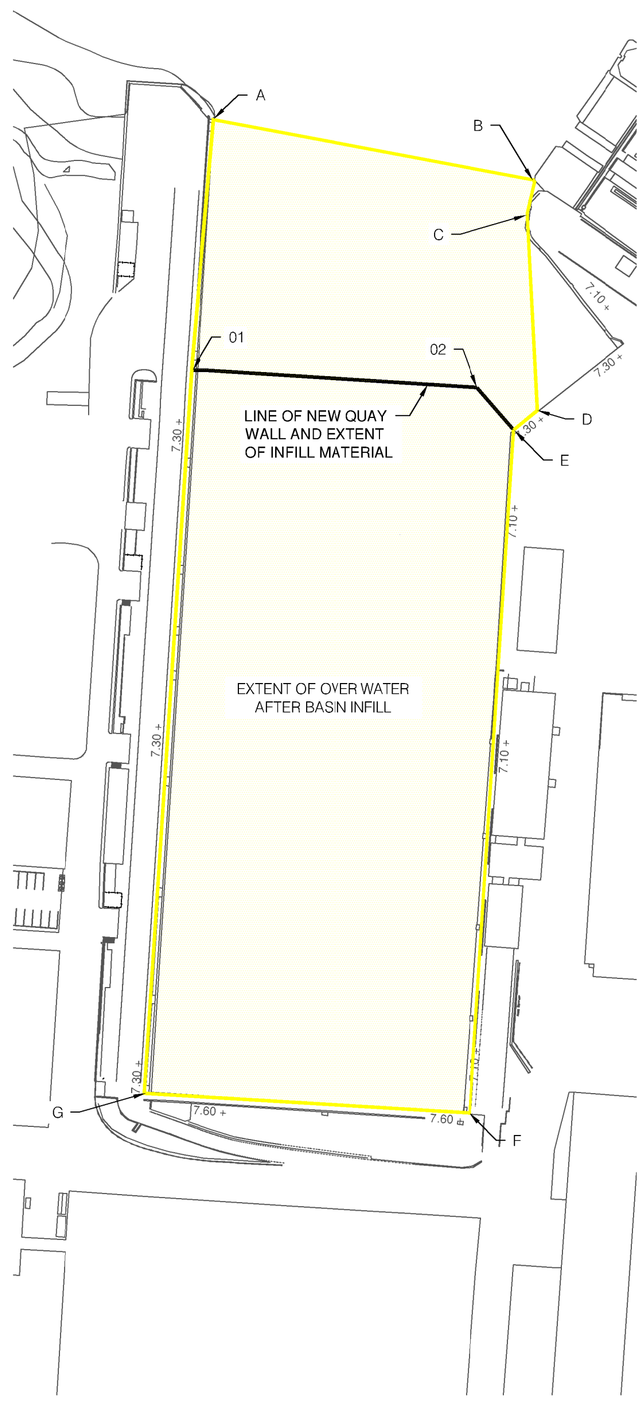
EXISTING EXTENTS OF MHWS

SCALE 1:1250



MHWS EXTENTS AFTER INFILL WORKS

SCALE 1:1250



OVER WATER SITE BOUNDARY

SCALE 1:1250

COFFERDAM WALL SET OUT COORDINATES

	LAT	LONG	EASTING	NORTHING
01	N55:52:01.27	W4:19:26.79	254662	666203
02	N55:52:01.34	W4:19:31.51	254580	666208

OVER WATER SET OUT COORDINATES

	LAT	LONG	EASTING	NORTHING
A	N55:52:03.67	W4:19:31.31	254585	666280
B	N55:52:03.19	W4:19:25.98	254678	666262
C	N55:52:02.87	W4:19:26.08	254675	666252
D	N55:52:01.06	W4:19:25.80	254679	666196
E	N55:52:00.83	W4:19:26.19	254672	666189
F	N55:51:54.51	W4:19:26.50	254660	665994
G	N55:51:54.57	W4:19:31.91	254566	665999

REV	DATE	REVISION DESCRIPTION	DRN	VER
P01	19.05.22	ISSUED FOR COMMENT	CAB	TR

Arch Henderson 1919

Civil Engineers
Structural Engineers
Principal Designers
Architects
Geotechnical services
Environmental services

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PROJECT :
BAE Surface Ships Limited - Govan
Wet Basin Infill

TITLE :
Site Boundaries

DRAWN :	DATE :	VERIFIED :	APPROVED :
CAB	19.05.22	TR	GB

SCALE : (A1)	DRAWING STATUS :
1:25	D1

DRAWING No : 225010-BAE-AHN-ZZ-XX-DR-C-0007 REV : P01

DO NOT SCALE