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## **PROJECT DOCUMENT PROPOSAL**

### **INTRODUCTION**

The Ministry of Public Works of the Democratic Republic of Timor-Leste and China Overseas Engineering Group Co., Ltd. in joint venture with China Railway First Group Co., Ltd. of the People’s Republic of China hereinafter called the “COVEC-CRFG JV” signed the Contract known to be the Construction of Suai - Beaco Highway Road Project, Section 1, this project: Suai-Fatukai/Mola Section (Sta.3+920-Sta.34+275).

The project requires to setup Concrete Mixing Plants in 4 locations, Asphalt Mixing Plant, Stone Crushers, Screening and Washing Plants and Casting Yards in 2 locations and Stockpile areas. Details of every quarry and facilities locations are discussed in (sub-clause 2.2), this document. It is committed to implement all the requirements of this proposed Project Document (PD) and COVEC-CRFG company environmental policy as stated in the tender proposal and Contract.

The project will be supported by the Ministry of Finance and the Petroleum Infrastructure Development Project to finance infrastructures in the southern coast of the country that was decided as a high priority project in Timor Leste; The government urges that the petroleum sector development should provide a great prosperity to the country and this investment should not only aim to support to the oil industry, but also to provide a sustainable economic growth the nation. Implemented by Ministry of Public Works (MPW). This “Project Document” has been prepared by the contractor, COVEC-CRFG, is the primary environmental document for application of the environmental assessment and management identified in the Decree Law 05/2011 Environmental Licensing Law (ELL) in the Contract. The Project Management Unit (PMU) of MPWTC will manage and implement the project as it is financed by the GOTL’s development including implementation of environmental safeguards, mitigation measures and other requirements.

#### **1. Name, Address and Contact details of the Proponent**

Name of Company:	China Overseas Engineering Group Co., Ltd. in joint venture with China Railway First Group Co., Ltd. (COVEC-CRFG)
Address:	Floor 2, Seaview Apartment & Office Building, Av. de Portugal, Dili, Timor-Leste
Telephone:	+670 331 0997
Name:	Mr. Lin Mingming, General Manager, COVEC-CRFG JV Lda. Timor Leste

#### **2. Locations and Scale of the Project**

##### **2.1. The Main Highway Road Project**

The proposed project is located within the District of Covalima. There is no direct adverse impacts projected on the other districts since the activities involved in the project will be restricted within the Covalima between the sub-Villages from Talioan of Suai to Fatucaí/Mola in Zumalai as shown

on the layout stretch of the project limits in figure 1 and 2. The Construction of Section 1: Suai-Fatukai/Mola Section (Sta.3+920-Sta.34+275) This will start from Tali Oan, Suai to Fatukai/Mola, Zumalai in Covalima District, the section of the highway road in this contract having a total length of 30.355km.

## 2.2. The Project Facilities and Quarrying Pits

COVEC-CRFG is proposing to quarry six (6) borrow pits locations for embankment/fill use and two (2) river pits for quarrying granular and fine aggregates. After joint confirmation together with Lease Contract with the land owners and the local chiefs, it has been established to locate the following:

- 1) **For Raiketan River in Branch 2** in the sub-village of HOLBA, village of LABARRAI in the sub-district of SUAI will quarry for aggregates with approximately 29 hectares in area with the GPS coordinates of 9°16'25.38"S, 125°18'25.54"E. Within the vicinity of the camp will setup Stone crusher, screening and washing plant, asphalt mixing plant, concrete batching plant and casting yard having an estimated output quantity of aggregates of 75,000 Tons/year and fine aggregates of 4,800 Tons/year. The estimated area for occupancy of the entire facilities and camp including offices and accommodation for all employees of Branch 2 is 6.5 hectares under the lease contract with the private land owners. The distance from nearby residents in the area is approximately 1 km.
- 2) **For Mola River in Branch 4** in the sub-village of Zulotas, village of Zulo, sub-district of Zumalai will quarry for aggregates with approximately 13 hectares in area with GPS coordinates of 9°10'22.35"S, 125°26'51.74"E. Within the vicinity of the camp will setup stone crushers, screening and washing plants, concrete batching plant and casting yard having an estimated output quantity of coarse aggregates of 40,000 Tons/year and fine aggregates of 5,600 Tons/year. The estimated area for occupancy of the entire facilities and camp including offices and accommodation for all employees of Branch 4 is 15 hectares, under the lease contract with the private land owners. The distance from nearby residents in the area is approximately 2 km.

With the both whole river-way occupation for stone crusher plants and sand washer plants that will be built together. Other lesser capacity concrete batching plants with stockpile are also located in other respective locations of branches 1 and 3 camps. The locations of the proposed facilities are not less than 1 km away from the nearest settlements area.

- 3) **Borrow Pit 1** in branch 1 located in sub- village of Foho, village of Ogues, sub-district of Suai will quarry for embankment/fill with an approximate area of 54,000 sq. m. is the proposed location with GPS coordinates of Latitude 074 6710 and Longitude 897 1677.

The facilities in Branch 1 will setup a lower capacity Concrete Batching Plant (0.75 m<sup>3</sup> per batch) and Stockpile area. The estimated area for occupancy of the facilities including base camp for offices and accommodation of all employees under the lease contract with the private land owners of Branch 1 is 14,680 sq. m. The distance from nearby residents in the area is approximately 1 km.

- 4) **Borrow Pit 2** in branch 2 located in sub- village of Holba, village of Labarrai, sub-district of Suai will quarry for embankment/fill with approximately 3 Hectares in area is the proposed location with GPS coordinates of Latitude 075 3604 and Longitude 897 4720.

- 5) **Borrow Pit 3** in branch 2 located in sub- village of Holba, village of Labarra, sub-district of Suai will quarry for embankment/fill with approximately 4 Hectares in area is the proposed location with GPS coordinates of Latitude 075 4677 and Longitude 897 5184.
- 6) **Borrow Pit 4** in branch 3 located in sub- village of Aidantuik, village of Beco, sub-district of Suai will quarry for embankment/fill with approximately 3 Hectares in area is the proposed location with GPS coordinates of Latitude 075 4677 and Longitude 897 5184.

The facilities in Branch 3 will also setup a lower capacity Concrete Batching Plant and Stockpile area. The estimated area for occupancy of the facilities including base camp for offices and accommodation of all employees under the lease contract with the private land owners of Branch 3 is 16,600 sq.m. The distance from nearby residents in the area is approximately 1 km.

- 7) **Borrow Pit 5** in branch 4 located in sub- village of Zoac, village of Beco, sub-district of Suai will quarry for embankment/fill with approximately 2.43 Hectares in area is the proposed location with GPS coordinates of Latitude 076 2696 and Longitude 898 0142.
- 8) **Borrow Pit 6** in branch 4 located in sub-village of Galitas, village of Tashilin, sub-district of Zumalai will quarry for embankment/fill with approximately 2.5 Hectares in area is the proposed location with GPS coordinates of Latitude 076 7347 and Longitude 898 3714.

The Facilities such as, Concrete Batching Plants, Asphalt Mixing Plants, Sand Washing, Crushing Plants and Casting Yards, are all within Covalima District, which locations were approved by the District Authorities. Each of the facilities will be constructed and operated by following international best practices and quality standards for production and health and safety includes: (i) extraction and washing of sand from the river (ii) mixing cement aggregates and water in the batching plant to make concrete; and; (iii) extraction of gravel based materials.

Sources of aggregates and filling materials for the proposed highway project has an important role of the operation, the river and mountain quarry pits is a must. So COVEC-CRFG JV applies for the approval of excavation and quarrying to the Ministry of Petroleum and Mineral Resources of the Democratic Republic of Timor-Leste.

### 2.3. Works Adjacent to Rivers and Streams

The River has water flows all year round and during the works it will be necessary to carry out excavation of gravel and boulders in the river. If the wet season cannot be avoided, there could be the need to temporarily constrict water flows and dry out sections of river depending on their size and water volumes carried. These activities can result in a risk of channel shifts and erosion, particularly of river banks that would lose their vegetation cover, most particularly during floods.

Figure 1: Layout Limit of the Project

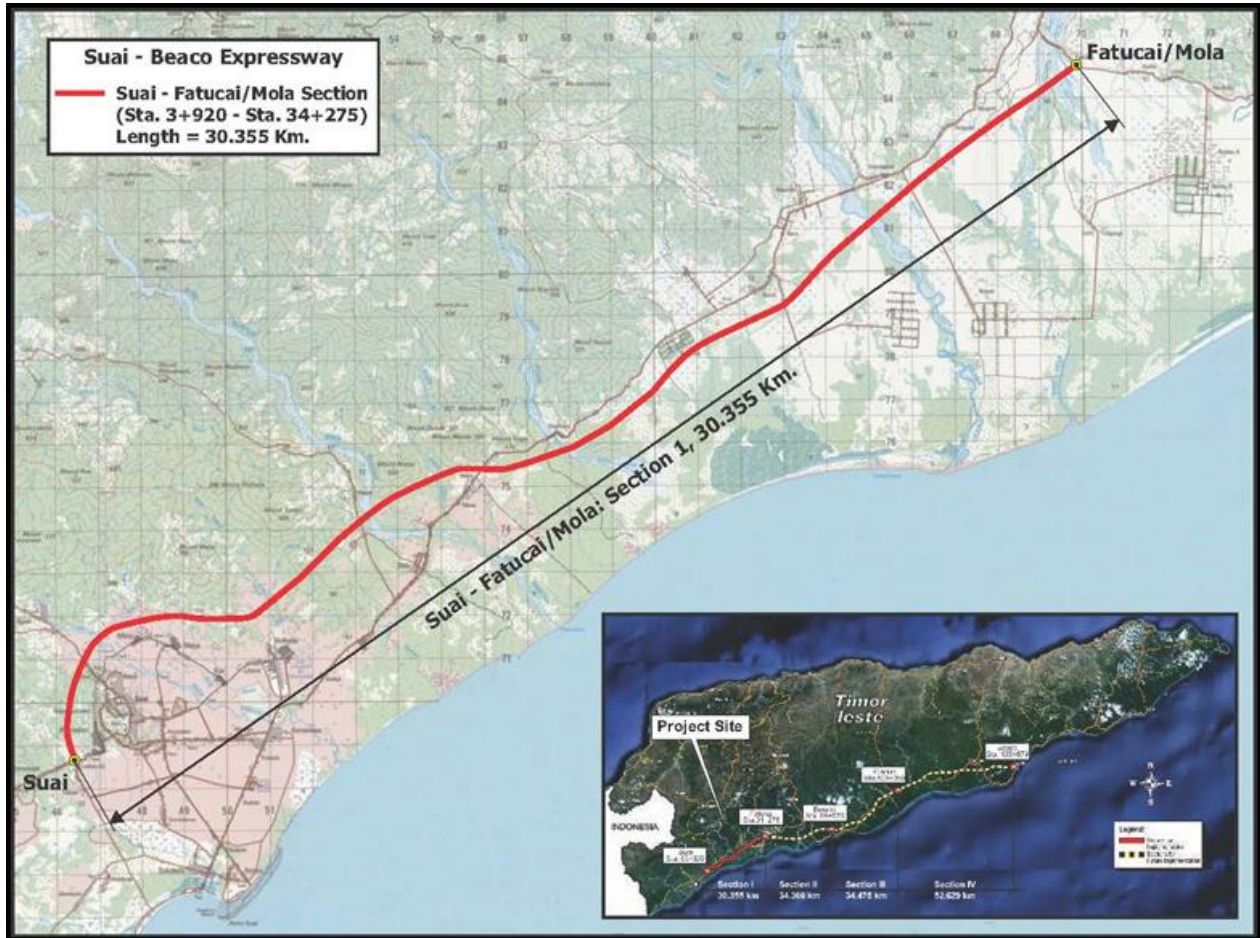


Figure 2: General Layout of Facilities Locations



Figure 3: General Layout of River Pits and Borrow Pits Locations

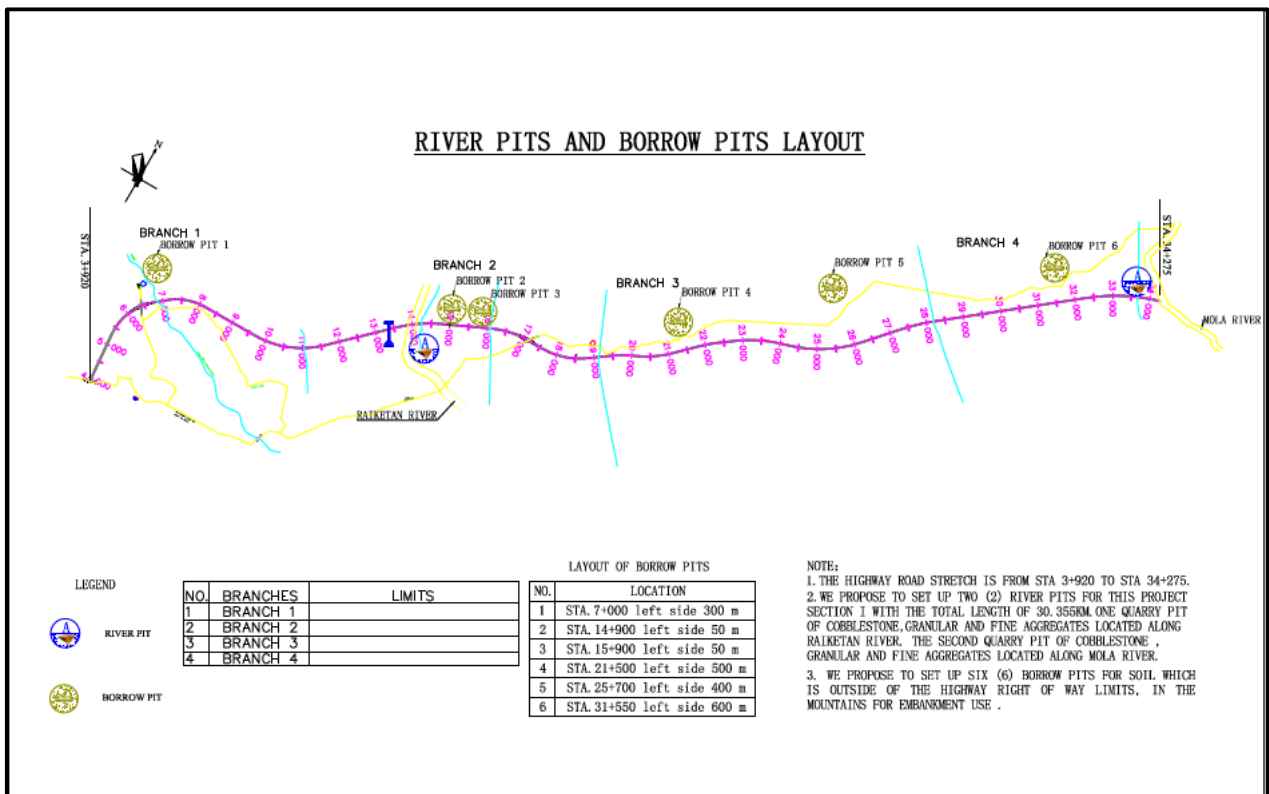


Figure 4: Layout of River Pit in Raiketan River and Facilities in Branch 2

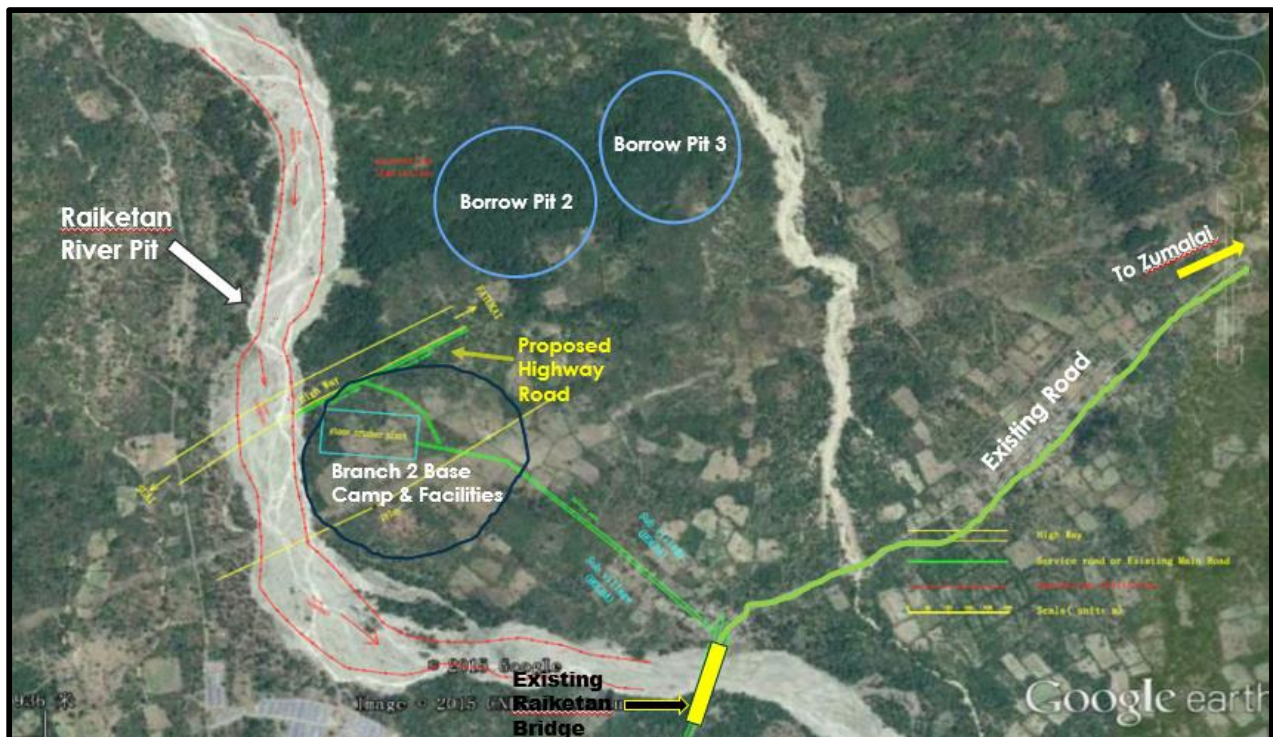




Figure 5: Layout of River Pit in Mola River and Facilities in Branch 4

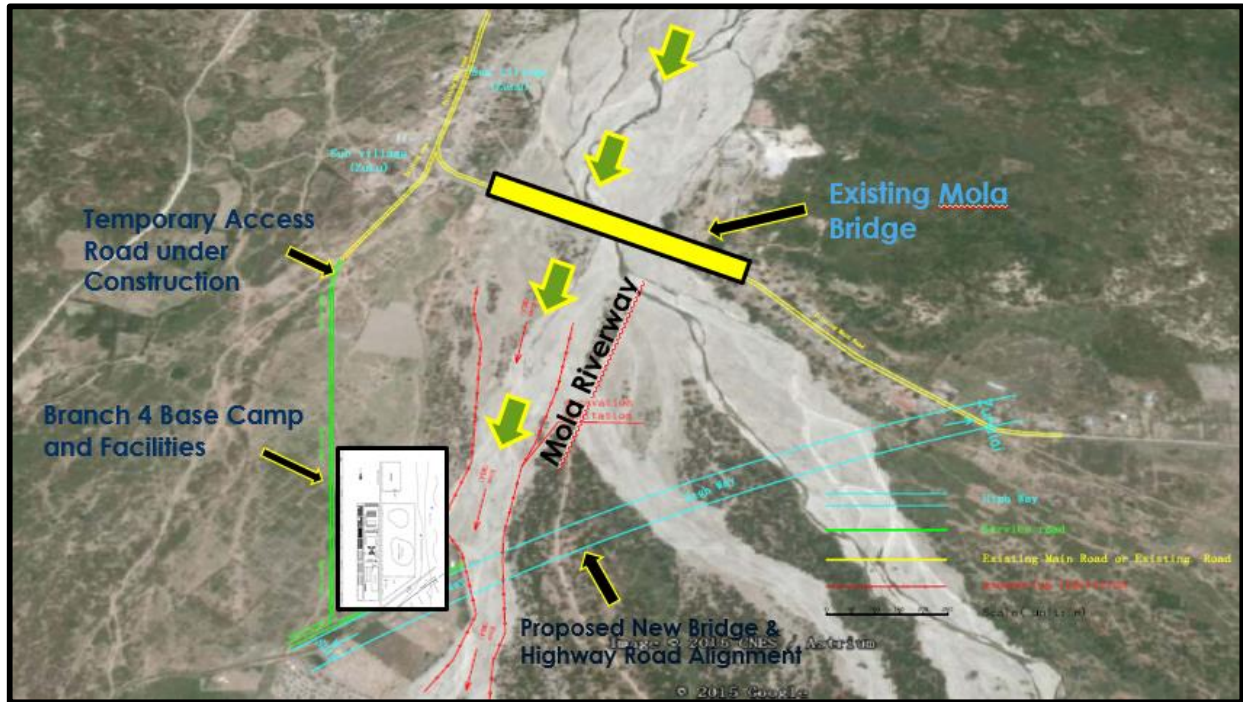


Figure 6: Layout of Borrow Pit 1 in Branch 1

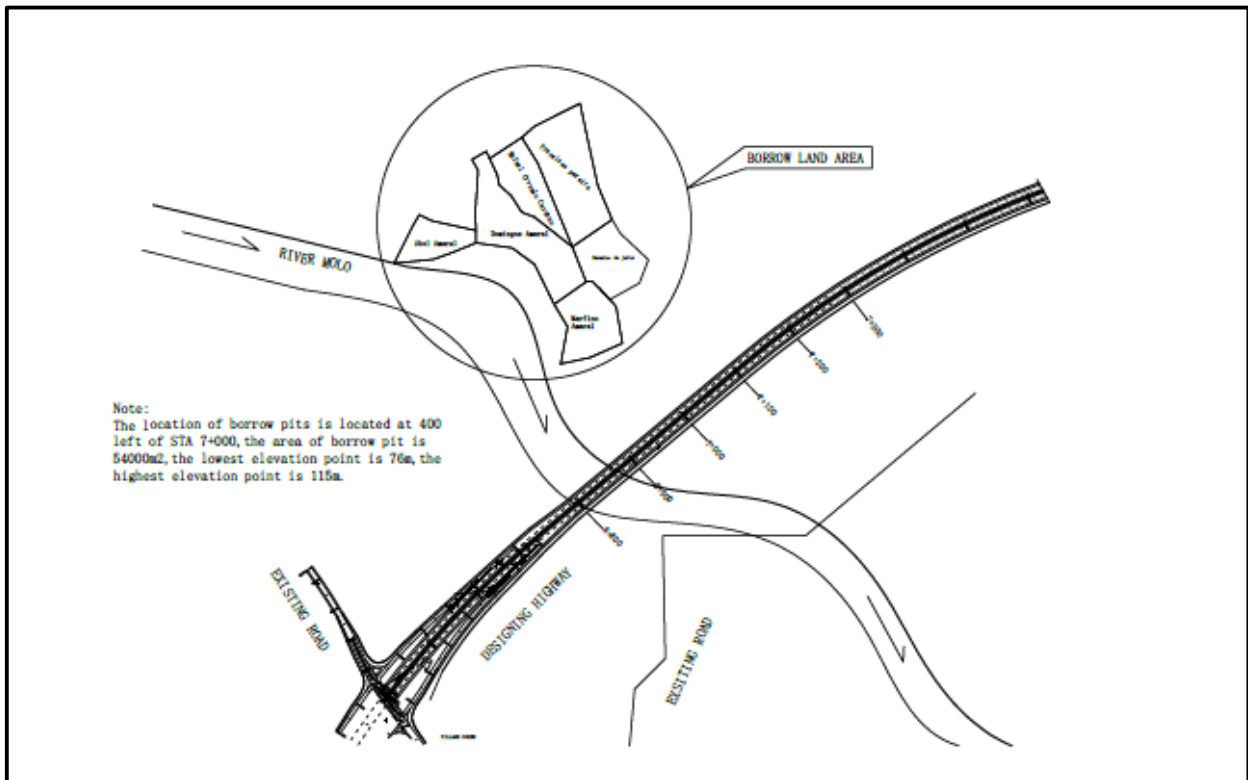


Figure 7: Layout of Borrow Pit 2 in Branch 2

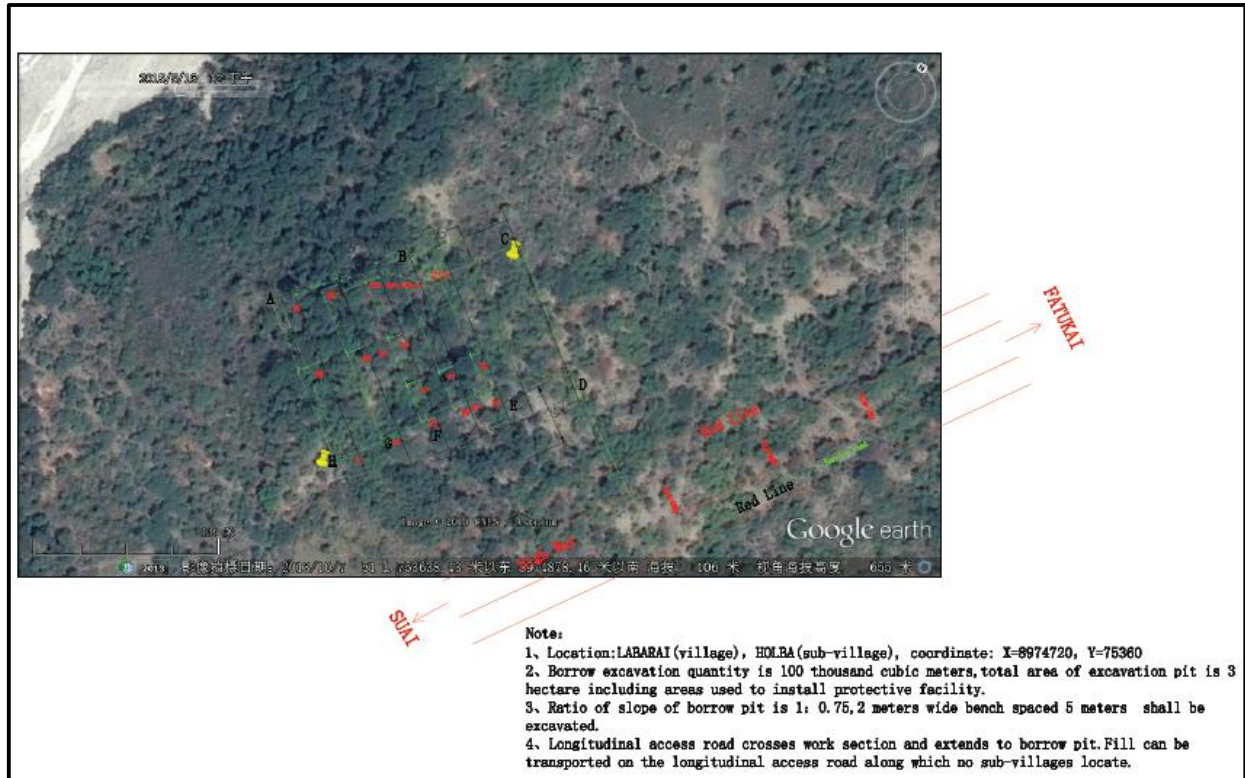


Figure 8: Layout of Borrow Pit 3 in Branch 2

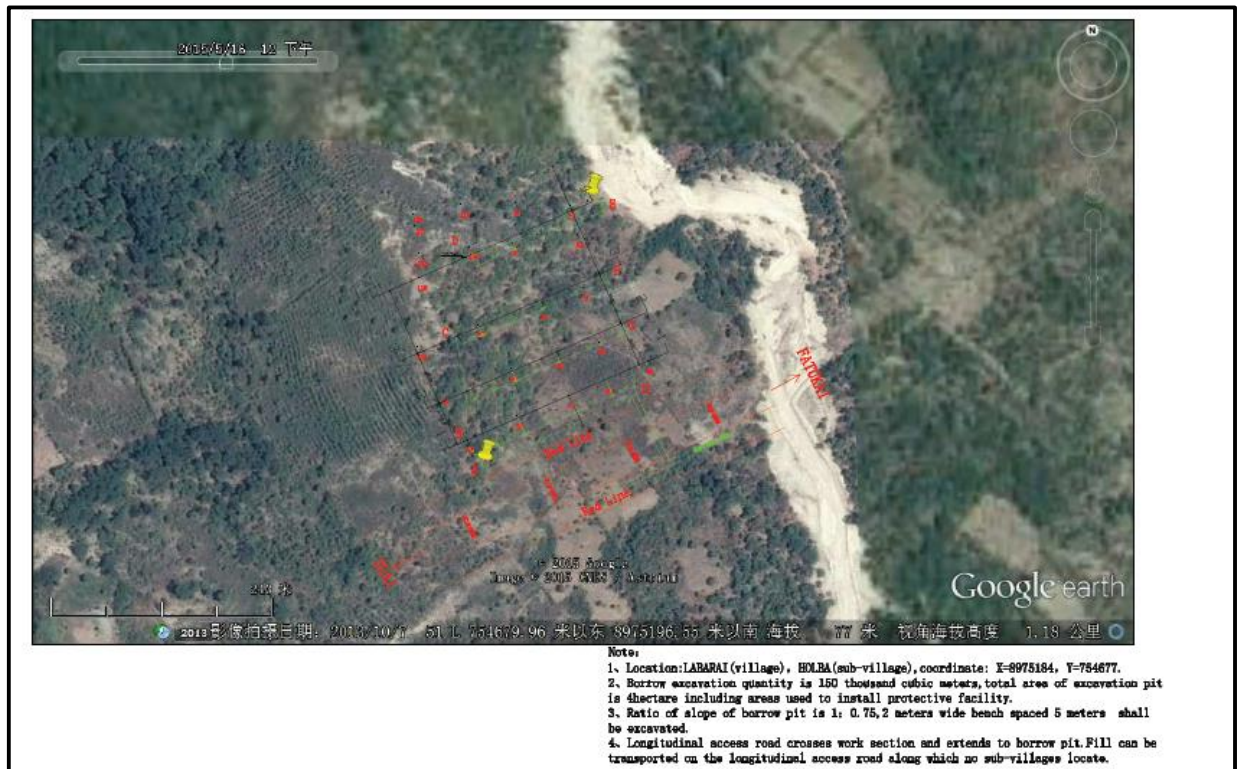


Figure 9: Layout of Borrow Pit 4 in Branch 3

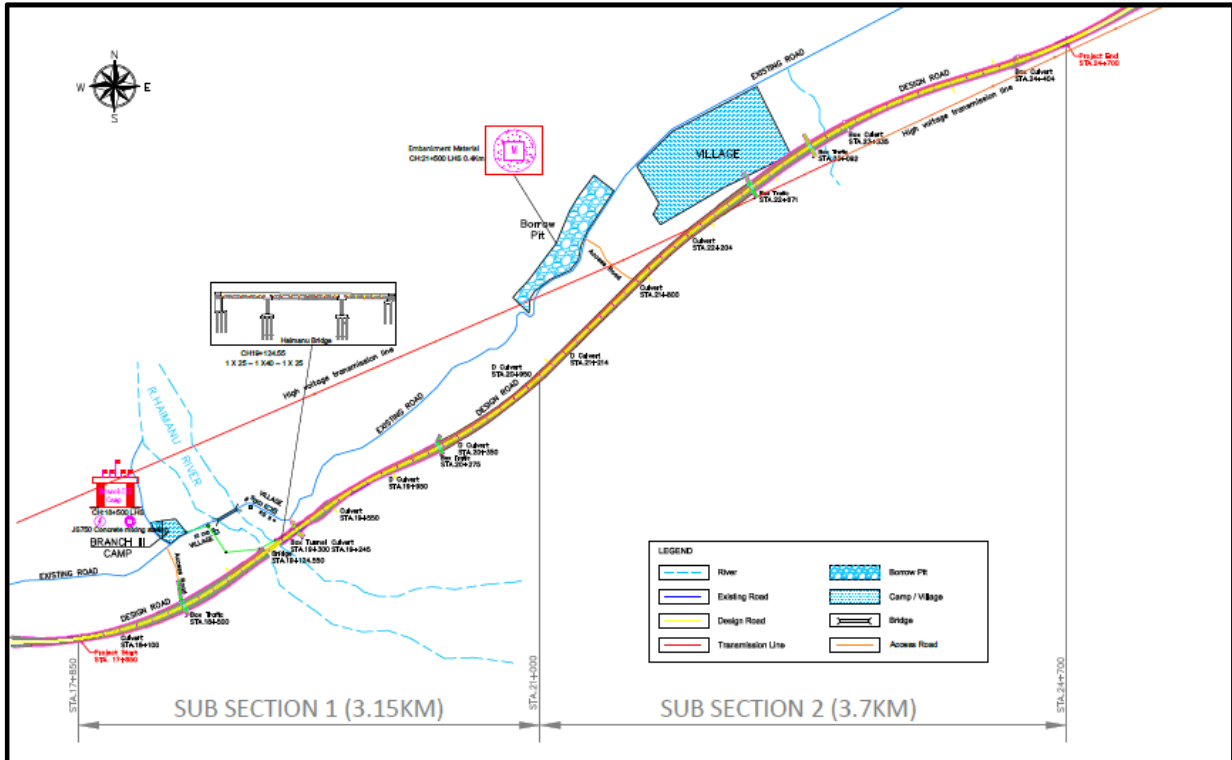


Figure 10: Layout of Borrow Pit 5 in Branch 4

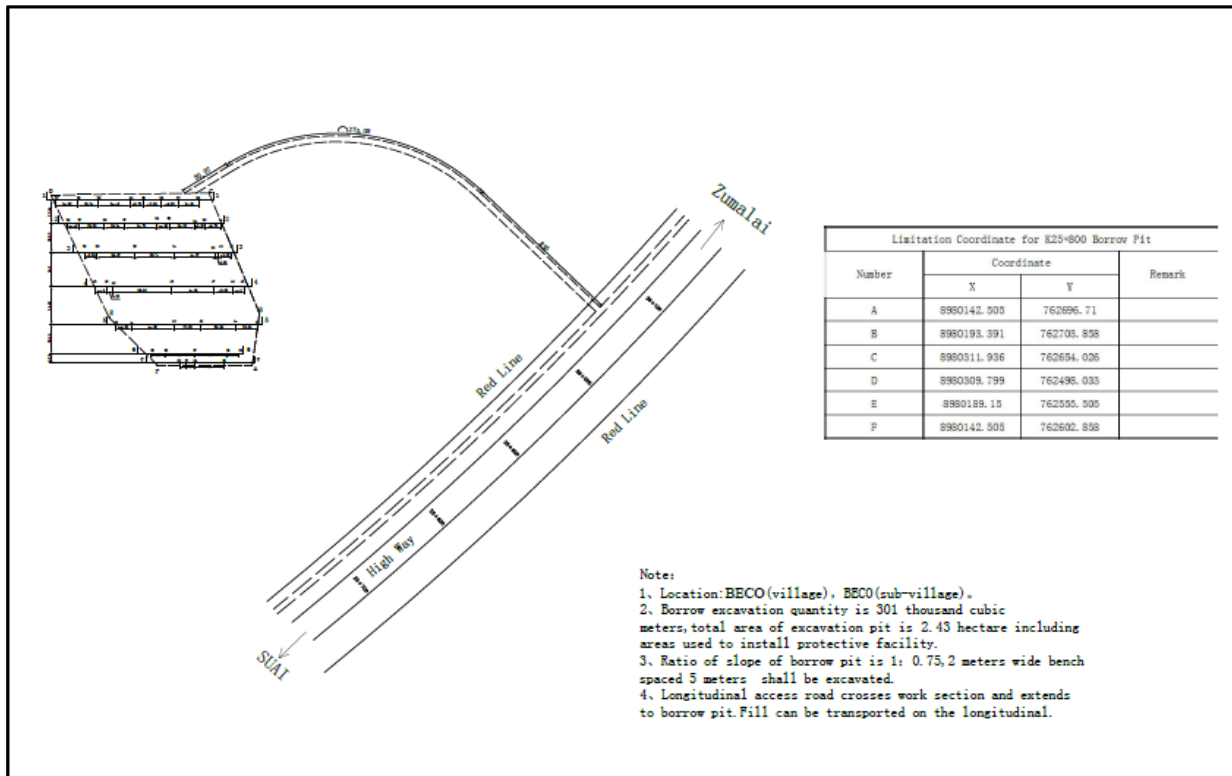
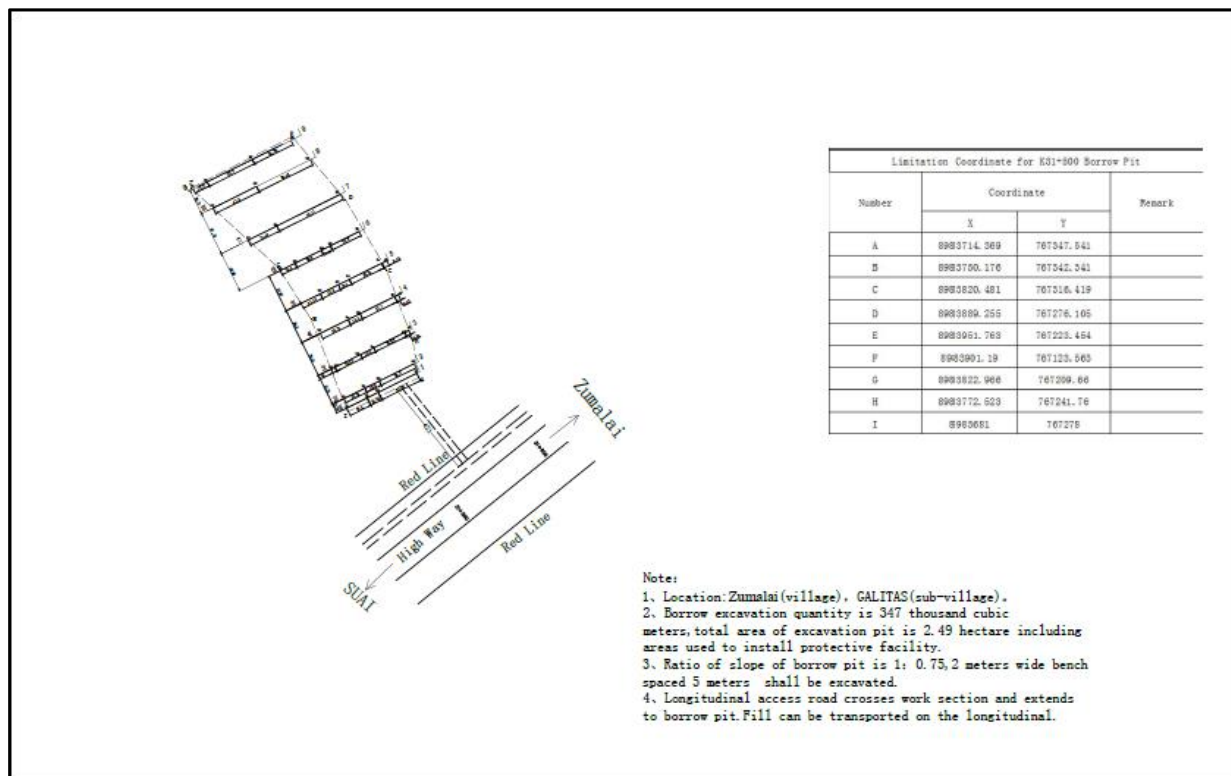


Figure 11: Layout of Borrow Pit 6 in Branch 4



### 3. District and Villages

The following list shows the affected Villages and sub-villages:

District of Covalima			
	Sub-Village	Village	Sub-District
Branch 1: • Borrow Pit 1	: Foho	Ogues	Suai
Branch 2: • Raiketan River Pit • Borrow Pit 2 • Borrow Pit 3	: Holba : Holba : Holba	Labarra Labarra Labarra	Suai Suai Suai
Branch 3: • Borrow Pit 4	: Aidantuik	Beco	Suai
Branch 4: • Borrow Pit 5 • Borrow Pit 6 • Mola River Pit	: Zoak : Galitas : Zulotas	Beco Tashilin Zulo	Suai Zumalai Zumalai

The project will not create a huge adverse impact as a whole particularly on people’s livelihood and cultural or heritage sites. COVEC-CRFG will implement the project carefully, though the community affected is not in a highly populated areas. Implementation of appropriate measures during construction and maintenance will minimize negative impacts to acceptable levels. To ensure that mitigation measures will be implemented and negative impacts avoided, the measures are included

in the Contract. The proposed works will not involve any relocation and resettlement since there is no adjacent or any directly affected houses within the area and nearby villages and sub-villages that is detailed in the following:

1. **Borrow Pit 1:** In branch 1, located in sub-village of Foho, village of Ogues, sub-district of Suai is a remote place. There is no other close village and sub-district affected other than Ogues and Suai, respectively in the proposed pit surroundings. The closest nearby residential areas are the sub-village of Matai of about 1.5 km east, and the sub-village of Ranok of about 2 km south from the location.
2. **Borrow Pit 2 and 3:** In branch 2, both mountain areas are located in the sub-village of Holba, village of Labarrai, sub-district of Suai, which is also considered as very remote place considering the closest nearby residents and sub-villagers of Holba is about 2 km in the south east. There is no other close village for the next 3 to 5 km in radius and sub-district affected except for Zumalai in the next 15 km north east according to the research.
3. **Borrow Pit 4:** In branch 3, located in sub-village of Aidantuik, village of Beco, sub-district of Suai is a continuous mountain land but not of a high elevation. The closest part of the said land is the villagers of Aidantuik. There is no other close village and sub-district affected for the next 2 km referring to the collected survey and the google map in the proposed pit surroundings.
4. **Borrow Pit 5:** In branch 4, located in sub-village of Zoac, village of Beco, sub-district of Suai a hilly land which area is located at least 200 m away from villagers. It can be accessed from the existing Suai to Zumalai road. The closest part of the said land is the sub-villagers of Zoac. There is no other close village and sub-district affected for the next 3 km referring to the collected survey and the google map in the proposed pit surroundings.
5. **Borrow Pit 6:** In branch 4, located in sub-village of Galitas, village of Tashilin, sub-district of Zumalai is a huge hilly land but not of a high elevation. The closest part of the said land is the sub-villagers of Galitas of about 2 km away. The next neighboring sub-village is Holgueda at about 4 km away to the east. There is no other close village and sub-district except for the places mentioned above that are affected referring to the physical inspection, collected survey and google map data in the proposed pit surroundings.
6. **For Raiketan River Pit:** in Branch 2 in the sub-village of HOLBA, village of LABARRAI in the sub-district of SUAI has a 120 – 150 m wide river way opening from 3 km upstream down to the adjacent camp location where the extraction of washing and screening and crushing plant will be in place. Said area is isolated from the surrounding nearby sub-villagers. Holba is the only sub-village with a distance of at least 1 km from the nearest end of the extraction site.
7. **For Mola River Pit:** in Branch 4 in the sub-village of Zulotas, village of Zulo, sub-district of Zumalai has a split 3 river ways from the existing Mola Bridge to the downstream area. The proposed part of the river pit is in the leftmost side having 80 – 120 m wide river way opening from the adjacent location of camp where the extraction of washing and screening and crushing plant will be in place where quarrying to the downstream direction is about 1 km. Said area is isolated from the surrounding nearby sub-villagers. There is no other sub-village affected around the area of extraction site of about 1 km radius.

There are removal of trees required although clearing and grubbing is required all across the site. Commissioning of the plants facilities will require minimal construction limited mainly to foundation works for the mobile stone crusher and asphalt mixing plant, concrete batching plants in their respective locations. Works to provide temporary drainage will not be in a highly demand to avoid inundation or flooding or increased precipitation due to climate change since the plants to be erected do not affect flooding.

#### 4. Plans and Technical Drawings of the Proposed Facilities in the Project

A collected layout plans showing the erection and setup of the corresponding facilities for asphalt mix plant, concrete batching plant, stone crusher, screening and washing and casting yard of the proposed project as shown in the following figures.

Figure 12: Layout Plan of Asphalt Mixing Plant and Stone Crusher

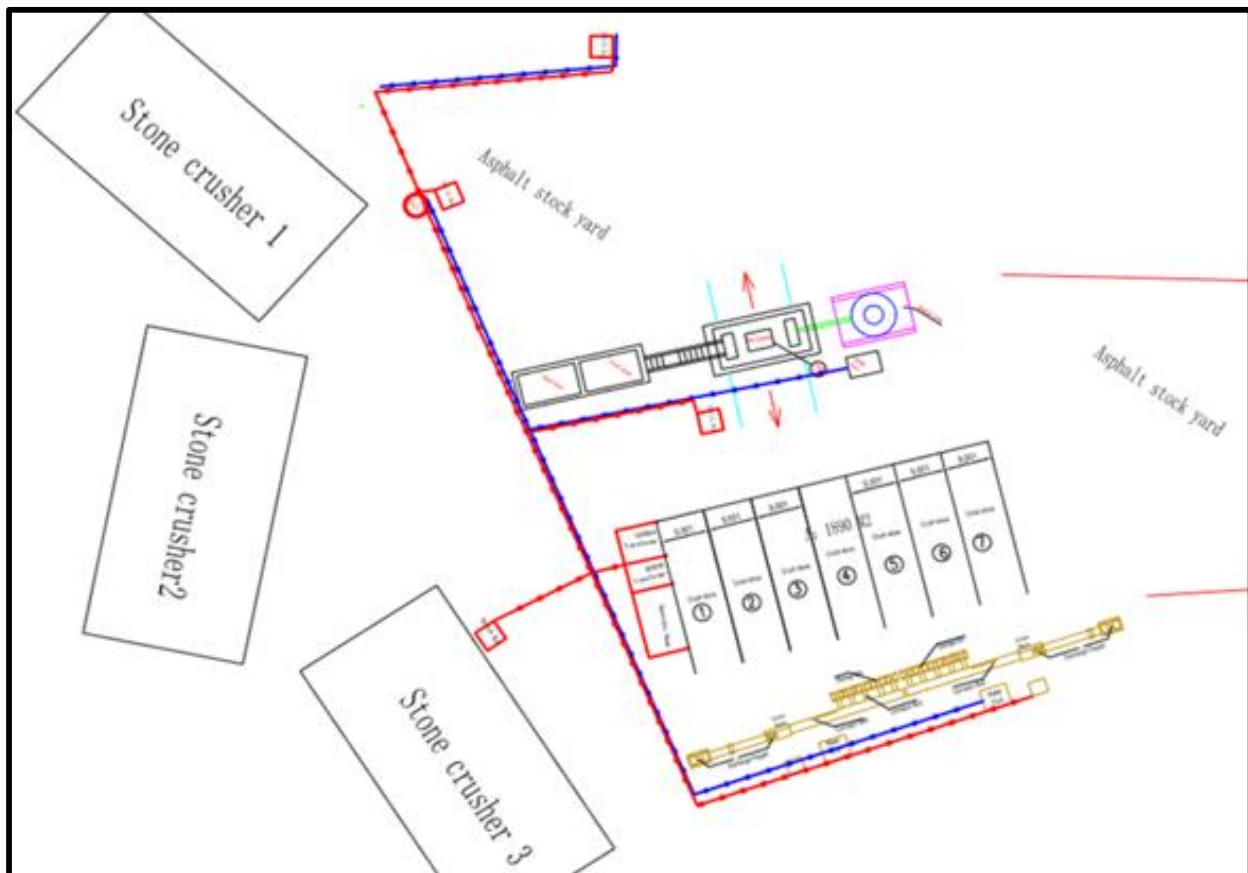


Figure 13: Layout of Concrete Batching Plant, Screening & Washing and Casting Yard

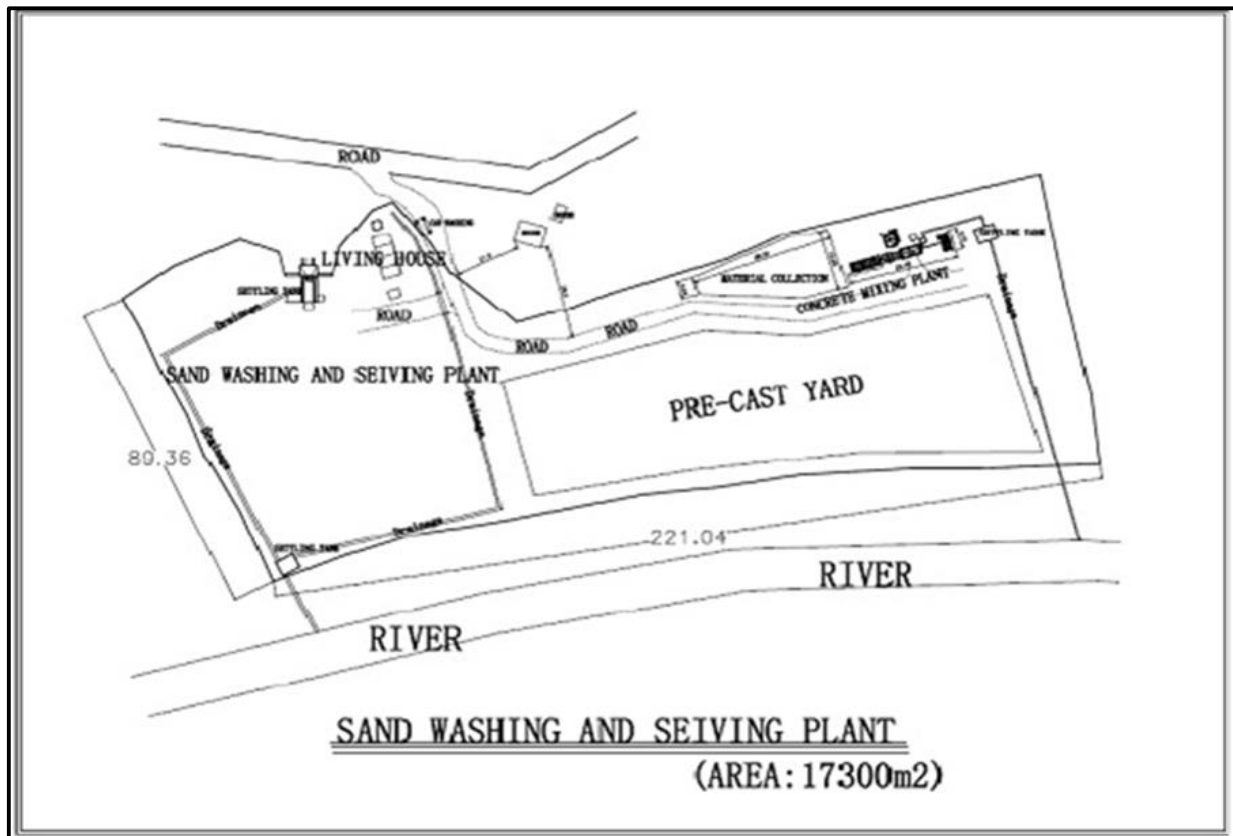


Figure 14: Foundation Plan for Stone Crusher

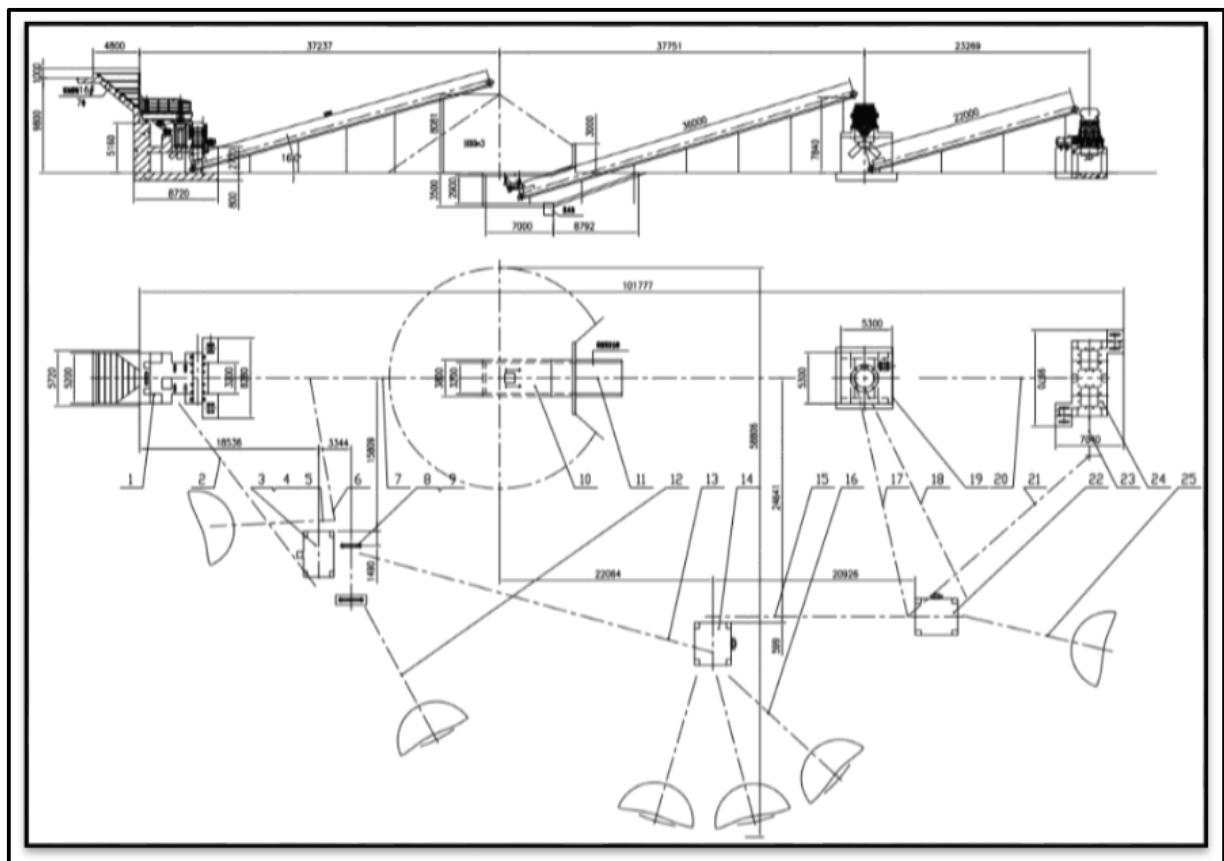
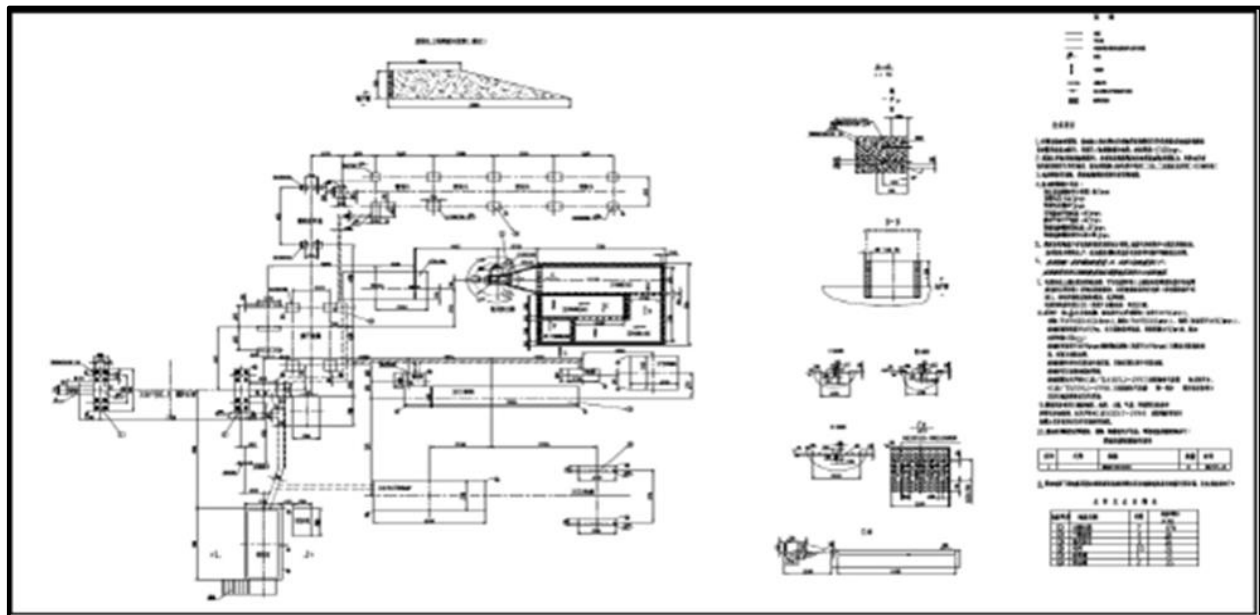


Figure 15: Foundation Plan for Asphalt Mixing Plant



## 5. Feasibility Studies of the Proposed Project

### 5.1. Overview

CovaLima, a district of Timor Leste in the Southwest part of the country. It has a population of 59,455 in a Census of 2010, and an area of 1,230 km<sup>2</sup>. The capital of the district is Suai, which lies 136 km from Dili, the national capital. The sub-districts of CovaLima are Fatululic, Fatumean, Fohorem, Zumalai, Maucatar, Suai, and Tilomar. Cova Lima borders the Timor Sea to the south, the districts Bobonaro to the north, Ainaroto the east, and the Indonesian province Nusa Tenggara Timur to the west.

### 5.2. Objective

For all we know feasibility study is written to know if the plan idea will become successful or not when implemented. It serves as an evaluation tool for every business desires because it will determine whether or not it's worth investing time and money to the idea.

#### 5.2.1. Soil Analysis

For the determination and confirmation of suitable material requirements of the proposed land and rivers to obtain such materials necessary for embankment/fill, structural concrete and bitumen asphalt mixes and other usage for the construction project, exploration and soil investigation were conducted to each location by series of boring hole method with corresponding depth. Taking of samples of every type of earth layer encountered during boring procedure and were brought to laboratory for testing and sampling that are classified in the table below:



SOIL STATISTICS							
Branch	Site location	Location of Material Source		Pit Depth (m)	Material Classification	CBR Value	Remarks
		Name of Place	Nature				
1	Borrow Pit 1	Foho, Ogues	Mountainous	4	Common Borrow, Sandstone	6-12	Suitable for Embankment/ Fill
2	Borrow Pit 2	Holba, Labarrai	Hilly	4	Sandstone	14	Suitable for Embankment/ Fill
	Borrow Pit 3	Holba, Labarrai	Mountainous	4	Sandstone	14	Suitable for Embankment/ Fill
	Raiketan River Pit	Holba, Labarrai	Wide River	1.5	Cobblestone, Granular Sandstone	250	Suitable for Aggregates Mixing
3	Borrow Pit 4	Aidantuik, Beco	Hilly	3.5	Common Borrow, Sandstone	24	Suitable for Embankment/ Fill
4	Borrow Pit 5	Zoac, Beco	Mountainous	5	Common Borrow, Sandstone	16	Suitable for Embankment/ Fill
	Borrow Pit 6	Galitas, Tashilin	Hilly	4	Common Borrow, Sandstone	38	Suitable for Embankment/ Fill
	Mola River Pit	Zulotas, Zulo	Wide River	1.5	Cobblestone, Granular Sandstone	225	Suitable for Aggregates Mixing

### 5.2.2. Economic Analysis

Quarries are usually of extensive operations and often serve the needs of the community for years depending on the quantity of soil materials to suit the needs. Extensive planning were taken to balance local impacts while serving the required needs for the construction of the project road.

The local geology is determined to be of rich in mineral resources. In this project, quarries for embankment/fill are located in mountainous land and for cobblestone and for fine aggregates in rivers. Locations of these land are just adjacent to the proposed road project alignment, accessibility wise is excellent with the existing road from Suai-Zumalai, vice versa. It has been determined also the efficiency, safety and the environment. The closer a quarry is to its markets, the cheaper the cost of supplying the materials. This flows through to the cost of constructing and paving the proposed project highway road and all other facilities required by the project that the quarry can benefit. Not only because the trucks hauling these materials have fewer kilometers to travel, there will be lesser trucks needed, less wear and tear and congestion on our construction traffic roads, will reduce the risk of accidents and less CO2 emissions.

Based on general hydrologic studies on earth with the geology in nature after the quarrying of the amount of cobblestones and sand, the river will recover itself by the future rainy seasons and it will go back to its common nature, whatever the shape from the storm flows may be with the river training works which is also included part of the construction method during the project implementation.

For the hill and mountain quarrying pits, particularly to the land owners where the original land of a mountainous shape will turn into flat plane land and can be of a multi-purpose use in the future.

With the huge quantity of aggregates required for the project it is also part of economic consideration the down-grading of the quantity we required for quarrying river run materials in

view of our desire to let other local suppliers to supply sand and gravel and or sub-contract the construction of some bridges in the highway road project.

## **6. Land and Water Uses**

### **6.1. Water Use**

General topography in the district is mountains and low lands. Enough amount of water supply from nature is expected. The highest mountain in Covalima District is Mount Taroman with 1,765 m in height. There are rivers that flows across the proposed road alignment throughout the year. It is identified as: Karoulun, Nabuk, Raiketan, Zolai, Haimanu, Lumea, Bunetel and Mola rivers. Both Raiketan and Mola are the prospected rivers that the project proposes for river quarrying for crushing and washing stones and sand.

The activities carried out during the screening, washing of coarse and fine aggregates and mixing of concrete will require the use of large quantities of water at each location of facilities. The water supply in Covalima has access to drinking water from improved sources making use of river and spring water in the area. In particular, water is drawn from rivers and wells. Most of river drawn system is applied through a perforated pipes encased in wire screens holding infill filter media consists of gravel and cobbles. This is transmitted with the aid of gravitation force to households in the entire villages within Covalima District.

The water source for the operation particularly for the washing of aggregates and mixing for concrete will be drawn from a deep well. Each branch has established their respective deep well extracted by mechanically driven pump and then be processed inside the facility. The total minimum depth where the source of water table is extracted, is 40 meters, which is considered to be of safe from human waste contamination. Meanwhile, most of these wells can also benefit to nearby residents from fetching by the use of walk behind or motorized carts for their daily consumption. It can also be of importance to the public for their permanent use upon completion of the project. The statistics of water wells during the operation of each branch facility are defined in the table below:

**Statistics of the Wells**

<b>Location</b>	<b>No. of Wells</b>	<b>Particular</b>	<b>Depth (m)</b>	<b>Output Capacity (m3/hr)</b>
Branch 1	1	For Camp and Extraction Use	50	10
Branch 2	1	For Camp Use	43	5
	2	For Extraction Use	47	14
Branch 3	1	For Camp and Extraction Use	40	10
Branch 4	1	For Camp and Extraction Use	42	12

### **6.2. Land use and Lease Agreement with Land Owners**

The project proposed to setup two (2) river pits for quarrying cobblestone, granular and fine aggregates in Raiketan River and Mola River and six (6) borrow pits for quarrying of embankment/fill materials for the fulfillment part of the items of work required in the contract to complete the

highway project. Under this requirement will need those prospected land/mountains as described in this document for occupancy. There were several consultations and agreement in written from land owners for the land that owned by privates and an official application process to the Land and Property (Terras Propriedade) office in Covalima for both public and private land. Recommendation for the execution of the project from the Land Property office has been taken. Also attached in Annex 1 of this document are copies of the legal papers of the lease agreements.

The Land use affected in the temporary occupancy of the quarry pits and facilities including the setting-up of camps and offices, has been acquired through legal lease contract agreement between the proponent COVEC-CRFG and the land owners, Legal papers are attached in Annex 1 of this document. Majority during the consultation meetings, the community supports the project implementation in the manner with soft amicable written agreement and settlement with the presence of Covalima Land Property officers headed by the Director.

The use of the land during the quarrying operation will be performed by isolating its extraction sites from the residents and public transport. The construction team will build access roads towards the starting point of the quarry, though some areas will have crossings with the existing road from the quarry point to the proposed highway road alignment. All road crossings will be provided with traffic safety protection facilities such as hazard signs and controls, lightings during night operation and deployment of traffic flagmen.

In reality after quarrying the hilly land may be of general benefit to the public, particularly the land owners where the original land of a mountain shape will turn into flat plane land and can be of a multi-purpose use in the future.

### 6.3. Photographs of the Initial Public Consultation Meetings with the Authorities and Suco Chiefs of Covalima.





## 7. Environmental Impacts

The potential biophysical impacts during the stages of project from pre-construction, construction and operational will be briefly described as follows (see Table in the foregoing paragraphs):

### 7.1. Physical and Biological Components

Physical impact during the project implementation in each site for stone crusher, screening and washing plant, asphalt mixing plant, concrete batching plant and casting yard will be likely dust emission, noise and vibration, heat exhausting, soil run-off, erosion and flooding, depletion of groundwater quantity. Biological impact will consist of forest clearance at hills and cutting trees in community’s lands as categorized for land conversion from agriculture sector to infrastructure sector such highway construction and base camp and other building constructions.

### 7.2. Negative Impact of Physical and Biological Components

Both biophysical negatively impacts are the migration of some wild birds from their habitat, including monkeys, deer, reptiles, etc. In the another hands, the main of significantly negative impact for human being are flooding because of the frequency of sand, gravel and cobble excavation alongside the river terrains. These specific impacts will occur in Mola and Raiketan rivers.

### 7.3. Climate Change Impacts

The main environmental impacts for quarries in 2 river pits of Mola and Raiketan Rivers will be influenced as meteorological data that typically monsoonal climate with less distinct of wet and dry seasons. This average annual rainfall intensity recently has been relatively low due to La Nino phenomenon as a part of climate change impact. The rainfall patterns are primarily influences by Asian monsoon patterns which has overload during November to April of each year, especially in the southern part of Timor Leste. On the other hands, a highly risk of physical parameter will contribute flooding passing through Mola and Raiketan rivers that derived from the alluvial formation landscapes.

### SUMMARY OF PROJECT ACTIVITIES AND KEY ENVIRONMENTAL IMPACTS

PROJECT ACTIVITIES GIVING RISE TO IMPACTS	MITIGATION MEASURES TO CONTROL ENVIRONMENTAL IMPACT
<b>PRE-CONSTRUCTION</b>	
	Identifying suitable land with sufficient supplies of rock based material & testing rock quality

PROJECT ACTIVITIES GIVING RISE TO IMPACTS	MITIGATION MEASURES TO CONTROL ENVIRONMENTAL IMPACT
Use of Public and Private Land	Establishing acceptable agreements with land owners for land use and tree felling
	Planning and developing a sustainable design of the Project excavation, mechanical structures and control of operational impacts
Surveying and demarcation of manufacturing area boundary.	Loss of vegetation during demarcation
Site Clearance, Digging, Excavations	Discovery of cultural historical property
	Removal of trees
Mobilization of contractor	Social disruption
	Health and safety risks and management
	Spread of communicable diseases
<b>CONSTRUCTION</b>	
Clearing, cut & fill activities for manufacturing working areas, stockpile and staging areas lead to loss of land	Soil erosion & sediment contamination of rivers & turbidity
Operation of construction equipment	Emissions & dust from plant & materials
Spoil overburden discarded un-useable rock base material	Impacts to habitats & water courses
Run-off, discharges, generation of liquid wastes	Impacts on water quality.
General activities - solid & liquid waste arising	Uncontrolled unmanaged waste disposal
Use of hazardous materials	Spillage, leakage, accidents
Accidental damage to existing services	Interference with existing infra-structure; water supply, power, telecommunications
Presence of construction workers	Disruption, or antagonism, communicable diseases & community health
Site office, water use & electricity supplies	Stress on existing resources and infrastructure
<b>OPERATION</b>	
Sourcing of materials (quarry aggregates).	Extraction gravel, altering contours & runoff & erosion; quarries & borrow.
Operation of construction equipment	Emissions & dust from plant & materials
Operation of crushers, conveyors, batching & asphalt mixing equipment	Emissions & dust from plant & materials
Spoil overburden discarded un-useable rock base material	Impacts to habitats & water courses
Run-off, discharges, generation of liquid wastes	Impacts on water quality
General activities - solid & liquid waste arising	Uncontrolled unmanaged waste disposal
Use of hazardous materials	Spillage, leakage, accidents

#### 7.4. Socio-economic impacts

The potential impacts during the implementation project covers 5 typical impacts will consist of health Impacts, socio-economic Impacts, economic Impacts, cultural and Heritage Impacts and land-use Impacts. For ease of reference, the impacts due to or affecting certain elements during maintenance works and operation will be presented in a narrative form in preparing such statements. Most of the population relies on agriculture with limited alternative sources of income which resulted in rising numbers of poor people in rural areas. High population growth (about 5% annually) rapid urbanization and a small formal sector have resulted in slow rates of job creation in urban areas and have contributed to poverty rates rising.

Mitigation measures for the various impacts, management and monitoring of impacts are described in this part. In general, environmental issues likely to be of concern during the operation on each facilities

The impacts of the project during each of its life cycle can be categorized into: impacts on the biophysical impacts; socio-economic impacts; and health and safety impacts. For ease of reference, the impacts due to or affecting certain elements during maintenance works and operation will be presented in a narrative form in preparing such statements.

Most of the population relies on agriculture with limited alternative sources of income which resulted in rising numbers of poor people in rural areas. High population growth (about 5% annually) rapid urbanization and a small formal sector have resulted in slow rates of job creation in urban areas and have contributed to poverty rates rising.

Mitigation measures for the various impacts, management and monitoring of impacts are described in this part. In general, environmental issues likely to be of concern during the operation on each facilities include:

- 1) Air pollution due to noise, vibration, and dust evolution;
- 2) Ecological damage from the clearance of areas for maintenance of facilities and storage of materials (fuel, lubricants and other machinery);
- 3) Material sourcing and supply for the operation and maintenance works; and
- 4) Social disturbance caused by the construction team and maintenance team in futures.

These impacts shall have a positive or negative bearing and can be direct or indirect.

The magnitude of each impact is described in terms of being significant, minor or negligible temporary or permanent, long term or short term specific localized) or widespread, reversible or irreversible.

#### 7.5. Project Socialization and Public Consultation

Project socialization was taken to explain the sequences of the project from Installation and launching of the facilities equipment, Operation, and Decommissioning stage. Public consultation was taken by a team to identify the anticipated positive and negative effects of the proposed project facility. It is also to list the community's needs and responses. One of the important result here is that the development of the proposed highway project do not affect to the community access to resources sites.

## 7.6. Anticipated Negative Environmental Impacts Construction Activities

### 7.6.1. Extraction and Use of Materials

Construction materials such as hard core, ballast, rough stone, gravel, soil and water will be required and will be obtained from the quarries, rivers and land. Since substantial quantities of materials will be required for construction of the road, the availability and sustainability of such resources at the extraction sites will be affected. In addition, the sites from which the materials will be extracted may be significantly affected in several ways including landscape changes, displacement of people, intrusion into settlement, animals and vegetation, poor visual quality and opening of depressions on the surface leading to destruction of agricultural crops, several human and animal health impacts.

### 7.6.2. Dust Emissions

During construction, the project will generate substantial quantities of dust at the construction site, diversions, material site and its surrounding. The sources of dust emissions will include excavation, construction, leveling works, and to a small extent, transport vehicles delivering materials. Emission of large quantities of dust may lead to significant impacts on construction workers and the local residents, which will be accentuated during dry weather conditions.

### 7.6.3. Exhaust Emissions

The trucks used to transport various excavated aggregates and filling materials from their sources to the project facility site will contribute to increases in emissions of CO<sub>2</sub>, NO<sub>2</sub> and fine particulates along the way as a result of diesel combustion. Such emissions can lead to several environmental impacts including global warming and health impacts. Because large quantities of materials are required, some of which shall be sourced from rivers and mountains, emissions released affect the geographical area. The impacts of such emissions can be greater in areas where the materials are sourced and at the processing site as a result of frequent gunning of vehicle engines and machineries, frequent vehicle turning and slow vehicle movement in the loading and offloading areas.

### 7.6.4. Noise and Vibration

The delivery of materials by heavy trucks and the use of machinery or equipment from source site to the processing area including bulldozers, generators, grinders, mixers and crushers, drills will contribute high levels of noise and vibration within the site and the surrounding area. Elevated noise levels within the site can affect project workers and the residents, passers-by, domestic animals, wildlife and other persons within the vicinity of the project facility site.

### 7.6.5. Risks of Accidents and Injuries to Workers

Because of the intensive engineering activities including grinding and cutting, among others, workers will be exposed to risks of accidents and injuries. Such injuries can result from accidental falls from high elevations, injuries from hand tools and motorized equipment cuts from sharp edges of metal sheets, failure and collapse of machines. Injuries and/or fatal death may also be possible due to attacks by wild animals or bandits. Open ditches, unfinished works and improper storage of materials can lead to accidents to both the public and workers.

#### 7.6.6. Clearance of Vegetation

There will be construction of access roads to and from the quarry pits in hauling the materials, thus minimum vegetation clearance. Some section requiring deviation will require clearance of bushes which will lead to disruption of animal's ecosystems, death of animals, among others.

#### 7.6.7. Increased Soil Erosion

Some portions in the borrow pits may be exposed to massive erosion during its operation. Soil erosion leads to sediments loading and silting water sources, reduction in river or stream flows upon abstraction or siltation, expose aquatic life to risks and depleted oxygen levels, affects wildlife watering location, destruction of river banks and basin.

#### 7.6.8. Waste Generation

Numerous quantities of solid waste will be generated at the site during the quarrying and the facilities operation. Such waste will consist of excavated materials, vegetation, metal drums, rejected materials, surplus materials, surplus spoils, paper bags, empty cartons, waste oil, wasting bitumen and cement powders, among others. Such solid waste materials can be injurious to the environment through blockage of drain systems, choking of water bodies and negative impacts on human and animal health. This may be accentuated by the fact that some of the waste materials contain hazardous substances such as waste oil, solvents, while some of the waste materials including metal cuttings and plastic containers are not biodegradable and can have long term and cumulative effects on the environment. Stored materials shall also generate waste in form of oil spills from storage tanks, filling platforms and transfer tanks.

#### 7.6.9. Energy Consumption

The project will consume fossil fuels (mainly diesel) to run transport vehicles, generators and other machinery. Fuel such as firewood would be required in large quantities. Fossil energy is non-renewable and its excessive use may have serious environmental implications on its availability, price and sustainability.

#### 7.6.10. Contamination of Environment

Contamination of soil, water and air might take place during the process. Soil contamination can occur through aerial deposition and spills of construction related pollutants; asphalt residual, erosion by wind and storm water this will lead to silting and development of gully and depressions. Air quality will be reduced due to generation of dust, hydrocarbon emissions nitrogen oxide, sulphur oxide and particulate matter from machineries.

Water will be contaminated due to siltation of water pans, rivers; deposit of construction residual materials (asphalt, cement, oil, hydrocarbons, spoils etc.). The hydrological patterns will also be affected with increased flows from collection drains and surface run off from the roads. The water quality is also likely to change in terms of turbidity, hydrocarbon levels, silt, suspended solids, organic matter etc.

Hydrocarbon levels at water sources may increase due to spillage and deposit of oil residue from pumping machines and water transportation tankers this will lead to damage of river banks and



basin near points of abstraction, transfer of hazardous material into aquatic and human systems leading to health risk.

#### 7.6.11. Increased Demand of Sanitary Facilities

Construction workers will require sanitary facilities while working in the field and other withdrawn areas leading to pollution of the environment.

#### 7.6.12. Repairs and Maintenance of Vehicles and Machinery

A project of such magnitude will have a number of heavy machinery, vehicles and equipment which will require repairs and maintenance including washing. This will lead to spillage of oil during changing and repairs, generation of waste like engine filters, grease, scrap materials, pollution of rivers, among others.

#### 7.6.13. Water Use

The construction activities will require large quantities of water that is not easily available in the area. Excessive water use may negatively impact on the water source and its sustainability.

### 7.7. Positive Environmental Impacts of Construction Activities

#### 7.7.1. Increased Security in the Area

Since security measures will be build up during all facilities operation, this will reduce the number of invasion by bandits in the area.

#### 7.7.2. Creation of Employment Opportunities

Several employment opportunities will be created for office and field workers during the operation. This will be a significant impact since unemployment is currently quite high in the area and country at large.

#### 7.7.3. Provision of Market for Supply of Materials

The project will require supply of large quantities of materials compare to normal condtion, most of which will be sourced locally in and the surrounding areas. This provides ready market for material suppliers such as hardware shops, cars spare parts, food market and local individuals with such materials.

#### 7.7.4. Reduce Costs of Existing Road Maintenance

Use of gravel to rehabilitate the temporary access road is considered costly for the reason to the rate of wear of the materials used due to usage, flushing rain, wind and among other factors.

#### 7.7.5. Increased Business Opportunities

The project will improve the Social and Economic status of the area by opening up the area to the outside market for export and import of available goods and services. The project will also lead to spurring economic and social development by providing vital links between centers of production and markets for agricultural products, tourism, and enhance people's access to employment, and a wide range of social services including health, education, recreation and others. Other benefits to the community shall include: employment and income opportunities, improved delivery of goods

and services, efficient public transport, easy access to the area and its conservancies for economic growth. This will also facilitate alleviate poverty, increase food supply and security. The development shall enhance equity and balance by facilitating the flow of goods and services from the surplus zones to deficit ones and thereby enhancing equitable distribution which will in effect reduce, stabilize and level the prices of goods and services. The large number of project staff required will provide ready market for various goods and services, leading to several business opportunities for small-scale traders such as food vendors around the construction site.

## 7.8. Negative Environmental Impacts of Operational and Maintenance Activities

### 7.8.1. Immigration of Workers

The project will attract large number of immigrants to the community which might affect the social and cultural status of the area in terms of use of drugs, illicit brewing, increased or mushrooming of drinking dens and bars, increased in unwanted pregnancies, diseases, molestation of young boys and girls, early marriages, family disputes and conflicts. Incoming immigrants will also take up jobs that would have otherwise been given to the local community members. Increased population shall also exert pressure on exciting resources including water, firewood, building materials, food sources, among others. Enhanced social interaction with the construction workers, most of whom are likely to come from other parts of the country, with the residents considering the influence of money is a potential avenue for transmission of HIV/AIDS and other social infections.

### 7.8.2. Solid Waste Generation

The camp sites will be a source of enormous amounts of solid waste during its operation stage. The bulk of the solid waste generated during the operation of the camp will consist of paper, plastic, glass, metal, textile and organic wastes. Such wastes can be injurious to the environment through blockage of drainage systems, choking of water bodies and negative impacts on animal health. Some of these waste materials especially the plastic/polythene are not biodegradable may cause long-term injurious effects to the environment. Even the biodegradable ones such as organic wastes may be injurious to the environment because as they decompose, they produce methane gas, a powerful greenhouse gas known to contribute to global warming.

### 7.8.3. Increased Storm Water Flow

The camp roofs and pavements shall increases volume and velocity of storm water or run-off flowing across the area covered by the buildings, tents at the contractor's yards and camps

### 7.8.4. Increased Demand for Sanitation

The camp sites require sanitary facilities for all workers living there. Most of the project area has no water borne sanitation and accompanying sewerage system and need of developing an integrated sewer network with septic tank or effluent collection and management system will be required.

### 7.8.5. Energy Consumption

During operation, the occupants of buildings/camps and their daily activities will use considerable amounts of energy mainly for running electrical gadgets, machines, lighting, cooking, running of air conditioning equipment, running of refrigeration systems, pumping water into reservoirs among

other activities. Since electricity generation involves utilization of natural resources, excessive electricity consumption will strain the resources and negatively impact on their sustainability. Since most of the project area is not adequately served with electricity and due to high costs of fossil fuels other sources of fuel like biomass wood might be exploited including solar energy system.

#### 7.8.5. Water Use

The activities carried out during operation of the project facilities will require the use of large quantities of water for washing and mixing products for the road construction.

#### 7.8.6. Increased Informal Settlement

The labor camps will attract people seeking secondary employment as domestic workers and small scale traders. These will turn increase development of informal settlement which will in turn stimulate insecurity, poor sanitation, and contamination of water, soil, and natural environment

#### 7.8.7. Increased pressure in the area

The road will ease movement in the area which shall expose the conservation areas to natural resources exploitation, poaching and banditry. Increased visitation and tourism will lead to increased desire of land by local people and visitors. The road may set precedence for cultural diffusion and imbalance thereby weakening the society social-fabric and interrelationship. The road shall also affect political scene negatively where those involved to gain mileage and/to check competitors. The road will shock the local economy by transforming it from subsistence market economy whose control may raise unwarranted competition and clashes among local and foreign entrepreneurs.

### 7.9. Positive Environmental Impacts of Operational Activities

#### 7.9.1. Provision of markets to local goods

The workers living at the camps will provide business to the local traders; provide employment domestic related activities, management agents, caretakers, cleaners, security personnel and technicians.

#### 7.9.2. Revenue to National and Local Governments

Through payment of relevant taxes, rates and fees to the government and the local authority, the project, traders and businessmen will contribute towards the national and local revenue earnings.

#### 7.9.3. Reduction in Poverty

Poverty shall be reduced through improved economic performance.

#### 7.9.4. Improved Security

Security measures will be ensured by the companies involved during the operation and thus improve the overall security of the area.

### 7.10. Negative Environmental Impacts of Decommissioning Activities

#### 7.10.1. Solid Waste

Demolition of the facilities including camps, facilities equipment and fixtures at processing yard and related structures will result in large quantities of solid waste. The waste will contain the materials used including waste concrete, metal, cement, bitumen, oil, sealants and fasteners. Although demolition waste is generally considered as less harmful to the environment since they are composed of inert materials, there is growing evidence that large quantities of such waste may lead to release of certain hazardous chemicals into the environment. In addition, even the generally non-toxic chemicals such as chloride, sodium, sulphate and ammonia, which may be released as a result of leaching of demolition waste, are known to lead to degradation of groundwater quality.

#### 7.10.2. Dust

Large quantities of dust will be generated during demolition works. This will affect demolition staff as well.

#### 7.10.3. Interference with Road Users

Decommissioning will interfere with road users and even lead to destruction of natural ecosystem due to diversion and off the road drives.

#### 7.10.4. Noise and Vibration

The demolition works will lead to significant deterioration of the acoustic environment within the project site and the surrounding areas

#### 7.10.5. Increased Waste Water

Demolition of supply lines will lead to increased waste water and interference with other community members.

#### 7.10.6. Positive Environmental Impacts of Decommissioning Activities

#### 7.10.7. Rehabilitation

Upon decommissioning the facilities, rehabilitation of the site will be carried out to restore it to its original status. This will include replacement of topsoil and re-vegetation that will lead to improved environmental status including visual quality of the area.

#### 7.10.8. Employment Opportunities

Several employment opportunities will be created for demolition staff.

### **8. Public Consultation**

#### 8.1. Stakeholders Overview

A list of stakeholders that may be interested and potentially affected by the carrying out of the proposed project, including their names of stakeholders previously consulted, date of each stakeholder was consulted; and method of consultation (see in attached of attendance list).

Based on an overview of key comments and concerns expressed by stakeholders who have been participated during consultation sessions can be described as follows:

- Proponent should obey all relevant laws and regulations of Timor Leste for further sustainability development (e.g. the proposed measures for land rehabilitation in upland and around catchment areas)
- Compliance with the land tenure system as applied by the Government of Timor Leste
- Maintain closely coordination among inter-agency and multi-sectoral per each project implementation stages
- Provide sufficient data and information related to the quantity of deposit materials and how much capacity for embankment as needed during operational
- Create a mechanism of recruitment process of local unskilled labors and skilled labor in collaboration with the respective of Chief of Sucos in the affected sites of project

## 8.2. Project Preparation

In the preparation for implementation of the entire project road, series of public consultations were carried out to the owners and suco chiefs with presence of local and national authorities involve in all affected areas for the use of selected lands in mountains for the quarrying of borrow pits and river pits. Stakeholder consultation process disseminated information on the Project and its expected impact, long-term as well as short-term to gather information on relevant issues, determine the extent of the concerns amongst the community and address these issues at early stages of operation during hauling of materials, crushing of stones, screening and washing, batching of concrete, mixing of asphalt and fabrication of different pre-cast structural shapes in casting yards. This implementation stage, the objective will be to address these concerns and ensure the appropriate mitigation measures are implemented.

## 8.3. Consultations on Stakeholders

Public consultations were undertaken during the preparation works. The stakeholder consultation process disseminated information to all key stakeholders including the general public and the authorities through meetings and door-to-door surveys along the project corridor and public forums. Information was provided on the scale and scope of the project and the expected impacts and the proposed mitigation measures through meetings presented in power point and surveys. The process also gathered information on relevant concerns of the local community so as to address these in the project implementation stages. Project documentation will be disclosed in a place and language accessible to stakeholders. Consultations will continue throughout the duration of the operation of the project to keep local people affected, local village head persons, local authorities, Suco leaders, national authorities, educational institutions, and other groups with an interest in the Project corridor informed about the Project.

## 8.4. Implementation Stage

In an EIA study requires that all EIA studies incorporate Public Consultation (PC). The aim of the PC is to ensure that all stakeholders interested in a proposed project (including project beneficiaries and the general public in the vicinity of the proposed project) are identified and their opinion considered during project planning, design, construction, operation and decommission phase.

### 8.4.1. Objectives of Public Consultation

The main objective of the PC was to:

1. Inform the local administration (District Commissioners, District Officers, Chiefs, Assistant Chiefs, Councilors and Village Elders) and the departmental heads in the districts about the proposed project at the same time collect their views;
2. Provide an opportunity for all the stakeholders and communities in the proposed project area to raise issues and concerns pertaining to the project; and
3. Conduct the socio-economic survey.

#### 8.4.2. Methodology and Data Collection

The field reconnaissance and detailed survey for the project with the aim of:

1. Collecting baseline data and evaluating the state of environment;
2. Studying the administrative structure in the three districts traversed by the road project in order to formulate a data collection method;
3. Conducting introductory meetings at the district levels in preparation for the public participation;
4. Gathering literature material from the district offices on the development plans and socio-economic profiles;
5. Assessment of the available social, cultural and economic infrastructure.

The public participation reveals that the socio-economic impacts (positive and negative) of the on the communities living along it or the population dependent on it were similar to each branch proposed areas to build the facilities. The communities living in the sub-districts and villages are optimistic on the benefits of the proposed improvement project though some negative issues were also raised.

The major positive impact perceived by the community members was enhancement of transport thus attraction of business activities in the respective districts. Other positive impacts included increased accessibility to the social and economic facilities such as markets, schools, hospitals among others.

The negative impacts raised were substantial but could be mitigated if an appropriate management, monitoring and implementation plan is drawn during operation of all the facilities. Some of the negative impacts raised included:

- 1) Abandonment of disused quarry. Community members lamented that this is a safety hazard to them and based on past experiences, the proponent had left open gullies and destroyed lands without rehabilitation thus exposing community members especially children and animals to dangerous sites and increasing food insecurity;
- 2) Damage of existing roads leading to material sites. The community members stated that the use of existing access roads serving their localities by the road construction team normally leads to their destruction and according to past experience the road developers normally leaves the damaged access roads without rehabilitation;
- 3) Inappropriate construction of drainage structures or lack of drainage structures leading to flooding of farms. On this issue community members stated that normally the drainage structures are constructed and directed to one point and many times to individual farms

thus leading to destruction of crops or even flooding the whole area during rainy seasons. They recommended that the drains should be designed and constructed with several outlets so that minimum volume of run-off are directed to the farms so as to reduce water logging or alternatively they should be directed to water bodies;

- 4) Immigration of workers leading to cultural disorientation, eruption of diseases and other ill social vices. The community members stated that labor should be sourced from the locality as much as possible before supplementing with incoming laborers as this shall reduce immigration to the area and the vices associated with it. They added that manual work like excavation, vegetation clearing, stone pitching among others could be done by women, the youth and the male community members. They emphasized the need of employing women as they need the resources to run their households;
- 5) Poor application of technology and management of raw materials especially handling of bitumen leading to air, water and soil pollution. They stated bitumen should not be melted in open public places as the emissions affect them and also damage their farm lands.

#### 8.4.3. Deduction on Information Gathered During Public Participation

The public participation was comprehensively conducted with a wide section of the community members being consulted including the administration, business community, farmers and the general public. According to the comments issued by the community members the need of rehabilitating the road and, improvement of its associated support infrastructure is apparent. The road in its current state hinders the optimal exploitation of potentials areas in terms of business and agricultural productivity and possess a great hazard to the community members due to lack of drainage facilities, safety facilities among others.

All resources to be sourced or shared by community should be done or shared in a humanly manner or under the guidance of appropriate regulations. It is advised consultations among the proponent or contractor, community administration and community members should be conducted if any major works that might lead to adverse impacts to the community.

#### 8.5. Photographs on Public Consultation and Land Site Investigation



Land Property Office with Land Owners & Soco Chiefs



Meeting with Land owners of Borrow Pits on Feb 05



Meeting with Land owners and Soco chiefs on Feb 04



Public Consultation w/ Socos Chiefs on Feb 04



Public Consultation with Socos Chiefs on Feb 24



Public Consultation with Socos Chiefs on Feb 24

## 9. Consultation with Other Authorities

### 9.1. Activities between the Proponent and the National and Local Authorities

A meeting was conducted and joint inspection between delegates of the National Authorities from the Department of Environment and Mineral Resources, National Offices and the Contractor's personnel on *17 & 18 December 2015* for the proposed River and Borrow Pits including locations of proposed Facilities to be installed such as Concrete Batching Plants, Washing and Crushing Plants, Asphalt Mixing Plant and Casting Yards. Another joint survey and inspection was conducted throughout the site between the proponent COVEC-CRFG and the office of the Land Property (Terras Propriedade) in Covalima on *29 & 30 December 2015* to confirm and check the Land use for River Pits and Borrow Pits. After taking all the information with the documents that were recommended from the local offices in Covalima, series of consultation meetings were taken by the proponent to the concern offices of the Land Property National, NDE and MPRM.

A meeting was held on 22 February 2016 in the Hotel Ramelau between the Proponent COVEC-CRFG and different representatives from the National Offices. The proponent presented the proposed project in Microsoft Power point view the whole concept of the extraction activities during the implementation of the project. After the presentation an open forum were taken and contribution of each respective idea that concerns their office responsibilities to the project in accordance with the GoTL Environmental Law. See attached Attendance for the meeting.

### 9.2. Photographs



### 9.2.1. Photographs of Consultation with National Authorities



Office of Covalima Land Property Director



Meeting with NDE and MPRM Officers in Dili



Meeting with Land Property Officers in Dili



Meeting with NDE Officers in Dili



Pre-Construction Meeting at PMU Mandarin Office



Pre-Construction Meeting at PMU Mandarin Office



Consultation with National Authorities on Feb 22



Consultation with National Authorities on Feb 22

9.2.2. Photographs During Site Inspection with Local and National Authorities



The Borrow Pit 1 (Branch 1) Sta.7+000



Branch 1 Concrete Mixing Plant



Branch 2 Concrete Mixing Plant



Raiketani River Pit (Sta. 14+000) in Branch 2



Stone Crusher Screen & Washer in Branch 2



Borrow Pit 2 Sta.14+900 in Branch 2



Borrow Pit 3 at Sta.15+800 Branch



Branch 3 Concrete Mixing Plant and Yard



Borrow Pit 4 in Branch 3, Access Side



Borrow Pit 5 in Branch 4



Borrow Pit 6 in Branch 4



Borrow Pit 6 in Branch 4 Access Side



Mola River Pit in Branch 4



Mola River Pit (Branch 4) Sta. 33+700

### 9.3. The Constitution. Laws, regulations

Timor Leste Constitution provides the constitutional foundation for the protection of the environment and preservation of natural resources. Especially in the Articles 61 and 139 stipulated conditions for the use and preservation of the environment and natural resources respectively. These reasons are explicitly with the purpose of ensuring an ecologically balanced and sustainable development approaches.

And the other relevant environmental laws and their objectives are listed in the Table below:

<b>Agency</b>	<b>Relevant Laws</b>
State Secretary of the Environment	Decree Law No.5/2011
	Decree Law No. 26/2012 on Environmental Base Law
	(Draft) Law on Biodiversity (March 2012)
	(Draft) Law on Protected Area (May 2013)
	UNTAET Law No. 19/2000 on Protected Area
State Secretary of Forestry and Protection of the Nature	(Draft) Law on Protected Area (May 2013)
	UNTAET Law No. 19/2000 on Protected Area

The Constitution. Laws, regulations, and standards for environmental assessment and management of GoTL will govern the implementation of the project. The Constitution of Timor-Leste has clearly established the importance of protecting the environment. The Constitution of Timor-Leste establishes a healthy environment as a constitutional right. The Constitution stipulates that:

- Everyone has the right to a humane, healthy, and ecologically balanced environment and the duty to protect it and improve it for the benefit of the future generations.
- The State shall recognize the need to preserve and rationalize natural resources.
- The State should promote actions aimed at protecting the environment and safeguarding the sustainable development of the economy.

#### 9.4. Environmental Basic Decree Law

As of 05 July 2012 the Environmental Basic Decree Law came into force (Decree- Law no. 26/2012). This sets the framework for other environmental legislation such as the Decree 05/2011 Environmental Licensing Law (ELL) and pending laws and regulations including the draft biodiversity law.

#### 9.5. Environmental Licensing Law

Environmental Licensing Law (ELL) implements a system of environmental impact assessment (EIA) and licensing in Timor-Leste. Under the ELL, proponents of projects or activities that may impact the environment are required to undertake a process of environmental assessment (EA), which includes preparing an “environmental impact statement” (EIS) or “simplified environmental impact statement” (SEIS), depending on the level of likely impact of the project (respectively Category A and Category B), together with an environmental management plan (EMP), according to the procedure established through the ELL, and submitting this information to National Directorate for Environment (NDE). If the Minister determines to approve the project or activity, based on the recommendations of NDE, the proponent is granted an environmental license by NDE to conduct the project or activity.

## **10. The Proposal for Classification of the Proposed Project**

### **10.1. The Project Proponent, the Consultant and the Employer**

The Project proponent for the quarrying of materials is the COVEC-CRFG. The Project will provide embankment/fill materials, aggregates, structural concrete mix, asphalt mix for the construction of Suai - Beaco Highway Road Project, Section 1: Tali Oan, Suai to Fatucaí/Mola Section. This is implemented by Government of Timor-Leste (GoTL) Ministry of Public Works Transport and Communications (MPWTC), the “Employer”. The PMU in MPWTC is established to manage and implement projects financed by the GOTL. A Consultant company Katahira Engineers International (KEI) in Association with Renardet S.A. of Switzerland has also been tasked by the Employer as the “Engineer” to supervise the project implementation. The PMU and the Engineer will be responsible for day to day management of the Project, including ensuring that the COVEC-CRFG implementation required safeguards measures.

### **10.2. The Proposal for Classification of the Project Facilities**

The project in general will not create major adverse impacts mostly on people’s livelihood, cultural and heritage sites. COVEC-CRFG will implement the project carefully, even though the communities affected are not on a highly populated areas.

The nearest possible sub-villagers or nearby residents from among all the 4 branches and its facilities that will be affected from the extraction of quarrying and operation of each facilities will not be less than 500 m and majority are about 1 to 2 km away including its access passage of the equipment. Nevertheless, implementation of appropriate measures during construction and maintenance will minimize negative impacts to acceptable levels, it is also in view to the classification of its type of a rural places which population only to the minimal and mostly in a remote locations. Nevertheless, it is aimed to ensure that mitigation measures will be implemented and negative impacts avoided, the measures are included in the Contract. The proposed works will not involve any relocation and resettlement since there is no adjacent or any directly affected houses within the area and nearby villages and sub-villages.

In view of the information that we presented in the paragraphs and sub-clauses above, we propose the classification to categorize our project in the following:

#### **10.2.1. Borrow Pits for Embankment**

For Borrow Pit 1 in Branch 1; For Borrow Pit 2 & 3 in Branch 2; For Borrow Pit 4 in Branch 3; For Borrow Pit 5 & 6 in Branch 4 are all proposed into **Category C** with following reasons, please refer to table below:

<b>Criteria</b>	<b>Reasons</b>
Characteristics of the project	The size of the project is relative medium; there is no cumulative effects of the project activities with other projects and activities; small quantity of production of waste; air emissions is limited; Wastewater discharges is less; no presence of any dangerous chemicals; the risk of accidents is low.
Location of the project	Project is not located in or adjacent to any Protected Area, wetland, mangroves, coral, critical or natural habitat and the

	project unlikely to have any impacts on modified habitat or habitat of any endangered or threatened species, unique archeological, historical or cultural heritage site; and no located in or adjacent to any densely populated areas, including near any areas of public use, including educational and medical facilities.
Characteristics of the significant potential impacts	The size of the area likely to be affected by the project is relative small and size of the population is unlikely to be affected by the project; there are no likely to be any cross-border impacts; and the size of the impact will be small, and also timing, frequency and duration of its impacts; reversibility of the impacts are relative low; and the probability of occurrence of the impacts are also low.

### 10.2.2 River Pits for Coarse and Fine Aggregates

For Raiketan River Pit in Branch 2 and for Mola River Pit in Branch 4 are proposed into **Category C** with following reason as described in the table below:

Criteria	Reasons
Characteristics of the project	The size of the project is relative big; there will be cumulative effects of the project activities with other projects and activities; medium quantity of production of waste; the risk of accidents is medium.
Location of the project	Project is not located in or adjacent to any Protected Area, wetland, mangroves, coral, critical or natural habitat and the project unlikely to have any impacts on modified habitat or habitat of any endangered or threatened species, unique archeological, historical or cultural heritage site; and no located in or adjacent to any densely populated areas, including near any areas of public use, including educational and medical facilities.
Characteristics of the significant potential impacts	The size of the area likely to be affected by the project is relative medium and size of the population is unlikely to be affected by the project; there are no likely to be any cross-border impacts; and the size of the impact will be small, and also timing, frequency and duration of its impacts; reversibility of the impacts are relative medium; and the probability of occurrence of the impacts are to be likely medium
Target Annual Quantity of Cobbleston Coarse and Fine Aggregates	<ol style="list-style-type: none"> <li>For Raiketan River Pit:                      Cobblestone for Coarse Aggregate = 75,000 Tons/year                      Fine Aggregates = 4,800 Tons/year</li> <li>For Mola River Pit:                      Cobblestone for Coarse Aggregate = 40,000 Tons/year                      Fine Aggregates = 5,600 Tons/year</li> </ol>

Economic Analysis	<p>With the huge quantity of aggregates required for the project it is also part of economic consideration the down-grading of the quantity we required for quarrying river-run materials in view of our desire to let other local suppliers to supply sand and gravel and or sub-contract the construction of some bridges in the highway road project.</p> <p>Based on general hydrologic studies on earth with the geology in nature after the quarrying of the amount of cobblestones and sand, the river will recover itself by the future rainy seasons and it will go back to its common nature, whatever the shape from the storm flows may be with the river training works which is also included part of the construction method during the project implementation.</p>
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## 11. Executive Summary

The content of this executive summary is described below:

### 1. Details of Proponent: Name, address and contact details of the proponent

Name of Company:	China Overseas Engineering Group Co., Ltd. in joint venture with China Railway First Group Co., Ltd. (COVEC-CRFG)
Address:	Floor 2, Sea view Apartment & Office Building, Av. de Portugal, Dili, Timor-Leste
Telephone:	+670 331 0997
Name:	Mr. Lin Mingming, General Manager, COVEC-CRFG JV Lda. Timor Leste

### 2. Location and Scale of the Project

- **Raiketán Riverin Branch 2:** Sub-Village of HOLBA, Village of LABARRAI, Sub-District of SUAI will quarry for aggregates with approximately 29 hectares and output quantity of aggregates of 75,000 Tons/year and fine aggregates of 4,800 Tons/year;
- **Mola Riverin Branch 4:** Sub-Village of Zulotas, Village of Zulo, sub-district of Zumalai will quarry for aggregates with approximately 13 hectares, and estimated output quantity of coarse aggregates of 40,000 Tons/year and fine aggregates of 5,600 Tons/year;
- **Borrow Pit 1:** Sub-Village of Foho, Village of Ogues, Sub-District of Suai will quarry for embankment/fill with an approximate area of 54,000 m<sup>2</sup>;
- **Borrow Pit 2:** Sub-Village of Holba, Village of Labarrai, Sub-District of Suai will quarry for embankment/fill with approximately 3 Hectares;

- **Borrow Pit 3** in branch 2: Sub-Village of Holba, Village of Labarra, Sub-District of Suai will quarry for embankment/fill with approximately 4 Hectares
- **Borrow Pit 4** in branch 3: Sub- Village of Haimanu, Village of Beco, Sub-District of Suai will quarry for embankment/fill with approximately 3 Hectares
- **Borrow Pit 5** in branch: Sub- Village of Zoac, Village of Beco, Sub-District of Suai will quarry for embankment/fill with approximately 2.43 Hectares
- **Borrow Pit 6** in branch 4: ISub- Village of Galitas, Village of Tashilin, Sub-District of Zumalai will quarry for embankment/fill with approximately 2.5 Hectares

### 3. District and Villages

District of Covalima			
	Sub-Village	Village	Sub-District
Branch 1: • Borrow Pit 1	: Foho	Ogues	Suai
Branch 2: • Raiketan River Pit • Borrow Pit 2 • Borrow Pit 3	: Holba : Holba : Holba	Labarra Labarra Labarra	Suai Suai Suai
Branch 3: • Borrow Pit 4	: Aidantuik	Beco	Suai
Branch 4: • Borrow Pit 5 • Borrow Pit 6 • Mola River Pit	: Zoak : Galitas : Zulotas	Beco Tashilin Zulo	Suai Zumalai Zumalai

### 4. Plans and Technical Drawings of the Proposed Project

A collected layout plans showing the erection and setup of the corresponding facilities for asphalt mix plant, concrete batching plant, stone crusher, screening and washing and casting yard of the proposed project are presented in the previous pages.

### 5. Feasibility Studies of the Proposed Project

Conceptually, feasibility study has been conducted by the project owner before the detailed engineering design stage was performed for the entire project planned stretch from Suai – Beaco from which section 1, this project, has been tendered for implementation and is about to begin its construction operation. This document, Feasibility Study (FS) will be available by the Employer, Department of Public Works, Transportation and Communication (DPWTC) through the Project Management Office (PMU) of the project.

### 6. Land and Water Use

The water source for the operation particularly for the washing of aggregates and mixing for concrete will be drawn from a deep well. Each branch has established their respective deep well extracted by mechanically driven pump and then be processed inside the facility.



## **7. Environmental Impact**

The overall environmental impacts are:

- Physical and Biological Components
- Negative Impact of Physical and Biological Components
- Climate Change Impacts

## **8. Public Consultation and Consultation with Other Authorities**

Based on an overview of key comments and concerns expressed by stakeholders who have been participated during consultation sessions can be described as follows:

- Proponent should obey all relevant laws and regulations of Timor Leste for further sustainability development (e.g. the proposed measures for land rehabilitation in upland and around catchment areas
- Compliance with the land tenure system as applied by the Government of Timor Leste
- Maintain closely coordination among inter-agency and multi-sectoral per each project implementation stages
- Provide sufficient data and information related to the quantity of deposit materials and how much capacity for embankment as needed during operational
- Create a mechanism of recruitment process of local unskilled labors and skilled labor in collaboration with the respective of Chief of Sucos in the affected sites of project

## **10. The Proposal for Classification of the Proposed Project**

1. For **Branch 1** for Borrow Pit 1; **Branch 2** for Borrow Pit 2 & 3; **Branch 3** for Borrow Pit 4; **Branch 4** for Borrow Pit 5 & 6 are all proposed into **Category C** with reasons presented in the table for the proposed categories in sub-clause 10.2.1. Borrow Pits for Embankment
2. For **Raiketán River Pit in Branch 2** and **Mola River Pit in Branch 4** are proposed into **Category C** with reasons presented in the table described in sub-clause 10.2.2 River Pits for Coarse and Fine Aggregates.