KKC Const. & Dev't. Corp.
Km. 10.5 Purok 30, Brgy. Cabantian, Buhangin, Davao City 8000
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FRONT NINE KONSTRUCT
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Lot 26 Brgy. Bangad, Cabanatuan City, Nueva Ecija, 3100 Tel. No.: (044) 456-6454
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PROJECT DESCRIPTION FOR SCOPING (PDS)

STA. CRUZ RIVER MAINTENANCE AND RESTORATION PROJECT

ANNEX 2-6
OUTLINE FOR PROJECT DESCRIPTION FOR SCOPING (PDS)

PROJECT DESCRIPTION FOR SCOPING (PDS) [1]

(Maximum of about 10 pages)

1. BASIC PROJECT INFORMATION (1 page)

1.1. **Project Information** – Tabulate following: Name of Project, Location (LGU and Contract/Permit/Agreement No. with DOE, MGB or other agencies), Nature of Project, Size/Scale

1.2. **Proponent Profile** – Tabulate Proponent name, address, authorized signatory/representative to apply for ECC, contact details

2. PROJECT DESCRIPTION (~ 7 pages)

2.1. **Project Location and Area** (at the minimum, shown in an official NAMRIA topographic or nautical map (whichever type is applicable and of appropriate scale); Show title, legend, scale, project location and political boundaries (from sitio/barangay to region); delineation of areas of primary and secondary impact areas-Refer to Annex 2-2 (NOTE: The NAMRIA map will make possible the location of the project in scale geographically and politically. It is important for Review Team to have accurate bearings/orientation of the project and vicinity right at the start of the EIA process)

2.2. **Project Rationale** – state need for project based on local/regional and national development goals

2.3. **Project Components List** - identify proposed project components (facilities/infrastructures, other single projects supporting the main project) ; specify which are already in existence

2.4. **Project Phases, Key Environmental Aspects, Wastes, Issues, Built-in Measures** – tabulate the main project phases with a brief statement on description of the main development processes/technologies being considered; the key environmental aspects or activities; the nature and estimate of major emissions, effluent, hazardous waste, solid waste, other wastes) likely to be generated per phase; other key environmental and social issues; and identify built-in management measures and facilities planned or committed to be built into the project design (NOTE for the Operational Phase: Specifically present if processes and substances to be used are listed and fall within the limits covered by Environmental Risk Assessment as enumerated in Section C of Annex 2-7a of the Revised Procedural Manual - as basis for coverage on ERA requirement)

2.5. **Project Cost and Duration**

3. ANNEXES (~ 2 pages)

10.1. 1 page: Collage of photos or plates of proposed project site, and if possible - impact areas and affected areas and communities (N, S, E, W of the project; key sectoral features - land, water, air, people)

10.2. 1 page: NAMRIA Topographic/Nautical Maps showing geopolitical location of the project site and topographic features of the project environs

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[1] The PDS is important due to its following specific purposes: a) It shall be used by the EMB Case Handler in the selection of the appropriate field of expertise and number of experts to form the EIA Review Committee or Technical Committee; b) The PDS shall also be a basis for EMB's evaluation of the list of sectoral stakeholders to be invited for Scoping, and c) The PDS may also provide EMB adequate background on likely key issues to enable it to provide in return proper advice to the Proponent on critical preparations for Public and Technical Scoping.

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PROJECT DESCRIPTION FOR SCOPING (PDS)

1. Basic Project Information

Name of Project	Sta. Cruz River Restoration and Rehabilitation Project
Location	Brgy. Poblacion 1 and Brgy. Lumangbayan, Sta. Cruz, Occidental Mindoro, Philippines
Nature of Project	**River Restoration and Rehabilitation Project in pursuit of DAO 2020-12** The proponent intends to implement the following: • Creation of a channel through the river delta to encourage the free flow of river water to the sea. • Deepening of the river channels in specified areas. • Removal of materials that hamper the natural flow of water via the river channels and river delta. • Installation of riverbank protection measures.
Authorization	• **Resolution No. 1 (dated November 11, 2020)** – There is a great heed to address the flooding in the Province. • **Resolution No. 3 (dated November 11, 2020)** – The IAC procedures are defined • **Resolution No. 5 (dated November 11, 2020)** – An Initial list of heavily Silted Rivers within the Province is issued. • **Resolution No. 7 (dated November 11, 2020)** – The Governor is authorized to issue an open invitation to contractors to file then intent to dredge and desilt 18 rivers.
Project Owner	**Province of Occidental Mindoro**
Project Proponent	**JOINT VENTURE of :** **FRONT NINE KONSTRUCT** KM. 10.5 Purok 30, Brgy. Cabantian, Buhangin, Davao City 8000 **KKC CONSTRUCTION AND DEVT. CORP** Lot 26 Brgy. Bangad, Cabanatuan City, Nueva Ecija, 3100
Contact Person(s)	**ENGR. ARSENIO B. GROSPE** JV Authorized Managing Officer Contact No. +63 9163125825 Landline (02) - 291 - 7883 frontninekonstruct@yahoo.com KKCconst@gmail.com

Republic of the Philippines
Inter-Agency Committee
Provincial Capitol, Mamburao
Occidental Mindoro

RESOLUTION NO. 1
Series of 2020

WHEREAS, the Department of Environment and Natural Resources (DENR) issued DENR Administrative Order No. 2020-12 with the subject of Rationalizing Dredging Activities in Heavily-Silted River Channels within the Province of Occidental Mindoro pursuant to the DENR-DPWH-DILG-DOTC Joint Memorandum Circular No. 1 Series of 2019;

WHEREAS, Section 2 Title II of the above-mentioned Administrative Order states that "applicants must possess the financial capacity prescribed by the Inter-Agency Committee to undertake dredging operations";

WHEREAS, to provide immediate and adequate assistance to our countrymen affected by floods due to the heavily-silted river systems in the Province of Occidental Mindoro, it becomes imperative for this Committee to issue resolutions that will create an operating structure for dredging operations in said Province;

WHEREAS, Article 2, Section 2, of DAO No. 2020-12 provides that *"Applicants must possess the financial capacity prescribed by the Inter-Agency Committee to undertake dredging operations";*

NOW, THEREFORE, on motion of DPWH Regional Director IV-B Engr. Yolanda L. Tangco, duly seconded by other members present, **BE IT RESOLVED**, as this body hereby resolves *to set the following minimum financial and technical capacity to undertake dredging operations in the Province of Occidental Mindoro in accordance with DENR Administrative Order No. 2020-12:*

- *For Large Rivers / 3rd Order Stream – ONE BILLION PESOS (PhP1,000,000,000.00) Authorized Capital Stock, 25% of which is subscribed and paid up.*
- *For Medium Rivers / 2nd Order Stream – THREE HUNDRED MILLION PESOS (PhP300,000,000.00) Authorized Capital Stock, 25% of which is subscribed and paid up.*
- *For Small Rivers / 1st Order Stream – ONE HUNDRED MILLION PESOS (PhP100,000,000.00) Authorized Capital Stock, 25% of which is subscribed and paid up.*

APPROVED AND SIGNED this 11th day of November 2020 at the Luxent Hotel, 51 Timog Avenue, Quezon City.

EDUARDO B. GADIANO
Chairperson

MA. LOURDES G. FERRER
Vice-Chairperson

YOLANDA L. TANGCO
Member

ROLAND A. DE JESUS
Member

FOR:
MICHAEL DRAKE P. MATIAS
Member

Republic of the Philippines
Inter-Agency Committee
Provincial Capitol, Mamburao
Occidental Mindoro

RESOLUTION NO. 3
Series of 2020

WHEREAS, the Department of Environment and Natural Resources (DENR) issued DENR Administrative Order No. 2020-12 with the subject of Rationalizing Dredging Activities in Heavily-Silted River Channels within the Province of Occidental Mindoro pursuant to the DENR-DPWH-DILG-DOTC Joint Memorandum Circular No. 1 Series of 2019;

WHEREAS, Section 2 (b) Title VII of the above-mentioned Administrative Order states that "the inter-agency committee shall have the following powers and functions.. shall propose policies and programs to rationalize the dredging operations";

WHEREAS, to provide immediate and adequate assistance to our countrymen affected by floods due to the heavily-silted river systems in the Province of Occidental Mindoro, it becomes imperative for this Committee to issue resolutions that will create an operating structure for dredging operations in said Province;

NOW THEREFORE, on motion of DPWH Regional Director IV-B Engr. Yolanda L. Tangco, duly seconded by other members present, **BE IT RESOLVED**, as this body hereby resolves "*to set the added responsibility of the application to include in its Dredging Plan the construction, formation, and maintenance of access roads and complimentary structures in relation to its proposed dredging operations in the Province of Occidental Mindoro in accordance with DENR Administrative Order No 2020-12*".

APPROVED AND SIGNED this 11th day of November 2020 at the Luxent Hotel, 51 Timog Avenue, Quezon City.

EDUARDO B. GADIANO
Chairperson

MA. LOURDES G. FERRER
Vice-Chairperson

YOLANDA L. TANGCO
Member

ROLAND A. DE JESUS
Member

FOR:
MICHAEL DRAKE P. MATIAS
Member

Republic of the Philippines
Inter-Agency Committee
Provincial Capitol, Mamburao
Occidental Mindoro

RESOLUTION NO. 5
Series of 2020

WHEREAS, the Department of Environment and Natural Resources (DENR) issued DENR Administrative Order No. 2020-12 with the objective of Rationalizing Dredging Activities in Heavily-Silted River Channels within the Province of Occidental Mindoro pursuant to the DENR-DPWH-DILG-DOTC Joint Memorandum Circular No. 1 Series of 2019;

WHEREAS, Section 2 (b) Title VII of the above-mentioned Administrative Order states that "The inter-agency committee shall have the following powers and functions.. shall propose policies and programs to rationalize the dredging operations ";

WHEREAS, to provide immediate and adequate assistance to our countrymen affected by floods due to the heavily-silted river systems in the Province of Occidental Mindoro, it becomes imperative for this Body to issue resolutions that will create an operating structure for dredging operations in said province;

NOW, THEREFORE, on motion of MGB Regional Director IV-B Engr. Roland A. de Jesus, duly seconded by other members present, **BE IT RESOLVED**, as this body hereby resolves to approve the eighteen (18) rivers in Occidental Mindoro considered as heavily silted rivers primed for dredging. Dredging zone shall be one (1) kilometer up from the Delta stopping at one (1) kilometer from the bridge.

RESOLVED FURTHER, that the DPWH shall be primarily responsible for undertaking activities within the prohibited/protected zone to ensure that the objective for which the dredging operation is allowed shall be realized.

APPROVED AND SIGNED this 11th day of November 2020 at the Luxent Hotel, 51 Timog Avenue, Quezon City.

EDUARDO B. GADIANO
Chairperson

MA. LOURDES G. FERRER
Vice-Chairperson

YOLANDA L. TANGCO
Member

ROLAND A. DE JESUS
Member

FOR:
MICHAEL DRAKE P. MATIAS
Member

Republic of the Philippines
Inter-Agency Committee
Provincial Capitol, Mamburao
Occidental Mindoro

RESOLUTION NO. 7
Series of 2020

WHEREAS, the Department of Environment and Natural Resources (DENR) issued DENR Administrative Order No. 2020-12 with the subject of Rationalizing Dredging Activities in Heavily-Silted River Channels within the Province of Occidental Mindoro pursuant to the DENR-DPWH-DILG-DOTC Joint Memorandum Circular No. 1 Series of 2019;

WHEREAS, Section 2 (b) Title VII of the above-mentioned Administrative Order states that "the inter-agency committee shall have the following powers and functions.. shall propose policies and programs to rationalize the dredging operations";

WHEREAS, to provide immediate and adequate assistance to our countrymen affected by floods due to the heavily-silted river systems in the Province of Occidental Mindoro, it becomes imperative for this Body to issue resolutions that will create an operating structure for dredging operations in said Province;

NOW, THEREFORE, on motion of MGB Regional Director IV-B Engr. Roland A. de Jesus, duly seconded by other members present, **BE IT RESOLVED**, as this body hereby resolves in its meeting duly assembled "*to authorize Governor Eduardo B. Gadiano of Occidental Mindoro to publish a Notice to Public allowing the sending of Letters of Intent for only fifteen (15) calendar days by proponents of dredging activities for the following rivers located in Occidental Mindoro:*

RIVER	LOCATION	RIVER CLASSIFICATION
1. Tubili River	Barangay Tubili, Paluan	Small River
2. Paluan River	Barangay 6, Paluan	Small River
3. Abra de Ilog River	Barangay Wawa, Abra de Ilog	Large River
4. Pagbahan River	Barangay Talabaan, Mamburao	Medium River
5. Mamburao River	Barangay 7, Mamburao	Large River
6. Sta. Cruz River	Barangay Poblacion, Sta. Cruz	Medium River
7. Salagan River	Barangay Lumangbayan, Sta. Cruz	Large River
8. Amnay River	Barangay Pag-asa Sablayan	Large River
9. Patrick/Viga River	Barangay San Agustin, Sablayan	Large River
10. Baclaran River	Barangay Pinagturian, Sta. Cruz	Large River
11. Mompong River	Barangay Sta. Lucia/San Nicolas, Sablayan	Large River
12. Anahawin River	Barangay Poypoy, Calintaan	Medium River
13. Nagapi River	Barangay Iriron, Calintaan	Small River

Republic of the Philippines
Inter-Agency Committee
Provincial Capitol, Mamburao
Occidental Mindoro

14. Lumintao River	Barangay Malawaan, Rizal	Large River
15. Busuanga River	Barangay Central/Adela, San Jose	Large River
16. Labangan River	Barangay Mangarin, San Jose	Medium River
17. Caguray River	Barangay Caguray Poblacion, Magsaysay	Large River
18. Tuguilan River	Barangay Tayamaan, Mamburao	Small River

APPROVED AND SIGNED this 11th day of November 2020 at the Luxent Hotel, 51 Timog Avenue, Quezon City.

EDUARDO B. GADIANO
Chairperson

MA. LOURDES G. FERRER
Vice-Chairperson

YOLANDA L. TANGCO
Member

ROLAND A. DE JESUS
Member

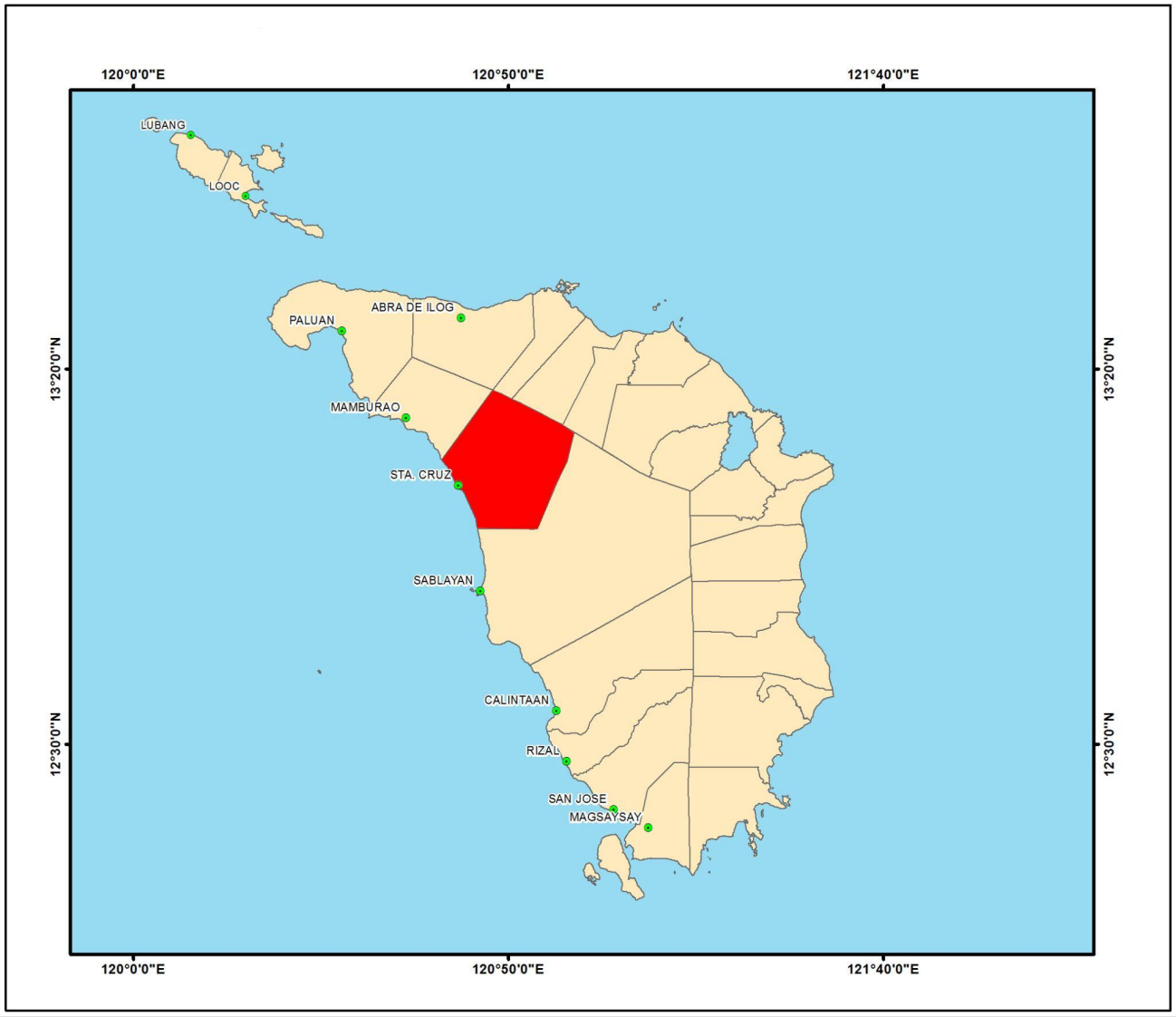
FOR:
MICHAEL DRAKE P. MATIAS
Member

2. Project Description

2.1. Project Location

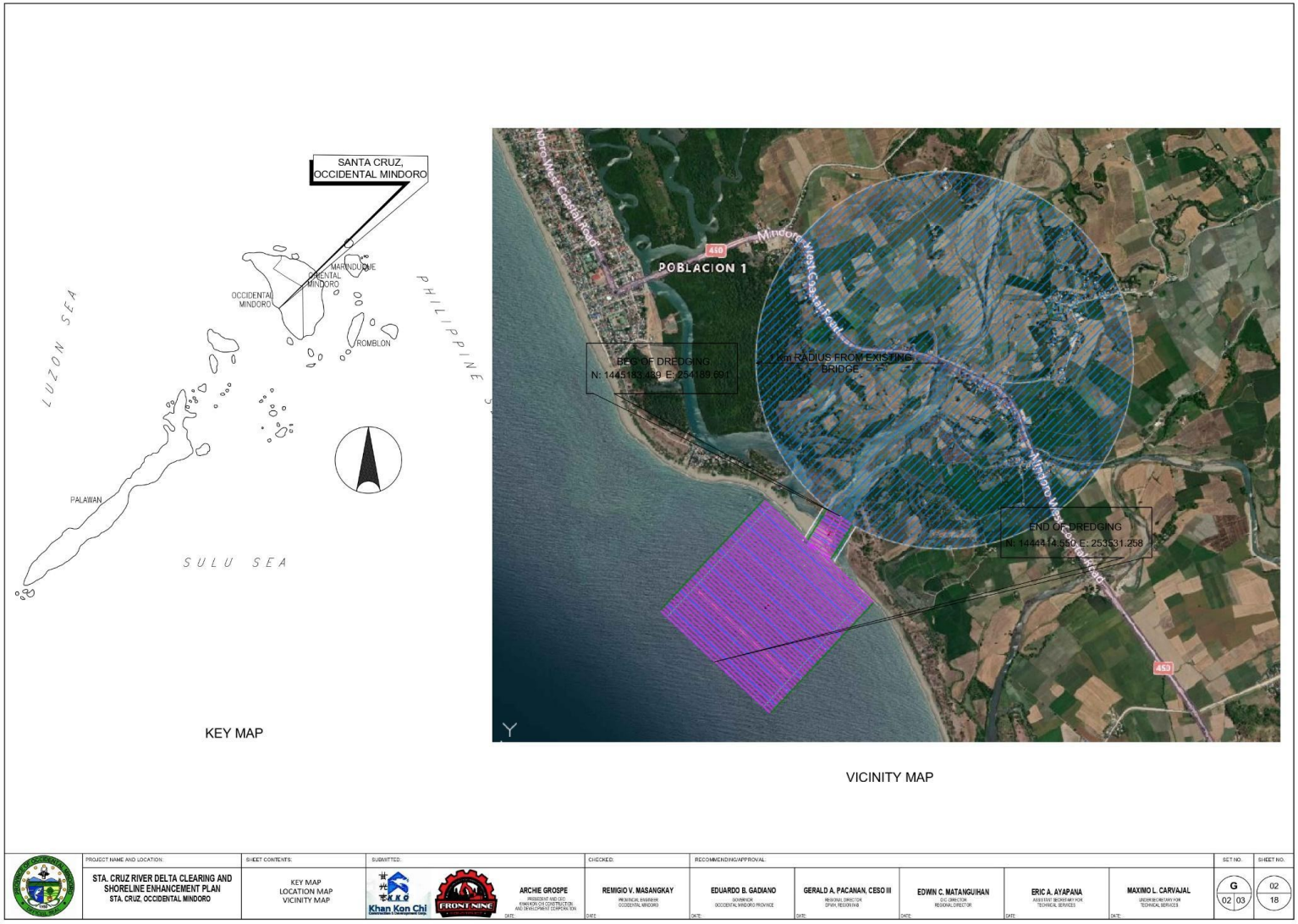
A. Location Map - Occidental Mindoro

B. Location Map - Sta. Cruz, Occidental Mindoro



C. NAMRIA Map - Sta. Cruz

D. Proposed Design Plan for River Maintenance and Restoration Project

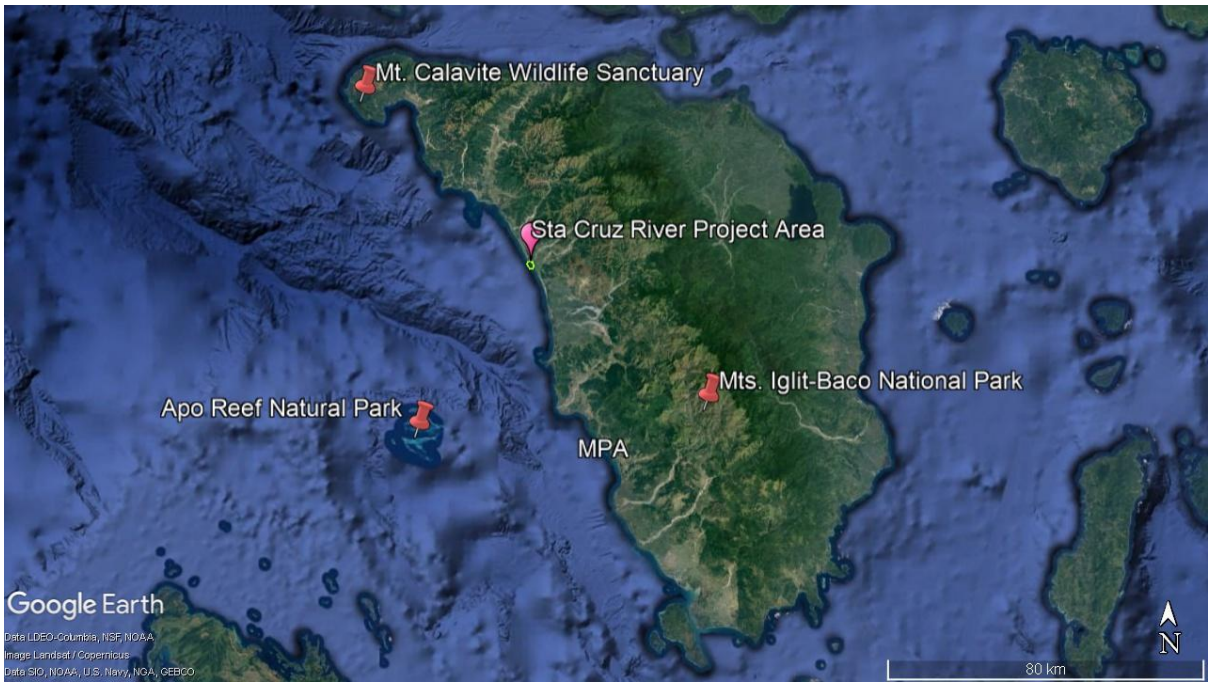


PROJECT NAME AND LOCATION:	SHEET CONTENTS:	SUBMITTED:	CHECKED:	RECOMMENDING/APPROVAL:				SET NO.	SHEET NO.
STA. CRUZ RIVER DELTA CLEARING AND SHORELINE ENHANCEMENT PLAN STA. CRUZ, OCCIDENTAL MINDORO	KEY MAP LOCATION MAP VICINITY MAP	ARCHIE GROSPE	REMIGIO V. MASANGKAY	EDUARDO B. GADIANO	GERALD A. PACANAN, CESO III	EDWIN C. MATANGUIHAN	ERIC A. AYAPANA	MAXIMO L. CARVAJAL	G 02 03	02 18

E. Sta. Cruz, Occidental Mindoro Protected Areas

F. Occidental Mindoro Protected Areas

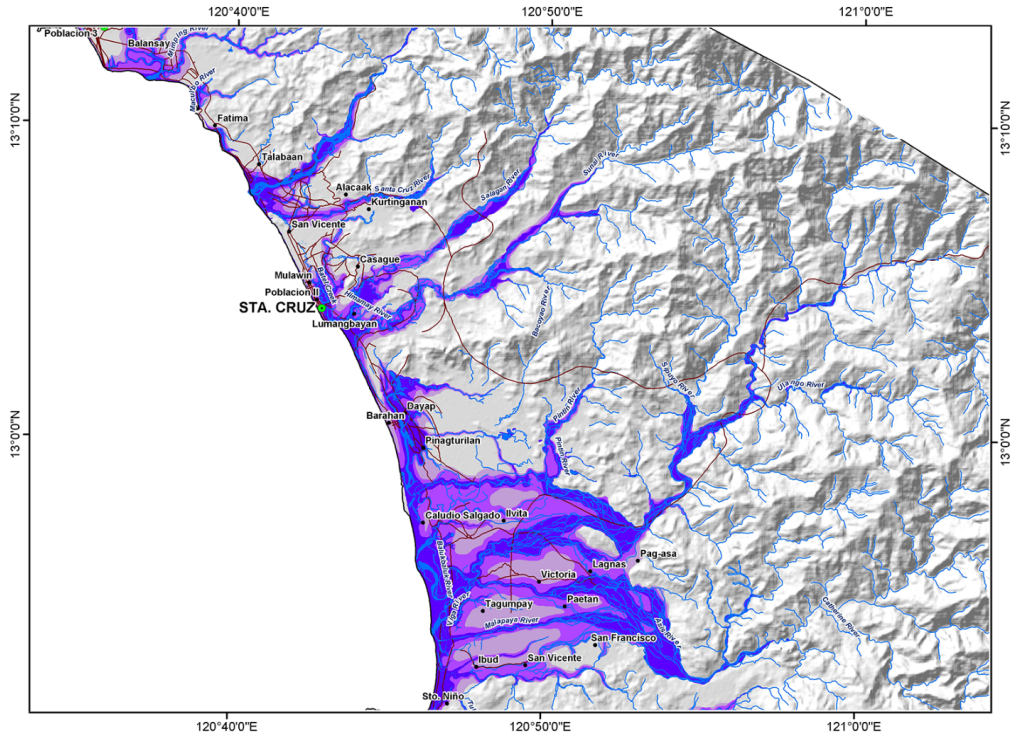
Occidental Mindoro Protected Areas



Name	Legal Basis	Legal Status	Proximate Distance from Project Area
Mts. Iglit-Baco National Park	Proclamation No. 557, s. 1969	Legislated	55km
Apo Reef Natural Park	Proclamation No. 868, s. 1996	Legislated	50km
Mt. Calavite Wildlife Sanctuary	Proclamation No. 292, s. 2000	Legislated	53km
Calavite & F.B. Harrison Game Refuge and Bird Sanctuary	E.O. 9, s. 1920	Initial Component	53km

G. Flood Susceptibility Map

FLOOD SUSCEPTIBILITY MAP OF STA. CRUZ, OCCIDENTAL MINDORO



FLOOD SUSCEPTIBILITY CATEGORIES

High Susceptibility
Areas likely to experience flood heights of greater than 1.0 meter and/or flood duration of more than 3 days. These areas are immediately flooded during heavy rains of several hours; include landforms of topographic lows such as active river channels, abandoned river channels and areas along river banks; also prone to flashflood.

Moderate Susceptibility
Areas likely to experience flood heights of 0.5 to 1.0 meter and/or flood duration of 1 to 3 days. These areas are subject to widespread inundation during prolonged and extensive heavy rainfall or extreme weather condition. Fluvial terraces, alluvial fans, and infilled valleys are areas moderately subjected to flooding.

Low Susceptibility
Areas likely to experience flood heights of less than 0.5 meter and/or flood duration of less than 1 day. These areas include low hills and gentle slopes. They also have sparse to moderate drainage density.

No Flooding Hazard

NOTE:
This flood susceptibility map should not be used as a substitute for detailed geologic / geotechnical site investigation.

N

0 4 8
Kilometers

Scale 1:70,000

Geographic Coordinate System
Luzon 1911 Datum

- Municipal Hall
- Barangay Hall
- National Highway
- Major Road/Other Access Roads
- Rivers & Creeks

Republic of the Philippines
Department of Environment and Natural Resources
MINES AND GEOSCIENCES BUREAU
Regional Office No. IV - MIMAROPA
1515 Roxas Blvd., Ermita, Manila

2.2. Project Rationale

- The Province of Occidental Mindoro is one of the most flood prone provinces in the Country.
- Being host to at least 18 heavily silted rivers, the annual occurrence of floods is almost as certain as sunrise with the advent of rain.
- Being primarily consisting of agricultural communities, flood damage affects the very source of livelihood of the Mindoreños.
- The topography of Occidental Mindoro is generally rugged, with narrow strips of coastal lowlands. Its terrain is characterized by successive mountain ranges, valleys, and elongated plateaus, with rolling lands along the coastal region.
- Areas with slope gradient of 30% and above represent 57% of the total land area while those with gradient of 0-18% account for 42% and 18-30% gradient is only 1%.
- In its effort to relieve its communities of the perennial threat of floods, the provincial leadership, in coordination with the DENR, the DPWH, the EMB, and the MGB is implementing DENR Administrative Order No. 2020-12 which seeks to Rationalize the Dredging Activities of Heavily Silted Rivers in the Province of Occidental Mindoro.

- The DAO is a guide for the Private Sector to participate in the National Government's efforts to address the issues of flooding in the various LGUs.

- The abovementioned Inter-Agency Committee (IAC) which consist of the Governor as Chairman, the DENR Regional Executive Director as Vice-Chairperson and the DPWH MIMAROPA Regional Director, the EMB MIMAROPA Regional Director and the MGB MIMAROPA Regional Director exercises oversight on the River Dredging Program of the Province.

- The IAC has evaluated the rivers of the Province and in its Resolution No. 7 has determined 18 heavily silted rivers and has accordingly classified these into Large, Medium and Small Categories.

- In the IAC's Reso 18, the IAC resolved that the Province will reopen its invitation for inactive applications to interested and qualified proponents the opportunity to participate in the dredging activities on the abovementioned heavily silted rivers.

- In November 2022, the Provincial Governor's Office (PGO) endorsed to the IAC the application of the Joint Venture of KKC Const, & Dev't, Corp / and Front Nine Konstruct Builders and Realty Development Corporation to dredge the Sta Cruz River based on the companies' experience in quarrying activities in Central Luzon and their track record of projects with a number of ports of the Philippine Ports Authority.

- The Sta Cruz River is located in the Municipality of Sta. Cruz, Occidental Mindoro. The Municipality is a 1st class Municipality in the North Quadrant of the Province, bounded by the Capital Municipality of Mamburao in the North, the Municipality of Sablayan in the South, Municipality of Baco in Oriental Mindoro in the East and the West Philippine Sea in the West.

- The Sta. Cruz River is identified as one of the 3 flood causing rivers of the Municipality. It will be noted that the Sta. Cruz River (a small river) lies in close proximity with the Salagan River (a large river) and the Baclaran River (a medium river), the 2 other floods causing rivers in the Municipality. It should be further noted that the exit of the Sta Cruz River and the exit of the Salagan River meet at the point where the rivers meet the sea.

2.3. Project Components

The primary considerations in the selection of the site for the construction of the Proposed River Restoration and Rehabilitation Project at Sta. Cruz River in the Municipal of Sta. Cruz, Occidental Mindoro are the following:

1. Considering the current concerns on:

    a. rising sea levels
    b. the changing weather patterns where there is extreme heat and extreme rains
    c. the change in the trajectory of recent typhoons where they now tend to exit via the MIMAROPA (Region 4B), flooding risks are expected to worsen if corrective actions are not taken immediately.

2. The following is a summary of the results of the Initial Survey:

    a. The river mouth is blocked by a wide river delta consisting of soil, rocks and mud and the river channel is only a few inches deep due to heavy siltation.
    b. The Channel is significantly dry in summer and flooded in the rainy season.

3. Protected areas were noted and identified. Adequate buffer zones are provided.

2.4. Summary of Project Phases, Key Environmental Aspects, Waste, Issues, Built-in Measures

Table 3. Summary of Project Phases, Key Environmental Aspects, Waste, Issues, Built-in Measures

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
PRE-OPERATION PHASE			
Pre-construction phase covers activities like planning, feasibility study, drawing of plans and permit procurement.			Non-commencement of construction phase until compliance and completion of required permits.
OPERATION PHASE			
Employment and Economic Opportunities	Increase income for the residents	Positive impact: No mitigation measure required.	100% priority hiring of qualified residents
	Spread of communicable diseases from migrant workers (e.g., COVID-19)	Conduct of medical examination of workers prior to hiring Provision of medical services to employees and nearby communities	100% compliant with the COVID-19-related policies and guidelines of the DOH
Opening of river delta and portions of the coastal, river line and stretch of Sta. Cruz River and some agricultural area, other government project sites	Land Tenure Land Acquisition	Implement cadastral surveys or RAP in coordination with IACs, LGUs, PGOs, MPDOs, lot owners and other concerned agencies to address the issue on land acquisition and relocation of informal settlers.	100% efficient implementation of proposed mitigations.
	Potential conflict with other government infrastructure projects	Close coordination with DPWH, LGU and other relevant agencies	

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
	Potential conflict with ferry operation	Close coordination with the affected ferry companies to align and ensure that the proposed dredging schedule and activities shall be accommodated in their operation plan; Plan appropriate method and schedule of dredging, hauling and transport to minimize the impact to existing ferry or maritime operation; Strictly implement approved dredging master plan and clearance from DPWH	100% coordination and cooperation with commercial vessel companies; 100% efficient implementation of proposed mitigations.
Generation and improper handling and disposal of domestic and hazardous solid waste.	Increase generation of hazardous wastes	Regular collection of wastes by hired/contracted hazardous wastes treaters	100% efficient implementation of proposed mitigations.
Clearing and removal of vegetation, stripping of soil cover, excavation and other pre-dredging and dredging operations	Pedology Soil erosion	Design and install of appropriate designed measures to prevent or minimize slope failure during part construction and operation based on the results of the geohazard assessment and geotechnical investigations. Scheduling of clearing and dredging activities in speedy manner during dry season if possible.	100% efficient implementation of proposed mitigations.

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
		Placement of unsuitable dredge materials on appropriate staging site or spoils area and with adequate containment. Limit stockpile height up to 5 m high only. Utilize heavy equipment for transporting, hauling and excavating material from one area to another so as to avoid spills into drainage system	
Generation and improper handling and disposal of dredged materials, unusable materials, etc.)	Pedology Soil erosion	Plan and implement recycling and reuse of excavated soil to be utilised for the project/ other project as much as possible. In case of excessive soil to be generated, identify the final spoil disposal site. Place excavated materials on appropriate dump sites or spoils area and with adequate containment.	100% efficient implementation of proposed mitigations.
Accidental spills of fuels/lubricants from construction vehicles & machineries/ hazardous chemicals. Generation and improper handling/disposal of construction/ domestic/ hazardous wastes.	Pedology Degradation of soil quality (soil contamination)	Proper inspection and maintenance of machines and equipment. Conduct soil fertility monitoring in case of any possible contamination events occur.	100% efficient implementation of proposed mitigations.

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
Damage of subsurface structures during filtering and dredging at previously service area sites (catchment basin, stock pile)	Pedology Exposure to contaminated soil	Identify a potential contaminated site and conduct of soil sampling survey at potential contained site, if necessary.	100% efficient implementation of proposed mitigations.
Removal of vegetation along the proposed dredging area (if any occurrence)	Terrestrial Ecology Loss of Habitat	Greening of the area and replacement of the loss vegetative cover shall be undertaken which will be part of the rehabilitation plan.	100% efficient implementation of proposed mitigations.
		For tree replanting, areas not part of the development within the project site, around the stations and depot will be prioritize for replanting activity to create buffer zone to improve wildlife. For those that cannot be replanted within the project area, coordination with the DENR and LGUs on the identification of relocation area for the potential trees that will be relocated	
		Secure tree cutting permit in compliance with DENR Memorandum Order No. 2012-02.	
Terrestrial Ecology Threat to Existence and/or Loss of Important Local Species Threat to Abundance,	Removal of vegetation along the proposed dredge area Dredging and vehicle movement	Design, plan and implement that will minimize vegetation clearing, alteration of landform, generation of noise, vibration, illumination, and vehicular movement particularly in areas adjacent to flora of higher conservation	100% efficient implementation of proposed mitigations.

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
Frequency and Distribution of Important Species Hindrance to Wildlife Access	Generation of dust and noise, vibration, and illumination pollution.	significance (i.e., Is-is, Narra) and in the vicinity of ecological significant areas. Wildlings of the endangered and threatened species, if any, will be collected before construction, placed in the nursery, and give priority during nursery operation to be used for rehabilitation of areas that will be affected by project.	
Potential Geologic-related and other natural events impacts	Land	Cut and Fill Method shall be undertaken in order not to cause severe changes in the terrestrial physiographic features of the site	100% efficient implementation of proposed mitigations.
Water Quality	Increase clogging of waterways which may affect water quality	Dredging design and Methodology Enhancement of drainage and flow discharge of the river to maintain its water quality and stabilize sediments	100% efficient implementation of proposed mitigations.
Visual aesthetics	Presence of the proposed dredging project equipment and vessels (dredgers, vehicles, etc.) Visual impact	Established and maintain tree planting to minimize the visual impact by the project and harmonise to the surrounding environments in open areas within the dredge site, stockpile and around the Plant, to create green corridor. Create tree nursery area for endemic and endangered/indigenous tree species for supply of planting materials to project site and rehabilitation area	100% efficient implementation of proposed mitigations.

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
Water	Generation and improper handling of domestic and hazardous wastes including accidental oil and lubricant spills from dredging areas and Plant Degradation of land value Change in water quality	Conduct proper inspection and prompt maintenance of machines and equipment, and facilities. Strictly implement solid waste management plan in accordance to RA 9003, and treatment of hazardous chemicals and contaminated soil in accordance with RA 6969. Conduct of soil quality monitoring when necessary.	100% efficient implementation of proposed mitigations;
Terrestrial Ecology	Support facility, Office areas, Operation of service vehicle, stockpile, catchment basin Loss of Habitat Threat to Existence and/or Loss of Important Local Species Hindrance to Wildlife Access	Continuous planting of replacement trees. Conduct monitoring on survival of replanted trees and replant if required. Implement vegetation management plan considering significant fauna (local bird species) to minimize the use of herbicide and machinery as much as possible. Minimized noise, vibration, illumination, and vehicular movement in faunal sites	Terrestrial Ecology
Freshwater Ecology	Loss of Habbitat	Dredging is most likely to affect fish when a vulnerable life-history stage of a species is confined largely to the area being dredged;	100% efficient Implementation of proposed mitigations. 100% compliant with DAO 2016-08 General Effluent Standards

Environmental Component	Potential Impact	Prevention/Mitigation/ Enhancement Measures	Target Performance/ Efficiency
		Raising of fish native to the area and nursery	
	Threat to Existence and/or Loss of Important Local Species		
	Hindrance to Wildlife Access		
Surface water quality	Dredging operation on river beds and coastal sections near the delta	It should be controlled by increasing the length of travel of water, to maximise settlement of solids within the discharge area, and, when necessary, by use of silt screens or curtains. The turbidity of the discharge should be monitored.	100% efficient implementation of proposed mitigations. 100% compliant with DAO 2016-08 General Effluent Standards
ABANDONMENT PHASE			
Decommissioning	Soil contamination with heavy metals	Abandonment Plan of the Project will be strictly followed with emphasis on the strategy of sustaining erosion/ sedimentation control within and adjacent vicinity of the Project and rendering the Project area free of soil contamination	100% efficient implementation of proposed mitigations;
	Disposal of wastes may lead to possible impacts from spills and discharges of contaminants affecting water quality and marine ecology	The management ensures that the workers follow the formulated rules and regulations on solid and domestic wastes management within the Front Nine Konstruct and KKC Construction and Devt. Corporation's area	Watering during dismantling to minimize dust. Proper maintenance of vehicles and equipment.

2.5. Project Cost and Duration

Project : Dredging of Sta. Cruz and Salagan River

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	REMARKS
1	Other General Requirements	LS	1	
2	Desilting	cu.m.	3,819,636.00	
3	Mobilization/Demobilization	LS	1	

PROJECT LIMITS :	0 + 000.00	1 + 080.00	1,080.00
	0 + 080.00	1 + 080.00	1,000.00
	0 + 800.00	2 + 500.00	1,700.00
PROJECT LENGTH :	1,080.00	l.m.	

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Lot 26 Brgy. Bangad, Cabanatuan City, Nueva Ecija, 3100 Tel. No.: (044) 456-6454
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Project : Dredging of Sta. Cruz and Salagan River Section

Station	Area Dredge	End Area	Distance (m)	Volume Dredge
0 + 000.00	1,031.02			
0 + 020.00	1,417.64	1,224.33	20.00	24,486.60
0 + 040.00	1,505.04	1,461.34	20.00	29,226.80
0 + 060.00	1,956.94	1,730.99	20.00	34,619.80
0 + 080.00	2,147.20	2,052.07	20.00	41,041.40
0 + 100.00	2,446.24	2,296.72	20.00	45,934.40
0 + 120.00	2,656.60	2,551.42	20.00	51,028.40
0 + 140.00	3,019.78	2,838.19	20.00	56,763.80
0 + 160.00	3,060.32	3,040.05	20.00	60,801.00
0 + 180.00	3,440.00	3,250.16	20.00	65,003.20
0 + 200.00	4,540.00	3,990.00	20.00	79,800.00
0 + 220.00	4,180.00	4,360.00	20.00	87,200.00
0 + 240.00	4,610.00	4,395.00	20.00	87,900.00
0 + 260.00	4,690.44	4,650.22	20.00	93,004.40
0 + 280.00	9,442.00	7,066.22	20.00	141,324.40
0 + 300.00	8,670.00	9,056.00	20.00	181,120.00
0 + 320.00	8,730.56	8,700.28	20.00	174,005.60
0 + 340.00	8,808.30	8,769.43	20.00	175,388.60
0 + 360.00	8,724.00	8,766.15	20.00	175,323.00
0 + 380.00	8,884.56	8,804.28	20.00	176,085.60
0 + 400.00	8,970.70	8,927.63	20.00	178,552.60
0 + 420.00	10,044.10	9,507.40	20.00	190,148.00
0 + 440.00	10,068.78	10,056.44	20.00	201,128.80
0 + 460.00	9,872.40	9,970.59	20.00	199,411.80
0 + 480.00	8,914.86	9,393.63	20.00	187,872.60
0 + 500.00	7,596.00	8,255.43	20.00	165,108.60
0 + 520.00	6,262.00	6,929.00	20.00	138,580.00
0 + 540.00	4,006.20	5,134.10	20.00	102,682.00
0 + 560.00	3,049.92	3,528.06	20.00	70,561.20
0 + 580.00	2,440.00	2,744.96	20.00	54,899.20
0 + 600.00	1,840.12	2,140.06	20.00	42,801.20
0 + 620.00	856.00	1,348.06	20.00	26,961.20
0 + 640.00	585.80	720.90	20.00	14,418.00
0 + 660.00	486.24	536.02	20.00	10,720.40
0 + 680.00	300.86	393.55	20.00	7,871.00
0 + 700.00	65.00	182.93	20.00	3,658.60
0 + 720.00	77.72	71.36	20.00	1,427.20
0 + 740.00	72.75	75.24	20.00	1,504.70
0 + 760.00	59.01	65.88	20.00	1,317.60
0 + 780.00	56.59	57.80	20.00	1,156.00
0 + 800.00	66.63	61.61	20.00	1,232.20
0 + 820.00	52.71	59.67	20.00	1,193.40
0 + 840.00	71.05	61.88	20.00	1,237.60
0 + 860.00	66.11	68.58	20.00	1,371.60
0 + 880.00	72.93	69.52	20.00	1,390.40
0 + 900.00	81.75	77.34	20.00	1,546.80
0 + 920.00	129.12	105.44	20.00	2,108.70
0 + 940.00	96.74	112.93	20.00	2,258.60
0 + 960.00	93.38	95.06	20.00	1,901.20
0 + 980.00	84.70	89.04	20.00	1,780.80
1 + 000.00	83.44	84.07	20.00	1,681.40
1 + 020.00	97.99	90.72	20.00	1,814.30
1 + 040.00	131.79	114.89	20.00	2,297.80
1 + 060.00	169.95	150.87	20.00	3,017.40
1 + 080.00	225.56	197.76	20.00	3,955.10
Sub-Total				**3,409,625.00**

Station (R/S)	Area Dredge	End Area	Distance (m)	Volume Dredge
0 + 080.00	149.56			
1 + 080.00	159.85	154.71	1000.00	154,705.00
Sub-Total				**154,705.00**

Project :

Station (L/S)	Area Dredge	End Area	Distance (m)	Volume Dredge
0 + 800.00	96.80			
2 + 500.00	203.56	150.18	1700.00	255,306.00
Sub-Total				**255,306.00**

Total	**3,819,636.00**
Add 25% of Total Volume for Continous Siltation	**954,909.00**
Grand Total	**4,774,545.00**

Project :

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PROGRAM OF WORKS

Municipality	:	Occidental Mindoro	Road Width		
Name of Project	:	Dredging of Sta. Cruz and Salagan River	Pavement Width		
			Pavement Thickness		
			Type of Superstructure		N/A
Location	:	Sta. Cruz and Salagan River, Occidental Mindoro	No. of Spans		N/A
Appropriation	:		Classification		
source of Funds	:	F.Y. 2021 GAA	Starting Date		Upon Approval
Limits	:	0+000.00 - 1+080.00	No. of Days to complete		90 C.D.
Net Length	:	L.M.			

DESCRIPTION OF WORK TO BE DONE		% of Total	EQUIPMENTS	NUMBER	
				Needed	Available
PART A	OTHER GENERAL REQUIREMENTS	0.001	Backhoe	2	
PART B	DESILTING	0.998	Barge	2	
PART C	MOBIIZATION/DEMOBILIZATION	0.000	Lowbed Trailer	2	
TOTAL		100.00%			

Item No.	Description		Unit	Quantity	Total Cost	Unit Cost	Adjusted Cost
PART A	OTHER GENERAL REQUIREMENTS						
	1.00	Other General Requirements	LS	1	2,305,198.97	2,305,198.97	
PART B	DESILTING						
	2.00	Desilting	cu.m.	3,819,636.00	1,563,614,548.41	409.36	
PART C	MOBIIZATION/DEMOBILIZATION						
	3.00	Mobilization/Demobilization	LS	1	212,471.88	212,471.88	
TOTAL COST					1,566,132,220.00		

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SUMMARY COST ESTIMATE

ITEM No.	DESCRIPTION	QUANTITY	UNIT	DIRECT COST		INDIRECT COST	
				UNIT COST (Php)	AMOUNT (Php)	UNIT COST (Php)	AMOUNT (Php)
PART-A OTHER GENERAL REQUIREMENTS							
1.00	Other General Requirements	1	LS	1,829,522.99	1,829,522.99	2,305,198.97	2,305,198.97
	TOTAL COST (PART A)				***1,829,522.99***		***2,305,198.97***
PART-B DESILTING							
2.00	Desilting	3,819,636.00	cu.m.	324.89	1,240,963,927.31	409.36	1,563,614,548.41
	TOTAL COST (PART B)				**1,240,963,927.31**		**1,563,614,548.41**
PART-C MOBILIZATION/DEMOBILIZATION							
3.00	Mobilization/Demobilization	1	LS	168,628.48	168,628.48	212,471.88	212,472
	TOTAL COST (PART C)				**168,628.48**		**212,471.88**
	GRAND TOTAL COST						***1,566,132,220.00***

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Project : Dredging of Sta. Cruz and Salagan River
Item No. : 3. Mob/Demob
Quantity : 1.00 LS
Unit Cost : P 212,471.88

	No. of Persons	No. of Hours	Hourly Rate	Amount
A . LABOR				
1 . Laborer	4	32.00	63.66	8,148.48
		Sub-total for Labor		8,148.48
Designation	No. of Unit	No. of Hours	Unit Cost	Amount
B. EQUIPMENT				
Mob/Demob of Offshore Equipment				
1 Tugboat	1	48.00	2,072.00	99,456.000
Mob/Demob of Other Facilities				
1 Low Bed Trailer		2 trips	10,560.00	21,120.00
2 Cargo Truck		32.00	1,247.00	39,904.00
		Sub-total for Equipment		160,480.00
Designation	Unit	Quantity	Unit Cost	Amount
F. Materials				
		Sub-total for Materials		-
Unit Direct Cost				168,628.48
1. Overhead, Contingencies & Miscellaneous,12%)				20,235.42
2. Contractor's Profit ,8%				13,490.28
3. Value Added Tax (5% of A and B)				10,117.71
Total Unit Cost				212,471.88

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Project : Dredging of Sta. Cruz and Salagan River
Item No. : 1. General Requirement
Quantity : 1.00
Unit Cost : P 2,305,198.97

	No. of Persons	No. of Hours	Hourly Rate	Amount
A . LABOR				
Project Billboards (2)				
1 . Foreman	1	2.00	113.29	226.58
2 . Skilled Laborer	1	2.00	82.57	165.14
3 . Unskilled Laborer	2	2.00	63.66	254.64
				646.36
			x 2	1,292.72
Safety and Health(1)				
1 . First Aider	1	29,840.91	60.86	##########
		Sub-total for Labor		##########

Designation	No. of Unit	No. of Hours	Hourly Rate	Amount
B. EQUIPMENT				
10 % labor (Billboard)				1,292.72
		Sub-total for Equipment		1,292.72
C. Total A + B				##########
D. Output(m^3) = -				-
E. Direct Unit Cost				-

Designation	Unit	Quantity	Unit Cost	Amount
C. MATERIALS				
Project Billboards				
1 . Printed Tarpauline	sets	2.00	1,400.00	2,800.00
2 . Marine Plywood 1/4 "thk	pcs.	2.00	495.00	990.00
3 . Coco Lumber	Bd.ft.	84.00	17.50	1,470.00
4 . CWN, assorted sizes	Kgs.	2.00	75.00	150.00
				5,410.00
			x 2	10,820.00
		Sub-total for Materials		10,820.00
Unit Direct Cost				##########
1. Overhead, Contingencies & Miscellaneous,12%)				219542.76
2. Contractor's Profit ,8%				146,361.84
3. Value Added Tax (5% of A and B)				109,771.38
Total Unit Cost				##########

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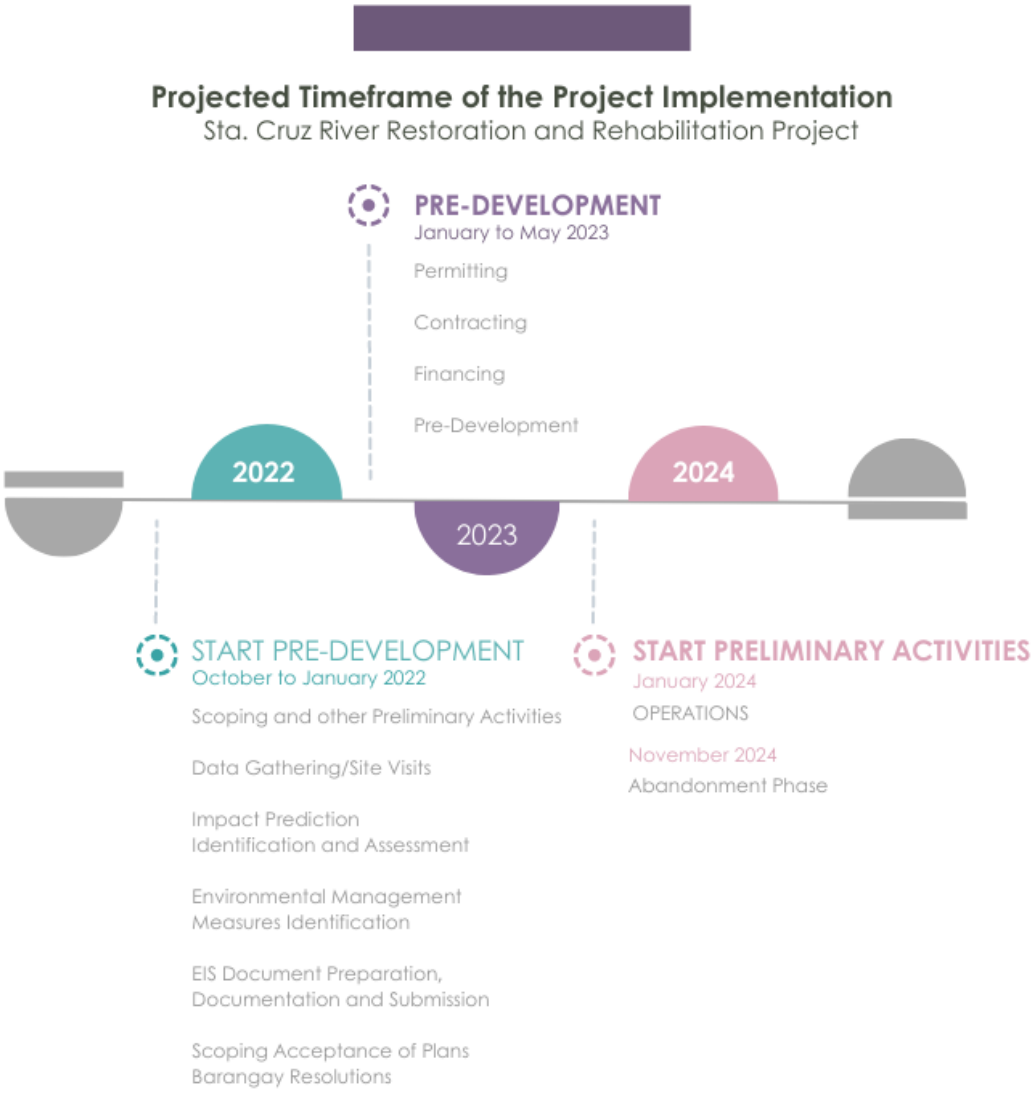
Project : Dredging of Sta. Cruz and Salagan River
Item No. : 2. Desilting
Quantity : 3,819,636 cu.m.

Output = 32.00 cu.m. / hr.

Designation	No. of Persons	No. of Hours	Hourly Rate	Amount
A . LABOR				
1 . Foreman	1	119,363.63	113.29	13,522,705.08
2 . Skilled laborer	1	119,363.63	82.57	9,855,854.52
3 . Laborer	4	119,363.63	63.66	30,394,753.47
		Sub-total for Labor		53,773,313.06
Name and Capacity	No. of Unit	No. of Hours	Hourly Rate	Amount
B. EQUIPMENT				
Desilting				
1 . Crane on Barge (non-propelled)	2	119,363.63	3,937.00	939,869,183.25
2 . Tugboat (550hp, 21.96 x 6.31 x 2.49)	1	119,363.63	2,072.00	247,321,431.00
		Sub-total for Equipment		1,187,190,614.25
C. Total A + B				1,240,963,927.31
D. Output(m^3) = 3,819,636				-
E. Direct Unit Cost				324.89
Designation	Unit	Quantity	Unit Cost	Amount
F. Materials				
		Sub-total for Materials		-
Direct Cost (E + F)				324.89
1. Overhead, Contingencies & Miscellaneous,12%)				38.99
2. Contractor's Profit ,8%				25.99
3. Value Added Tax (5% of A and B)				19.49
Total Unit Cost				409.36

The implementation of the River Restoration and Rehabilitation Project and its appurtenant equipment has a long-term operational period. Preparatory works, like pre-opening of river delta, positioning of the equipment and post-permit acquisitions would take place right before the start of the implementation schedule. The timeline schedule of project is presented in figure below:



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ANNEX A

ANNEX B

Project Area

KKC Const. & Dev't. Corp.
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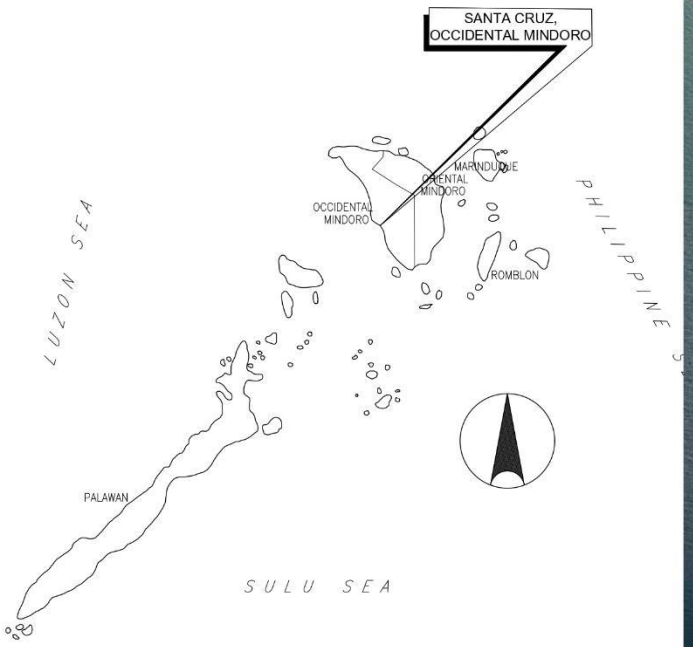
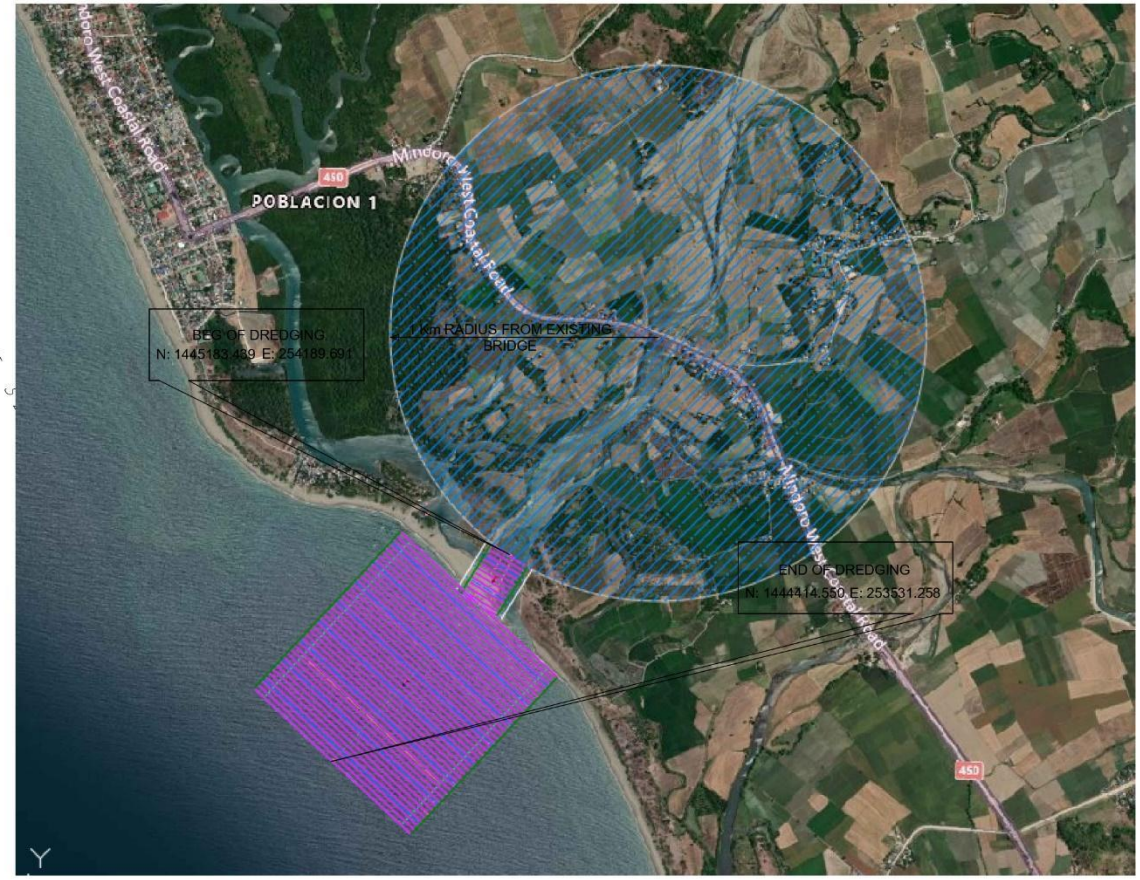


KEY MAP



VICINITY MAP

PROJECT NAME AND LOCATION:	SHEET CONTENTS:	SUBMITTED:	CHECKED:	RECOMMENDING/APPROVAL:					SET NO.	SHEET NO.
STA. CRUZ RIVER DELTA CLEARING AND SHORELINE ENHANCEMENT PLAN STA. CRUZ, OCCIDENTAL MINDORO	KEY MAP LOCATION MAP VICINITY MAP	ARCHIE GROSPE PRESIDENT AND CEO KHAN KON CHI CONSTRUCTION AND DEVELOPMENT CORPORATION DATE:	REMIGIO V. MASANGKAY PROVINCIAL ENGINEER OCCIDENTAL MINDORO DATE	EDUARDO B. GADIANO GOVERNOR OCCIDENTAL MINDORO PROVINCE DATE:	GERALD A. PACANAN, CESO III REGIONAL DIRECTOR DPWH, REGION IV-B DATE:	EDWIN C. MATANGUIHAN OIC-DIRECTOR REGIONAL DIRECTOR DATE	ERIC A. AYAPANA ASSISTANT SECRETARY FOR TECHNICAL SERVICES DATE:	MAXIMO L. CARVAJAL UNDERSECRETARY FOR TECHNICAL SERVICES DATE:	G 02 03	02 18