



Cromarty Slipway Repairs: Environmental Considerations

**Cromarty Community Development Trust
(CCDT)**

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	Name	Title	Signature	Date
Author	Jack Clarkson	Consultant	[Redacted]	09/01/2020
Reviewer	Fiona Henderson	Director	[Redacted]	14/01/2020
Authoriser	Fiona Henderson	Director	[Redacted]	14/01/2020

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Contents

1	Introduction.....	1
2	Project Description	1
2.1	Location.....	1
2.2	Project Need.....	1
2.3	Description of Slipway Repairs	2
2.4	Construction Methodology.....	3
2.4.1	Concrete Blockwork Construction.....	3
2.4.2	Sheet Piling Construction	3
3	Statutory Context.....	4
3.1	Marine Licence.....	4
3.2	Onshore Consenting.....	4
3.3	Marine Works Licence PoCF	4
3.4	Habitats Regulation Appraisal	4
3.5	National Marine Plan.....	4
4	Methodology	7
4.1	Baseline Assessments.....	7
4.2	Assessment Criteria.....	7
4.2.1	Receptor Sensitivity	7
4.2.2	Impact Severity and Magnitude.....	8
4.2.3	Determination of Significant Effects.....	9
5	Environmental Implications and Assessment.....	9
5.1	In-Air Noise	11
5.1.1	Policy and Guidance	11
5.1.2	Methodology.....	11
5.1.3	Baseline.....	12
5.1.4	Assessment	12
5.1.5	Mitigation	14
5.2	Biodiversity.....	14
5.2.1	Policy and Guidance	14
5.2.2	Methodology.....	15
5.2.3	Baseline.....	18
5.2.4	Impact Assessment	20
5.2.5	Mitigation	22
5.3	Coastal Processes.....	22

5.3.1	Policy and Guidance	23
5.3.2	Baseline.....	23
5.3.3	Assessment	23
5.3.4	Mitigation	23
5.4	Water Quality	24
5.4.1	Policy and Guidance	24
5.4.2	Baseline.....	24
5.4.3	Impact Assessment	24
5.4.4	Mitigation	25
5.5	Local Community and the Economy.....	25
5.5.1	Policy and Guidance	26
5.5.2	Methodology.....	26
5.5.3	Baseline.....	27
5.5.4	Impact Assessment	28
5.6	Traffic and Access	29
5.6.1	Policy and Guidance	29
5.6.2	Methodology.....	30
5.6.3	Baseline.....	31
5.6.4	Impact Assessment	32
5.6.5	Mitigation	34
6	Conclusion	34
7	References.....	35
8	Glossary.....	37
	Appendix A – Habitats Regulations Assessment: Pre-Screening Report.....	38
	Drawings.....	39

1 Introduction

The Cromarty Community Development Trust (CCDT) are planning on conducting repairs and improvements to the Cromarty ferry slipway. Concerns over both the condition and potential loss of functionality of the slipway has been raised, thus, repair or replacement of the structure is required to maintain the current ferry service. Discussions were held with the CCDT regarding the importance of the service provided by the ferry between Cromarty and Nigg, and it was identified that the proposal of the works meet many of the objectives and policies under the Scottish National Marine Plan (SNMP).

This report supports the proposal for a Marine Construction Licence under the Marine (Scotland) Act 2010, a Marine Works Licence from the Port of Cromarty Firth (PoCF) under the Cromarty Firth Port Authority Order Confirmation Act 1973 and planning under the Town and Country Planning (Scotland) Act 1997.

This document lays out the planned works, construction techniques and the associated environmental implications of the proposed development. The development is located partly within the PoCF Harbour Limits and is expected to take place below Mean High Water Spring (MHWS) and above and below Mean Low Water Spring (MLWS), thus the need to apply for a Marine Works Licence, a Marine Construction Licence and planning consent. The project does not fall under Schedules 1 or 2 of the Environmental Impact Assessment (EIA) Regulations as it is less than 1 hectare and will not alter the coastline and hence should not require an EIA. Highland Council have however, asked that the project is submitted for screening, this report will be submitted to inform both the screening and planning consent process.

Notwithstanding the above information, several environmental topics have been assessed to support the licence applications required to be submitted. The purpose of this report is to provide an overview of the outputs of these assessments, detailing the mitigation required to reduce potentially negative environmental impacts.

In addition, it is recognised that the project is partly within the Moray Firth Special Area of Conservation and has other Natura 2000 sites in the immediate vicinity. Hence information to support an assessment as required by the Habitats Directive to determine whether an Appropriate Assessment is required has been provided.

2 Project Description

2.1 Location

The Cromarty slipway is located on the southern bank of the mouth of the Cromarty Firth. The slipway is found north of the B9163 at the most northerly tip of the town of Cromarty grid reference NH786 678. The location of the slipway is shown in Drawing 62/02/02.

2.2 Project Need

The success of the North Coast 500 (NC500) initiative has heralded a large increase in tourists who visit the north of Scotland, with the vast majority coming by car or motorhome. As a result of the NC500, the former medieval burgh of Cromarty has witnessed a significant increase in tourism influx, which has been welcomed. Many visitors to The Black Isle and Cromarty are consequently keen to take the ferry over to Nigg and continue north through Easter Ross or travel south this way.

Ferries across the firths of the east coast of Scotland were previously integral to the national transport network, however, ferries servicing the Forth, Tay and Moray firths were progressively withdrawn as they were replaced with bridges. The Cromarty to Nigg ferry is now the only vehicle ferry service in operation on the eastern side of Scotland and adds character to Easter Ross.

The ferry service is not just a tourist attraction, it services the communities on both sides of the firth, avoiding a significantly longer driving route through the summer months.

Exposed reinforcement bars, loss of construction joints and general weathering resulting in the loss of fines, sidewalls and sections of the deck slab on the seaward extents of the slipway are evident. This had led to a deterioration in the adequacy of the facility. There is a strong need to repair and improve the current slipway designs by increasing the length and width in order to allow for the continued operation of a ferry service and to give to the potential to facilitate a larger ferry on the route. The proposal to use a larger ferry will increase the capacity of the current service and provide an improved transport link for locals and tourists.

2.3 Description of Slipway Repairs

As a minimum, the existing concrete slipway will be removed and replaced with a slipway of the same size as the existing slipway, (as shown in Drawings 2191-011 & 2191-012). However, if funding allows, the intent is to extend and widen the slipway to allow for a larger ferry to be utilised on the Cromarty to Nigg route. Thus, a Rochdale Envelope approach to consenting is proposed whereby consents are sought for the largest extension and widening option.

- **Extension and Widening of slipway**

- To allow for a larger ferry to provide the service as aforementioned, it is required that the slipway be extended by up to 20m to give a 60m long slipway and widened by up to 12m from 5.5m.
- The slipway will be extended to a level of -1.0m Chart Datum (CD) which is below the original slipway foundation level.

There are two potential construction options, the decision regarding which option will be progressed with, will be determined during the procurement process. As such, consent is sought for either of the options to be utilised. The two options are as follows:

- **Sheet Piling Construction Option**

- Sheet piling will be used to create a temporary cofferdam to allow the works at the lower end of the slipway to be conducted in mostly dry conditions (see Drawings 2191-111 and 2191-112).
- These will be constructed around the perimeter of the slipway and provide scour protection to the new slab.
- The proposed sheet piles will be 6m long and cantilever at the lower end of the slipway. Whereas at the top section cross ties will be utilised to tie the walls together to prevent movement during infilling with rock fill and concrete.
- The sheet piles will be backed with concrete above a layer of rock fill places to provide a stable base on the loose sand.
- Following the construction of the concrete slabs, these piles will be cut down flush with slab level.

- **Concrete Blockwork Construction Option**

- Construction using a combination of rock fill, precast concrete slabs and blocks, together with insitu concrete (Drawings 2191-101 and 2191-103 of the equivalent construction technique for the Nigg Slipway are provided for illustration purposes only).
- The lower concrete blocks which create the foundation of the slipway will be constructed on top of concrete scour mats (6m x 3m x 0.15m) to prevent scour or beach erosion by wave action.
- When the concrete block side wall is more than two blocks high, the blocks are to be backed with concrete.
- Rock fill will be placed between the blockwork walls up to the underside of the slipway slab. At the lower section backfill will be underwater mix concrete.
- Concrete blocks forming the foundations of the slipway will be typically 1.2m wide, 0.8m high and 1.2m long. The top units are tapered to match the slipway gradient.

2.4 Construction Methodology

It is envisaged that the Cromarty slipway structure will be removed by the contractor since it will be sufficiently stable to operate plant on top of it. A rock fill bund of clean stone free from fines will be placed down the centre to provide plant access. This bund will be used by cranes, piling rigs and excavators as required for the various elements of the construction.

2.4.1 Concrete Blockwork Construction

For the blockwork construction, the perimeter of the slipway will be excavated, and the scour mats placed. Steel frames are then set up on top of the scour mats and levelled, these hold the lower blocks in place.

The lower blocks are then concreted up at their base to form the foundation of the wall. Upper levels of blocks are then added with concrete backing as required. Rock fill will be used to backfill up to the underside of the slab. The lower section blocks would be placed using divers to guide the crane/excavator lowering blocks into position.

2.4.2 Sheet Piling Construction

The contractor may propose to adopt the sheet piled option due to cost and less working in the wet. The lower section would still flood at mid tide level but can be pumped out to increase the working period at low tides.

Sheet piles would be driven around the perimeter of the slipway from the bund. Concrete backfill would then be placed behind the sheets and tie rods fitted. Rock fill and concrete will then be used to fill up the slipway to the underside of the slab level.

The lower section of the slab will be constructed from precast concrete slab units set in place on steel levelling beams. The precast units have holes through them to grout the void underneath and pockets to anchor into the walls with dowels.

The upper section of the slab will be constructed with insitu concrete placed on a receding tide, to allow it to go off before the tide returns.

3 Statutory Context

This section provides a summary of the statutory requirements for the proposed remedial works to the Cromarty slipway. Statutory requirements relevant to a given topic area are discussed under the relevant topics in Section 5: Environmental Implications and Assessment.

3.1 Marine Licence

Under the Marine (Scotland) Act 2010 a number of activities listed in Part 4, Section 21 of the Act require a Marine Licence issued by the Marine Scotland Licensing Operations Team (MSLOT). This includes any activity where the project intends to do any of the following below the Mean High Water Spring (MHWS):

- Deposit or remove substances or objects in the sea either on or under the seabed; and
- Construct/alter/improve any works in or over the sea or on or under the seabed.

3.2 Onshore Consenting

Under the Town and Country Planning (Scotland) Act 1997, any type of development i.e. carrying out building, engineering, or any other operations over or under land, including material change for the use of buildings, above MLWS requires Planning Permission. In this case, Planning Permission will be sought from the Highland Council.

The pier extension works fall under the definition of engineering works as stated above, and thus, the proposed works requires Planning Permission.

3.3 Marine Works Licence PoCF

A Marine Works Licence from the PoCF under the Cromarty Firth Port Authority Order Confirmation Act 1973 is required as a result of the slipway repairs being within the Harbour Boundary of the PoCF.

3.4 Habitats Regulation Appraisal

When a project may have a likely significant effect on a Natura Site, a Habitats Regulation Appraisal (HRA) and, when required, an Appropriate Assessment (AA) needs to be completed by the competent authority. The legislative context for carrying out an HRA is based on the Habitats Directive (92/43/EEC), in particular Article 6(3), and The Conservation (Natural Habitats, &c.) Regulations.

3.5 National Marine Plan

As the project is partly below the MHWS and within 12 nautical miles (nm) of the Scottish Coastline it falls within the remit of the Marine (Scotland) Act 2010. The 2015 Scottish National Marine Plan (NMP) covering inshore waters is a requirement of the Act. The NMP lays out the Scottish Minister's policies for the sustainable development of Scotland's seas and provides General Planning Principles (GENs), most of which apply to the proposed Cromarty Slipway repair and upgrade. Many GENs are specific to environmental topics; these are identified in Table 3.5.1, along with the considerations made during design development in order to meet the requirements.

The NMP lays out sector specific objectives and policies, for shipping, ports, harbours and ferries. Table 3.5.2 details the objectives and relevant policies how the Cromarty Slipway repair and upgrade contributes towards these.

Table 3.5.1: Applicable Scottish National Marine Plan GENs

General Planning Principles	Requirements	Nigg Slipway Considerations
GEN 2: Economic benefits	Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.	The ability to continue to run and potentially improve the ferry service between Cromarty and Nigg for the benefit of locals and tourism will maintain and improve economic benefit.
GEN 3: Social benefits	Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this Plan.	The ability to continue to run and potentially improve the ferry service between Cromarty and Nigg for the benefit of locals and tourism will maintain and improve social benefits.
GEN 5: Climate Change	Marine planners and decision makers must act in the way best calculated to mitigate, and adapt to, climate change.	The ferry facilitates a short crossing between Cromarty and Nigg, avoiding a lengthy drive with associated carbon emissions.
GEN 6: Historic Environment	Development and use of the marine environment should protect and, where appropriate, enhance heritage assets in a manner proportionate to their significance.	No heritage assets have been identified that could be affected by the project.
GEN: 7 Landscape/seascape:	Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape and visual impacts into account.	The project is low lying and replaces an existing slipway hence no changes in impacts are predicted.
GEN 8: Coastal process and flooding:	Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.	The repair works are required due to damage caused by coastal processes. The proposed design takes this into account.
GEN 9: Natural Heritage	Development and use of the marine environment must: (a) Comply with legal requirements for protected areas and protected species. (b) Not result in significant impact on the national status of Priority Marine Features (PMF). Protect and, where appropriate, enhance the health of the marine area.	Ecological features of interest have been considered within Section 5 of this document. No effects on PMF are predicted.
GEN 10: Invasive Non-Native Species	Opportunities to reduce the introduction of invasive non-native species (INNS) to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made.	No new sources of INNS will be introduced by the project.
GEN 11: Marine Litter	Developers, users and those accessing the marine environment must take measures to address marine litter where appropriate. Reduction of litter must be taken into account by decision makers.	Good construction practices will be utilised to eliminate the potential for marine litter.

General Planning Principles	Requirements	Nigg Slipway Considerations
GEN 12: Water Quality and Resource	Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive (WFD), Marine Strategy Framework Directive or other related Directives apply.	The repair works will not change the coastal waters of the Cromarty Firth in terms of the WFD.
GEN 13 Noise:	Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.	Vibro-pilling will be utilised for the sheet piles which are located in intertidal and shallow water only, hence no noise issues are predicted.
GEN 14: Air Quality	Development and use of the marine environment should not result in the deterioration of air quality and should not breach any statutory air quality limits.	No effects on air quality are predicted.
GEN 19: Sound Evidence	Decision making in the marine environment will be based on sound scientific and socio-economic evidence.	Information provided in this Report is based on current available scientific evidence, to inform the decision-making process.
GEN 21: Cumulative Impacts	Cumulative impacts affecting the ecosystem of the marine plan area should be addressed in decision making and plan implementation.	The project is not of a scale to give rise to significant effects even in combination with other projects.

Table 3.5.2: NMP Shipping, Ports, Harbours and Ferries Objectives Comparison

Objective/Policy	Requirements	Cromarty Slipway Contribution
Objective 1	Safeguarded access to ports and harbours and navigational safety.	The construction works will be subject to a Port Marine Works Licence and all navigational precautions taken as required by the PoCF.
Objective 2	Sustainable growth and development of ports and harbours as a competitive sector, maximising their potential to facilitate cargo movement, passenger movement and support other sectors.	The pier upgrades, increase will potentially facilitate a larger ferry increasing capacity for passenger movements between Cromarty and Nigg.
Objective 4	Linking of ferry services with public transport routes and active travel routes to help encourage sustainable travel where possible.	The ferry route connects sections of the National Cycle Networks, facilitating sustainable travel as discussed in Section 5.6.4.
TRANSPORT 7	Marine and terrestrial planning processes should co-ordinate to: Provide co-ordinated support to ports, harbours and ferry terminals to ensure they can respond to market influences and provide support to other sectors with necessary facilities and transport links. Consider spatial co-ordination of ferries and other modes of transport to promote integrated and sustainable travel options.	The popularity of the NC500 is a driver for ensuring the link is maintained and improved upon.

4 Methodology

This section sets out the process undertaken in order to provide a methodical and robust environmental assessment that has been implemented throughout the assessment of all topics detailed in this environmental report.

4.1 Baseline Assessments

Baseline assessments have been completed for each of the environmental topic areas considered as part of this report. Desk based studies, making use of publicly available reports and data have been utilised in the compilation of baseline data.

The baseline information is utilised to understand the value of each environmental receptor and its sensitivity to the potential impacts associated with the development. This is then utilised to assess whether significant effects may result through the construction of the proposed repair works to the slipway.

4.2 Assessment Criteria

The criteria used in this report to assess potential environmental impacts are outlined below. These criteria are used in all assessments, unless otherwise stated in the topic specific sections.

The environmental assessment is conducted in two stages. The first stage characterises the nature of the impacts (positive or negative) and the second determines the level of significance of the effects. An effect results from the consequences of a change (or impact) acting on a resource / receptor. The precise nature of the effect will depend on the interaction between the degree of impact (e.g. extent, duration, magnitude, permanence etc.) and the sensitivity, value, or number of the resources / receptor in each case.

The assessment identifies the origins of environmental impacts, positive (beneficial) and negative (adverse), from the project and predicts their effects on resources or receptors. A resource is any environmental component affected by an impact (e.g. items of environmental capital such as landscape, views and community facilities). A receptor is any environmental or other defined feature (e.g. human beings) that is sensitive to or has the potential to be affected by an impact.

Each potential impact was assessed in terms of its receptor's sensitivity or value (e.g. landscape value or amenity value), followed by an assessment of the magnitude of the impact, and thus determination of whether or not significant effects result. For each significant effect identified, appropriate secondary mitigation measures are prescribed.

4.2.1 Receptor Sensitivity

Sensitivity values were assigned to individual resources or receptors, using a set of criteria and terminology defined within Table 4.1.

Table 4.1: Receptor Sensitivity

Category	Definition
High	High importance and rarity, international scale and very limited potential for substitution.
Medium	Medium importance and rarity, national scale and some potential for substitution.
Low	Low or medium importance and rarity, regional/local scale and ample potential for substitution.
Negligible	Low importance or rarity, local scale.

4.2.2 Impact Severity and Magnitude

In considering the impact severity a range of factors are taken into account as applicable to the subject matter. The factors utilised are based on the Institute of Ecology and Environmental Monitoring (IEEM) guidelines of ecological assessment (CIEEM, 2018) but are applicable to most topic areas. They include the:

- Extent: spatial or geographical area affected;
- Magnitude (Scale): size, amount, intensity, volume;
- Duration: typically: short, medium, long-term and permanent or temporary;
- Frequency and timing: how often and when (time of day or seasonality); and
- Reversibility: can the effect be reversed or is it irreversible.

The magnitude of the impact takes into account the extent, scale, frequency and timing. The magnitude of impact terminology and criteria are defined in Table 4.2.

Table 4.2: Impact Magnitude

Category	Definition
Major	Loss of resource and/or quality and integrity of receptor, severe damage to key characteristics, features or elements.
Moderate	Loss of Resource, but not affecting integrity, partial loss of / damage to key characteristics, features or elements.
Minor	Some measurable change in attributes, quality or vulnerability, minor loss of or alteration to one (possibly more) key characteristics, features or elements.
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
No Change	No loss or alteration of characteristics, features or elements, no observable impact in either direction.

The duration of the impact is also noted, as permanent or temporary. Temporary impacts can be further sub-divided if necessary, in accordance with the following definitions, although use of this terminology is highly dependent on other factors within the environmental topic being assessed:

- Short-term: less than 1 year in duration;
- Medium-term: between one to three years in duration; and
- Long-term: more than three years in duration.

Whether or not an impact is reversible is also noted.

Potential significant adverse effects are reassessed to understand the residual effects taking account of all mitigation proposed.

4.2.3 Determination of Significant Effects

For each impact identified, a determination of whether or not it will result in a significant effect was made; taking into account both the sensitivity / value of the resource / receptor, and the magnitude of impact. Table 4.3 provides an example of how these two elements can be combined to give an overall significance category.

Table 4.3: Categorising Significance of Effects

Magnitude of Impact	Sensitivity/Value of Receptor			
	High	Medium	Low	Negligible
Major	Major	Moderate	Minor	Negligible
Moderate	Moderate	Moderate	Minor	Negligible
Minor	Minor	Minor	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Key

	Significant Effect
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The categories provide a threshold to determine whether or not significant effects may result from the proposed works. A typical categorisation is shown in Table 4.4.

Table 4.4: Categorisation and Definition of Effects

Category	Definition
Negligible	No detectable change to the environment resulting in no significant effect.
Minor	A detectable, but non-material change to the environment resulting in no significant effect.
Moderate	A material, but non-fundamental change to the environment, resulting in a possible significant effect.
Major	A fundamental change to the environment, resulting in a significant effect.

Key

	Significant Effect
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For the purposes of this environmental report, a significant effect will be defined as moderate in level or higher (Table 4.3 and Table 4.4). The duration and reversibility of the effect will also be noted as discussed in Section 4.2.2.

For adverse significant effects, secondary mitigation will be proposed where practicable in order; to prevent, reduce, or offset the significant adverse effect. Effects determined as minor or lower will be considered to have no likely significant effect, and secondary mitigation will not be identified, except where the application of recognised industry best practice would further reduce the impact magnitude.

5 Environmental Implications and Assessment

Environmental topics have been considered in turn with regard to the proposed development. The potential effects of these works are described in Table 5.1. Areas which have been identified as requiring additional consideration within the assessment are shown in yellow. The

additional desk study and literature search characterised any potential significant effects of the assessed conditions. These are detailed in Sections 5.1 – 5.6.

Table 5.1: Summary of Environmental Topics, Considerations, and Potential Effects

Topic	Potential Effects	
	Construction	Operation
Noise: In Air	In-air noise receptors also include the village of Cromarty and the isolated dwellings at Nigg on the other side of the Firth. The proposed works could involve piling and use of heavy plant and hence in-air noise has been taken forward for further consideration in Section 5.1.	Noise levels will be determined by engine noise and the number of vessels utilising the ferry slipway. Operational noise emissions have the potential to change at the Cromarty-Nigg ferry route associated with traffic and a larger vessel. This has been considered in Section 5.1
Noise: Underwater	Most of the works will be conducted 'dry' when the work areas are exposed by the tide. Limited working in the water may be necessary to expose the seaward extents of the slipways and conduct repairs. Sheet pile installation will be carried out by vibration and in shallow water and hence will not give rise to significant underwater noise	The larger vessel in which the proposed development will allow to operate is may give rise to increased underwater noise emissions in comparison the ferry currently in use. However, in the context of vessel movements in the Cromarty Firth the change will be negligible.
Biodiversity	The Cromarty Firth is utilised by fish, marine mammals and ornithological receptors, all of which could be disturbed by construction works or affected by changes in water quality hence, considerations of the impacts on biodiversity are made in Section 5.2.	
Landscape, Seascape and Visual	The project is low lying and involves repairs to existing structures, hence will not have a landscape, seascape or visual effect. No significant impacts are expected to occur.	
Air Quality	No significant air quality impacts are predicted, and construction/operations are not in an area with air quality issues.	
Contamination and Ground Conditions	The proposed works involve minimal excavation and no contaminated land is expected. However, coastal processes need to be understood and the influence they have is further discussed in Section 5.3.	No effects predicted due to lack of interaction with the seabed.
Water Quality	The construction operations pose a risk to water quality due to the use of hydraulic equipment and excavation of the seaward extents of the slipways in the marine environment. They are considered in Section 5.4.	Operations should not pose any detriment to water quality that are not typically associated with marine vessel operations. This is discussed in Section 5.4
Archaeology and Cultural Heritage	No scheduled monuments or other designated archaeological features are present. The Cromarty slipway is adjacent to the Cromarty Conservation Area; however, the proposed works do not fall under the provisions of the planning restrictions for this area. These	The Cromarty-Nigg ferry route is not expected to change as a result of the repair and replacement works. The current route does not impede on the adjacent archaeological features and they will not be affected.

Topic	Potential Effects	
	Construction	Operation
	features will not be affected by the works.	
Local Community and Economy	The works will ensure the continuation of the Cromarty-Nigg Ferry service, which is beneficial to the local economy. The potential increased ferry size will bring additional benefits and is further discussed in Section 5.5.	
Traffic & Access	If the construction works are conducted during the months of June-September, this will result in interruptions to the Cromarty-Nigg ferry service, which could constitute a negative significant impact. This would be avoided if the works are conducted out with these months. A transport assessment has been provided in Section 5.6.	Operational traffic impacts with regard to the larger vessel and the effect of this on the roads to and from the ferry are considered in Section 5.6.

5.1 In-Air Noise

Environmental, or community noise, is a broad term that encompasses noise emitted from many sources, including road, rail & air traffic, industry, construction, public work and neighbourhood noise. All of these sources potentially contribute adversely to the overall noise environment. Cromarty is known to have contentious issues with noise and is therefore sensitive to any change in the acoustic environment. This section considers the possible noise effects associated with the Cromarty slipway repairs.

5.1.1 Policy and Guidance

At national level, policy documents for in-air noise are: **Planning Advice Note (PAN) 1/2011** – ‘Planning and Noise’, (Scottish Government, 2011a) and the associated **Technical Advice Note (TAN)** – ‘Assessment of Noise’ (Scottish Government, 2011b).

The **BS5228-1:2009+A1:2014** (hereafter BS5228) – ‘Code of practice for noise and vibration control on construction and open sites’ (British Standards Institute, 2014) parts 1 to 5 provides useful guidance on practical noise control. Part 1 provides recommendations for basic methods of noise control including sections on community relations, training, occupational noise effects, neighbourhood nuisance and project supervision. Specific advice on noise from sources such as piling is provided.

5.1.2 Methodology

An understanding of baseline noise in terms on BS5228 (British Standards Institute, 2014) will be utilised to identify the dwelling category and hence the appropriate Significant Effect threshold banding for local receptors.

A basic calculation based on noise dissipation will be completed to identify the noise source levels which would need to be breached for the noise levels at the nearest receptor to be reached. The potential plant required to undertake the works in terms on noise sources will be calculated to identify whether significant effects thresholds are likely to be exceeded.

5.1.3 Baseline

There is the potential for in-air noise to be generated during the construction of the proposed remedial works, which may negatively affect noise sensitive receptors adjacent to the works. Potential noise sensitive receptors are detailed in Table 5.1.1.

Table 5.1.1 Baseline Noise Receptors

Receptor	Grid Reference	Distance to Receptor
Village of Cromarty	NH7863 / 6765	Closest ~ 60 m
Bed and Breakfast and residential properties to the North East	Closest – NH 7972 6883	Closest ~ 1.4 km
Nigg Energy Park	NH 7876 6902	Closest ~ 1.2 km

The Nigg Energy Park to the north of the slipway, across the Firth, is both a receptor and a noise source. Ambient noise levels in the area are generally elevated due to the operations of Nigg Energy Park and the associated Heavy Goods Vehicle (HGV) movements. It was identified that the Nigg Energy Park is operational during both day and night-time periods on a typical busy schedule (EnviroCentre, 2019).

Other dominant noise sources include traffic through the village and vessel movements within the Cromarty Firth, including those of the current ferry service.

Baseline noise assessments completed to inform the Nigg East Quay development (EnviroCentre, 2019) identified that receptors at Balnabruich (Grid Reference NH7947 6983) and Balnapaling (Grid Reference NH 7968 6883) and in the village of Cromarty all had baseline noise levels such that they would be classed as Category A Dwellings by BS 5228 (British Standards Institute, 2014).

5.1.4 Assessment

5.1.4.1 Construction Noise

Based on BS5228, the Threshold of Significance for Category A dwellings are:

- 65 dB L_{Aeq} - Daytime weekday (07:00 to 19:00) and Saturdays (07:00 to 1300)
- 55 dB L_{Aeq} - Evenings weekday (19:00 to 23:00), Saturdays (13:00 to 23:00) and Sundays 07:00 to 23:00)
- 45 dB L_{Aeq} - Night-time (23:00 to 07:00)

Equation 1 has been utilised to calculate the noise levels 10m from source, which would give rise to the Threshold values at the three receptors identified in Table 5.1.1, these are provided in Table 5.1.2.

Equation 1 assumes simple hemispherical noise distribution and does not account for screening or additional attenuation afforded by the surrounding landscape.

Equation 1

$$L_2 = L_1 - (20 - \text{Log} \frac{r_1}{r_2})$$

Where: L_1 = Sound pressure level at location 1.

L_2 = sound pressure level at location 2.

r_1 = distance from source to location 1.

r_2 = distance from source to location 2.

Table 5.1.2: Noise Source Back Calculations

Threshold Value dB	L_{Aeq} 10m from source to give Threshold Value at 60m (dB)	L_{Aeq} 10m from source to give Threshold Value at 1200m (dB)	L_{Aeq} 10m from source to give Threshold Value at 1400m (dB)
Daytime - 65	85.8	87.1	87.1
Evening - 55	75.8	77.1	77.1
Night-time - 45	65.8	67.1	67.1

Although a detailed plant list is not available at this stage, it is anticipated that the development will utilise generic plant such as those shown in Table 5.1.3.

Table 5.1.3: Potential Plant and Source Noise Level from BS5228 (British Standards Institute, 2014)

Plant Item	A-weighted sound pressure level L_{Aeq} at 10m
Handheld pneumatic Breaker	83
22 tonne Tracked Excavator	78
Articulated Dump Truck	81
Water Pump	65
Sheet Steel Vibrator Pilling Rig	88

Table 5.1.3 shows that some equipment performing continuous piling operations could breach the daytime threshold value. However, equipment will not be on 100% of the time and as such, the L_{Aeq} levels experienced at the receptor will be lower. Therefore, it is unlikely that significant noise effects will be experienced at any of the receptors during daytime hours. If construction activities are to be carried out in the evenings or during the night then effects could be significant, depending on the specific activity carried out and plant utilised.

It should however be recognised that the construction will be a short-lived activity, and that activities such as cement pours will have very low associated noise levels, and hence could be carried out during evening hours without causing a significant effect.

5.1.5 Mitigation

Section 8 of BS5228 recommends a number of simple noise control measures which will be implemented as a matter of best practice. These include:

- Noisy work activities will be restricted to 07:00 to 19:00 Monday-Friday, 07:00 to 13:00 on Saturdays, with no working on Sundays;
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and 'smart' broadband reversing alarms and be subject to programmed maintenance;
- Inherently quiet plant will be selected where appropriate – and all ancillary equipment will be 'sound reduced' models;
- Machines will be shut down between work periods or throttled down to a minimum;
- Regular maintenance of all equipment used on site will be conducted, including maintenance related to noise emissions; and
- All material movements will be performed carefully, ensuring minimal drop heights so as to minimise noise during these operations.

5.2 Biodiversity

This section lays out the relevant policies and guidance, assessment methodology and potential impacts relating to ecological receptors. The topic-specific sections of the impact assessment will focus on:

- 5.2.4.1 Ornithology
- 5.2.4.2 Marine Mammals
- 5.2.4.3 Fish Ecology
- 5.2.4.4 Otters

5.2.1 Policy and Guidance

5.2.1.1 The Habitats Directive

The European Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, also referred to as the 'Habitats Directive' (Office Journal of the European Communities, 1992), has the primary aim of maintaining biodiversity within the Member States. The Habitats Directive is transposed into Scottish law by a combination of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland), commonly known as the 'Habitat Regulations' together with the Habitats Regulations 2010 (in relation to reserved matters).

The Habitats Regulations identify several habitats or species whose conservation interest requires the designation of Special Areas of Conservation (SACs), which form the Natura 2000 network of protected sites, in conjunction with Special Protection Areas (SPA's).

Species that are termed as European Protected Species (EPS) includes all cetaceans in Scottish waters, as well as otters.

Appendix A provides a Habitats Regulations Appraisal Pre-Screening Report, produced to aid the competent authority's assessment of the designated sites which may have their qualifying interests potentially affected by the proposed slipway works.

5.2.1.2 The Birds Directive

Directive 2009/147/EC of the European Parliament and of the Council, on the conservation of wild birds, commonly known as the Birds Directive, protects all wild birds, their nests, eggs and habitats within the European Community. It gives member states of the European Union, the power and responsibility to classify SPA's, to protect birds which are rare or vulnerable in Europe, as well as all migratory birds which are regular visitors. The 2009 Directive is the consolidated (or 'codified') version of Council Directive 79/409/EEC which originally came into force in 1979 and was amended many times before being replaced by the current version.

5.2.1.3 Wildlife and Countryside Act 1981 & The Nature Conservation (Scotland) Act 2004

The Wildlife and Countryside Act 1981 (WCA) (as amended in Scotland) was originally conceived to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and the Birds Directive in Great Britain.

Schedule 5 of the WCA provides special protection to selected animal species other than birds, through section 9(4) of the Act, against damage to "any structure or place which [any wild animal included in the schedule] uses for shelter and protection", and against causing disturbance whilst in such places.

The WCA contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9. It also provides a mechanism making the above offences legal through the granting of licenses by the appropriate authorities.

Important amendments to the WCA have been introduced in Scotland including the Nature Conservation (Scotland) Act 2004 (NCSA). Part 3 and Schedule 6 of this Act make amendments to the WCA, strengthening the legal protection for threatened species. The NCSA is also the instrument under which Sites of Special Scientific Interest (SSSI) are protected in Scotland.

5.2.1.4 Planning Policies

The Scottish Government has released general policies and planning advisory notes relevant to ecological receptors, as part of the Scotland's National Marine Plan, and Scottish Planning Policy:

- **GEN 9 Natural heritage:** Development and use of the marine environment must:
 - *Comply with legal requirements for protected areas and protected species;*
 - *Not result in significant impact on the national status of Priority Marine Features;*
 - *Protect and, where appropriate, enhance the health of the marine area* (Scottish Government, 2015).
- **PAN 60:** Planning for Natural Heritage (Scottish Government, 2008).

5.2.2 Methodology

The assessment of the significance of predicted impacts on ecological receptors is based on both the 'value' of a receptor and the 'nature and magnitude' of the impact that the development will have on it. Effects on biodiversity may be direct (e.g. the loss of species or habitats), or indirect (e.g. effects due to noise or disturbance), on receptors located within or out with the work site.

5.2.2.1 Evaluation of Receptors

The approach that has been undertaken throughout the ecological assessments is to identify 'valued ecological receptors' i.e. species and habitats that are both valued in some way and could be affected by the proposed development and separately, to consider legally protected species. Both species populations and habitats have been valued using a broad geographical basis with full details in Table 5.2.1.

Table 5.2.1: Nature Conservation Receptor Evaluation Criteria

Value	Criteria
International	<ul style="list-style-type: none"> An internationally important site (SAC or SPA) or a site proposed for, or considered worthy of designation, or qualifying feature thereof; A regularly occurring substantial population of internationally important species (e.g. EPS listed on Annex IV of the Habitats Directive).
National	<ul style="list-style-type: none"> A nationally designated site (SSSI), or a site proposed for, or considered worthy of such designation; A viable area of habitat type listed in Annex I of the Habitats Directive or of smaller areas of such habitat which are essential to maintain the viability of a larger whole; or A regularly occurring substantial population of a nationally important species, e.g. listed on Schedule 5 & 8 of the WCA.
Regional	<ul style="list-style-type: none"> Areas of internationally or nationally important habitats which are degraded but are considered readily restored; Viable habitats or populations of a species identified as a PMF, or smaller areas/populations which are essential to maintain the viability of a larger area/population as a whole; Regionally important population/assemblage of an EPS, WCA Schedule 1 and/or 5 species. Regionally important assemblages of other species or habitats.
High Local	<ul style="list-style-type: none"> Locally important population/assemblage of an EPS, WCA Schedule 1 and/or 5 species; or Sites containing viable breeding populations of species known to be county rarities, or supplying critical elements of their habitat requirements.
Moderate Local	<ul style="list-style-type: none"> Undesignated sites, features or species considered to appreciably enrich the habitat resource within the local context (within 2km radius from the site) and may benefit from mitigation as a good practice measure.
Low Local	<ul style="list-style-type: none"> Undesignated sites, features or species considered to appreciably enrich the habitat resource within the immediate environs of the site and may benefit from mitigation as a good practice measure.
Negligible	<ul style="list-style-type: none"> Common and widespread or modified habitats or species.
Negative	<ul style="list-style-type: none"> Invasive, alien species often scheduled under Section 14, Schedule 9 of the WCA.

5.2.2.2 Magnitude of Impact

Impacts can be: permanent or temporary; direct or indirect; adverse or beneficial; reversible or irreversible; and may also have a cumulative function with other activities out with the assessed development. These factors are taken into consideration in the context of the sensitivity of the valued ecological receptor and the range of potential effects. To identify whether impacts are significant or not, it is important to undertake the assessment in terms of the integrity (coherence of the ecological structure and function), and conservation status (ability of the receptor to maintain its distribution and/or extent/size) of the receptor.

Table 5.2.2 provides an overview of the range of impact magnitudes referred to within this assessment. In addition, impacts may also be positive in nature.

Table 5.2.2: Definition of Magnitude of Impact

Magnitude	Description
High	Total loss of, or major alteration to conservation status or integrity of a receptor with situation likely to be irreversible, even in the long term. Fundamental alteration to the character and composition of the Site.
Medium	Clear effect on the conservation status or integrity of the receptor in the short to medium term (6-15 years), although this is likely to be reversible or replaceable in the long-term (15 years plus).
Low	Minor shift away from baseline conditions. Effects will be detectable but unlikely to be of a scale or duration to have a significant effect on the conservation status or integrity of the receptor in the short term (1-5 years). Overall baseline character of site will not alter substantially.
Negligible	Very slight change from the baseline conditions. Changes barely detectable, approximating to the 'no change' situation. Any effects likely to be reversible within 12 months and not affect the conservation status or integrity of the receptor.

5.2.2.3 Significance of Effect

The significance of an effect is a product of the value of the ecological receptor and the magnitude of the impact on it, moderated by professional judgment. Table 5.2.3 illustrates a matrix based on these two parameters which is used for guidance in the assessment of significance. Only effects which are 'moderate' or 'major' are considered significant, the others constituting a non-significant effect.

Table 5.2.3: Significance of Effects Matrix

Magnitude of Impact	Value				
	International	National	Regional	Moderate Local/ High Local	Low Local /Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible	Negligible

Key

	Significant Effect
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5.2.3 Baseline

5.2.3.1 Ornithology

The Cromarty Firth and Moray Firth are recognised as being important areas for marine bird species including wintering and migratory wildfowl. Although the development is not within a designated site for avian species, there are sites designated for avian species in the vicinity, these are detailed in Table 5.2.4 and Drawing 62/03/02.

Table 5.2.4: Designated Sites with Ornithological Interest

Site	Distance from Site	Value	Qualifying Features
Cromarty Firth SSSI, SPA & Ramsar	~ 0.1km South West	International	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding; Red-breasted merganser (<i>Mergus serrator</i>), non-breeding; Redshank (<i>Tringa tetanus</i>), non-breeding; Greylag goose (<i>Anser anser</i>); Whooper swan (<i>Cygnus Cygnus</i>), non-breeding; Wigeon (<i>Anas Penelope</i>), non-breeding; Curlew (<i>Numenius arquata</i>), non-breeding; Common tern (<i>Sterna hirundo</i>), breeding; Dunlin (<i>Calidris alpina alpina</i>), non-breeding
Rosemarkie to Shandwick Coast SSSI	~ 0.8km East	National	Cormorant (<i>Phalacrocorax carbo</i>), breeding;
Whiteness Head SSSI	~ 8.9km South	National	Bar-tailed godwit (<i>limosa lapponica</i>), non-breeding; Knot (<i>Calidris canutus</i>), non-breeding;
Moray Firth pSPA	~ 2.3km East	International	Common scoter (<i>melanitta nigra</i>); Eider (<i>Somateria mollissima</i>); Goldeneye (<i>Bucephala clangula</i>); Great northern diver (<i>Gavia immer</i>); Long-tailed duck (<i>Clangula hyemalis</i>); Red-breasted merganser <i>Mergus serrator</i>); Red-throated diver (<i>Gavia stellata</i>); Scaup (<i>Aythya marila</i>); Shag (<i>Phalacrocorax aristotelis</i>); Slavonian grebe (<i>Podiceps auritus</i>); Velvet scoter (<i>Melanitta fusca</i>)
Inner Moray Firth SPA & Ramsar	~ 8.9km South	International	Bar-tailed godwit (<i>Limosa lapponica</i>); Common tern (<i>Sterna hirundo</i>); Cormorant (<i>Phalacrocorax carbo</i>); Curlew (<i>Numenius arquata</i>); Goldeneye (<i>Bucephala clangula</i>); Goosander (<i>Mergus merganser</i>); Greylag goose (<i>Anser anser</i>); Osprey (<i>Pandion haliaetus</i>);

			Oystercatcher (<i>Haematopus ostralegus</i>); Red-breasted merganser (<i>Mergus serrator</i>); Redshank (<i>Tringa totanus</i>); Scaup (<i>Aythya marila</i>); Teal (<i>Anas crecca</i>); Wigeon (<i>Anas penelope</i>)
Morangie Forest SPA	~ 9.8km North West	Local	Capercaillie (<i>Tetrao urogallus</i>), breeding

The qualifying species of the designated sites give a good understanding of the wintering and migratory wildfowl species that may be in the vicinity of the works and hence will be considered within this assessment.

The ornithological interest of the Morangie Forest SPA is Capercaillie, this species is not associated with the coast and as such are highly unlikely to be affected by a coastal development, as such they will not be considered further.

5.2.3.2 Marine Mammals

Marine mammals known to utilise the Moray Firth include: harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), common seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*) and minke whale (*Balaenoptera acutorostrata*).

The Moray Firth SAC is designated for the conservation of bottlenose dolphins (*Tursiops truncatus*), under the European Habitats Directive. The area is of key importance to the UK east coast bottlenose dolphin population, and is regularly utilised by over 100 individuals annually, which equates >50% of the population (Cheney, Graham, Barton, Hammond, & Thompson, 2018). It has been shown that the percentage of the population utilising the SAC has declined, however this is likely due to the fact that the population size is increasing, and hence the population is utilising a larger habitat area (Cheney et al., 2018). The Moray Firth SAC extends into the Cromarty Firth, with the slipway repairs marginally within the SAC.

The Cromarty Firth is also a well-known non-breeding common seal haul out area, with a haul out site located approximately 22km south west of the slipway repairs on the intertidal sandbanks close to Cromarty bridge. In 2016 aerial surveys recorded 72 common seals at the Cromarty Firth haul out site (SCOS, 2017).

5.2.3.3 Diadromous Fish

The Cromarty Firth is an estuary draining into the Moray Firth in the north east of Scotland, stretching from the mouth of River Conon to the Sutors, at approximately 28km in length (SNH, 2011). The entrance of the Cromarty Firth to the Moray Firth consists of naturally occurring deep waters of approximately 50m depth and 1.5km width between the North and South Sutor. The Firth contains multiple river catchments including: Conon, Alness, Allt Graad, Balnagown, Sgitheach, Peffery and Newhall Burn (Cromarty Firth Fishery Board, 2012).

Diadromous fish species utilising the firth include Atlantic Salmon (*Salmo salar*), Sea Trout (*Salmo trutta* morpha *trutta*) and European Eel (*Anguilla anguilla*). Atlantic salmon are of International importance, with sea trout and European Eel having national importance.

5.2.3.4 Otter

Otter (*Lutra lutra*) are a European Protected Species and as such are of International importance. Species records through NBN Atlas identified 16 recordings of otter within a 5km radius of the Cromarty slipway between 1978 and 2017. Low numbers of recordings of otter are in line with the lack of suitable habitat in the areas surrounding Cromarty overall and close to the Cromarty slipway. It is recognised that there is the potential suitable habitat for otters along the rock armoured slope immediately to the west of the slipway, although it is subject to high levels of disturbance due to members of the public utilising the area and the close proximity of the road and pier.

5.2.4 Impact Assessment

5.2.4.1 Ornithology

During construction and operations, the potential sources of impact would be:

- Disturbance due to construction site activities; and
- Water quality changes due to accidental release of contaminants.

Construction activities will be small in scale and local to the existing slipway, such that any disturbance due to noise, people and plant movements will therefore be localised to the immediate environment surrounding the works. These effects are similar to those arising during ferry operations; however, they are likely to arise for longer periods of time. Disturbance effects on ornithological interests during construction will be negligible, giving rise to **short term, reversible minor to negligible: non-significant** effects on ecological receptors.

The use of a larger ferry during operations may give rise to additional traffic and people being in the vicinity of the slipway embarking and disembarking the ferry. The effects will however remain localised and for short periods of time, **no change** in disturbance levels to ornithological interests are predicted.

Accidental release of oils and other marine pollutants, depending on the quantities involved could have lethal and sub-lethal effects on waterfowl and seabirds, including both direct immediate impacts on their health, and indirect longer-term impacts to their lifecycle and behaviour.

Direct effects include:

- Contamination of their feathers leading to a loss of water proofing, and displacing air from between the feathers, affecting the animals thermoregulation and buoyancy. This can lead to death through hypothermia, and the inability to dive, fly, or forage; and
- Poisoning resulting in sickness or death, through the ingestion or inhalation of the contaminants. Ingestion occurs through preening and foraging in contaminated areas.

Indirect effects include:

- Displacement from foraging areas if species avoid the contaminated area;
- A reduction in prey availability if prey species are affected by the contamination event; and

- Long-term accumulation of contaminants such as poly aromatic hydrocarbons, through foraging on contaminated prey items, leading to illness, reduction in reproductive success, and increased mortality rates.

As discussed in Section 5.4, the quantity of potential pollutants on site during construction, will be small hence potential impact would be small and localised, in addition the duration of the works is short which reduces the risks of an event occurring. With the appropriate mitigation in place in line with the pollution prevention hierarchy, as discussed in Section 5.4, the risk of a pollution event is low. The chances of direct effects are extremely low due to birds being unlikely to come into contact with pollutants due to localised disturbance effects. Pollution effects that could give rise to indirect effects are not deemed feasible due to the small volumes involved, as such **no change** to ornithological receptors are envisaged during the construction phase.

The new ferry, being larger and having the ability to carry additional vehicles, in theory could give rise to slightly larger quantities of pollutants mainly in the form of fuel oils. However, in the context of the existing vessel movements in the Cromarty Firth there is **no change** in the overall risk levels of pollution on ornithological receptors.

5.2.4.2 Marine Mammals

Typically, impacts on marine mammals resulting from marine construction works include disturbance and injury resulting from underwater noise emissions, injury through direct physical interactions, and water quality impacts. As detailed in Section 5: Environmental Implications and Assessment (Table 5), underwater noise emissions associated with the proposed slipway repairs are not anticipated to be of a magnitude which could negatively impact marine mammals. Due to the majority of the work being carried out of the water and piling being limited to the vibration of sheet piles in shallow water, the only possible impacts on marine mammals are associated with reductions in water quality due to a release of hazardous substances.

A release of oils or other potential pollutants may result in both short and long-term impacts on marine mammals. Short term effects include reduction in the thermal properties of seals' fur, resulting in hypothermia and potentially death, as well as poisoning of both seals and cetaceans through inhalation or ingestion of the contaminant, resulting in sickness or death. Both seals and cetaceans may also avoid a contaminated area, which could impact foraging behaviour. In the longer term, both seals and cetaceans may accumulate toxic pollutants through the ingestion of contaminated food, or through a prolonged exposure to low levels of pollution. Such a toxic build-up may lead to reductions in reproductive success, illness, and increased mortality rates (Gubbay & Earll, 2000).

As discussed in Section 5.4, the quantity of potential pollutants on site during construction, will be small, hence, any potential impacts would be small and localised. In addition, the duration of the works will be short, reducing the risk of an event occurring. With the appropriate mitigation in place in line with the pollution prevention hierarchy, as discussed in Section 5.4, the risk of a pollution event is low. The chances of any direct effects from construction activities are extremely low for cetaceans as they are unlikely to be present within the immediate vicinity of the works due to the shallow water depths around the slipway. Likewise, the area around the slipway is not designated as a seal haul out area and hence, they are unlikely to come into contact with pollutants. Pollution effects that could give rise to

indirect effects are not deemed feasible due to the small volumes involved and as such, it is envisaged that there will be **no change** in the potential impacts to marine mammals during the construction phase.

The new ferry being larger and having the ability to carry additional vehicles in theory could give rise to slightly larger quantities of pollutants mainly in the form of fuel oils. However, in the context of the existing vessel movements in the Cromarty Firth there is **no change** in the overall risk levels of pollution on marine mammals.

5.2.4.3 Diadromous Fish

Fish can be affected by changes in water quality, as discussed in Section 5.4 effects on water quality if they occur will be short lived, reversible and localised. The juvenile salmon smolt whom are known to run close to shore due to their immaturity are the most sensitive receptor. Post-smolt runs in the Cromarty Firth are expected to occur from late April to late June, with a peak in May (Cromarty Firth Fisheries, 2008; Malcolm, Godfrey, & Youngson, 2010). Studies in Norwegian fjords identified that in general, the depth of migrating smolts is at a shallow depth (<10m) (Finstad, Økland, Thorstad, Bjørn, & McKinley, 2005).

Works in the water are limited, but particular care to minimise changes to water quality if construction is to be carried out between April and June to minimise potential effects. If changes to water quality were to occur, they would only affect a small population of fish, whom pass extremely close to the works. Hence the magnitude of impact on diadromous fish is overall deemed to be short-lived, reversible and negligible giving rise to a **minor: non-significant effect**.

5.2.4.4 Otter

Potential effects on otter will be limited to disturbance and knock on impacts of pollution incidents. The area subject to disturbance will be extremely localised during the construction period, as discussed in Section 5.2.3.4, no otter signs have been recorded in the immediate vicinity of the works. As such the magnitude of impacts are negligible, giving rise to **short term, reversible minor: non-significant** effect. Disturbance effects during operation will be **no change** from existing effects.

Pollution incidents are highly unlikely to directly or indirectly effect otters during construction and operations due to their small, localised nature and mitigation to allow prompt recovery as discussed in Section 5.4.3.2, hence **no change** as to otters are predicted.

5.2.5 Mitigation

Mitigation identified in Section 5.4 to minimise effects on water quality will minimise ecological effects. In addition, standard mitigation to minimise disturbance such as switching equipment off when not in use, utilising directional lighting where required will be employed. Checks for ecological receptors such as nests and signs of otters will be carried out prior to works commencing to ensure no potential inadvertent impacts are caused.

5.3 Coastal Processes

This section lays out the relevant policies and guidelines relevant to works and maintenance in or near water and the potential impacts relating to coastal processes.

5.3.1 Policy and Guidance

The following policy and guidance documents were identified:

- **GPP 5:** Works and maintenance in or near water (Environment and Heritage Service, SEPA, & Environment Agency, 2017);
- **Land Use Planning System SEPA Guidance Note 17:** Marine Development and Marine Aquaculture Planning Guidance (SEPA, 2014).; and
- **GEN 8:** Coastal process and flooding: *Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.*

5.3.2 Baseline

The prevailing tidal currents within the Inner Moray Firth are of generally low velocity, flowing parallel to the shoreline across the mouth of the Cromarty Firth. Between the headlands, at the entrance of the Cromarty Firth also known as the Sutors, the climate is locally influenced by flows entering and leaving the firth from the open sea. Given its location within the Sutors, the slipway at Cromarty is susceptible to wave action from open sea waves or swells and ebb currents exceeding 1m/s (Affric Limited, 2018; EnviroCentre, 2019). As a result of the tidal and wave activity the slipway experiences, much of the west and east faces of the slipway have undergone serious undermining, leaving voids, exposed faces and sections of structural loss at construction joints. This had some level of impact on the ground conditions around the slipway.

5.3.3 Assessment

Given the nature of the repairs to the slipway and the extremely localised extent of the works, alongside limited work in the water environment, changes to coastal processes associated with construction will experience no-change from current conditions.

As discussed in 'Section 2.3: Description of Slipway Repairs' and 'Section 2.4: Construction Methodology', if concrete blockwork is to be utilised it will be constructed on top of scour mats and steel frames set up on top of the scour mats, before being levelled to hold the lower blocks in place. The purpose of the scour mats is to prevent erosion and undermining from wave and tidal action under the newly constructed slipway. The use of scour mats will also prevent any material from escaping and prevent any material from washing into the surrounding water environment when stronger tidal and wave climates occur. As there is already a scour effect in the area, the use of scour mats during the operation of the slipway will prevent this action from happening further and is likely to have a positive, minor impact.

If the sheet piling construction method is to be utilised, the sheet piles will be of a length that the structure will be protected from undermining by the piles.

No impacts on coastal processes are predicted.

5.3.4 Mitigation

The design of the works has taken account the effects coastal processes may have on the structure, no additional mitigation is required.

5.4 Water Quality

This section provides the relevant policies and guidance, assessment methodology and potential impacts associated with the construction and operation of the Cromarty slipway. Mitigation measures to minimise effects are identified and discussed.

5.4.1 Policy and Guidance

The following guidance documents are relevant and were utilised in the development of this section:

- **GEN 10 Invasive Non-Native Species:** *Opportunities to reduce the introduction of invasive non-native species to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made* (Scottish Government, 2015);
- **GEN 12 Water Quality and Resource:** *Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive, Marine Strategy Framework Directive or other related Directives apply* (Scottish Government, 2015); and
- **PAN 79:** Water and Drainage (Scottish Government, 2006).

5.4.2 Baseline

The coastal waters around the proposed development are classified under the Water Framework Directive (WFD) monitoring programme as the Outer Cromarty Firth. This waterbody is classified as being 'Good' overall (SEPA, 2018a, 2018b).

5.4.3 Impact Assessment

5.4.3.1 Increased Sediment Loading

During construction works, the removal of the existing slipway and installation of the replacement, may give rise to seabed disturbance. The associated sand and silts could give rise to increased sediment loading in the water column. However, disturbance is minimal due to the small area of works occurring in the water and the low energy associated with seabed disturbance activities. As such, any effects will have a **localised, short-term and reversible, minor: non-significant** effect on water quality.

5.4.3.2 Potential Loss of Contaminants

A number of potential pollution sources will be present on the construction site and during the operations of the slipway, including:

- Fuel oil/diesel associated with construction plant and vehicles;
- Hydraulic fluids and oils associated with construction plant; and
- Fuel oil/diesel and hydraulic fluids associated with the operations of the larger ferry.

Materials will be appropriately stored and handled in line with standard construction industry practice. However, if a loss of containments were to happen, then there could be a reduction in water quality.

The largest volume of fuel stored will be in the refuelling bowser which will be appropriately located away from the marine environment hence any pollution incident would be to ground, affording time to allow appropriate pollution recovery to be employed, hence any incident would be **short-term, recoverable minor: non-significant**.

Appropriate maintenance of construction plant will minimise the potential for loss of fuel or hydraulic fluids from plant items due to mechanical failure. In the event of an incident there is a potential to lose oils, fuels or hydraulic fluids directly to the environment. The volumes involved will be limited to that utilised by machinery, where the maximum volume of fuel in plant unlikely to exceed 350 litres. Hence, the scale of a pollution incident, if it were to occur, would be **minor: non-significant**.

The use of a different ferry will give rise to **no change** in the pollution risk posed by the vessel. The additional number of vehicles embarking and disembarking the ferry will increase the pollution risk from the vehicles simply due to the increase in numbers, but the numbers are still extremely low when compared to ferry routes on the west coast of Scotland. The pollution risk during operations is therefore deemed to be **negligible: non-significant**.

5.4.4 Mitigation

The fuel bowser will be under strict management controls to prevent pollution incidents. It will be kept secure and locked when not in use to protect it from oil thefts, and to comply with the requirements of GBR 28 of the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended). The fuel bowser will be double skinned and stored in an appropriate area away from watercourses and drains where it cannot be 'crashed into'. Refuelling will be carried out in designated areas by trained operatives following site refuelling procedures. The refuelling procedure will take into account best practice laid out in GPP2 (SEPA, NIEA, & Wales, 2017) and PPG6 (Environmental Agency, NIEA, & SEPA, 2012).

Where practicable, bio-degradable hydraulic fluids will be utilised in machinery during construction. All oils and chemicals will be subject to Control of Substances Hazardous to Health (COSHH) assessments under the COSHH Regulations 2002 (UK Government, 2002). All COSHH assessments will include a section on the environment to highlight any precaution or mitigation requirements.

Appropriately bunded oil and chemical storage cabinets will be provided on site. These will be kept locked, with the key under management control to ensure appropriate use and accountability. Furthermore, appropriate spill plans aligned to the pollution control hierarchy and spill kits will be in place. Oil booms will be included in the spill kits to allow any releases to water to be contained and recovered as far as practicable. Construction operatives will be trained in the plans and in the use of spill kits to ensure that loss of containment incidents can be dealt with promptly to prevent or minimise pollution.

Taking account of the mitigation identified in line with best practice to minimise installation and operational risks the chance of a pollution incident causing a significant change in water quality is unlikely and as such, no significant environmental effect to water quality or ecological receptors are predicted.

5.5 Local Community and the Economy

This section assesses the changes to the proposed development and the effects on the socioeconomics. To ensure that all the potential impacts associated with socioeconomics as a result of the slipway development are understood, systematic reviews of both the construction and operational phases of the project have been taken.

The relevant regulations, guidance and policies have also been applied to indicate how the development and proposed use of a larger ferry will facilitate economic and social benefits.

5.5.1 Policy and Guidance

Relevant policy and guidance related to socioeconomics include (Scottish Government, 2015):

- **GEN2 Economic benefits:** *Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan;*
- **GEN3 Social Benefits:** *Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this Plan.*
- **GEN4 Co-existence:** *Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision-making processes, when consistent with policies and objectives of the Plan.*

5.5.2 Methodology

A desktop review of relevant information was used to inform the likely impacts the development of the slipways will have on the local community and economy, as a result of the continued ferry service.

5.5.2.1 Evaluation of Receptors

Table 5.5.1 sets out the criteria which have been applied to determine the sensitivity of the identified receptors.

Table 5.5.1: Sensitivity of Socioeconomic Receptors

Sensitivity	Definition
International	International effects on socioeconomics, tourism or recreation.
National	Effects on Scotland.
Regional	Effects on the Highland region.
High Local	Effects on the Black Isle region.
Moderate Local	Effects on neighbouring villages e.g. Jemimaville, Balblair and Rosemarkie.
Low Local	Effects in the immediate vicinity and rural residences in Cromarty.

5.5.2.2 Magnitude of Impact

Table 5.5.2 provides definitions of the magnitude of impacts for community and economic receptors. Effects can also be defined as having a negative or a positive outcome for the receptors assessed.

Table 5.5.2: Magnitude of Impacts for Community and Economic Receptors

Magnitude of Impact	Definition
High	A permanent or long-term effect on the socioeconomics, tourism or recreation. If adverse in nature, this is likely to threaten the sustainability of the area. If beneficial, it is likely to enhance the area.
Medium	A permanent or long-term effect on the socioeconomics, tourism or recreation. If adverse in nature, this is unlikely to threaten the area's sustainability. If beneficial, it is likely to be sustainable, but not enhance the area.
Low	A short-term but reversible effect on the socioeconomics, tourism or recreation area, that is within standard levels of variation and is unlikely to cause a noticeable difference.

Negligible	A short-term but reversible effect on the socioeconomics, tourism or recreation of the area, and that is within standard levels of variation.
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5.5.2.3 Significance of Effect

To assess whether there are any significant effects on the identified receptors, a matrix approach has been adopted. The sensitivity and magnitude of impact are combined to determine the significance, as shown in Table 5.5.3.

Table 5.5.3 Significance of Effects Matrix

Magnitude of Impact	Sensitivity				
	International	National	Regional	Moderate Local/ High Local	Low Local
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible	Negligible

Key

Significant Effect

Those effects which are defined as being moderate or above have been regarded as significant and therefore further attention and mitigation measures are to be applied, if they are of negative significance.

5.5.3 Baseline

The current Cromarty to Nigg ferry service allows tourists to pass through the Black Isle and visit villages such as Munlochy, Fortrose and Cromarty without having to significantly increase their road mileage as discussed in Section 5.6. Without this link tourists are likely to by-pass the Black Isle completely.

A recent survey by the CCDT indicated that of 16 local businesses:

- 50% said the ferry had a significant impact on their business; and
- 80% of business owners felt that the ferry was highly significant or essential to the local economy.

The CCDT identified that during the ferry's operational months of June to September from 2016 to 2018, the number of ferry passengers had increased year on year. The figures are shown in Table 5.5.4.

Table 5.5.4: The number of ferry passengers

Month	Year	Ferry Figures		
		Total Number of Passengers	Number of Cars	Number of Motorhomes
June	2016	1504	331	18
	2017	1869	489	29

Month	Year	Ferry Figures		
		Total Number of Passengers	Number of Cars	Number of Motorhomes
	2018	3637	706	58
July	2016	2987	587	22
	2017	3191	756	26
	2018	5241	1032	71
August	2016	4701	839	65
	2017	4821	842	85
	2018	4952	1002	61
September	2016	2161	451	35
	2017	2912	638	42
	2018	2420	509	42

These figures, however, do not indicate how many cars and campervans were turned away due to their size (only small campervans can be transported) or how many ferry journeys had to be cancelled due to high tide.

In addition to tourists, locals utilise the service to gain easy access to services either side of the Firth, for example to reach the supermarket in Tain.

It is noted that there are two aquaculture sites in the Cromarty Firth:

- A Common Mussel site in Udale Bay - operator is Cromarty Mussels; and
- A Pacific Oyster aquaculture site in the west of Cromarty Bay - operator is MacKenzie Oysters.

Due to the lack of impact on water quality identified in Section 5.4, it is highly unlikely that the development will have any effect on the aquaculture activities of the Cromarty Firth.

Cromarty Harbour is immediately to the west of the slipway, this is utilised by fishing and recreational vessels. A dolphin watching boat operates out of the harbour also.

5.5.4 Impact Assessment

The repairs to the slipway will facilitate the continued operation of the existing ferry. In 2015 the Cromarty-Nigg ferry service did not run for a full Summer which was a serious blow for the ferry operator and businesses that cater for the tourists who use the ferry. There was anecdotal evidence across businesses that trade was down compared to previous summers. This demonstrates that the repair of the slipways which would enable the ferry service to continue would have a **positive, medium** magnitude of impact on local business in comparison to a 'do nothing' scenario, whereby the ferry would not be able to operate. As the receptor is classified as '**high local**', the overall impact is therefore classed as a **positive minor: non-significant effect**.

The construction works will not impact upon the workings of the adjacent harbour, and as there are no planned changes to the ferry timetable, there will be **no change** in the effects of the ferry on other boat operations from Cromarty.

If the upgrades to the slipway are implemented, it would facilitate the use of a larger ferry on the Cromarty-Nigg route. The current ferry only allows 2 cars or a single motorhome to travel across the firth, a larger service which can hold up to 16 cars at a time. The use of a larger ferry service as a result of any slipway upgrade would lead to extra visitors utilising the route. As such, local businesses are likely to see improved support of their business due to increased visitor numbers, giving rise to **a positive, high** magnitude of impact on Black Isle business, in comparison to a 'do-nothing' scenario. As the receptor is classified as '**high local**', the overall impact is therefore classed as a **positive medium: significant effect**.

5.6 Traffic and Access

The Cromarty slipway is dependent on the capability of local transport links to accommodate a suitable number of ferry users intending to utilise the service. This section addresses the assessment methodology and potential impacts on the surrounding road network and sensitive receptors as a result of the construction and operation of the proposed development. The relevant regulations, guidance and policies have also been applied to indicate how the development and proposed use of a larger ferry will facilitate economic and social benefits as previously outlined in Section 5.5.

The effects on traffic have been considered in-terms of existing traffic volumes by using published data sets where available. This is to quantify the possible impacts that both construction and operational traffic may have. Construction traffic has been considered in-terms of the delivery of construction materials and the proposed routes they will take to deliver the materials and how this will change from existing volumes of traffic experienced.

Operational traffic has been considered in terms of the use of a larger ferry following the proposed development and in terms of road traffic both to and from the ferry slipways. The use of the existing ferry has not been considered as that would give rise to 'no change' from an operational perspective.

5.6.1 Policy and Guidance

National, regional and local transport policies and guidance include:

- **TRANSPORT 3 safeguarding ferry routes and maritime transport to island and remote mainland areas:** *ferry routes and maritime transport to island and remote mainland areas provide essential connections and should be safeguarded from inappropriate marine development and use that would significantly interfere with their operation* (Scottish Government, 2015);
- **TRANSPORT 7 Marine and terrestrial planning process:** *Provide co-ordinated support to ports, harbours and ferry terminals to ensure they can respond to market influences and provide support to other sectors with necessary facilities and transport links. Consideration of spatial co-ordination of ferries and other modes of transport to promote integrated and sustainable travel options* (Scottish Government, 2015);
- **PAN 75: Planning for Transport** (Scottish Government, 2005);
- **The Transport Strategy for the Highlands and the Islands 2008 – 2021** (The Highlands and the Islands Transport Partnership) (HITRANS) (HITRANS, 2008);

- **National Transport Strategy (NTS)** (Transport Scotland, 2016).

5.6.2 Methodology

The study area for the traffic and access assessment considers the public road networks leading to and from the Cromarty slipway and the alternative route along the A9. Many of the transport impacts of the proposed development will not be new impacts, as the existing ferry operations will remain largely unchanged.

5.6.2.1 Data Sources

The traffic and access studies were characterised through a desk-based assessment to understand the average number of vehicle movements, traffic accidents and possible transport routes to and from the Cromarty slipway and the alternative routes that would be used in the absence of the Cromarty-Nigg ferry service. The desk-based assessment was used to inform the baseline conditions of traffic and access conditions. The data utilised in the assessment was sourced from the Department for Transport, CrashMap and existing Environmental Impact Assessment Reports (EIAR) in order to form as complete of an assessment as possible to assess the impacts of the proposed development. The following routes have been assessed:

- A9, from North Kessock Bridge to Nigg Roundabout;
- A832, from Tore to Cromarty; and
- B9163/B9169, from Cromarty Bridge to Cromarty.

5.6.2.2 Evaluation of Receptors

Potential receptors have been identified and their sensitivity assessed. Sensitivity is set in Table 5.6.1.

Table 5.6.1: Traffic and Access Receptor Sensitivity

Sensitivity	Criteria
High	Pedestrians and cyclists, local amenities (i.e schools, hospitals) and road safety (i.e. accident blackspots) as in Paragraph 2.5 of IEMA (Institute of Environmental Assessment now (IEMA), 1993).
Medium	Public Transport – buses, taxis, and ferry. Traffic flow sensitive receptors – congested junctions, roads with narrow pavements.
Low	Private vehicles and general traffic on the highway including access and servicing.

5.6.2.3 Magnitude of Impact

Based on the type of potential consequences occurring and the magnitude of the consequence, Table 5.6.2 identifies the scale that will be used to evaluate the significance.

Table 5.6.2: Magnitude of Impact Criteria

Magnitude of Impact	Characteristics
Major	Substantial Deterioration / Improvement compared to the current scenario e.g. high impact on a regionally or nationally important resource.
Moderate	Noticeable deterioration / improvement compared to the current scenario e.g. moderate to high impact on a locally important resource.
Minor	Slight deterioration / improvement compared to the current scenario e.g. low impact on a locally important resource.
Negligible	No noticeable alterations to the current scenario.

5.6.2.4 Significance Evaluation

For each impact identified, a determination of whether it will result in a significant effect will be made by taking into account the sensitivity of receptor and magnitude of impact. Table 5.6.3 will therefore be used to determine the overall significance category.

Table 5.6.3: Magnitude of Impact Criteria

Magnitude of Impact	Sensitivity of Receptor			
	High	Medium	Low	Negligible
Major	Major	Moderate	Minor	Negligible
Moderate	Moderate	Moderate	Minor	Negligible
Minor	Minor	Minor	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Key

	Significant Effect
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5.6.3 Baseline

Currently, the A9 serves as the main route to and from Inverness along the NC500 for Easter Ross and The Black Isle, although visitors are being encouraged to take roads off the main route. Vehicles currently travelling the NC500 route north to Easter Ross and The Black Isle from Inverness transit along on the A9 link between North Kessock Bridge and Nigg Roundabout. With the maintenance and expansion of the Cromarty-Nigg ferry service visitors may be encouraged to take the alternative routes from this link of the A9 to Cromarty via either the A832 or the B6163 via the B9169. An assessment by the CCDT identified a pinch point on the northern section of the A832 closest to the links area of the slipway at Cromarty.

Due to the small capacity of the ferry, vehicles currently have to queue and potentially wait for the ferry to complete a trip before they can make the journey.

5.6.3.1 Road Routes and Traffic Information

The Annual Average Two-Way Daily Flow (AADF) of traffic for 5 years for the A9 between North Kessock Bridge and Nigg Roundabout, the A832 to Cromarty and the B9169 to Cromarty (between 2014 and 2018) are shown in Table 5.6.4. The table provides a summary for bicycles, cars, motorbikes, light goods vehicles (LGVs) and heavy goods vehicles (HGVs).

It should be noted that numerous minor roads join onto all roads from both the east and west, but no public data is available for them.

Table 5.6.4. The Annual Average Two-Way Daily Flow (AADF) of traffic for 5 years for each road route described (between 2014 and 2018) (Department for Transport, 2018)

Road	The AADF for each Vehicle Type					
	Bicycle	Motorbike	Cars	Buses	LGVs	HGVs
A9 between North Kessock Bridge and Nigg Roundabout	0	69.2	3954.7	53.3	869.8	429.9
A832 to Cromarty	0.5	12.1	739.3	23.5	249.8	69.8
B169 (via B9163) to Cromarty	5.5	1.9	493	8.2	121.3	22.2

5.6.3.2 Pedestrian and Cycle Routes

National Cycle Network (NCN) Route 1 is a 1695-mile-long route connecting Dover to the Shetland Islands – via the east coast of Scotland and England. The NCN Route 1 enters Inverness from the east via Culloden to Kessock Bridge, before following the A9 to Arpafeelie. From Arpafeelie, the NCN Route 1 splits into two individual routes. One follows the A9 and A835, including an on-road section along the A835 before re-joining alongside the A9 to Tain, the other travels north from Arpafeelie to Cromarty staying clear of the A832 other than a couple of crossing points, a 1km section past Old Dam Steading and the last ~2km section from Newton of Cromarty into the village of Cromarty. The Cromarty-Nigg ferry service is part of the NCN Route 1 when travelling from Arpafeelie to Tain via Cromarty and Nigg.

5.6.3.3 Accidents and Safety

A review of the number of accidents on the A9 between the North Kessock Bridge and Nigg Roundabout, the A832 and B9169 have been completed via CrashMap and are included in Table 5.6.5. A total of 69 accidents were recorded in a 5 year period on the North Kessock Bridge to Nigg Roundabout section of the A9. Five accidents occurred over a 5-year period on the B9169 linking into the B9163 to Cromarty over the same time period. The other route to and from the Cromarty slipway, the A832, had 14 accidents, three of which were fatal.

Table 5.6.5 Number of Road Traffic Accidents

Road	Severity of Accident		
	Slight	Serious	Fatal
A9 between North Kessock Bridge and Nigg Roundabout	55	10	4
A832 to Cromarty	6	5	3
B169 (via B9163) to Cromarty	4	1	0

5.6.4 Impact Assessment

Traffic movements during the construction phase will include LGVs for construction workers and HGVs for the removal of excavated materials and the delivery of construction materials to the site. Construction traffic will generally bring pre-cast concrete slabs from Alness, to the site via two possible routes:

- A9(S) via B9163 (22miles); and
- A9(S) via A832 (25miles).

These roads are of an appropriate standard to accommodate the HGV movements proposed. The increase in traffic movements over this temporary construction phase are not expected to significantly change the experience of other road users or local residents.

Traffic movements during operations of the ferry service are assuming a larger vessel may increase from a maximum of 2 to a maximum of 16 vehicles per ferry trip. This may be a significant percentage increase but in real traffic numbers is still very low. The ferry will operate on a similar timetable as the existing ferry.

5.6.4.1 Traffic Flow

During construction, the increase in LGV and HGV movements is not anticipated to have any tangible impact on public transport users due to the limited number of additional HGV movements per day. The expected increase in the number of LGV and HGV movements will be temporary. In relation to the current AADF of LGVs and HGVs along the B9169 or A832 to and/or from Cromarty, the proposed number of movements will have minor impact on other road users. **Minor adverse, temporary** magnitude of impact is expected, giving rise to **temporary, minor: non-significant** effects on overall traffic flow.

The repair and extension to the slipways at Cromarty will allow the ferry service to be able to operate at lower tide heights and prevent weather from limiting the number of journeys the ferry service can make. An extension to the slipways and a good state of repair will also enable the facilitation of a larger ferry to run the service. By upgrading the current ferry – which currently only allows 2 cars or a single motorhome to travel across the bay, to a larger service which can hold up to 16 cars at a time, current queue times will be considerably cut. Ferry traffic will continue to use the existing routes to the ferry service along the A832 or the B9163. If a larger ferry is brought in to service the Cromarty-Nigg crossing, it may encourage more people to utilise the route through the Black Isle, however it may also reduce the number of people driving to and from Cromarty through the Black Isle by making it easier to carry on to Nigg, or to access Cromarty from Nigg. Hence additional vehicles utilising roads on the Black Isle associated with the operation of a larger ferry are not expected to result in a noticeable change in traffic conditions. The increase in traffic flow as a result of the larger ferry service will be of a **minor** magnitude, including reduced waiting times for vehicles utilising the ferry service. The **minor** magnitude of the impact is expected to give rise to a **long-term** and **minor: non-significant** effect on traffic flow.

5.6.4.2 Pedestrians and Cycle Routes

Increased traffic volumes as a result of LGV and HGV movements during construction are likely to give rise to increased traffic movements along the A832, B9163 and in Cromarty. The increased traffic movements could increase risk of injury or harm to pedestrians and cyclists. The minimal increase in traffic movements along with good pedestrian infrastructure in Cromarty will mean that construction impacts on pedestrians will be of **minor** magnitude, giving rise to a **temporary, minor: non-significant** effect.

The construction traffic could interact with cyclists along the NCN1, where it coincides with the A832; however, the road is relatively straight with good visibility, hence the risk of injury is low. As with pedestrians, disturbance and intimidation effects from the small increase in HGV movements will be of **minor** magnitude, giving rise to a **temporary, minor: non-significant** effect.

Whilst the existing ferry provides a baseline of ferry trips, the larger ferry service proposed may result in increased vehicular volumes. The assessment has noted however that this service is only operational during the peak periods (Summer). The improved ferry service hopes to improve the NC500 experience for cyclists by providing an alternative route to the A9(N). There will be **minor** impacts on cyclists as the volume of traffic will increase marginally but will benefit from the provision of a safer cycle route. This will provide a **beneficial, minor: non-significant permanent** effect.

5.6.4.3 Road Safety

Vehicles heading north from Inverness along the NC500 will enter the section of A9 between Kessock Bridge and Nigg Roundabout. This route along the NC500 poses a greater risk of accident than the alternative routes around it which would involve utilising the Cromarty-Nigg ferry service.

The redevelopment of the Cromarty slipway will ensure that the ferry can continue its service. Likewise, the widening of the slipway will enable a larger ferry to be used. The larger ferry will be able to support a greater number of vehicles (as stated in Section 2.2: Project Need), and thus encourage road users and tourists travelling north along the A9 to take alternative routes. This would redirect traffic along road routes with better safety records. Road safety is a highly sensitive receptor and thus, the magnitude of effect is **minor beneficial** giving rise to a **permanent minor: non-significant** effect.

5.6.5 Mitigation

Construction works will be brief on appropriate travel routes and need to comply with all road traffic laws. In addition, they will be made aware of the NCN1 route and the need to be courteous to cyclists, for example to pass at an appropriate speed and give sufficient space.

Deliveries will be spaced out throughout the day, to prevent convoys on the roads and the need for vehicles to be waiting in the village of Cromarty avoiding local congestion.

6 Conclusion

The Cromarty slipway is deemed as structurally inadequate to support the future use of the Cromarty – Nigg ferry service and thus, prompt action is required to avoid potential impacts on Black Isle business and to prevent the ferry service from coming to a halt.

By commencing with the repairs of the Cromarty slipway and extension works, the future of the ferry service will be ensured with the possibility of the utilisation of a larger ferry service which is expected to provide additional benefits to Black Isle businesses.

Potential environmental effects associated with the construction works and operations of the slipway, have been considered, no negative significant effects on receptors or designated sites were identified. Good construction practices and compliance with CAR for the storage of oils will minimise effects and pollution risks.

Appendix A provides the HRA pre-screening report assessments, no likely significant effects (LSE) were identified.

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8 Glossary

Acronym	Definition
AA	Appropriate Assessment
AADF	Annual Average Two-Way Daily Flow
AAWT	Annual Average Weekly Traffic
CCDT	Cromarty Community Development Trust
CD	Chart Datum
EIA	Environmental Impact Assessment
EPS	European Protected Species
GENs	General Planning Principles
HGV	Heavy Goods Vehicle
HITRANS	The Highlands and the Islands Transport Partnership
HRA	Habitat Regulation Appraisal
LGV	Light Goods Vehicle
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
MS-LOT	Marine Scotland Licensing Operations
NC500	North Coast 500
NCN	National Cycle Network
NCSA	Nature Conservation (Scotland) Act 2014
NTS	National Transport Strategy
PAN	Planning Advice Note
PoCF	Port of Cromarty Firth
pSPA	Possible Special Protected Area
SAC	Special Area of Conservation
SNMP	Scottish National Marine Plan
SPA	Special Protection Area
SPP	Scottish Planning Policy
SSSI	Site of Special Scientific Interest
TAN	Technical Advice Note
WCA	Wildlife and Countryside Act 1981

Appendix A – Habitats Regulations Assessment: Pre-Screening Report



Cromarty Slipway Habitat Regulations Appraisal Pre-Screening Report

**Prepared by Affric Limited
January 2020**



Contents

1	Introduction	1
1.1	Legislative Basis.....	1
1.2	Objectives	1
1.3	Terminology.....	2
2	Project summary.....	2
3	Designated Sites.....	2
3.1	Reasons for Designated Site Exclusions.....	4
3.1.1	SACs Related to Fish Receptors	4
3.1.2	Moray Firth SAC	4
3.1.3	Pitmaduthy Moss SAC	4
3.1.4	Morangie Forest SPA.....	4
3.2	Designated Site Information	4
3.2.1	Moray Firth SAC	4
3.2.2	Cromarty Firth SPA.....	5
3.2.3	Moray Firth pSPA.....	8
3.2.4	Inner Moray Firth SPA.....	10
4	Cumulative and In-combination effects.....	12
5	Conclusions.....	12
6	References	12

1 Introduction

In conjunction with submitting the Cromarty Slipway Repairs: Environmental Considerations report to support the licence and planning applications for the proposed slipway development at Cromarty, this Habitats Regulation Appraisal (HRA) pre-screening report provides information required for the competent authorities to carry out a HRA to identify whether an Appropriate Assessment (AA), is required.

This report is designed to be read in conjunction with the Cromarty Slipway Repairs: Environmental Considerations report and directs the reader to the section of that report which are relevant to the designated site or qualifying species being discussed.

1.1 Legislative Basis

A HRA is required for this development due to its proximity to multiple Natura 2000 sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The legislative context for this requirement is based on Article 6(3) of the Habitats Directive (92/43/EEC), Article 4(4) of the Birds Directive (2009/147/EC) [European Commission, 2010], and The Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations) [UK Government, 1994].

In Scotland, the Scottish Planning Policy document ensures that Ramsar sites, which are normally included in an HRA assessment, overlap with Natura sites and are therefore protected under the same legislation [Scottish Ministers, 2014]. Therefore, Ramsar sites do not need to be considered separately as part of this HRA Screening report and will be considered within the SPA assessment.

If a likely significant effect (LSE) is predicted on a Natura Site at the first stage of the HRA, then an AA must then be carried out. The AA must demonstrate that the proposal will not adversely affect the integrity of the site [SNH, 2017a].

It is the responsibility of the competent authority to carry out the HRA, based on robust, scientific information provided by the project developer about the proposed project. It is not the role of the developer to make an assessment on whether or not the proposal will have an adverse effect on any associated Natura sites.

1.2 Objectives

The objectives of this HRA Pre-Screening report is to summarise:

- The proposed development details;
- The Natura 2000 sites being considered with reference to the slipway development proposal, along with these sites' qualifying interests and conservation objectives; and
- Details on the qualifying interests for each of the scoped-in Natura sites.

This information will aid the competent authority in carrying out an HRA. This HRA Pre-Screening report provides a reference point as to where the useful information is within the Cromarty Slipway Repairs: Environmental Considerations report which will help complete the HRA. An indication of whether or not LSE are expected is given for each designated site, but it is ultimately up to the competent authority carrying out the LSE assessment to ascertain whether LSE are present and therefore whether an AA is needed for each designated site.

1.3 Terminology

The terminology employed as part of the HRA process relates to LSE. Assessment of LSE takes a precautionary approach and asks whether a project may have an effect or have the possibility of having an effect on a Natura site [SNH, 2017b]. A project component is said to have an LSE on a designated site if *"it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site"* [European Court of Justice C-127/02, 2004]. The conservation objectives of the site provide the framework for considering likely significant effects.

It should be noted that the terminology used as part of the ecological impact assessments in the Cromarty Slipway Repairs: Environmental Considerations report refers to significance based on a matrix system. It is important when using these documents in conjunction with one another to be aware that the term 'significance' has different meaning in these two different contexts. In this HRA Pre-Screening report use of the word 'significant' in relation to impact assessments is not employed within the assessment, to avoid confusion.

2 Project summary

The Cromarty Community Development Trust (CCDT) are planning on conducting repairs and improvements to the Cromarty ferry slipway. Concerns over both the condition and potential loss of functionality of the slipway have been raised, thus, repair or replacement of the structure is required to maintain the current ferry service. There are two potential construction options which includes the following components:

- Concrete blockwork construction using a combination of rock fill, precast concrete slabs and blocks, together with insitu concrete.
- Sheet piling construction to create a temporary cofferdam to allow the works at the lower end of the slipway to be conducted in mostly dry conditions.

Either method will allow for:

- The slipway to be extended by 20m and widened by 4m to give a 60m long, 12m wide slipway.
- The slipway will also be extended down to a level of -1.0m Chart Datum (CD) which is below the original slipway foundation level.
- The slipway extension will comprise of numerous precast concrete slab units over the lower 30m length of the slipway; with the upper slipway slab cast with insitu concrete during periods of low tides.

Further details on the individual components of the project can be found in the Cromarty Slipway Repairs: Environmental Considerations report Section 2: Project Description.

3 Designated Sites

The designated sites which have designated features relevant to the Cromarty slipway development are shown in Table 3.1 and Drawing 62/03/02. The sites, or species within the sites, are scoped in or out depending on the level of ecological connectivity to the development. A reduced list of designated sites and features is then taken forward for further assessment. Explanations for why certain sites or qualifying features are excluded is laid out in Section 3.1.

Table 3.1 Designated sites relevant to the proposed Cromarty slipway development.

Site	Direction and Straight-line distance	Qualifying Feature(s)	Included in further assessment.
Moray Firth SAC	~ 0km	Bottlenose dolphin (<i>Tursiops truncatus</i>); Subtidal sandbanks	IN – only for bottlenose dolphins.
Cromarty Firth SPA & Ramsar	~ 0.1km South West	Bar-tailed godwit (<i>Limosa lapponica</i>), non-breeding; Mudflats; Sandflats; Saltmarsh; Red-breasted merganser (<i>Mergus serrator</i>), non-breeding; Redshank (<i>Tringa tetanus</i>), non-breeding; Greylag goose (<i>Anser anser</i>); Whooper swan (<i>Cygnus Cygnus</i>), non-breeding; Wigeon (<i>Anas Penelope</i>), non-breeding; Curlew (<i>Numenius arquata</i>), non-breeding; Common tern (<i>Sterna hirundo</i>), breeding; Dunlin (<i>Calidris alpina alpina</i>), non-breeding	IN
Pitmaduthy Moss SAC	~ 9.6km North West	Flies; Raised bog; Bog woodland	OUT – the proposed works are too far from the designated site for effects to occur and a there is a lack of connectivity.
Moray Firth pSPA	~ 2.3km East	Common scoter (<i>melanitta nigra</i>); Eider (<i>Somateria mollissima</i>); Goldeneye (<i>Bucephala clangula</i>); Great northern diver (<i>Gavia immer</i>); Long-tailed duck (<i>Clangula hyemalis</i>); Red-breasted merganser <i>Mergus serrator</i> ; Red-throated diver (<i>Gavia stellata</i>); Scaup (<i>Aythya marila</i>); Shag (<i>Phalacrocorax aristotelis</i>); Slavonian grebe (<i>Podiceps auritus</i>); Velvet scoter (<i>Melanitta fusca</i>)	IN
Inner Moray Firth SPA & Ramsar	~ 8.9km South	Bar-tailed godwit (<i>Limosa lapponica</i>); Common tern (<i>Sterna hirundo</i>); Cormorant (<i>Phalacrocorax carbo</i>); Curlew (<i>Numenius arquata</i>); Goldeneye (<i>Bucephala clangula</i>); Goosander (<i>Mergus merganser</i>); Greylag goose (<i>Anser anser</i>); Osprey (<i>Pandion haliaetus</i>); Oystercatcher (<i>Haematopus ostralegus</i>); Red-breasted merganser (<i>Mergus serrator</i>); Redshank (<i>Tringa totanus</i>); Scaup (<i>Aythya marila</i>); Teal (<i>Anas crecca</i>); Wigeon (<i>Anas penelope</i>)	IN
Morangie Forest SPA	~ 9.8km North West	Capercaillie (<i>Tetrao urogallus</i>), breeding	OUT –the site is too far from the proposed works for a direct effect and Capercaillie are not users of coastal areas.

3.1 Reasons for Designated Site Exclusions

3.1.1 SACs Related to Fish Receptors

Although not discussed in Table 3.1, it should be noted that no sites within the Cromarty Firth, or its catchment area, are designated for diadromous fish, and as such the development site is not on the migration route of any protected sites designated for diadromous fish populations (see Section 5.2: Biodiversity for more details). Since the development site is located on the northern banks of the mouth of the Cromarty Firth, it is effectively isolated from the migration routes for diadromous fish transiting to designated sites out with the Cromarty Firth. Therefore, there is no potential for the development to affect the designated features of the SACs designated for diadromous fish (see Table 3.1). Designated sites for fish need no further consideration.

3.1.2 Moray Firth SAC

No direct or indirect effect on the Moray Firth SAC sandbanks will occur due to the distances from the construction activities to the designated features. Therefore, only the bottlenose dolphin qualifying feature is taken forward for further assessment for this designated site.

3.1.3 Pitmaduthy Moss SAC

For the Pitmaduthy Moss SAC, there is no connectivity between this site and the proposed development for any of the qualifying features. Works are expected to take place in both the marine and on terrestrial environments. Works in the marine environment have no connectivity with the terrestrial features of the SAC and although some works will be performed in the terrestrial environment, the features protected in this SAC are static and are not connected to the development. Thus, this site will not be considered further for assessment.

3.1.4 Morangie Forest SPA

The Morangie Forest SPA is designated for breeding Capercaillie (*Tetrao urogallus*). Although the site is located ~ 9.8km from the development and Capercaillie are mobile features, the qualifying feature is not known to utilise coastal environments. As Capercaillie predominantly utilise Scottish native pinewood environments, it is considered highly unlikely that Capercaillie from the Morangie Forest SPA will be in the vicinity of the proposed development. Hence this site will not be taken forward for further assessment.

3.2 Designated Site Information

The Conservation Objectives of each of the designated sites taken forward is provided under each designated site section. Information on where the assessment for the qualifying features or species for each site is then provided.

3.2.1 Moray Firth SAC

The conservation objectives for the Moray Firth SAC are shown in Table 3.2 and the qualifying features are shown in Table 3.3.

LSE are not expected for the qualifying species and therefore it is unlikely an AA will need to take place.

Table 3.2 Moray Firth SAC Conservation Objectives

Conservation Objective of the Designated Site	Section of supporting document to inform the assessment
Overarching Conservation Objective: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained, and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features	Section 5.2.4.2: Marine Mammal (Impact Assessment)
Further Conservation objectives: To ensure for the qualifying species that the following are maintained in the long term: <ul style="list-style-type: none"> • Population of the species as a viable component of the site • Distribution of the species within site • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species 	Section 5.2.3.2: Marine Mammal (Baseline) Section 5.2.4.2: Marine Mammal (Impact Assessment) In Addition: Water Quality 5.4

Table 3.3 Moray Firth Qualifying Features

Species	Summary of assessment
Bottlenose Dolphins	Underwater noise emissions associated with the proposed slipway repairs are not anticipated to be of a magnitude which could cause harm or disturbance to marine mammals. If piling is utilised, then only short sheet piles will be utilised. These will be vibrated in and will occur out with the water or in shallow waters. The low energy's associated with vibro piling and minimal contact with the water column mean that the underwater noise created will be negligible. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to have an effect on dolphins. The slip way extension is small covering a total area of 400m ² in intertidal and shallow waters, a habitat not utilised by bottlenose dolphin.

3.2.2 Cromarty Firth SPA

The conservation objectives for the Cromarty Firth SPA are shown in Table 3.4 and the qualifying features are shown in Table 3.5, where (*) indicates an assemblage qualifier only.

LSE are not expected for the qualifying species and therefore it is unlikely an AA will need to take place.

Table 3.4 Cromarty Firth SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of supporting document to inform the assessment
Overarching Conservation Objective: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained	5.2.4.1: Ornithology (Impact Assessment)
Further Conservation objectives: To ensure for the qualifying species that the following are maintained in the long term: <ul style="list-style-type: none"> • Population of the species as a viable component of the site • Distribution of the species within site 	5.2.3.1: Ornithology (Baseline); 5.2.4.1: Ornithology (Impact Assessment);

Conservation Objective of the Designated Site	Section of supporting document to inform the assessment
<ul style="list-style-type: none"> • Distribution and extent of habitats supporting the species • Structure, function and supporting processes of habitats supporting the species • No significant disturbance of the species 	In Addition: 5.4: Water Quality

In addition, the Cromarty Firth Ramsar is designated for marine mudflats and sandbanks, which will be considered as part of the assessment of the Cromarty Firth SPA.

Table 3.5 Cromarty Firth SPA designated feature summary of assessment, where * indicates an assemblage qualifier only.

Species	Summary of assessment
Bar-tailed godwit	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Bar-tailed godwit are known to utilise Nigg Bay to the north of the development, as disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Bar-tail godwit.
Common tern	Six breeding colonies exist in the Cromarty Firth and Dornoch, but not in the direct vicinity of the construction, as such no LSE are predicted.
Curlew*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Curlew are known to utilise Nigg Bay to the north of the development, as disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Curlew.
Dunlin*	Dunlin prefer to use the mudflats in Nigg and Udale bays, ~2 – 6km away from the development respectively. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Dunlin.
Greylag goose	No impacts predicted due to lack of suitable habitat for the geese in immediate vicinity of the development area. Being a largely freshwater or coastal species, the area encompassing the slipway development does not provide suitable habitat. Nigg bay, ~ 2km away from the development, is utilised on occasion by Greylag geese, disturbance and potential pollution will not affect this area.
Knot*	Nigg and Udale bays are the habitat preference of knot, ~2 – 6km away from the development respectively. As any disturbance or potential pollution issues will be local to the development no LSE are predicted.

Species	Summary of assessment
Osprey	The slipway development is identified as unlikely to impact on Ospreys, as no impacts on their potential prey species have been predicted or are likely.
Oystercatcher*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Oystercatchers are predicted.
Pintail*	It is suggested Nigg Bay (~2km north west of the development) sees larger congregations of pintail in comparison with the rest of the SPA. As disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Pintail.
Red-breasted merganser*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on red-breasted merganser are predicted.
Redshank*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Redshank are predicted.
Scaup*	The favoured wintering flock area is at Jemimaville, ~6km west south west of the proposed development. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on scaup are predicted.
Whooper swan	No suitable feeding habitat for swans in the proposed development area, hence whooper swans will not be close enough to the development to be affected by disturbance of potential pollution events.
Wigeon*	Udale and Nigg Bays are popular areas for this species. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Wigeon are predicted.

3.2.3 Moray Firth pSPA

This proposed SPA has not yet had its Conservation Objectives confirmed, however draft objectives are provided in Table 3.6. Information on its qualifying features are shown below in Table 3.7.

LSE are not expected for the qualifying species and therefore it is unlikely an AA will need to take place.

Table 3.6 Moray Firth pSPA draft Conservation Objectives.

Draft Conservation Objective of the Designated Site	Section of supporting document to inform the assessment
Overarching Conservation Objective: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.	5.2.4.1: Ornithology (Impact Assessment)
Further Conservation objectives: This contribution will be achieved through delivering the following objectives for each of the site's qualifying features: <ul style="list-style-type: none"> Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term; and To maintain the habitats and food resources of the qualifying features in favourable condition. 	5.2.3.1: Ornithology (Baseline); 5.2.4.1: Ornithology (Impact Assessment); In Addition: 5.4: Water Quality

Table 3.7 Moray Firth pSPA Qualifying Features, with * representing those designated for migratory populations.

Species	Summary of assessment
Great northern diver	Divers prefer deeper waters and hence are unlikely to be close to shore. Only low densities (0.2 bird per km ²) have been recorded [SNH, 2016] in the Sutors hence, LSE due to localised disturbance or potential pollution events are not predicted.
Red throated diver	The Cromarty Firth area is not an area with high numbers or concentrations of this species, which are more associated with the deeper coastal waters, beyond the Sutors of Cromarty, in the outer Moray Firth. LSE due to localised disturbance or potential pollution events are not predicted.
Slavonian grebe	Slavonian grebes are a common species in the Cromarty Firth and are regularly seen especially along the north coast of the Black Isle, in areas east of Jemimaville, ~6km from the development. LSE due to localised disturbance or potential pollution events are not predicted.
Scaup*	The favoured wintering flock area is at Jemimaville, ~6km west south west of the proposed development. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on scaup are predicted.

Species	Summary of assessment
Eider*	There use to be a breeding colony of eider in the vicinity of Nigg, however this has relocated to the Invergordon Service Base [Affric Limited, 2018]. LSE due to localised disturbance or potential pollution events are not predicted.
Long-tailed duck*	The North and South Sutors, close to the slipway development, provides very little intertidal habitat. The majority of the area is greater than 10m in depth. As such, these waters are not suitable for long-tailed ducks' main food source, blue mussels, which demonstrate a tight zonation in the intertidal region, or in very shallow permanently submerged waters [JNCC, 2015]. This statement is supported by the fact that no blue mussel beds are present in the area, with the nearest documented beds located within the Cromarty Firth, on Skate Bank in the Inner Moray Firth, and on the southern shore of the outer Moray Firth [Marine Scotland, 2018]. No LSE on long-tailed duck wintering in the Moray Firth pSPA are predicted.
Common scoter*	The largest concentrations of common scoter within the Moray Firth are in the Dornoch/Embo/Golspie area and the Burghead area. This is much further north (Dornoch area) and south (Burghead) than the proposed development. No effect on Common scoter are predicted, and therefore no LSE on the Moray Firth pSPA are expected for this species.
Velvet scoter*	This species is not regularly found in the Cromarty Firth at all, more usually restricted to the Outer Moray Firth and the Moray coast. No effect on velvet scoter are predicted and therefore no effects on the Moray Firth pSPA are expected for this species.
Goldeneye*	The larger distributions of goldeneye tended to be between Dornoch and Golspie to the north, and between Nairn and Lossiemouth to the south [SNH, 2016]. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on red-breasted merganser are predicted.
Red-breasted merganser*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on red-breasted merganser are predicted.
Shag*	The major concentrations of shags in the Moray Firth pSPA are between Brora and Berriedale, both during the breeding and non-breeding periods. There is also a shag breeding colony at North Sutor, which is close to the pSPA. Any shags from the pSPA utilising waters near the slipway development have the potential to be affected by water quality issues. Any impacts on water quality will be temporary in nature and are not predicted to have a large impact on the shag population as a whole as the water quality issues will be localised in nature. Therefore, no effects on the Moray Firth pSPA is predicted for this species.

3.2.4 Inner Moray Firth SPA

The conservation objectives for the Inner Moray Firth SPA are shown in Table 3.8 and the qualifying features are shown in Table 3.9, where the (*) indicates an assemblage qualifier only.

LSE are not expected for the qualifying species and therefore it is unlikely an AA will need to take place.

Table 3.8 Inner Moray Firth SPA Conservation Objectives

Conservation Objective of the Designated Site	Section of supporting document to inform the assessment
Overarching Conservation Objective: To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained	5.3.4.1: Ornithology (Impact Assessment)
Further Conservation objectives: To ensure for the qualifying species that the following are maintained in the long term: <ul style="list-style-type: none"> Population of the species as a viable component of the site Distribution of the species within site Distribution and extent of habitats supporting the species Structure, function and supporting processes of habitats supporting the species No significant disturbance of the species 	5.3.3.1: Ornithology (Baseline); 5.3.4.1: Ornithology (Impact Assessment); In Addition: 5.5.4: Water Quality (Impact Assessment)

Table 3.9 Inner Moray Firth SPA Qualifying features, where * indicates an assemblage qualifier only.

Species	Summary of assessment
Bar-tailed godwit	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Bar-tailed godwit are known to utilise Nigg Bay to the west of the development, as disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Bar-tail godwit.
Common tern	Six breeding colonies exist in the Cromarty Firth and Dornoch, but not in the direct vicinity of the construction, as such no LSE are predicted.
Cormorant*	There is a breeding colony of Cormorant at the North Sutors, the cliffs are over 1km from the development and hence no LSE from disturbance or potential pollution events are expected.
Curlew*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Curlew are known to utilise Nigg Bay to the west of the development, as disturbance effects will be extremely localised, this species will not be affected. In the unlikely event of a pollution incident, the scale of any pollution event would be too small to reach areas likely to be frequented by Curlew.
Goldeneye*	The larger distributions of goldeneye tended to be between Dornoch and Golspie to the north, and between Nairn and Lossiemouth to the south [SNH, 2016]. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on red-breasted merganser are predicted.

Species	Summary of assessment
Goosander*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Goosander are predicted.
Greylag goose	No impacts predicted due to lack of suitable habitat for the geese in immediate vicinity of the development area. Being a largely freshwater or coastal species, the area encompassing the slipway development does not provide suitable habitat. Nigg bay, ~2km away from the development, is utilised on occasion by Greylag geese, disturbance and potential pollution will not affect this area.
Osprey	The slipway development is identified as unlikely to impact on Ospreys, as no impacts on their potential prey species have been predicted or are likely.
Oystercatcher*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Oystercatchers are predicted.
Red-breasted merganser	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on red-breasted merganser are predicted.
Redshank*	Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Redshank are predicted.
Scaup*	The favoured wintering flock area is at Jemimaville, ~6km west south west of the proposed development. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on scaup are predicted.
Teal	Teal are unlikely to be present in the immediate vicinity of the development, hence they will not be affected by localised disturbance or potential pollution events.
Wigeon*	Udale and Nigg Bays are popular areas for this species. Shoreline habitats close to the slipway are not expected to be modified as a result of the development. Disturbance effects will be extremely localised and short lived. In the unlikely event of a pollution incident, the scale of any pollution event would be extremely localised and recoverable. No LSE on Wigeon are predicted.

4 Cumulative and In-combination effects

No cumulative or in-combination effects were identified for any of the qualifying interests.

5 Conclusions

Due to the location and small scale of the proposed works no LSE have been identified for any qualifying interests of the designated sites in the area. Although it is unlikely any significant effects will occur, it will be up to the competent authority to ascertain whether the proposal will adversely affect the integrity of the designated sites to be considered.

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Drawings



Registered Office:
Lochview Office, Loch Duntelchaig
Farr, Inverness, IV2 6AW

Telephone: 01808 521 498
Email: info@affriclimited.co.uk
www.affriclimited.co.uk

Title: 62/01/01 Cromarty & Nigg
Location

Projection: OSGB 1936/British National
Grid EPSG: 27700

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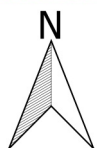
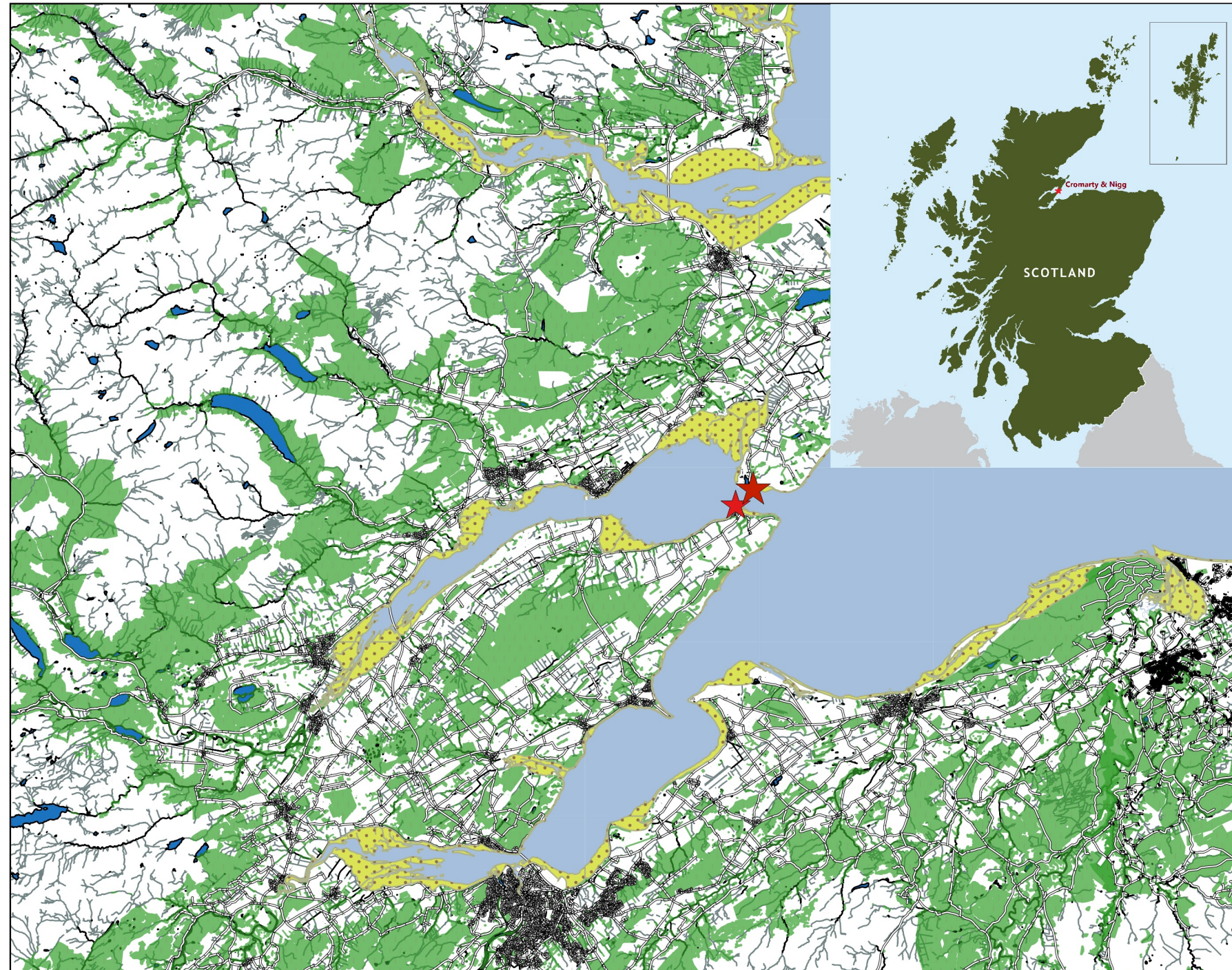
Page 1

Rev No: 1

Drawing Date:
20/12/2019

Legend

-  Cromarty & Nigg Slipways
-  Buildings
-  Foreshore
-  Tidal Water
-  Woodland
-  Surface Water
-  Road
-  Stream/River



0 5 10 15 20 25 30 km



Registered Office:
Lochview Office, Loch Duntelchaig
Farr, Inverness, IV2 6AW

Telephone: 01808 521 498
Email: info@affriclimited.co.uk
www.affriclimited.co.uk

Title: 62/02/02 Cromarty Slipway
Location

Projection: OSGB 1936/British National
Grid EPSG: 27700

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Page 1

Rev No: 1

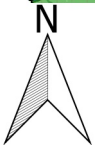
Drawing Date:
29/11/2019

Legend

-  Cromarty Slipway
-  Buildings
-  Foreshore
-  Tidal Water
-  Woodland
-  Surface Water
-  Road
-  Stream/River



0 5 10 15 20 km



Registered Office:
Lochview Office, Loch Duntelchaig
Farr, Inverness, IV2 6AW

Telephone: 01808 521 498
Email: info@affriclimited.co.uk
www.affriclimited.co.uk

Title: 62/03/02 Designated sites

Projection: OSGB 1936/British National
Grid EPSG: 27700

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
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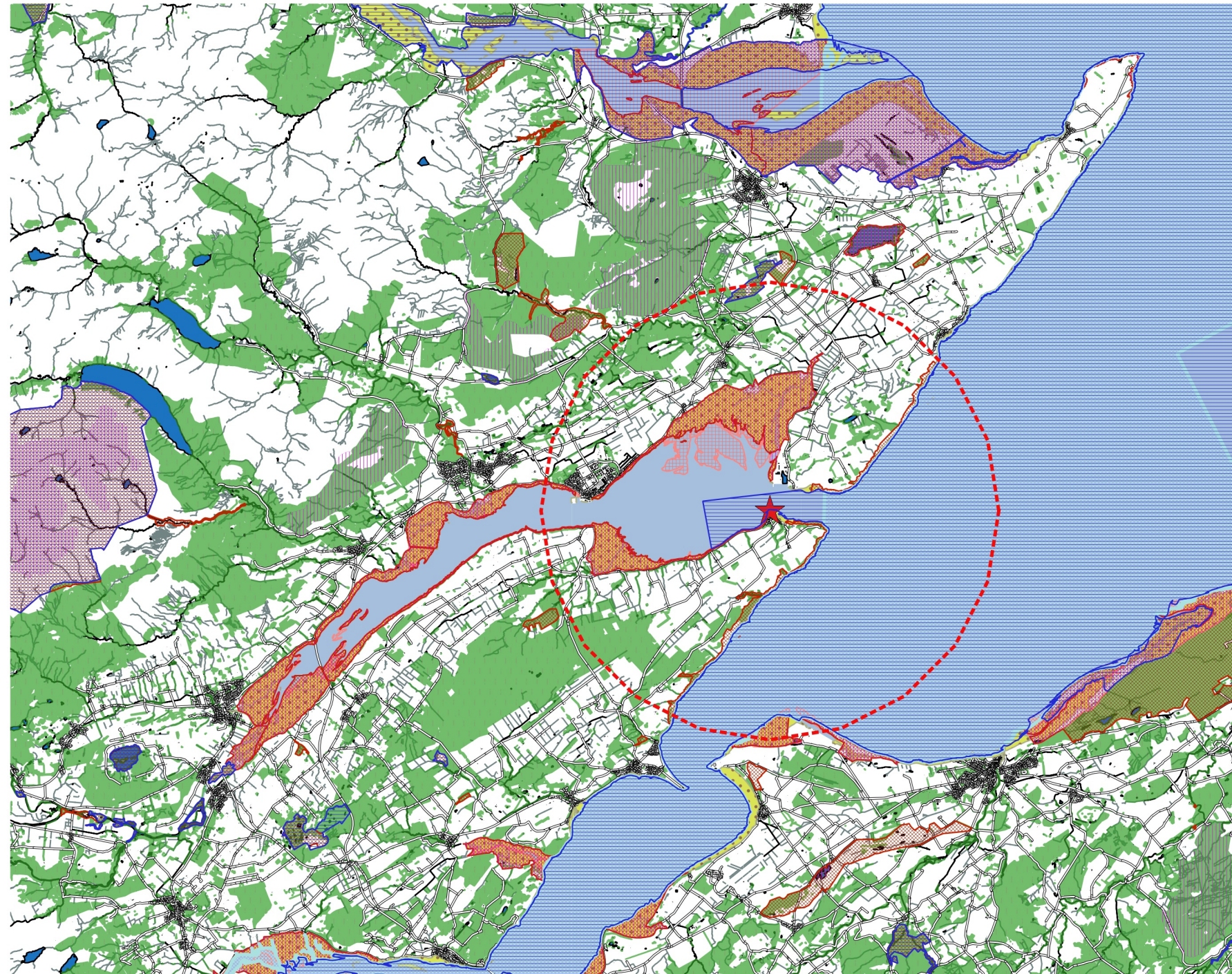
Page 1

Rev No: 1

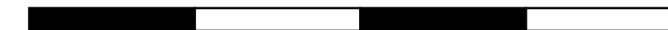
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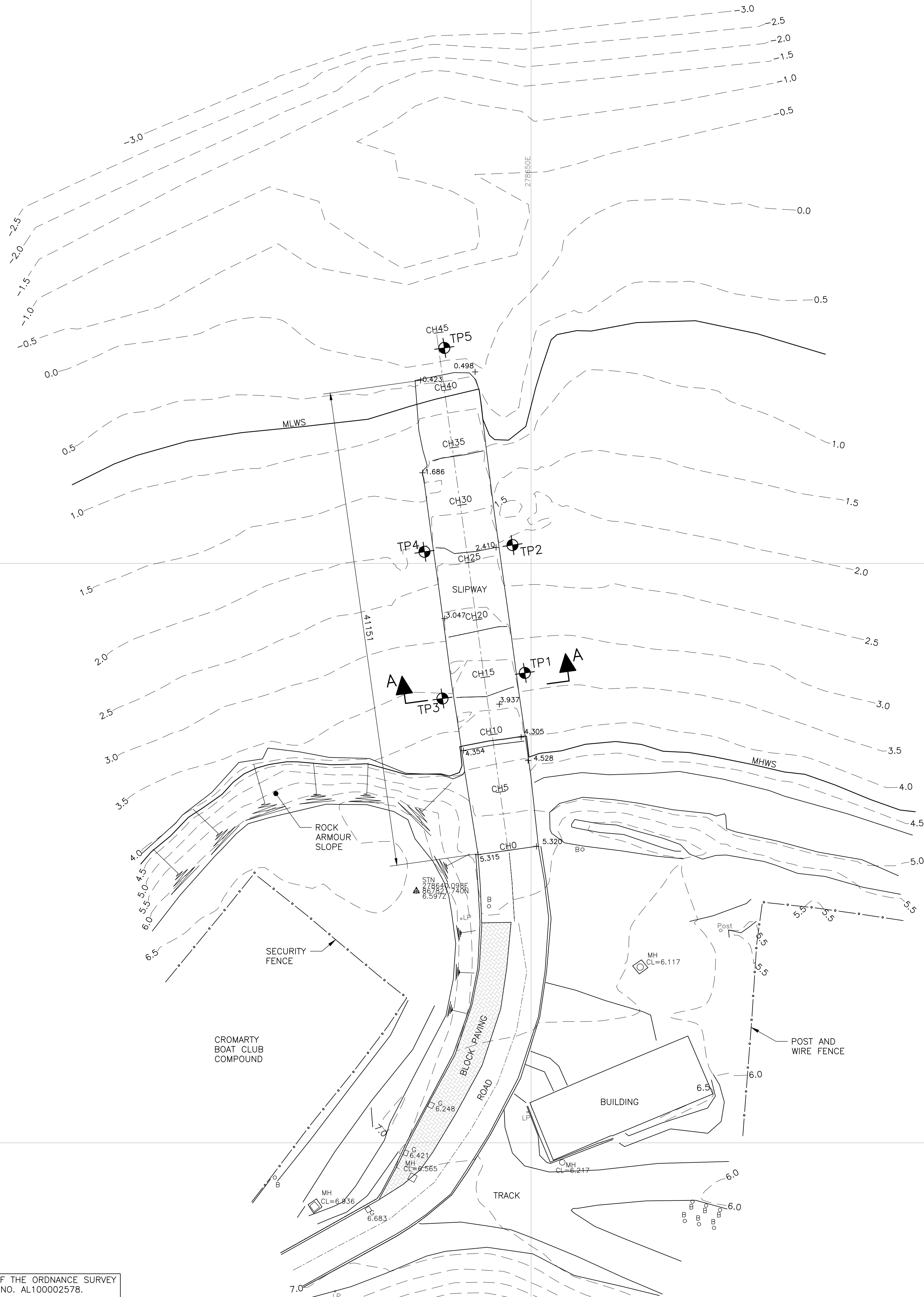
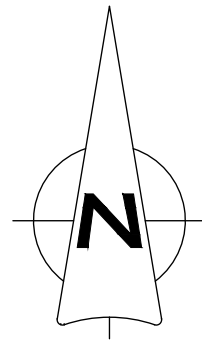
Legend

-  Cromarty Slipway
-  Cromarty Buffer
-  Buildings
-  Foreshore
-  Tidal Water
-  Woodland
-  Surface Water
-  Road
-  Stream/River
-  Special Area of Conservation (SAC)
-  Marine Protected Area (MPA)
-  Proposed Special Protected Area (pSPA)
-  Special Protected Area (SPA)
-  Specific Site of Scientific Interest (SSSI)
-  RAMSAR



0 5 10 15 20 km





- GENERAL NOTES
1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.
 2. ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.
 3. CHART DATUM IS 2.10m BELOW ORDNANCE DATUM.
 4. FOR SLIPWAY ELEVATION REFER TO DRAWING 2191-012.
 5. SURVEY WAS UNDERTAKEN ON 03/09/19. BY CAINTECH.
 6. ADDITIONAL SURVEY UNDERTAKEN ON 30/10/19 BY WALLACE STONE.
 7. TRIAL PITS TP1 - TP5 UNDERTAKEN ON 2/10/19.
 8. BEACH LEVELS VARY DUE TO WAVE CONDITIONS.
 9. HAT 5.0m
MHWS 4.3m
MHWN 3.3m
MLWN 1.6m
MLWS 0.7m
LAT 0.0m

REV	DATE	DETAILS	DRAWN	CHK'D	APP'D

AMENDMENTS

CLIENT
CROMARTY COMMUNITY DEVELOPMENT TRUST

PROJECT
CROMARTY AND NIGG SLIPWAYS

Wallace Stone
Consulting Civil Engineers

GLASGOW
0141 554 8233
glasgow@wallacestone.co.uk

DINGWALL
01349 866775
dingwall@wallacestone.co.uk

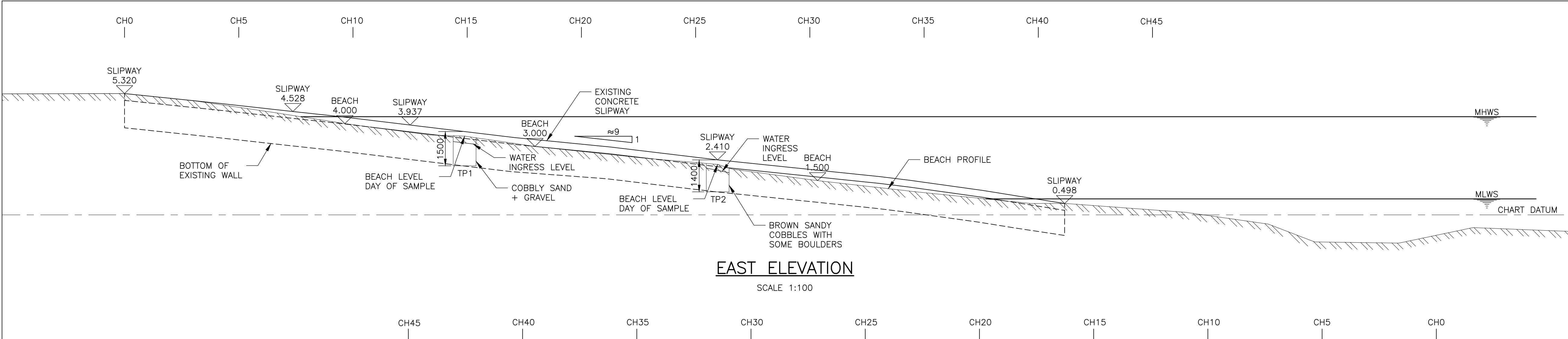
HEBRIDES
01851 612454
hebrides@wallacestone.co.uk

DRAWING TITLE
CROMARTY SLIPWAY EXISTING LAYOUT

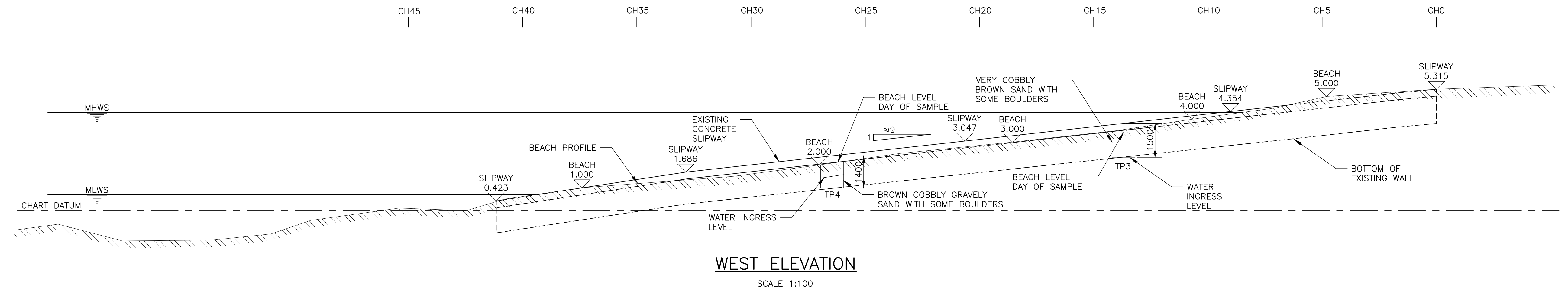
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DATE 19.09.19	DATE 09.12.12	DATE 09.12.12

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REVISION	

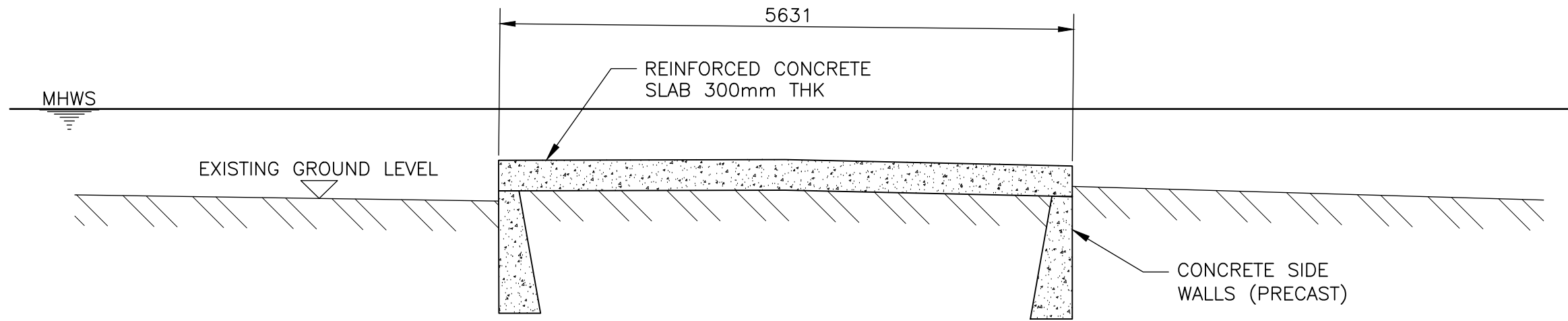
PROJECT No. 2191	DRAWING No. 011
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EAST ELEVATION
SCALE 1:100



WEST ELEVATION
SCALE 1:100



SECTION A-A
SCALE 1:50

COBBLY SAND AND GRAVEL

SANDY COBBLES WITH
SOME BOULDERS

VERY COBBLY SAND
WITH SOME BOULDERS

COBBLY GRAVELLY SAND
WITH SOME BOULDERS

SAND



TRIAL PIT 1



TRIAL PIT 2



TRIAL PIT 3



TRIAL PIT 4



TRIAL PIT 5

GENERAL NOTES

1.

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.

2.

ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.

3.

CHART DATUM IS 2.10m BELOW ORDNANCE DATUM.

4.

FOR PLAN FEFER TO DRAWING 2191-011.

5.

SURVEY WAS UNDERTAKEN ON 03/09/19. BY CAINTECH.

6.

TRIAL PITS TP1 – TP5 UNDERTAKEN ON 2/10/19.

7.

BEACH LEVELS VARY DUE TO WAVE CONDITIONS.

8.

HAT 5.0m
MHWS 4.3m
MHWN 3.3m
MLWN 1.6m
MLWS 0.7m
LAT 0.0m

REV

DATE

DETAILS

DRAWN

CHK'D

APP'D

AMENDMENTS

CLIENT

CROMARTY COMMUNITY DEVELOPMENT TRUST

PROJECT

CROMARTY AND NIGG SLIPWAYS

Wallace Stone

Consulting Civil Engineers

GLASGOW

0141 554 8233

glasgow@wallacestone.co.uk

DINGWALL

01349 866775

dingwall@wallacestone.co.uk

HEBRIDES

01851 612454

hebrides@wallacestone.co.uk

DRAWING TITLE

CROMARTY SLIPWAY EXISTING SECTIONS AND ELEVATIONS

DRAWN

JHG

CHECKED

TR

APPROVED

TR

DATE

19.09.19

DATE

09.12.12

DATE

09.12.12

SCALE (A1)

1:100

STAGE

INFORMATION

REVISION

PROJECT No.

2191

DRAWING No.

012



1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.
2. ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.
3. CHART DATUM IS 2.10m BELOW ORDNANCE DATUM.
4. FOR SLIPWAY SECTIONS & ELEVATION REFER TO DRAWING 2191-112.
5. SURVEY WAS UNDERTAKEN ON 03/09/19. BY CAINTECH.
6. ADDITIONAL SURVEY UNDERTAKEN ON 30/10/19 BY WALLACE STONE.
7. BEACH LEVELS VARY DUE TO WAVE CONDITIONS.
8. HAT 5.0m
MHWS 4.3m
MHWN 3.3m
MLWN 1.6m
MLWS 0.7m
AT 0.0m

SOP	EASTING	NORTHING	LATITUDE	LONGITUDE
1	278640.761	867807.371	57° 41.020'	-04° 2.220'
2	278643.613	867822.624	57° 41.029'	-04° 2.218'
3	278642.284	867831.824	57° 41.034'	-04° 2.220'
4	278637.776	867863.017	57° 41.050'	-04° 2.225'
5	278635.004	867882.194	57° 41.061'	-04° 2.228'
6	278650.840	867884.482	57° 41.062'	-04° 2.213'
7	278652.948	867869.895	57° 41.054'	-04° 2.210'
8	278658.056	867834.547	57° 41.035'	-04° 2.204'
9	278660.068	867820.625	57° 41.028'	-04° 2.201'
10	278650.002	867803.504	57° 41.018'	-04° 2.211'

REV	DATE	DETAILS	DRAWN	CHK'D	APP'D
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CLIENT CROMARTY COMMUNITY REDEVELOPMENT TRUST

PROJECT	CROMARTY AND NIGG SLIPWAYS
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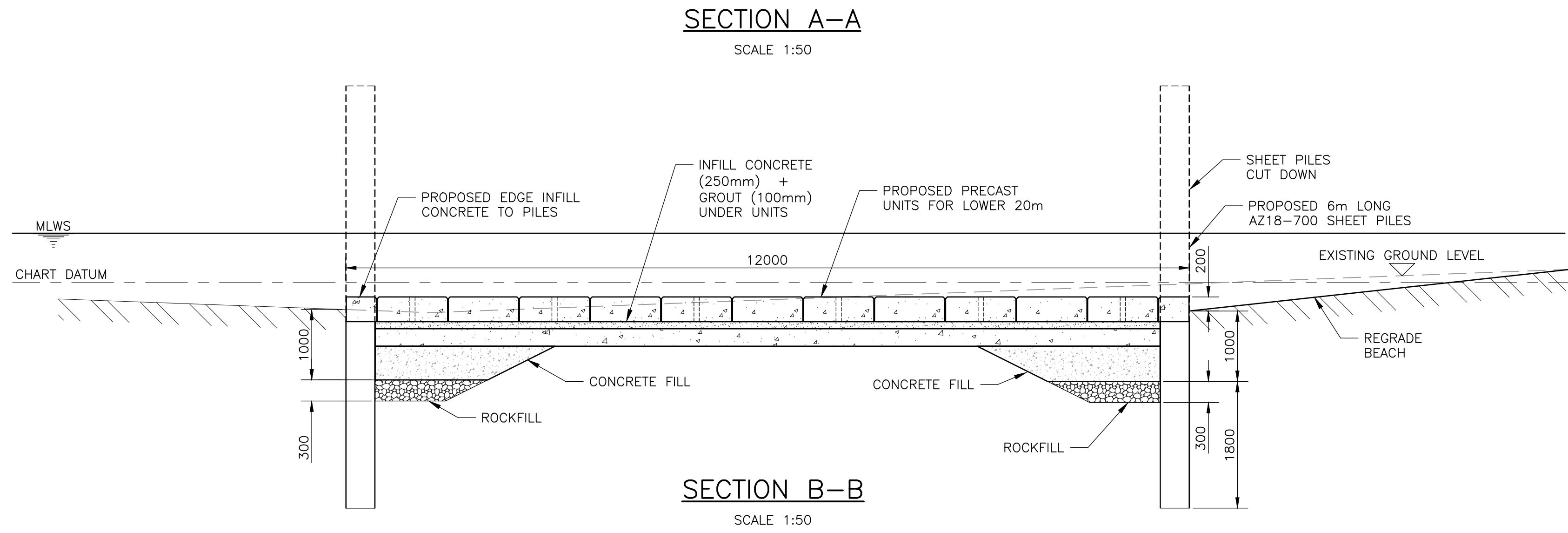
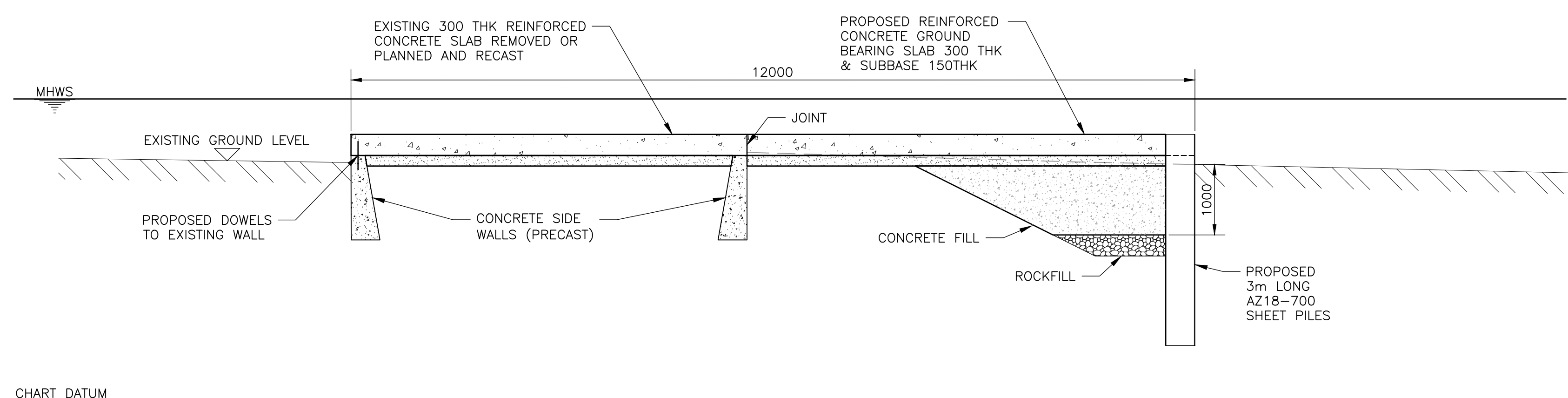
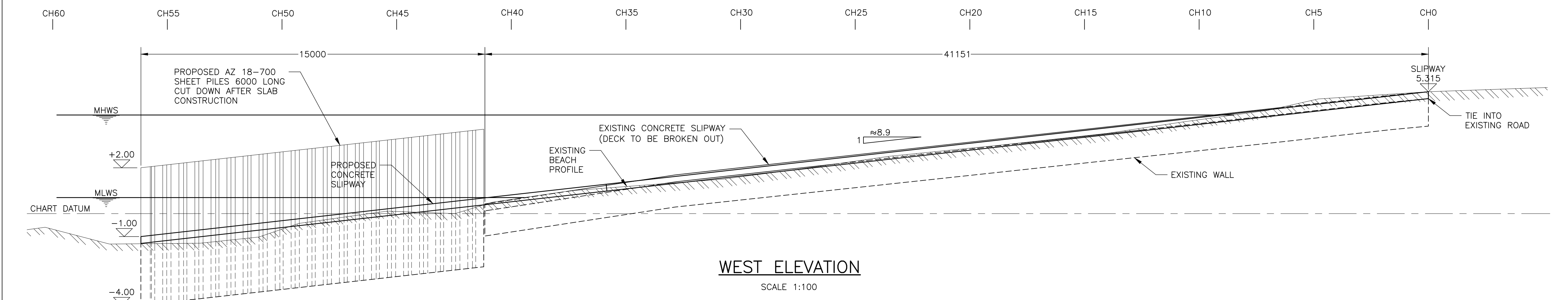
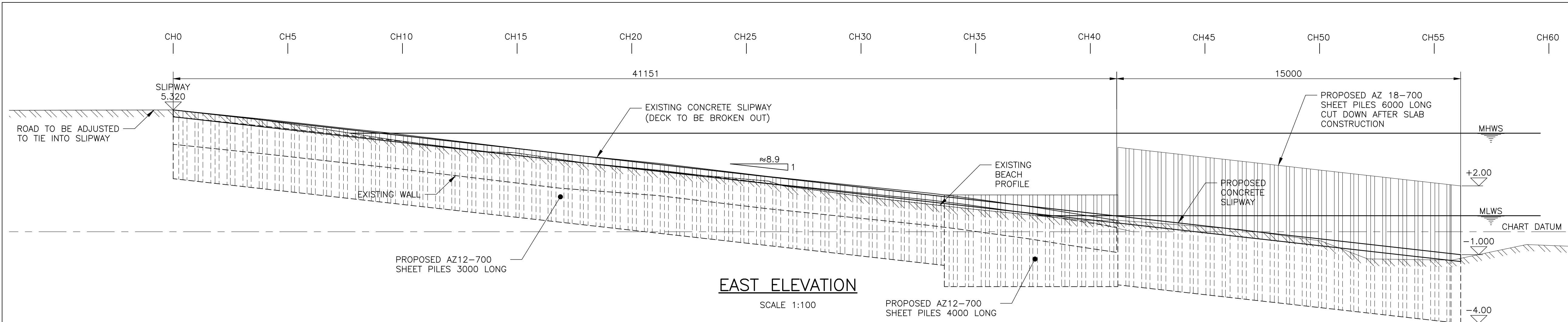


CROMARTY SLIPWAY
PROPOSED LAYOUT

DRAWN JHG	CHECKED TR	APPROVED TR
DATE 19.09.19	DATE 07.12.12	DATE 07.12.12

[illegible]

PROJECT No.	DRAWING No.
2191	111



- GENERAL NOTES
1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.
 2. ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.
 3. CHART DATUM IS 2.10m BELOW ORDNANCE DATUM.
 4. FOR PLAN REFER TO DRAWING 2191-111.
 5. SURVEY WAS UNDERTAKEN ON 03/09/19. BY CAINTECH.
 6. BEACH LEVELS VARY DUE TO WAVE CONDITIONS.
 7. HAT 5.0m
MHWS 4.3m
MHWN 3.3m
MLWN 1.6m
MLWS 0.7m
LAT 0.0m

REV	DATE	DETAILS	DRAWN	CHK'D	APP'D

AMENDMENTS

CLIENT
CROMARTY COMMUNITY REDEVELOPEMENT TRUST

PROJECT
CROMARTY AND NIGG SLIPWAYS

Wallace Stone
Consulting Civil Engineers

GLASGOW
0141 554 8233
glasgow@wallacestone.co.uk

HEBRIDES
01851 612454
hebrides@wallacestone.co.uk

DINGWALL
01349 866775
dingwall@wallacestone.co.uk

DRAWING TITLE
CROMARTY SLIPWAY PROPOSED SECTIONS AND ELEVATIONS

DRAWN JHG	CHECKED TR	APPROVED TR
DATE 19.09.19	DATE 09.12.12	DATE 09.12.12
SCALE (A1) 1:100	STAGE INFORMATION	
REVISION		
PROJECT No. 2191	DRAWING No. 112	



GENERAL NOTES

1.

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.

2.

ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.

3.

CHART DATUM IS 2.10m BELOW ORDNANCE DATUM.

4.

FOR SLIPWAY ELEVATION REFER TO DRAWING 2191-102.

5.

SURVEY UNDERTAKEN ON 03/09/19. BY CAINTECH.

6.

BEACH LEVELS VARY DUE TO WAVE CONDITIONS.

7.

HAT 5.0m
MHS 4.3m
MLWN 3.3m
MLWN 1.6m
MLWS 0.7m
LAT 0.0m

SOP	EASTING	NORTHING	LATITUDE	LONGITUDE
1	279658.742	868775.285	57° 41.558'	-04° 1.226'
2	279652.461	868767.338	57° 41.554'	-04° 1.232'
3	279649.477	868761.270	57° 41.550'	-04° 1.235'
4	279638.405	868686.857	57° 41.510'	-04° 1.244'
5	279622.579	868689.212	57° 41.511'	-04° 1.260'
6	279633.512	868762.693	57° 41.551'	-04° 1.251'
7	279640.267	868777.806	57° 41.559'	-04° 1.244'
8	279652.869	868788.539	57° 41.565'	-04° 1.232'

REV

DATE

DETAILS

DRAWN

CHK'D

APP'D

AMENDMENTS

CLIENT

CROMARTY COMMUNITY DEVELOPMENT TRUST

PROJECT

CROMARTY AND NIGG SLIPWAYS

Wallace Stone

Consulting Civil Engineers

GLASGOW

0141 554 8233

glasgow@wallacestone.co.uk

DINGWALL

01349 866775

dingwall@wallacestone.co.uk

HEBRIDES

01851 612454

hebrides@wallacestone.co.uk

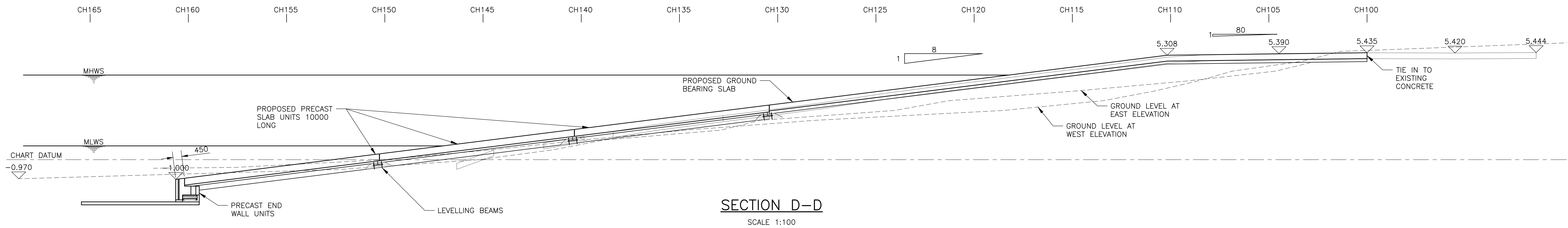
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NIGG SLIPWAY PROPOSED LAYOUT

DRAWN	CHECKED	APPROVED
JHG	TR	TR
DATE	DATE	DATE
20.09.19	06.12.19	06.12.19

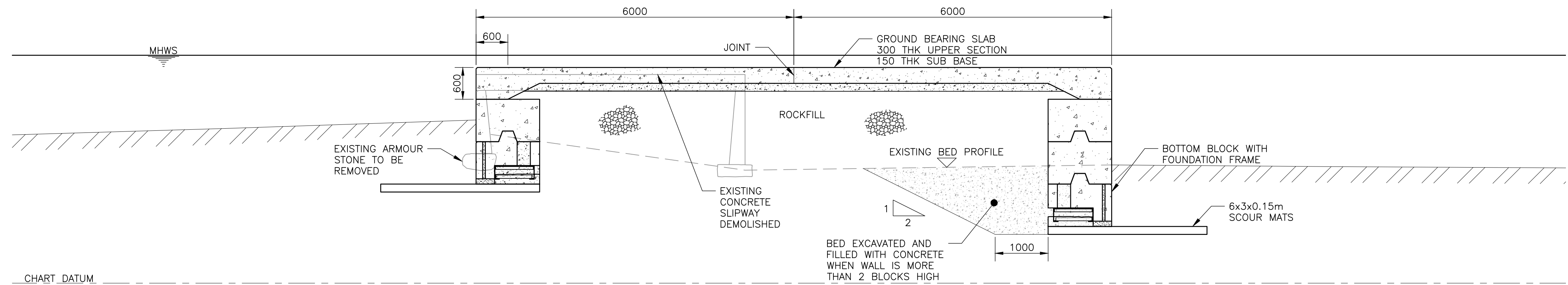
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REVISION	PROJECT No.	DRAWING No.
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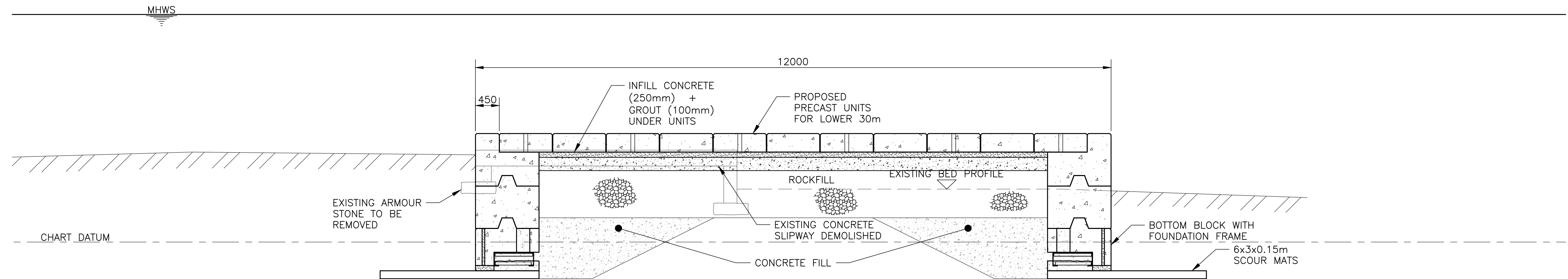
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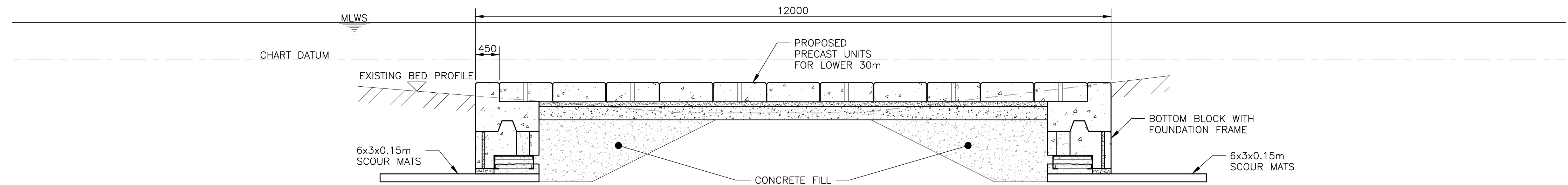
SECTION A-A

SCALE 1:50



SECTION B-B

SCALE 1:50



SECTION C-C

SCALE 1:50

GENERAL NOTES					
1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED.					
2. ALL LEVELS IN METRES ARE RELATIVE TO CHART DATUM.					
3. CHART DATUM IS 2.10m BELOW ORDNANCE DATUM					
4. FOR PLAN REFER TO DRAWING 2191-101.					
5. SURVEY UNDERTAKEN ON 03/09/19. BY CAINTECH.					
6. BEACH LEVELS VARY DUE TO WAVE CONDITIONS.					
7. HAT 5.0m MHWS 4.3m MHWN 3.3m MLWN 1.6m MLWS 0.7m LAT 0.0m					
REV	DATE	DETAILS	DRAWN	CHK'D	APP'D
AMENDMENTS					
CLIENT CROMARTY COMMUNITY DEVELOPMENT TRUST					
PROJECT CROMARTY AND NIGG SLIPWAYS					
Wallace Stone Consulting Civil Engineers GLASGOW 0141 554 8233 glasgow@wallacestone.co.uk DINGWALL 01349 866775 dingwall@wallacestone.co.uk HEBRIDES 01851 612454 hebrides@wallacestone.co.uk					
DRAWING TITLE NIGG SLIPWAY PROPOSED SECTIONS					
DRAWN PM		CHECKED TR		APPROVED TR	
DATE 20.09.19		DATE 06.12.19		DATE 06.12.19	
SCALE (A1) AS SHOWN		STAGE INFORMATION			
REVISION					
PROJECT No.		DRAWING No.			
2191		103			