

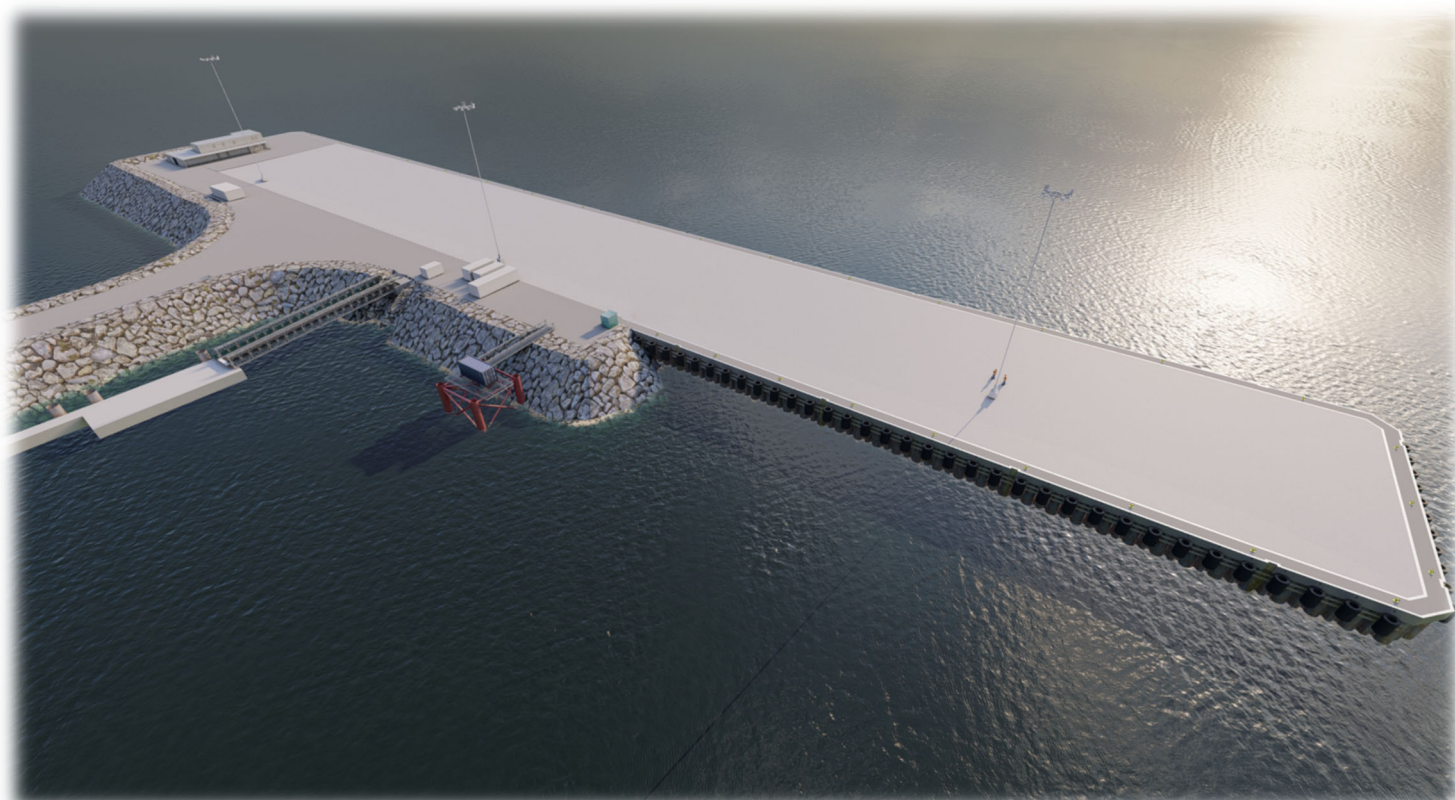


# New Port Facility Falkland Islands

## Environmental Impact Statement – Non-Technical Summary

Revision	Date	Description	Prep	Check	App
P04	18/01/2021	Suitable for Approval	EIA team	MS	RCBP

	Contract No:	Doc No:	Status	Revision
<b>BAM</b>	BAS2051	BAS2051-RHD-ZZ-ZZ-RP-YE-0029	S4	P04
<b>RHDHV</b>	PB7829	PB7829-RHD-ZZ-ZZ-RP-YE-0029	S4	P04



## Hold Record

Hold No.	Section	Description of Hold
1		Outline planning permission has been granted by F.I.G. Planning and Building Services for a wool warehouse, south of Airport Road; such outline permission was granted after the EIS was finalised. The figures and drawings in the EIS reflect the original scheme. Changes required to some of the proposed temporary works areas for the new port facility, to accommodate the wool warehouse, are not expected to significantly affect the EIS conclusions and will be addressed via condition, if required.

## Revision Tracking

Revision	Description of Revision
P01	First draft issued to BAM
P02	Draft issued to BAM following review
P03	Issued for acceptance to F.I.G.
P04	Final version for acceptance incorporating comments from F.I.G.

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## A1.0 Introduction and need for the proposed scheme

The economy of the Falkland Islands depends upon a port and the Falkland Interim Port and Storage System (FIPASS) has been in operation since 1984. This is the current main commercial port facility for the Falkland Islands. The system is nearing the end of its operational life.

Investigative work conducted between 2017 and 2019 revealed a deteriorating condition of FIPASS. New port facilities are now required to serve the needs of the traditional industries and to support economic growth by the early 2020s.

The purpose of this project is to deliver a new port (comprising an access road, causeway and quay (hereafter referred to as the 'the proposed scheme')) to serve the Falkland Islands. The proposed scheme will also involve the removal and dismantling of FIPASS and its causeway. Further detail regarding the proposed scheme is provided in **Section A2** and **A3**, as well **Drawing PB7829-RHD-ZZ-ZZ-DR-Z-0016**.

The proposed scheme requires planning permission from the Falklands Islands Government (F.I.G.) under the Planning Ordinance 1991. In addition, the proposed scheme will require a Maritime Authority licence from F.I.G. under the Harbours and Ports Ordinance 2017 and the Maritime Ordinance 2017 for discharge of water into Stanley Harbour during the construction and operation phase, as well as deposition of substances or articles on the seabed (i.e. construction of the causeway and quay).

As part of the design development for the proposed scheme, proactive engagement has been undertaken with all the key users, industry sectors and interested parties (stakeholders). During September 2020, a series of collaborative meetings were held with all stakeholder groups. This initial stakeholder engagement process provided an early opportunity for interested parties to comment on all elements of the proposed scheme, including its design and the potential environmental impacts associated with its construction, operation and maintenance. In advance of the initial stakeholder engagement the stakeholders were all issued with bespoke questionnaires relating to their needs and requirements for the new port facility. A total of 26 stakeholder groups were met at over 50 meetings. This initial stakeholder feedback was used to shape the concept design that was subsequently developed.

Further stakeholder engagement was undertaken with key stakeholders (Atlink, SAAS, FIFCA, Chamber of Commerce etc.) to further explain the proposed scheme and to gain further feedback in advance of the planning application being submitted. As part of the planning application process, public exhibition boards will be available for viewing at the Malvina Hotel; details of the planning application and its supporting documents will be available to the public through the F.I.G website; advertisements will be made in the Penguin News and on the local radio.

The proposed scheme has been subject to an Environmental Impact Assessment (EIA) under the Planning (Environmental Impact Assessment) Regulations 2015. The EIA has assessed the potential environmental effects and impacts of constructing and operating the proposed scheme. The findings of the EIA are reported in the Environmental Impact Statement (EIS).

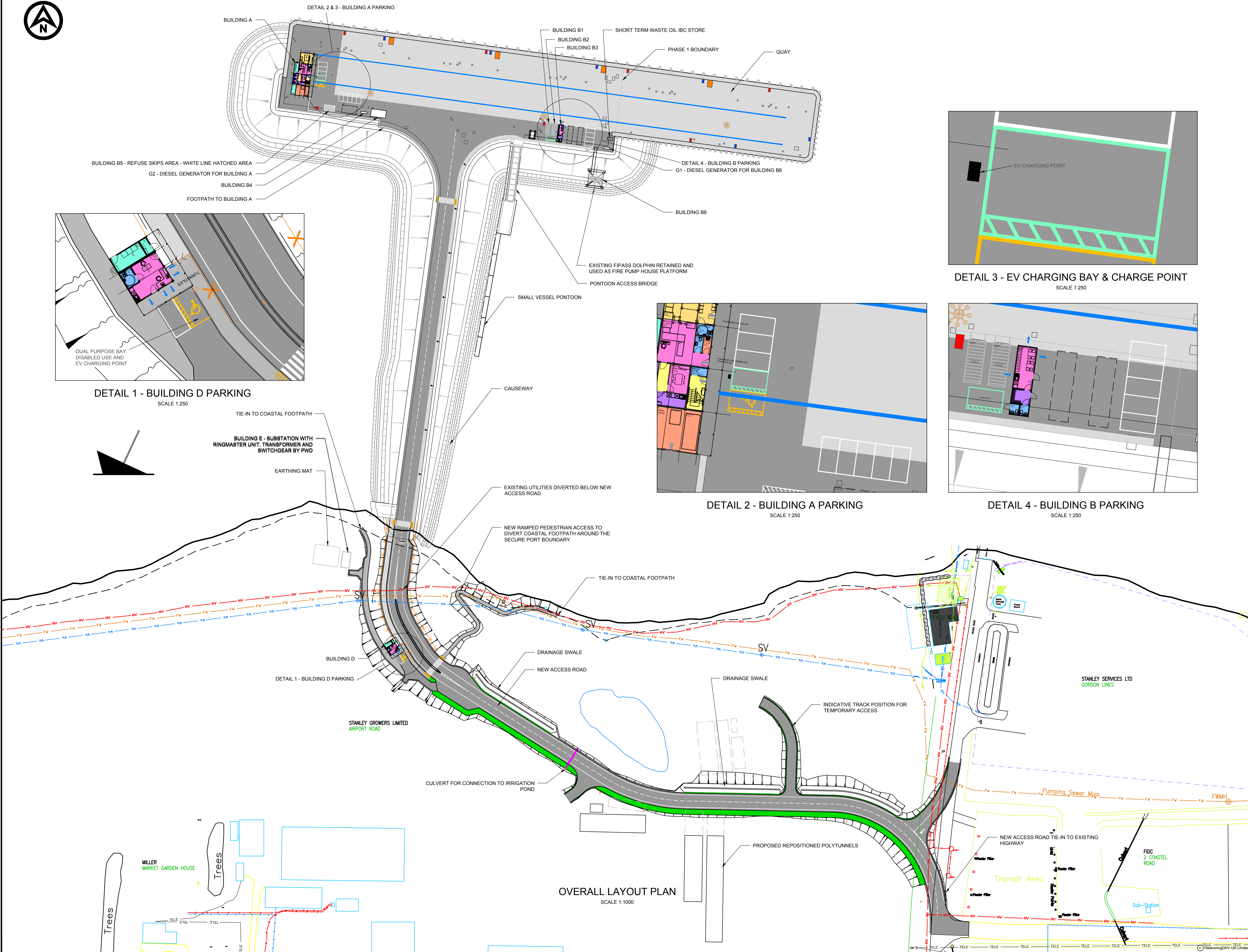
This document is the Non-Technical Summary of the EIS which has been submitted to the F.I.G. in support of the application for planning permission and the Maritime Authority licence.

## A2.0 Description of the construction phase

The proposed construction phase will involve the following activities (refer to **Figure 1.1**, **Figure 1.2** and **Drawing PB7829-RHD-ZZ-ZZ-DR-Z-0016**):

- Establishment of site offices, workshop, stores, material and waste laydown areas, remediation facilities, temporary accommodation facilities and concrete batching plant and pre-cast storage yard.
- Diversion of the existing coastal path (temporary and permanent diversions required).
- Transportation of construction plant and machinery to the site by commercial vessels (berthing at either Mare Harbour or FIPASS) and the road network from Mare Harbour to Stanley.

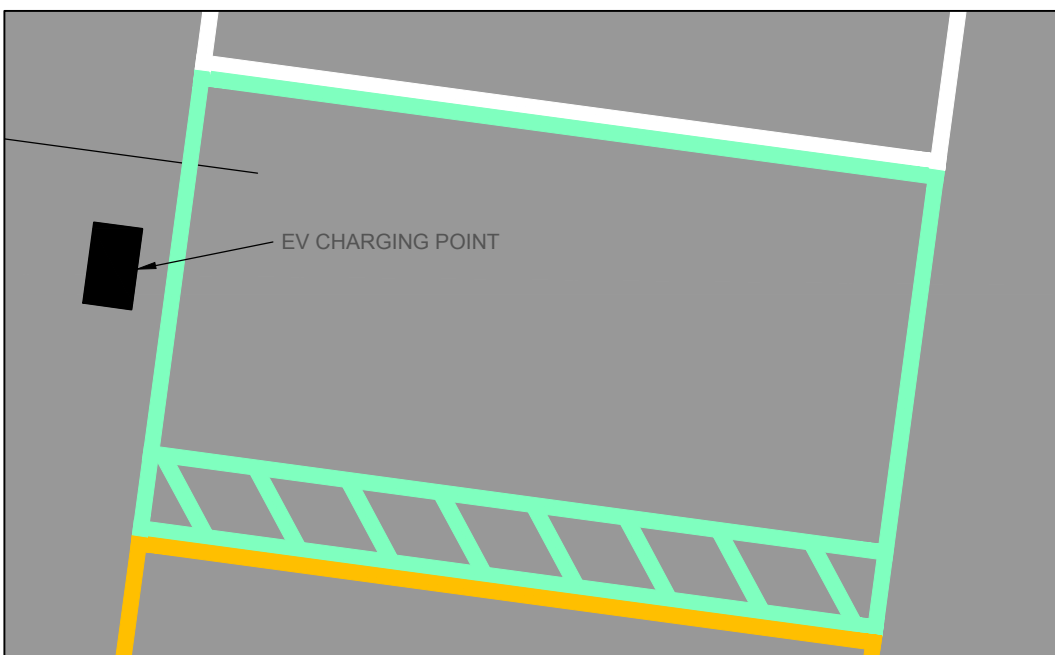




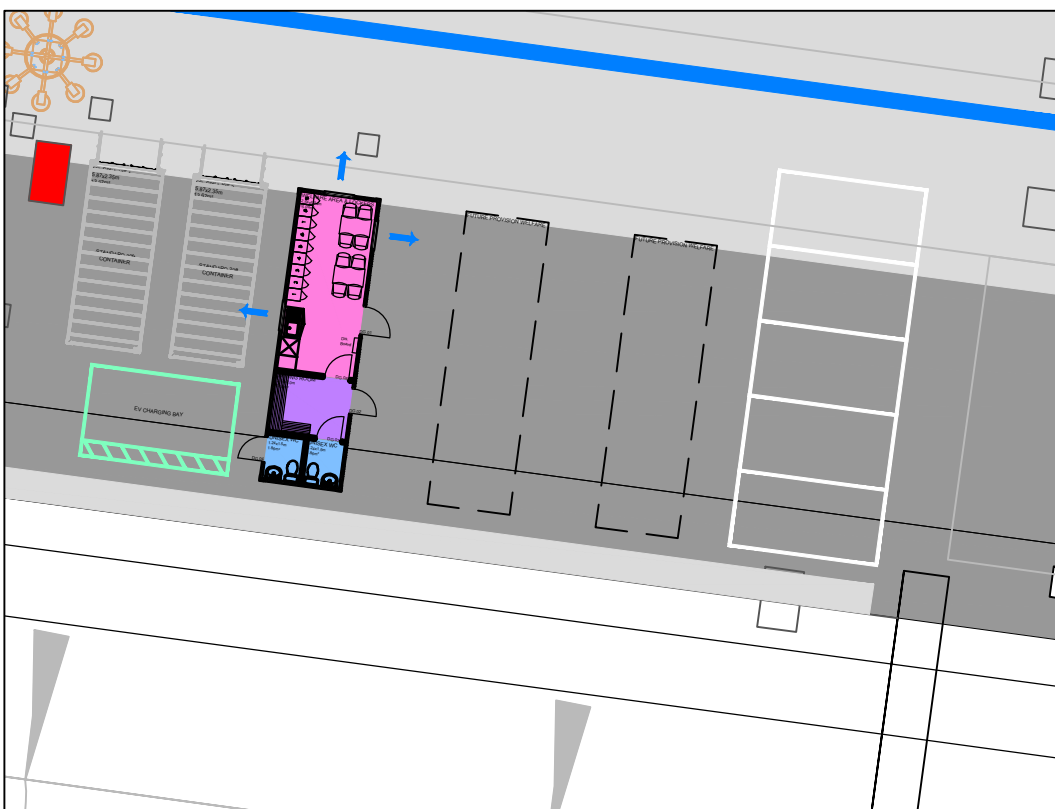
- NOTES
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  - ALL LEVELS ARE IN METRES TO CHART DATUM (mCD) UNLESS NOTED OTHERWISE.
  - ALL COORDINATES RELATIVE TO SAPPERS HILL 1943 / UTM ZONE 21S.
  - THIS DRAWING REPRESENTS LAYOUT FOR PLANNING. MECHANICAL AND ELECTRICAL SERVICES ARE NOT SHOWN.

BUILDING SCHEDULE	
REF	NAME
A	FACILITIES BUILDING
B1	STORES 1
B2	STORES 2
B3	WELFARE BLOCK
B4	QUAY SUBSTATION
B5	REFUSE SKIPS AREA
B6	FIRE PUMPHOUSE CONTAINER
D	GATEHOUSE
G1	DIESEL GENERATOR FOR BUILDING B6
G2	DIESEL GENERATOR FOR BUILDING A

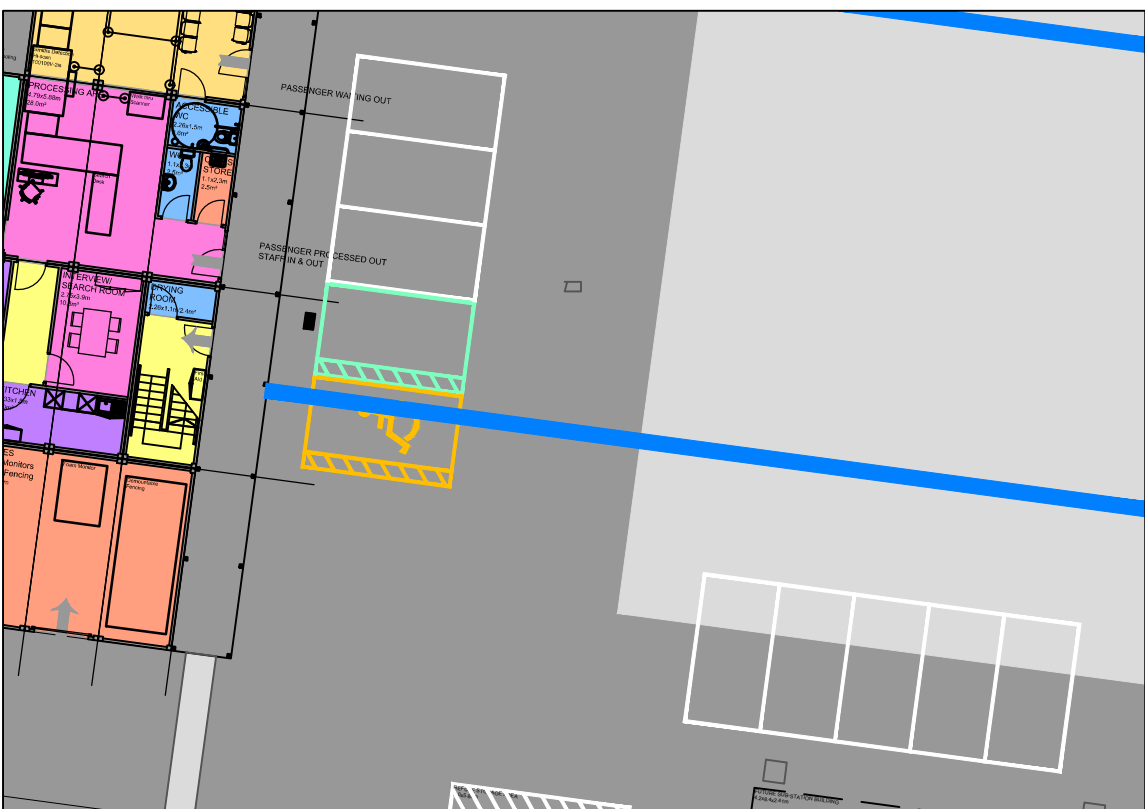
- LEGEND
- SURFACE WATER SLOT DRAINS
  - INDICATIVE FRESH WATER BUNKERING PITS
  - INDICATIVE FUEL BUNKERING PITS
  - INDICATIVE FIRE HYDRANT PITS
  - 30m HIGH LIGHTING MAST
  - SERVICE ROAD CORRIDOR
  - ROAD CONSTRUCTION (SUITABLE FOR VEHICLES WHICH USE THE ACCESS ROAD)
  - CONCRETE QUAY SURFACING SUITABLE FOR CARGO HANDLING AND FISH TRANSHIPMENT (MOBILE CRANES AND OPERATING SIDE LIFTERS)
  - DISABLED PARKING BAY
  - EV CHARGING BAY



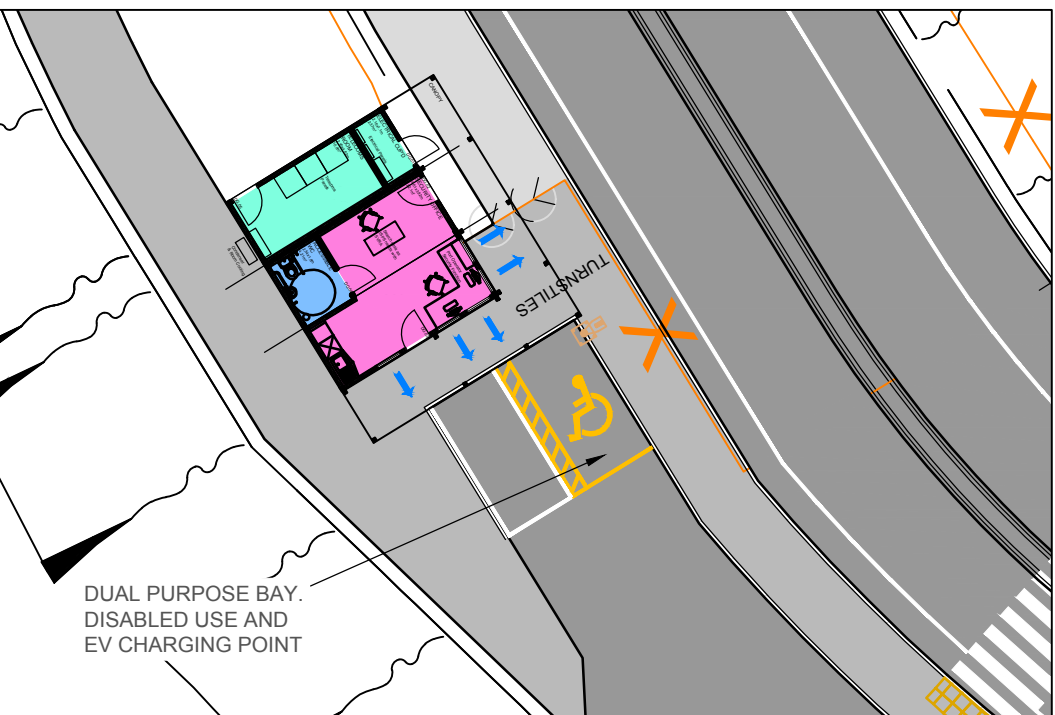
DETAIL 3 - EV CHARGING BAY & CHARGE POINT  
SCALE 1:250



DETAIL 4 - BUILDING B PARKING  
SCALE 1:250



DETAIL 2 - BUILDING A PARKING  
SCALE 1:250



DETAIL 1 - BUILDING D PARKING  
SCALE 1:250

**NOT FOR  
CONSTRUCTION**

P02	1.01.22	FOR PLANNING PERMISSION	CH	DP	RCBP
P01	14.01.22	FOR PLANNING PERMISSION	CH	DP	RCBP
REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT



**bam  
nuttall**

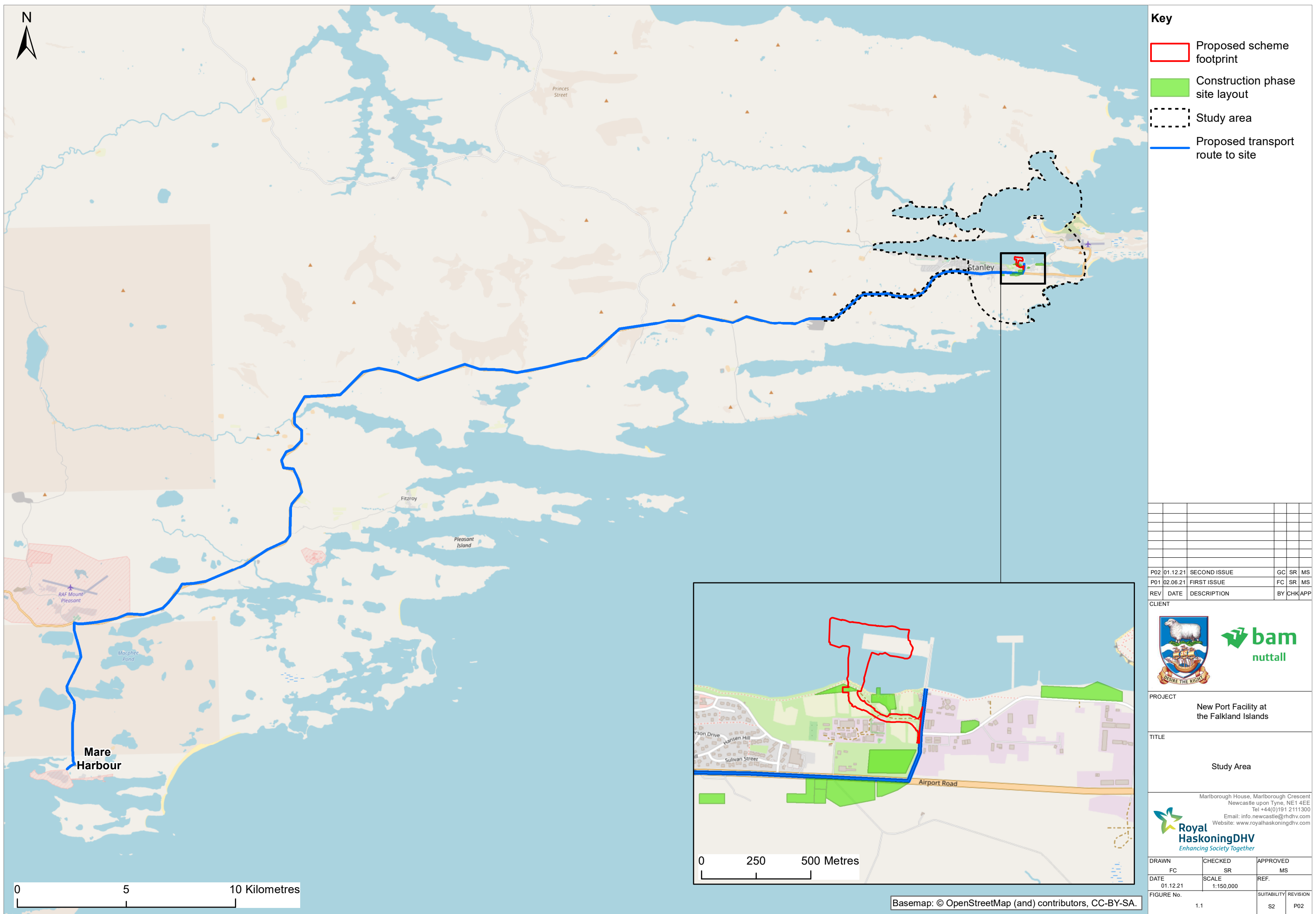
PROJECT  
**NEW PORT FACILITY AT THE  
FALKLAND ISLANDS**

TITLE  
**OVERALL LAYOUT DRAWING  
FOR PLANNING PRESENTATION  
SHOWING CAR PARKING AREAS**

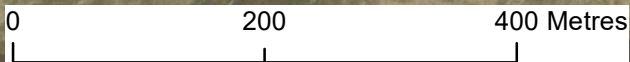
**Royal  
HaskoningDHV**  
Enhancing Society Together

DRAWN	CH	CHECKED	DP	APPROVED	RCBP
DATE	19.01.22	SCALE	AS SHOWN	RHDHV DRAWING No. PB7829-RHD-ZZ-ZZ-DR-Z-5016	
BAM DRAWING No.	BAS2051-RHD-ZZ-ZZ-DR-Z-5016	SUITABILITY	S4	REVISION	P02









Basemap: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGA, AeroGRID, IGN and the GIS User Community.

- Key**
- Construction phase site layout
  - Proposed Temporary Footpath Diversion

- Construction Phase**
1. Stores and materials laydown area
  2. Laydown and stockpile area
  3. Mobile concrete batching plant
  4. Pre-cast storage area
  5. Site offices / plant workshop
  6. Welfare stores and laydown area
  7. Bioremediation area
  8. Working area on land
  9. Proposed temporary footpath diversion
  10. Slipway
  11. Rock armour laydown area
  12. Container storage
  13. Accommodation

P02	01.12.21	SECOND ISSUE	GC	MS	SR
P01	10.05.21	FIRST ISSUE	FC	MS	SR
REV	DATE	DESCRIPTION	BY	CHK	APP



PROJECT

New Port Facility at the Falkland Islands

TITLE

Construction Phase Site Layout



Marlborough House, Marlborough Crescent  
Newcastle upon Tyne, NE1 4EE  
Tel: +44(0)191 2111300  
Email: info.newcastle@rhdhv.com  
Website: www.royalhaskoningdhv.com

DRAWN	CHECKED	APPROVED
FC	MS	SR
DATE	SCALE	REF.
01.12.21	1:6,000	
FIGURE No.	SUITABILITY	REVISION
1.2	S2	P02



- Construction of a new access road and services which will connect the new quay to the existing highway and infrastructure / utility networks.
- Removal and dismantling of the FIPASS barges, services and causeway on the foreshore (including removal of water and sludge from inside FIPASS tanks, removal of infrastructure currently on top of FIPASS and construction of a temporary slipway to allow for dismantlement).
- Removal of surficial silt and kelp currently present on the bed of the harbour within the footprint of the proposed quay and causeway.
- Construction of a new causeway and road over to provide access from the land to the quay. The causeway will be constructed using mass fill rock sourced from Pony's Pass quarry which will be transported to site by the Public Works Department, with a rock armour layer constructed on top of the mass fill on its side slopes for long term protection of the new facility from wave action.
- Construction of a quay with maximum dimensions of 300m x 50m at the western end, reducing to 40m at the eastern side. The quay is to comprise a mass fill structure with tubular piled combi-wall.
- Construction of roller compacted concrete (RCC) surface and associated drainage connections including drainage outfall for surface water and foul water–treated to surface water standards.
- Construction of a seawater pump house, generator and associated piped services.
- Construction of various buildings on the quay, including a two-storey building to house the Port Operator and various cruise related and regulatory functions, as well as independent welfare block, substation and seawater pump station.
- Other work including the construction of a security gatehouse and security measures to comply with the International Ship and Port Facility Security Code (ISPS).
- Construction of a resupply pontoon suitable for small vessel mooring and associated bunkering services and safety equipment.
- Construction of Quayside services including fuel bunkering, electrical connections, water supplies, fire hydrants and Quayside lighting.
- Provision of quay furniture including fenders, bollards and safety equipment.
- Provision of a fibre optic control network and site-wide wi-fi.
- Provision of an ultra-high frequency (UHF) and a very-high frequency (VHF) radio network.

The proposed scheme is to be constructed in a phased manner, with works currently scheduled from 2023 to 2025.

The phased sequencing of construction works (shown on **Drawing PB7829-RHD-MA-BA-DR-ME-0033** and **Drawing PB7829-RHD-MA-BA-DR-ME-0034** will result in the provision of 190m of berthing face at all times (either at FIPASS or at the proposed new quay). The completed 300m quay is proposed to be constructed in full and handed over to the operators in 2025.

Construction works will typically be undertaken six days per week (Monday to Saturday); however, depending on the progression, sequencing of works and weather conditions, there may be a requirement for critical programme works to be undertaken on Sundays. Working hours will typically be from 7am – 7pm; however, certain critical to programme construction phase activities (i.e. construction of the causeway road) are double shifted and would require an extended window to 11pm.

### A3.0 Description of the operational phase

During the operational phase, the proposed quay is predicted to be used by a range of vessels similar to those that use FIPASS currently, including tankers, cruise vessels, fishing vessels, cargo vessels, tugs, research / survey vessels and yachts.

The new quay will provide and support the following features:

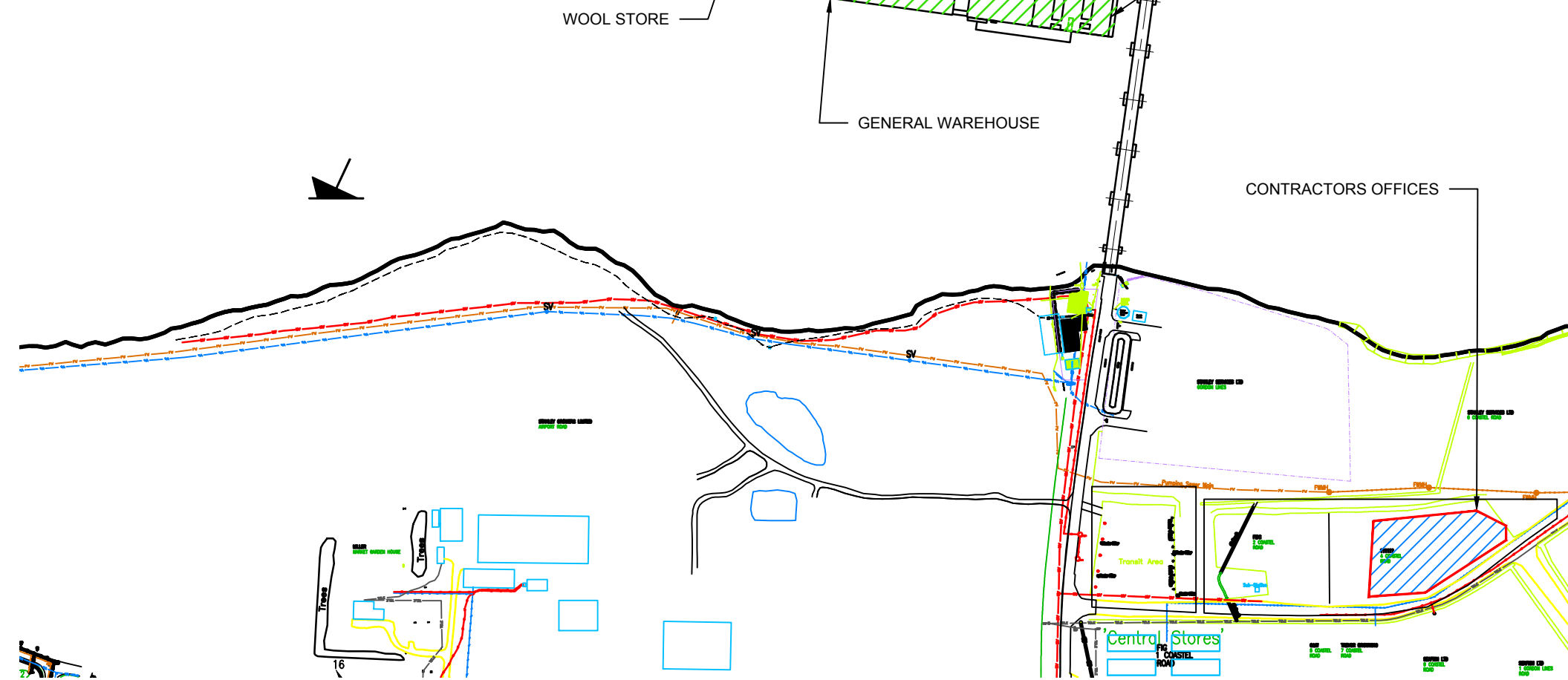
- 300m of berthing on the seaward face of the quay, end-on berthing on the eastern face
- 70m rear side berthing for some of the smaller fishing vessels, launches, the Concordia Bay and smaller vessels. A berth that depending on draft could be used for layover.





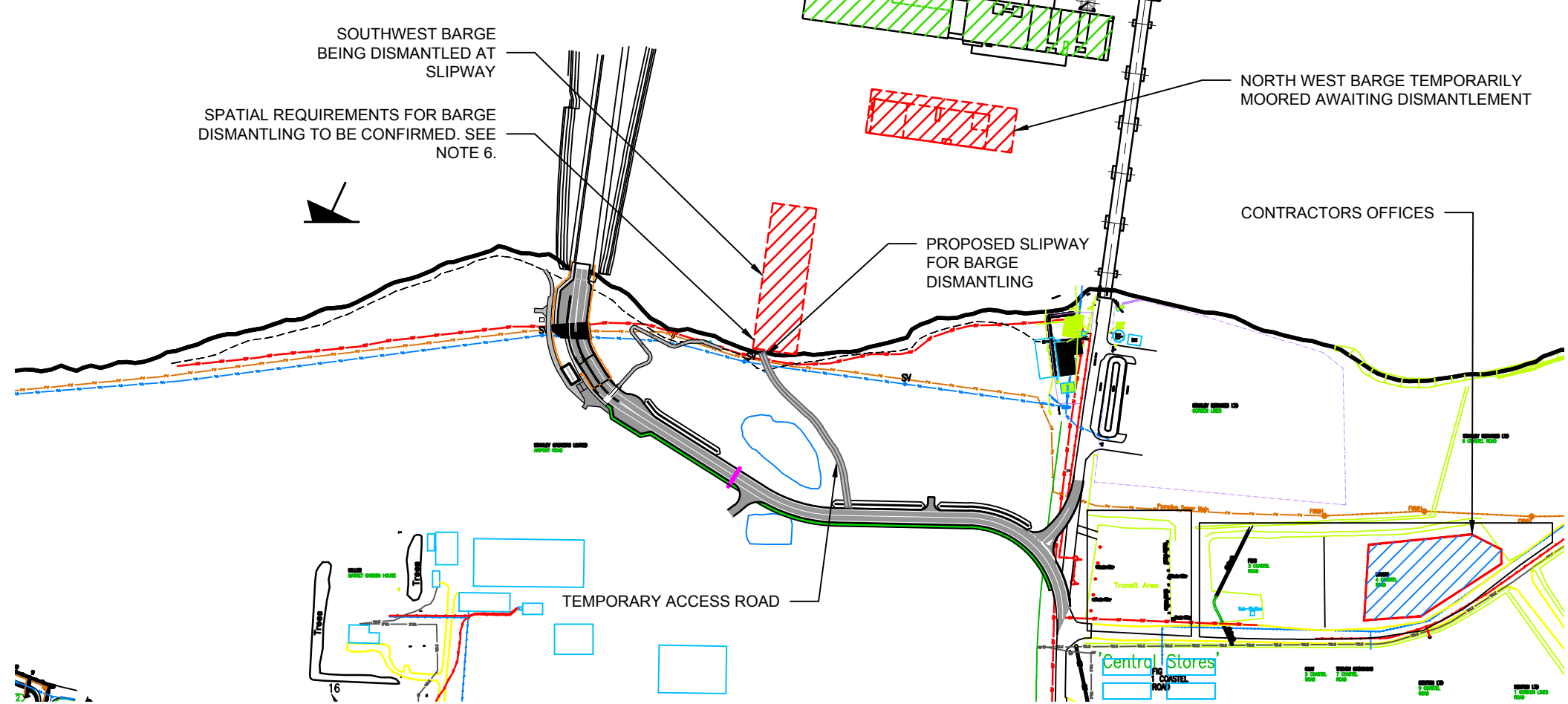
CURRENT OPERATION

WESTERN BARGES NOT FIT FOR BERTHING  
CENTRAL AND EASTERN BARGE USED FOR BERTHING APPROX 190m  
CONTRACTORS COMPOUND ESTABLISHED



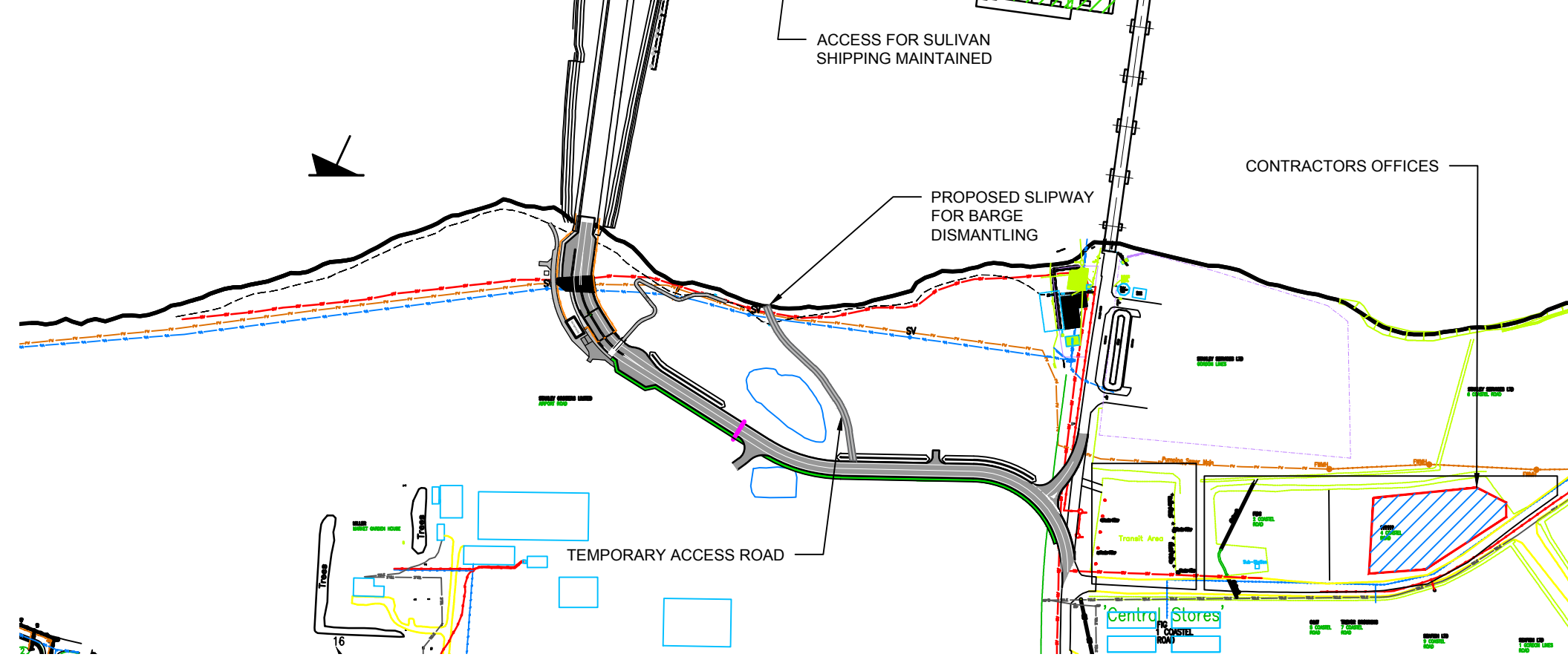
PHASE 0

CAUSEWAY CONSTRUCTION STARTED  
2 NO. WESTERN BARGES DISMANTLED



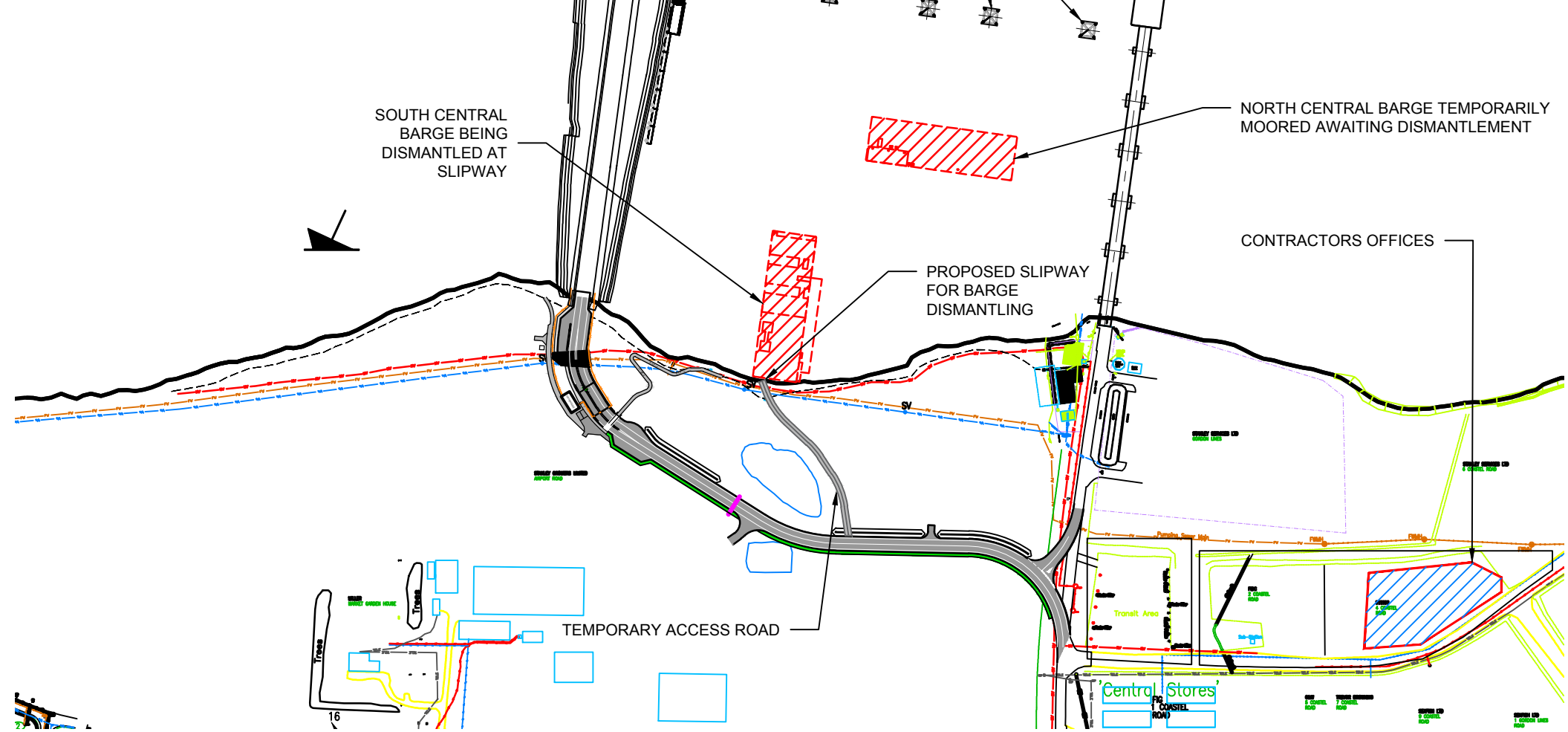
PHASE 1

190m WESTERN BERTH CONSTRUCTED  
PORT OPERATIONS TRANSFERRED TO NEW QUAYSIDE  
BAM SHARED ACCESS FOR PHASE 2 CONSTRUCTION  
SULIVAN SHIPPING ACCESS MAINTAINED



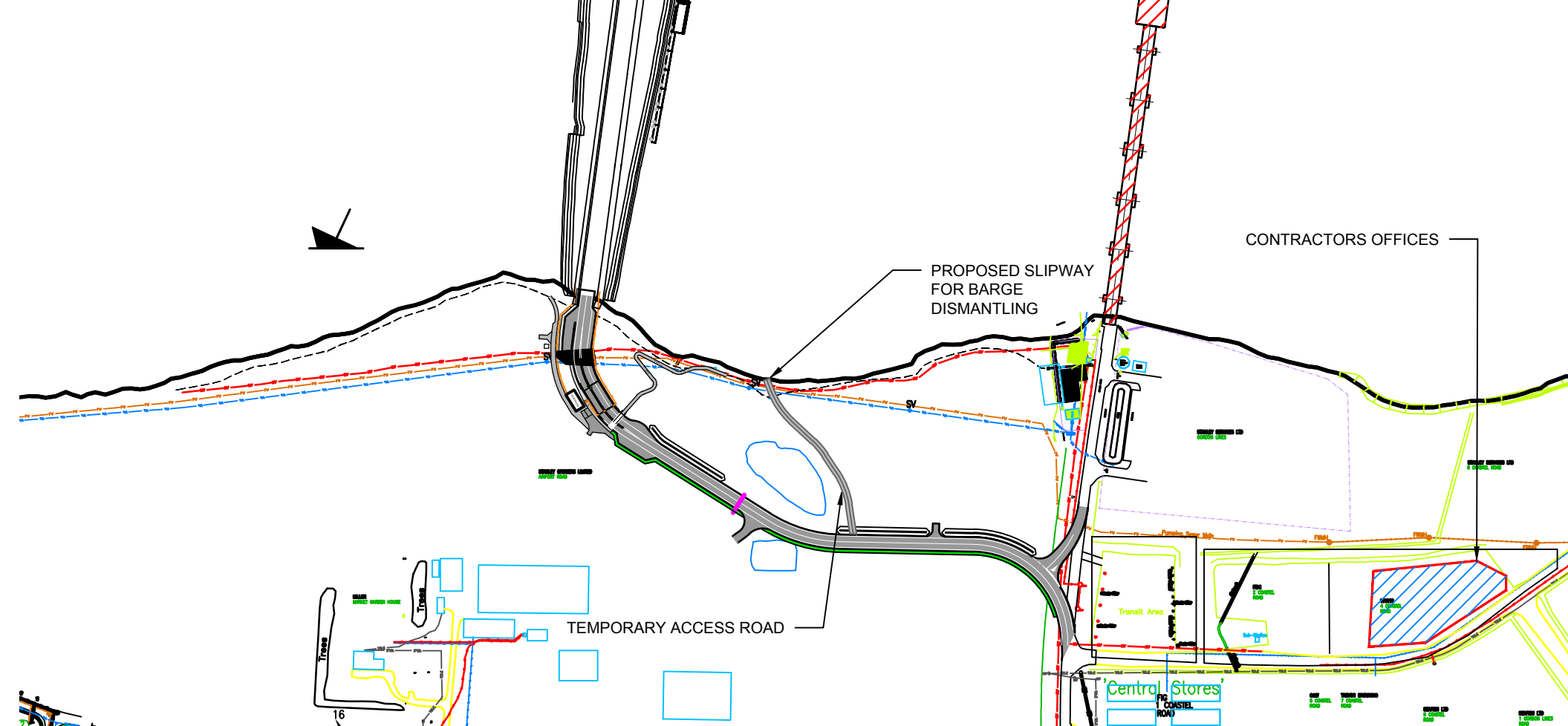
PHASE 2

WORKING QUAYSIDE PROGRESSING TO 300m



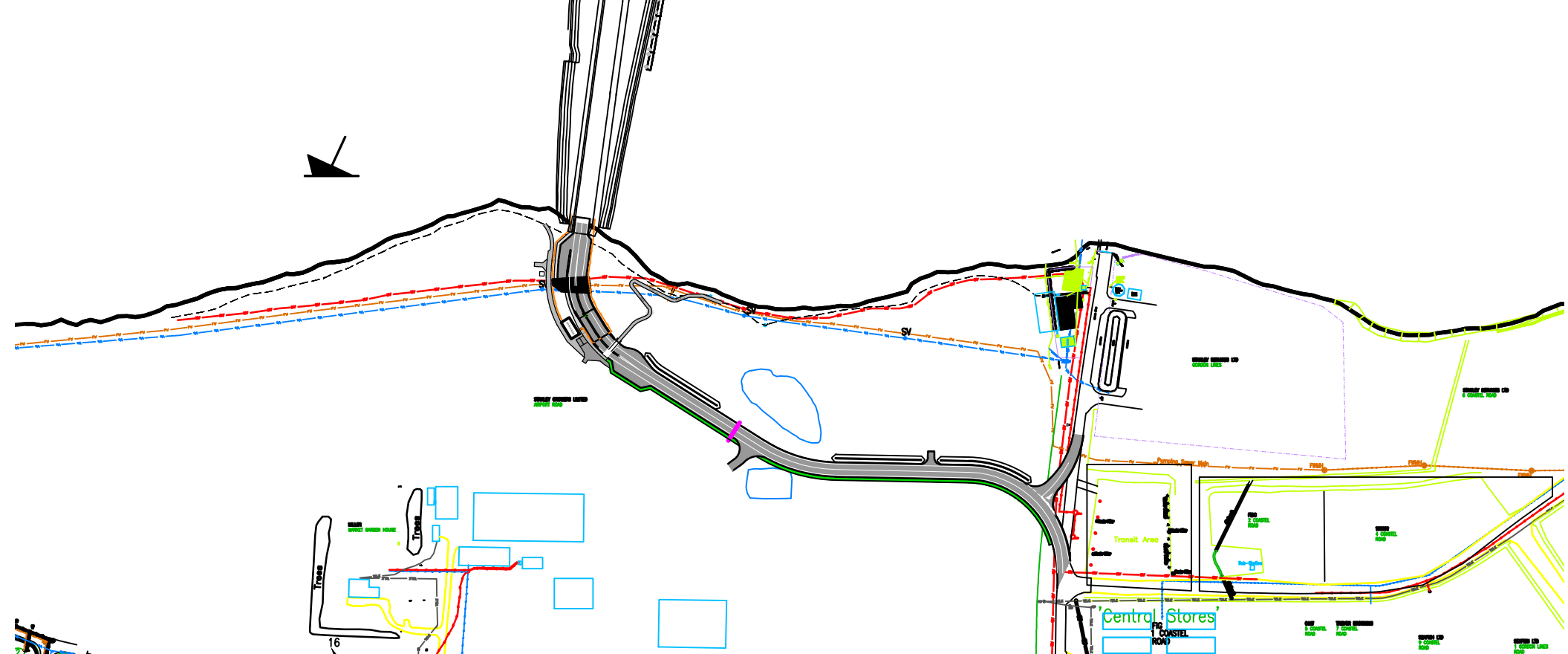
PHASE 3

WORKING QUAYSIDE NOW 300m



COMPLETION

ORIGINAL FIPASS CAUSEWAY DISMANTLED  
CONTRACTORS OFFICES REMOVED  
SLIPWAY FOR BARGE DISMANTLING AND  
TEMPORARY ACCESS ROAD REMOVED



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES TO CHART DATUM (mCD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES RELATIVE TO SAPPERS HILL 1943 / UTM ZONE 21S.
4. DRAWING TO BE READ IN CONJUNCTION WITH THE DISMANTLING STRATEGY BAS2050-BNL-ZZ-YYY-RP-W-0002 (HOLD)
5. PROVISIONAL PORT AREA AND BOUNDARY WITH BAM WORKING SPACE TO BE AGREED WITH PORT OPERATOR.
6. LOCATION SHOWN FOR BARGE DISMANTLING IS PROVISIONAL THIS IS SUBJECT TO ENVIRONMENTAL IMPACT ASSESSMENT AND IS ILLUSTRATIVE ONLY AT CONCEPT DESIGN STAGE.
7. AREA SHOWN FOR CONTRACTORS OFFICES IS ILLUSTRATIVE ONLY - REFER ALSO TO DRAWING BAS 2050-STAGE1A-SK-CMO-014.

KEY

- BAM WORKING SPACE
- AREA AVAILABLE FOR PORT USE

**NOT FOR  
CONSTRUCTION**

P04	08.12.21	ADDRESSING BAM COMMENTS	CH	DP	RCBP
P03	01.12.21	ADDRESSING BAM COMMENTS	BM	CH	DP
P02	22.03.21	ADDRESSING BAM COMMENTS	CH	DP	RCBP
P01	15.03.21	FOR INFORMATION	CH	DP	RCBP
REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

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PROJECT

NEW PORT FACILITY AT THE  
FALKLAND ISLANDS

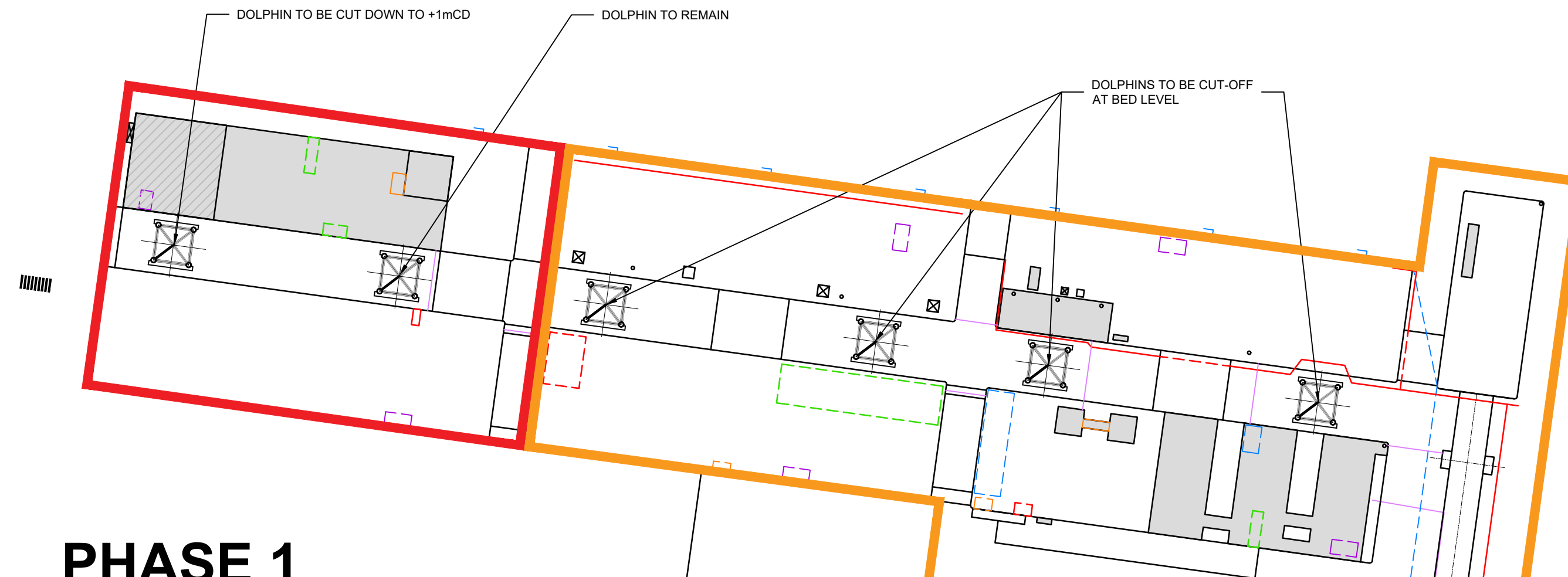
TITLE

STAGING AND PHASING  
DRAWING



DRAWN	CH	CHECKED	DP	APPROVED	RCBP
DATE	11.03.21	SCALE	N.T.S	RHDHV DRAWING No.	P87628-RHD-MA-BA-DR-ME-0033
BAM DRAWING No.	BAS2051-RHD-MA-BA-DR-ME-0033	SUITABILITY	S2	REVISION	P04





## PHASE 1

## PHASE 2

- 1.1 TENANTS TO REMOVE ASSETS IN  
NW & SW BARGES.
- 1.2 CARRY OUT SURVEYS.
- 1.3 DE-CONTAMINATE NW & SW BARGES.
- 1.4 REMOVE SUPERSTRUCTURES (WAREHOUSES).
- 1.5 CREATE SHORESIDE ACCESS TRACK  
AND SLIPWAY / WINCH.
- 1.6 WINCH / TOW SW BARGE TO SLIPWAY  
AND DISMANTLE.
- 1.7 WINCH / TOW NW BARGE AND ANCHOR SOUTH  
OF EXISTING FIPASS.
- 1.8 ONCE SW BARGE COMPLETELY DISMANTLED,  
REPEAT 6. FOR NW BARGE.
- 1.9 DISMANTLE PLOY TUNNELS ON ACCESS ROUTE

- 2.1 TENANTS TO REMOVE ASSETS IN NC, SC, NE AND SE BARGES.
- 2.2 CARRY OUT SURVEYS.
- 2.3 DE-CONTAMINATE NC, SC, NE AND SE BARGES.
- 2.4 REMOVE SUPERSTRUCTURES (WAREHOUSES).
- 2.5 CREATE SHORESIDE ACCESS TRACK AND SLIPWAY / WINCH.
- 2.6 WINCH / TOW SC BARGE TO SLIPWAY AND DISMANTLE.
- 2.7 WINCH / TOW NC BARGE AND ANCHOR SOUTH OF EXISTING FIPASS.
- 2.8 ONCE SC BARGE COMPLETELY DISMANTLED, WINCH / TOW NC BARGE TO SLIPWAY AND DISMANTLE.
- 2.9 CREATE SHORESIDE ACCESS TRACK AND SLIPWAY / WINCH.
- 2.10 WINCH / TOW SE BARGE TO SLIPWAY AND DISMANTLE.
- 2.11 REMOVE CAUSEWAY LINKSPAN BRIDGE AND TOW RORO BARGE TO SLIPWAY AND DISMANTLE.
- 2.12 DISMANTLE CAUSEWAY N TO S USING NE BARGE AS WORKING PLATFORM.
- 2.13 ONCE SE BARGE COMPLETELY DISMANTLED, WINCH / TOW NE BARGE TO SLIPWAY AND DISMANTLE.
- 2.14 REMOVE SECURITY HUT AT THE BASE OF THE CAUSEWAY.
- 2.15 REMOVE ACCESS TRACK AND SLIPWAY AND MAKE GOOD.

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES TO CHART DATUM (mCD) UNLESS NOTED OTHERWISE.
3. ALL COORDINATES RELATIVE TO SAPPERS HILL 1943 / UTM ZONE 21S.
4. FOR FURTHER DETAILS OF STAGING AND PHASING REFER TO DRAWING PB72R2-RD-MA-8A-DR-ME-0001.
5. DISMANTLEMENT STRATEGY MAY ONLY COVER F.I.G ASSETS. SSL ASSETS AND DISMANTLEMENT TASKS ON PIPES AND WITHIN THE TANK FARM ARE TO BE ACTIONED BY RECYCL. THIS INCLUDES DESIGN, CONSENTS AND DISMANTLING/RECYCLING/REUSING.

- PHASE 1
- PHASE 2

**NOT FOR  
CONSTRUCTION**

P05	08.12.21	ADDRESSING BAM COMMENTS	CH	DP	RCBP
P04	01.12.21	ADDRESSING BAM COMMENTS	BM	CH	DP
P03	15.03.21	ADDRESSING BAM COMMENTS	CH	DP	RCBP
P02	09.03.21	ADDRESSING BAM COMMENTS	TC	DP	RCBP
P01	09.03.21	FOR INFORMATION	TC	DP	RCBP
REV	DATE	DESCRIPTION	BY	CHK	APP

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NE

## NEW PORT FACILITY AT THE FALKLAND ISLANDS

100

### DISMANTLEMENT STRATEGY DRAWING



DRAWN TC		CHECKED DP	APPROVED RCBP
DATE 09.03.21		SCALE 1:1000	RHDHV DRAWING No. PB7829-RHD-MA-BA-DR-ME-0034
BAM DRAWING No. BAS2051-RHD-MA-BA-DR-ME-0034			S4 P05 REVISION



- A clear open main quay area allowing flexibility for operational use and further storage or welfare facilities if the need arises in the future.
- Dedicated space for storage of oil spill kits on the port near the potential point of need.
- Pontoon on the landward side of the quay, east of the proposed causeway for resupply activities for vessels at anchor in the harbour, use by tourism launches and tours, pilot vessels, etc. The design allows flexibility for additional pontoons and marina activity in the future, if required and funding allows.
- Limited car parking (comprising a total of 18 spaces, up to four of which are for electric vehicle charging) and temporary coach parking (including provision for electric vehicle charging for port utility vehicles).
- Turning circle for coaches, HGVs and cargo handling plant and equipment.
- Demountable security fence / barrier to define a safe zone for cruise vessel passengers and crew and to form separation from the main operational area on the quay.
- Surface water runoff drains and RCC surface suitable for transshipment operations.
- Foul water will be collected from the buildings, treated in package treatment plants and clean water discharged into the harbour.
- High Lighting masts on the quay and (extended bracket) street lit causeway, with conventional street lighting on the access road designed to minimise light spill.
- Various buildings and containerised units required to operate the port.
- The new port will provide a safe area behind each berth to arrange containers for fish transshipment and with the addition of new container handling equipment will lead to improved turnaround times for the fishing fleet.
- The increase in overall available berthing length for the fishing fleet will support transshipment at the new port.

The quay has been designed to accommodate the existing cargo handling operations on FIPASS (side loaders and ships gear), as well as the use of a future mobile harbour crane and straddle carrier for container loading and movement.

The pontoon will serve as a base for the resupply vessels that carry out crew, pilots, resupply cargo to vessels at anchor and passenger transfer operations, and other smaller vessel operations .

The EIA has been based on the numbers of vessels that are predicted to use the port. The increase in vessel numbers is based on the optimistic scenario for all cargo types considered in the Demand Study. It also takes into consideration the changes in F.I.G. fishing licencing policy, encouraging fishing companies to tranship at FIPASS / the new port facility, rather than at sea into reefer vessels.

The EIS assumes an increase of approximately 200 vessels per year compared to the annual average number of vessels which berthed at FIPASS from 1999 to 2019 (which was approximately 300 vessels per year).

Vehicular and pedestrian access onto and off the quay will be provided via the causeway. Access onto the quay will be managed via a security gatehouse located on the landward end of the causeway.

A permanent diversion of the existing coastal footpath will be required during the operational phase; the proposed diversion route is shown on **Drawing PB7829-RHD-ZZ-ZZ-DR-Z-0016**.

Surface water drainage from the quay and the access road will discharge into Stanley Harbour. Package sewage treatment plants will be used in the various buildings to treat foul water to surface water standards before discharging into Stanley Harbour.

The proposed scheme will be utilised on a 24 hour, seven day per week basis, as per the FIPASS facility. The number of employees working during the operational phase is envisaged to be the same as currently work at FIPASS.

## A4.0 Alternative options considered

### A4.1 Alternative locations

A number of locations were considered for a new port facility prior to selecting Stanley Harbour (FIPASS area) as the preferred option. The options which were originally considered comprised Stanley (FIPASS area), Mare Harbour, Port William, Navy Point, Port Harriet (Mullet Creek area) and Berkeley Sound – Uranie Bay area.

An assessment was undertaken which considered a range of criteria including environmental considerations, presence of supporting infrastructure, physical characteristics (e.g. topography, geology), navigational access and development costs. The Stanley (FIPASS area) site contains significant infrastructure, including a surfaced container yard, warehousing, laydown areas and fuel storage. There are also a range of services in place and available for use, including water, electricity and a highway network. The presence of this infrastructure is beneficial from an environmental perspective over many of the other locations considered, as disruption to the local community and environmental receptors associated with installation of such services would be minimised. In addition, the proximity of the FIPASS area to Stanley is also advantageous from a socio-economic perspective. Based on the above, the Stanley (FIPASS area) was selected by F.I.G. as the preferred location for the proposed scheme.

### A4.2 Alternative structural forms and construction techniques

In the early stages of the design process, multiple structural forms and construction methods for the quay and causeway were considered. These comprised a pre-fabricated frame, a suspended deck on piles and a mass fill structure supported by a retaining structure.

The mass fill structure method was considered to be the best option from a technical, programme, cost and environmental perspective and was therefore selected for the proposed scheme.

### A4.3 Alternative options for management of surficial silts underneath FIPASS

The proposed scheme requires the removal of surficial silt which is currently present within the footprint of the proposed quay (as it is not geotechnically suitable for construction of the proposed quay). A number of options were considered to remove and dispose of the material:

- Removal: backhoe / grab dredging.
- Removal: displacement using plough.
- Removal: submersible pump, cutter suction dredge and trailing suction hopper dredge.
- Disposal: deposition into landfill.
- Disposal: pumping into geotubes on land.
- Disposal: offshore disposal beyond the 200m depth contour.
- Disposal: inshore disposal (within the 200m depth contour, including within Stanley Harbour).

It was confirmed that the most appropriate solution from an environmental and Health and Safety perspective is to remove the surficial silts using suction techniques (using a barge or vessel) and pump into large geotextile bags (referred to as geotubes) to be located on land where it would be de-watered and the *E.coli* neutralised. The remaining solids could then be used as a fertiliser (should there be such a demand for this and laboratory analysis confirms the material is suitable for such a use), or disposed of to a landfill site if these conditions cannot be met.

This approach was selected as the preferred solution as it will permanently remove surficial silts from Stanley Harbour which are assumed to be heavily biologically contaminated, and has potential to create a product which could be beneficially re-used on the Islands.

## A4.4 Alternative options for management of FIPASS barges

Options considered for management of the FIPASS barges comprised dismantling on the shore and scuttling (i.e. sinking) of the barges at sea. The dismantling on the shore option is that which has been assessed in the EIA.

Although scuttling of barges at sea is not the proposed solution at present (and has not, therefore, been assessed within the EIS), this option has not been ruled out and may become the preferred solution at a later date. Should this be the case, it is recognised that the submission of further environmental assessment to F.I.G. in support of a planning application would be required, as well as an application for a Maritime Authority licence for offshore disposal (scuttling).

## A5.0 Requirement for and scope of EIA

In June 2015, F.I.G. brought the Planning (Environmental Impact Assessment) Regulations 2015 (the '2015 Regulations') into force. Regulation 4 of the 2015 Regulations states that during the consideration of any application for planning permission, the Planning Officer may determine that an EIA is necessary. Considering the scale and nature of the proposed scheme, a decision was made by the applicant to undertake an EIA and produce an EIS as part of the planning application.

The scope of the EIA was defined through the submission of an Environmental Scoping Report to F.I.G. in October 2020 and issue of a Scoping Opinion from F.I.G. in November 2020. The EIA has been undertaken in accordance with the comments received within the Scoping Opinion.

## A6.0 Assessment methodology

The characteristics of the existing (baseline) environment have been defined, and the potential environmental impacts of the proposed scheme identified and assessed, through the following methods and activities:

- Desk-based reviews, interpretation and assessment of existing data.
- Site surveys.
- Consultation.

The EIS reports the findings of the EIA process. The following environmental parameters / topics have been considered in detail within this process:

- Coastal processes.
- Marine water and sediment quality.
- Marine ecology.
- Coastal and terrestrial ecology.
- Archaeology and cultural heritage.
- Noise and vibration.
- Air quality.
- Traffic.
- Landscape and visual.
- Land quality.
- Flood risk.
- Navigation.
- Socio-economic and local community.
- Sustainability and climate.
- Human health.
- Vulnerability to major accidents and disasters.

Where potential adverse impacts have been identified, mitigation measures have been recommended to reduce or avoid potential impacts to acceptable levels.

## A7.0 Summary of predicted environmental impacts

### A7.1 Coastal processes

The assessment of coastal processes was informed by a desk-based review of existing information, analysis of newly collected / acquired survey data and interpretation of numerical modelling results. The bathymetry of the area, local oceanographic conditions (winds, waves, tidal levels and tidal currents), predicted sea level rise and local morphological and sedimentological conditions have all been considered.

As the proposed scheme will be constructed using mainly land-based plant, the impacts on hydrodynamics, sediment transport and morphology and the disturbance and dispersion of bed material will be negligible during the construction phase.

During operation, the proposed scheme is predicted to result in a reduction in the wave climate in the lee of the quay, as well as causing a reduction in baseline tidal currents. This may lead to an increased tendency for deposition of any sediment that is carried in suspension in the water column (if present). However, as the existing wave and tidal environment is so low, it is predicted that there would not be considerable quantities of sediment suspended in the water and any effect is predicted to be small scale. These changes are predicted to be confined to the area around the proposed scheme footprint; as a result, no impact on the hydrodynamics, sediment regime or morphology of the wider Stanley Harbour is predicted as a result of the proposed scheme. **Overall, no significant effects on the baseline coastal processes are predicted during construction or operation.**

### A7.2 Marine water and sediment quality

The assessment of potential impacts associated with marine water and sediment quality has been undertaken with reference to publicly available water quality data and the results of targeted water and sediment quality sampling and analysis from Stanley Harbour.

The proposed removal of surficial silt currently on the bed of the harbour has the potential to temporarily increase the suspended sediment concentrations locally within the harbour. However, the silt removal process will be undertaken carefully using suction techniques and the surficial silt will not be disposed of back into the marine environment; as a result, **an impact of minor adverse significance is predicted.**

General construction work adjacent to and within the harbour (e.g. associated with dismantling of FIPASS and construction of the quay and causeway) could also result in temporary sediment disturbance; however, as the proposed scheme will be constructed using mainly land-based equipment and the works will be temporary and localised in nature, **this impact is also predicted to be minor adverse significance.**

There is a long term benefit to the environment in the removal of the surficial silts from around the project site location in that the material is considered to be mainly raw sewage that has accumulated in the area over many years. Its removal will benefit the local water and sediment quality in the long term. The removal of surficial silt has potential to cause release and dispersion of potentially biologically and chemically contaminated sediment (locally reducing water quality). Given the temporary nature of the proposed surficial silt removal process and the highly localised footprint for removal (in addition to the fact that suspended sediment would remain localised to the point of disturbance due to the low tidal currents in the harbour), any effects would be limited in spatial extent. The technique proposed to remove the surficial silt has been selected in part to minimise the potential for reductions in water quality. **An impact of minor adverse significance is predicted during the construction phase.**

During the operational phase of the proposed scheme, an impact of minor adverse significance is predicted on water quality as a result of the new quay and causeway altering the flushing characteristics of the area. An impact of minor beneficial significance is predicted (compared to the present day situation on FIPASS) associated with the

discharge of foul sewage. **All other operational phase impacts to marine water and sediment quality are predicted to be of negligible significance.**

### A7.3 Marine ecology

The assessment of potential impacts to marine ecology has been informed by desk-based review of existing information and the results of site-specific survey undertaken within and adjacent to the footprint of the proposed scheme.

The proposed scheme will result in the permanent loss of habitat within the footprint of the quay and causeway. However, the proposed area of loss is small in the context of Stanley Harbour, and the species and communities present are representative of Stanley Harbour and other sheltered enclosed harbours in the Falklands. This loss is therefore **predicted to be of negligible significance.**

The removal of artificial habitat (namely FIPASS and its causeway) will also result in the loss of habitat and the communities they support. However, the proposed scheme will offer new habitat for colonisation (i.e. new haul out area on pontoon as well as the rock to be used along the causeway and locally around the quay which is likely to be colonised by marine growth) and therefore an **impact of negligible significance is predicted.**

The proposed removal of surficial silt and general working in the harbour has the potential to locally smother benthic habitats and influence fish due to increased suspended sediment. However, any impact would be temporary and short-term only, with any habitat disturbed likely to rapidly recover on completion of the works. In addition, the area within and around the proposed new quay is already covered by a layer of surficial silt. As a result, an **impact of negligible significance is predicted.**

Impacts to marine mammals as a result of underwater noise during construction have been modelled and are **predicted to be of negligible significance.** A Marine Mammal Observation Protocol (MMOP) has been developed and will be implemented during the construction phase to manage potential disturbance impacts to marine mammals.

During operation, there is potential for noise and visual disturbance to hauled out marine mammals, increased risk of collision with marine mammals (due to the greater number of vessels) and light spill and glare to act as an attractant to marine life and birds. All such impacts are, however, **predicted to be of negligible significance and no mitigation measures are required.**

### A7.4 Coastal and terrestrial ecology

The assessment of potential impacts to coastal and terrestrial ecology has been informed by desk-based review of existing information and the results of site-specific survey undertaken within the footprint of the proposed scheme.

There will be a direct loss of coastal habitat under the footprint of the approach causeway as a result of the proposed scheme. However, the habitat types to be lost are considered common in the area and are not listed as protected. As a result, and given the relatively small scale loss of habitat predicted, **an impact of negligible significance is predicted.**

The proposed geotube area is known to support the pale maiden. This is a protected plant which would be lost through the stripping of soils to construct the hardstanding in the geotube area. It is understood from liaison with PWD that this plant is relatively widespread in this area. For the purposes of the EIA, mitigation measures to address the presence of the pale maiden would be addressed through an Environmental Management Plan, the detail of which will be agreed with F.I.G. (which may require translocation).

Noise generated during construction has the potential to disturb birds. Given the duration of the proposed construction phase, it is not possible to undertake the works outside of the sensitive period for breeding birds and, therefore, temporary disturbance is an unavoidable consequence of the proposed scheme. The area to be affected

is localised and comprises modified landscapes and habitats. **An impact of negligible significance is predicted as a result.**

If it is possible to do so, the removal of structures that have the potential to support breeding birds and clearance of any vegetated areas at any locations to be used during construction will be undertaken outside of the breeding season. This is the preferred means of mitigation. However, because the timing of works is dependent on timing of receipt of planning permission, this cannot be guaranteed. If it is clear that the construction phasing would require works to be undertaken in areas or on structures that can potentially support breeding birds, advance measures would be carried out to deter breeding within areas that would be affected by construction works during the next breeding season. These measures could include advance clearance of vegetation and surfacing of working areas, blocking access to nest sites and using visual and/or auditory deterrents.

In advance of any works, a pre-construction survey will be undertaken to ensure that there is no potential for disturbance to breeding birds.

During operation, there is potential for noise and visual disturbance to birds and long term impacts to birds due to loss of FIPASS and its causeway. Based on the predicted operational phase noise levels, **a negligible impact is predicted**. The loss of habitat due to removal of FIPASS will be offset through the construction of the proposed scheme, which will offer new habitat for potential use by coastal birds (albeit of a different structural nature). As a result, **an impact of negligible significance is predicted**.

The provision of artificial habitat within the coastal waters at Stanley Harbour (specifically the rock to be placed along the causeway and locally around the quay) is predicted to result in a **minor beneficial** impact during the operational phase. No mitigation measures are required and the residual impact is of **minor beneficial** significance.

## A7.5 Archaeology and cultural heritage

Due to the history of the maritime and aviation industry in Stanley Harbour there are potentially undiscovered heritage assets which could be impacted by the construction of the proposed scheme.

The proposed removal of surficial silt and the excavation required to construct the access road could result in the loss of as yet unknown assets. However, as the impact would be highly localised, the impact is predicted to be of minor adverse. During the construction phase there would be no impact on known heritage assets.

The setting of the wreck of *SV Lady Elizabeth* and the Stanley Conservation Area would be temporarily affected during construction; however, the distance between the construction activities and these locations would mean the impact will be of minor adverse significance.

There will be a **negligible impact on heritage** as a result of changes to hydrodynamic processes and sedimentation and changes to setting during the operational phase of the proposed scheme.

## A7.6 Noise and vibration

The assessment of potential noise and vibration impacts has been informed by a review of existing information and targeted baseline noise survey. Computer modelling of the noise associated with construction plant and road traffic during the construction phase of the proposed scheme showed that impacts would be of **minor adverse significance at worst**.

During the operational phase of the proposed scheme, the noise levels are not predicted to be greater than existing levels as a result of FIPASS and, therefore, the **impacts are predicted to be of negligible significance**.



## A7.7 Air quality

Impacts on human and ecological receptors were considered as a result of air emissions generated during the construction and operational phases of the proposed scheme. Qualitative assessments were undertaken to consider the impacts of construction phase dust emissions and construction and operation phase road traffic, plant and vessel emissions.

The assessment concluded there will be **no significant impact on air quality** from the emissions associated with non-road mobile machinery or road traffic exhausts during construction or operation. Vessel movements during operation were also assessed as having no significant impact on air quality. While the impacts are not predicted to be significant, it is recommended that current guidance and industry best practice are followed to reduce emissions where possible.

## A7.8 Traffic

The traffic assessment studied the impact of increased traffic on seven road links which will be used during the construction and operational phases of the proposed scheme, namely:

- Darwin Road (MPA Road).
- Stanley Bypass.
- FIPASS Road (South).
- FIPASS Road (North).
- Airport Road.
- Coastel Road.
- Proposed new access road to the quay.

During construction, it is predicted that there will be a **minor adverse impact** on road amenity, driver delay and road degradation as a result of increased numbers of Heavy Goods Vehicles using these sections of road. Although mitigation is not required, construction phase traffic movements will be managed through a Construction Traffic Management Plan (CTMP).

During operation it is predicted that there will be a **minor adverse** effect on driver delay and road degradation; all other impacts are predicted to be negligible. No mitigation measures are proposed during the operational phase.

## A7.9 Landscape and visual

The landscape and visual assessment focused on the changes to visual character during the construction and operational phases of the proposed scheme. The baseline landscape and visual environment was based on a site visit undertaken in September 2020.

There is a direct line of sight between the proposed scheme footprint and the town of Stanley and, therefore, the construction of elements of the proposed scheme will be visible to residents within east Stanley. The impact of this change to visual amenity has been assessed as minor adverse and will be mitigated through good practice, which includes maintaining the construction site in an orderly manner and ensuring equipment and materials are stored in a tidy fashion. The impact of construction activities to road users, visitors to the coastal footpath and businesses and workers in the commercial area **during the construction phase is considered to be negligible.**

During the operational phase of the proposed scheme, lighting will be required for safety and security reasons on the quay, causeway and access road. The illuminance levels generated by lighting on the proposed quay and causeway will be greater than the illuminance levels from FIPASS and, therefore, lighting will be noticeable. A number of measures have been built into the scheme design to minimise the light disturbance during operation, including:

- Adopting the lowest safe lighting levels possible for the task being undertaken.
- Ensuring the luminaire is mounted at zero degrees to the horizontal and avoid any tilt where possible.
- Directing luminaires into the area to be lit (light from the boundary inwards).
- Placing lighting equipment so it makes use of the natural topography, buildings and bunds to minimise its visibility to sensitive receptors.
- Using a luminaire with good optical control.
- Minimising the mounting height of the luminaire.
- Limiting the hours of lighting operation where possible.
- Making use of manufactures supplied louvres/shields.
- Providing local control for the lighting so it may be switched off when not required.

The lighting of the new quay (designed to light the working surface and improve health and safety by lighting the operational areas) will be focused predominately in a seaward direction and is designed to reduce the need for vessels to utilise their own ships gear lighting when berthed at night (which is likely to present a source of lighting disturbance to residents in Stanley). On the assumption that the new lighting for the new port facility avoids the need for ships to use their on-board lights when berthed at night, the impact is deemed to be of **negligible** significance. No mitigation is required beyond that already built into the scheme design and the residual impact is of negligible significance.

## A7.10 Land quality

The understanding of the existing environment with regard to land quality has been informed by desk-based study and ground investigation.

Construction activities will disturb soil and groundwater and may result in the mobilisation of contaminants which have the potential to impact on human health, controlled waters, ecology and the built environment.

An assessment of the chemical composition of the rust, ballast water and ballast sludge within the FIPASS barges recorded contaminants (including asbestos fragments) and hydrocarbon vapours.

During construction, the most significant risk is to site workers during the dismantling of the FIPASS tanks; without mitigation there could be a **major adverse impact** due to the potentially flammable/explosive environment and presence of contaminants known to be present in the ballast sludge inside the tanks (including asbestos fragments). A range of mitigation measures will be put in place to reduce this risk, including prohibiting the use of hot works during the dismantling process (if an explosive environment is identified within the tanks) and use of appropriate personal protective equipment for construction workers.

The assessment concluded that **all other construction phase impacts would be of negligible to minor adverse significance.**

During the operational phase of the proposed scheme, there is the potential for fuel to leak from fuel lines and refuelling areas associated with the quay. However, the new fuel lines that will be installed as part of the proposed scheme will be fitted with monitoring along their length that will detect if leakage has occurred and where it is located. This will provide the mechanism for managing any leaks from the pipework during the operational phase. As a result, operational phase impacts are predicted to be of **minor adverse significance.**

## A7.11 Flood risk

A desk-based study which considered the topography and current flood risks in the area has been undertaken to inform the assessment of flood risk.

Due to the location of the proposed scheme there is no risk of fluvial flooding (flooding from rivers) during the construction or operational phases.

There will be no impact to the surface water, groundwater or sewer/foul water flood risk during the construction phase of the proposed scheme. The proposed scheme has been designed to take account of the potential risks of surface water, groundwater and sewer/foul water flooding and, therefore, there will be **no impact during the operational phase**.

The tidal regime and wave heights in the area mean there is no realistic likelihood of the coastal land at the location of the proposed scheme experiencing coastal flooding during construction. The proposed quay and causeway is, however, predicted to overtop during certain extreme storm events when the facility would be closed anyway due to the high winds and threat to human life. The design of the quay includes features to make it resistant to damage from overtopping, including moving equipment away from the quay edge where possible, having services in covered pits and raising the ground floor level of buildings above the level of the surrounding quay.

## A7.12 Navigation

The Harbour Master and Director responsible for the Maritime Authority at F.I.G. and the current port operator of FIPASS (AtLink Ltd) were consulted to understand the existing environment from a navigation perspective. A qualitative assessment of the impacts of the proposed scheme on navigation was then undertaken.

During the construction phase there will be a **negligible impact on navigation into Stanley Harbour** and existing operations at FIPASS as the risks will be managed through co-ordination with F.I.G., the current operators of FIPASS, the contractor and the Harbour Master.

The phasing of the proposed scheme will maintain sufficient berthing capacity in Stanley Harbour, until the new quay is built out in full to the 300m length.

The risk of increased collision due to the predicted increased vessel traffic during the operational phases is considered to be **of negligible significance**. One of the buildings on the quay will contain a vessel traffic service which will provide the mechanism to manage any conflicts between vessels.

## A7.13 Socio-economic and local community

A desk-based socio-economic assessment has been undertaken to inform the assessment of potential impacts. This involved a review data published by the F.I.G. and other sources to establish the baseline conditions in relation to population, accommodation provision, employment, tourism and the economy.

The assessment concludes that the construction phase will have a **moderate beneficial impact** on the local economy by providing sub-contracting opportunities to the local business community, and opportunities to up-skill the local population through the provision of apprenticeships and training opportunities. In addition, local businesses in Stanley are envisaged to benefit from construction phase employee related expenditure (i.e. wage spending in shops, bars, restaurants, etc.) and the purchase of construction materials.

The proposed access road will impact the agricultural land at Stanley Growers. Discussions are ongoing between F.I.G. and Stanley Growers in relation to this, with F.I.G.'s intention being to ensure that any loss of land (either temporarily during the construction stage or long term when the new port becomes operational) can be offset by the offer of provision of alternative land at a suitable nearby location, and assist with re-siting or re-provision of polytunnels.

In addition, it is proposed to offer to enhance agricultural areas on the remaining Stanley Growers land through the relocation of peat and topsoil generated from excavations to construct the access road. On this basis, while acknowledging that there will inevitably be disruption and an impact on the local business at Stanley Growers, with F.I.G.'s intention to offset this disruption by the provision of alternative land at a nearby location and support in re-provision of polytunnels as required, **the impact on the wider community is predicted to be of negligible significance**.

The impacts associated with the temporary diversion of the coastal footpath on the economy and local communities are **predicted to be negligible**. The impact of the proposed bioremediation of surficial silts and presence of the geotubes on land classified as open space is predicted to have a **minor adverse impact on the amenity value** of the area in the period of bioremediation only.

The intended increase in vessel numbers entering Stanley Harbour and docking at the proposed new quay during the operational phase is anticipated to result in an increase in revenue and economic growth to the Falkland Islands (and Stanley in particular). This is **predicted to be of major beneficial significance** from a socio-economic perspective.

The legacy benefit associated with provision of training / apprenticeships to the local population during construction is predicted to be of **minor beneficial significance**. The impact of the permanent diversion of the coastal footpath is predicted to be negligible.

## A7.14 Sustainability and climate

Greenhouse gases will be released during the construction phase of the proposed scheme. These emissions will be generated from construction plant and equipment, electricity consumption, road traffic and embodied greenhouse gases in construction materials. The largest source of emissions during construction is predicted to be those embedded in construction materials.

It should be noted that the quarrying and transport of rock to the site from Pony's Pass quarry is to be undertaken by PWD; this minimises the requirement to import quarrying equipment and haulage plant to the Falkland Islands which has a beneficial impact from a climate change and sustainability perspective (compared to the alternative of transporting new quarrying and haulage plant to the Falkland Islands). Collaborative working between the project team, key stakeholders and F.I.G. has resulted in the quay being reduced in size compared to that originally proposed, whilst still meeting the objectives of the project. Specifically, the quay has been reduced from 400m in length to 300m, with a reduction in width at the eastern end of the quay from 50m to 40m. This reduction in quay size has been achieved through the design of very efficient berthing arrangements, with berthing provision on three faces of the quay. This has significantly reduced the volume of construction materials required when compared with the initial design, resulting in a very significant carbon saving in the construction phase.

It should also be recognised that the emissions to be generated in the construction phase will be temporary and are not expected to significantly affect the long-term emission reduction targets on the Falkland Islands.

A range of mitigation measures are to be considered, including further design iteration to reduce the absolute quantities of construction materials through efficient design, use of locally sourced materials where possible to minimise transport distances, use by BAM of low emission vehicles for transporting materials to site (where possible) and implementation of a CTMP to minimise the number of journeys required during construction.

During the operational phase, vessel movements, road traffic and electricity consumption will release greenhouse gases (noting that FIPASS in operation is also currently generating GHG emissions). A number of measures have been incorporated into the scheme design to increase the sustainability of the proposed scheme and reduce the GHG emissions during operation at the new port facility, including:

- Buildings will be of modular construction with good levels of insulation.
- Electric vehicle charging points will be installed at the gatehouse and on the port.
- Energy efficient light-emitting diode (LED) lighting is to be used on the port and in port buildings.
- Peat excavated to construct the new access road will be re-used to enhance soil conditions nearby.
- Swales are to be adopted to drain the new access road, which will provide natural drainage attenuation and minimise construction material use.
- Foul water to be generated on the port will be treated using low energy package sewage treatment plants before discharging clean water into the harbour.
- Encouraging the procurement of energy efficient equipment within the proposed scheme.

Based on the above, it is considered that the GHG emissions to be generated during operation have been minimised as far as practicable through the scheme design. A number of measures to enhance the sustainability of the proposed scheme and reduce the GHG emissions have also been included in the design. In the global context, the GHG emissions to be generated during the operational phase of the proposed scheme are not considered to be significant.

Approximately 30% of electricity within the Falkland Islands is currently provided by renewable sources (wind). It is F.I.G.'s intention to increase this ratio of renewable energy in the future, resulting in a further decrease in GHG emissions in the operational phase (note this is not modelled in the EIS). Emissions during the operational phase of the new port facility would not compromise the future emission reduction targets in the Falkland Islands.

## A7.15 Human health

The assessment of impacts to human health has been undertaken using the findings of the noise and vibration, air quality, traffic, land quality and socio-economic assessments. With the adoption of mitigation measures, the impacts to human health are predicted to be of **negligible significance** during the construction and operational phases of the proposed scheme.

## A7.16 Vulnerability to major accidents and disasters

The proposed scheme is not considered to be particularly vulnerable to major accidents or disasters which could lead to an environmental impact. No impact is predicted from a flood risk perspective during construction or operation and the proposed scheme has been designed to take account of predicted sea level rise for the proposed design life of 50 years.

The new fuel lines to be constructed as part of the proposed scheme are to run below ground and onto the quay adjacent to the proposed access road within a dedicated utilities corridor. The fuel lines will be fitted with monitoring along their length that will detect if a leakage has occurred and where it is located. Isolation valves located on the quay provide the ability to isolate sections of pipe and maintenance and repair. This is a significant improvement beyond the current set up on FIPASS, where the fuel lines run above ground (and the fuel lines are currently in a degraded condition). The measures which have been built into the proposed scheme therefore **significantly reduce the risk of a major accident** occurring due to release or spillage of fuel during the operational phase of the proposed scheme.