



Nigg East Quay EIA Non-Technical Summary



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1 INTRODUCTION

1.1 Structure of this Non-Technical Summary

The NTS is set out in the same chapter format as the EIAR, to facilitate cross-referencing and to offer a summary of the environmental findings that are contained within the full EIAR. The sections within this NTS are therefore as follows:

1. Introduction
2. Proposed Development
3. EIA Methodology and Scoping
4. Marine Ecology (*inc. Underwater Noise, Fish and Habitats*)
5. Water Environment and Coastal Processes
6. Airborne Noise
7. Traffic and Transport
8. Other Issues (*inc. Terrestrial Ecology, Ornithology, Landscape and Visual, Cultural Heritage, Air Quality, Navigation, Population/Human Health, Climate Change and Natural Disasters*)
9. Schedule of Mitigation
10. Conclusions

The NTS summarises the key findings from the environmental impact assessment (EIA) process. Where the assessment results in potential negative effects on the environment, measures to address and control effects, known as mitigation measures are identified. The assessment then presents the overall effects remaining after mitigation has been applied; these are referred to as the residual effects.

The overall suite of documents associated with the EIA includes the following:

- The Environmental Impact Assessment Report (EIAR) – which reports upon the potentially significant environmental effects of the proposed development upon the receiving environment, comprising:
 - Volume 1: Written Statement – this includes the written assessment and contains discussion of potentially significant environmental effects;
 - Volume 2: Figures – this volume includes figures, drawings and diagrams which support Volume 1; and
 - Volume 3: Technical Appendices – this volume contains the technical background reports written and used to derive the environmental assessment.
- Non-Technical Summary (NTS) – this document.

2 THE PROPOSED DEVELOPMENT

2.1 The Site

The site is bounded to the north by the B9175, to the east by the Fearn Peninsula, to the south are 'The Sutors' of Cromarty and Nigg Bay lies to the immediate west. The Cromarty Ferry crosses The Sutors Channel from May to September. The hamlets of Balnabruich and Balnapaling are located immediately to the north, and further north, are the settlements of Nigg, Arabella, Ankerville and Ballintore scattered amongst open farmland. Rocky coastal cliffs are evident on the approach to The Sutors. The general location is shown in NTS Figure 1 – *Site Location Plan*.

The site application boundary encompasses both coastal waters and land. The land element is composed of the associated derelict buildings associated with the former Dunskeath House. The remaining land is earmarked for laydown and is presently bare ground, scrub, grassland with some tall ruderal vegetation and broadleaved trees. The proposed site has an elevation of generally around 5m above sea level.

The application boundaries outlining both the marine and terrestrial components are detailed in NTS Figure 2. The new East Quay is proposed for the south-eastern vicinity of the energy park.

Several sites located within a 5km reach of the development have been afforded environmental protection because of their nominated qualifying features (i.e ecological, geological). These are set out in Table 1 and NTS Figure 3. More distant but significant designations located out-with 5km include the Dornoch Firth and Morrich More SAC, have also been included in the assessment (i.e. within the Habitats Regulations Appraisal).

Table 1 – List of environmental designations within 5km radius of the proposed development

Designated Site	Distance from site	Qualifying Features
Cromarty Firth Site of Special Scientific Interest (SSSI)	0.59km west	Intertidal mudflats and sandflats
Cromarty Firth Special Protection Area (SPA)	0.59km west	Non-breeding bird species
Cromarty Firth Ramsar	0.59km west	Intertidal mudflats and sandflats, waterfowl assemblages
Rosemarkle to Shandwick Coast Site of Special Scientific Interest (SSSI)	0.76km east	Maritime cliffs, geology, breeding birds
Moray Firth Special Area of Conservation (SAC)	Immediately east of the site	Bottlenose dolphin

Nigg Energy Park currently provides a range of Inspection, Repair and Maintenance (IRM) services for offshore vessels and infrastructure, being located conveniently for oil and renewables fields in the North Sea. These services include fabrication, engineering and refurbishment of bulky infrastructure (i.e. assembly of steel rig jackets) and provision of all associated specialist services (i.e. diving, subsea surveying). The images below show some examples of the activities typical of the site.



Assembly of turbine towers, nacelles and blades for the renewables sector, Nigg Energy Park.



Utilisation of current laydown at Nigg Energy Park; and examples of the large offshore structures which are typically anchored for servicing at Nigg Energy Park

The existing dry dock and 900m of heavy load-bearing quayside allow for simultaneous berthing of Floating Production Storage Offshore (FPSO) type vessels and bulk handling of renewable infrastructure such as turbine towers, nacelles and blades.

The East Quay development will allow for the expansion of existing services by providing suitable laydown and deep sea berthing in order to capture further opportunity in this sector and in emerging markets such as cable spooling for sub-sea cabling.

Port of Cromarty Firth (PoCF) operate from Invergordon Service Base and are the existing statutory harbour authority and trust port for the Cromarty Firth and Nigg Basin. As such, PoCF have overall control on the management of vessels and marine works taking place within the Nigg Basin and Inner Moray Firth waters. PoCF undertake similar large scale IRM services at the service base, and as such several large offshore rigs and associated bulky cargo and operations vessels may be anchored concurrently or in transit within these waters.

2.2 Proposed Development

The component parts of the proposed new East Quay are

- 0.88ha perimeter-piled quay wall to retain locally-dredged sediment. The quay will be finished with concrete coping and rock armour. The quay will be equipped with high-level lighting, fendering and deck furniture in accordance with Port Regulations;
- 165,000m³ of seabed sediment will be removed to attain a sea bed level of 12m below chart datum. This will be achieved by means of a suction dredger and barge mounted excavator employed where stiff material is encountered.
- 15,000-30,000m³ of these dredge arisings will be re-stated as infill within the quay structure, depending on their suitability;
- Up to 150,000m³ will be safely disposed of at the 'The Sutors' licensed disposal site under the authority of the Marine Licence Dredge and Disposal Application;
- A laydown area will be finished with crushed rock surfacing, landscaped where possible and equipped with security fencing;
- A 2m high bund will run along on the eastern and northern extents, comprised of reclaimed material and landscaped in keeping with native species planting; and
- Emergency vehicular access will be provided from the B1975.

The procedures and processes by which this will be achieved are explained below.

Piling

Piling will be required to drive sheet and king piles (associated with the quay wall) securely into the sea bed and underlying bedrock. This will be achieved mostly by vibrating hammer, which has a lower-frequency than other methods and steady drilling motion. Use of impact-hammer will be limited to where bedrock is encountered and only when there is a need to drive king-piles further to ensure firm fitting of the pile toe. This will help maintain the long-term integrity of the quay wall, which is subject to considerable pressures from vessels and surrounding coastal waters.

A comprehensive Marine Mammal Protection Plan (MMPP) is in place to mitigate any potential underwater noise impacts in local waters during the short term construction works. The Plan is detailed within the Marine Ecology section of this NTS.

Dredging

This stage will involve dredging up to 165,000m³ of material to create the required final sea bed levels at the proposed berth. Some dredged material would be used to infill the quay structure (approximately 15,000m³ – 30,000m³) with the remainder (a maximum of approximately 150,000m³) to be disposed at The Sutors licenced disposal facility at the mouth of the Cromarty Firth.

Seabed sediment earmarked for removal has been analysed and determined suitable for extraction by suction-dredge set up. Arisings will be pumped directly from the seabed along floating pipework set up to the infill location. It is considered that the initial dredging exercise in front of the existing sheet piled wall at the north end of the structure will be by barge-mounted excavator.



A suction-dredge and floating pipework set up is the preferred method of dredging at East Quay, Nigg

Phasing

The proposed development is scheduled to begin in late 2019 with an anticipated construction timetable of 10 months. Works will be delivered over 4 phases, namely;

- Phase 1: Creation of structures (i.e. piling) – Month 1 to Month 7;
- Phase 2: Dredge and disposal – Month 5-9;
- Phase 3: Concrete works and installation of services – Month 6 to Month 9;
- Phase 4: Surface layer, finishing, testing – Month 8 to Month 10

Assumed construction timing will be from 7am-7pm Monday to Sunday for all construction activities with the exception of dredging, which will be in operation 24 hours per day/ 7 days per week.

3 EIA METHODOLOGY AND SCOPING

3.1 General EIA Methodology

This section discusses the rationale and general methodological approach behind undertaking an EIA.

The purpose of an EIA is to identify and evaluate the likely significant effects of a proposed development on the environment, and then to identify measures to mitigate or manage any significant adverse effects before a planning application is determined.

The process involves identifying the sensitivity of the baseline conditions/receptors; predicting the magnitude of potential impacts; predicting the significant effect of the impacts; detailing mitigation measures; predicting the potential residual effects as well as the potential cumulative impacts.

The results and findings are presented within the EIAR.

3.2 Scoping as part of the EIA Process

The scoping process allows for agreement upon which topics should be covered in the EIAR and for those topics not considered pertinent to be scoped out of the study or reduced in scope (*i.e* topics where it is unlikely that significant environmental effects will occur).

As the proposed development contains elements which are above and below Mean Low Water Springs (MLWS), consents will be required from The Highland Council and Marine Scotland. Accordingly, the EIA covers both consents under the Town and Country Planning EIA Regulations and the Marine EIA Regulations.

A Scoping Request was submitted to The Highland Council (THC) and Marine Scotland Licensing and Operations Team (MS-LOT) on 5th February 2019, and in response, Scoping Opinions were received on the 25th March 2019 and 20th May 2019, respectively. The comments received in the Scoping Opinion represent the views and opinions of THC and MS-LOT, responses provided to the Council by other statutory consultees were received separately.

3.3 Consultation

Consultation responses were obtained from the following organisations:

- The Highland Council (the Council);
- Marine Scotland (MS-LOT);
- Scottish Environmental Protection Agency (SEPA);
- Scottish Natural Heritage (SNH);
- Historic (Environment) Scotland;
- Cromarty Firth Port Authority (CFPA);
- Northern Lighthouse Board (NLB);
- Royal Yachting Association (RYA);
- Scottish Water (SW); and
- Transport Scotland (TS).

The opinions provided in the Scoping Opinion were used to inform the EIA process.

3.4 Scope of the EIA

Based on the consultation and responses received to date, a view was reached on the key topics to be assessed and included as a full impact assessment chapter as part of the EIA. These were:

- Marine Ecology (including underwater noise);
- Water Environment, Soils and Coastal Processes;
- Noise;
- Traffic and Transport; and
- Other Issues

On the basis of the limited potential for significant effects, full impact assessments were not undertaken for the following topics: Terrestrial Ecology, Ornithology, Landscape and Visual, Cultural Heritage, Air Quality, Navigation, Population and Human Health, Climate Change and Natural Disasters. However, to provide a suitable level of supporting information, Desk Based Assessments were undertaken for certain 'Other Issues' topics, and these form part of the Technical Appendices contained within Volume 3 of the EIAR.

4 ECOLOGY

4.1 Introduction

The marine ecology assessment considered the impact of the East Quay development on the following Important Ecological Features (IEFs):

- Statutory designated sites;
 - Moray Firth SAC (bottlenose dolphins and sub-tidal sandbanks);
 - Dornoch Firth and Morrich More SAC (Harbour seal); and
 - Cromarty Firth Site of Special Scientific Interest (SSSI) (mudflats, sandflats and saltmarsh habitats).
- Marine mammals (cetaceans and seals, namely bottlenose dolphin, harbour porpoise, harbour seal and grey seal);
- Migratory fish (salmon and trout; European eel, sea lamprey and river lamprey); and
- Cromarty Bay and Udale Bay Shellfish Water Protected Area.

The ecology assessment was carried out by experienced and competent ecologists who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow its Code of Professional Conduct.

The assessment comprised a review of existing records and publications, and consultation with bodies such as SNH, the University of Aberdeen Lighthouse Field Station and Marine Scotland. In addition, computer models were developed to predict underwater noise and the impact of dredging and sediment dispersion upon the marine environment. The assessment of impacts describes how the baseline conditions would change as a result of the project and its associated activities; and from other developments cumulatively.

The CIEEM guidance states that when describing changes/activities and positive or negative impacts on ecosystem structure and function, reference should be made to the following parameters:

- Magnitude;
- Extent;
- Duration;
- Reversibility; and
- Timing and frequency.

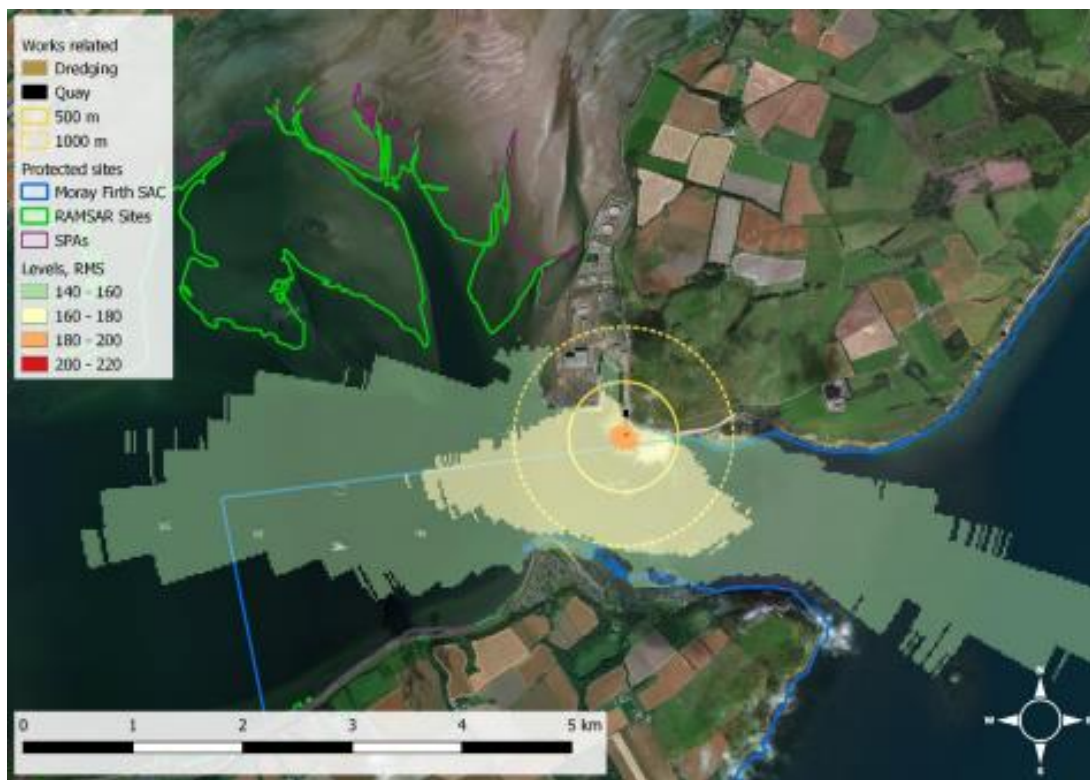
4.2 Impact Assessment

The following constitutes a brief summary of the key potential impacts on each of the Important Ecological Features (IEFs) assessed:

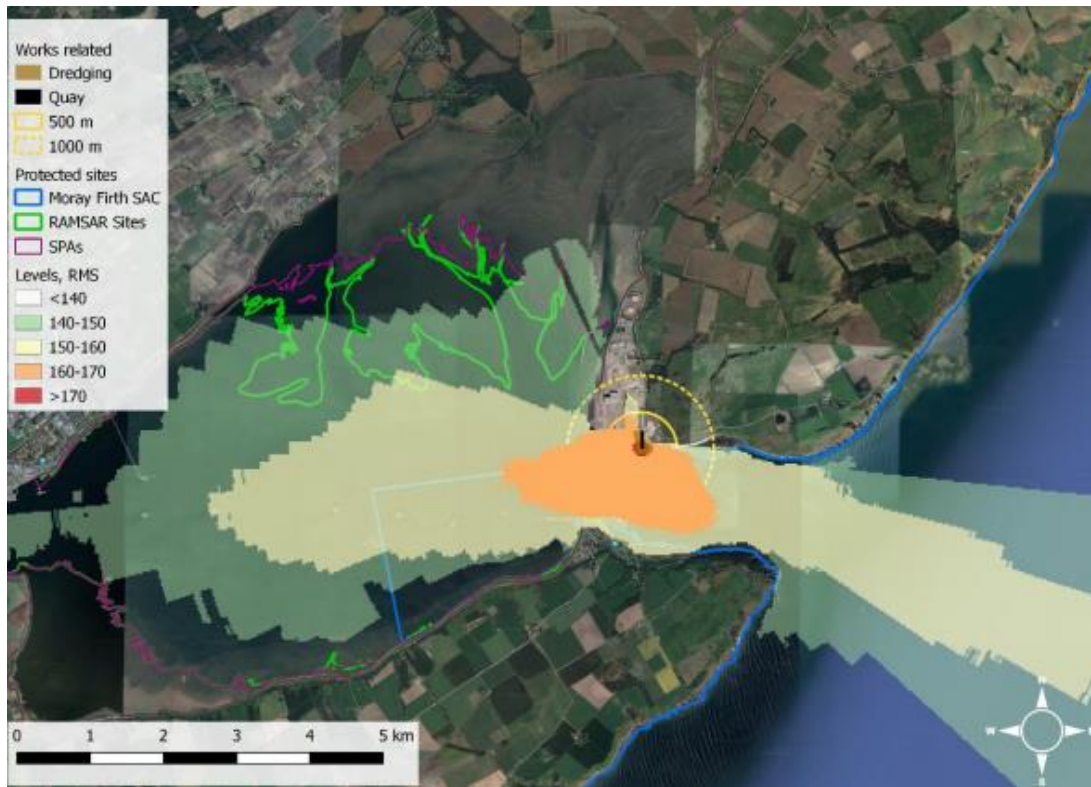
Construction Phase

- Moray Firth SAC
Potential impacts on the SAC included injury or disturbance to bottlenose dolphins from underwater noise producing construction activities, increased sedimentation and turbidity due to dredging operations, increased vessel movement and the disposal of dredged material, pollution and the spread of marine Invasive Non-Native Species (INNS).
- Dornoch Firth and Morrich More SAC
Potential impacts on the SAC included injury or disturbance to harbour seals from underwater noise producing construction activities, increased sedimentation and turbidity due to dredging operations, increased vessel movement, pollution and the spread of marine INNS.

- Cromarty Firth SSSI
Potential impacts on the SSSI included increased sedimentation and turbidity and the alteration of coastal processes and the spread of marine INNS.
- Marine Mammals
The primary impact of the proposed works on marine mammals is underwater noise, primarily resulting from impact piling works. The impacts of increased sedimentation and turbidity, increased vessel movement and pollution were also assessed.
- Migratory Fish
Potential impacts on migratory fish included injury or disturbance to from underwater noise producing construction activities, increased sedimentation and turbidity due to dredging operations, increased vessel movement, increased floodlighting and pollution.
- Cromarty Bay and Udale Bay Shellfish Water Protected Area
Potential impacts to mussel beds include increased sedimentation and turbidity and the alteration of coastal processes, pollution and the spread of marine INNS.



Example of underwater noise output to examine impact piling and subsequent potential impacts upon marine mammals and fish.



Example of underwater noise output to examine high impact scenario of impact piling and subsequent impacts upon marine mammals and fish.

Operational Phase

- Moray Firth SAC
Potential impacts on the SAC included collision injury or disturbance to bottlenose dolphins from increased vessel movement and the spread of marine INNS.
- Dornoch Firth and Morrich More SAC
Potential impacts on the SAC included collision injury or disturbance to harbour seals from increased vessel movement and the spread of marine INNS.
- Cromarty Firth SSSI
The spread of marine INNS has the potential to impact the SSSI.
- Marine Mammals
Potential impacts on marine mammals included collision injury or disturbance as a result of increased vessel movement.
- Cromarty Bay and Udale Bay Shellfish Water Protected Area
The spread of INNS, which may increase due to an increase in vessels using the area, could impact the mussel beds of the Shellfish Water.

For construction, as the impacts are temporary in nature, as well as the low to negligible risks to IEFs, all impacts upon the above receptors were assessed as not significant after mitigation (see section 4.3). Operational phase impacts were also not considered to be significant; with the exception of marine invasive non-native species (INNS); as although it is known that the marine INNS are widespread in Scotland, the rate and extent is difficult to predict, and the impacts may be permanent in nature.

The cumulative assessment also takes into consideration the following ongoing development projects:

- Port of Cromarty Firth – Phase 4 Development, Invergordon Service Base;

- Ardersier Port Development; and
- Aberdeen Harbour – South Harbour Development.

In-combination effects of these developments includes the increase in vessels travelling through the Moray Firth, and the introduction of underwater noise via multiple sources in various areas of sensitive bottlenose dolphin habitat.

4.3 Mitigation

4.3.1 Marine Mammal Protection Plan

A Marine Mammal Protection Plan has been prepared in consultation with the University of Aberdeen Lighthouse Field Station and in-keeping with Joint Nature Conservation Committee (JNCC) guidance.

Global Energy will ensure that trained Marine Mammal Observers (MMO) are present for the construction phase of the project. The MMO will be present during impact piling and will check for the presence of marine mammals within a 500m radius of works for a minimum of 30 minutes before works commence. Piling will not start if there are marine mammals within the area or within 20 minutes of them leaving. Once piling commences, hammer energy will start at a low level and ramp up gradually over 10-20 minutes to allow any marine mammals still in the area to move away.

A Passive Acoustic Monitoring (PAM) protocol has been designed for use when the sea state or light is not conducive to visual monitoring. A dredge disposal protocol has also been designed to prevent disturbance to bottlenose dolphin using The Cromarty Sutors; a preferred habitat and the location of the licenced dredge disposal site.

4.3.2 Standard Mitigation

The following comprises a summary of mitigation practices which will be followed during the construction and operational phase of the proposed development:

- Pollution of the marine environment should be prevented in order to safeguard water quality and marine life which marine mammals rely on within these habitats;
- A Construction Environmental Management Plan (CEMP) detailing pollution prevention measures will be agreed with the regulatory authority prior to works commencing; and
- The CEMP will incorporate a marine INNS biosecurity protocol for both construction and operational phases.

4.3.3 Cumulative Working

In the event of overlap between underwater noise producing activities at the development sites noted in Section 5.2.1 above, a 'Works Dialogue Protocol' shall be implemented which would involve active communication between the four projects to reduce the potential for significant cumulative impacts (e.g. piling would be scheduled not to occur concurrently between all projects, thereby impacting marine mammals simultaneously).

5 WATER ENVIRONMENT

5.1 Introduction

This Chapter of the EIA considered the impact of the proposed development on hydrology, water and sediment quality, tidal and wave action, and sediment transport processes. The assessment process involved review of levels surveys of the seabed and adjoining land, as well as consideration of previous modelling of tidal currents, wave conditions and sediment transport.

The following elements of the proposed development were assessed to predict their impacts on the water environment and coastal processes:

- Dredging of proposed navigation channel and berths;
- Construction activities including excavations and formation of the quay;
- Site surface water drainage; and
- Port operations following construction.

The assessment considered the impact of these elements on the following receptors:

- Operational coastal waters and sediment of the Outer Cromarty Firth within the vicinity of the proposed development;
- Cromarty Firth SSSI;
- Rosemarkie to Shandwick Coast SSSI;
- Moray Firth SAC;
- Cromarty Firth SPA;
- Cromarty Firth RAMSAR; and
- Existing outfalls in the vicinity of the development.

5.2 Potential Impacts and Mitigation

The assessment found that all impacts resulting from the construction and operation of the proposed development on the water environment and coastal processes would be of either low or negligible magnitude, with the exception of potential pollution incidences which could be of low to high magnitude depending on the scale and nature of the incident. Mitigation is therefore proposed in order to avoid, manage, control and further minimise environmental impacts.

The risk of impacts from pollution during construction will be managed through a Construction Environmental Management Plan (CEMP), including a Pollution Incident Response Plan (PIRP). Best practice will be adopted throughout all phases of development, following current guidance. Surface water drainage will be designed to comply with Scottish Environment Protection Agency (SEPA) guidelines.

During the operational phase an Operational Environmental Management Document will be in place, ensuring best practice is followed. This will include an updated Pollution Incident Response Plan taking account of operational activities and risks.

Additionally, active communication with linked and adjacent developments will be undertaken to avoid any cumulative impacts to the water environment and coastal processes.

Taking into account the prescribed mitigation measures, the assessment concluded that the development will not result in any significant effects on the water environment or coastal processes.

6 NOISE

6.1 Introduction

A Noise Assessment was carried out by members of the Institute of Acoustics to determine the impacts of construction and operational activities on noise sensitive receptors surrounding the site. The methodology was agreed in consultation with THC Environmental Health Department taking account of Scottish Government guidance and British Standards. The assessment involved;

- Measurement of existing noise at five representative sensitive receptors surrounding the proposed development. Receptors were chosen in the hamlets of Balnabruaich, Balnapaling and in the village of Cromarty (as shown in NTS Figure 6 - Noise Monitoring Locations);
- Review of proposed construction activities, schedules, locations and noise data;
- Calculation and assessment of construction noise at the most exposed sensitive receptors informed by 3D computer noise modelling to calculate worst-case scenarios of combined construction activities (as shown on NTS Figure 7 – Noise Modelling Locations);
- Measurement of existing operational noise generating activities within Nigg Energy Park;
- Review of existing and proposed operational activities, locations and noise data;
- Calculation and assessment of operational noise at the most exposed sensitive receptors informed by 3D computer noise modelling to calculate operational noise;
- Recommendations for noise mitigation and management measures for construction and operational activities.

6.1.1 Potential Impacts

Construction

Construction works will generally be carried out on weekdays and weekends during the daytime period (7am – 7pm). There may be occasions where suction dredging will require to be carried out over a 24 hour period. During the evening and night-time it is expected that on-site generators could be operational throughout the evening and night, therefore this assessment was also considered.

The threshold level for each location had to be calculated for daytime evening and night-time noise, taking account of the baseline noise. The anticipated level was then compared to the existing level with the significance of effect being determined by the difference. Threshold levels for the weekday, evening and weekends are different, with more stringent targets being applied to the more sensitive evening, night-time and weekend periods. The main noise producing activities for each period are summarised in Table 2 – Summary of Significance of Impacts below;

Table 2 – Summary of Significance of Airborne Noise Impacts

Time period assessed	Noise Generating Activities	Impact
Weekday Daytime	Concurrent piling and dredging works over 2 week period	Neutral at all receptors
Weekend Daytime	Concurrent piling and dredging works over 2 week period	Significant, Adverse at Balnapaling Neutral at all other receptors

Time period assessed	Noise Generating Activities	Impact
Evening	On-site generators and 24 hour suction dredging	Neutral at all receptors
Night-time	On-site generators and 24 hour suction dredging	Slight, Adverse at Balnapaling Neutral at all other receptors

Operational

During the operational stage, there is the potential for noise from ships berthing, loading/unloading activities, and transfer of materials to/from the laydown area to impact upon existing residents. The assessment considers the change in noise levels between existing and proposed operations.

Daytime noise from proposed operations at the East Quay and Laydown Area is predicted to result in an increase in noise levels at sensitive receptors of between 0.2dB(A) at receptors on George Street & Forsyth Place in Cromarty, and 1.3dB(A) at receptors in Balnapaling. The significance of the increases in noise level varies between Neutral/Slight at George Street & Forsyth Place in Cromarty, and Slight at Balnapaling. The noise levels are predicted to be unchanged at receptors in Balnabruaich and Shore Street in Cromarty. An increase in noise levels of less than 1dB(A) at Receptors in Cromarty shall not be perceptible to the listener, and is therefore considered as insignificant. The predicted increase in noise levels of 1.3dB(A) at receptors in Balnapaling is considered likely to be mostly imperceptible, and therefore also insignificant. There are no significant adverse effects in terms of the EIA Regulations during the daytime.



Example of Noise Monitoring Location set-up at Shore Street, Cromarty

Night-time

Night-time noise from proposed operations at the East Quay and Laydown Area is predicted to result in an increase in noise levels at sensitive receptors of between 0.1dB(A) at Balnabruaich and 1.4dB(A) at Balnapaling. The increase in noise levels in receptors in Cromarty varies between 0.2dB(A) at Forsyth Place, and 0.4dB(A) at George Street & Shore Street. The significance of the increases in night-time noise level are Neutral/Slight at all receptors. An increase in noise levels of less than 1dB(A) at Receptors in Balnabruaich and Cromarty shall not be perceptible to the listener, and is therefore considered as insignificant. The predicted increase in noise levels of 1.4dB(A) at receptors in Balnapaling is considered likely to be mostly imperceptible, and therefore also insignificant. There are no significant adverse effects in terms of the EIA Regulations during the night-time.

6.2 Mitigation

6.2.1 Construction

Potential mitigation for noisy activities upon the properties at Balnapaling include:

- Where possible, scheduling piling operations not to take place at the weekend;
- Using shrouding techniques when piling. .

6.2.2 Operational

Site-wide mitigation and management measures have been discussed and agreed upon with the Applicant, in order to off-set the slight, imperceptible increase to the existing noise environment as a result of the proposed development.

7 TRAFFIC AND TRANSPORT

7.1 Introduction

The assessment considered the potential effects of construction and operation on the surrounding road network and nearby sensitive receptors (i.e. schools, hospitals, residential areas).

The assessment was comprised of the following considerations;

- Description of the study area and existing local/strategic road networks;
- Assessment of the likely impact of increased traffic levels (i.e. increased environmental effects);
- Identification of suitable mitigation measures;
- Description of residual effects post mitigation.

The methodology used in this assessment adheres to that set out in the IEMA Guidelines and addresses issues raised within THC Scoping response.

The study area includes the public road network in the vicinity of the proposed development and the route to the site from the wider strategic road network, including the A9 and the B9175. The unclassified road linking the B9175 and Castlecraig Quarry is also considered within this assessment, albeit, traffic count surveys were not undertaken along this route. Traffic count locations are shown in NTS Figure 9.

7.2 Potential Impacts

Terrestrial construction traffic is generally expected to be between 07:00 and 19:00 on weekdays and 07:00 to 13:00 on Saturdays and daytime deliveries are likely to be staggered. Staff are likely to arrive and depart before the network peak AM and PM periods (which are generally 08:00 – 09:00 and 17:00 – 18:00 respectively).

A significant proportion of the construction materials will arrive to the site by sea and, therefore, will not impede upon HGV movements. In consideration of materials to be imported via the public road network, HGV loads and vehicle trips are estimated to be:

- *Imported crushed rock from Castlecraig Quarry – 912 loads (1,824 two-way vehicle movements);*
- *Imported concrete from ready-mix plant in Alness – 155 loads (310 two-way vehicle movements); and*
- *Construction staff – 20 at most, likely to arrive in two works mini-buses.*

In order to consider a worst-case, robust scenario, the assessment assumes that all staff will be travelling by single-occupancy car (40 two-way vehicle movements) and concrete importation is concentrated over a two week period of the 12 month construction stage.

The assessment concluded that a negligible increase (<10%) was anticipated for total traffic and HGV along the B9175, at Arabella and A9 during the busiest construction week. A negligible increase was also predicted for the B9175 at Nigg Energy Park.

Locally resourcing rock for armouring and surfacing works will incur an additional 1,824 two-way HGV movements between Castlecraig Quarry and the access to Nigg Energy Park. Assuming this is scheduled over the course of a month, this would equate to approximately 90 two-way HGV trips per day (assuming 5 delivery days per week). The potential environmental effects of these movements have been considered and measures would be put in place to account for ferry traffic and core path users, including giving way and appropriate speed limits.

During the operational stage, all large components will be delivered to and exported from the proposed development by sea. Operational traffic associated with the proposed development will therefore comprise staff travelling to and from the site, predominantly in private cars. The Applicant has informed that during the

operational stage, the level of staff vehicle trips generated would be negligible, particularly when compared to the existing fluctuation in staff vehicle movements that occur at the Nigg Energy Park facility according to contract work underway at any one point in time.

7.3 Potential Effects after Mitigation

The assessment identified no significant environmental effects from the proposed development, but in good practice, a Construction Traffic Management Plan (CTMP) will be in place prior to the commencement of construction works. This will identify measures to reduce numbers of construction vehicles and associated impacts through such means as programming, routing and appointment of a 'Construction Traffic Manager'.

The assessment concluded that all effects associated with an increase in HGV construction traffic from the proposed development are deemed to be negligible, and Not Significant (for severance; driver delay; pedestrian delay and amenity; accidents and safety; and dust and dirt).

Operationally, it is intended that all large components will be delivered and exported by sea, with no impact upon HGV movements in the study area. It should also be noted that staff numbers will not exceed those assessed under the construction stage. Therefore, it is concluded that any effects associated with a small number of additional car trips will be negligible and classed as Not Significant.

8 OTHER ISSUES

Air Quality, Population and Human Health, Climate Change and Natural Disasters were scoped out of full impact assessment while those which were reduced in scope included Landscape and Visual, Cultural Heritage, Ornithology, Terrestrial Ecology and Navigation. Consultees agreed that no significant effects were anticipated for any of these topics at the initial Scoping stages.

Desk-based assessments and technical reports were compiled to support those studies which were reduced in scope, including Protected Species (including bats); Habitats Regulations Appraisal (Ornithology); Landscape and Visual Appraisal and Archaeological Desk-Based Assessment (DBA).

The only significant effects anticipated from all the topics included within Other Issues were predicted within the Landscape and Visual Appraisal, which returned only very localised impacts upon views from Nigg Ferry Terminal (VP1) and Cromarty Beach (VP2).

9 CONCLUSIONS

This NTS summarises the findings of the Nigg East Quay EIA Report. This has been shaped by several months of survey, consultation and assessment. The purpose of the EIA process is to establish potentially significant environmental effects and avoid or mitigate these where applicable.

The EIA identified some potential effects, some of which are considered to be significant in nature. Mitigation proposals have been identified to address the significant effects. A detailed schedule of mitigation is included in the EIA Report. The below table shows all effects of the proposed development after mitigation has been applied.

Table 3 – Summary of Significance of Impacts

	Construction Phase Impacts	Operational Phase Impacts
<i>Marine Ecology</i>	Not Significant Subject to mitigation outlined in the Marine Mammal Mitigation Protocol, construction impacts from piling and dredging are not anticipated to be significant.	Precautionary approach taken in the assessment of effects for Invasive Non-Native Species (INNS) as current and predicted dispersion is not quantifiable for the proposed development.
<i>Water Environment, Soils and Coastal Processes</i>	Not Significant Minor, negligible magnitude of effects post-mitigation	Not Significant Negligible magnitude of effects post-mitigation for all receptors, low magnitude of impact for tidal regime, wave climate and sediment transport.
<i>Airborne Noise</i>	No significant effects anticipated for weekday daytime, evening or night time. Weekend daytime significant impacts were identified for a two-weekend overlap of dredging/piling works at Balnapaling.	Not Significant Effects not significant at any time of day for any receptor during the operational phase.

	Construction Phase Impacts	Operational Phase Impacts
<i>Traffic and Transport</i>	<p>Not Significant</p> <p>All effects associated with an increase in HGV levels (i.e. severance, driver delay, pedestrian delay and amenity; accidents and safety; and dust and dirt) are deemed to be negligible during the construction stage.</p>	<p>Not significant</p> <p>Operational impacts associated with vehicle movements (i.e. staff car trips and HGV movements) are considered to be negligible and not significant.</p>
<p><i>Other Issues</i></p> <p><i>(inc. Terrestrial Ecology, Ornithology, Landscape and Visual, Cultural Heritage, Air Quality, Navigation, Population and Human Health, Climate Change and Natural Disasters)</i></p>	<p>Subject to the mitigation measures specified in Chapter 9: Schedule of Mitigation there are anticipated to be no significant effects across all topics, with a small exception in landscape and visual terms. These were localised effects upon views from Nigg Ferry and Cromarty Beach during operation. These are not anticipated to compromise important landscape or visual interests within the study area.</p>	

List of Non-Technical Summary Figures

NTS Figure 1 Site Location Plan

NTS Figure 2 Consenting Context Plan

NTS Figure 3 Environmental Designations

NTS Figure 4 Proposed Site Layout

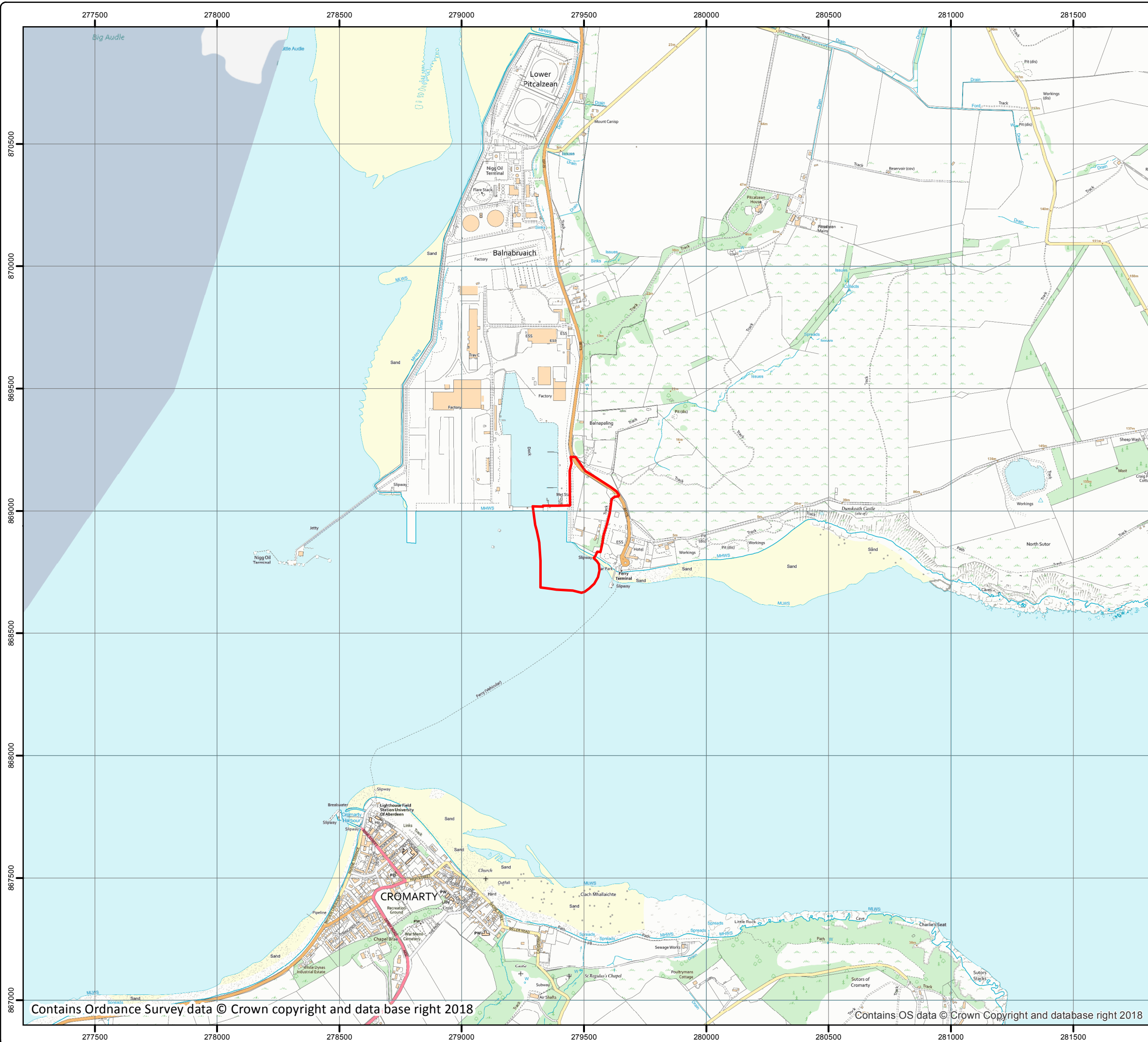
NTS Figure 5 Dredge Disposal Location Plan

NTS Figure 6 Shellfish Protected Areas

NTS Figure 7 Noise Monitoring Locations

NTS Figure 8 Noise Modelling Locations

NTS Figure 9 Traffic Counter Locations



Legend

Site Boundary

Do not scale this map

Client

Global Energy Nigg Limited

Project

Nigg East Quay

Title


Figure 1.1 - Site Location Plan

Status

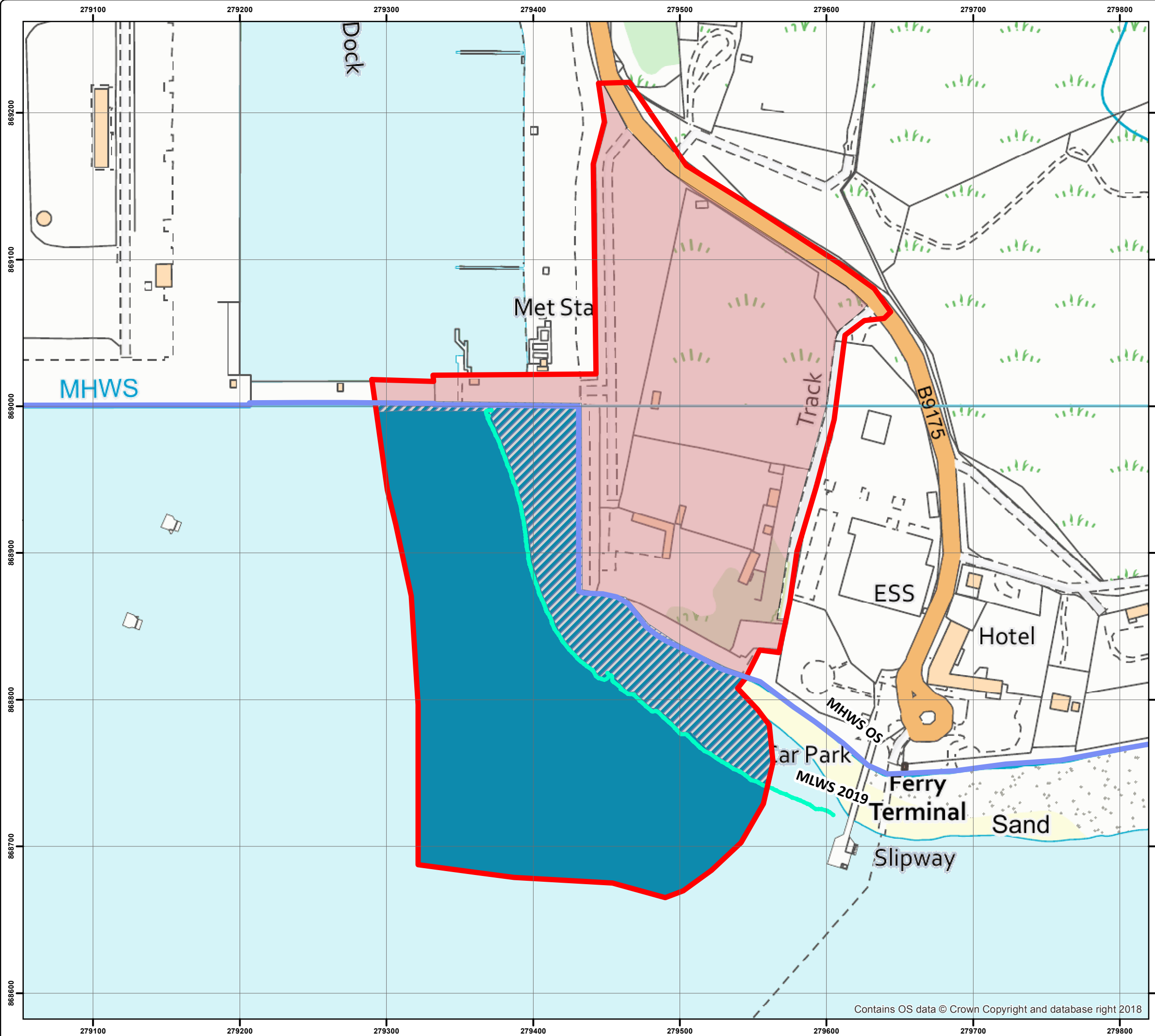
FINAL

Drawing No.	Revision
671906-001	

Scale	A3	Date
1:15,000		12 Feb 2019
Drawn	Checked	Approved
SMC	JEP	MH



Craighall Business Park, Eagle Street, Glasgow, G4 9XA
Tel: 0141 341 5040
Fax: 0141 341 5045



- Legend**
- Site Boundary
 - MHWS OS Mapping
 - MLWS Feb 2019
 - Intertidal Zone (overlapping of consenting boundaries)
 - Marine Scotland Licencing (below MHWS)
 - Town and Country Planning (above MLWS)

MHWS derived from OS mapping.

MHLS derived from merged 'February 2019' and 'April 2018' Clyde Surveys bathymetry surveys.

Do not scale this map

Client
Global Energy Nigg Limited

Project
Nigg East Quay

Title
Figure 1.3 - Consenting Context Plan

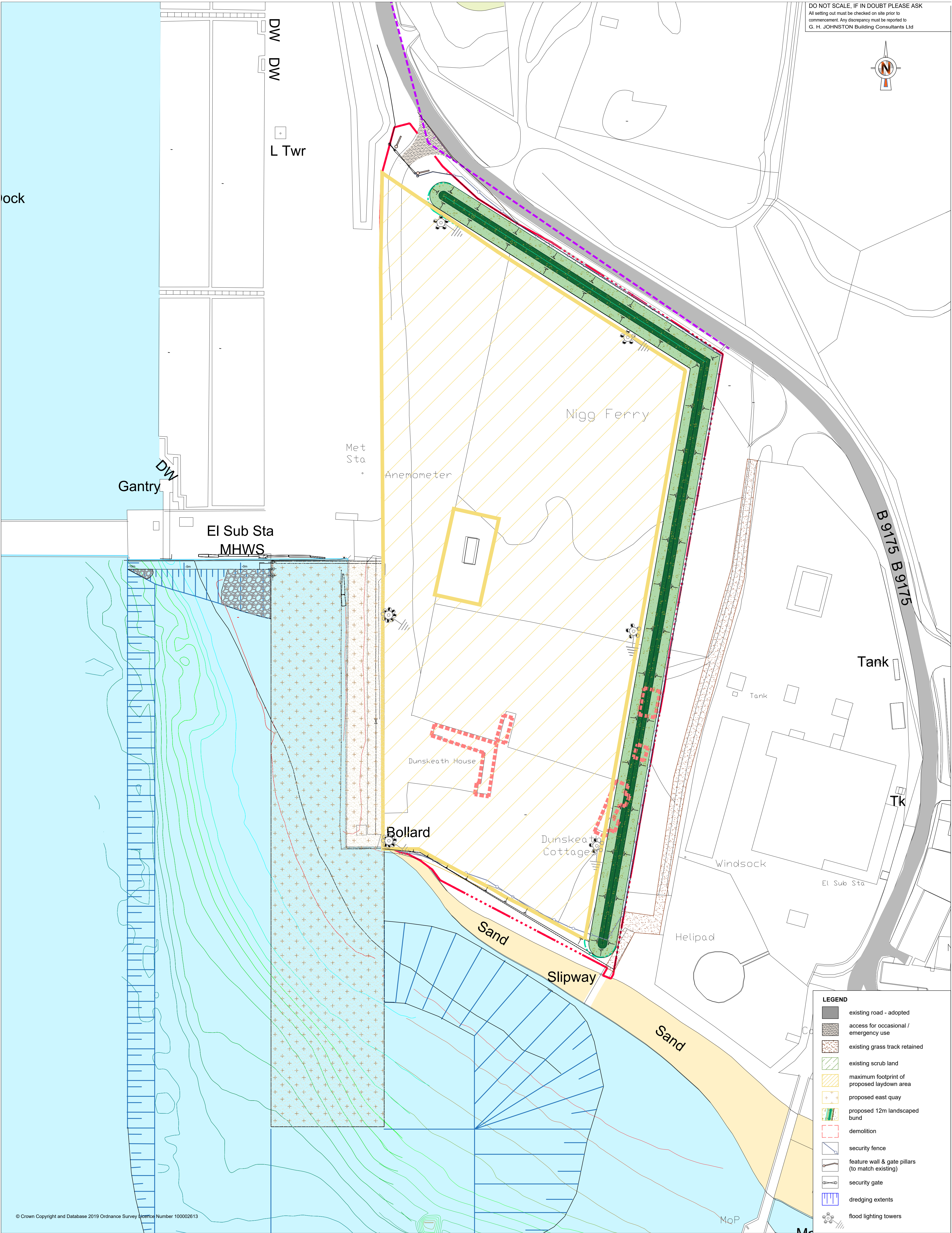
Status
FINAL

Drawing No. 671906-009	Revision
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Scale 1:2,500	A3	Date 12 Feb 2019
Drawn EQ	Checked JEP	Approved CP

EnviroCentre

Craighall Business Park, Eagle Street, Glasgow, G4 9XA
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REVISIONS			
Rev.	Description	Drawn	Date

Notes

Client
Global Energy Nigg Ltd

Project
Formation of East Quay Nigg

Drawing
Proposed Site Plan

Scale
1:750@A1

Date
06.2019

Drawn by
ca

Project no
2494

Dwg no
PL004

Rev

Planning Application

DO NOT SCALE, IF IN DOUBT PLEASE ASK
All setting out must be checked on site prior to commencement. Any discrepancy must be reported to G. H. JOHNSTON Building Consultants Ltd

LEGEND

existing road - adopted

access for occasional / emergency use

existing grass track retained

existing scrub land

maximum footprint of proposed laydown area

proposed east quay

proposed 12m landscaped bund

demolition

security fence

feature wall & gate pillars (to match existing)

security gate

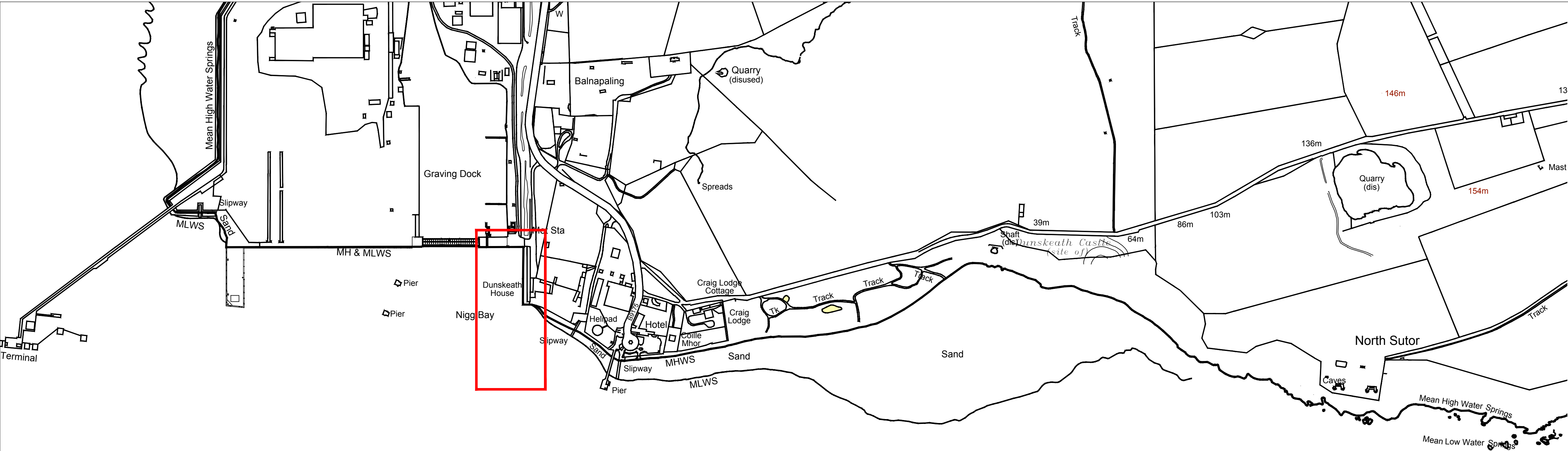
dredging extents

flood lighting towers

G.H.JOHNSTON
BUILDING CONSULTANTS LTD

WILLOW HOUSE
STONEFIELD BUSINESS PARK
INVERNESS IV2 7PA
Email: technical@ghjohnston.co.uk

TEL (01463) 237229

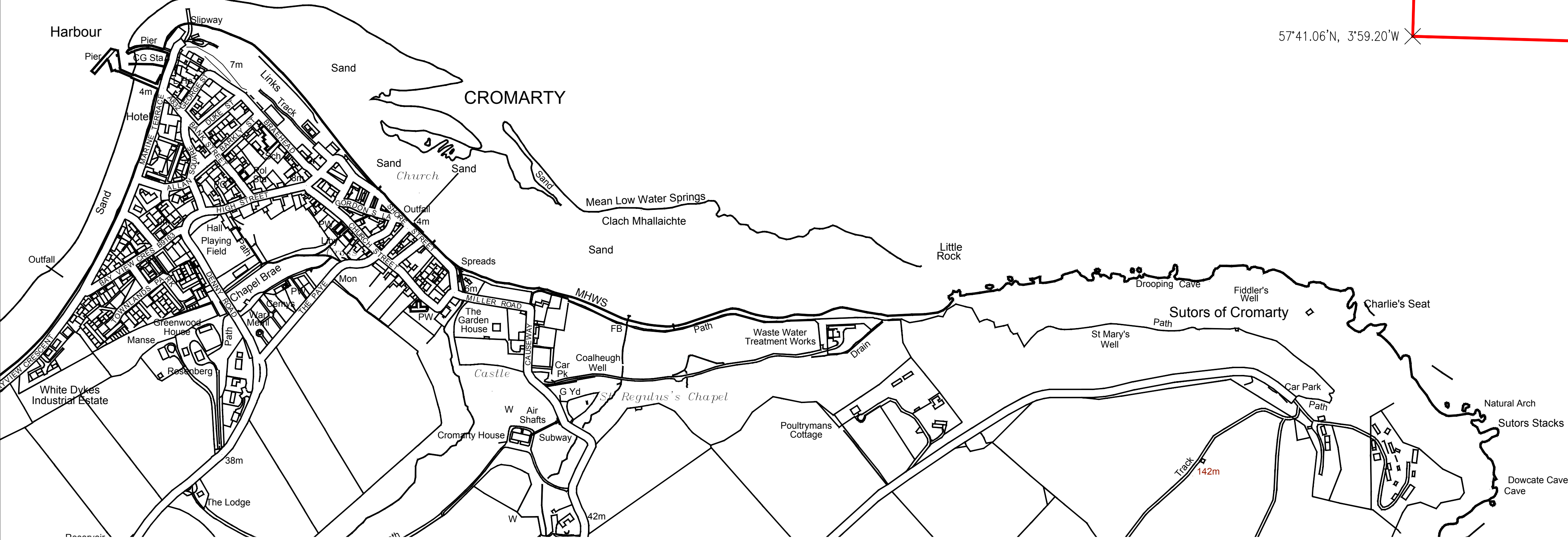


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Cromarty Firth



DRAFT



REV	DATE	REVISION DESCRIPTION	DRN	VER
THIS DRAWING IS COPYRIGHT . . . DO NOT SCALE FROM THIS DRAWING.				

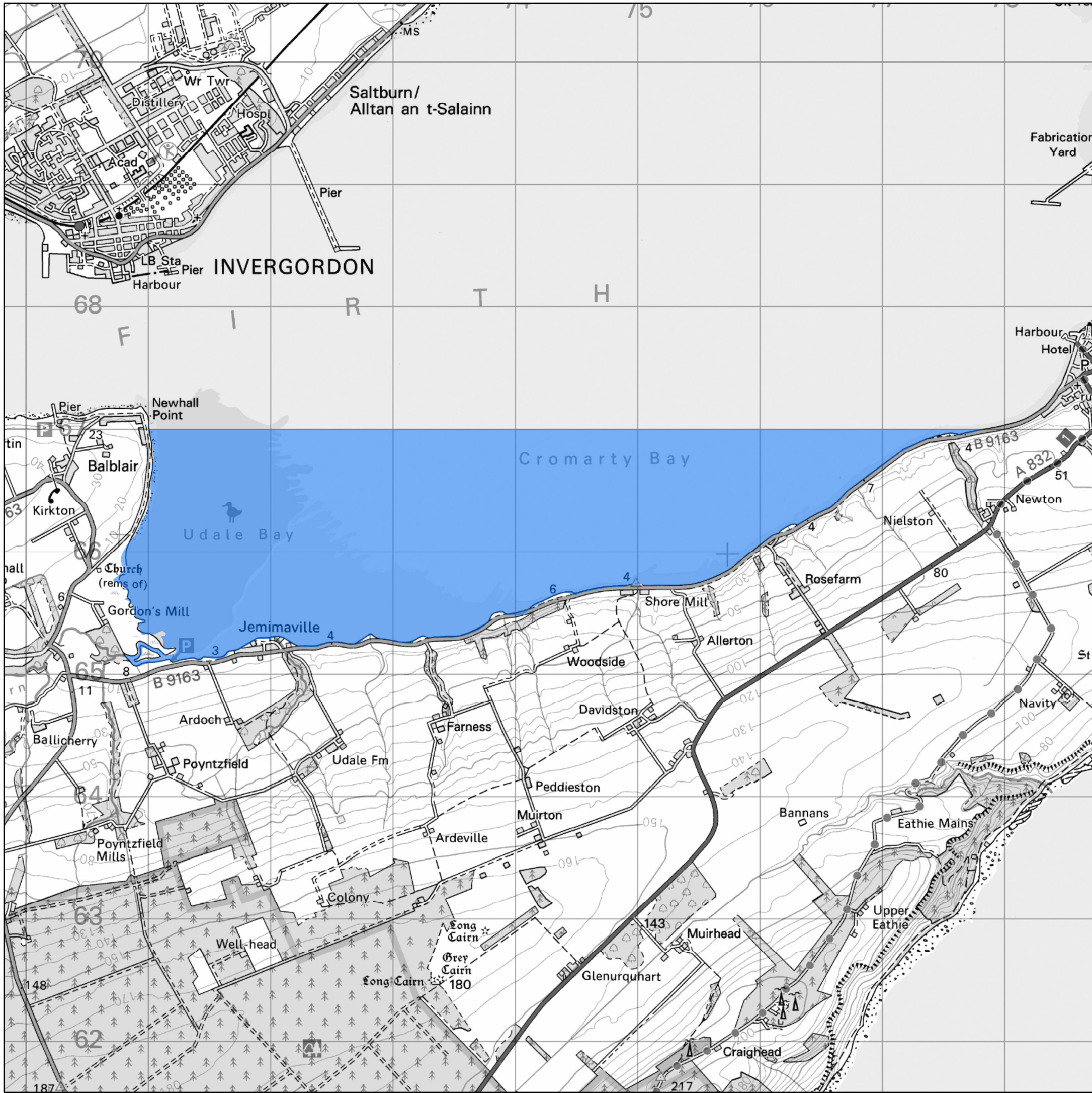
Arch Henderson

142 St. Vincent Street, Glasgow G2 5LA.
Tel : 0141 227 3060 - Fax : 0141 248 9542
www.arch-henderson.co.uk - email : glasgow@arch-henderson.co.uk

Offices in : Aberdeen, Dundee, Falkland Islands, Glasgow, Inverness, Lerwick, Southampton, Stromness and Thurso

Civil Engineers
Structural Engineers
Principal Designers
Architects
Geotechnical services
Environmental services

PROJECT :		NIGG ENERGY PARK	
TITLE : DEFINITION DRAWING DREDGED MATERIAL OFFSHORE DISPOSAL AREA			
DRAWN : K.S	DATE : 09.04.19	VERIFIED : M.S.	APPROVED :
SCALE : (A1) 1:5000		DRAWING STATUS : DRAFT	
DRAWING No : 185062/013		REV : /	



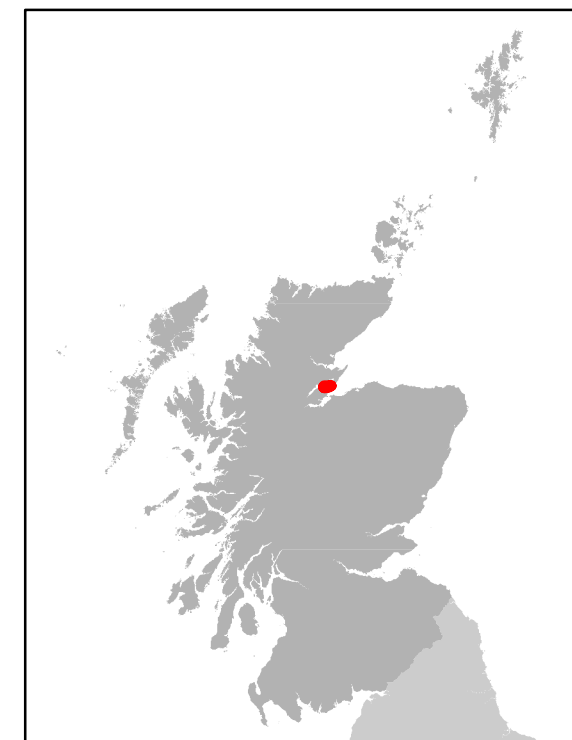
Scotland River Basin District

Map 11

Cromarty Bay



Area identified as a shellfish water protected area



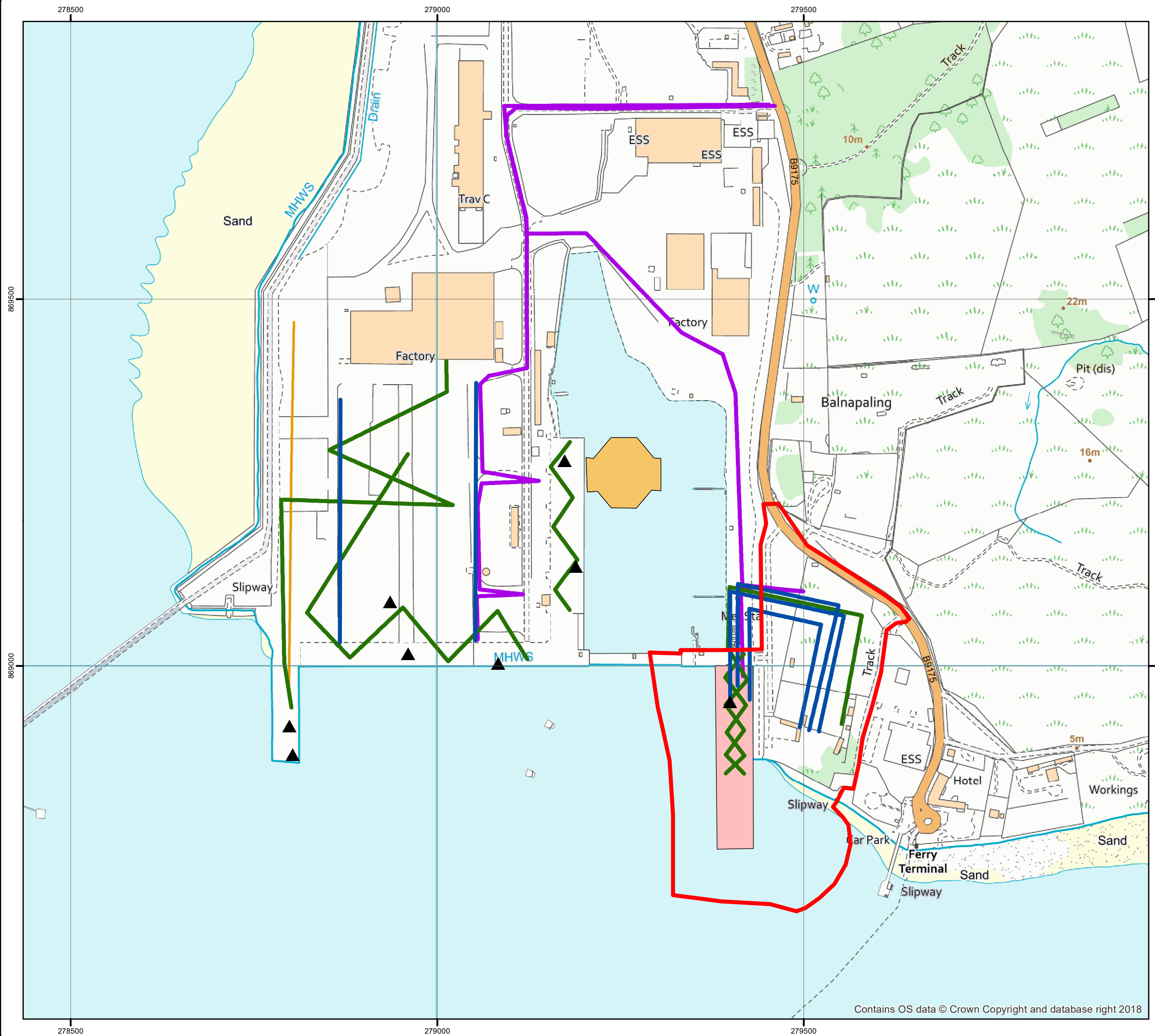
This map identifies an area of coastal water or transitional water within the Scotland River Basin District for the purposes of the Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013. The Order designates this area of coastal water or transitional water as a shellfish water protected area for the purposes of Part 1 of the Water Environment and Water Services Act (Scotland) 2003.

Signed _____

Dated _____

A member of the staff of the Scottish Ministers

Sources: Shellfish Waters, Scottish Government 2013
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Scottish Government GI Science & Analysis Team
November 2013, Job: 5362ac



- Legend
- Site Boundary
 - Proposed East Quay
 - Ocean Endeavour Rig
 - SPMT (Pair)
 - 16 ton FLT
 - HGV Routes
 - Blade Tractor
 - Cranes

Do not scale this map

Client
Global Energy Nigg Limited

Project
Nigg East Quay

Title
Noise Modelling Locations

Status
Draft

Drawing No. 671906-021	Revision
---------------------------	----------

Scale 1:5,000	A3	Date 03 April 2019
Drawn CC	Checked AH	Approved CC



Craighall Business
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Glasgow, G4 9XA
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Fax: 0141 341 5045



- Key
- Site Boundary
 - Traffic Counter Locations



Systra LTD
124 St Vincent Street
Glasgow
G2 5HF

Client:
Global Energy Nigg LTD

Project:
**East Quay
Nigg**

Title:
**Figure 7.2
Traffic Counter Locations**

Date: June '19	Scale: N.T.S	Drawn By: SM	Checked By: BF	Approved By: SL
Drawing Status: -		DWG No: 108490/I/ATC/001		Rev: A