TERMS OF REFERENCE

FOR THE DETAILED ENGINEERING DESIGN OF A NEW FISHING PORT AND MULTI-PURPOSE JETTIES ON SANTIAGO AND SÃO NICOLAU ISLANDS AND INCLUDING ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENTS

JULY 2025

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1 BACKGROUND AND CONTEXT

Cabo Verde's tourism sector has been a key economic driver but remains vulnerable due to its concentration in a few islands, limited local value chain integration, and environmental pressures. To address these challenges, the Government of Cabo Verde, with World Bank support, is implementing the Resilient Tourism and Blue Economy Development (RTBED) Project which aims at promoting diversification, inclusion, and sustainability in tourism and ocean-based sectors, aligned with national strategies such as Strategic Plan for Sustainable Development (PEDS II), the National Investment Plan for the Blue Economy (PNIEB), and the Tourism Operational Plan (POT).

Through the Second Additional Financing approved in 2024, project funding expanded to US$75 million and extended activities across a total of six islands. The new investments included in the project focus on key blue economy infrastructure—such as fishing ports, jetties, and maritime terminals—across the islands. These works aim to improve inter-island connectivity, boost fisheries value chains, and increase resilience to climate and economic shocks.

These Terms of Reference support the preparation of detailed engineering designs and environmental and social assessments for a set of blue economy-related investments in two islands, ensuring alignment with national regulations and the World Bank's Environmental and Social Framework.

2 SCOPE OF THE CIVIL WORKS TO BE DESIGNED

The scope of the civil works to be designed comprises:

Table 1 – List of civil works and location

Project Activity – Santiago Island	Brief Description
Construction of new fishing port in Ribeira da Barca Municipality of Santa Catarina	Extension of existing jetty to be protected by 2 rubble mound breakwaters to provide safe mooring basin for the fishing and tourist boats.
Offloading jetty in Calheta São Miguel Municipality of São Miguel	Construction of a new piled jetty for the offloading of semi-industrial vessels in an exposed area.

Project Activity - São Nicolau Island	Brief Description
Multi-purpose jetty in Carriçal Municipality of Ribeira Brava	Construction of a jetty in prefabricated caissons in a remote village to provide maritime connection with Preguiça and Tarrafal.

Outline designs of the above works are included in Annex 1.

3 OBJECTIVE OF THE ASSIGNMENT

The objective of this assignment is to carry out an engineering analysis of the current proposals included in Annex 1, together with the Environmental and Social Impact Assessment consistent with the Legislation of Cabo Verde, the World Bank Environmental and Social Framework and the WBG EHS Guidelines, culminating with Detailed Engineering Designs (DED) and bidding documents to upgrade the inter-connectivity and coastal fisheries value chain in accordance with relevant international best practices. Specifically, the Joint-Venture (Engineering/Environment) Consultant, henceforth called "*the consultant*" will be responsible for carrying out the following:

1. Engineering review of the outline proposals of the marine structures listed in Table 1;
2. Full set of Environmental and social studies;
3. Upgrading of the outline proposals of the structures into detailed preliminary designs together with the economical and financial feasibilities;
4. Development of the Detailed Engineering Designs (DED), including drawings, specifications and Bills of Quantity;
5. Development of the Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP);
6. Preparation of the bidding documents;
7. Resettlement Action Plan (RAP) if and where required;
8. Stakeholder Engagement Plan (SEP);
9. Labour Management Procedure (LMP);
10. Assisting the client with the evaluation of the bids.

4 SCOPE OF SERVICES

Task I – Inception Report

Data Collection - The consultant shall visit and examine the project sites listed above where the services shall be provided and obtain all information necessary for the preparation of the project inception report. The consultant shall provide a specific Project Quality Plan in accordance with the principles of ISO 9001. The consultant shall also prepare and update throughout the project a Design Basis Report comprising codes and standards applied for the project.
For all structural design work, Eurocodes shall be the basic system, supplemented as necessary by other international or Cabo Verdean codes, directives or rules. The design life for all the static structures (*floating pontoons excluded*) shall be 75 years and shall include all the IPCC recommendations for climate change and resilience, including sea level rise. The consultant shall prepare, maintain and update as required, a detailed implementation schedule for the planned engineering work and construction services.

During this phase, the consultant shall also review the policy, legal and administrative framework within which the ESIA will be carried out. The consultant will develop the outline of the ESIA report based on this review and the direct requests from the Ministry of Agriculture and Environment and World Bank team. The review will also include the relevant international environmental agreements which the Republic of Cabo Verde is a party to and will identify the national environmental and social legislation, the applicable WB ESS, , and the Environmental, Health and Safety guidelines of World Bank Group (WBG).The Consultant shall also review the most pertinent regulations and standards governing environmental quality, health and safety, protection of sensitive areas, protection of endangered species, siting of proposed facilities, land use, climate change, sea level rise and water use.

Task II – Preliminary Engineering Design, Social Assessment and Environmental Field Studies

The consultant shall review the outline designs provided by the client and firm them up to preliminary engineering design proposals for discussion with the stakeholders, including the client. Simultaneously, the consultant shall embark on collecting detailed information on the baseline conditions which shall enable the consultant to predict and analyse the project risks and impacts, and to propose measures or actions to avoid, minimize, reduce or mitigate specific risks and impacts of the project. The consultant should prepare environmental and social baseline data at an appropriate level of detail sufficient to inform characterization and identification of risks and impacts and mitigation measures. The baseline data shall include but are not limited to information on the following:

i) Physical environment: Topography, bathymetry, geology, soils, wave climate and meteorology, water quality and sediment assessment, ambient air quality; surface and groundwater hydrology, existing sources of noise and air emissions, existing water extraction, available water resources, water users and polluted water discharges;
ii) Biological environment: flora, fauna, rare or endangered species, sensitive habitats, including wetlands, parks or reserves, significant natural sites focusing on marine bio-diversity, and develop a Biodiversity Management Plan (BMP) and a Water Resources Management Plan (e.g., preventing water pollution) for the project sites and its surroundings;
iii) Socio-economic environment: population, land use, particularly agricultural land use in the area, planned development activities, settlement and community structures, employment, distribution of income, goods, and services, recreation, health and cultural properties. This section should provide information regarding those community members more likely to be affected by project activities;
iv) Social assessment on the fisheries value chain including fishers, fishmongers, fish processors and equipment suppliers that may be temporarily affected; in order to adequately assess the impact of the temporary economic displacement and,
v) Gender-based violence (GBV) risk assessment: The consultant will be required to conduct GBV risk assessment and provide an action plan for identified project related GBV risks (with focus on risks of sexual exploration and abuse or sexual harassment related to project activities). Measures must include code of conducts and training on its content for workers, information campaigns on SEA/SH risks and measures for population and procedures how SEA/SH complaints will be received and managed including information on local GBV service providers offering medical care, psychosocial assistance and legal aid where survivors could be referred for care. The action plan can be standalone or incorporated in the project overall Environmental and Social Management Plan.
vi) Social and Conflict Analysis: existing tensions and inequality within society (both within the communities affected by the project and between these communities and others); that can have a negative effect on stability and human security.
vii) The consultant shall provide a comprehensive multi-criteria Evaluation. Multi-Criteria Evaluation Opinions on the most important factor regarding public infrastructure projects vary among people. Some think economic efficiency and adequacy as tax usage is the most important, but some think effectivity in solving social problems is more important. Others may give importance to preserving the environment, landscape, history, and culture. The project implementation environment also cannot be ignored. A project without a satisfactory implementation environment cannot be conducted even with impeccable financial or economic evaluation results. Project implementation environment here refers to technical difficulty, consensus building with stakeholders, and obtaining understanding and cooperation from residents. Therefore, all infrastructure investments must also be evaluated by multiple criteria that take both the consciousness of stakeholders and implementation environment into account.

The consultant shall describe the existing environment and social situation at each proposed construction site as follows.

1. Current detailed bathymetric mapping of the entire project area extending down at 1.0 metre intervals to the -10.0-metre contour and covering the project area at a scale of 1:1000. The extent of the survey shall also cover the offshore area needed for nearshore hydraulic modelling, if and when required;
2. Current onshore topographic survey of the surrounding area at a scale not smaller than 1:1000 showing all salient features, including but not limited to access within the town area, utilities, etc.;
3. Details and cross-sections of existing structures within the project area;
4. Details and cross sections of any planned reclamation, rock bund, quay walls, jetties and any dredging for an access channel and turning basin if required;
5. Detailed geomorphologic description of the site backed up by a detailed geotechnical investigation of the site. The extent of the geotechnical investigation shall cover both land and marine areas where piling, dredging or excavation are envisaged;

6. Details of the planned sourcing of materials in terms of rubble and/or cohesionless backfill quantities and their geotechnical suitability for the proposed structures. The identified quarry's geotechnical report must support the volumes of the mineral resources required for the project;
7. Detailed benthic map of the longshore habitats;
8. Chemical assessment of the water column;
9. Wave data within the project site correlated to wind directions, sea currents and tidal streams;
10. Layout, size and capacity of resource networks, if any, such as sewage outfalls, potable water supply, power supply;
11. Detailed traffic analysis in and around the project area with special reference to the quantification of traffic flows, quantification of pedestrian flows, identification of committed roads, baseline air quality data and noise levels at selected points and identification of development planning likely to generate excess traffic;
12. A review of existing data and/or information on boat traffic (both fishing and tourist) at the site and to and from all neighbouring villages;
13. A review of existing data and/or information on the species of marine organisms (in the sediments and water column), marine mammals of the site, including sighting frequencies and, if required, a cetacean desk study if the site is also a tourist/diving destination or a turtle nesting site;
14. location maps of any type of activity discharging directly or indirectly effluent into the aquatic environment, including distant but connected watercourses, such as sewer outfalls, onshore fish farms, slaughterhouses, industrial concessions, factories, mines, quarries and other industries;
15. Location maps of neighbouring facilities and social structures, like places of worship, entertainment venues, tourist hot spots, hospitals, cemeteries, etc.

a) Detailed methodology for the bathymetric mapping - The single beam bathymetric survey shall be a Class 2 survey as indicated in the latest edition of the US Army Corps of Engineers, Engineering Manual EM 1110-2-1-1003 dated November 2013, Hydrographic Surveying. The vessel positioning systems and/or modes utilised on this contract shall conform to the allowable horizontal positioning criteria based on a Class 2 survey as prescribed in EM 1110. The electronic positioning system shall be capable of meeting this standard of accuracy at a distance not exceeding 6 km offshore. This should be accomplished by differential GPS methods and automated real-time logging of positional data. The bathymetric survey shall be calibrated for the Lowest Astronomical Tide level or Chart Datum and plotted on Autocad to a scale of 1000 on the local plane coordinate.

b) Detailed methodology for the topographic mapping – The Topographic and Planimetric detail maps shall meet or exceed ASPRS (American Society of Photogrammetry & Remote Sensing) Class 1 accuracy standards (limiting *RMS* error in X or Y coordinates limited to 500 mm). Unless otherwise specified, the grid system shall be established on the local plane coordinate system with coordinate values properly annotated and shown at the top and right edge of each map sheet. Multiple map sheets shall contain an index of the street layout oriented to each sheet. The map shall be plotted on Autocad to a scale of 1000 on the local plane coordinate.

c) Detailed methodology for the geotechnical investigation - The geotechnical studies for the structures outlined in Table 1 shall incorporate boreholes over land and water as required. Boreholes for piling and rock anchoring shall be drilled up to 30 metres into the seabed or until competent deposits are encountered.
Each borehole shall include a full borehole log, sampling and full laboratory tests (Liquid Limit, Plastic limit, Plasticity Index, Particle Size Distribution, Triaxial UU Tests, Shear Box Tests for granular or cohesive soils and RQD, specific gravity, density, porosity and compression tests for competent rock). Seabed sampling of sediment for Particle Size Distribution and Specific Gravity is required in cases of longshore transport and where coastal modelling is required.
All the latest ASTM standards/codes of practices, used in or which are applicable to the site investigation, testing, and determination of soil parameters, are to be cited where relevant in the report. The geological formation and the type of deposit shall be indicated. The structural

characteristics of the soil mass are to be described. Details should be given of the presence and spacing of bedding features, fissures, porosities and other relevant geological characteristics.

d) Detailed methodology for benthic studies - A detailed benthic survey is required to permit an assessment of the present state of the benthic conditions (baseline data) obtaining at the project sites to provide the environmental planning authorities and the design engineers with a set of guidelines for the implementation of the proposals. The benthic study shall cover the loss of habitats and decimation of biota through smothering or dredging, disturbance to habitats and species through loss of sand or deposition on benthic habitats/species within the area of coverage, disturbance to habitats and species from dredging operations, damage to benthic vegetation and alteration of habitat resulting from reduced availability of light due to the presence of suspended sediments in the water column and damage to benthic vegetation and alteration of habitat resulting from increased phytoplankton populations in the water column due to increased nutrient levels. The mapping should identify and map the benthic communities, indicate the presence or absence of protected habitats, identify all major fauna species and identify and map outstanding physical features and habitats.

e) Detailed methodology for the hydraulic modelling studies - At Ribeira da Barca, the scope of the modelling studies is to refine the outline design concept of the layout and cross section of the breakwaters in Phase 2 and Phase 3 scenarios as illustrated in Annex 1. The model studies should determine the wave climate at the site during a set number of storm conditions from the offshore sectors, the wave residuals inside the proposed development (Phases 2 and 3) and potential wave breaking at the harbour mouth (Phase 3) that may hinder navigation for the passenger (tourists on day outings) vessels entering or leaving the proposed basin. Particular attention will be devoted to the sensitivity of the proposed layout in Phase 3 to long period swell (resonance).
It is envisaged that the overall modelling studies will consist of three distinct mathematical models and a 3-dimensional physical model of the port basin at the required scale, for the Ribeira da Barca site. All models will incorporate adequate measures to simulate sea level rise. The hindcast models will incorporate statistical data for the 1, 5, 10, 20, 50, 75 and 100-year return periods. The output from the model will be in the form of tabulated significant wave heights for the 1, 5, 10, 20, 50, 75 and 100-year return periods at selected analysis points within the basin area. Adequate basin model calibration shall be carried out prior to repeating the storm conditions for the recommended engineering layouts in Phase 2 and Phase 3.

f) *Detailed methodology for vehicle and vessel traffic flows* - The detailed vehicle and vessel traffic analysis in and around the project area shall quantify current and projected traffic flows during both the construction phase and operation. The quantification shall include baseline air quality data, noise levels at selected points and identification of development planning likely to generate excess traffic. The scope of the air quality assessment studies is to provide baseline data on the basic air parameters at the project sites. Baseline studies shall consider Total Suspended Particles (TSP), PM10 and PM2.5, and unburned hydrocarbons

Task III – Engineering Design Proposals

Following the above studies, the consultant shall provide an updated preliminary engineering design of the proposals accompanied by a detailed description of the anticipated changes to the environment that are planned or may be caused by the planned development.

i. Based on available documentation as well as complimentary investigations, the consultant shall advise the client on possible refinements to the proposed design of the development;
ii. In the case of the new fishing port, details of the planned changes in the shoreline and bathymetry of the site and their effect on the coastal hydrodynamics, supported by an adequate mathematical and/or physical three-dimensional hydraulic modelling.

Task IV – Environmental and Social Impact Assessments

Construction and management of infrastructure inevitably has some effect on the environment. Though infrastructure projects are planned and developed to improve social welfare, they can generate adverse effects if they damage the environment. Recovery will take a great deal of time and money, and complete restoration may be impossible. Thus, the consultant is required to conduct surveys for assessing and forecasting environmental and social impacts, and must define necessary measures against those potential impacts. Further, the results and evaluation of surveys should be disclosed to the public, and residents' opinions should be reflected in the project contents.

The consultant shall carry out an Environmental and Social Impact Assessment (ESIA) of the project to assess its environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect and cumulative environmental and social risks and impacts throughout the project life cycle, including those specifically identified in the Environmental and Social Standards (ESSs) 2–10 of the World Bank's Environmental and Social Framework (ESF).

The ESIA will evaluate the project's potential environmental and social risks and impacts; examine project alternatives; identify ways of improving project selection, siting, planning, design and implementation in order to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts of the project. The ESIA will include stakeholder engagement as an integral part of the assessment, in accordance with ESS 10. It's crucial to anticipate, avoid, minimize or reduce risks and impacts to acceptable levels.

The consultant will ensure that the ESIA takes into account in an appropriate manner the Cabo Verde's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environment and social issues; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements; applicable requirements under the ESSs; and the Environmental and Health Safety Guidelines (EHSGs), and other relevant Good International Industry Practice (GIIP).

The ESIA will set out and apply a mitigation hierarchy, which will: (i). Anticipate and avoid risks and impacts; (ii). Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (iii). Once risks and impacts have been minimized or reduced, mitigate; and (iv). Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.

Environmental risks and impacts, including: (i) those defined by the EHSGs; (ii) those related to community safety (including road traffic safety); (iii) those related to climate change; (iv) any material threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity; and (v) those related to ecosystem services and the use of living natural resources, such as fisheries.

The assessment in addition to evaluate the project's potential environmental and social risks and impacts, will examine project alternatives; identify ways of improving project selection, siting, planning, design, and implementation, in order to apply the mitigation hierarchy for adverse environmental and social impacts and seek opportunities to enhance the positive impacts of the project.

Social risks and impacts, including: (i) threats to human security through the escalation of personal, communal crime or violence; (ii) risks that project impacts fall disproportionately on individuals and groups who, because of their particular circumstances, may be disadvantaged or vulnerable; (iii) any prejudice or discrimination toward individuals or groups in providing access to development resources and project benefits, particularly in the case of those who may be disadvantaged or

vulnerable; (iv) negative economic and social impacts relating to the involuntary taking of land or restrictions on land use; (v) risks or impacts associated with land and natural resource tenure and use; (vi) impacts on the health, safety and well-being of workers and project-affected communities; and (vii) risks to cultural heritage.

Climate Change and Disasters threaten the long-term sustainability of development. Over recent decades, the world has experienced a significant increase in the number, intensity, and impact of extreme weather events such as tropical cyclones, floods, droughts, and heat waves. Serious disasters including earthquakes and tsunamis have also caused significant loss of lives. Growing climate change and disasters pose challenges to economic growth and exacerbate existing vulnerabilities. Rapidly scaling up climate- and disaster-resilient infrastructure is key to sustainable development and inclusive economic growth. Disaster prevention is a typical and important social service that the central government and the local governments should provide, especially in countries where natural disasters such as floods, volcanic disasters and cyclones and landslides occur frequently. This requires highly technical knowledge and thorough research. In many cases, we do not know the exact time when disasters will happen, and most residents never think they may need to use disaster prevention services. In such a situation, the residents, who are the beneficiaries of this service, usually just request the service and are not involved in the concrete plan of the disaster prevention infrastructure. The consultant shall assess the potential impacts of climate change and disaster in the infrastructures and develop mitigations and adaptation strategies. The consultant is required to consider climate change in project structural design and siting location as appropriate, including consideration of both extreme weather and slow onset events, such as changing current patterns, temperature raising and sea-level rise.

The environmental and social assessment is a flexible process that can use different tools and methods depending on the details of the project and the circumstances of the Borrower, and should begin as early as possible in project identification and preparation.

Effects of the project to the environment and social well-being will be evaluated against issues such as land and soil, environmental pollution, health and safety, cultural integration and overview of benefits to the local residents.
Where the project involves specifically identified physical elements, aspects, and facilities that are likely to generate impacts, the risks and impacts identification process should include an assessment of the combined effects of the multiple components associated with the project (for example, quarries, roads, associated facilities). In situations where multiple subprojects occur in or are planned for the same geographic area, as described above, the consultant shall conduct a **Cumulative Impact Assessment** (CIA) as part of the risks and impacts identification process.

Cumulative impact assessment is an instrument to consider cumulative impacts of the project in combination with impacts from other relevant past, present, and reasonably foreseeable develop ments as well as unplanned but predictable activities enabled by the project that may occur later or at a different location.
Examples of cumulative impacts include effects on ambient conditions such as incremental contribution of pollutant emissions in an airshed, increase in pollutant concentrations in a water body, in soil or sediments or bioaccumulation; reduction of water flow in a watershed due to multiple withdrawals, increases in sediment loads to a watershed or increased erosion; interference with migratory routes or wildlife movement, increased pressure on the carrying capacity or the survival of indicator species in a given ecosystem, wildlife population reduction due to increased hunting, or more traffic congestion and accidents along roadways due to increases in transport activity.

Indirect and cumulative impacts must be considered if they are reasonably foreseeable. The consultant is not expected to assess or mitigate induced impacts due to their unknown, speculative, uncertain, or remote nature.

The environmental assessment of the designs shall incorporate impacts such as:

- Visual intrusion on the landscape;
- The underwater footprint of the project on underwater priority habitats;

- The impact on the hydrodynamic regime of the coast if sea defences are envisaged;
- The volume of materials to be used in the construction;
- The use of reactive cross-sectional designs of structures in the presence of beaches.

Experiences with marine work worldwide have shown that a modern approach must be utilized to ensure compliance with environmental legislation. Best Management Practise dictates that a Construction Management Plan (**CMP**) be set up at inception stage and approved by the competent authorities prior to the start of work on a marine construction site.
CMP (Construction Management Plan): Given the remoteness of the sites, the consultant shall recommend a CMP for each of the project sites using the following precautionary and anticipatory analysis with built-in safeguards against pollution of the environment:

- Detailed analysis of the logistics to transport to remote and isolated sites and place the required volume of specified materials;
- Technical assessment of any material to be dredged, equipment to be used and method and site for its disposal including any confined disposal requirements;
- Detailed impact assessment of other construction materials to be sourced (imported) for the construction activities, like cement and steel;
- Detailed assessment of occupational health and safety risks and hazards associated with the construction activities, and,
- Detailed assessment of community health and safety risks and hazards associated with the construction activities.

The environmental and social assessment of the operational stage of the fisheries related infrastructure shall incorporate recommendations on mitigation measures at outline design stage in order to tackle the reception and handling of all wastes in line with International Maritime Organisation (IMO) regulations, World Bank Environmental and Social Framework particularly Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management, and World Bank Group general and sector-specific EHS guidelines. In particular, the following issues should be considered:

- The reception and disposal of solid and wet fish processing wastes;
- The reception and treatment of all liquid sewage wastes;
- The reception and disposal of spent engine oil, oily bilge water and spilled fuel;
- The reception and disposal of toxic garbage (batteries and engine components); municipal solid waste (food packaging, glass and plastic bottles and other dunnage);
- And Health and safety issues associated with fish handling/processing facilities.

Wherever possible, the environmental and social studies shall compare economically viable and technically feasible alternatives to the proposed preliminary project designs. These should include the "*without project*" option.

The preliminary engineering design shall be accompanied by an outline cost estimate and a financial and economic feasibility study. The proposed design must consider the outcome and recommendations of the ESIA and social assessment field studies. The use of green infrastructure components is a requirement.

The Consultant shall prepare and present a presentation (preferably in Power Point) of the preliminary designs of all the structures to the clients (ENAPOR and the Municipalities of Santa Catarina, Sao Miguel, Porto Novo and Ribeira Brava) and all the stakeholders (including the World Bank) at a meeting to be attended by all the relevant private sector operators and stakeholders.

Task V – Environmental and Social Management Plan (ESMP)

The consultant shall prepare an Environmental and Social Management Plan (ESMP) for both construction, operational and decommissioning phases to identify: (a) the set of mitigation responses to potentially adverse impacts; (b) the institutional structure and strengthening required

to ensure that mitigation measures are implemented and (c) the monitoring program to be implemented to verify compliance with the recommended mitigations and measure the level of impacts produced by the proposed project. Specific details concerning each of these EMP components are discussed below. The Environmental and Social Management Plan (ESMP) shall include a clear Mitigation Plan and Monitoring Plan in line with the requirements of the Bank ESF.

The ESMP should clearly present estimated costs affiliated with proposed mitigation and monitoring actions as well as the parties/institutions responsible for each item of the ESMP implementation.
The consultant will present a table of all impacts for the pre-construction, construction, operations and decommissioning phases for all key project components. The preconstruction/design section of the matrix shall include recommendation for the design phase to avoid certain impacts.
The matrix will include

1. significant impacts to be expected;
2. proposed mitigation measures and their proposed timing;
3. which party will be responsible for incorporating the mitigating measure into the proposed project during construction and operation and which authority will be responsible for providing oversight that the mitigation measures are taken correctly, and,
4. estimated budget of the proposed mitigation measures and allocation of financing responsibilities.

The ESMP will also include a detailed waste audit covering all operations at the site of construction and the methods for their re-cycling or safe disposal. The wastes audit for each of the proposed components should cover the reception and disposal of sewage (field offices, hygiene and shower units, workshops), the storage and re-cycling of spent oils (engine oil and hydraulic fluids), potential fuel storage on site, storage and disposal of hazardous wastes (starter batteries, oil rags and contaminated spares) and construction debris.

The ESMP will also include appropriate excavation and dredging management guidelines to ensure that the construction site does not haphazardly discharge suspended sediment or re-suspend bottom sediments on project sites with a marine footprint. This will include:

- specific description, and technical details of monitoring measures required, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions in line with the standards which are applicable;
- monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).

The ESMP will also include a list of proposed institutional arrangements for the Grievance Redress Mechanism (GRM) for the population surrounding the proposed project sites with description of procedures adapted for registration and management of sensitive complaints like SEA/SH, that are confidential, and survivor cantered and include referrals to GBV service providers.
The ESMP will also include operational and programming safeguards to prevent local work practises from jeopardising the integrity of the CMP.

Task VI – Detailed Engineering Design (DED) and Tender Documents

Following feedback from the stakeholders during the presentation of the preliminary design and considering outcomes and recommendations from the ESIA and ESMP, the consultant shall be

required to prepare detailed draft final engineering design reports and drawings. This shall comprise:

- Detailed Design Drawings;
- Technical Specifications, including but not limited to:
  i. Preliminaries incl. requirements to Contractor's H&S - Environment Plan and Construction Management Plan; Demolitions and site clearances; berthing pontoons, bollards, navigational aids, steel, concrete including reinforcement, drainage, water and sewerage, power and lighting, paved areas and perimeter walls and fences.
  ii. Each construction item section shall at least contain: Scope; Materials; Workmanship incl. tolerances; Testing; Measurement for calculation of payment.
- Bills of Quantities (BOQ) organised in separate bills with detailed quantities including Daywork Rates, and Summary Sheet. The Bills shall be itemized and prioritized so as to allow the final Works Contract to be adjusted to meet budget.
- Priced Bill of Quantities, i.e. the Bills of Quantities completed with unit price estimates to provide updated construction budget. The BOQ cost estimates shall also include the costs for the update and implementation of the Environmental and Social Management Plan (ESMP), to be derived from the ESIA report.

In accordance with: World Bank "STANDARD BIDDING DOCUMENTS; Procurement of Works; October 2017. The consultant shall prepare the tender documents for the project organised in 5 volumes plus the ESMP:

Vol. 1: Instruction to Bidders (Prepared by the Client, with relevant technical inputs from the Consultant);
Vol. 2: Conditions
I. General Conditions of Contract. *Standard document not to be changed*;
II. Special Conditions: Special document to be prepared by the Consultant in accordance with any amendments required for the specific Works;
Vol. 3: Technical Specifications;
Vol. 4: Construction Drawings;
Vol. 5: Bill of Quantities;
ESMP (Environmental and Social Management Plan).

The ESMP shall be accompanied by an itemized Bill of Quantities for pricing by the bidders.

Task VII – Resettlement Action Plan (RAP) if required at a specific site

If and when the need arises, the consultant shall identify and estimate land requirement for the resettlement of any Project Affected Persons or PAPs. The identified land parcel/area shall be evaluated. The impacted owners/users of the land (if not reclaimed) shall be consulted in line with ESS-10 of World Bank's Environmental and Social Framework (ESF). The land acquisition, restrictions on the land use and involuntary resettlement shall be managed in line with ESS-5 and existing policies, acts and process of local government.

The Resettlement Action Plan (RAP) will be prepared to compensate project affected people (PAP). The RAP will be Prepared consistent in policy and context to the laws, regulations, and procedures of the Government of Cabo Verde and the World Bank's Environmental and Social Standards on Land Acquisition, Restriction on Land Use and Involuntary Resettlement (ESS-5).

The consultant shall submit a final RAP report incorporating all comments from the client and the Bank within 8 (eight) months after contract effective date.

Task VIII - Stakeholder Engagement Plan (SEP)

The environment, landscape, history, and culture are often formed through various processes and are treasured as a shared value within each community. Then the consultant may seek to build consensus with residents by holding workshops and having close communication with them. Understanding local opinions and reflecting them adequately in the design is important not only for smooth consensus building, but also for getting local residents to later cherish the infrastructure as their shared value.

The Environmental and Social Assessment recognizes the importance of open and transparent engagement of the project stakeholders as an essential element of good international practice, because it can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. It's more effective when initiated at an early stage of the project development process, and is an integral part of early project decisions and the assessment, management, and monitoring of the project's environmental and social risks and impacts.

It is fundamental to build consensus with the local stakeholders in order to maximize social welfare (objective of pure public goods type projects) and/or profit (objective of private business type projects) through the solution of problems by infrastructure investment. Infrastructure is basically built to improve the social welfare of the local community. Therefore, communities should generally welcome it. Upon development of these types of infrastructure, it is necessary for the consultant to have close and continuous communication with local residents from the early stages. This kind of dialogue and assembly with residents is important. These general assembly and focus groups meetings with experts where stakeholders including residents can understand deeply the contents and significance of a project. By using visual methods, their understanding will be more easily deepened. It is also important to make time to listen to criticism against the project and opinions on its modification.

The consulting firm and the Government are required to engage with stakeholders as an integral part of the project's environmental and social assessment and project design and implementation, based on the Resilient Tourism and Development of the Blue Economy in Cabo Verde Project's (P176981) SEP. The consultant will be required to develop a strategy for Stakeholders identification and mobilization that facilitates this engagement throughout the life of the sub project and that adapts consultation methods to different stakeholder groups (gender, age will be considered). The process of stakeholder identification and mobilization will involve the following:

- stakeholder identification and analysis;
- planning how the engagement with stakeholders will take place;
- disclosure of information;
- consultation with stakeholders;
- addressing and responding to grievances, and,
- reporting to stakeholders.

The consulting firm will be required to submit a draft SEP 10 months after contract signature.

Task IX - Labour Management Procedure

The Labour Management Procedure (LMP) under ESS-2 on Labour and Working Conditions is required for this project is already prepared in the frame of the Resilient Tourism and Development of the Blue Economy in Cabo Verde Project (P176981). Based on this LMP, a document will be prepared to facilitate planning and implementation of the sub project. The document will identify the main labour requirements and risks associated with the sub project and help the client to determine the resources necessary to address project labour issues. The consulting firm will be required to develop and submit a draft 10 months after contract signature.

5 DELIVERABLES AND PAYMENT SCHEDULE

The deliverables for the ESIA, design, tendering and contracting period shall comprise:

Document	Hard copy Number	Electronic copy 1 No.	Percentage Payment
Task I			
Inception Report, Quality Plan & Design Basis	3	PDF	10%
Outline of the ESIA reporting	3	PDF	
Task II			
Preliminary design, environmental field studies, and social assessment on fisheries value chain	3	PDF	20%
Task III	3	PPT	10%
Detailed Engineering Design Proposals			
Task IV	3	DOCX	10%
Environmental and Social Impact Assessment	3	DOCX	10%
Task V			
Environmental and Social Mitigation Plan			
Task VI			
Detailed Engineering Design and tender docs	3	PDF+EXCEL+PDF	20%
Task VII			
Resettlement Action Plan	3	DOCX	10%
Task VIII	3	PDF	5%
Stakeholder Engagement Plan			
Task IX	3	PDF	5%
Labour Management Plan			

Table 2 – Deliverables and Payment Schedule

The Consultant shall deliver the following output within the following prescribed timelines:

Documents & Reports	Submission Date
Deliverable I	Contract signature
Inception Report, Quality Plan & Design Basis	Latest end of Month 1
Outline of the ESIA reporting	Latest end of Month 1
Deliverable II	
a) Preliminary design, Environmental field studies:	
- Ribeira Barca	Latest end of Month 7
- Calheta	Latest end of Month 6
- Carriçal	Latest end of Month 8
b) environmental and social assessment on fisheries value chain	Latest end of Month 6
Deliverable III	
Detailed Engineering Design Proposals	
- Ribeira Barca	Latest end of Month 10
- Calheta	Latest end of Month 9
- Carriçal	Latest end of Month 11

Deliverable IV Environmental and Social Impact Assessment	Latest end of Month 10
Deliverable V Environmental and Social Mitigation Plan	Latest end of Month 12
Deliverable VI Detailed Engineering Design and tender docs - Ribeira Barca - Calheta - Carriçal	 Latest end of Month 13 Latest end of Month 12 Latest end of Month 14
Deliverable VII Re-settlement Action Plan	Latest end of Month 8
Deliverable VIII Stakeholder Engagement Plan	Latest end of Month 10
Deliverable IX Labour Management Plan	Latest end of Month 10

Table 3 – Deliverables Schedule

6 DURATION

The assignment will have a total duration of 14 (fourteen) months.

7 CONSULTANT PROFILE

As described previously, the consulting firm must be a joint venture between a specialized marine engineering firm and a certified environmental consultant. Single firm bids will not be eligible.

Marine Engineering firm: To effectively carry out the tasks for the detailed engineering design services, the marine engineering firm should have at least 15 years of experience in the conduct of Detailed Engineering Design (DED) in fisheries infrastructure or similar projects preferably with experience in remote areas logistics. Further, the firm must be ISO 9001-2015 certified and should be able to field key professional personnel with adequate educational and technical background, experience and capability in the fields of port planning and marine engineering.

Environmental firm: To effectively carry out the environmental and social impact studies, the environmental firm should have at least 15 years of general experience with at least 5 years (or a set number (three) of projects) in the marine field, including mathematical and physical modelling. The firm must be ISO 9001-2015 certified and must be a certified environmental consultant in its country of origin. The Environmental firm may enlist the services of independent field survey firms, geotechnical investigation firms and hydraulic laboratories.

7.1 STAFF COMPOSITION OF MARINE ENGINEERING FIRM

Table below identifies the firm's key-staff for this assignment.

Key Staff	Qualifications and skills	General Experience	Specific Experience
Team leader Senior Ports Engineer	➢ University degree and post-graduate qualification in port engineering or related coastal engineering field.	➢ At least 15 years of experience in the field of marine infrastructure, including fishing ports or small vessel ports	➢ Experience as Team Leader on at least 2 similar projects in relation to preparatory studies (feasibility studies, detailed design) of similar infrastructure with a minimum amount of EUR 5 million; ➢ Must be proficient in Portugues (oral and written) and in English (oral at least); ➢ Must be registered with a professional engineering institution; ➢ Familiarity with the region will be an asset.
Structural Civil Engineer	➢ Master's degree or equivalent in Civil/structural Engineering.	➢ At least 10 years of experience in the field of marine infrastructure, including fishing ports or small vessel ports.	➢ Experience as engineer on at least 2 similar projects in relation to preparatory studies (feasibility studies, detailed design); ➢ Must be proficient in English (oral and written); ➢ Familiarity with the region will be an asset.
Maritime Fisheries Economist	➢ Master's degree or equivalent academic degree in fisheries economics, finance, or similar field.	➢ At least 10 years of experience in the field of economic and financial analysis of fisheries infrastructure projects.	➢ Experience as economist/ financial expert on at least 3 similar fisheries projects in relation to economic and financial evaluation/appraisal; ➢ Must be proficient in English; ➢ Familiarity with the region will be an asset.
Geotechnical Engineer	➢ University degree and post-graduate qualification in soil mechanics.	➢ At least 10 years of experience in the field of marine infrastructure	➢ Experience as geotechnical engineer on at least 2 similar projects in marine foundations and/piling; ➢ Must be registered with a professional institution; ➢ Must be proficient in English; ➢ Familiarity with the region will be an asset.

Table 4 Marine Engineering Firm - Key Staff

The Consultant is free to mobilize additional experts (non-key staff) for specific tasks.

7.2 STAFF COMPOSITION OF THE ENVIRONMENTAL FIRM

Table below identifies the firm's key-staff for this assignment.

Key Staff	Qualifications and skills	General Experience	Specific Experience
Team leader Senior Environmental Scientist	➢ University degree and a post-graduate qualification in environmental management with significant knowledge and experience of coastal ecology.	➢ At least 15 years of international consultancy experience, including at least 10 years as team leader.	➢ Experience in evaluating the impact of ports, fisheries and other infrastructure on the coastal ecology; ➢ Familiarity with climate resilient marine infrastructure; ➢ Experience with international financial institutions would be an advantage; ➢ Fluency in English and Portuguese (oral and writing) is a must; ➢ Familiarity with the region will be an asset.
Coastal Modelling Scientist	➢ University degree and a post-graduate qualification in mathematical/physical modelling with significant knowledge of port design and modelling of coastal processes.	➢ At least 10 years of experience in the field of mathematical/physical modelling of port structures.	➢ Experience on at least 2 similar projects in relation to modelling studies (wave hindcasting, wave modelling, physical models); ➢ Must be proficient in English (oral and written). ➢ Familiarity with the region will be an asset.
Environmental Engineer	➢ University degree in environmental management with significant experience in nature conservation.	➢ At least 10 years of experience in the field of environmental management in a coastal and isolated setting.	➢ Experience on at least 2 similar projects featuring isolated communities; ➢ Must be proficient in Portuguese. ➢ Familiarity with the region will be an asset.
Social Expert	➢ University degree with post-graduate qualification in Sociology or Anthropology.	➢ At least 10 years of experience in similar projects.	➢ Experience on at least 2 similar projects featuring isolated communities; experience in social assessment on similar project; ➢ Experience in World Bank guidelines and policies, and E&S instruments, frameworks development (RAP, SEP, GBV, LMP and GRM); ➢ Must be proficient in Portuguese. ➢ Must be familiar with the region.

Table 5 Environmental Firm - Key Staff

The Consultant is free to mobilize additional experts (non-key staff) and specialist contractors for specific tasks.

8 RESPONSIBILITIES AND SUPPORTING DOCUMENTS

The PIU/UGPE will act as the representative of the study sponsor. Its main tasks will be:

(i) to provide the Consultant with all information likely to support him in the accomplishment of his mission;
(ii) to support the establishment of links between the Consultant and the entities involved in the implementation of the study;
(iii) to support the contacts, the identification of stakeholders as well as the implementation of consultation activities and surveys to be carried out;
(iv) to ensure that the services are carried out in compliance with the standards, texts in force and the rules of the trade; and
(v) to ensure the technical and administrative supervision of the Consultant's work.

The PIU/UGPE shall make available the following reports:

- All relevant and available data from previous studies (ADB, PNIEB);
- Design Standards of the Republic of Cabo Verde.

ANNEX 1 OUTLINE DESIGNS – SANTIAGO ISLAND

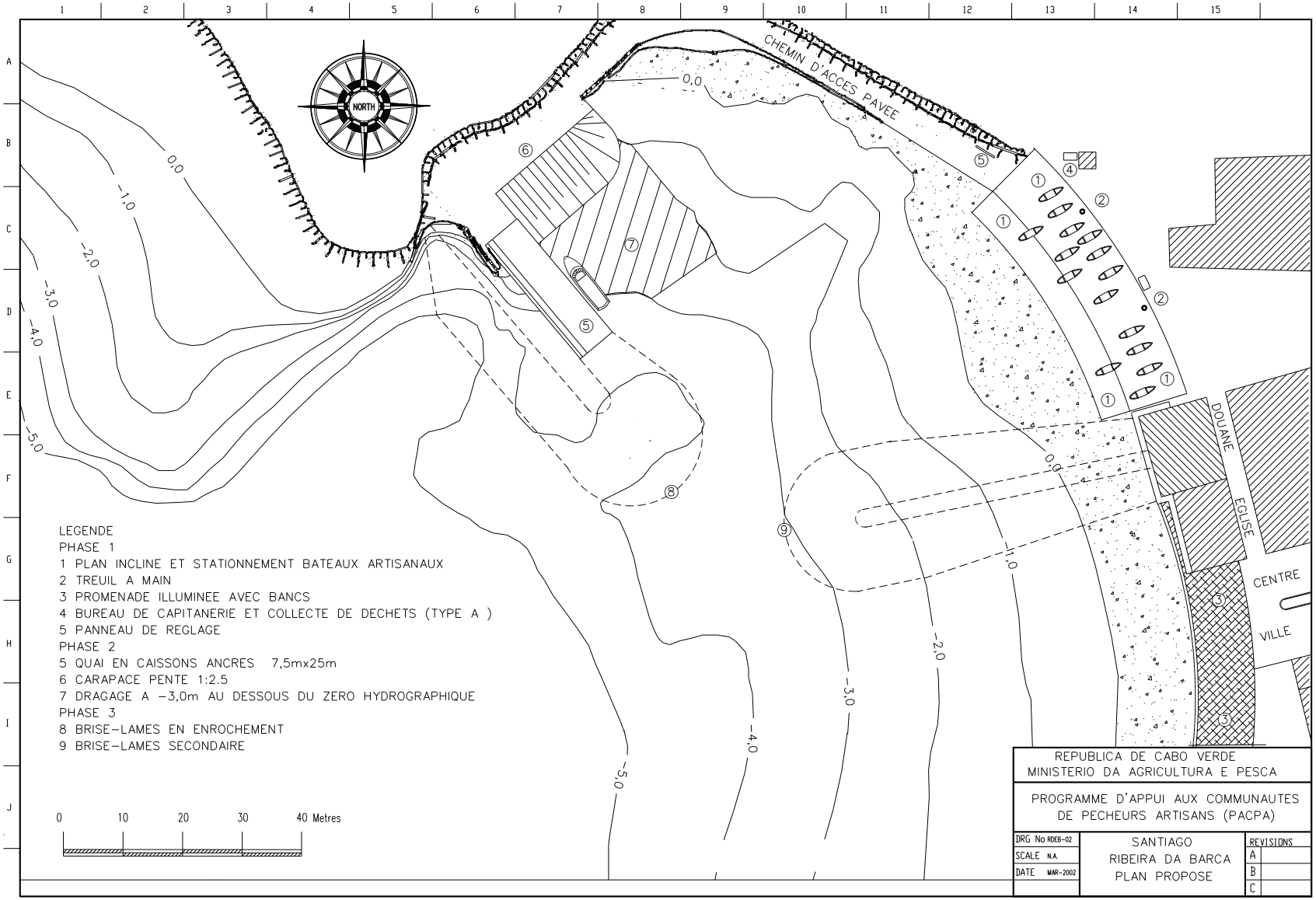

Figure 1 Proposed layout of new fishing port at Ribeira da Barca

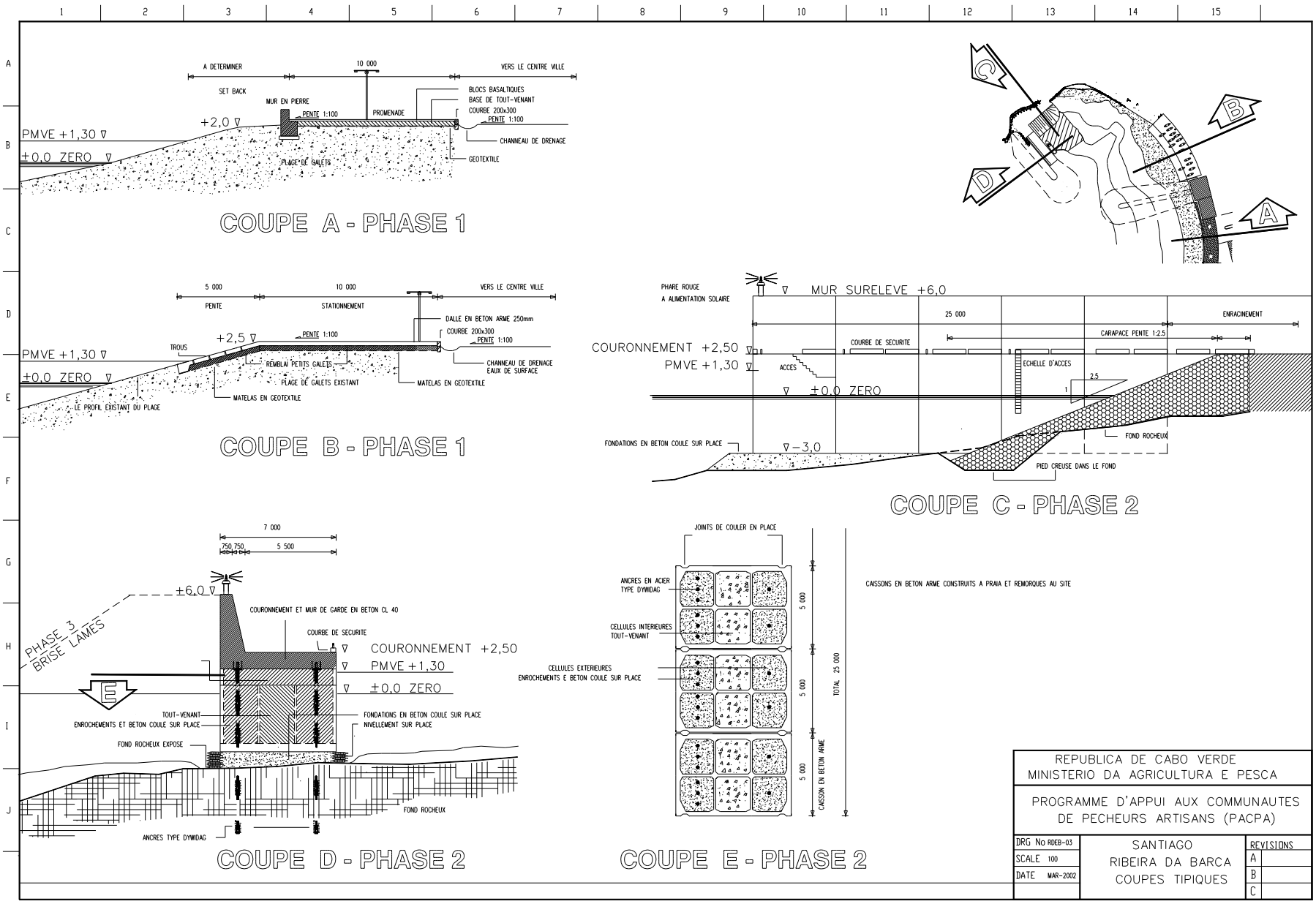

Figure 2 Proposed construction details – Ribeira da Barca

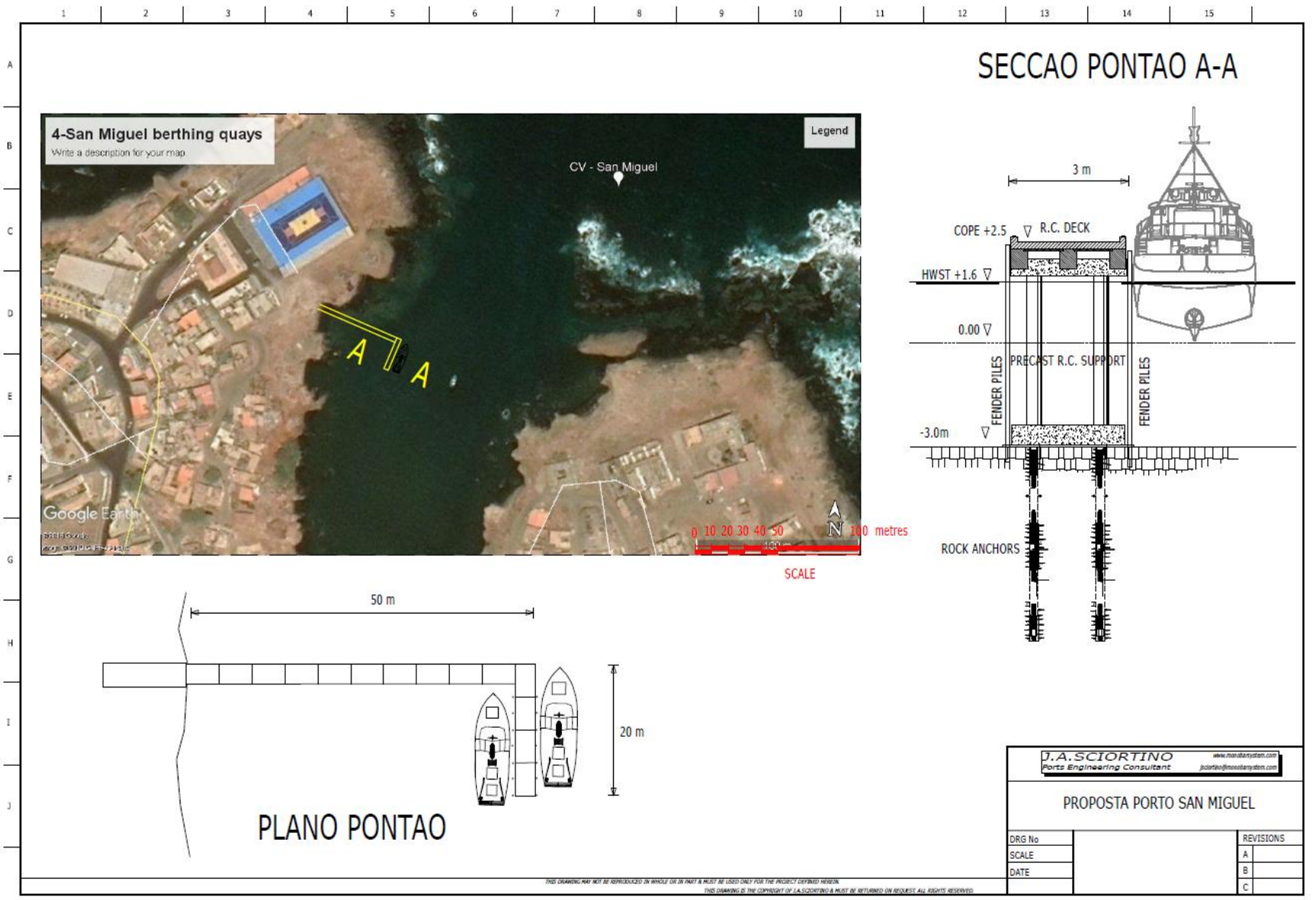

Figure 3 Proposed offloading jetty at Calheta São Miguel

ANNEX 1 OUTLINE DESIGNS – SÃO NICOLAU ISLAND

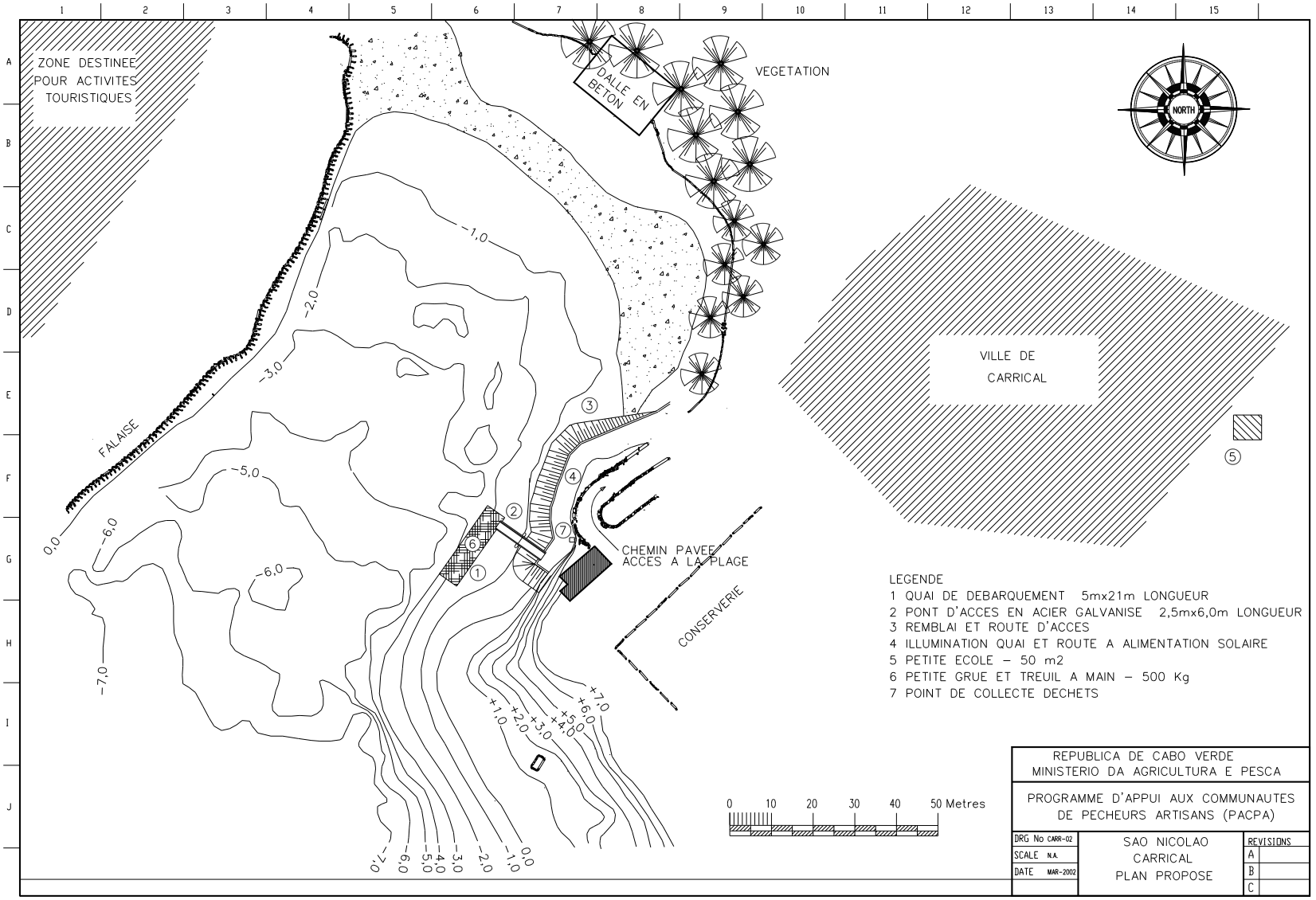

Figure 4 Proposed multi-purpose jetty at Carriçal

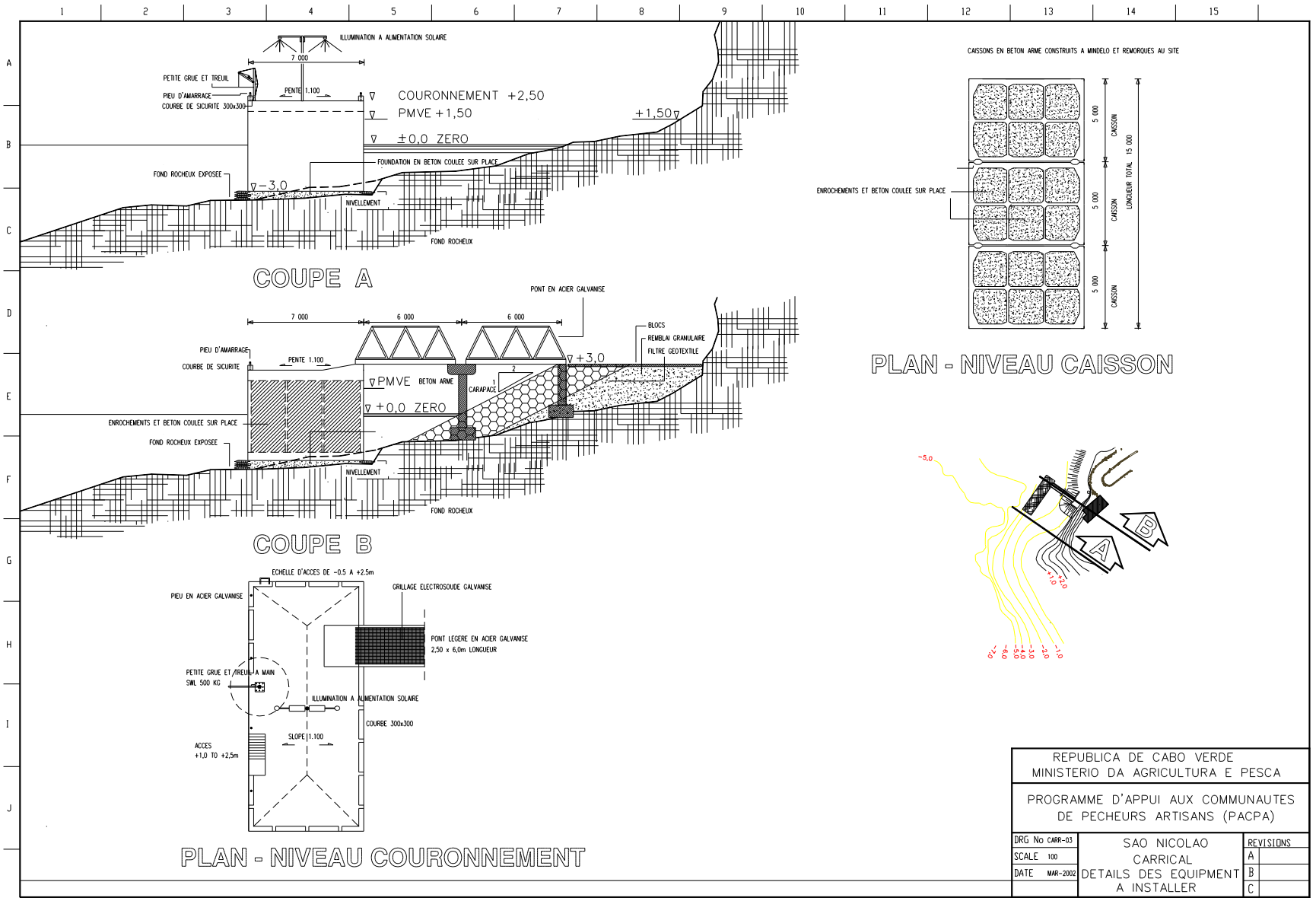

Figure Proposed construction details at Carriçal