



Uig Harbour Redevelopment

Masterplan Summary Report

The Highland Council

Project number: 60536743
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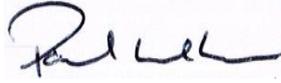
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1. Introduction

Uig Harbour forms one part of the Uig, Tarbert, Lochmaddy triangle, providing lifeline ferry services to the communities of the Western Isles. Increasing demand and tonnage has led CMAL to commission new, larger ferry vessels for a number of its routes. The Triangle has been identified by CMAL as a priority and the procurement of a new vessel for this route has commenced

The new vessel (802) will be owned by CMAL and operated by CalMac Ferry Limited (CFL). The ferry will be a dual fuel vessel running on Marine Diesel Oil and Liquefied Natural Gas (LNG). As part of the overall programme LNG will be delivered and bunkered at Uig. The design and implementation of the LNG service and infrastructure will be the responsibility of CFL. The details of LNG are currently being developed by the ship owners (CMAL) and CFL.

The present berth for vessels using the Roll On/Roll Off facility is exposed to wind and wave action predominately from the west direction. In certain conditions the berth can become untenable particularly when waves refract around the headland. The present structure and layout of the pier is a result of the following modernisations:

- 1984-1986 - Berthing structure and roundhead were added and Roll On/roll Off facilities provided for Caledonian MacBrayne's MV Hebrides Isles. New fishing berths and landing areas were provided during this modernisation;
- 2000 – Construction of new Inner berthing dolphin and construction of new Outer berthing dolphin.

The provision of a new vessel with increased vehicle and pedestrian capacity will have significant impact on the existing operability of Uig Ferry Terminal. The current Ferry Terminal was constructed in 1986 and it is recognised by THC/ CMAL/CFL that the facility is at its operational limit for the vessel turnaround time and the consequential vehicle throughput for the current vessel.

This report considers the following mitigation options for the following critical infrastructure elements of Uig Ferry Terminal to ensure that for the larger vessel, larger vehicle and passenger carrying capacity, the current operability and vessel turnaround times are not reduced. Refer to Appendix A for current layout 60536743-SKE-00-0000-1120.

1. Berthing Structure.
2. Marshalling Area including new Ticket Office.
3. Approachway Structure.
4. Fisherman's Compound.
5. Dredging.
6. Linkspan.
7. Passenger Access System/Gangway

The six key elements considered in assessing the mitigation measures options are as follows:

- The new vessel will geometrically fit the infrastructure and linkspan orientation but requires dredging works and strengthening of the current berthing facility to maintain the structural integrity. Without dredging the compromised water level will introduce a tidally effected service;
- Maintaining current Ferry Terminal operability for increased vessel vehicle and passenger numbers;
- Infrastructure not suitable for current vessel including footprint requirements for Passenger Access Gangway and LNG footprint requirements on the berthing structure;
- Infrastructure not suitable for additional passengers and vehicle requiring widening of the Approachway, increased footprint of Marshalling area and larger ticket office;
- Health and safety concerns of passengers traversing near mooring bollards on the berthing structure and the current Approachway footway not wide enough to allow passengers to pass without encroaching onto the road.
- Environmental conditions (wave/wind) affecting the berth, which impact on the reliability of the vessel.

The impacts of the 'Do Nothing' option for the larger vessel and larger vehicle and passenger carrying capacity will mean that the current operability and vessel turnaround times will be both reduced, together with the

increased impact of the existing environmental conditions on the new vessel, would result in a reduction on a reliability of the existing infrastructure to maintain vessel timetables. The key impacts are detailed below:

- Geometrical vessel fit will still require berth dredging and fendering strengthening if the structural integrity of the berthing structure and the vessel timetable is to be maintained;
- The increased deadweight/displacement and windage of the new vessel will impact on berthing, bunkering and offloading of passengers, vehicles and freight.
- The impact of not improving pedestrian and vehicle provision and capacity will mean that the vessel may have to operate by limiting its carrying capacity (vehicle and passenger) to the capacity of the existing Ferry Terminal infrastructure including Marshalling Area footprint;
- Reputational risk of bringing into service a larger vessel which cannot run at full capacity because the infrastructure is not suitable and the number of lost days of vessel sailings is increased due to the increased berthing and mooring requirements of the new vessel.

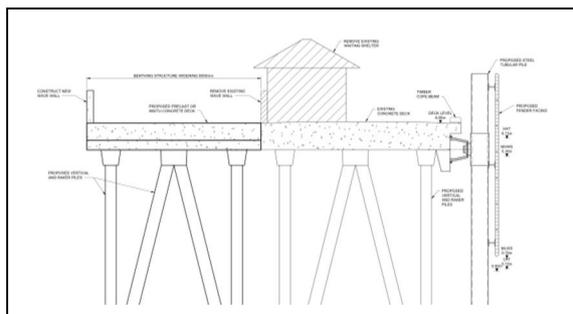
2. Preferred Option

2.1 Summary and Recommendations

The following is a summary of the recommendations and an overall cost estimate contained in this document for the following critical infrastructure for the upgrade of Uig Ferry Terminal. Refer to Appendix A for Block plan sheet no. 60525699-SKE-20-0000-C-1145.

2.1.1 Pier Strengthening Summary

Option 2, Widening of the existing berthing structure by introduction of additional 8m width of new pier does solve the issue of maintaining the structural integrity. The recommendation is that this is the preferred masterplan option because this option does adequately address the following issues which could have affected the operability of Uig Ferry Terminal for the new vessel:



- Berthing structure width increased means that there is no longer a health and safety issue with movement of passengers within the bollard rope snap back zone;
- Berthing structure width increased means it may be possible to introduce in future phases of the work mechanically operated Passenger Access System (PAS);
- The increased pier width means that the sterilised footprint area required for the vessel gangways will not have a detrimental effect on mooring operations and pedestrian access.
- The increased pier width means that LNG bunkering footprint (as yet undefined) required will not have a detrimental effect on berthing and mooring operations and pedestrian access;
- Covered pedestrian access can be introduced along the back face of the widened pier structure further reducing pedestrian exposure to environmental conditions.
- Would allow for the opportunity of a covered walkway to the waiting room and gangway.

Justification

Alternative Option 1 was considered which included strengthening of the existing berthing structure by introduction of tension anchors into the front face raking piles and does solve the issue of maintaining the structural integrity of the existing berthing structure due to the increased horizontal fender reaction. The recommendation is that this Option was not taken forward as a preferred masterplan option because this option does not address the following issues with the potential to reduce the operability of Uig Ferry Terminal for the new vessel:

- Berthing structure width not increased means the problem still exists with movement of passengers safely to the vessel within the bollard rope snap back zone;
- Berthing structure width not increased means it is not possible to introduce mechanically operated Passenger Access System (PAS) because of restricted space;
- There is a large window for the range of vessels gangways and this will require an area that will sterilise that area of the berthing structure for mooring operations and pedestrian access. Existing waiting shelter will become redundant;
- Will require a larger pier waiting room for the increased number of passengers;
- LNG bunkering footprint (as yet undefined) will be required and this will require a large area on the berthing structure that will sterilise that area of the berthing structure for berthing and mooring operations and pedestrian access.
- Would not allow for the opportunity of a covered walkway to the waiting room and gangway.

detrimental effect on Uig Ferry Terminal operability.

- Allows a smoother flow of traffic through the marshalling area improving turnaround time.
- Fisherman's compound located closer to the existing fisherman's working area on the approachway structure.
- Provides largest number of additional parking spaces.

2.1.4 Approachway Summary

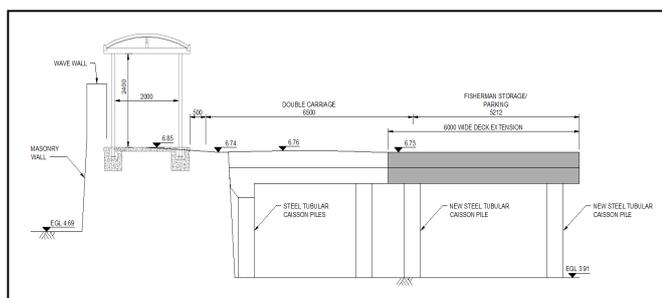
Option No. 2 extending the approachway structure width by 6.0m is the preferred option for the following reasons.

- Extension of the approachway width will ensure that the vessel turnaround times required for the new vessel will be achieved and the operability of the Ferry Terminal is not reduced with the introduction of the new vessel. The increased width will cater for the potential of LNG and increased traffic and will eliminate issues associated with a vehicle breakdown that could impact on passenger safety and vessel loading/unloading
- Reduces any delays in vessel turnaround times due to broken down vehicles on the approachway;
- The new vessel has increased capacity for pedestrians which are anticipated to grow, this option allows for an enhancement to existing substandard pedestrian access which places pedestrians onto the road and in conflict with vehicular traffic.
- It allows for an enclosed protective walkway from the terminal building for the length of the approachway as a minimum. However this could terminate immediately adjacent to the gangway access point - either into a waiting room or simply to hold passengers inside the walkway itself if pier strengthening option 2 is constructed. This would provide the optimum passenger journey in terms of safety and experience from the terminal building to the vessel and avoids exposing foot passengers to the elements on what can be a significantly exposed pier at times;
- The 2m wide protective walkway allows for two way movement of pedestrians (including prams and wheelchairs). This means that the health and safety risk to passengers is alleviated as passengers can pass each other on the footpath without needing to step onto the roadway;

The 6m berth extension ensures that there is no loss of laydown area/working space on the fisherman's berth.

Justification

Option No.1 for a 3m wide approachway extension was not taken forward as the preferred option because this 3m extension would only allow for the provision of the passenger shelter to meet passenger safe access along the approachway and health and safety requirements while still maintaining single vehicle movement along the approachway. The 3m wide extension does not fully address the potential of LNG and increased traffic and in addition a vehicle breakdown could potentially have a severe impact.



- Requires significant more investment;
- More complex machinery;
- Temporary relocation of harbourmaster office;
- Temporary loss of come fishing berth and ice plant relocation.

2.1.7 Passenger Access Summary

Further detail can be found in the Passenger Access report as appended in appendix D of the masterplan.

Option No. 2 Gangway and Full Covered Walkway is our preferred option;

- Provides a safe and sheltered access from the terminal building 300m away from the vessel;
- Familiarity to operation for staff;
- Can provide a waiting area when required prior to loading of ferry;
- Improves the passenger experience.

Justification

Option No. 1 was not recommended. This was the Do Nothing option and had the following disadvantages:

- Does not meet compliance with regulation and standards;
- Passengers, during busy period will migrate onto the carriageway;
- No improvement;
- Passengers are exposed to the elements approaching the pier,

Option No. 3 was not recommended. This was the full Electro Mechanical Passenger Boarding Bridge option and had the following disadvantages:

- Significant cost;
- Highly complicated system;
- PBB require regular maintenance;
- Significant cost of maintenance;
- Difficult to manage as these are very specialist;
- Breakdowns can cause significant difficulty for the port;
- Operators will have very little time in tying up the vessel and operating the PBB;
- Structure can be an eyesore to the local community;
- PBB would sterilise significant space on the pier

2.1.8 Dredging Summary

Consideration has been given to dredge depths in respect of 802, the Isle of Lewis and the Loch Seaforth.

The capital dredge volume taking account of the dredge depth and vessel manoeuvring areas, as agreed with CFL, equates to some 12,229cu.m.

A dredge cost allowance of £444,500 for 802 has been established. This cost assumes that disposal of dredge arisings will be by incorporation within the land reclamation area or by sea disposal. Should programming requirements dictate dredging in advance of such disposal consent – then disposal will be to an approved sea location or to landfill – these options will add significantly to the cost and will only be considered if the timing of vessel delivery and the impact on service is deemed to justify such additional costs.

2.1.9 Miscellaneous Summary

The upgrade of Uig Ferry terminal will include the following infrastructure improvements;

- Ticket Office

- Survey and Investigations
- Old Ticket Office Demolition
- Harbour Order Revision
- Lighting
- Utilities
- Consenting and Licensing
- EIA
- Power upgrade

2.2 Preferred Option Cost

The total cost for the redevelopment works at Uig Ferry terminal is £26,502,195.

3. Programme and Required Outages

3.1 Programme Key Dates

Stage	Start	Finish
HRO	13/07/2017	26/10/2018
Marine License	13/07/2017	18/07/2018
Detail Design	02/08/2017	23/02/2018
Construction	19/07/2018	04/09/2019

Table 1. Programme Schedule

The construction end date shown above does not allow for construction of option 7's wave screen. This will be determined with monitoring of the new vessel once in service.

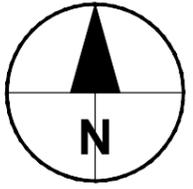
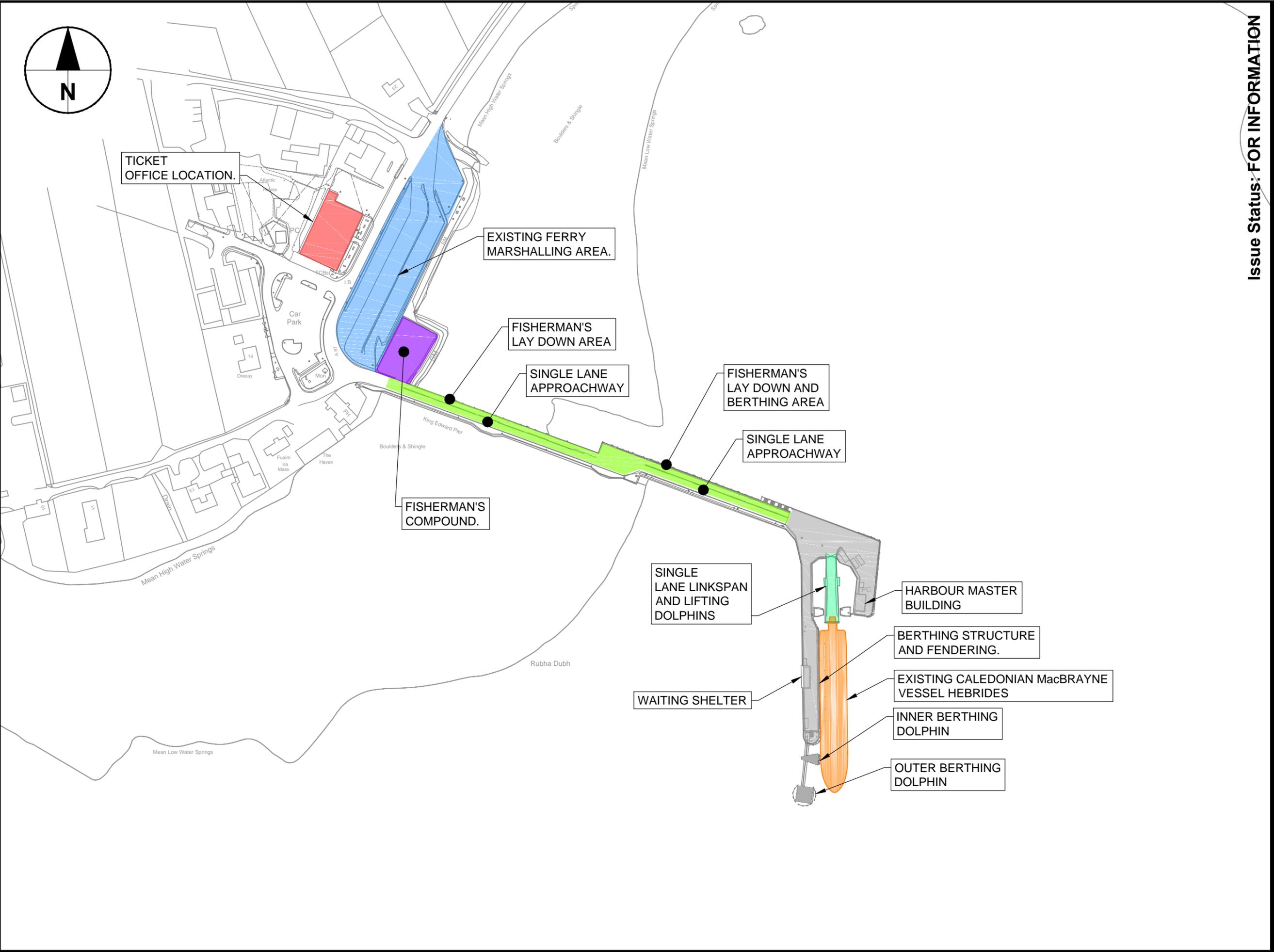
The above programme dates are for guidance. Construction works start date is dependent on consent approval for Marine License, Planning and HRO and no clear timescales are given for consents approval and are likely to be subject to change. The construction start and end date is approximate however these cannot dictate the method that would be used by the contractor.

3.2 Required Outages

Based on the dates provided in the above table, a proposed outage would be required for the delivery of the vehicle linkspan. An estimation of 5 weeks has been allowed.

Appendix A - Masterplan Block Plan Drawings

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Project Management Initials: Designer: _____ Checked: _____ Approved: _____ ISO A3 297mm x 420mm



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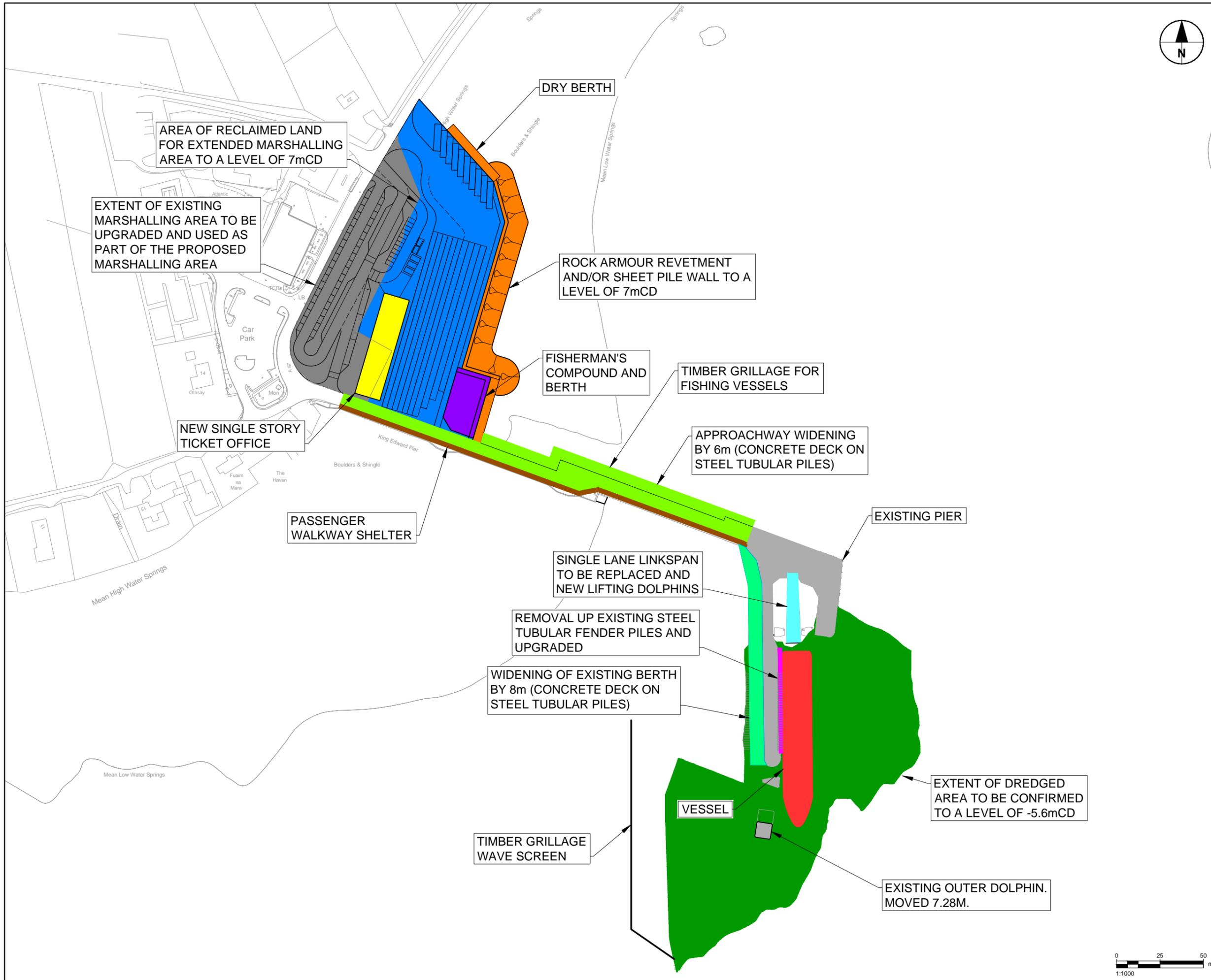
CURRENT LAYOUT

UIG HARBOUR REDEVELOPMENT

THE HIGHLAND COUNCIL, UIG, ISLE OF SKYE
Project No.: 60536743 Date: 27-MAR-2017



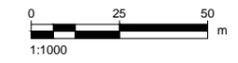
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- NOTES**
1. ALL DIMENSIONS IN METRES UNLESS OTHERWISE NOTED. DO NOT SCALE.
 2. ALL LEVELS IN METRES AND REDUCED TO CHART DATUM UNLESS OTHERWISE NOTED.

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A	2017-06-06	DRAFT

KEY PLAN



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