List of Submitted Documents
Area Clearance Application: William Tan

No.	Requirement
1.	Project Description
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1-B	Indicative Site Development Plan
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1-E	Reclamation methodology
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5.	Clearances from concerned government agencies:
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7-A	Coastal Resource Assessment
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1. PROJECT DESCRIPTION

Project Description

William Tan (Proponent) was able to secure a Memorandum of Understanding with the Philippine Reclamation Authority (PRA) for the proposed 22.2 hectares reclamation project located adjacent to land boundaries of Barangay Luzviminda, Puerto Princesa City. It will be operated as a port, which is necessary for the proposed complementary light industrial park within the vicinity.

1. Sketch plan

The project will convert a portion of the sea front in Barangay Luzviminda to a 22.2-hectare land reclamation. The reclamation and development project is designed to address the future commodity imports and exports transport needs of the Province of Palawan and neighboring provinces. Thus, it would accommodate port facility and berth marina etc. The proposed reclamation site is centered at geographic coordinates, 118°43'59.981"E & 9°41'27.351"N (PRS92).

See Annex 1-A: Sketch Plan

2. Indicative site development plan

The Project will be a sea front master planned development project located on the South East Coast of the Palawan Island, Philippines. It is a 22.2-hectare reclamation and development project designed to address the future commodity imports and exports transport needs of the Province of Palawan and neighboring provinces. Thus, it would accommodate port facilities such as ships, warehouses, piers, fueling and repairs stations, berth marina etc.

Preceding construction of port and support facilities, the topographic and hydrographic survey and land reclamation activities shall commence first and followed by activities that involve shoreline protection works, channel construction, waterway dredging, and soil improvement works.

See Annex 1-B: Site Development Plan

3. Description of the reclamation site

Luzviminda and Mangingisda were populated by the influx of migrants from the different parts of the country who were searching for land to own and build their houses. With this, the small population of over three thousand, speaks in different language. Migrants came from all over the country but the dominant group came from Visayas. Since there are no major establishments in the area that could provide employment, sources of income generally come from farming, fishing and or driving motorcycles and jeepneys. Both barangays can be accessed through land and sea transportations. Sitio Tawiran can be accessed through an access road going to the coastal area, from the barangay road.

Households get the water supply from deep wells and public water pumps. The barangays are supplied with electricity by PALECO. The barangay captain is the recognized leader of the community. He downloads information from the city government to his constituents. Issues and concerns of the community are discussed during the council meeting, sometimes with the participation of the parties concerned for proper decision making.

The barangays have basic facilities for the communities, which includes barangay hall, health center, public school and basketball court. There are also churches and stores in the area. There is a rural health unit center that takes care of the common illnesses in the area. The unit is open daily and is manned by a midwife. Vaccination and pre-natal care are the main activities in the center.

In the project site there are traces of abandoned (not maintained) baklad, and some are installed for personal use.

The adjacent land surface from the reclamation project exhibits relatively flat and gently
sloping landforms, with elevation between 0 to 15 masl. The reclamation project covers about 600 meters of the shoreline. The shoreline in this portion of Barangay Luzviminda has an orientation of NE-SW.

This reclamation area will solidify the economic relevance of Puerto Princesa in the developing economy of Palawan by providing easy access of bulk commodity imports, for distribution to the entire province especially with the opening of BIMPEAGA/ASEAN routes; easy access of exports and distribution of food (farm or agro-industrial products) in the neighboring provinces. This port project is essential to the proposed light industrial park adjoining this project to be able to pre-process imports for local distribution.

There is a question why not utilize the existing port, additional load in port will not be efficient especially that there is no more space in that vicinity to create a light industrial hub for pre-processing prior to distribution. The zoning in that area will also not allow such due to the worsening traffic in the central business district and national highway.

Another question is why in Sitio Tawiran. This location has been used by locals as their boat landing for so many years until they were able to transfer to central locations for better access to public service. This area, with reference to NAMRIA map, has the most least mangrove in the vicinity since the early years. The depth requirements are also ideal.

There are already many players in the tourism industry, but there is limited to no attention on economic part of BIMPEAGA where the development of sub-regional supply/value chains for priority commodities with highest perceived potential for intra-EAGA and extra-EAGA trade and processing. This is where this project will be of great support to the government.

See Annex 1-C: Master Development Plan

4. Valid sources of fill materials

The project will source filling materials from valid sources only. Attached are copies of ECC and Quarry Permits as possible sources.

Annex 1-D: ECC and Quarry Permits of Valid Sources

5. Reclamation methodology

Prior to commencement of the main reclamation works, a pre-survey and setting-out are to be undertaken to the proposed site. First, the boundary of the reclamation project working area shall be demarcated with lighted buoys. This is to ensure safe navigation and to keep out vessels that are not associated with this project. Subsequently, a number of arrays of turbidity control measures shall also be constructed and installed. These shall include the construction of the perimeter bund and also installation of silt curtain positioned close to the perimeter bund construction sites for the prevention of sediment dispersion resulted from dredging and sand filling activities. The seaward perimeter bunds shall be constructed using rocks, and most boundaries shall be formed by using two types of materials, which are sheet piles and rocks. The rocks, sand and sand bags shall be use initially as a perimeter bund to contain the sand fill material. Sand-filling works that started after the reclamation areas were predominantly enclose by the perimeter bunds made from rocks, and sand bags. After the sand fill was up to +3.0 m above the mean high water level, the prefabricated vertical drain (PVD) shall be follow install to the full depth of the compressible layer to drain off the pore water as part of the soil treatment. This is to fasten or expedite the consolidation of the slow-draining soils. Subsequent sand filling took place at the +3.0 m platform that are to be installed with PVDs, until the designated platform elevation of (+5.5 to +6.0 m) are reach. It should be noted that the platform at +6.0 m is 3.0 more or less above the highest astronomical tide occurring during high tide season and more than 1.5 m above the recorded wave height at the Luzviminda, Puerto Princesa City. Hence, the platform levels of the proposed for site is regarded to be a safe design parameter with the inclusion of the safe environment against overtopping effects.

As to accelerate the speed of the construction and reclamation filling activities two filling methods were considered to be apply as the most cost effective and suitable construction method. These are above water such the use of dump trucks, heavy equipments and barges for hauling of materials and below water filling activities by the used of hopper suction dredgers and barges.

Annex 1-E: Reclamation Methodology

6. Estimated cost of reclamation and land development including supporting data (i.e., existing labor force, structure and average cost and available equipment and average cost/rental rates)

Estimated project cost is at Php 2.7 B. Detailed estimates are presented in the attached Annex 1-F.

7. **Proposed funding/financing of the project**

Source of funding for the reclamation and development will be 20% Equity and 80% Bank Financing.

Annex 1-G: Affidavit of Undertaking

8. Proposed project timetable - reclamation, land development and other related activities;

Major activities for Reclamation and Development will be during the first five years. Actual reclamation activities are expected to commence on Year 2 to 3. Development of land is expected to start from Year 3.

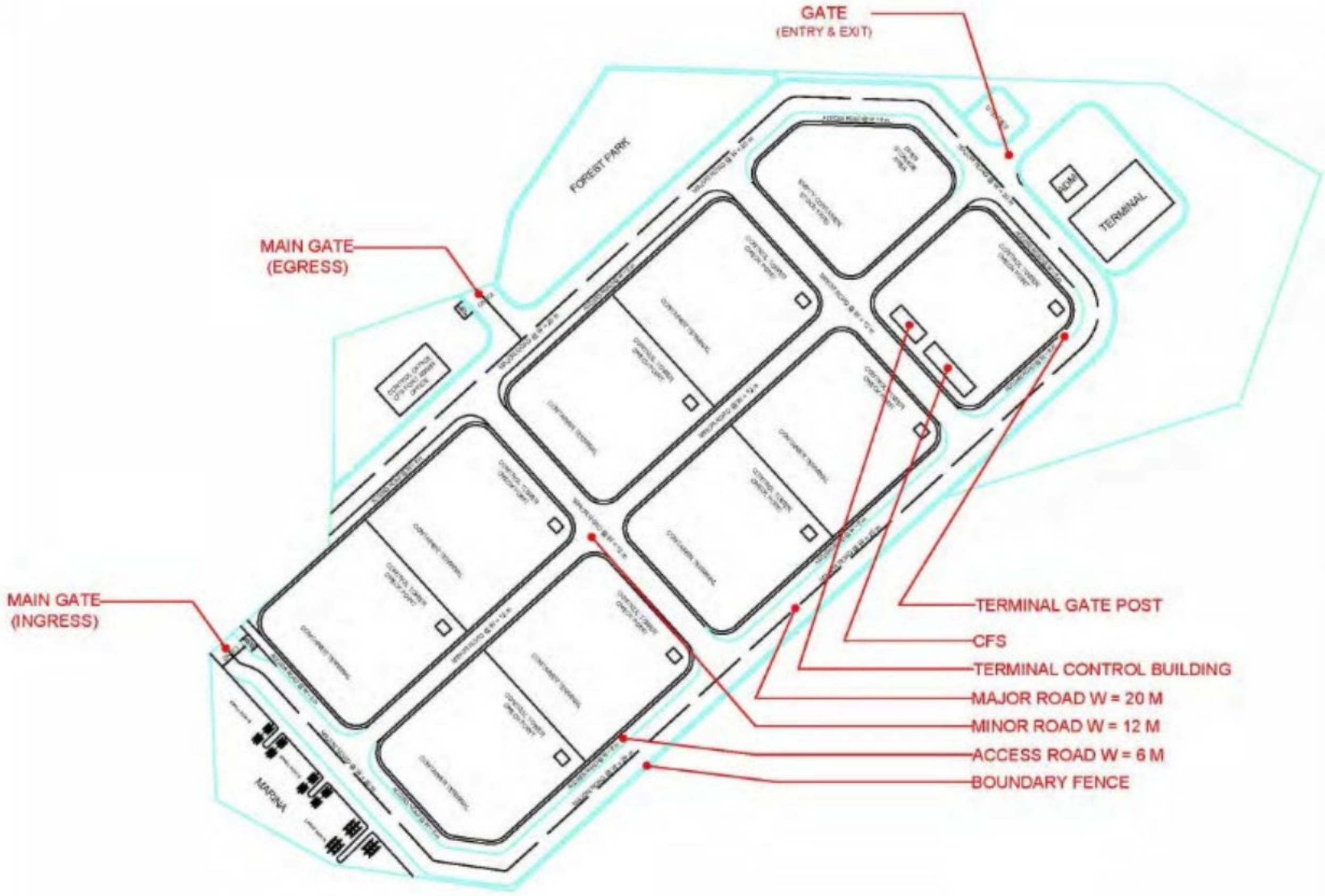
See attached Annex 1-H: Project Timetable

9. Prevailing market land values of types/uses similar to the proposed land use/s within immediate vicinity duly certified by the local assessor/s and based on Bureau of Internal Revenue (BIR) zonal valuations

The prevailing zonal valuation as certified by BIR for different land classification in the area are shown in attached Annex 1-I: BIR Zonal Valuation.

Attachment 1-A

SKETCH PLAN



TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 00° 03' 39" W	97.413 M
2 - 3	S 04° 18' 55" W	51.998 M
3 - 4	S 48° 15' 17" W	104.299 M
4 - 5	S 03° 22' 48" E	95.515 M
5 - 6	S 60° 53' 09" E	87.844 M
6 - 7	S 81° 50' 31" E	119.291 M
7 - 8	N 47° 41' 35" E	384.208 M
8 - 9	N 72° 17' 44" E	203.946 M
9 - 10	N 19° 42' 40" E	159.911 M
10 - 11	N 59° 37' 37" W	118.005 M
11 - 12	N 88° 09' 09" W	367.372 M
12 - 13	S 35° 47' 36" W	116.047 M
13 - 14	S 11° 58' 15" W	47.401 M
14 - 01	S 71° 04' 45" W	111.795 M

LEGEND

1 AR1 **MASTER DEVELOPMENT PLAN**
SCALE 1 : 3000 MTS

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	ENGR. RUDOLPH M. ESCAÑAN, PROFESSIONAL ENGINEER	PROPOSED RECLAMATION PROJECT	WILLIAM TAN, OWNER	AS SHOWN			1
	DATA: PRC NO. 81347; PTR NO. 9112176D; DATE ISSUED: JAN 4, 2022; ISSUED AT: BACOLOD CITY, PH	LOCATION: BRGY. MAMBOG-II A.P.P.C., PALAWAN					AR 1/5

Attachment 1-B

INDICATIVE SITE DEVELOPMENT PLAN

MAP PROJECTION LAYOUT

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 05° 02' 39" W	57.46 M
2 - 3	S 04° 18' 56" W	51.036 M
3 - 4	S 46° 15' 17" W	104.294 M
4 - 5	S 02° 22' 46" E	86.083 M
5 - 6	S 68° 53' 00" E	57.644 M
6 - 7	S 81° 50' 31" E	119.281 M
7 - 8	N 47° 41' 35" E	364.266 M
8 - 9	N 72° 17' 44" E	303.946 M
9 - 10	N 19° 42' 40" E	159.611 M
10 - 11	N 59° 37' 37" W	115.005 M
11 - 12	N 86° 55' 09" W	367.372 M
12 - 13	S 33° 47' 38" W	116.047 M
13 - 14	S 11° 56' 15" W	47.401 M
14 - 01	S 71° 04' 46" W	111.705 M

LEGEND

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATE:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			2
						AR	2/5

LOCATION AND ROUTE LAYOUT

1 AR3 SCALE 1:2000 MTS

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 80° 62' 38" W	97.153 M
2 - 3	S 80° 16' 55" W	61.030 M
3 - 4	S 83° 15' 17" W	168.246 M
4 - 5	S 82° 22' 48" E	88.515 M
5 - 6	S 82° 53' 55" E	97.586 M
6 - 7	N 81° 52' 37" E	139.291 M
7 - 8	N 47° 41' 35" E	264.290 M
8 - 9	N 72° 17' 44" E	223.640 M
9 - 10	N 16° 42' 49" E	155.011 M
10 - 11	N 59° 27' 37" W	145.005 M
11 - 12	N 68° 50' 59" W	307.272 M
12 - 13	S 53° 47' 35" W	139.587 M
13 - 14	S 51° 59' 15" W	47.421 M
14 - 01	S 71° 54' 45" W	191.795 M

LEGEND

MAJOR ROAD

MINOR ROAD

LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN
	DATE:		
	SCALE: AS SHOWN		
	DRAWING: AR-1 (3D)		

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AS SHOWN	NO. / DESCRIPTION / DATE / APPROVED		4
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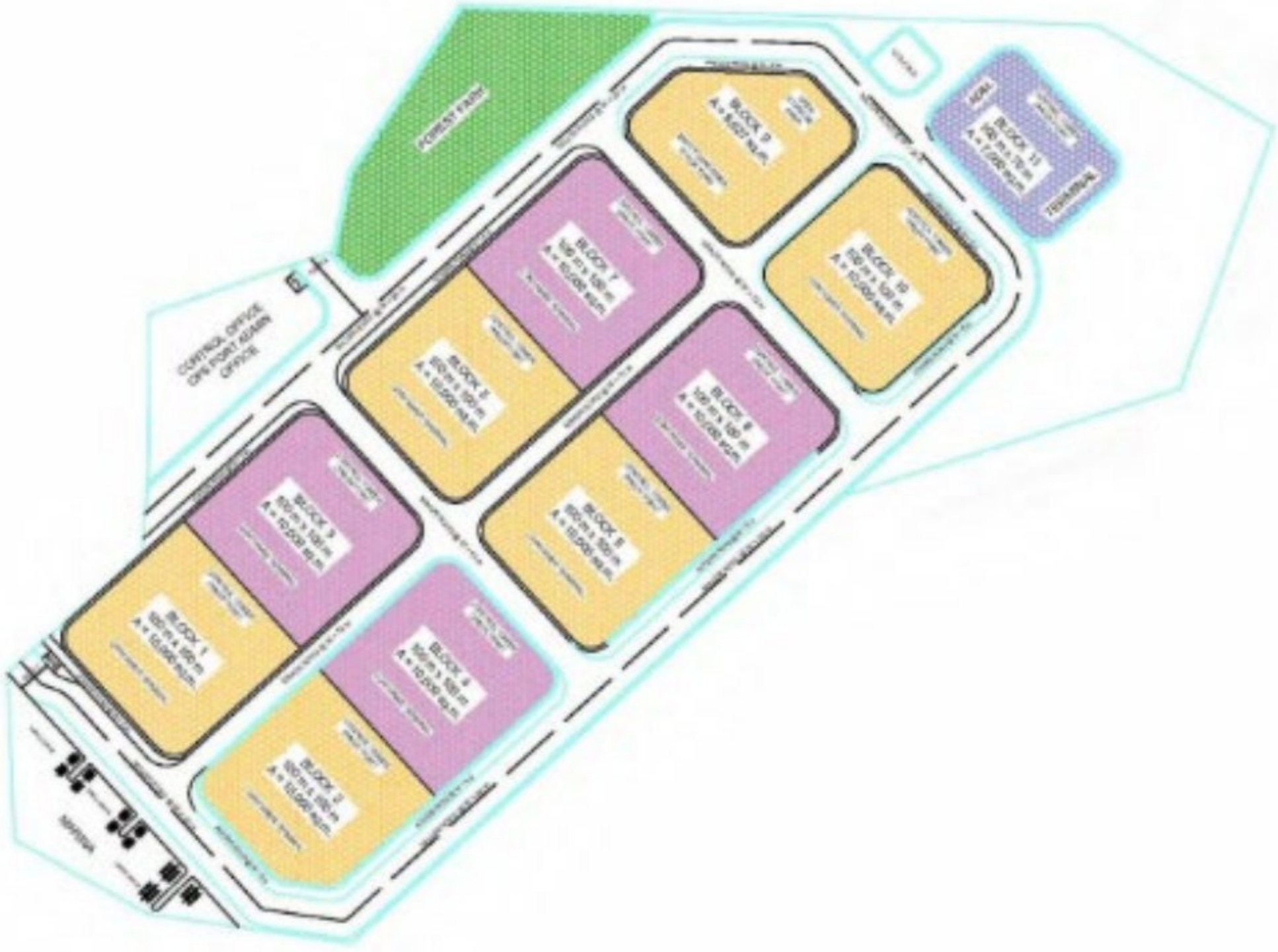


1 AR2 **ROAD NETWORK PLAN**

SCALE 1:2000 @ A3

TECHNICAL DESCRIPTION

LOT

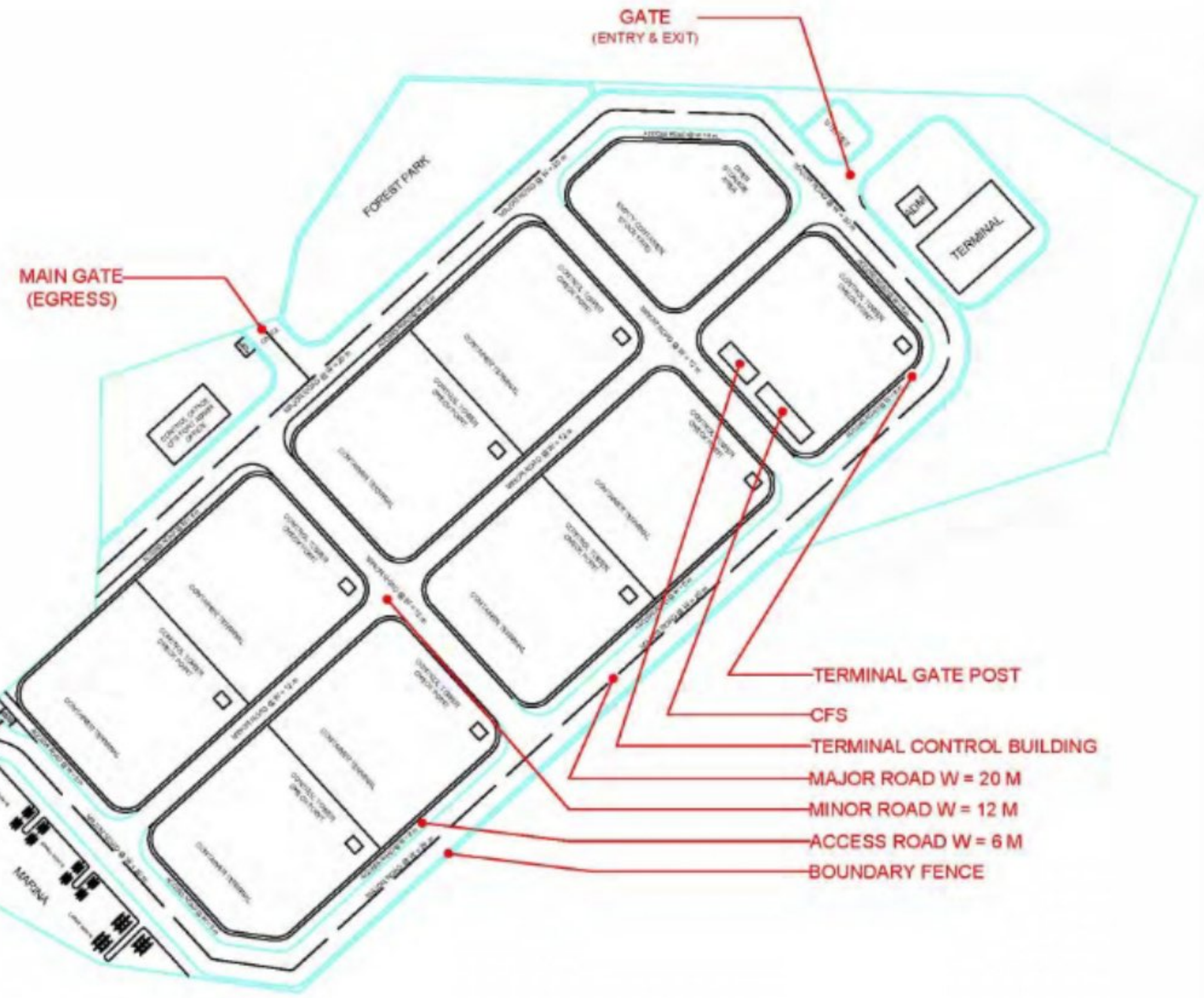
LINE	BEARING	DISTANCE
1 - 2	S 80° 52' 35" W	97.153 M
2 - 3	S 84° 19' 57" W	61.526 M
3 - 4	S 69° 10' 17" W	168.246 M
4 - 5	S 50° 22' 45" E	88.535 M
5 - 6	S 60° 43' 00" E	87.986 M
6 - 7	S 81° 52' 57" E	179.291 M
7 - 8	N 47° 41' 33" E	204.390 M
8 - 9	N 72° 17' 44" E	222.640 M
9 - 10	N 16° 42' 49" E	150.011 M
10 - 11	N 59° 17' 37" W	118.205 M
11 - 12	N 66° 50' 59" W	307.272 M
12 - 13	S 32° 47' 35" W	118.087 M
13 - 14	S 11° 02' 45" W	47.403 M
14 - 01	S 71° 54' 48" W	111.706 M

LEGEND

LOGO:		PREPARED BY:		PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:				PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION			DATE:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN	NO.	REVISIONS	DATE	INITIALS		3
												AR 3/5

Attachment 1-C

DESCRIPTION OF THE RECLAMATION SITE



1 AR1 **MASTER DEVELOPMENT PLAN**
SCALE 1:3000 MTS

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 00° 03' 39" W	87.413 M
2 - 3	S 04° 16' 55" W	51.098 M
3 - 4	S 48° 15' 17" W	104.294 M
4 - 5	S 02° 22' 48" E	96.515 M
5 - 6	S 60° 53' 09" E	87.844 M
6 - 7	S 81° 50' 31" E	119.291 M
7 - 8	N 47° 41' 35" E	384.268 M
8 - 9	N 72° 17' 44" E	203.946 M
9 - 10	N 19° 42' 40" E	159.911 M
10 - 11	N 59° 37' 37" W	118.005 M
11 - 12	N 88° 09' 09" W	367.372 M
12 - 13	S 35° 47' 36" W	116.047 M
13 - 14	S 11° 58' 15" W	47.401 M
14 - 01	S 71° 04' 45" W	111.795 M

LEGEND

LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. EUGENE [illegible] PROFESSIONAL ENGINEER	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN OWNER	SHEET CONTENT: AS SHOWN	REVISIONS:	PARTICULARS:	SHEET NO.: 1 AR 1/5

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 00° 05' 39" W	57.413 M
2 - 3	S 04° 18' 55" W	51.098 M
3 - 4	S 48° 15' 17" W	104.294 M
4 - 5	S 02° 22' 49" E	96.515 M
5 - 6	S 60° 53' 09" E	97.844 M
6 - 7	S 81° 50' 31" E	119.291 M
7 - 8	N 47° 41' 35" E	384.288 M
8 - 9	N 72° 17' 44" E	203.949 M
9 - 10	N 19° 42' 40" E	159.811 M
10 - 11	N 69° 37' 37" W	118.035 M
11 - 12	N 88° 09' 09" W	367.372 M
12 - 13	S 33° 47' 38" W	116.047 M
13 - 14	S 11° 56' 15" W	47.401 M
14 - 01	S 71° 04' 45" W	111.795 M

LEGEND

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
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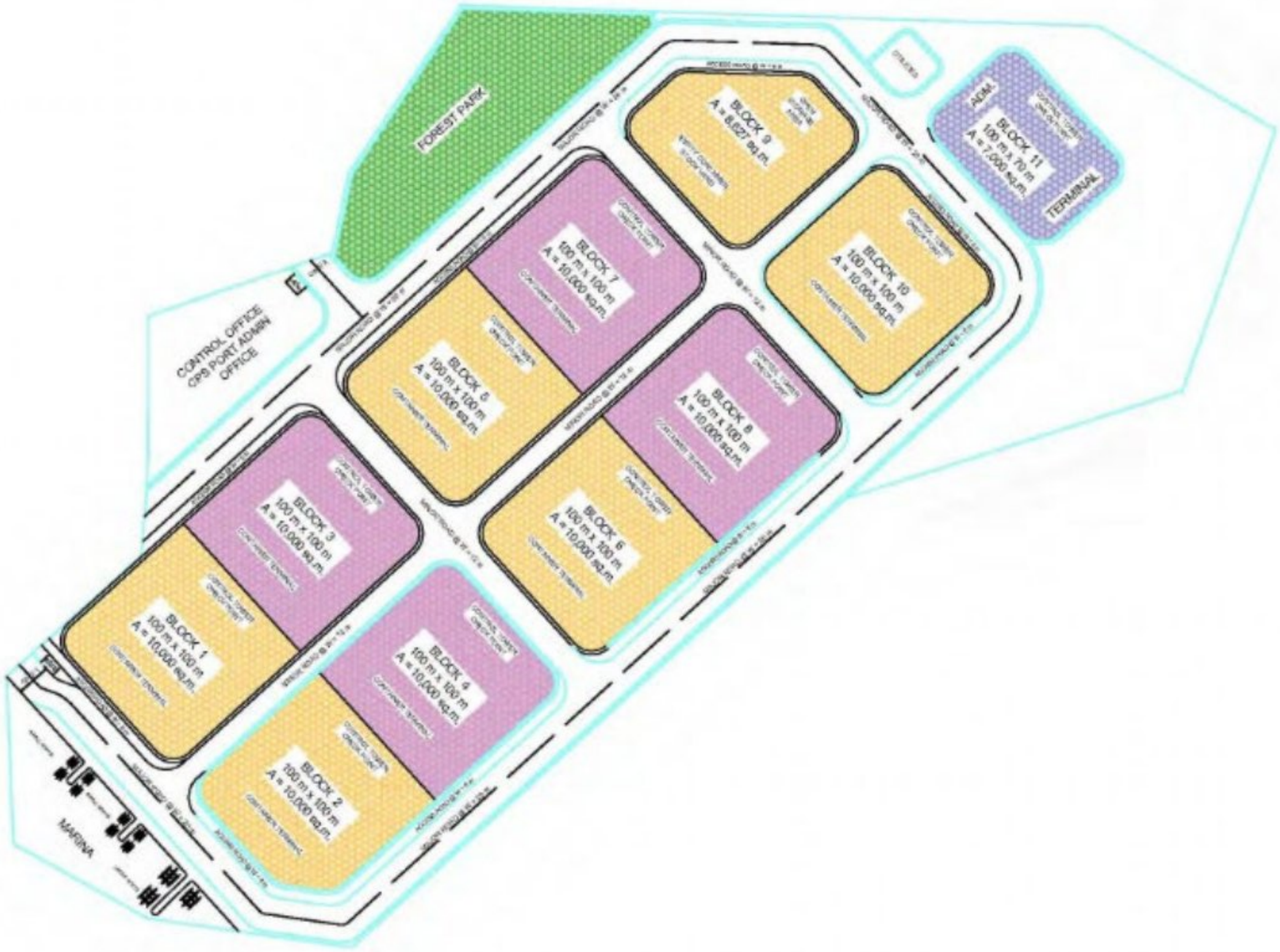
DATA:

PROJECT NO.:	91347	ISSUED ON:	JAN 4, 2022
TEL NO.:	9112111512	ISSUED AT:	BACOLOD CITY, PH

LOCATION: BRGY. MAGSAYSAY, P.P.C., PALAWAN



1 ROAD NETWORK PLAN
AR 2 SCALE 1:3000 MTS

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 00° 03' 39" W	87.413 M
2 - 3	S 04° 16' 55" W	51.098 M
3 - 4	S 48° 15' 17" W	104.298 M
4 - 5	S 02° 22' 48" E	95.515 M
5 - 6	S 60° 53' 09" E	87.844 M
6 - 7	S 81° 50' 31" E	119.291 M
7 - 8	N 47° 41' 35" E	384.268 M
8 - 9	N 72° 17' 44" E	283.946 M
9 - 10	N 19° 42' 40" E	159.911 M
10 - 11	N 59° 37' 37" W	116.905 M
11 - 12	N 89° 09' 09" W	367.372 M
12 - 13	S 33° 47' 36" W	116.047 M
13 - 14	S 11° 58' 15" W	47.401 M
14 - 01	S 71° 08' 45" W	111.795 M

LEGEND

LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. RUDOLPH R. CATALAN, PROFESSIONAL ENGINEER	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN, Owner	SHEET CONTENT: AS SHOWN	REVISIONS: (NUMBER / DESCRIPTION / DATE / APPROVED BY)	PARTICULARS:	SHEET NO.: 3
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1 AR3 **LOCATION AND ROUTE LAYOUT**

SCALE 1:3000 MTS

TECHNICAL DESCRIPTION

LOT

LINE	BEARING	DISTANCE
1 - 2	S 00° 03' 39" W	87.413 M
2 - 3	S 04° 16' 55" W	51.099 M
3 - 4	S 48° 15' 17" W	104.298 M
4 - 5	S 02° 22' 48" E	98.515 M
5 - 6	S 60° 53' 09" E	87.844 M
6 - 7	S 81° 59' 31" E	119.291 M
7 - 8	N 47° 41' 35" E	384.268 M
8 - 9	N 72° 17' 44" E	203.946 M
9 - 10	N 19° 42' 40" E	159.911 M
10 - 11	N 58° 37' 37" W	116.005 M
11 - 12	N 88° 09' 09" W	367.372 M
12 - 13	S 33° 47' 36" W	116.047 M
13 - 14	S 11° 58' 15" W	47.401 M
14 - 01	S 71° 04' 45" W	111.795 M

LEGEND

MAJOR ROAD

MINOR ROAD

LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. [illegible] N. CATALAN, PROFESSIONAL ENGINEER	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN, OWNER
	DATA: PROJ. NO.: [illegible] DRAWN: JAN 4, 2022 DRAWN BY: [illegible] DWGHT: BACOLOD CITY, PH LOCATION: BRY. MAKIBIGKAY P.C., PALAWAN		

SHEET CONTENT: AS SHOWN

REVISIONS:

MARK	DESCRIPTION	DATE	APPROVED BY

PARTICULARS: DESIGNED BY: ENGR. [illegible] N. CATALAN; PLOTTED BY: JANUZZEN GO ALCANTARA; CHECKED BY: ENGR. [illegible] N. CATALAN; REVISED DATE: ; DATE OF REVISION:

SHEET NO.: 4

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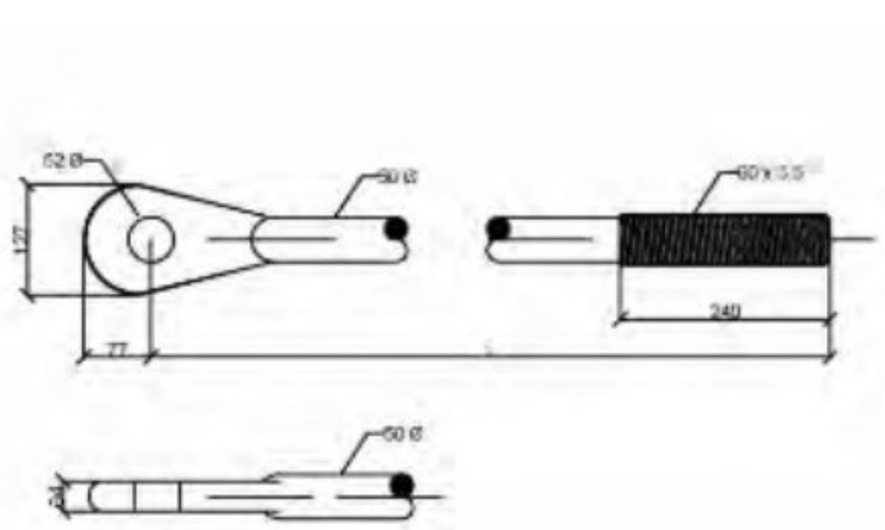
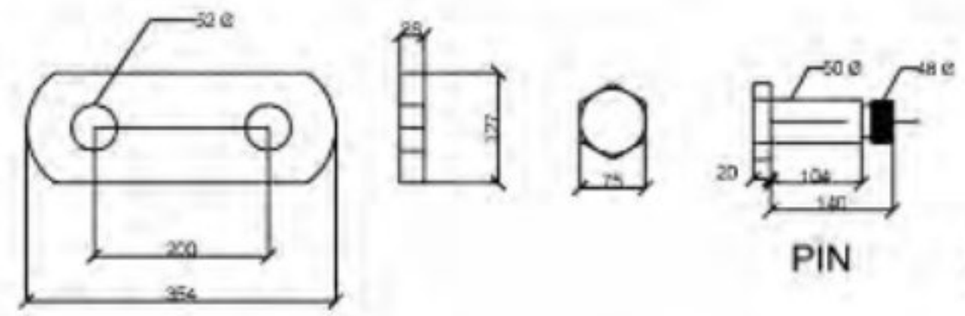


DETAIL OF TIE ROD PROPER



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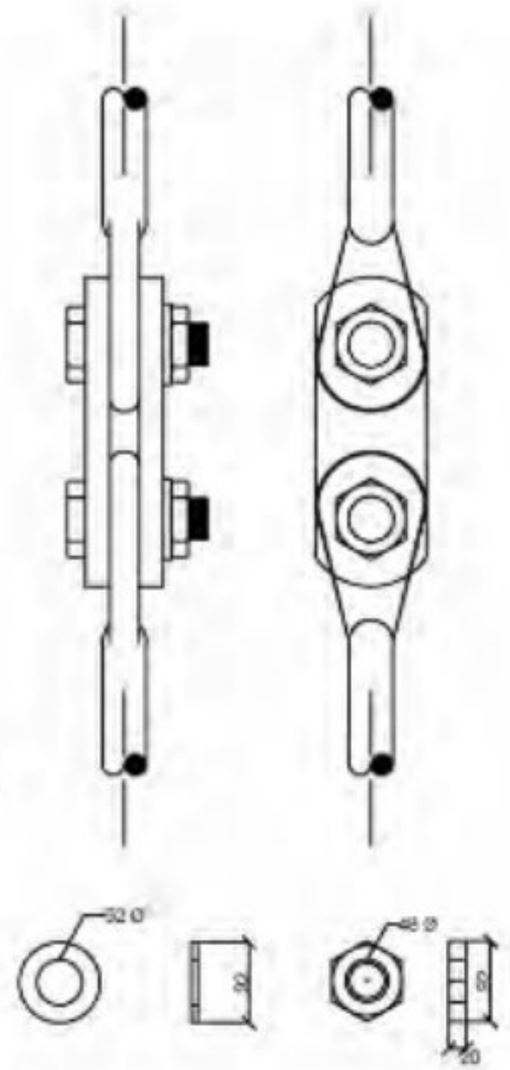
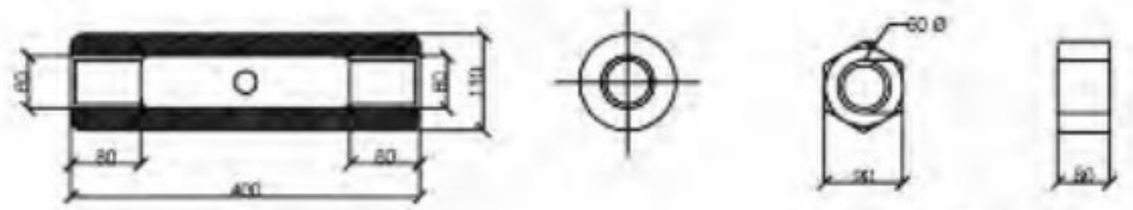
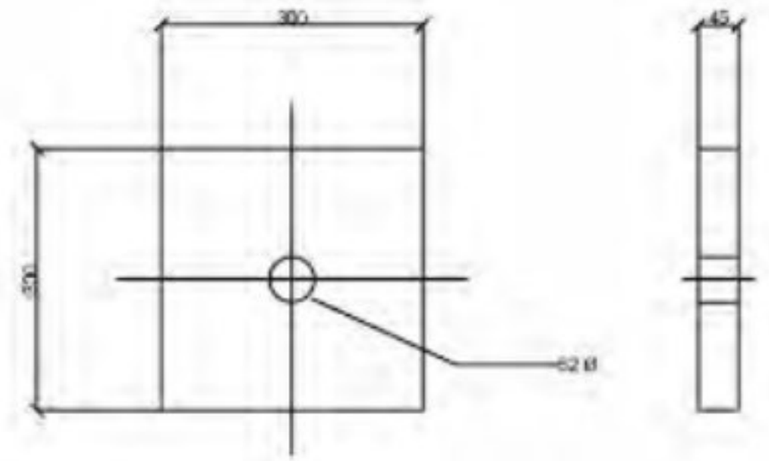




DETAIL OF TURNBUCKLE

NUT



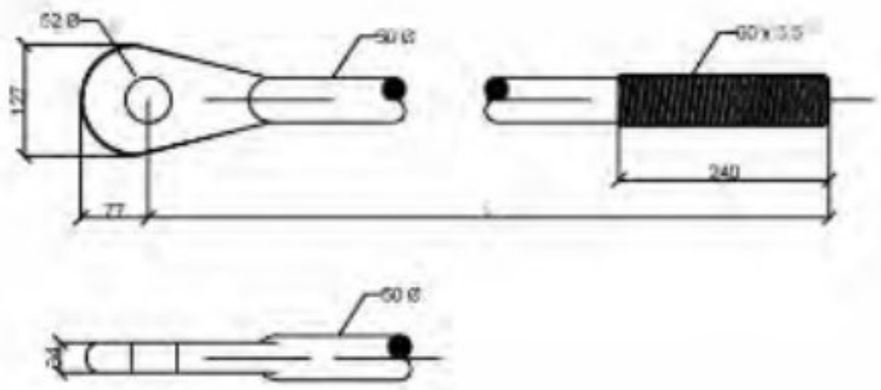
DETAILS OF 50Ø TIE ROD ASSEMBLY

NUMBER OF ACCESSORIES PER TIE ROD ASSEMBLY								
TIE ROD	RING JOINT				NUT	TURNBUCKLE	PLATE WASHER	ASSEMBLY LENGTH
	PLATE	PIN	WASHER	NUT				
2 LENGTHS	2 PCS	2 PCS	2 PCS	2 PCS	1 PC	1 PC	2 PCS	REFER TO PLAN

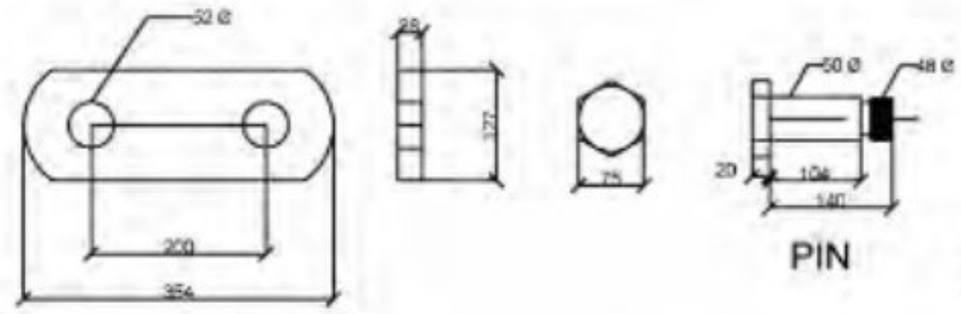
NOTES:

1. ALL TIE ROD ACCESSORIES SHOULD BE EQUAL OR GREATER IN STRENGTH THAN THE PARENT OR TIE ROD PROPER.
2. YIELD STRESS (fy)= 414 MPa (GRADE 60.)

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



DETAIL OF TIE ROD PROPER



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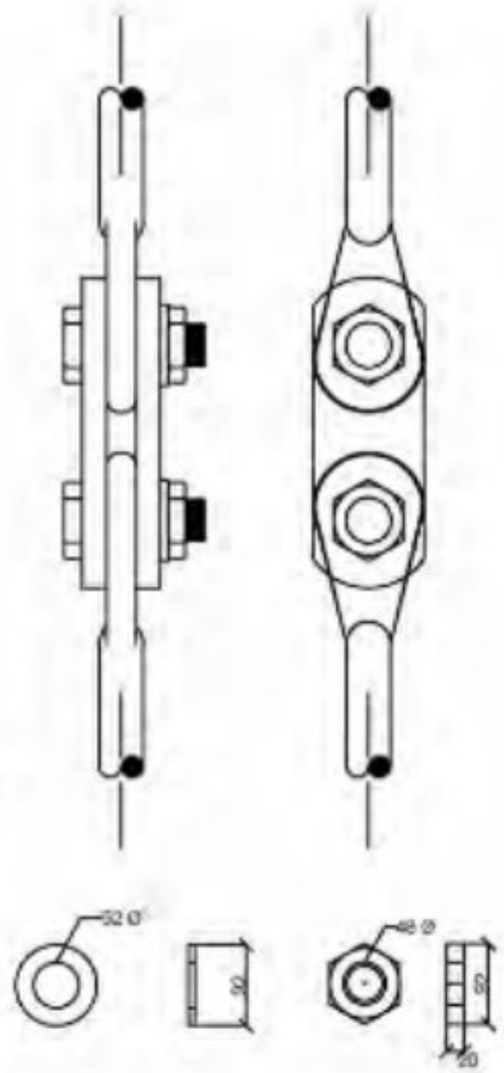
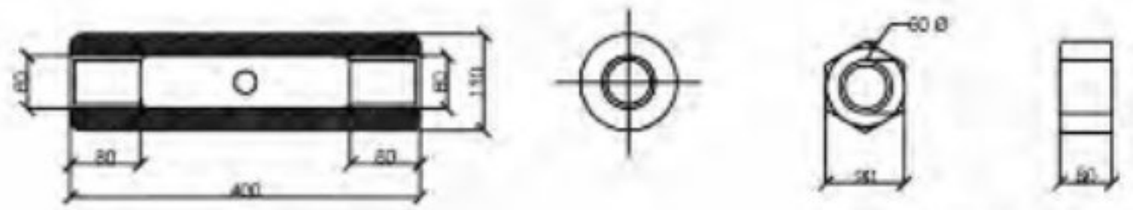
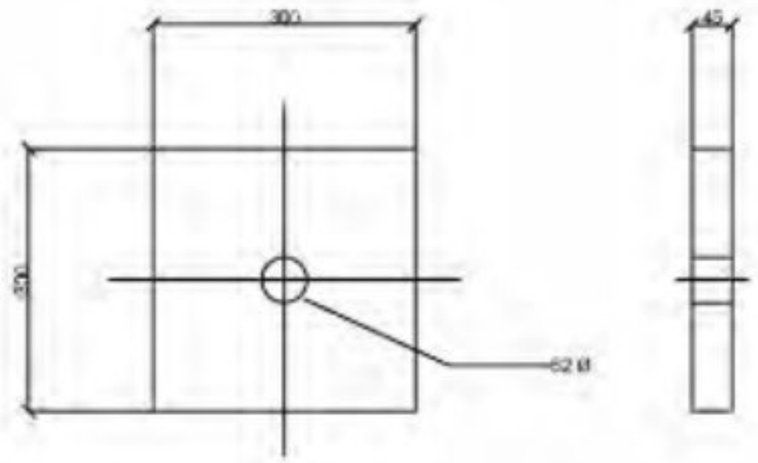




NUT

DETAIL OF TURNBUCKLE



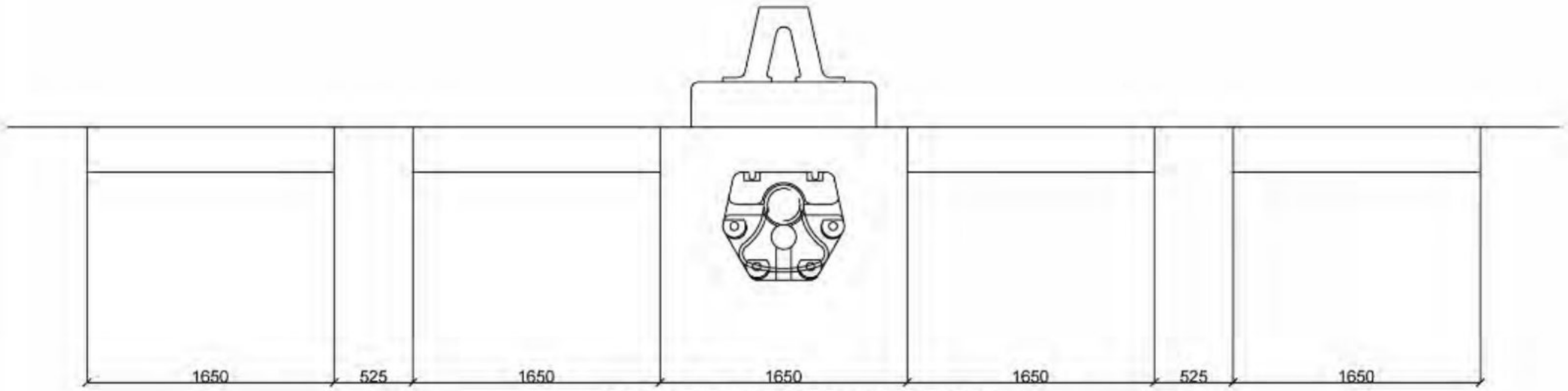
DETAILS OF 50Ø TIE ROD ASSEMBLY

NUMBER OF ACCESSORIES PER TIE ROD ASSEMBLY								
TIE ROD	RING JOINT				NUT	TURNBUCKLE	PLATE WASHER	ASSEMBLY LENGTH
	PLATE	PIN	WASHER	NUT				
2 LENGTHS	2 PCS	2 PCS	2 PCS	2 PCS	1 PC	1 PC	2 PCS	REFER TO PLAN

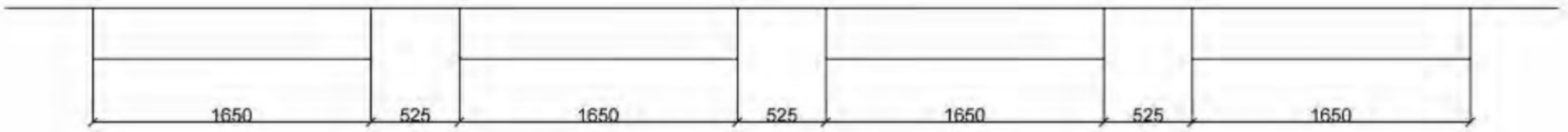
NOTES:

1. ALL TIE ROD ACCESSORIES SHOULD BE EQUAL OR GREATER IN STRENGTH THAN THE PARENT OR TIE ROD PROPER.
2. YIELD STRESS (fy)= 414 MPa (GRADE 60.)

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST

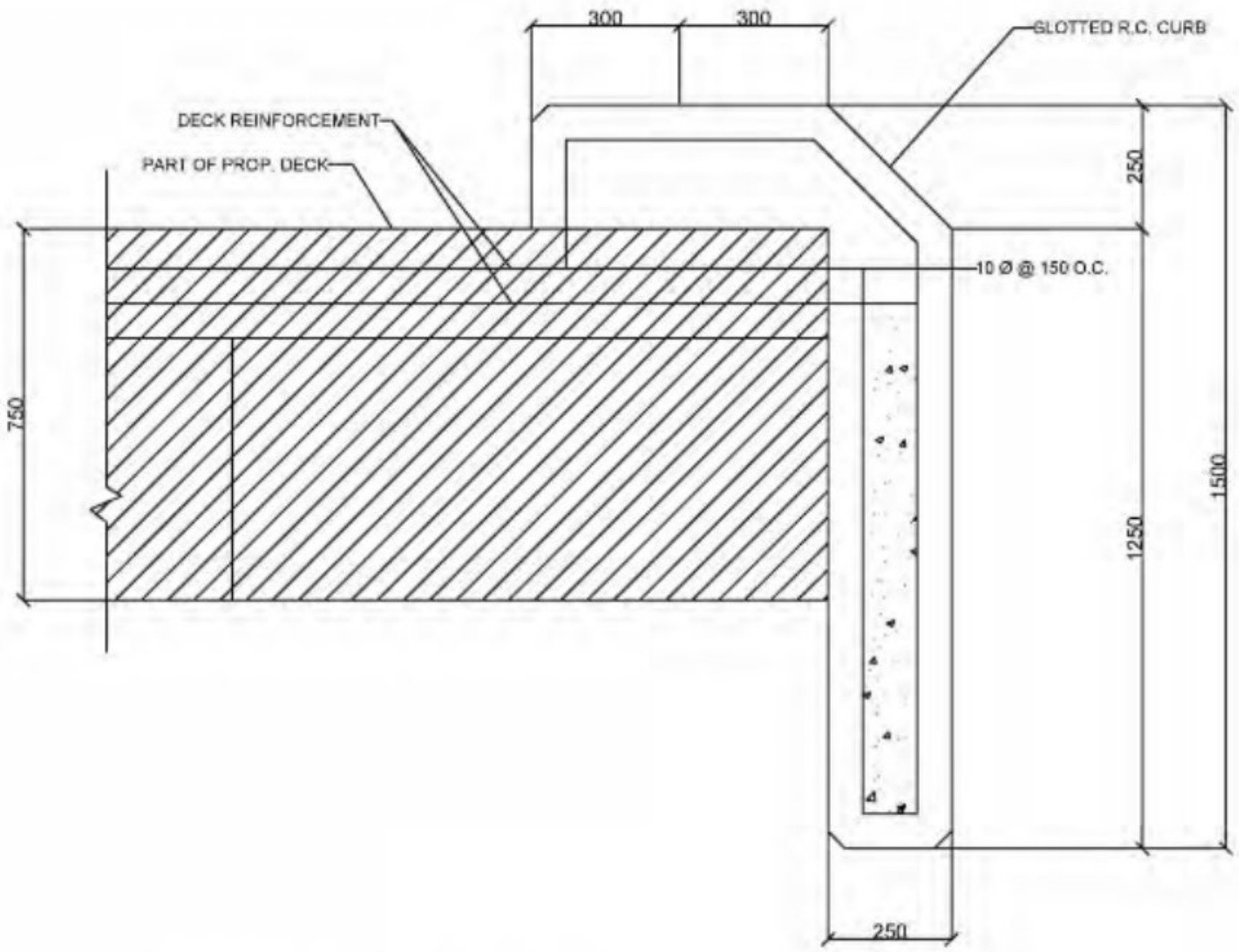


LAYOUT PLAN OF SLOTTED R.C. CURB
AT BERTHS



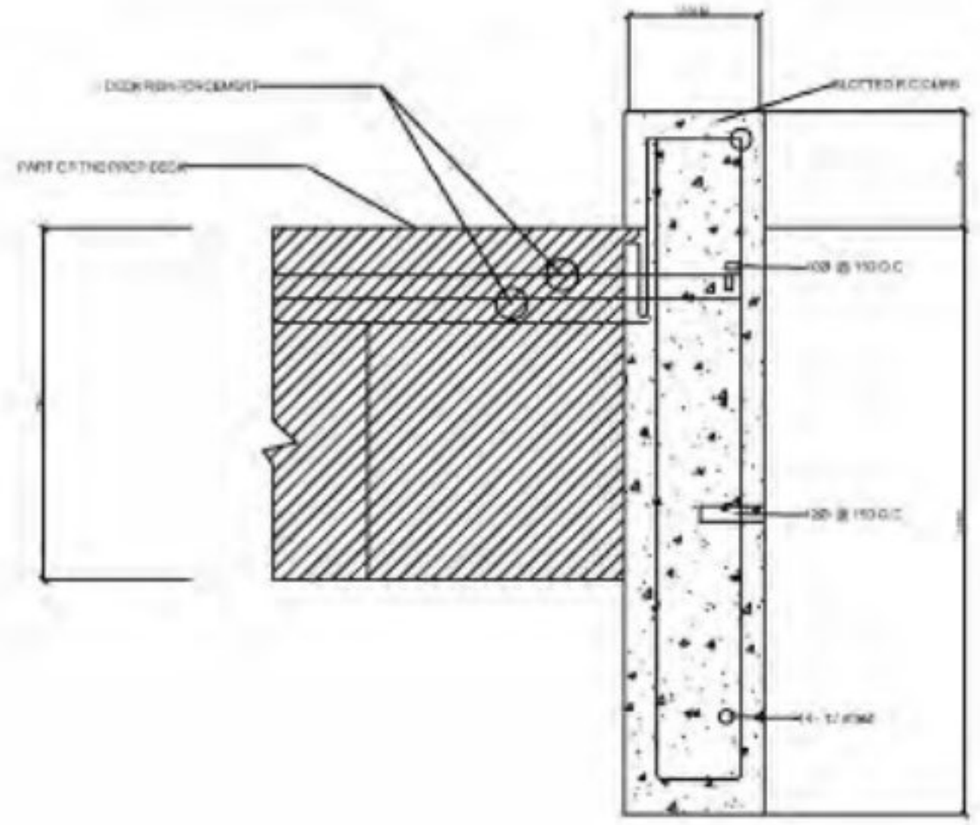
LAYOUT PLAN OF SLOTTED R.C. CURB
AT R.C. WHARF AND BACK-UP AREA

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST

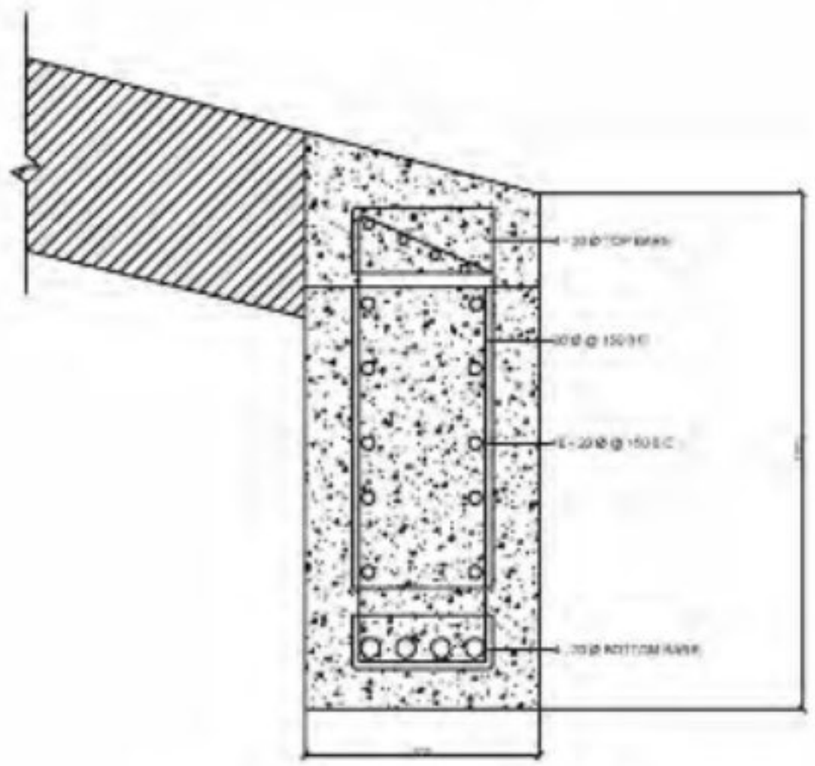


DETAIL OF R.C. CURB @ BERTH SIDE

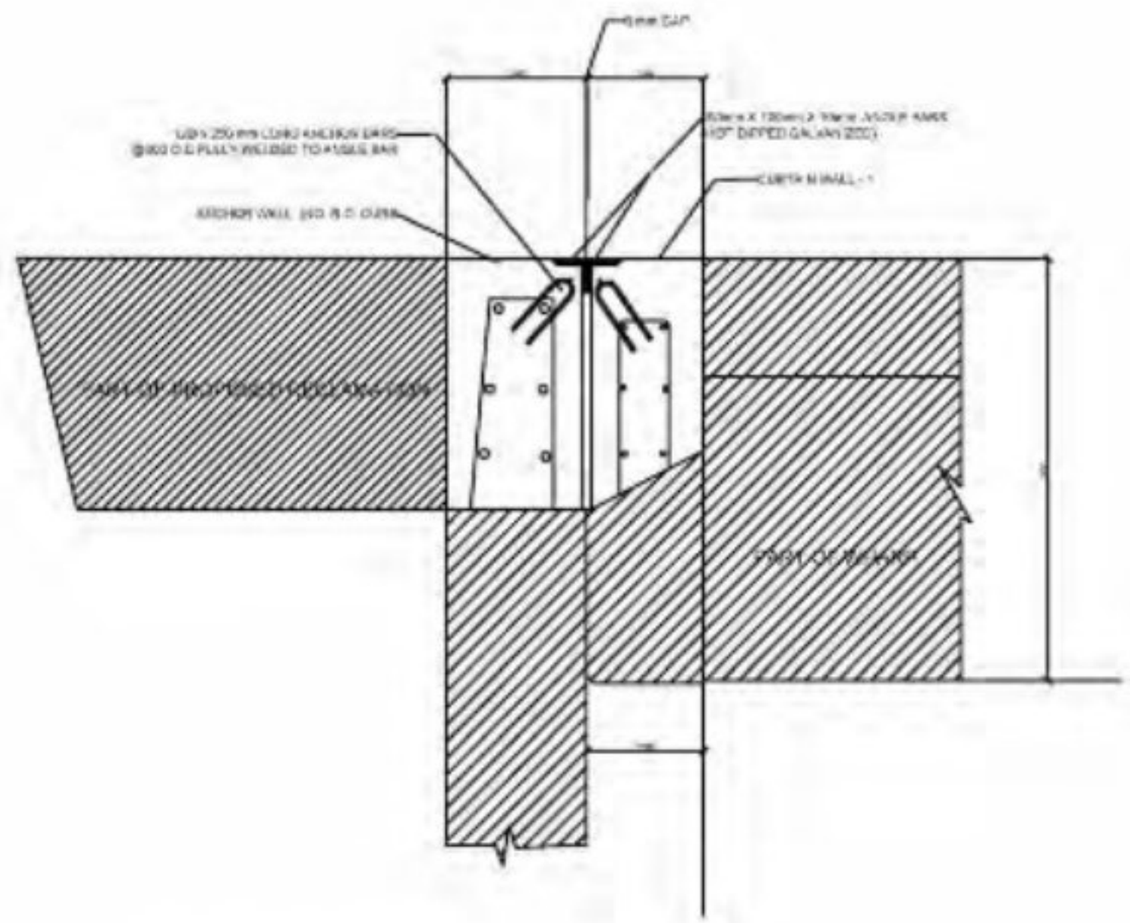
LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. [illegible]	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN	SHEET CONTENT: AS SHOWN	REVISIONS: / PARTICULARS: / SHEET NO.: ST



DETAIL OF CURTAIN WALL - 1

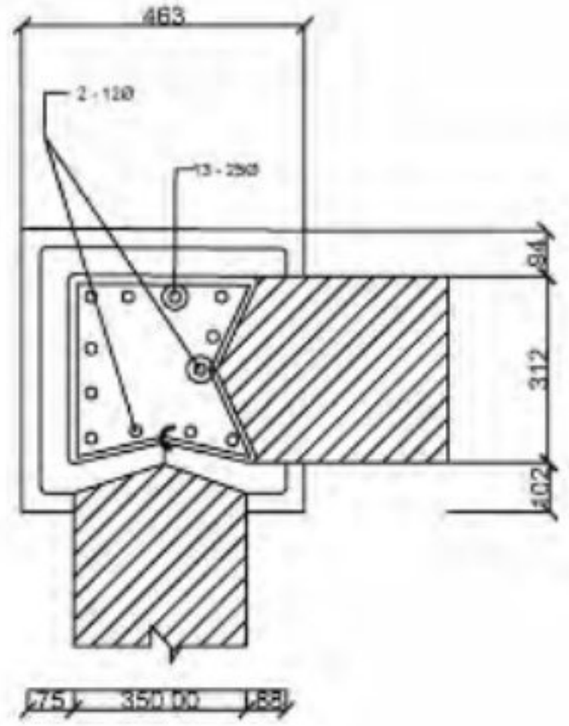


DETAIL OF CURTAIN WALL - 2

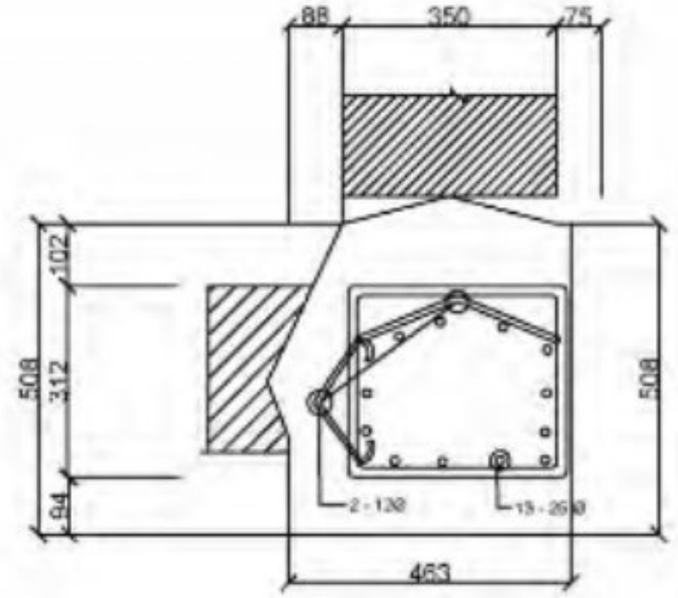


DETAIL OF EXPANSION JOINT

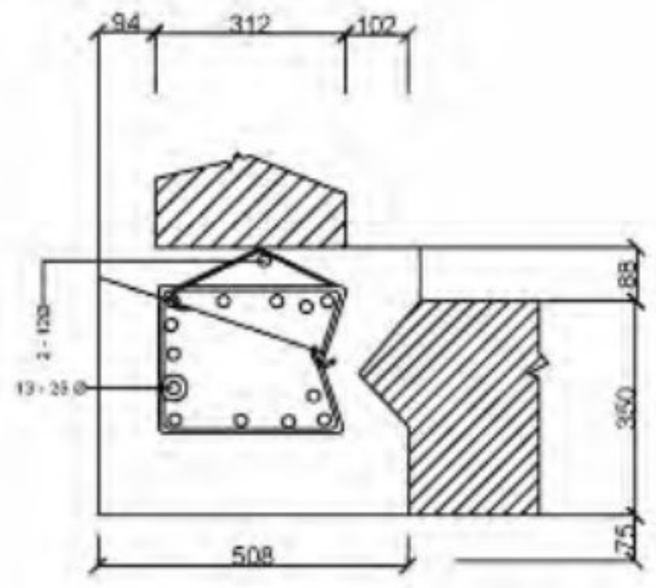
LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS: / PARTICULARS: / SHEET NO.:
	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN	ST



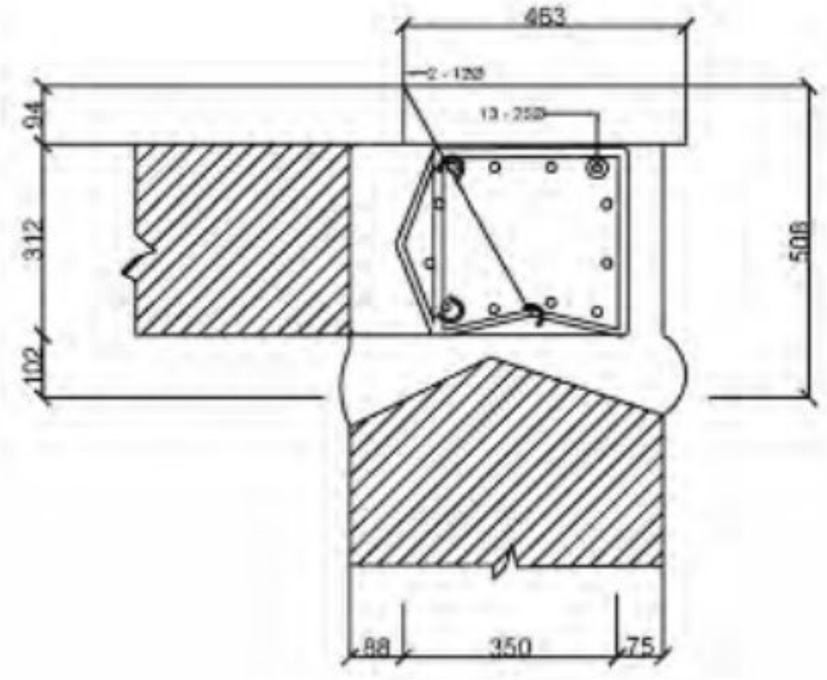
CORNER PILE - 1



CORNER PILE - 3



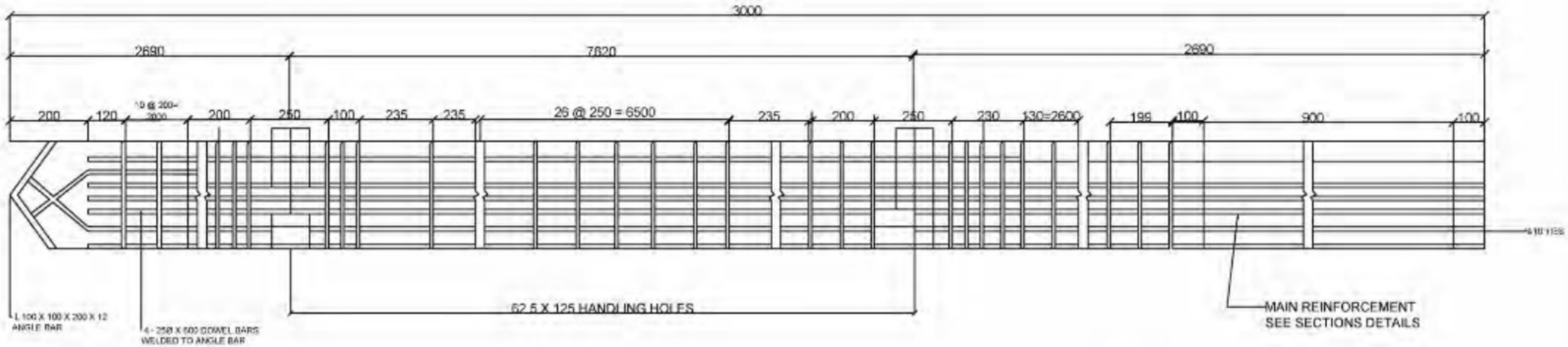
CORNER PILE - 2

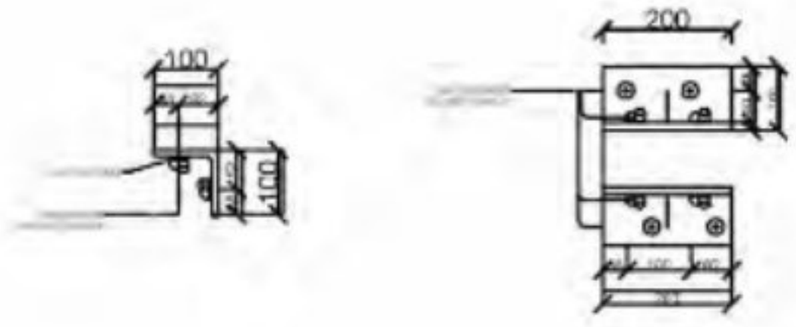


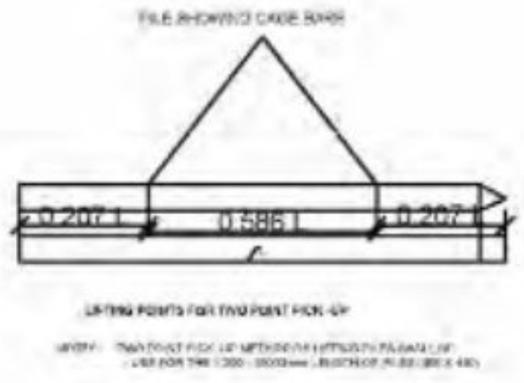
CORNER PILE - 4

TYPICAL DETAIL OF CORNER PILES

LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. [illegible] CATALAN	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN	SHEET CONTENT: AS SHOWN	REVISIONS:	PARTICULARS: / SHEET NO.: ST

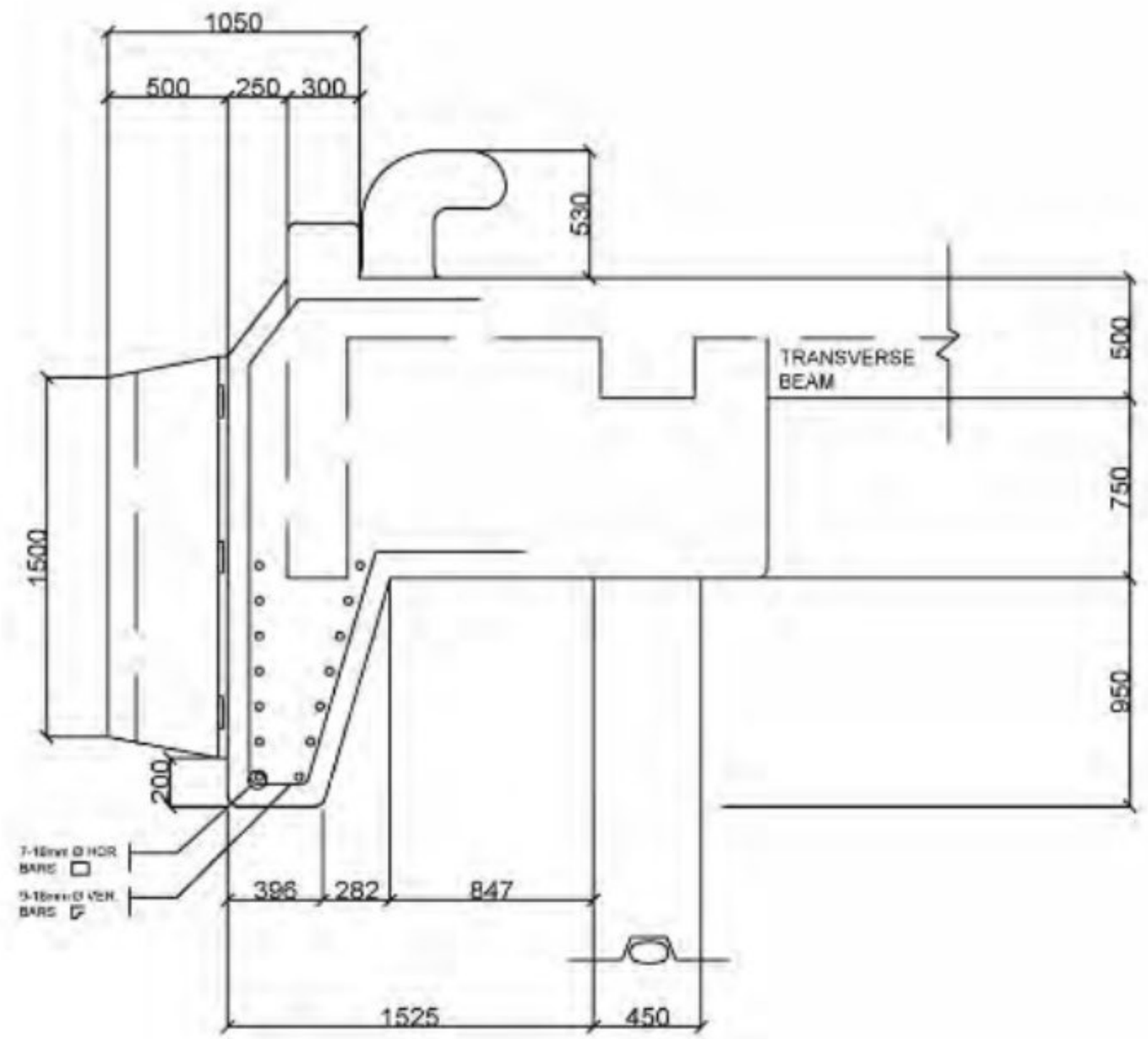




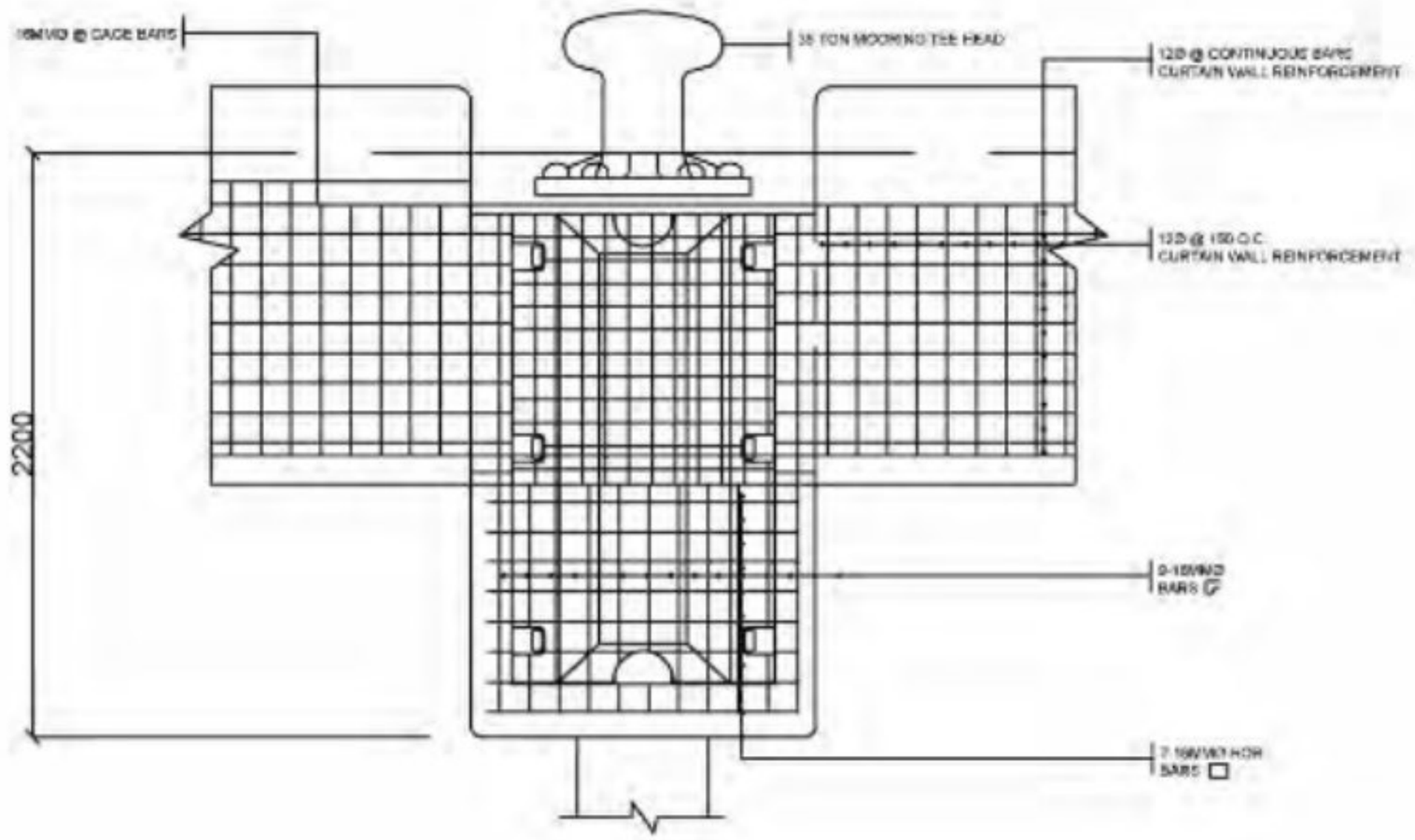


100X100X200X12MM STEEL ANGLE FOR PILE TIP

LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS: / PARTICULARS: / SHEET NO.:
	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN	ST



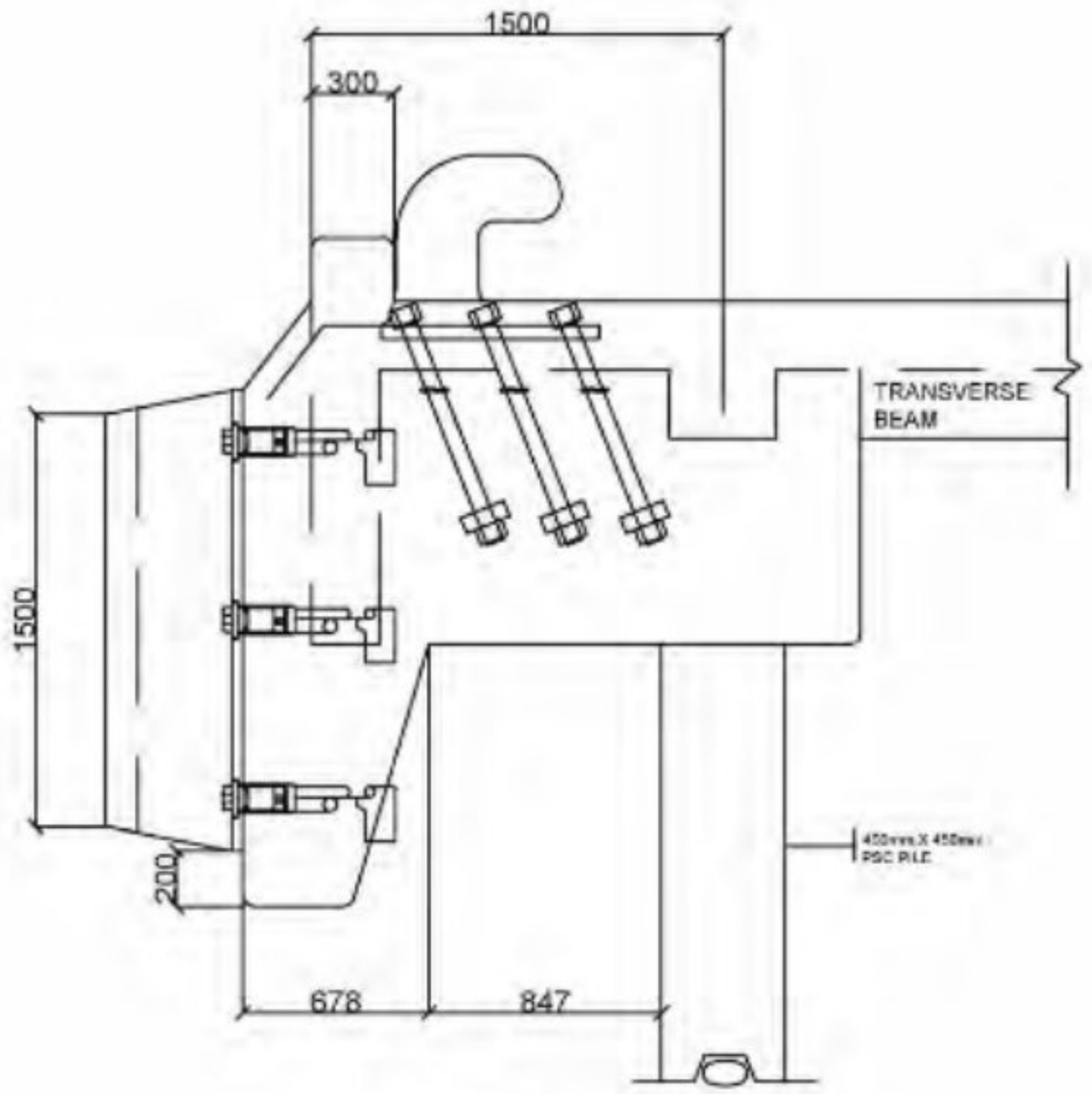
SECTION/ELEVATION



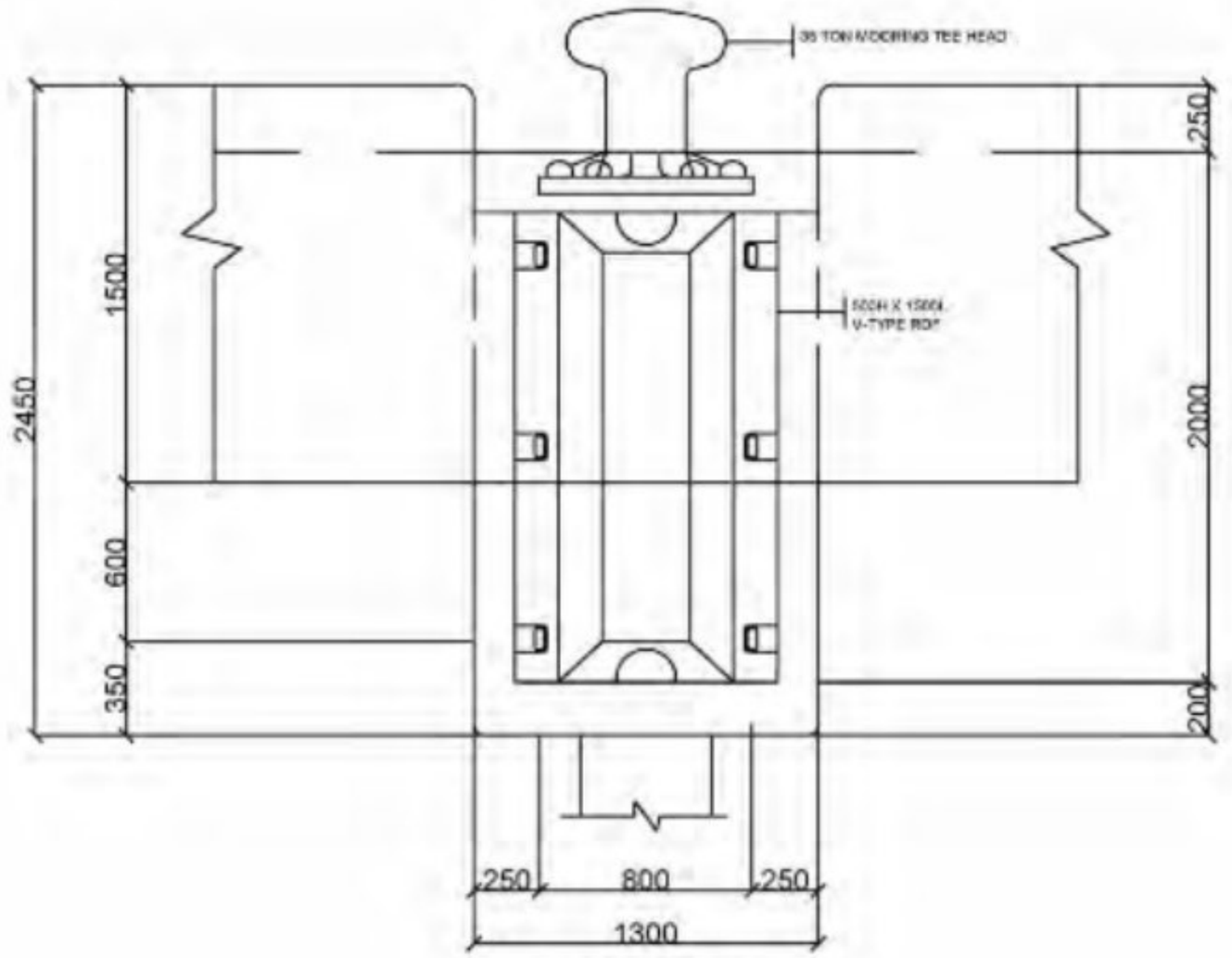
ELEVATION

TYPICAL REINFORCEMENT OF FENDER BLOCK @ R.C. WHARF

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



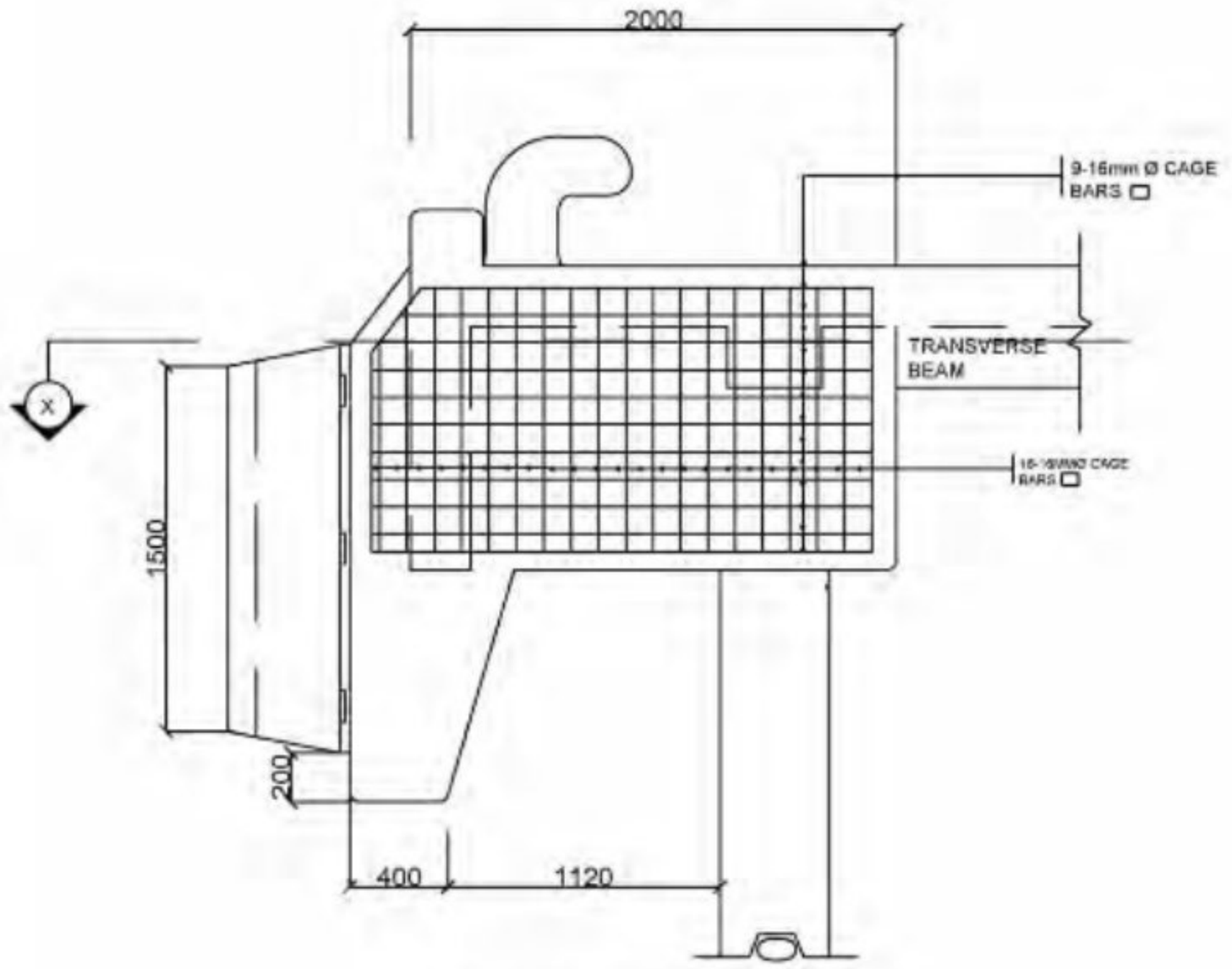
SECTION/ELEVATION



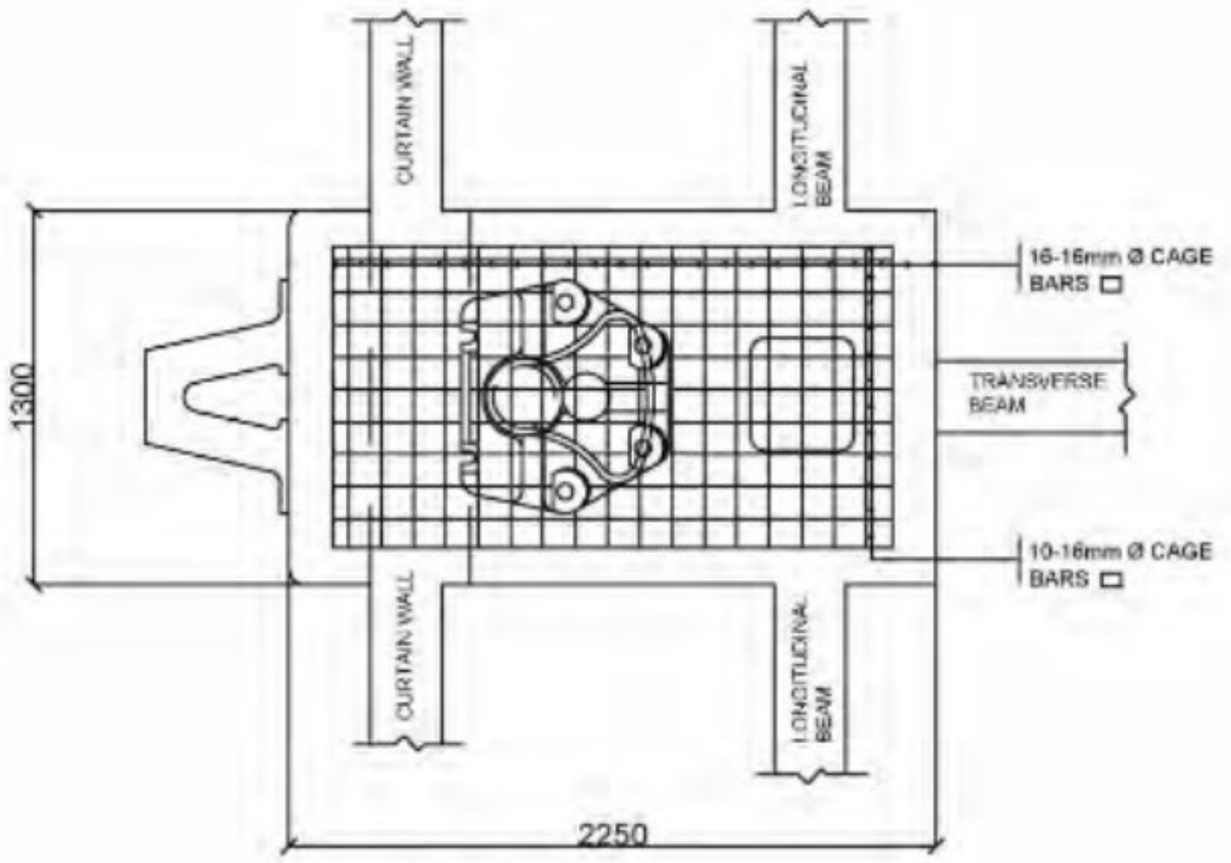
ELEVATION

TYPICAL ATTACHMENT OF V - 500H x 1500l @ R.C. WHARF

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



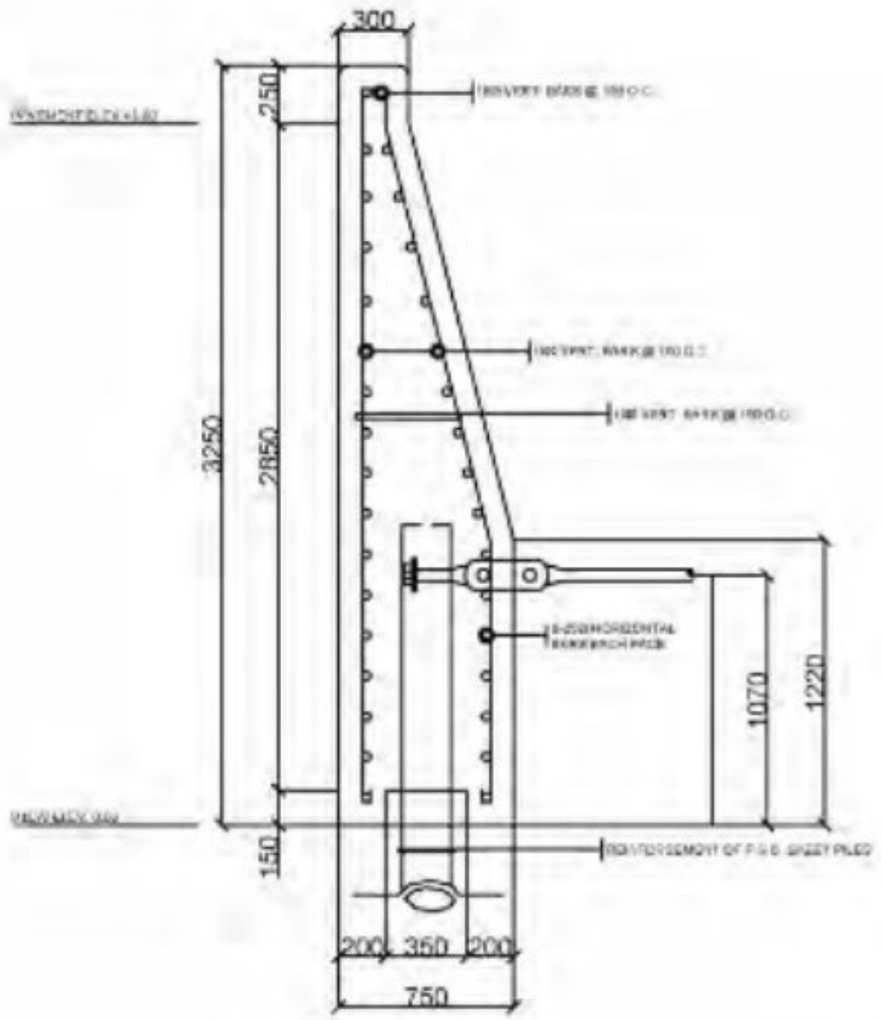
SECTION/ELEVATION



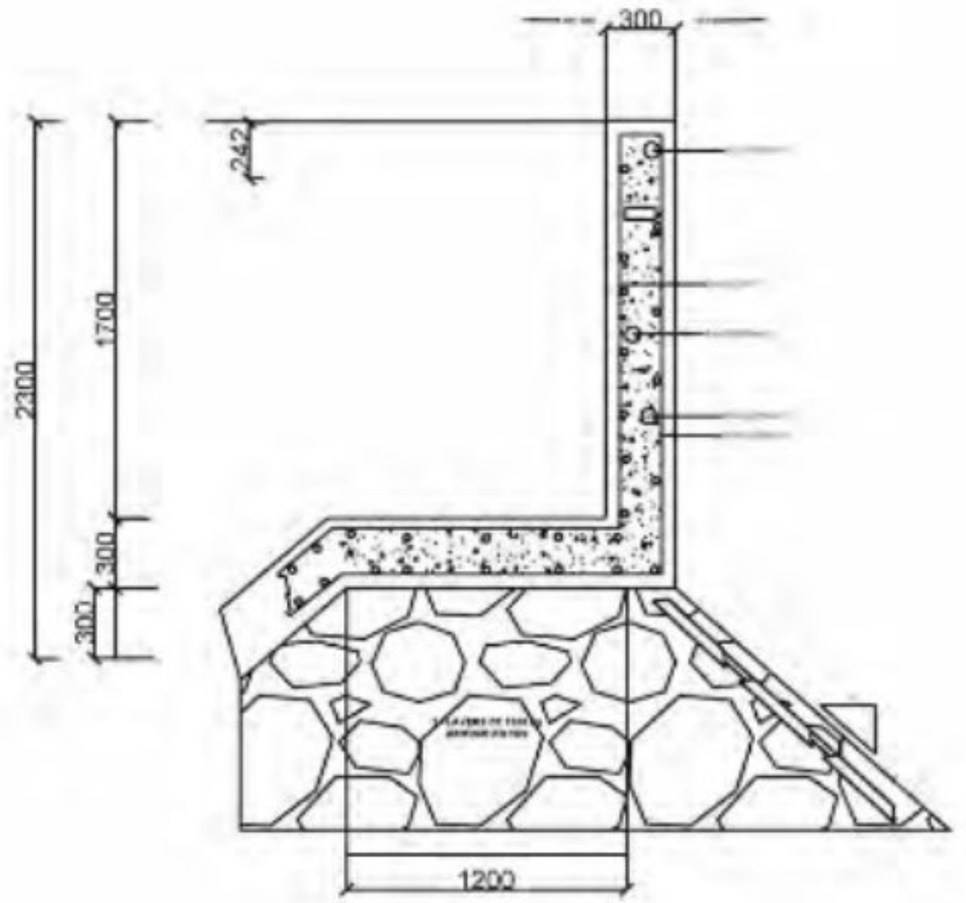
SECTION X

TYPICAL REINFORCEMENT OF MOORING BLOCK

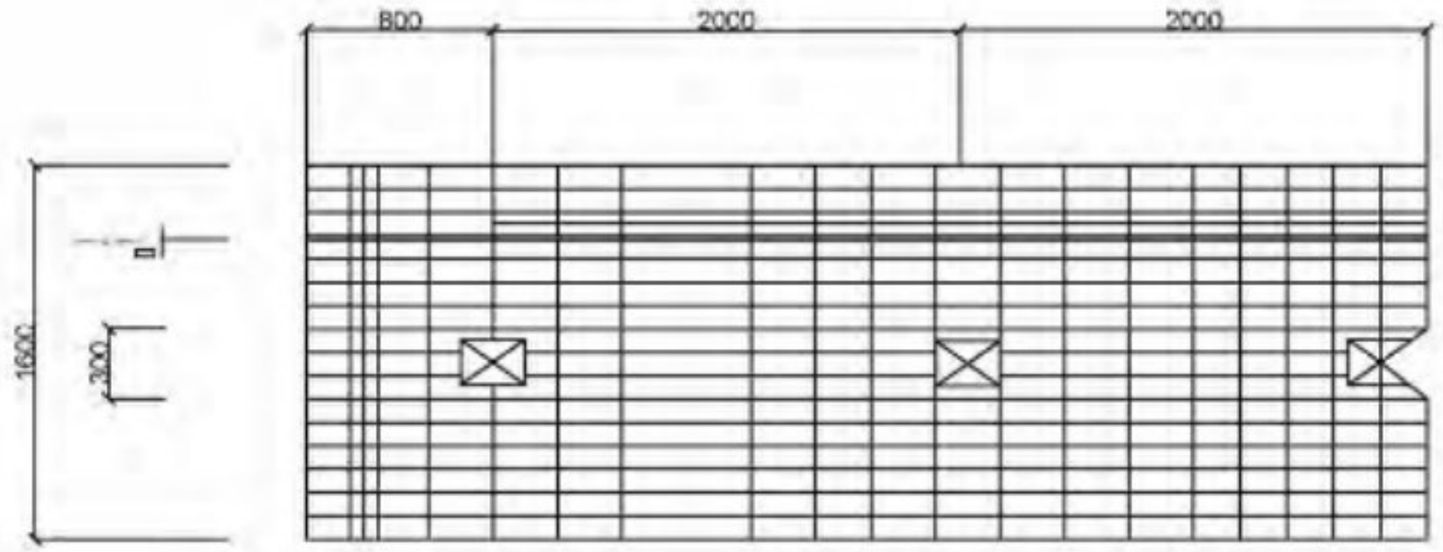
LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



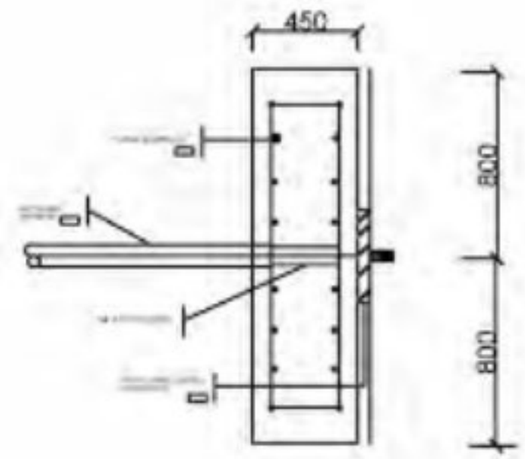
DETAIL OF RETAINING WALL - 1 WITH SLOTTED R.C. CURB



DETAIL OF RETAINING WALL - 2 WITH SLOTTED R.C CURB



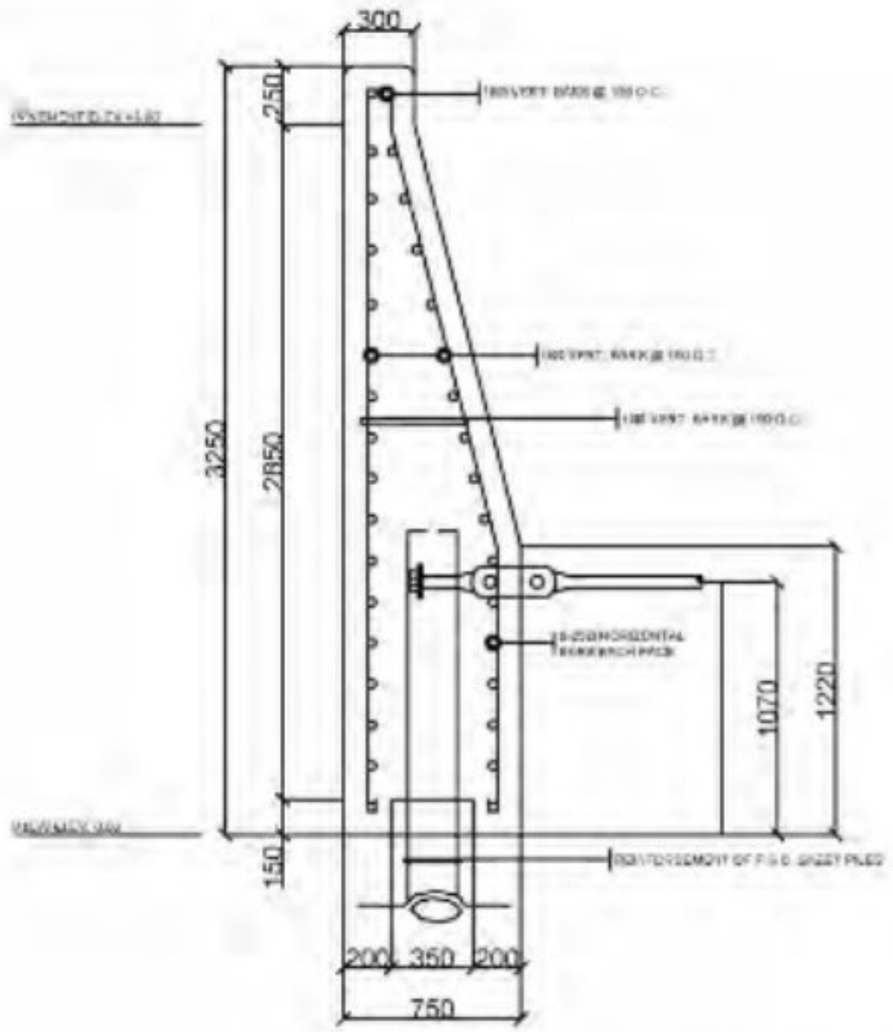
PLAN



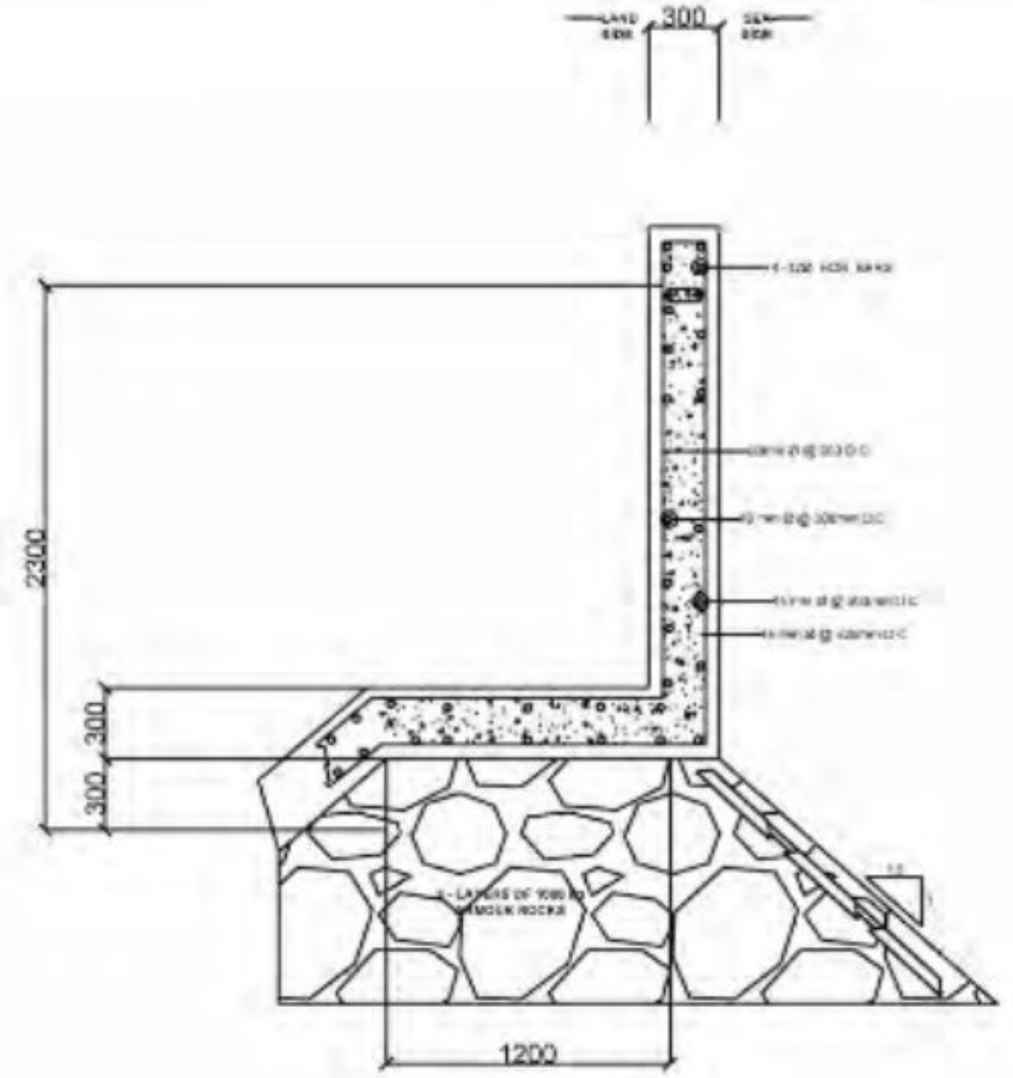
SECTION

DETAIL OF CONTINUOUS ANCHOR BLOCK

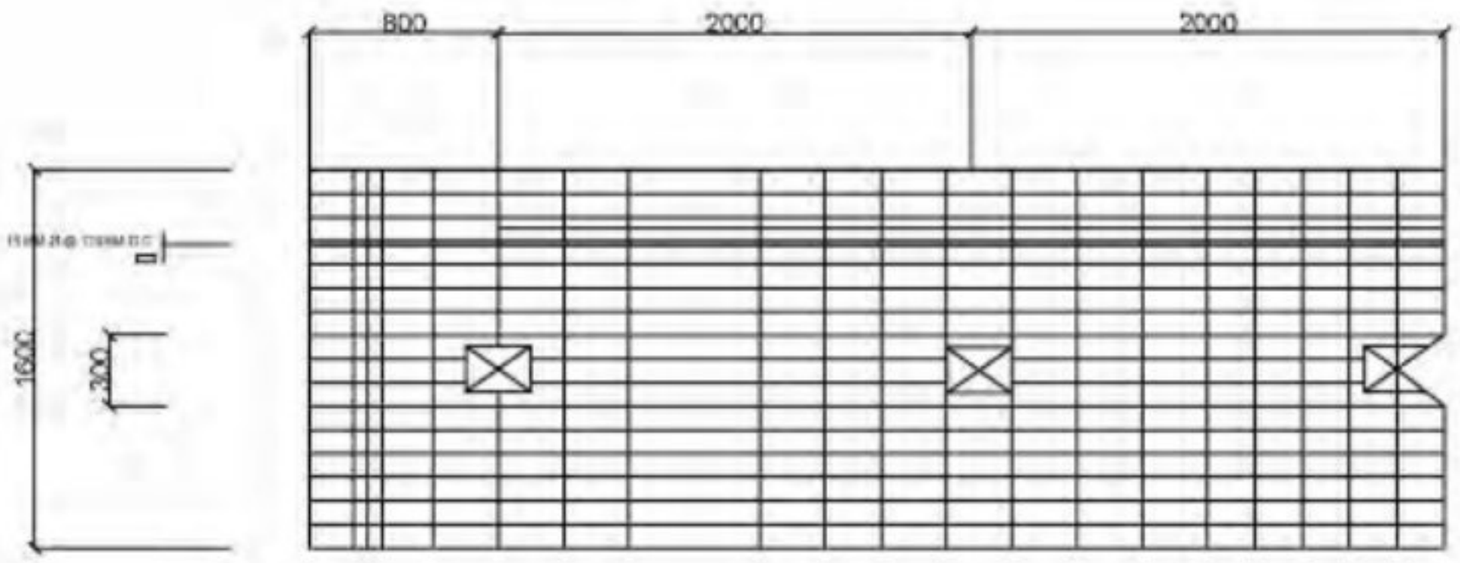
LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



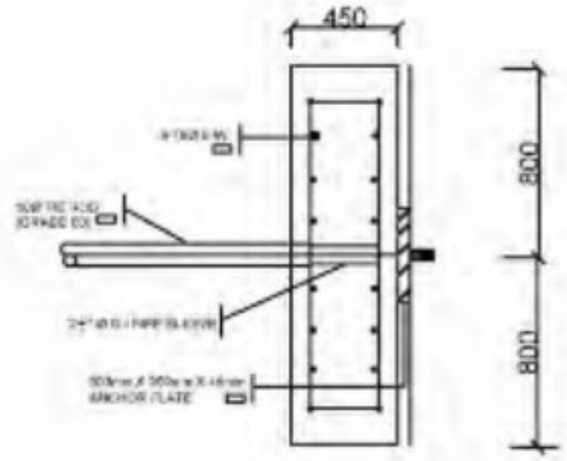
DETAIL OF RETAINING WALL - 1 WITH SLOTTED R.C. CURB



DETAIL OF RETAINING WALL - 2 WITH SLOTTED R.C CURB



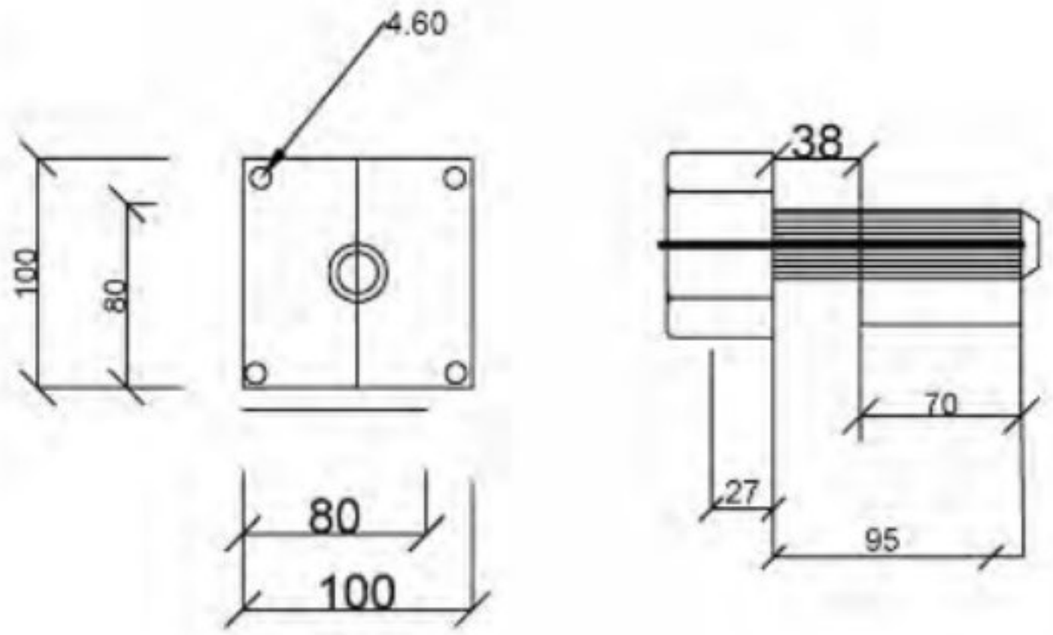
PLAN



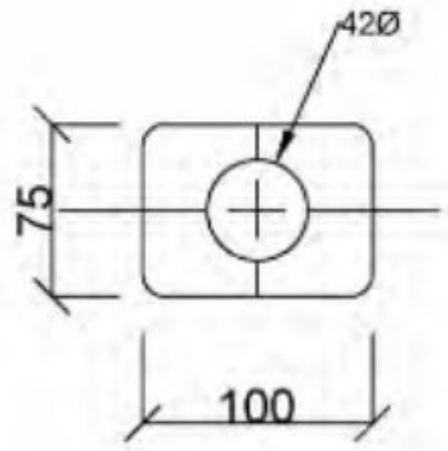
SECTION

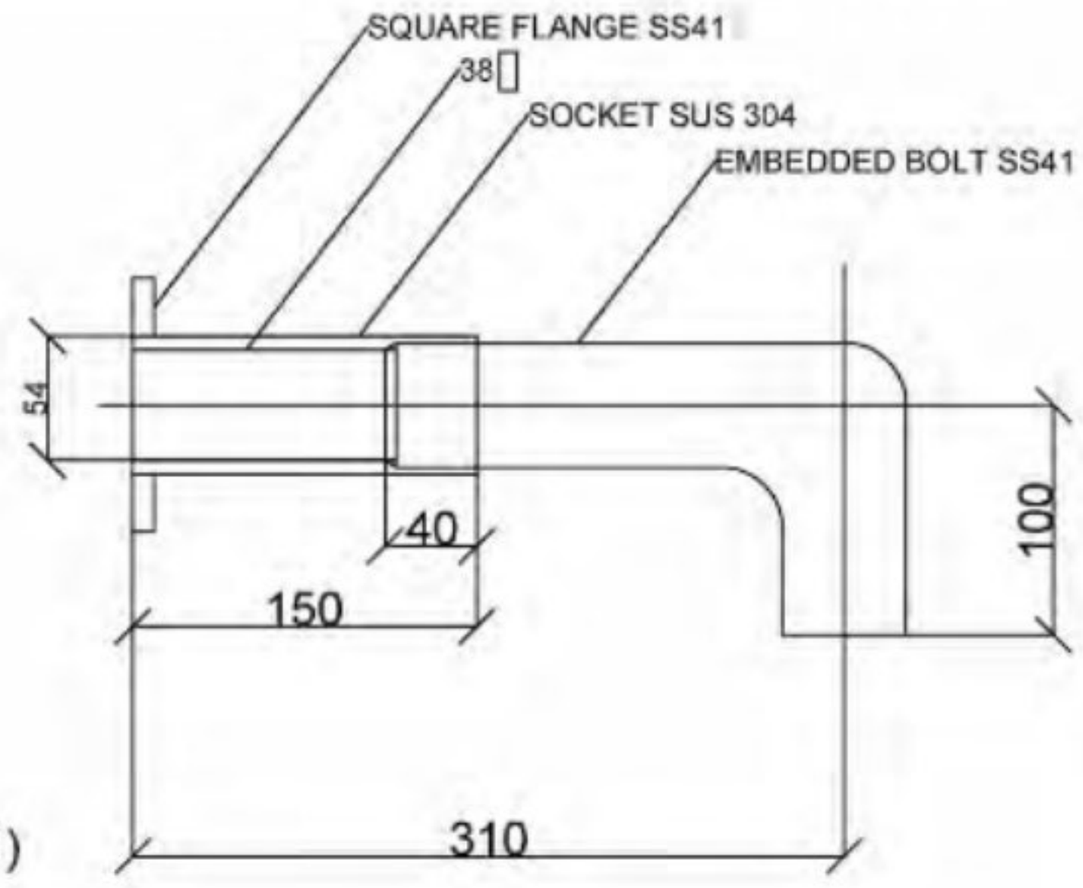
DETAIL OF CONTINUOUS ANCHOR BLOCK

LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS: / SHEET NO.:
	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN		ST



FIXING BOLT (SS 4)
(Zn COATING)





WASHER (SS 41)
(Zn COATING)

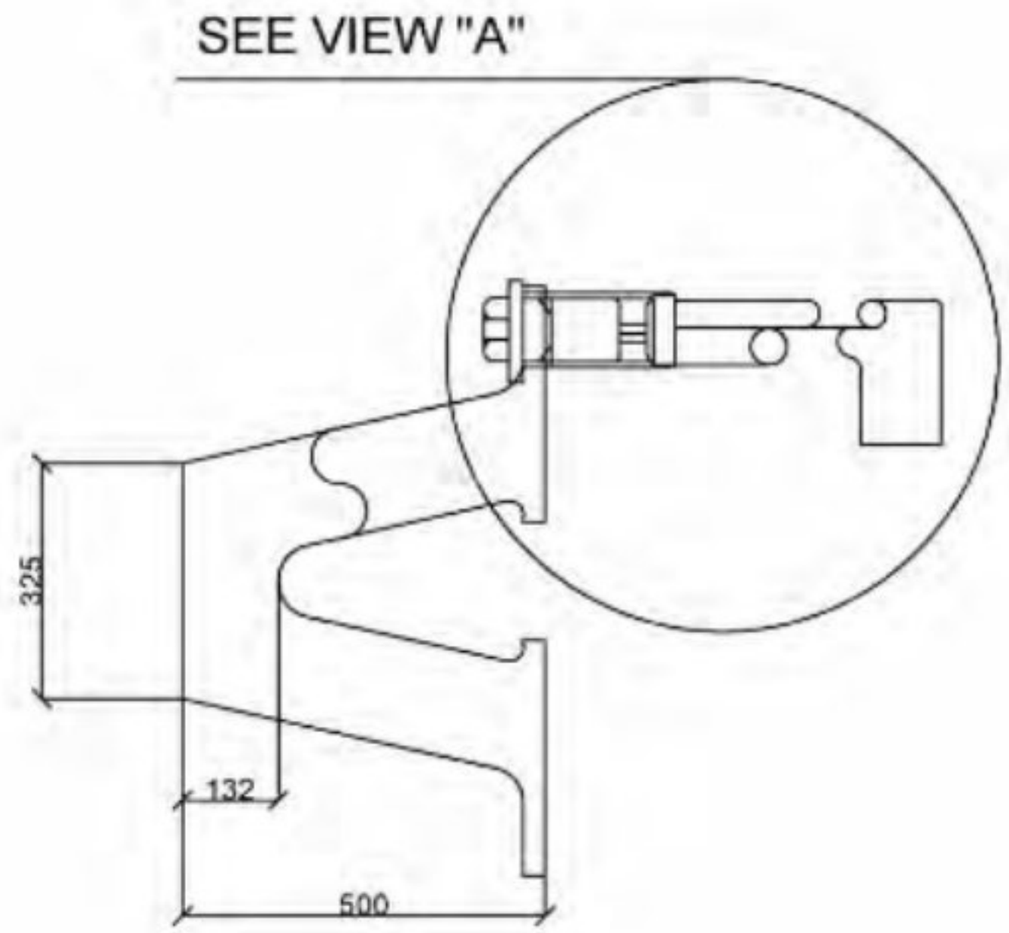
DETAIL OF ANCHOR BOLT (NORMAL)

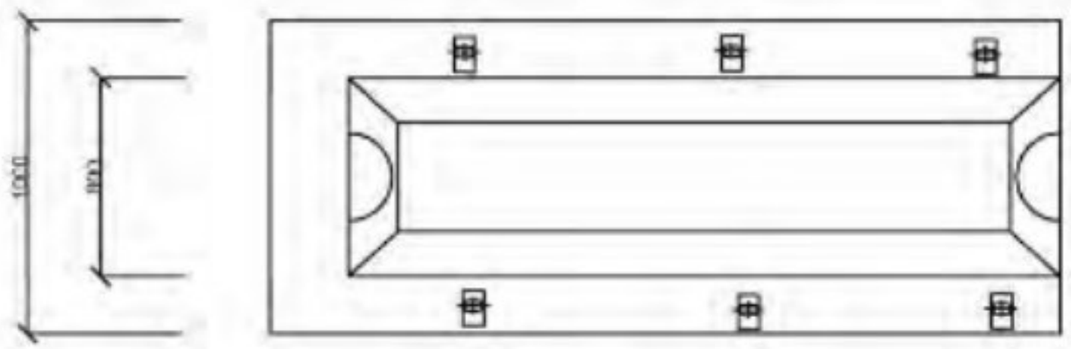
PERFORMANCE CHARACTERISTICS OF 500H (V-Type)

AT RATED DEFLECTION OF FENDER (45%)		
HULL PRESSURE	REACTION FORCE	HULL PRESSURE
TON / M ^{2}	TON	TON / M
96 (max.)	56.3 (max.)	9.38 (min.)

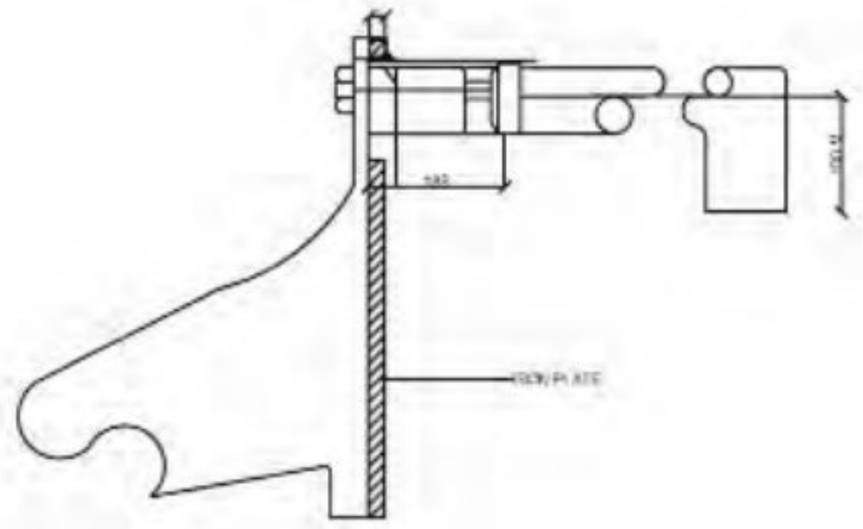
LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN	SHEET CONTENT: AS SHOWN	REVISIONS: / PARTICULARS: / SHEET NO.: ST

ELEVATION





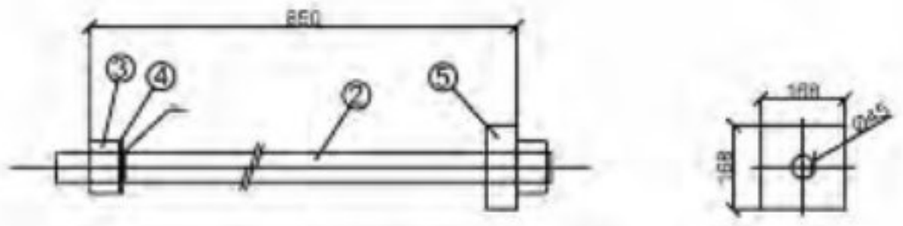
PLAN



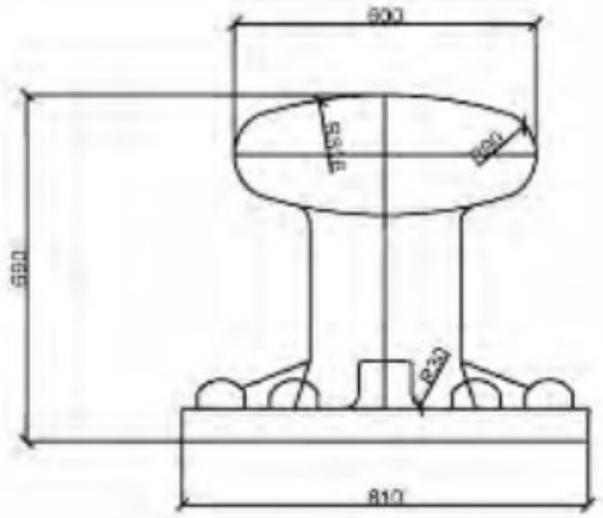
VIEW "A"

DETAIL OF RUBBER DOCK FENDER V-500H x1500L

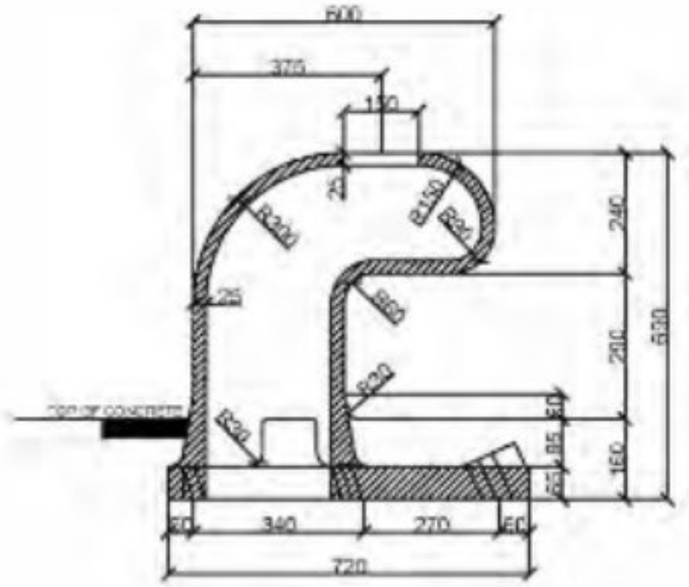
LOGO: BSG CONSTRUCTION	PREPARED BY: ENGR. [illegible]	PROJECT TITLE: PROPOSED RECLAMATION PROJECT	OWNER: WILLIAM TAN	SHEET CONTENT: AS SHOWN	REVISIONS: / PARTICULARS: / SHEET NO.: ST



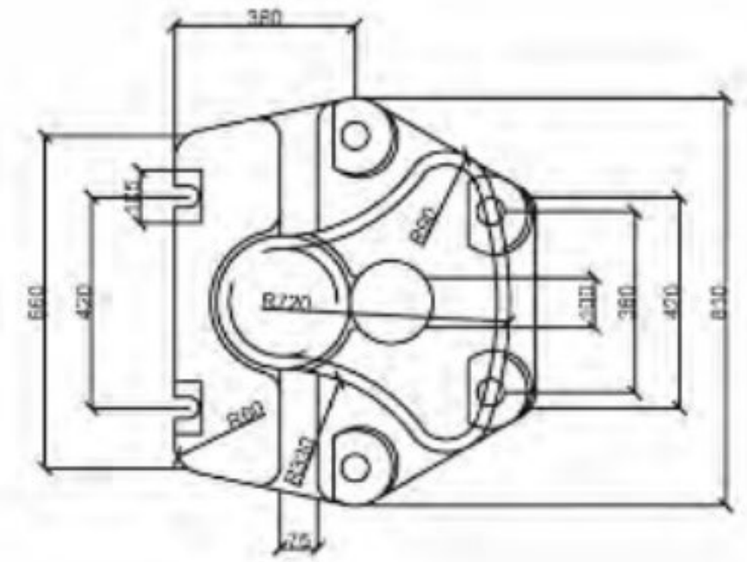
DETAIL OF ANCHOR BOLT



ELEVATION



SECTION



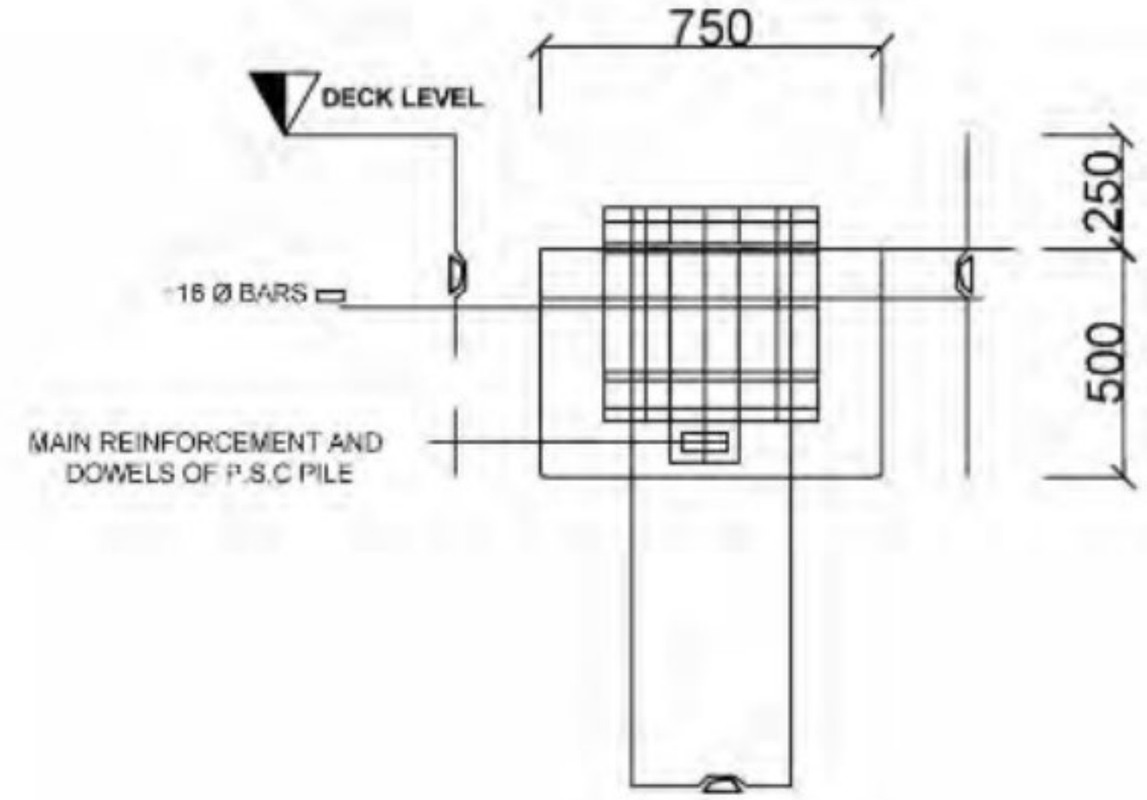
PLAN

MATERIALS AND WEIGHT

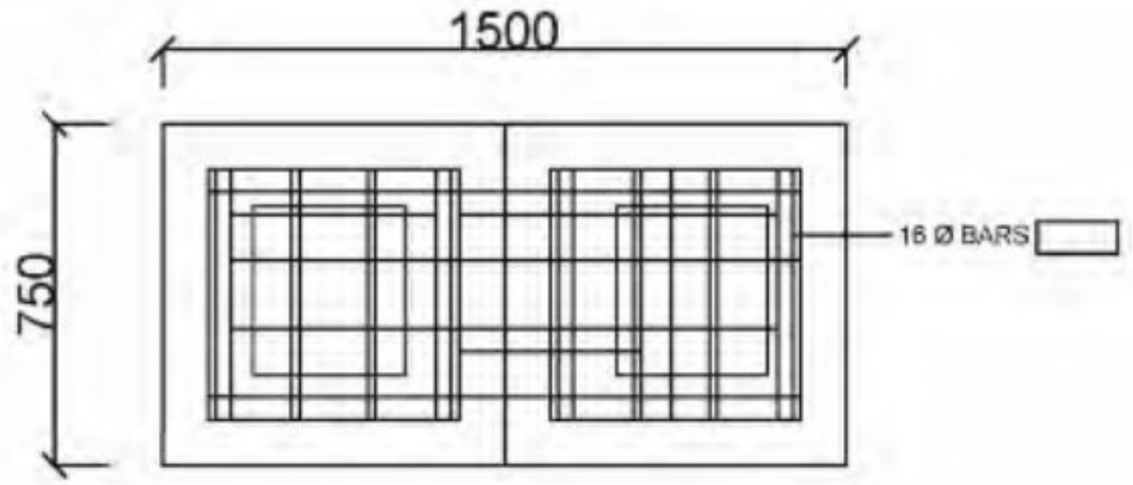
NO.	DESCRIPTION	MATERIALS AND SPECIFICATION	ALLOW. STRESS (kgf/cm^2)	QTY.	WEIGHT PER PC. (kgf)	WT. (kgf)
1	BODY	JIS G 5101 3 GRADE SC 46	1,400	1	663	663
2	ANCHOR BOLT	JIS G 3101 2 GRADE SS41 JIS B 0205 M 48-5	1,400	6	14	84
3	HEXAGON NUTS	JIS B 1181 1 GRADE 4T. M 18-5	-	12	-	-
4	PLAIN WASHER	JIS B 1256 ROUND STEEL	-	6	-	-
5	ANCHOR RING	JIS G 3101 2 GRADE SS41 OR JIS G 5101 3 GRADE SC46	1,400	6	12	72

DETAIL OF 50 TON MOORING TEE HEAD

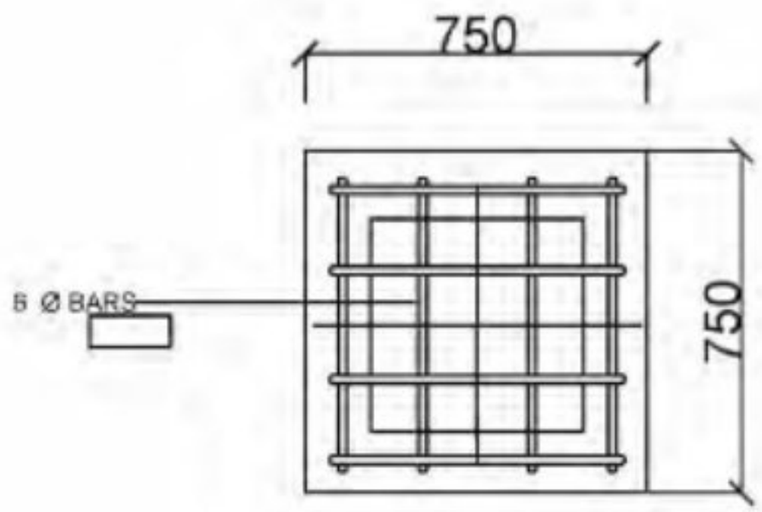
LOGO: BSG CONSTRUCTION	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST



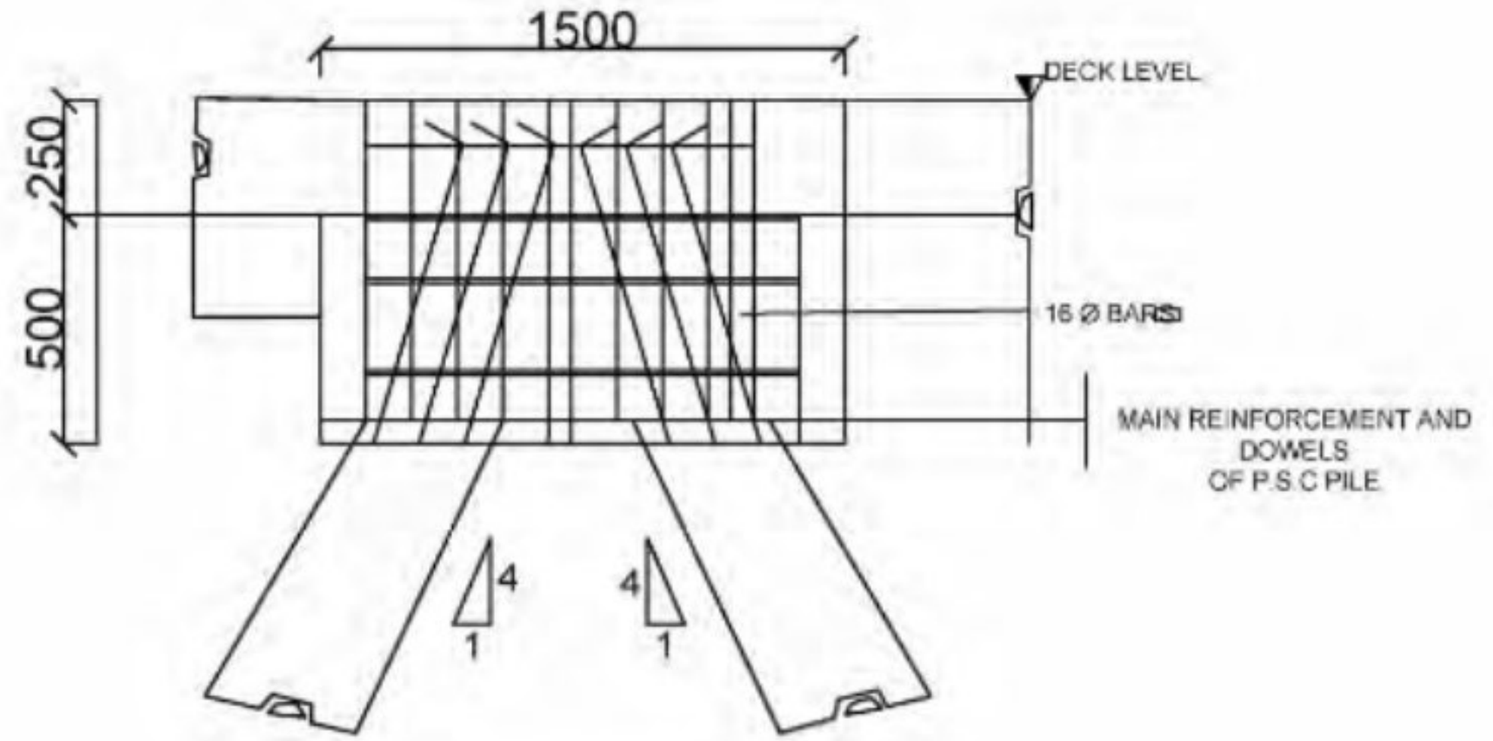
ELEVATION



PLAN



PLAN

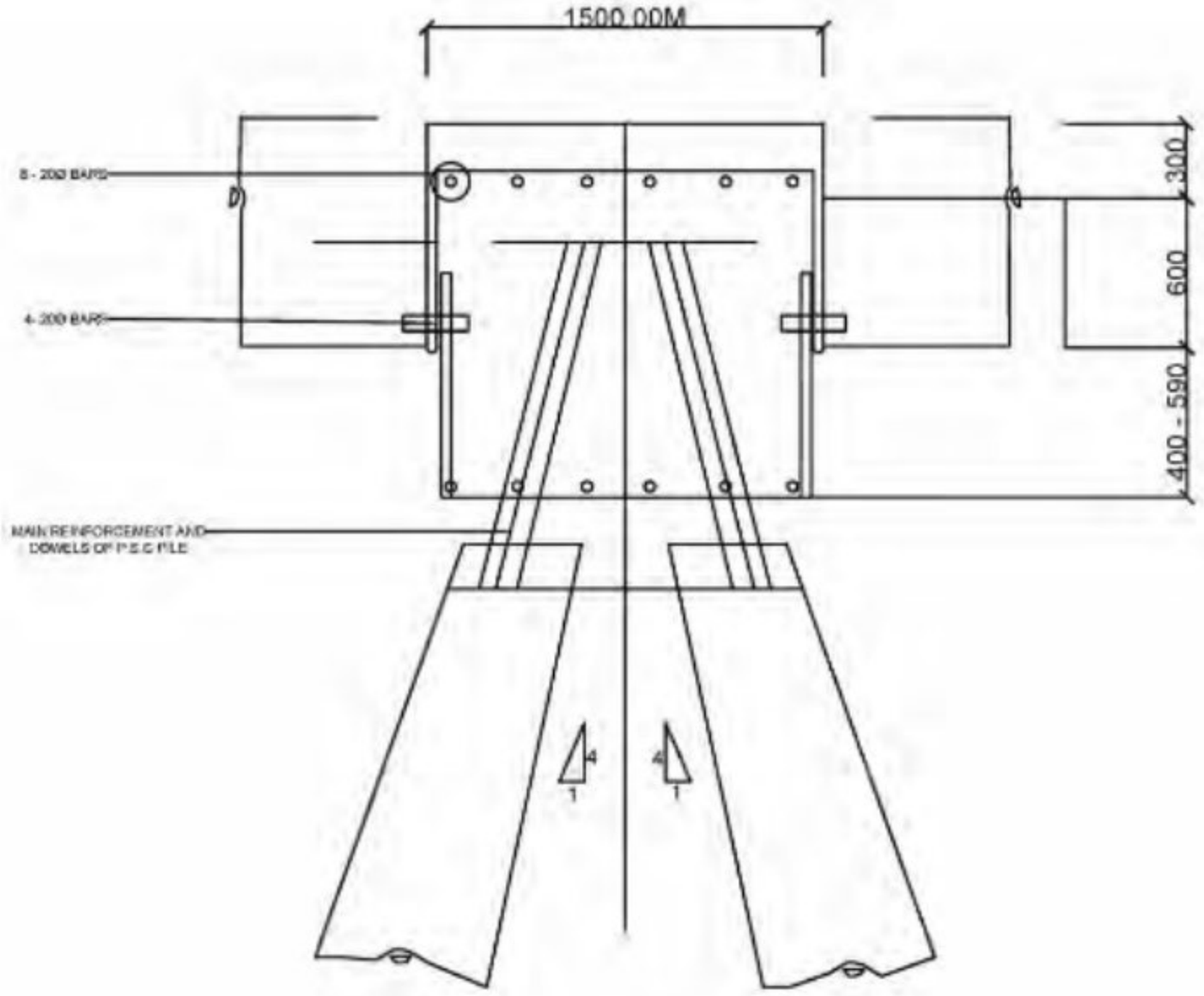


ELEVATION

TYPICAL DETAIL OF PILE CAP FOR VERTICAL PILES AT R.C WHARF

TYPICAL DETAIL OF PILE CAP FOR COUPLE - BATTER PILES AT R.C WHARF

LOGO:		PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	BSG CONSTRUCTION	ENGR. [illegible] CARELAN PROFESSIONAL ENGINEER DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN OWNER	AS SHOWN			ST



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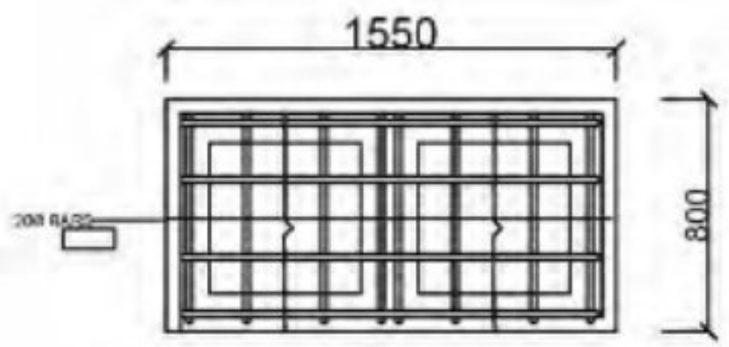
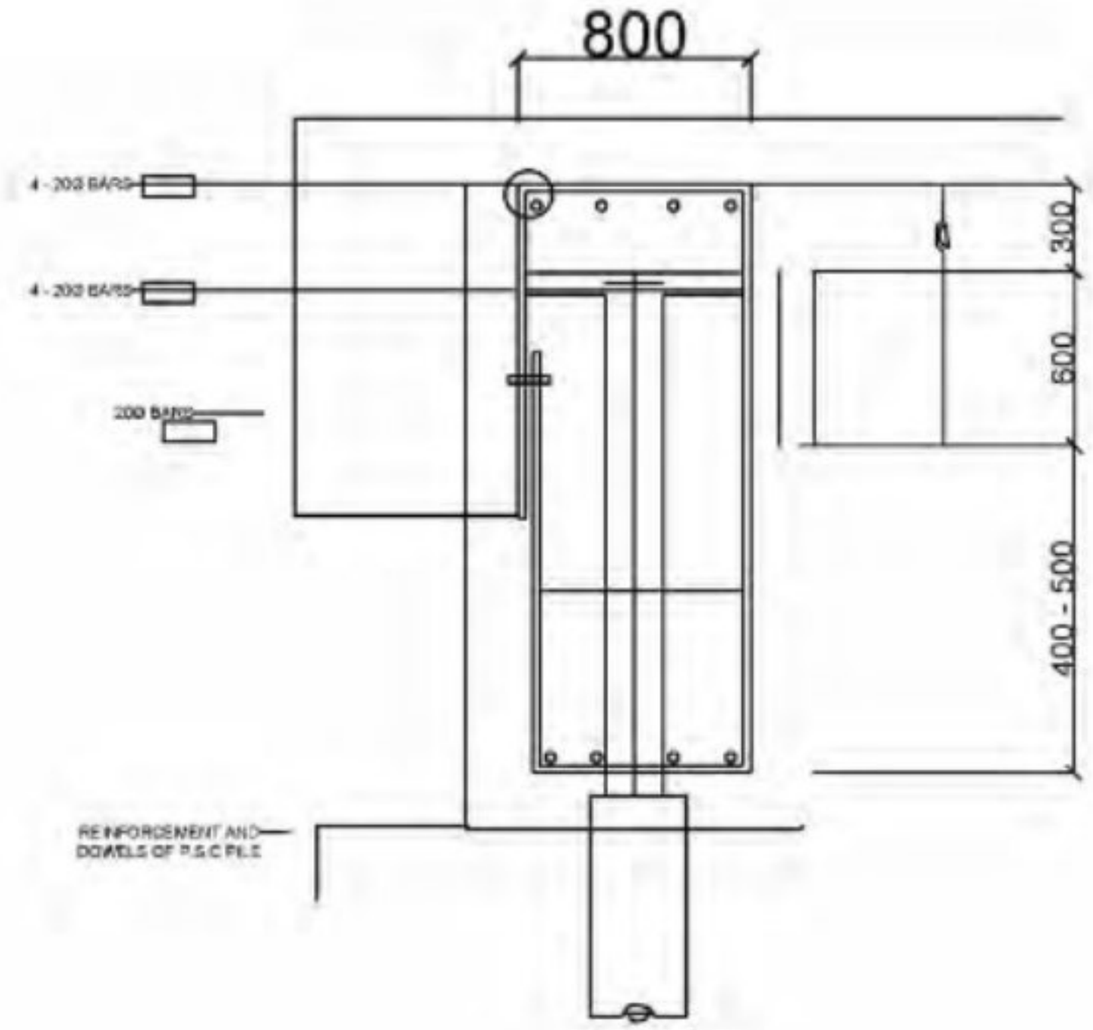


PLAN

TYPICAL DETAIL OF PILE CAP FOR
VERTICAL PILES AT RORO RAMP



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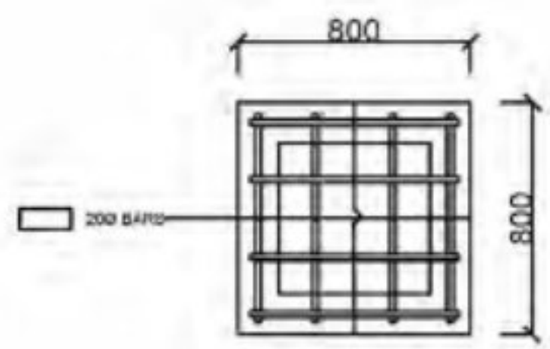
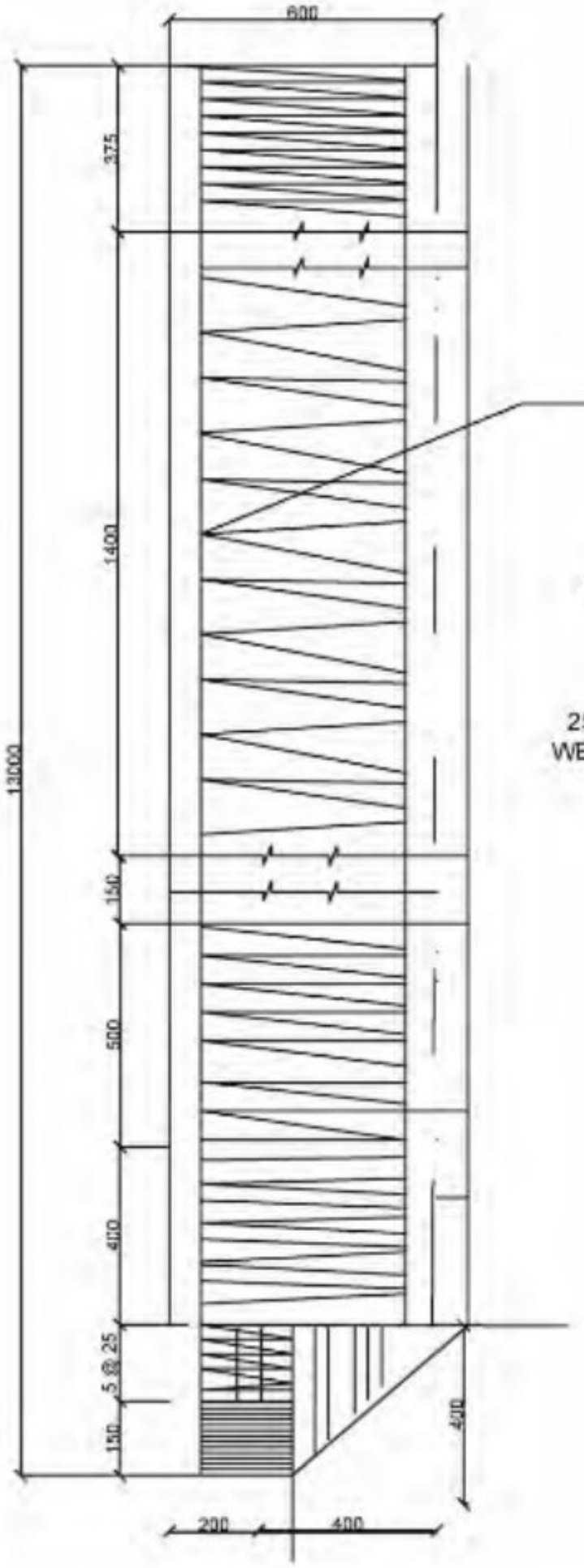
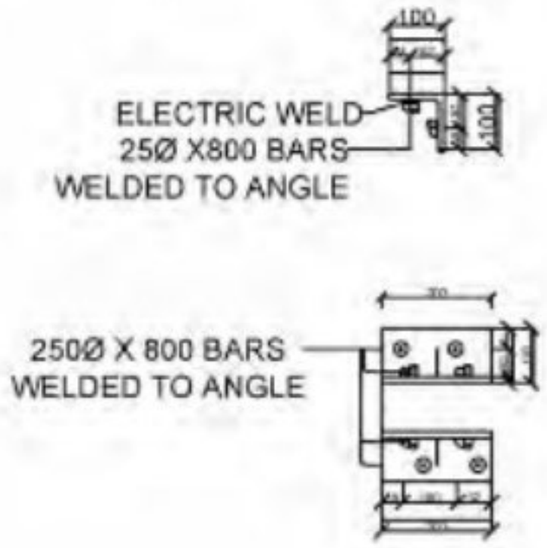


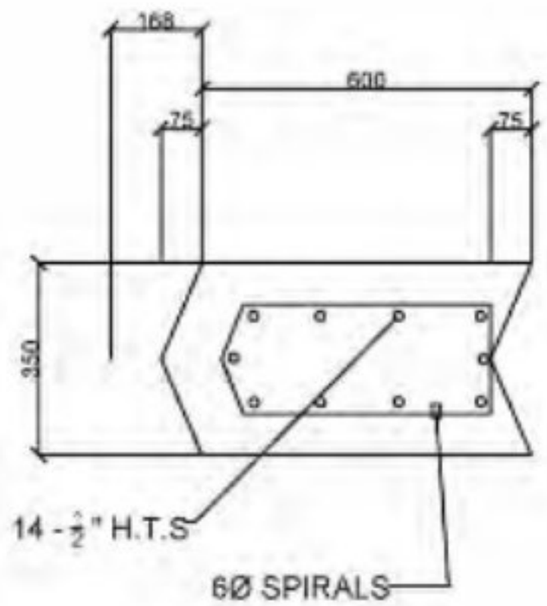
PLAN

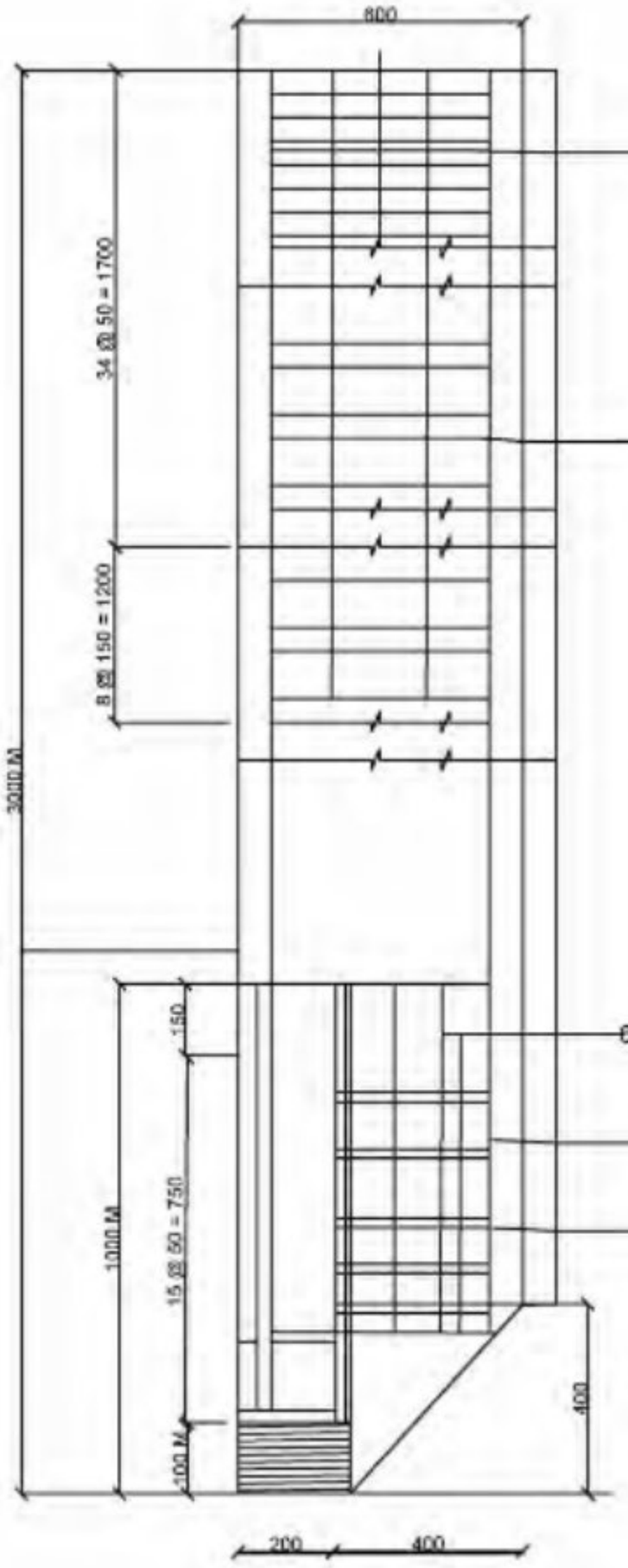
TYPICAL DETAIL OF PILE CAP FOR
COUPLE-BATTER PILES AT RORO RAMP

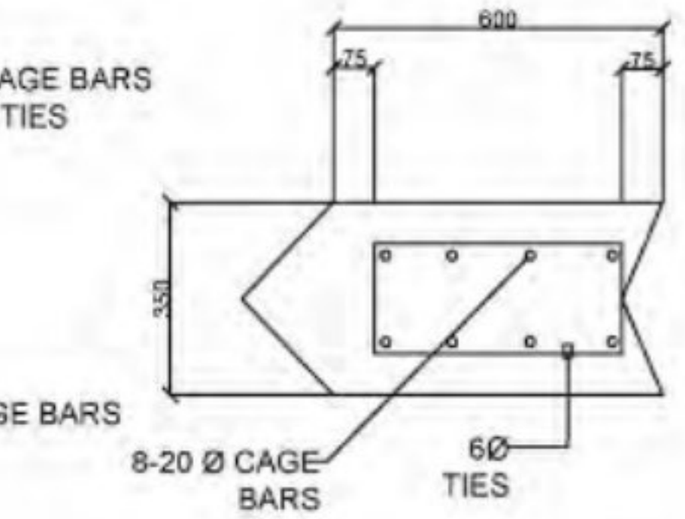
LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST

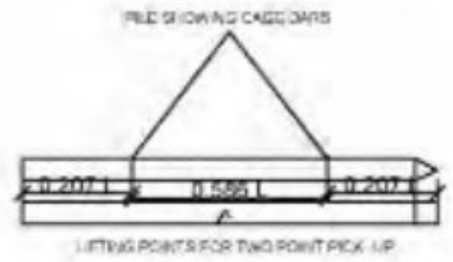












NOTES: TWO POINT PICK -UP METHOD OF LIFTING PILES SHALL BE:
- USE FOR THE 1,200 - 15000 mm LENGTH OF PILES (450 X 450)

NOTES FOR PRE - STRESSES CONCRETE SHEET PILES

1. PRE - STRESSED STRAND IS UNGALVANIZED 7-WIRE STRAND TYPE (ASTM 44 / 6)
2. MINIMUM ULTIMATE TENSILE STRENGTH IS 1862 MPa\
3. CLASS OF CONCRETE IS 41 MPa (6,000 psi)

LOGO:	PREPARED BY:	PROJECT TITLE:	OWNER:	SHEET CONTENT:	REVISIONS:	PARTICULARS:	SHEET NO.:
BSG CONSTRUCTION	DATA:	PROPOSED RECLAMATION PROJECT	WILLIAM TAN	AS SHOWN			ST

Attachment 1-D

VALID SOURCES OF FILL MATERIALS

AFFIDAVIT OF UNDERTAKING

REPUBLIC OF THE PHILIPPINES)
_____) S.S.
PUERTO PRINCESA CITY

I, WILLIAM C. TAN, Filipino, of legal age, and a resident of Puerto Princesa City, after having been duly sworn in accordance with law, hereby depose and say that:

1. The project will source filling materials from valid sources only;
2. Current possible sources are particularly named as follows:

    a. Madelyn Digo, quarry permit no. MQP (PPC) No. 07, with ECC No. ECC-OL-R4B-2019-0008.
    b. Marietta Atud, quarry permit no. MQP (PPC) No. 09, with ECC No. ECC-OL-R4B-2020-0003.
    c. Johanne Borot, quarry permit no. MQP (PPC) No. 06, with ECC No. ECC-OL-R4B-2018-0152.
    d. Annivie Alcosaba, quarry permit no. MQP (PPC) No. 08, with ECC No. ECC-OL-R4B-2019-0014.
    e. Other similar valid sources.

3. That by the virtue of this sworn declaration I would like to inform that authorities concerned about the facts herein stated and that I will inform should other sources be added or delisted.

IN WITNESS WHEREOF, I have hereunto affixed my signature this 01-29-22 day of _____ at _____, Philippines.

PUERTO PRINCESA CITY

WILLIAM C. TAN
(Affiant)

==========

SUBSCRIBED AND SWORN to before me this 01-29-22 day of _____ at _____, Affiant exhibiting to me his Community Tax Certificate No. _____ issued on _____ at _____

PUERTO PRINCESA CITY

ATTY. ROLAND E. PAY
NOTARY PUBLIC
ROLL NO. 32126
PUERTO PRINCESA CITY

NOTARY PUBLIC
ATTY. ROLAND E. PAY
NOTARY PUBLIC
EXTENDED UNTIL JUNE 30, 2022
B.M. NO. 3795
PTR NO. 0888617/01-03-2022
IBP NO. 001822/10-29-2019
ROLL NO. 32126
MCLE COMPLIANCE NO. VI-0025067/4-29-2019

Doc. No. 17
Page No. 5
Book No. CXXVII
Series of 2022

Republic of the Philippines
Department of Environment and Natural Resource
ENVIRONMENTAL MANAGEMENT BUREAU
1515 L and S Building, Roxas Boulevard, Pasay City
Telephone No.(02) 400-5960 Fax No.(02) 400-5960
mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com
Visit us at http://www.mimaropa.emb.gov.ph/

ENVIRONMENTAL COMPLIANCE CERTIFICATE

(Issued under Presidential Decree 1586)

ECC-OL-R4B-2019-0008

THIS IS TO CERTIFY THAT THE PROPONENT, **MADELYN DIGO**, is granted this Environmental Compliance Certificate (ECC), for the proposed **Madelyn Digo Quarry Project** located at **Malbeg, Brgy. Bacungan, Puerto Princesa City, Palawan** by the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EMB).

SUBJECT ONLY to the conditions and restrictions set in this ECC and in the attached document labelled as **Annexes A and B**.

This Certificate is issued with the following details:

PROJECT DESCRIPTION

This ECC covers the **Quarry Project** having a total land area of ***46,051.00*** square meters ***(4.6051 Hectares)***, located at **Malbeg, Brgy. Bacungan, Puerto Princesa City, Palawan**, specifically described as follows:

Tie Line: N. 88°00' W., 3,328.06 M.; from PLW-3028, Brgy. Bacungan, Puerto Princesa City to Coner "1"

Line	Bearing	Distance
1-2	S. 77°12' E	252.43 M.
2-3	S. 01°02' W	195.54 M.
3-4	N. 77°25' W	227.39 M.
4-1	N. 05°51' W	209.95 M.

The project shall operate and maintain its facilities and amenities as contained in the submitted **Initial Environmental Examination Checklist (IEEC) Report and Environmental Management Plan (EMP)**.

This Certificate is issued in compliance with the requirements of Presidential Decree No. 1586, and in accordance to DENR Administrative Order (D.A.O.) No. 2003-30. Non-compliance with any of the provisions of this Certificate shall be a sufficient cause for the cancellation of this Certificate and/or imposition of a fine in an amount not to exceed Fifty Thousand Pesos **(P50, 000.00)** for every violation thereof without prejudice to imposition of fines and penalties under other environmental laws. The EMB, however, is not precluded from reevaluating and correcting any deficiencies or errors that may be found after issuance of this Certificate.

Issued at EMB-R4B, 1515 L and S Building, Roxas Boulevard, Pasay City this **January 17, 2019.**

Recommending Approval:

Buena Fe A. Riofloride
Chief, Clearance & Permitting Division

Approved:

Atty. Michael Drake P. Matias
Regional Director

Environmental Compliance Certificate
MADELYN DIGO QUARRY PROJECT
MALBEG, BACUNGAN Puerto Princesa City, Palawan
MADELYN DIGO

Republic of the Philippines
OFFICE OF THE CITY MAYOR
CITY MINING REGULATORY BOARD (CMRB)
Puerto Princesa City

QUARRY PERMIT

Quarry Permit No. **MQP (PPC) No. 07**

Quarry Permit Application No. **MQPA (PPC) NO. 36**

Date Approved : MAR 26 2019

Expiry Date : MAR 25 2024

Permit Holder : **MS. MADELYN DIGO**

Address : BARANGAY BACUNGAN, PUERTO PRINCESA CITY

Quantity Allowed : 50,000 CUBIC METERS

An Application for Quarry Permit to extract and dispose quarry resources (release of allowable volume of 50,000 cubic meters) situated in the Sitio of **MALBEG,** Barrio of **BACUNGAN**, City of Puerto Princesa, Province of Palawan, and more or less described and bounded as follows to wit:

On the North : LOT 10870, CAD 800-D PUERTO PRINCESA CADASTRE

On the East : LOT 11874, CAD 800-D PUERTO PRINCESA CADASTRE

On the South : LOT 11328, CAD 800-D PUERTO PRINCESA CADASTRE

On the West : LOT 10869, CAD 800-D PUERTO PRINCESA CADASTRE

Containing an area of **4.6051** hectare and more or less specifically described in the Survey Plan and Technical Description thereto attached and made as an integral part of this Permit, having been filed in the Province of Palawan by **MS. MADELYN DIGO** pursuant to the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, this **Mountain Quarry Permit No. 07** is hereby granted to **MS. MADELYN DIGO** subject to the terms and conditions herein stated, to wit:

1. This Permit is for a period of five (5) years, from _____ to _____ inclusive, renewable for a like period but in no case shall exceed o total of twenty five (25) years. *Provided,* that the application for renewal shall be filed before the expiry date thereof, and that the Permit Holder has complied with the provisions of the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, and the terms and conditions of this permit;

2. The Permit shall be for the exclusive use and benefit of the Permit Holder and not, directly or indirectly, for the benefit of any other person whether natural or juridical, and that the area covered by the Permit shall be used for the purpose only of extracting and disposing the materials herein authorized.

3. The Permit cannot be assigned, transferred or conveyed, in whole or in part, without prior approval of the City Mayor concerned;

4. The extraction or removal of materials shall not be allowed within the distance of one (1) kilometer from the boundaries of reservoirs established for public water supply, archeological and historical sites, or of any public or private works or structure, unless with prior clearance of the agency or owner concerned is obtained. No extraction, removal and/or disposition of materials shall likewise be allowed in offshore areas within five hundred (500) meters distance from the coast and two hundred (200) meters from the mean low tide level along the beach;

Certified photocopy from the original copy

CARDELAR STEVIE ANGEL M. MADRIÑAN
Environmental Management Specialist II

Republic of the Philippines
Department of Environment and Natural Resource
ENVIRONMENTAL MANAGEMENT BUREAU
1515 L and S Building, Roxas Boulevard, Pasay City
Telephone No.(02) 400-5960 Fax No.(02) 400-5960
mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com
Visit us at http://www.mimaropa.emb.gov.ph/

ENVIRONMENTAL COMPLIANCE CERTIFICATE
(Issued under Presidential Decree 1586)
ECC-OL-R4B-2020-0003

THIS IS TO CERTIFY THAT THE PROPONENT, **MARIETTA ATUD**, is granted this Environmental Compliance Certificate (ECC), for the proposed MARIETTA ATUD QUARRY PROJECT located at Malbeg, Bacungan, Puerto Princesa City, Palawan., by the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EMB).

SUBJECT ONLY to the conditions and restrictions set in this ECC and in the attached document labelled as Annexes A and B.

This Certificate is issued with the following details:

PROJECT DESCRIPTION

This ECC covers the **MARIETTA ATUD QUARRY PROJECT** having a total land area of 49,999.00 square meters, located at Malbeg, Brgy. Bacungan, Puerto Princesa City, Palawan specifically described as follows:

Tie Line: N.88°00'W. 3328.06M: From PLW - 3028,
Brgy. Bacungan, Puerto Princesa City to Corner "1"

Line	Bearing	Distance
1-2	N. 06°27'E.	205.64 M.
2-3	S. 66°32'E.	322.87 M.
3-4	S. 29°02'W.	150.66 M.
4-1	N. 77°11'W.	252.43 M.

The project shall operate and maintain its facilities and amenities as contained in the submitted **Initial Environmental Examination Checklist (IEEC) Report and Environmental Management Plan (EMP)**.

Republic of the Philippines
OFFICE OF THE CITY MAYOR
CITY MINING REGULATORY BOARD (CMRB)
Puerto Princesa City

CITY ENVIRONMENT AND NATURAL RESOURCES OFFICE
RECEIVED
May 22, 2020
2:26pm

QUARRY PERMIT

Quarry Permit No. **MQP (PPC) NO. 09**
Quarry Permit Application No. **MQPA (PPC) NO. 32**
Date Approved : MAY 22 2020
Expiry Date : MAY 21 2025
Permit Holder : **MS. MARIETTA ATUD**
Address : BARANGAY BACUNGAN, PUERTO PRINCESA CITY
Quantity Allowed : 50,000 CUBIC METERS

An Application for Quarry Permit to extract and dispose quarry resources (release of allowable volume of 50,000 cubic meters) situated in the Sitio of **MALBEG,** Barrio of **BACUNGAN**, City of Puerto Princesa, Province of Palawan, and more or less described and bounded as follows to wit:

On the North : LOT 10869, (PORTION) CAD 800-D

On the East : LOT 10860, CAD 800-D, PUERTO PRINCESA CADASTRE

On the South : LOT 11327, CAD 800-D, PUERTO PRINCESA CADASTRE

On the West : LOT 10871, CAD 800-D, PUERTO PRINCESA CADASTRE

Containing an area of **4.9999** hectare and more or less specifically described in the Survey Plan and Technical Description thereto attached and made as an integral part of this Permit, having been filed in the Province of Palawan by **MS. MARIETTA ATUD** pursuant to the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, this **Mountain Quarry Permit No. 09** is hereby granted to **MS. MARIETTA ATUD** subject to the terms and conditions herein stated, to wit:

1. This Permit is for a period of five (5) years, from MAY 22 2020 to MAY 21 2025 inclusive, renewable for a like period but in no case shall exceed o total of twenty five (25) years. *Provided,* that the application for renewal shall be filed before the expiry date thereof, and that the Permit Holder has complied with the provisions of the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, and the terms and conditions of this permit;

2. The Permit shall be for the exclusive use and benefit of the Permit Holder and not, directly or indirectly, for the benefit of any other person whether natural or juridical, and that the area covered by the Permit shall be used for the purpose only of extracting and disposing the materials herein authorized.

3. The Permit cannot be assigned, transferred or conveyed, in whole or in part, without prior approval of the City Mayor concerned;

4. The extraction or removal of materials shall not be allowed within the distance of one (1) kilometer from the boundaries of reservoirs established for public water supply, archeological and historical sites, or of any public or private works or structure, unless with prior clearance of the agency or owner concerned is obtained. No extraction, removal and/or disposition of materials shall likewise be allowed in offshore areas within five hundred (500) meters distance from the coast and two hundred (200) meters from the mean low tide level along the beach;

Republic of the Philippines
Department of Environment and Natural Resource
ENVIRONMENTAL MANAGEMENT BUREAU

ENVIRONMENTAL COMPLIANCE CERTIFICATE

(Issued under Presidential Decree 1586)

ECC-OL-R4B-2018-0152

THIS IS TO CERTIFY THAT THE PROPONENT, **JOHANNE A. BOROT**, is granted this Environmental Compliance Certificate (ECC), for the proposed JOHANNE BOROT QUARRY PROJECT located at Malbeg, Brgy. Bacungan, Puerto Princesa City, Palawan, by the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EMB).

SUBJECT ONLY to the conditions and restrictions set in this ECC and in the attached document labelled as Annexes A and B.

This Certificate is issued with the following details:

PROJECT DESCRIPTION

The ECC covers the **JOHANNE BOROT QUARRY PROJECT** having a total land area of 49,999.00 square meters, located at Malbeg, Brgy. Bacungan Puerto Princesa City, Palawan specifically described as follows:

Tie Line: S.86°20'W, 2868.03M; From PLW - 3028, Brgy. Bacungan, Puerto Princesa City to Corner "1"

Line	Bearing	Distance
1-2	N 77°42'W	226.43 M
2-3	N 01°02'E	195.54 M
3-4	S 78°14' E	241.39 M
4-1	S 39°26' W	180.30 M

The project shall operate and maintain its facilities and amenities as contained in the submitted **Initial Environmental Examination Checklist (IEEC) Report and Environmental Management Plan (EMP).**

Republic of the Philippines
OFFICE OF THE CITY MAYOR
CITY MINING REGULATORY BOARD (CMRB)
Puerto Princesa City

QUARRY PERMIT

Quarry Permit No. **MQP (PPC) NO. 06**

Quarry Permit Application No. **MQPA (PPC) NO. 44**

Date Approved : MAR 26 2019

Expiry Date : MAR 25 2024

Permit Holder : **MS. JOHANNE BOROT**

Address : BARANGAY BACUNGAN, PUERTO PRINCESA CITY

Quantity Allowed : 50,000 CUBIC METERS

An Application for Quarry Permit to extract and dispose quarry resources (release of allowable volume of 50,000 cubic meters) situated in the Sitio of **Malbeg,** Barrio of **Bacungan**, City of Puerto Princesa, Province of Palawan, and more or less described and bounded as follows to wit:

On the North : LOT 10871CAD 800-D PUERTO PRINCESA CADASTRE

On the East : LOT 86, PLS 302

On the South : LOT 93 (PORTION), PLS 302

On the West : LOT 94, PLS 302

Containing an area of **4.9999** hectare and more or less specifically described in the Survey Plan and Technical Description thereto attached and made as an integral part of this Permit, having been filed in the Province of Palawan by **MS. JOHANNE BOROT** pursuant to the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, this **Mountain Quarry Permit No. 06** is hereby granted to **MS. JOHANNE BOROT** subject to the terms and conditions herein stated, to wit:

1. This Permit is for a period of five (5) years, from _____ to _____ inclusive, renewable for a like period but in no case shall exceed o total of twenty five (25) years. *Provided,* that the application for renewal shall be filed before the expiry date thereof, and that the Permit Holder has complied with the provisions of the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, and the terms and conditions of this permit;

2. The Permit shall be for the exclusive use and benefit of the Permit Holder and not, directly or indirectly, for the benefit of any other person whether natural or juridical, and that the area covered by the Permit shall be used for the purpose only of extracting and disposing the materials herein authorized.

3. The Permit cannot be assigned, transferred or conveyed, in whole or in part, without prior approval of the City Mayor concerned;

4. The extraction or removal of materials shall not be allowed within the distance of one (1) kilometer from the boundaries of reservoirs established for public water supply, archeological and historical sites, or of any public or private works or structure, unless with prior clearance of the agency or owner concerned is obtained. No extraction, removal and/or disposition of materials shall likewise be allowed in offshore areas within five hundred (500) meters distance from the coast and two hundred (200) meters from the mean low tide level along the beach;

Certified photocopy from the original copy

CARDELAR STEVIE ANGEL M. MADRIÑAN
Environmental Management Specialist II

Republic of the Philippines
Department of Environment and Natural Resource
ENVIRONMENTAL MANAGEMENT BUREAU
1515 L and S Building, Roxas Boulevard, Pasay City
Telephone No.(02) 400-5960 Fax No.(02) 400-5960
mimaropa@emb.gov.ph and emb_mimaropa@yahoo.com
Visit us at http://www.mimaropa.emb.gov.ph/

ENVIRONMENTAL COMPLIANCE CERTIFICATE
(Issued under Presidential Decree 1586)
ECC-OL-R4B-2019-0014

THIS IS TO CERTIFY THAT THE PROPONENT, **ANNIVIE ALCOSABA**, is granted this Environmental Compliance Certificate (ECC), for the proposed ANNIVIE ALCOSABA QUARRY PROJECT located at MALBEG, BACUNGAN, Puerto Princesa City, Palawan, by the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EMB).

SUBJECT ONLY to the conditions and restrictions set in this ECC and in the attached document labelled as Annexes A and B.

This Certificate is issued with the following details:

PROJECT DESCRIPTION

This ECC covers the ANNIVIE ALCOSABA QUARRY PROJECT having a total land area of 49,999.00 square meters, located at Malbeg, Brgy. Bacungan, Puerto Princesa City, Palawan specifically described as follows:

Tie Line: N.88°53'W. 3080.46M: From PLW - 3028, Brgy. Bacungan, Puerto Princesa City to Corner "1"

Line	Bearing	Distance
1-2	N. 29°02'E.	150.67 M.
2-3	S. 81°21'E.	210.68 M.
3-4	S. 83°59'E.	122.49 M.
4-5	S. 29°02'W.	175.50 M.
5-1	N.78°14'W.	324.87 M.

The project shall operate and maintain its facilities and amenities as contained in the submitted **Initial Environmental Examination Checklist (IEEC) Report and Environmental Management Plan (EMP)**.

This Certificate is issued in compliance with the requirements of Presidential Decree No. 1586, and in accordance to DENR Administrative Order (D.A.O.) No. 2003-30. Non-compliance with any of the provisions of this Certificate shall be a sufficient cause for the cancellation of this Certificate and/or imposition of a fine in an amount not to exceed Fifty Thousand Pesos (P50, 000.00) for every violation thereof without prejudice to imposition of fines and penalties under other environmental laws. The EMB,

Republic of the Philippines
OFFICE OF THE CITY MAYOR
CITY MINING REGULATORY BOARD (CMRB)
Puerto Princesa City

QUARRY PERMIT

Quarry Permit No. : **MQP (PPC) NO. 08**
Quarry Permit Application No. : **MQPA (PPC) NO. 40**
Date Approved : MAR 26 2019.
Expiry Date : MAR 25 2024
Permit Holder : **MS. ANNIVIE ALCOSABA**
Address : BARANGAY BACUNGAN, PUERTO PRINCESA CITY
Quantity Allowed : 50,000 CUBIC METERS

An Application for Quarry Permit to extract and dispose quarry resources (release of allowable volume of 50,000 cubic meters) situated in the Sitio of **MALBEG**, Barrio of **BACUNGAN**, City of Puerto Princesa, Province of Palawan, and more or less described and bounded as follows to wit:

On the North : LOT 10869, CAD 800-D PUERTO PRINCESA CADASTRE

On the East : LOT 93, PLS 302

On the South : LOT 94 (PORTION), PLS 302

On the West : LOT 10861, AND LOT 10862, CAD 800-D

Containing an area of **4.9999** hectare and more or less specifically described in the Survey Plan and Technical Description thereto attached and made as an integral part of this Permit, having been filed in the Province of Palawan by **MS. ANNIVIE ALCOSABA** pursuant to the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, this **Mountain Quarry Permit No. 08** is hereby granted to **MS. ANNIVIE ALCOSABA** subject to the terms and conditions herein stated, to wit:

1. This Permit is for a period of five (5) years, from _____ to _____ inclusive, renewable for a like period but in no case shall exceed o total of twenty five (25) years. *Provided,* that the application for renewal shall be filed before the expiry date thereof, and that the Permit Holder has complied with the provisions of the Philippine Mining Act of 1995 and the Revised Implementing Rules and Regulations promulgated thereunder, and the terms and conditions of this permit;

2. The Permit shall be for the exclusive use and benefit of the Permit Holder and not, directly or indirectly, for the benefit of any other person whether natural or juridical, and that the area covered by the Permit shall be used for the purpose only of extracting and disposing the materials herein authorized.

3. The Permit cannot be assigned, transferred or conveyed, in whole or in part, without prior approval of the City Mayor concerned;

4. The extraction or removal of materials shall not be allowed within the distance of one (1) kilometer from the boundaries of reservoirs established for public water supply, archeological and historical sites, or of any public or private works or structure, unless with prior clearance of the agency or owner concerned is obtained. No extraction, removal and/or disposition of materials shall likewise be allowed in offshore areas within five hundred (500) meters distance from the coast and two hundred (200) meters from the mean low tide level along the beach;

Certified photocopy from the original copy

CARDELAR STEVIE ANGEL M. MADRIÑAN
Environmental Management Specialist II

Attachment 1-E

RECLAMATION METHODOLOGY

Proposed 22.2 Hectares Reclamation Project

Brgy. Luzviminda, Puerto Princesa City, Palawan

Method of Construction

Project Background

The Proposed Industrial Zone and Green Port Project is a sea front master planned development project located on the South East Coast of the Palawan Island, Philippines. It is a 22.2-hectare reclamation and development project designed to address the future commodity imports and exports transport needs of the Province of Palawan and neighboring provinces. Thus, it would accommodate port facilities such as ships and transshipments, warehouses, piers, fueling and repairs stations, berth marina etc.

Preceding construction of port and support facilities, the topographic and hydrographic survey and land reclamation activities shall commence first and followed by activities that involve shoreline protection works, channel construction, waterway dredging, and soil improvement works.

Laying out of Construction Work Plans

Before proceeding to the construction phase of the project a work plan of a reclamation projects shall be lay out such as; Inventory of all relevant contractual and technical specifications including layout of the reclamation area, the required fill, the testing and monitoring requirements and other possible milestones. Enumerated below;

- An inventory of boundary conditions such as; the borrow Area, the sailing route of the dredging vessels and the reclamation area and its surroundings.
- The Nature of the existing subsoil at borrows area and the reclamation site.
- Environmental regulations
- Navigational regulations
- Required permits
- Availability of Plant
- Detailed project Planning
- Dredging Plan of borrow area including dredging equipment
- Fill Transport Plan (e.g. pipeline, booster pump, stations trailing sanctions hopper, barges and other equipment)
- Result of the geotechnical Analysis (e.g. settlement and stability of bunds and fill)
- Filling Plan (e.g. plant and equipment required, the number and thickness of lifts, consolidation, periods, testing schedules
- Soil and ground improvement plan (e.g. vertical drains, compaction)
- Monitoring and quality control plan
- Risk assessment and mitigating measures.

Construction Phase Sequence

Prior to commencement of the main reclamation works, a pre-survey and setting-out are to be undertaken to the proposed site. First, the boundary of the reclamation project working area shall be demarcated with lighted buoys. This is to ensure safe navigation and to keep out vessels that are not associated with this project. Subsequently, a number of arrays of turbidity control measures shall also be constructed and installed. These shall include the construction of the perimeter bund and also installation of silt curtain positioned close to the perimeter bund construction sites for the prevention of sediment dispersion resulted from dredging and sand filling activities. The seaward perimeter bunds shall be constructed using rocks, and most boundaries shall be formed by using two types of materials, which are sheet piles and rocks. The rocks, sand and sand bags shall be use initially as a perimeter bund to contain the sand fill material. Sand-filling works that started after the reclamation areas were predominantly enclose

by the perimeter bunds made from rocks, and sand bags. After the sand fill was up to +3.0 m above the mean high water level, the prefabricated vertical drain (PVD) shall be follow install to the full depth of the compressible layer to drain off the pore water as part of the soil treatment. This is to fasten or expedite the consolidation of the slow-draining soils. Subsequent sand filling took place at the +3.0 m platform that are to be installed with PVDs, until the designated platform elevation of (+5.5 to +6.0 m) are reach. It should be noted that the platform at +6.0 m is 3.0 more or less above the highest astronomical tide occurring during high tide season and more than 1.5 m above the recorded wave height at the Luzviminda, Puerto Princesa City. Hence, the platform levels of the proposed for site is regarded to be a safe design parameter with the inclusion of the safe environment against overtopping effects.

As to accelerate the speed of the construction and reclamation filling activities two filling methods were considered to be apply as the most cost effective and suitable construction method. These are above water such the use of dump trucks, heavy equipments and barges for hauling of materials and below water filling activities by the used of hopper suction dredgers and barges.

Delivery of the Construction Materials

The main materials used for reclamation are rock and sand. The latter shall be use as the source of reclamation fillings for the reclamation project due to its ease of handling, good drainage system and shorter consolidation period. To avoid water contamination during sand filling operation at the reclamation sites, a suitable marine sand is chosen to be the filling material for this project. The marine sand is transported from the approved sources to the project site via sea route using trailer hopper suction dredgers (TSHD, conveyor belt barges and flat-top barges. To ensure the supplied sand meets the particle size distribution requirement as specified for this project, soil sampling has to be performed at the sand carrying barge prior to sand filling at the reclamation sites. The soil samples are then sent to an approved licensed laboratory for particle size distribution test – sieve analysis. Sand filling operation is permitted to start upon compliance with the stipulated requirements.

Meanwhile, rocks to be obtained from the approved quarries are then be transported overland by trucks to the respective offloading jetties, and carried to the project site using flat-top barges

and tug boats. Prior to delivery of the rocks from the quarries, rock sampling is conducted to determine their physical properties (e.g. shape, size, mass, relative density, roundness, etc.) through a series of laboratory tests. Once the requirements of the quarry rock samples are met, the rocks of different sizes are transported to the sites in several batches using land and sea routes. These are in compliance of the Environmental Impact Assessment approval conditions, for quarrying, hauling and delivery of filling materials to the location of the reclamation project. The rocks are presorted screened or graded according to the required sizes at the crusher site or quarry area. The sand carried by the sand barge or trailing suction hopper dredger is delivered to the reclamation site with the aid of an on-board pump, neighbouring pump barge and floating pipelines. Once berthed at the temporary jetty of the sand island, the quarry rocks of different sizes are then offloaded to dump trucks using an excavator and shall be transported to the specified stockpile area for storage.

Method of Placement of Filling Materials

Upon completion of the rock bunds and the discharge outlets along the inner boundary of the reclamation area, placement of fill material (i.e. sand, rocks) may then commence. To prevent the loss of fill material from the reclamation area, the rock bunds are to be covered by a layer of geotextile. It should also be noted that several openings are made along the rock bund so as to prevent water stagnation within the enclosed area that potentially poses drainage problems.

Reclamation at seaward boundaries may be done by a conveyor barge via a pump vessel located at a designated location. Both the sand-carrying vessel and the pump vessel can be utilized for the operation, without hindrance for the deep may exceed 14 m in those particular location. The pump vessel transfers sand to the reclamation area via floating pipes and may range up to 200 meters enough to traverse half the width of the project area. Meanwhile, the choice of reclamation method use in the inland side of the site shall be cautiously opted for this project. Improper reclamation method used at the specified location which is claimed to be in a weak seabed the soil may lead to the formation of mud wave in front of the fill. But proper and thorough soil investigation shall be conducted first before the finalization of the construction plan and construction implementation within the area.

For the sand spreading phase of the reclamation projects, using smaller tubes. The sand discharge outlets shall be assisted with manpower to ensure the sand material is evenly spread on the soft original seabed material. Subsequently, leveling of the sand fill is performed using bulldozers. Upon filling of sand up to +3.0 m at the reclaimed area, pre-fabricated vertical drain (PVD) installation work takes place to treat and consolidate the ground follows. Later, the reclamation resumes until the platform reaches the final desired designed level at +5.0 m. Once the design platform is reached, the pump barge is located to a new location within the access channel as the reclamation progresses.

Soil Improvement Method

Reclamation on soft ground will require a substantial amount of time to achieve primary consolidation due to low permeability and long drainage path of the underlying soft clay. Non-uniformity of the underlying soil and the uneven spread of future loads on soil may lead to differential settlement resulting to damage to structures to be build on the newly reclaimed land. Hence, soil improvement is required to increase the effectiveness stress throughout the profile of the compressible soil layer. This can only be done by dissipation of pore water pressure through draining out of pore water. The reclamation project shall adopt pre-fabricated vertical drain (PVD) installed at certain intervals in the compressible soil mass to improve drainage capacity of the soil. PVD is a composite geo-synthetic system consisting of an inner core and an outer filter jacket. It has a width of 100 mm and a thickness of 6 mm. PVD technology is preferred due to its low material cost and efficient installation technique. The flexible core forms flow grooves on both sides along its length, and the jacket serves as a

filter to maintain the hydraulic capacity of the grooves allowing passage of fluids into the drain core while preventing clogging by soil intrusion. As a result, PVD consolidates the compressible soil mass much faster due to shorter drainage path. PVDs are installed by a hollow steel mandrel encasing the wick drain material. The mandrel is driven into the ground by a stitcher attached to an excavator carrier. The mandrel is driven by a vibrating force. At the base of the mandrel, the wick is looped through a steel anchor to secure the drain in place. Once the desired depth is

reached, the drain is anchored and the mandrel is extracted. The mandrel is withdrawn 15 to 20 cm above the surface for the wick drain to be cut.

PVDs are installed once the fill level has reached +3.0 m. Before surcharging, several monitoring equipment are installed for future monitoring of the ground condition. These equipments include benchmarks, surface settlement plate, subsurface settlement plate, piezometers etc. Upon completion of installation of the monitoring equipment, a continuous filling to the required level and subsequent addition of the surcharge material of 3 m thickness are shall be performed. The overburden of the surcharge weight is used to act as a preload to accelerate the consolidation of the underlying clay layer that is naturally saturated with water. Under compression by the surcharge, pore water is drained out onto the surface through the PVDs. The surcharge material is transported using belt conveyor vessels and then loaded onto dump truck for placement before being trimmed by bulldozers.

Sheet Pile Installation Method

A sheet pile wall is commonly used for reclamation works as a retaining wall providing vertical face edge between the reclaimed land and waters. Sheet piles are suitable to be used for deep and soft seabed conditions. For the soft seabed condition and the berthing area oft the project site, sheet pile installation shall require sufficient penetration depth for stability. At certain areas, additional anchoring system is adopted to further strengthening stability of the marine soil.

A single length sheet piles of 24 m are used to provide perimeter protection along the east of the the project proposed marinas and facilities; each pair of sheet pile is made of two units of interlocked Z-shape sheet pile. For the perimeter section consisting of the weak soils, sheet piles of 30 m are used and the active sides of the piles are pulled by horizontal anchors (tie-rods) that are connected to a 3-m anchor sheet piles placed at 120 m landward of the sheet pile wall. All sheet piles used for this project were coated with several layers of protective paint to counter corrosion in the marine environment.

Prior to sheet pile installation, an array of steel plates was inserted into the external edges of the reclaimed land, i.e. several meters seaward from the sheet pile installation location, to serve as a temporary seawall. The void at the leeside of the temporary seawall was subsequently filled with sand by using an excavator. Once the working platform was completed, sheet pile installation work commenced to start. The sheet piles were first vibrated into the ground to a certain penetration depth using a vibratory hammering machine, followed by impact hammering of the piles penetrating the hard soil layers to the desired depth. The complete sheet pile wall is formed by connecting the joint of neighboring sheet pile section in sequential installation.

Revetment (Coastal Protection)

A rock revetment is a form of protection placed on a sloping surface or structure to stabilize and protect against erosion as a result of waves and currents. A rubble mound revetment was chosen as the main coastal protection structure for the reclamation project. This locally available material is deemed suitable to be placed at the soft seabed due to its high adaptability to uneven soft ground settlement. Moreover, the material is relatively economical to construct and maintain.

A complete rock revetment consists of an armour layer as an outer most top layer, a filter layer (or under-layer) and possible other sub-layers. The armour layer of the revetment allows for some limited degree of movement or deformation when interacting with waves, while maintaining contact with the under-layer or filter layer. The filter layer is laid to provide drainage to the revetment, avoiding the build-up of excessive hydraulic pressures beneath the armours, and preventing loss of fine sediments. The filter layer may be a granular filter, a geotextile, or both built beneath the armour layer.

Coastal protection using revetment is necessary to protect the completed profile of the reclaimed land from erosion induced by wave, current and tide. The construction of revetment structure of the project commences after the formation of the reclaimed land. For the project, perimeter rock bunds were first constructed to mark the boundary of part of the reclamation areas. Upon

completion of the reclamation, the existing rock bunds were further re-profiled to be a revetment structure providing adequate protection to the reclaimed land. The revetment design used for the project varies with sections depending on the seabed level and distribution of wave energy along the shorelines with the adoption of 100-years return period and the possible tsunami wave forces in consideration. In general, the revetments of p project are made of a primary armour rock, secondary armour rocks, bedding rocks and filter rocks. The graded stones and armour stones used for this construction are granites rocks, with a specific gravity are between 2.4-2.6 and the density is about 26 kN/m. The toe of the revetment seated on the centerline of the scour rocks is to provide toe stabilization and protection from possible scour of the foreshore in front of the structure and to hold the rock armour. Apart from the rock armour layers, geotextile filters were also used in the permanent

revetment design to segregate between underlying layers and as filter layers. The construction sequence of revetments (up to secondary armour layer).

Prepared by:

Engr. Eugene R. Catalan CE, Enp

Attachment 1-F

ESTIMATED COST OF RECLAMATION AND LAND DEVELOPMENT

TOTAL PROJECT COST

ITEM NO.		ITEMS/ WORK DISCRIPTION	UNIT	QTY	UNIT COST	TOTAL COST
A.		**Pre - Construction**				
	1	Geotechnical Investigation	ls	1	666,000.00	666,000.00
	2	Geodetic Survey Works	ls	1	1,110,000.00	1,110,000.00
	3	Detailled Engineering works	Sq.m	220,000.00	25.00	5,500,000.00
		Total (A)				**7,276,000.00**
B.		**CONSTRUCTION / IMPLEMENTATION**				
I		**General Requirement / Preliminaries**				
	1	Mobilization / Demobilization	sq.m	220000	466.00	102,520,000.00
	2	Temporary Facilities for the Engineer	sq.m	1500	13,000.00	19,500,000.00
	3	Permits,Licenses & Duties and Taxes	ls	1	50,000,000.00	50,000,000.00
		Sub-total (BI)				**172,020,000.00**
II		**Land Reclamation and other Civil works**				
	1	Mountain quarry as filling materials to reclamation level total volume	cu.m	**1,998,000.00**		
		Detailed materials				
	•	Armuor rock	cu.m	299,700.00	497	148,950,900.00
	•	Sand	cu.m	1,198,800.00	905	1,084,914,000.00
	•	Boulders, cobbles and granular	cu.m	499500	730	364,635,000.00
	2	Constainment Structures	m	2,044.00	200000	408,800,000.00
	3	Soil Stabilization (Roads only)	sq.m	39,960.00	350	13,986,000.00
	4	Miscellaneous Works	sq.m	220,000.00	24	5,280,000.00
		Sub-total (BII)				**2,026,565,900.00**
III		**Land Developmemt**				
	1	Detailed Engineering & Const. Mgmt.	sq.m	220,000.00	40	8,800,000.00
	2	Land Dev. Construction	sq.m	220,000.00	2300	506,000,000.00
						514,800,000.00
		GRAND TOTAL				**2,720,661,900.00**

Attachment 1-G

PROPOSED FUNDING/FINANCING OF THE PROJECT

AFFIDAVIT OF UNDERTAKING

REPUBLIC OF THE PHILIPPINES)
PUERTO PRINCESA CITY) S.S.

I, WILLIAM C. TAN, Filipino, of legal age, and a resident of Puerto Princesa City, after having been duly sworn in accordance with law, hereby depose and say that:

1. A Memorandum of Understanding was entered with the Philippine Reclamation Authority (PRA) involving the reclamation of twenty-two (22) hectares along the shorelines of Barangay Luzviminda, Puerto Princesa, Palawan.

2. The project is planned to be developed into a vibrant commercial and industrial complex with residential community as part of Puerto Princesa City's economic and social advancement as world-class city.

3. Source of funding for the reclamation and development will be 20% Equity and 80% Bank Financing.

IN WITNESS WHEREOF, I have hereunto affixed my signature this ____ day of 01-29-22 at _____, Philippines.
PUERTO PRINCESA CITY

WILLIAM C. TAN
(Signature of Affiant over Printed Name)

==========

SUBSCRIBED AND SWORN to before me this 01-29-22 day of _____ at _____, Affiant exhibiting to me his Community Tax Certificate No. PUERTO PRINCESA CITY issued on _____ at _____

Doc. No. 14
Page No. 3
Book No. CCXVII
Series of 2022

ATTY. ROLAND E. PAY
NOTARY PUBLIC
ROLL NO. 32126
PUERTO PRINCESA CITY

NOTARY PUBLIC

ATTY. ROLAND E. PAY
NOTARY PUBLIC
EXTENDED UNTIL JUNE 30, 2022
B.M. NO. 3795
PTR NO. 0868617/01-03-2022
IBP NO. 001822/10-29-2019
ROLL NO. 32126
MCLE COMPLIANCE NO. VI-0025887/4-29-2019

Attachment 1-H

PROPOSED PROJECT TIMETABLE

Project Timetable

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Development		Phase 1					Phase 2									
Land Area (sqm)		55,000					222,000									
Land Development Cost (6,000 per sqm)		₱				318,000,000.00	₱									1,332,000,000.00

Project Implementation Schedule

Activities:	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Procurement																
PRA Approval Process																
Detailed Engineering Design																
Reclamation of Land																
Development of the Land																
Construction of commercial and residential buildings																
Selling of property																

Construction Schedule

ITEMS:	Duration (Months) 3	6	9	12
General Requirements				
Mobilization/Demobilization works				
1. Offshore equipment/vessels/tools				
2. Other heavy equipment				
Temporary Facilities for Engineer				
1. Construct/Provide TEMFACIL				
2. Maintenance of TEMFACIL				
Permits and Licenses (By Others)				
Land Mass Const. Works				
1. Removal and Disposal of Unsuitable materials				
2. Dredge Fill to land mass level				
3. Containment Walls				
4. Soil Stabilization/Consolidation				
5. Dredging of Channels/Waterways				
Land Development				
Earth moving				
Major Roads & Pavement				
Drainage Mains				
Sewerage Mains				
Water Mains				
Power Distribution				

Attachment 1-I

BIR ZONAL VALUATION

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF FINANCE
BUREAU OF INTERNAL REVENUE
Revenue District Office No. 36
Puerto Princesa City - Palawan

PROVINCE: **PALAWAN**
CITY/MUNICIPALITY: **PUERTO PRINCESA CITY (HIGHLY URBANIZED CITY)**

D.O No. **72-17**
BARANGAY: **LUZVIMINDA** **Effectivity Date** **23-Dec-17**

STREET NAME/ SUBDIVISION/CONDOMINIUM	VICINITY	CLASSIFICATION	2ND REVISION ZV/SQ.M
ALONG NATIONAL HIGHWAY (NH)	within 200 m. from center line of NH	RR	430.00
ALONG BARANGAY ROAD (BR)	within 100 m. from center line of BR	RR	280.00
INTERIOR LOTS		RR	200.00
ALL LOTS		A2	50.00
		A3	50.00
		A4	70.00
		A5	70.00
		A6	50.00
		A8	60.00
		A16	70.00
		A12	60.00
		A38	60.00
	BINUNSALIAN SEA-SEASHORE	A39	1,000.00
	PRINCESA BAY-SEASHORE	A39	1,000.00
	CAMIA BAY	A40	4,000.00

Issued upon the request of MR. WILLIAM C. TAN, PRERSIDENT of WILLIAM TAN ENTERPRISES INC, for whatever purpose it may serve him/her best. Given this 13th day of Januaryr, 2022, in the City of Puerto Princesa, Province of Palawan.

ATTY. ALEXANDER S. TOLENTINO
OIC-Chief Assessment Section

BUWIS BAYAN
DSK2021
00237437
30 PISO DOKUMENTARYO 30 PISO

O. R. No. 2022-004868-000135
DATE : '01/13/2022
Amount: Php.100.00
PLACE : PPCITY

2. CERTIFICATION ON THE STATUS OF THE AREA AND THE LAND CLASSIFICATION OF THE ADJACENT LAND

Attachment 2-A
CERTIFICATION FROM CENRO

Republic of the Philippines
Department of Environment and Natural Resources
Region IV - MIMAROPA
COMMUNITY ENVIRONMENT AND NATURAL RESOURCES OFFICE

August 26, 2022

WILLIAM C. TAN
Puerto Princesa City

Dear Mr. Tan,

We acknowledged receipt of your letter request for lot verification of a tract of land identified as Lot Nos. 4393,4394 and 4379, PLS-1117-D containing an area of 16,875,16937 and 17,617square meters as based on your attach letter located at Barangay Mangingisda, Puerto Princesa City.

We would like to inform you that the said lots : fall within **Presidential Proclamation 2347** "RESERVING AS A 'BARANGAY NG MGA MANGINGISDA' A PORTION OF IWAHIG PENAL COLONY COVERED BY EXECUTIVE ORDER NO. 67 DATED 15 OCTOBER 1912 SITUATED IN THE CITY OF PUERTO PRINCESA, PROVINCE OF PALAWAN, ISLAND OF PALAWAN." Having enunciated as such by Ferdinand E. Marcos then President of the Philippines dated March 29, 1984.

We hope you had been informed accordingly.

Very truly yours,

PEDRO A. VELASCO
Development Management Officer I
OIC-CENRO

DENR MIMAROPA REGION
CEN SA
RECEIVED
NO 734
DATE: 9-9-22
BY:

South National Highway, Bgy. Sta. Monica
Puerto Princesa City
Email Address: cenroppchuc@yahoo.com
TelFax No.: (048) 433-0660

Attachment 2-B
PROCLAMATION NO. 2347

Proclamation No. 2347, s. 1984

Signed on March 29, 1984 (https://www.officialgazette.gov.ph/1984/03/29/proclamation-no-2347-s-1984/)

MALACAÑANG

Manila

PROCLAMATION NO. 2347

RESERVING AS A "BARANGAY NG MGA MANGINGISDA" A PORTION OF IWAHIG PENAL COLONY COVERED BY EXECUTIVE ORDER NO. 67 DATED 15 OCTOBER 1912 SITUATED IN THE CITY OF PUERTO PRINCESA, PROVINCE OF PALAWAN, ISLAND OF PALAWAN.

Upon the recommendation of the Minister, Ministry of Natural Resources and pursuant to the authority vested in me by the Constitution, I, FERDINAND E. MARCOS, President of the Philippines, do hereby reserve for the settlement and operation of the "BARANGAY NG MGA MANGINGISDA", subject to private rights, and to future survey, a portion of the Iwahig Penal Colony, situated in the City of Puerto Princesa, Province of Palawan, Island of Palawan, which parcel of land is more or less particularly described as follows:

Beginning at a point marked "1" on SP-0001 being S. 06 deg. 30' E., 5050.00 m. from BLLM 1, Cad-37, City of Puerto Princesa; thence S. 40 deg.

30'W., 800.00 m. to point "2", thence S. 25 deg.

30'W., 525.00 m. to point "3", thence S. 24 deg.

00'E., 420.00 m. to point "4", thence S. 78 deg.

00'E., 335.00 m. to point "5", thence N. 25 deg.

00'E., 300.00 m. to point "6", thence N. 70 deg.

30'E., 170.00 m. to point "7" thence S. 65 deg.

30'E., 380.00 m. to point "8", thence N. 79 deg.
30'E., 375.00 m. to point "9", thence S. 66 deg.
00'E., 550.00 m. to point "10", thence N. 23 deg.
30'E., 270.00 m. to point "11", thence N. 60 deg.
30'E., 600.00 m. to point "12", thence S. 74 deg.
00'E., 415.00 m. to point "13", thence S. 63 deg.
00'E., 420.00 m. to point "14", thence S. 02 deg.
30'W., 730.00 m. to point "15", thence S. 29 deg.
30'W., 500.00 m. to point "16", thence S. 28 deg.
30'W., 470.00 m. to point "17", thence S. 29 deg.
30'E., 160.00 m. to point "18", thence S. 10 deg.
00'W., 520.00 m. to point "10", thence S. 47 deg.
00'W., 200.00 m. to point "20", thence S. 26 deg.
00'E., 115.00 m. to point "21", thence S. 47 deg.
30'W., 80.00 m. to point "22", thence N. 82 deg.
30'W., 105.00 m. to point "23", thence S. 44 deg.
30'W., 880.00 m. to point "24", thence S. 76 deg.
00'W., 390.00 m. to point "25", thence N. 51 deg.
30'W., 300.00 m. to point "26", thence N. 21 deg.
00'W., 250.00 m. to point "27", thence N. 83 deg.
00'W., 280.00 m. to point "28", thence S. 72 deg.
30'W., 310.00 m. to point "29", thence S. 04 deg.
30'W., 340.00 m. to point "30", thence S. 38 deg.
30'W., 670.00 m. to point "31", thence N. 75 deg.
30'W., 130.00 m. to point "32", thence N. 30 deg.
00'E., 225.00 m. to point "33", thence N. 31 deg.
00'W., 160.00 m. to point "34", thence N. 20 deg.
00'E., 240.00 m. to point "35", thence N. 43 deg.
30'W., 180.00 m. to point "36", thence S. 42 deg.
00'W., 175.00 m. to point "37", thence S. 05 deg.
30'E., 190.00 m. to point "38", thence S. 24 deg.
30'W., 185.00 m. to point "39", thence N. 61 deg.
30'W., 355.00 m. to point "40", thence N. 78 deg.
30'W., 200.00 m. to point "41", thence N. 37 deg.
30'W., 360.00 m. to point "42", thence S. 66 deg.

30'W., 195.00 m. to point "43", thence S. 31 deg.
30'W., 460.00 m. to point "44", thence S. 42 deg.
00'W., 140.00 m. to point "45", thence N. 57 deg.
30'W., 250.00 m. to point "46", thence S. 62 deg.
00'W., 300.00 m. to point "47", thence S. 28 deg.
30'W., 200.00 m. to point "48", thence S. 52 deg.
00'E., 175.00 m. to point "49", thence N. 67 deg.
00'E., 245.00 m. to point "50", thence S. 37 deg.
30'E., 135.00 m. to point "51", thence S. 41 deg.
30'W., 295.00 m. to point "52", thence S. 42 deg.
00'E., 250.00 m. to point "53", thence N. 85 deg.
00'E., 250.00 m. to point "54", thence S. 78 deg.
00'E., 285.00 m. to point "55", thence N. 81 deg.
00'E., 305.00 m. to point "56", thence N. 46 deg.
00'W., 360.00 m. to point "57", thence N. 68 deg.
30'E., 265.00 m. to point "58", thence S. 60 deg.
00'E., 150.00 m. to point "59", thence S. 25 deg.
30'W., 365.00 m. to point "60", thence S. 10 deg.
50'W., 685.00 m. to point "61", thence S. 37 deg.
45'W., 1160.00 m. to point "62", thence N. 47 deg.
30'W., 445.00 m. to point "63", thence N. 26 deg.
45'E., 110.00 m. to point "64", thence N. 74 deg.
50'W., 190.00 m. to point "65", thence N. 20 deg.
30'W., 205.00 m. to point "66", thence S. 79 deg.
30'W., 290.00 m. to point "67", thence S. 41 deg.
30'W., 195.00 m. to point "68", thence N. 85 deg.
15'W., 390.00 m. to point "69", thence N. 20 deg.
45'W., 345.00 m. to point "70", thence N. 75 deg.
45'W., 290.00 m. to point "71", thence N. 54 deg.
00'W., 105.00 m. to point "72", thence N. 00 deg.
30'E., 390.00 m. to point "73", thence N. 75 deg.
30'W., 330.00 m. to point "74", thence N. 39 deg.
30'W., 70.00 m. to point "75", thence N. 06 deg.
00'W., 740.00 m. to point "76", thence N. 49 deg.
30'W., 395.00 m. to point "77", thence N. 07 deg.

00"W., 1040.00 m. to point "78", thence N. 18 deg.
00"W., 760.00 m. to point "79", thence N. 17 deg.
30"W., 105.00 m. to point "80", thence N. 03 deg.
45"W., 340.00 m. to point "81", thence N. 41 deg.
30'E., 80.00 m. to point "82", thence N. 49 deg.
00'E., 860.00 m. to point "83", thence N. 52 deg.
15'E., 780.00 m. to point "84", thence N. 75 deg.
30'E., 120.00 m. to point "85", thence S. 41 deg.
00'E., 130.00 m. to point "86", thence S. 03 deg.
00'E., 290.00 m. to point "87", thence N. 62 deg.
30'E., 295.00 m. to point "88", thence N. 54 deg.
30'E., 120.00 m. to point "89", thence N. 89 deg.
30'E., 105.00 m. to point "90", thence N. 78 deg.
30'E., 360.00 m. to point "91", thence N. 02 deg.
00'E., 755.00 m. to point "92", thence N. 73 deg.
00'E., 180.00 m. to point "93", thence N. 46 deg.
15'E., 70.00 m. to point "94", thence N. 10 deg.
30'E., 280.00 m. to point "95", thence N. 56 deg.
15'E., 420.00 m. to point "96", thence N. 40 deg.
15'E., 360.00 m. to point "97", thence N. 76 deg.
30'E., 240.00 m. to point "98", thence S. 68 deg.
30'E., 245.00 m. to point "99", thence S. 54 deg.
15'E., 150.00 m. to point "100", thence S. 37 deg.
15'E., 190.00 m. to point "101", thence S. 32 deg.
59'E., 450.82 m. to point of beginning,

containing an area of twenty four million nine hundred forty two thousand seven hundred nine (24,942,709) square meters, more or less as shown in the attached special plan, Sp-0001.

Bounded on the North and Northeast by points 99 to 101, 1 to 24 along the Saguiy Inlet and Sulu Sea; on the Southeast by points 25-62 along the Bununsalian Bay, Turtle Bay and the Sulu Sea; on the South and Southwest by point 62 to 81 by the provincial road; on the Northwest by points 81-83 by the remaining portion of Iwahig Penal Colony; and on the North by point 83 to 99 along the Abucayan Inlet.

All data are approximate and subject to change based on future survey.

All areas, totalling 689 hectares, having an elevation of 40 meters and over are reserved as permanent forest zones, and the remaining portion of 1038 hectares for residential purpose and 767.3 hectares for swampland aqua culture development.

The "Barangay ng mga Mangingisda" shall be planned and designed into a human settlement jointly by the Ministry of Human Settlements, the Ministry of Natural Resources and the City Government of Puerto Princesa. The Barangay shall be subdivided into viable and economic sized housing lots to be sold to bona fide fishermen's families without home lots of their own, as first priorities at a fair price payable over a reasonable period of time, taking into consideration the financial capabilities of the proposed beneficiaries.

The City Government of Puerto Princesa, which has administrative jurisdiction over the area, is authorized to invoke the cooperation of other government agencies in developing the barangay into a human settlement reflective of the national government's continuing drive to built self-reliant communities.

All previous proclamations and orders contrary to or inconsistent with this proclamation are hereby revoked or amended accordingly.

IN WITNESS WHEREOF, I have hereunto set my and caused the seal of the Republic of the Philippines to be affixed.

Done in the City of Manila, Philippines, this 29th day of March, in the year of Our Lord, nineteen hundred and eighty-four.

(Sgd.) FERDINAND E. MARCOS
President

By the President:
(Sgd.) JUAN C. TUVERA
Presidential Executive Assistant

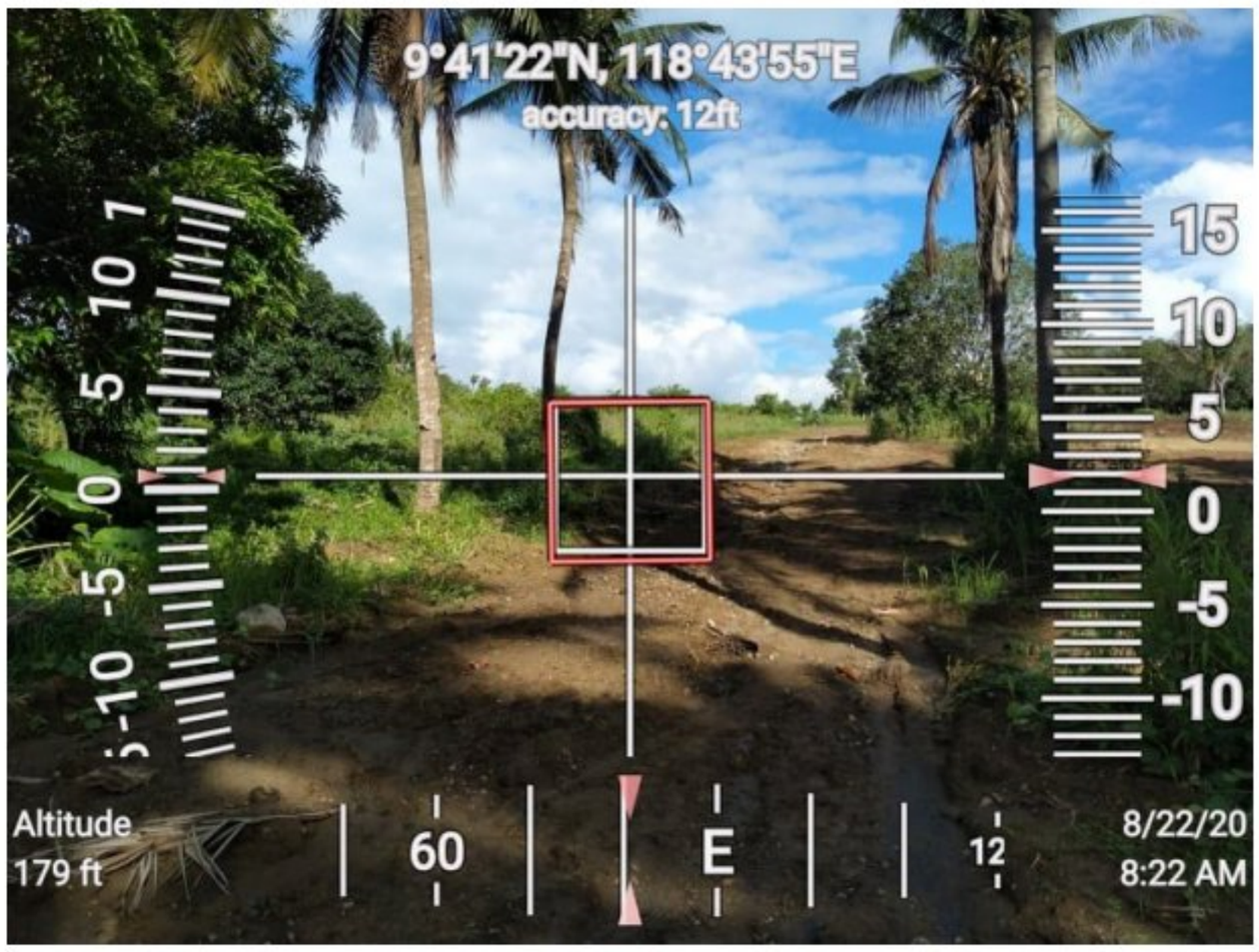
Source: **CDAsia** (http://www.cdasia.com/)

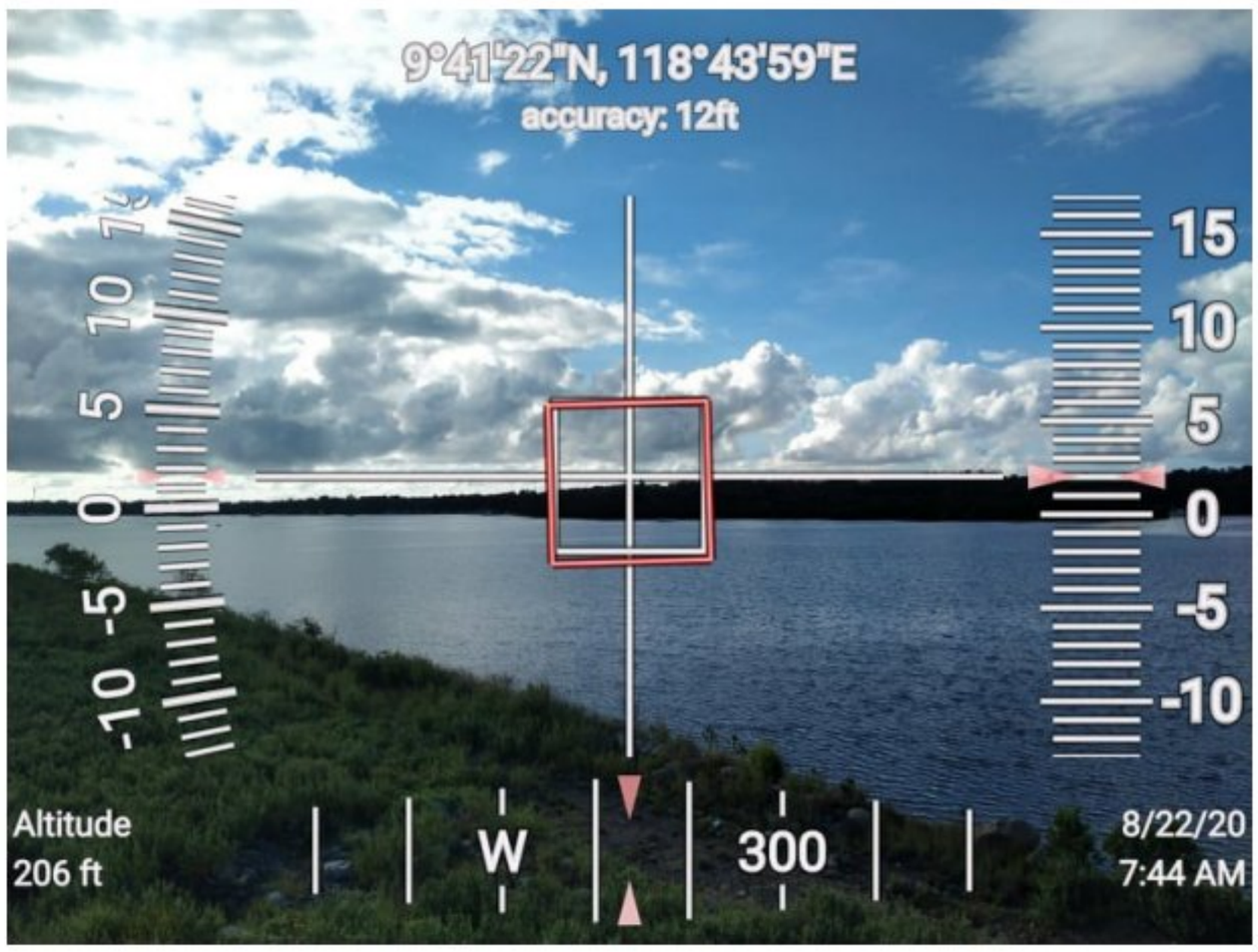
RESOURCES

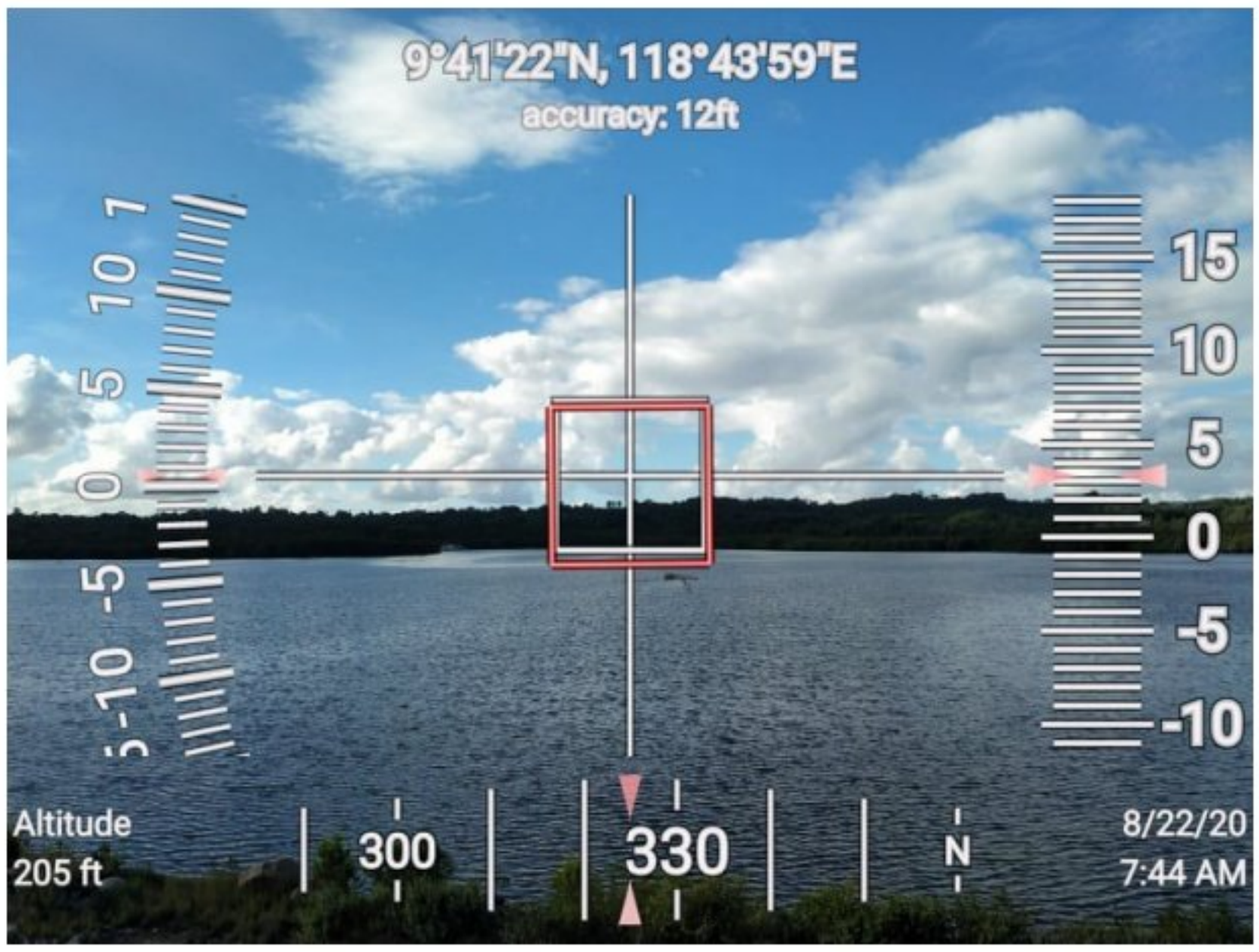
- [PDF] Proclamation No. 2347, March 4, 1984 (http://www.officialgazette.gov.ph/downloads/1984/03mar/19840304-PROC-2347-FM.pdf)

3. GEOTAGGED PHOTOS

Geotagged Photos



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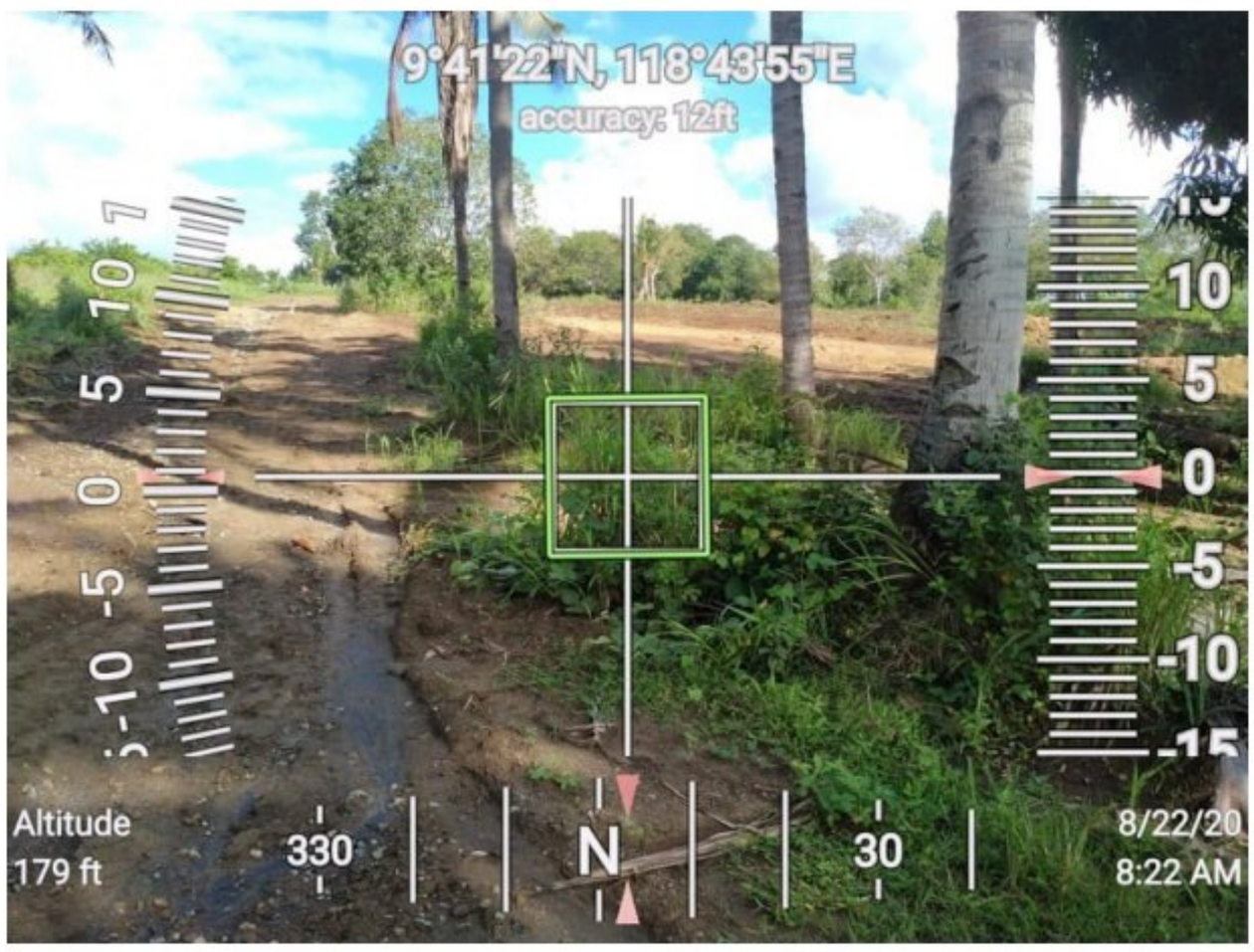
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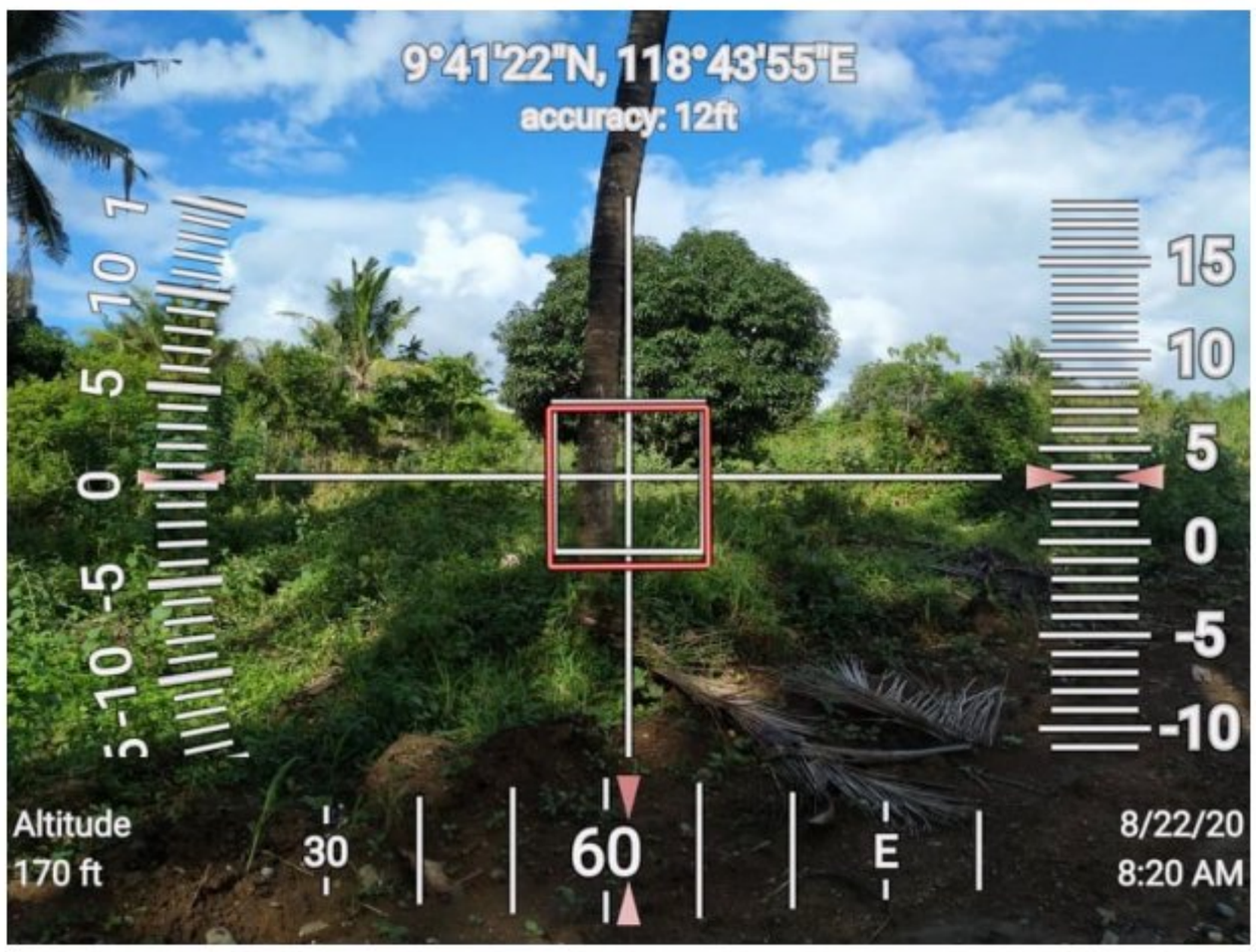
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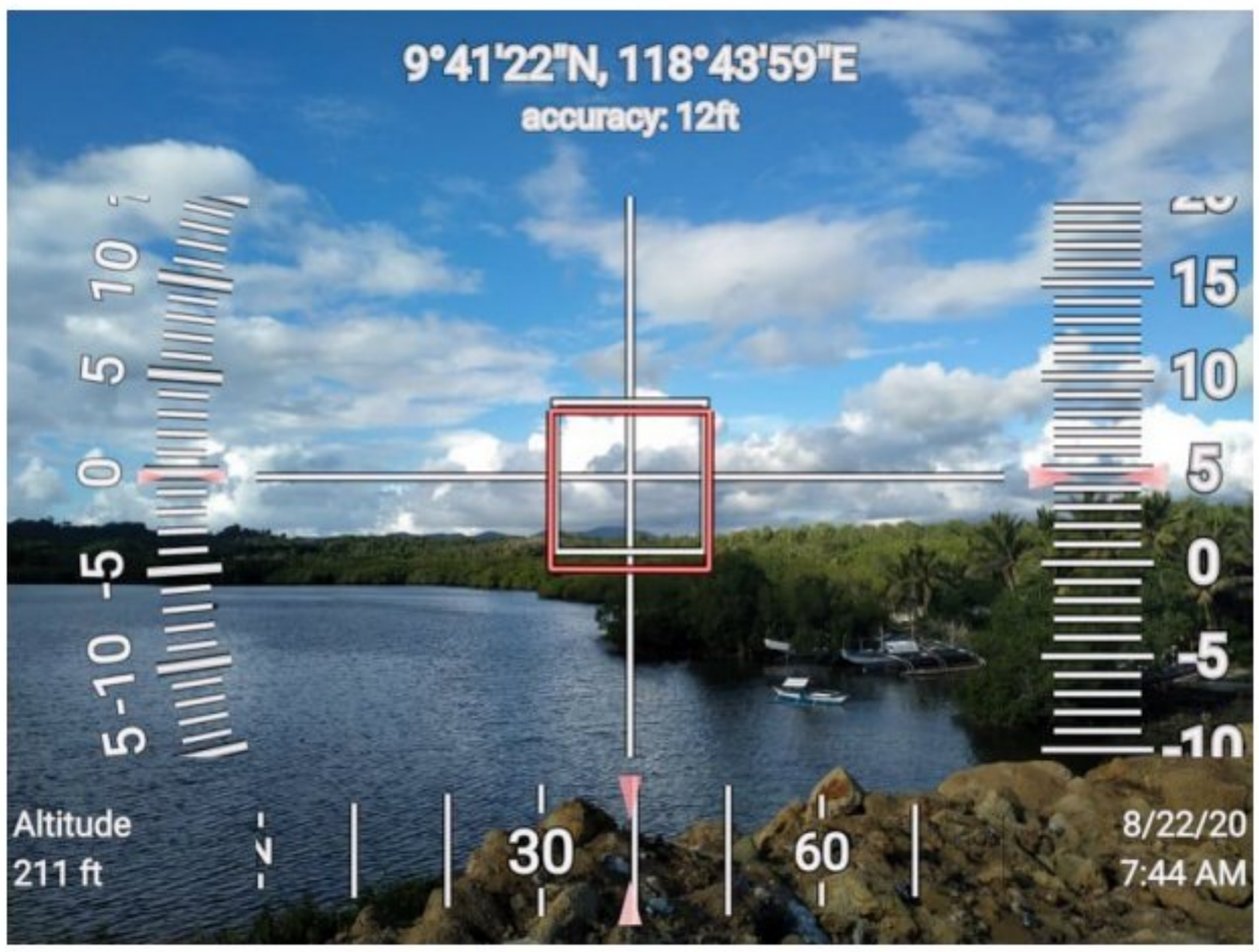
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4. SANGGUNIANG PANLUNGSOD RESOLUTION

Republic of the Philippines
OFFICE OF THE SANGGUNIANG PANLUNGSOD
2nd Floor, New City Hall, Bgy. Sta. Monica
Puerto Princesa City, Palawan 5300
citysanggunian.puertoprincesa@yahoo.com

Petsa 18 y ang Oktubre
Dos Mil Bente-Uno

MR. WILLIAM TAN
President
William Tan Enterprise Incorporated Realty and
Development Corporation
This City

Ing mamaal nga WTEI-RDC Pres. Tan:

Mayad nga adlao agalin sa Opisina y ang Junta Ciudad y ang Puerto Princesa!

We respectfully furnish you a copy of **RESOLUTION NO. 1446-2021** entitled: **"A RESOLUTION INTERPOSING NO OBJECTION TO THE PROPOSED PORT WITH RECLAMATION PROJECT BY MR. WILLIAM C. TAN, IN PARTNERSHIP WITH THE PHILIPPINE RECLAMATION AUTHORITY (PRA)"**; which was passed by the 16th Sangguniang Panlungsod of the City of Puerto Princesa during its 112th Regular Session held on October 11, 2021.

For your information and appropriate action.

Malamang salamat ig maboi idta sa gracia ateng Guinoo.

Canindo sa serbisyo publiko,

ATTY. PHILIP JEROME S. HILARIO
Sekretaryo y ang Junta Ciudad

Encls: A/S

PJSH/XGM/lbs

Republic of the Philippines
OFFICE OF THE SANGGUNIANG PANLUNGSOD
City of Puerto Princesa

EXCERPTS FROM THE JOURNAL OF PROCEEDINGS OF THE 112TH REGULAR SESSION OF THE 18TH SANGGUNIANG PANLUNGSOD OF THE CITY OF PUERTO PRINCESA HELD ON OCTOBER 11, 2021 AT THE SESSION HALL OF THE SANGGUNIANG PANLUNGSOD.

PRESENT:

Hon. MARIA NANCY M. SOCRATES	City Vice Mayor, Presiding Officer
Hon. MATTHEW K. MENDOZA	City Councilor, Chairman Protempore
Hon. JIMMY L. CARBONELL *	City Councilor, Asst. Chairman Protempore
Hon. VICTOR S. OLIVEROS	City Councilor, Majority Floor Leader
Hon. NESARIO G. AWAT	City Councilor
Hon. ROY GREGORIO G. VENTURA *	City Councilor
Hon. HERBERT S. DILIG	City Councilor
Hon. MYKA MABELLE L. MAGBANUA	Ex-Officio Member, SK Federation President

OFFICIAL BUSINESS: None

ABSENT:

Hon. HENRY A. GADIANO	City Councilor, Asst. Majority Floor Leader
Hon. PETER Q. MARISTELA	City Councilor, Minority Floor Leader, On-leave
Hon. PATRICK ALEX M. HAGEDORN	City Councilor
Hon. ELGIN ROBERT L. DAMASCO	City Councilor
Hon. FRANCISCO R. GABUCO	Ex-Officio Member, Pres., Liga ng mga Barangay
Hon. JOHNMART M. SALUNDAY	Ex-Officio Member, Indigenous Peoples Mandatory Representative

RESOLUTION NO. 1446-2021

Sponsored by: Committee on Landed Estate and Urban Development

A RESOLUTION INTERPOSING NO OBJECTION TO THE PROPOSED PORT WITH RECLAMATION PROJECT BY MR. WILLIAM C. TAN, IN PARTNERSHIP WITH THE PHILIPPINE RECLAMATION AUTHORITY (PRA).

WHEREAS, Article II, Section 9 of the 1987 Philippine Constitution declares it the policy of the State to promote a just and dynamic social order that will ensure the prosperity and independence of the nation and free the people from poverty through policies that provide adequate social services, promote full employment, a rising standard of living for all;

WHEREAS, Article XII, Section 1 of the same Constitution provides that the goal of the national economy are a more equitable distribution of opportunities, income and wealth, a sustained increase in the amount of goods and services produced by the nation for the benefit of the people; and an expanding productivity as the key to raising the quality of life for all;

WHEREAS, Article II, Section 20 of the 1987 Philippine Constitution expressly provides that: "The State recognizes the indispensable role of the private sector, encourages private enterprise, and provides incentives to needed investments";

WHEREAS, Section 16 of Republic Act No. 7160, otherwise known as the "Local Government Code of 1991," empowers every local government unit to enact measures intended for the promotion of the general welfare of its people;

WHEREAS, presented to this August Body is a letter dated October 20, 2020 from Mr. William C. Tan of WTEI Realty and Development Corporation (WRDC), Proponent, addressed to the Honorable Members of the Sangguniang Panlungsod, this City, requesting for a resolution interposing no objection to his proposed Port with Reclamation Project, located in the foreshore adjoining the vicinity of Bgy. Luzviminda and Mangingisda, this City, as part of the pre-qualification requirement of the Philippine Reclamation Authority (PRA);

WHEREAS, finding said request in order, this Sanggunian passed Resolution No. 935-2020, entitled "A Resolution Interposing No Objection to the Proposed Port with Reclamation Project by WTEI Realty and Development Corporation (WDRC), in partnership with the Philippine Reclamation Authority (PRA)."

* Hon. Carbonell and Hon. Ventura manifested their objection to the passage of this measure

WHEREAS, further presented to this August Body is a letter dated October 11, 2021 from Atty. Patrick P. Tan, COO and EVP for Operation, Sales and Marketing of WDRC, requesting the amendment of Resolution No. 935-2020, after the assignment of its rights and interest over the aforementioned endorsement to Mr. William C. Tan, as per its Board Resolution No. 032021-011 dated March 22, 2021;

WHEREAS, the Port with Reclamation Project was initially an undertaking in partnership with the City Government of Puerto Princesa envisioned to create alternate port areas within the city to fast track development and aid in the decongestion of the City proper;

WHEREAS, the Project was halted due to the fact that under the provisions of law, all reclamation projects must be done with a corresponding authority from the Philippine Reclamation Authority (PRA). Any violation of said provision shall result to forfeiture of reclamation activities in favour of the State. The proponent now seeks authority from the PRA in order to push through with this project, which however requires a corresponding legislative act expressing no object to said project by this Sangguniang Panlungsod;

WHEREAS, such activity in the said rural barangays of the City shall be a catalyst to economic restart and growth of the City, which is necessary and imperative during this time of Global COVID-19 Pandemic. More than ever, this Pandemic has proven the City Government of Puerto Princesa should desire to diversify economic activities within its jurisdiction in order to prepare for any possible global downturns. The tourism centric economic model of this City and other tourism destinations throughout the world has proven most vulnerable and fickle, therefore, the need to explore other venues of possible economic expansion, in order to shield most of our constituents from the effects of the present (and future) Global Pandemic;

WHEREAS, this August Body recognizes the potential benefit to the City as a whole of the said Project; Provided that the proponent shall bind himself to comply to the relevant laws applicable to reclamation projects such as PRA Administrative Order No. 2019-4, Presidential Executive Order No. 74, Series of 2019 and Presidential Decree No. 3-A, city regulations, environmental laws, coastal resource rules and regulations appurtenant to reclamation and port construction;

WHEREAS, the new proponent as substituted shall be solely responsible for the prerequisite compliance of the requirements of law due to the assignment of the rights and interest of WRDC to him.

NOW THEREFORE, on motion of Hon. Victor S. Oliveros, City Councilor, Majority Floor Leader,

BE IT RESOLVED, as it is hereby resolved, to interpose no objection to the proposed Port with Reclamation Project by Mr. William C. Tan, in partnership with the Philippine Reclamation Authority (PRA).

RESOLVED further, that copies of this Resolution be furnished to Honorable City Mayor Lucilo R. Bayron, the City Administrator, the City Legal Officer, the City Information Officer, the City Building Official, the City Planning and Development Coordinator, the City ENRO, and Mr. William C. Tan, all of this City, and the Philippine Reclamation Authority for their information and appropriate action.

APPROVED WITH OBJECTIONS OF HON. CARBONELL AND HON. VENTURA.

CERTIFIED TRUE AND CORRECT BY:

ATTY. PHILIP JEROME S. ARZADON
Secretary to the Sangguniang Panlungsod

ATTESTED AND CERTIFIED
TO BE DULY ADOPTED:

MARIA NANCY M. SOCRATES
City Vice Mayor
Presiding Officer
PJJ/MNS/AAD/en

APPROVED: Resolution No. 1446-2021 on OCT 18 2021

LUCILO R. BAYRON
City Mayor

ATTESTED:

ATTY. ARNEL M. PEDROSA
City Administrator

5. CLEARANCES FROM CONCERNED GOVERNMENT AGENCIES

Attachment 5-A
PRA MEMORANDUM OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING

THE PUBLIC IS INFORMED:

This Memorandum of Understanding executed between:

The **PHILIPPINE RECLAMATION AUTHORITY** [Public Estates Authority], a government instrumentality created by P.D. No. 1084 as amended, with office address at the 7th & 8th Floors, Legaspi Towers 200, Paseo de Roxas, Makati City, Metro Manila and herein represented by its General Manager and CEO, ATTY. JANILO E. RUBIATO, duly authorized for this purpose under PRA Board Resolution No. 5395, Series of 2021 (Attached as **Annex "A"** hereof), herein referred to as **"PRA"**.

MR. WILLIAM C. TAN

PATRICK P. TAN

- and –

The **MR. WILLIAM C. TAN**, with office address at WTEI Corporate Center, Malvar Street, Barangay San Miguel, Puerto Princesa City, herein referred to as the **"APPLICANT"**.

ANTECEDENTS

Presidential Decree No. 3-A dated January 11, 1973, mandates that all reclamation of foreshore and offshore areas shall be limited to the National Government, or any person authorized by it in a proper contract.

ATTY. JANILO E. RUBIATO

ATTY. JOSE [illegible] M. LITERAL

Witnesses:

PRA is the government agency primarily responsible for integrating and coordinating all reclamation projects and is mandated to administer, develop and dispose of government properties and that all reclamation projects shall be approved by the President of the Philippines upon the recommendation of the PRA pursuant to Presidential Decree No. 1084 as amended by Executive Order No. 525.

On 01 February 2019, President Rodrigo Roa Duterte issued Executive Order (EO) No. 74, series of 2019, delegating to the PRA Governing Board the authority of the President to approve reclamation projects.

On 21 April 2021, the **APPLICANT** submitted to **PRA** a letter of intent to undertake the reclamation and land development of twenty-

two (22) hectares, more or less, of foreshore and offshore areas Barangay Luzviminda, Puerto Princesa, Palawan. After reviewing the **APPLICANT**'s submissions, the **PRA** has determined that the **APPLICANT** has complied with the requirements under Sections 4.1 and 5.1 of the IRR of EO 74 and is deemed pre-qualified.

This MOU is entered into by the parties herein to guide the **APPLICANT** of the mandatory requirements, timeline and process for the review and evaluation of its proposed reclamation project.

The Office of the Government Corporate Counsel, in its Contract Review No. 897, Series of 2019, found this MOU in order.

NOW THEREFORE, for and in consideration of the foregoing premises, the parties hereto do hereby enter into this MOU, with the following terms and conditions:

MR. WILLIAM C. TAN

PATRICK P. TAN

ARTICLE I
DOCUMENTS COMPRISING THIS MOU

The following documents are hereby made integral part of this Agreement:

1. **EXECUTIVE ORDER NO. 74** Repealing Executive Order (EO) No. 798 (S. 2009) and EO No. 146 (S. 2013) Transferring the Philippine Reclamation Authority (PRA) to the Office of the President (OP), Delegating to the PRA Governing Board the Power of the President to Approve Reclamation Projects, And For Other Purposes (**Annex B** hereof).

2. **IMPLEMENTING RULES AND REGULATIONS** of Executive Order No. 74 (**Annex C** hereof)

ATTY. JANILO E. RUBIATO

Witnesses:

ATTY. JOSEPH JOHN M. LITERAL

ARTICLE II
DEFINITION OF TERMS

In so far as the MOU is concerned, the following shall be defined as follows:

1. **Advisory Opinion** shall refer to the opinions of:

   1.1 The National Economic Development Authority (NEDA), on the consistency of the project with national and regional development planning and programming, and established national priorities of the government;

1.2 The Department of Environment and Natural Resources (DENR), on the environmental sustainability of the project and compliance with environmental laws, rules and regulations; and

1.3 The Department of Finance (DOF), on the economic and fiscal viability of the project based on the feasibility study submitted by the project proponent, compliance with Republic Act (RA) No. 6957 as amended by RA No. 7718 and RA No. 9184, and consistency of component joint venture agreements or other incidental agreements with applicable laws.

2. **Area Clearance** refers to the document issued by the DENR declaring an area suitable for reclamation on the basis of:

2.1 Valid Geo-Hazard Assessment of the Area duly prepared and signed by a licensed Geologist; and

2.2 Community Environment and Natural Resources Office (CENRO) Certification on the status of the area and land classification of adjacent land.

3. **Completed Staff Work (CSW)** refers to the output of the entire process of PRA review and evaluation including the required advisory opinions under Section 3 of E.O. 74, if any, as basis for the recommendation of reclamation proposals for approval of the PRA Governing Board.

4. **Environmental Compliance Certificate (ECC)** refers to the document issued by the DENR - Environmental Management Bureau (EMB), certifying that based on the representations of the proponent, the proposed project or undertaking will not cause significant negative environmental impact. The ECC also certifies that the proponent has complied with all the requirements of the Philippine Environmental Impact Statement (PEIS) System and has committed to implement its approved Environmental Management Plan. The ECC contains specific measures and conditions that the project proponent has to undertake before and during the operation of a project, and in some cases, during the project's abandonment phase to mitigate identified environmental impacts.

MR. WILLIAM C. TAN

PATRICK P. TAN

ATTY. JANILO E. RUBIATO

Witnesses:

ATTY. JOSEPH JOHN N. LITERAL

5. **Equivalent Studies** refer to studies being required by the DENR to secure an ECC such as but not limited to Environmental Impact Statement (EIS), Initial Environmental Examination (IEE) Checklist, Environmental Performance Report and Management Plan (EPRMP), as may be applicable.

6. **Feasibility Study (F/S)** shall refer to the comprehensive report containing the full analysis and evaluation of the technical, financial, including more definite estimates of financial returns and economic impact, social, institutional, legal and environmental merits of the project.

7. **Hydrodynamic Modeling** refer to the modeling used to simulate water currents, water levels, circulation and sediment transport including flushing, among others, as the case may be, to predict, simulate, and evaluate the impact of reclamation to the environment.

8. **Joint Venture (JV) Guidelines** shall mean the NEDA-issued JV Guidelines, Public Private Partnership (PPP) ordinances issued by concerned LGUs, or whichever applicable JV Guidelines of government corporate entities (e.g., in the exercise of their primary mandates to dispose of government assets or properties).

9. **MOU** refers to this Memorandum of Understanding.

10. **Notice of Full Compliance (NOFC)** shall refer to the notification by PRA to the applicant of compliance with the mandatory requirements set forth under Sections 4 and 5.3 and payment of fees under Section 10 of the IRR of EO 74.

11. **Private Sector/Entity** subject to constitutional limitations, shall refer to any qualified individual Filipino citizen of legal age and with capacity to contract or a corporation, partnership or association duly registered in accordance with law, or consortium.

12. **Project Description** refers to the document substantially describing the proposed reclamation project, particularly the following: description of the reclamation site (area, location, average depth,

MR. WILLIAM C. TAN

ATTY. PATRICK P. TAN

ATTY. JANILO E. RUBIATO

ATTY. JOSEPH JOHN M. LITERAL

Witnesses:

boundaries, immediate vicinity, distance from shoreline, egress/ingress, available infrastructure facilities/utilities), reclamation methodology (site preparation, compaction and consolidation procedures/techniques), estimated volume and type of fill material, containment wall, identified source of fill material, estimated cost of reclamation, project financing/funding, and project timetable, as well as those aspects of the project which will likely cause environmental impact.

13. **Reclamation** is the deliberate process of converting foreshore land, submerged areas or bodies of water into permanent land by filling or other means using dredge fill and other suitable materials for specific purpose/s.

14. **Reclamation and Development Plan (RDP)** – shall refer to the plan crafted by PRA in coordination with the DENR, NEDA and affected Local Government Units, taking into consideration, environmental, social, and economic impacts of proposed reclamation projects.

15. **Reclamation Component** - refers to the reclamation as a component of a development or infrastructure project such as roads, expressways, bridges, ports, airports, power plants and other similar projects which must be adjacent to the main project area.

MR. WILLIAM C. TAN

PATRICK P. TAN

ARTICLE III
THE PROPOSED PROJECT

The proposed project shall involve the reclamation of, more or less, twenty-two (22) hectares along the shorelines of Barangay Luzviminda, Puerto Princesa, Palawan. The project is planned to be developed into a vibrant commercial and industrial complex with residential community as part of Puerto Princesa City's economic and social advancement as world-class city.

ATTY. JANILO E. RUBIATO

Witnesses: ATTY. JOSEPH JOHN M. LITERAL

ARTICLE IV
MANDATORY REQUIREMENTS

1. The following mandatory requirements, as far as they are applicable, shall be submitted by the **APPLICANT** to the **PRA:**

Mandatory Requirements	*Case 1 Less than five (5) hectares* (<5 ha)	*Case 2 Five (5) hectares or more* (≥5 ha)
1. Feasibility Studies* and final Environmental Impact Statement (EIS) or equivalent studies.		✓
2. Project Description and Initial Environmental Examination (IEE) checklist	✓	
3. Area Clearance and ECC	✓	✓
4. Hydrodynamic Modeling		✓
5. Detailed Engineering Design	✓	✓

MR. WILLIAM C. TAN

PATRICK P. TAN

2. For roads, expressways, bridges, ports, airports, power plants and other similar projects requiring adjacent areas to be reclaimed (reclamation component), if the relevant F/S of such projects already cover the reclamation aspect, such F/S shall be submitted by the **APPLICANT** to **PRA** for review and validation together with the requirements of a Reclamation Project Description.

ATTY. JANILO E. RUBIATO

3. Detailed Engineering Design shall include, among others, the following:

   3.1 Detailed engineering design, reclamation plans including reclamation methodology and specifications to include the following:
   a. Geotechnical investigation;
   b. Engineering Geological and Geohazard Assessment Report (EGGAR); and
   c. Climate change adaptation strategy.

   3.2 Hydrographic, topographic and bathymetric plans / maps of the reclamation site and immediate vicinity as well as of the marine borrow pit areas, as the case maybe.

Witnesses:

ATTY. JOSEPHINE M. LITERAL

4. The **APPLICANT** shall be given a maximum period of twenty four (24) months from the execution of this MOU within which to complete the mandatory requirements and payment of the review and processing fees, unless the period is extended by **PRA** upon request of the **APPLICANT** for compelling reasons and such extension shall be for a maximum period of six (6) months.

ARTICLE V
PAYMENT OF FEES

The following fees shall be paid by the **APPLICANT** based on the followings schedule:

	Fees	Payment schedule
1	Review Fee	
2	Processing Fee equivalent to Php2,000.00 per hectare but not less than Php1,000,000.00 plus 12% VAT.	Upon submission of complete mandatory requirements

ARTICLE VI
REVIEW and EVALUATION

1. The proposed reclamation PROJECT shall be evaluated by the **PRA** based on their cumulative impacts rather than on a specific project basis. The EIS, hydrodynamic models, and all technical studies submitted to **PRA** must show the cumulative impact of the proposed PROJECT on the affected body/bodies of water where such reclamation project is to be located.

2. The **PRA** shall conduct its review and evaluation of any of the mandatory requirements stated in Article IV hereof which in no case shall be more than sixty (60) calendar days from date of issuance of Notice of Full Compliance (NOFC). A NOFC shall be issued in favor of the **APPLICANT**, if after evaluation, it has fully complied with the requirements under Article IV (*Mandatory Requirements*).

MR. WILLIAM C. TAN

PATRICK P. TAN

ATTY. JANILO E. RUBIATO

Witnesses:

3. Within the same period stated in the preceding number two above and prior to the submission of the application to the **PRA** Board for approval, the **PRA** shall secure the advisory opinions of the DOF, DENR and NEDA for guidance in its evaluation and approval of the proposed reclamation project.

4. If the **APPLICANT** shall fail to comply with Article IV hereof, within the required period, including an extension granted, this MOU shall be terminated, provided that at least fifteen (15) working days prior to the expiration of the compliance period, the **APPLICANT** shall be duly notified of any deficiency in the submissions that must be addressed for full compliance with the mandatory requirements.

5. The **PRA** Governing Board shall take appropriate action on the application to reclaim within ninety (90) calendar days from the date of the submission of the Complete Staff Work (CSW), which shall be completed no later than the last day of the 60-day period for review and evaluation from the date of the issuance of the NOFC. No reclamation project/component shall be approved without the required Area Clearance and ECC to be issued by the DENR. The **APPLICANT** shall be notified of the Board action, either approval or disapproval of the Project, within three (3) working days from the date of the **PRA** Board meeting.

MR. WILLIAM C. TAN

PATRICK P. TAN

ARTICLE VII
COMPETITVE BIDDING AND CHALLENGE

1. All reclamation projects shall undergo competitive selection processes by the concerned Implementing Agency. The requirement of competition shall be deemed satisfied if the proposed reclamation project complies with public tender under the Government Procurement Reform Act (Republic Act No. 9184), or the competitive selection process, whether solicited or unsolicited, under the Build-Operate-Transfer Law (Republic Act No. 6957, as amended), the 2013 Revised Joint Venture Guidelines issued by the National Economic and Development Authority, or the applicable Public-Private Partnership (PPP) or Joint Venture (JV) ordinance of the LGU, or such other applicable laws and regulations.

ATTY. JANILO E. RUBIATO

Witnesses:

ATTY. JOSEPH JOHN M. LITERAL

Prior to the conduct of the bid tender or competitive selection process, the **PRA** shall be notified in writing by the **APPLICANT** of the terms of reference of the reclamation project and schedule of the bidding. Within ten (10) days from receipt of the notice, the **PRA** shall authorize the conduct of the public tender or competitive selection process, if the

parameters thereof are found to be consistent with applicable rules and regulations.

2. Upon approval by the **PRA** Governing Board of the proposed reclamation project it shall be subjected by **PRA** to a competitive challenge in accordance with existing laws, rules and regulations.

ARTICLE VIII
POST-APPROVAL AGREEMENT

Within twenty (20) working days from the approval by the **PRA** Board of the proposed reclamation project or the award of the project, as the case may be, a Memorandum of Agreement (MOA)/Implementing Agreement (IA) shall be executed between the PRA and the **APPLICANT** providing the terms and conditions for the implementation of the proposed reclamation project in accordance with the provisions of the IRR of EO 74 and other applicable and existing laws, rules and regulations.

MR. WILLIAM C. TAN

PATRICK P. TAN

ARTICLE IX
TERMINATION OF MOU

1. This MOU shall be terminated on any of the following grounds:

   1.1 Failure of the **APPLICANT** to comply with Article IV (*Mandatory Requirements)* within the required period as provided under Article IV, Section 4; or
   1.2 Failure of the **APPLICANT** to comply with Article V (*Payment of Fees),* within the required period as provided under Article IV, Section 4.

ATTY. JANILO E. RUBIATO

2. Notwithstanding the termination, all filing, review and processing fees paid by the **APPLICANT** shall be forfeited; while documents submitted shall be returned by **PRA.**

3. Notwithstanding the foregoing and in case of disapproval/ rejection by **PRA** of its application, the **APPLICANT** may submit its application to reclaim but subject anew to compliance with the requirements of **PRA**, payment of the required fees, execution of MOU and such other requirements as may be imposed by **PRA**.

Witnesses:

ATTY. JOSEPH JOHN M. LITERAL

ARTICLE X
ASSUMPTION OF RISK

1. Compliance with **PRA**'s requirements shall be at the **APPLICANT**'s expense and risk. The execution of this MOU does not guarantee the approval of the proposed reclamation project by the **PRA** Governing Board but shall solely depend on the result of the evaluation to be undertaken by the **PRA**.

2. In the event that the **APPLICANT** has already contracted a developer/contractor to undertake the actual raw land reclamation and development of its proposed project, the **PRA** in its evaluation process of the **APPLICANT**'s application is under no obligation to take cognizance of any agreement that it may have executed with its developer/contractor and that such agreement shall not in any way bind the **PRA**.

3. The **APPLICANT** shall hold the **PRA**, its officers and employees free and harmless from any claims or suits of any third party arising from its application to reclaim.

MR. WILLIAM C. TAN

ATTY. JOSEPH JOHN M. LITERAL

ARTICLE XI
EFFECTIVITY

This MOU shall be effective for period of twenty four (24) months from the execution of this MOU unless the period is extended by **PRA** upon request of the **APPLICANT** for compelling reasons and such extension shall be for a maximum period of six (6) months.

IN WITNESS WHEREOF, the parties hereunto affix their respective signatures on this 7 day of DEC 13 2021 DECEMBER 2021, Makati City, Philippines.

ATTY. JANILO E. RUBIATO

Witnesses:

PHILIPPINE RECLAMATION AUTHORITY

By:

ATTY. JANILO E. RUBIATO
General Manager & CEO

MR. WILLIAM C. TAN
Applicant

SIGNED IN THE PRESENCE OF:

	PATRICK P. TAN
(Signature over printed name)	(Signature over printed name)

MR. WILLIAM C. TAN

PATRICK P. TAN

ACKNOWLEDGEMENT

Republic of the Philippines)
City of Makati) s.s.

I certify that on this date before me, a notary public duly authorized in the city named above to take acknowledgments, personally appeared:

Competent Evidence of Identity

ATTY. JANILO E. RUBIATO	Philippine Passport No.: P4273219B
	Expiry Date : 26 December 2029
	Issued at : DFA Davao
MR. WILLIAM C. TAN	TIN: 128-062-897
	Issued on : April 2011
	Issued at : _____

ATTY. JANILO E. RUBIATO

Who are personally known to me to be the same persons described in the foregoing instrument, who acknowledged before me that the signatures on the instrument were voluntarily affixed by them for the purposes stated therein, and who declared to me that they have executed the instrument as their free and voluntary act and deed.

This instrument consisting of twelve (12) pages including the page where the acknowledgement is written has been signed each and every page by the parties and their witnesses.

DEC 13 2021

MAKATI CITY

WITNESS MY HAND AND SEAL this ____ day of _____ 2021.

ATTY. JOSEPH JOHN M. LITERAL

Witnesses:

Doc. No. 77;
Page No. 12;
Book No. III;
Series of 2021.

ATTY. [illegible]
Notary Public for Makati City
Commission No. M-[illegible]
Until December 31, 2022
IBP No. 850336 01-03-2019; Makati City
[illegible]3585; 12-27-2013; Iloilo City
Roll No. 37226
MCLE Compliance No. VI-0017640; 02-11-2019

Attachment 5-B
LETTER CONFIRMATION FROM DPWH

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
PALAWAN 3RD
DISTRICT ENGINEERING OFFICE
REGIONAL OFFICE IV-B
Puerto Princesa City

DPWH. RMU.ADM.
DATE: 7-6-2022
FILE NO. 403-301

July 5, 2022

WILLIAM TAN
Applicant
Puerto Princesa City

Dear Mr. Tan,

This refers with your letter dated June 22, 2022 concerning request for area clearance of your **proposed reclamation project** containing an area of 222,000 sq. m. situated at Brgy. Luzviminda, Puerto Princesa City.

Please be informed that the reclamation land being applied for is not within our area of jurisdiction and will not be affected by future construction/improvement programs of DPWH.

In view hereof, you are advised to seek clearance from other concern agencies whether the above-said reclamation land is suitable for the purpose of your application.

Very truly yours,

AMELIA B. FAJARDO
District Engineer

R4B.15.1 ald/egg/mat/UMV

Attachment 5-C

CERTIFICATION FROM THE DEPARTMENT OF TOURISM

REPUBLIKA NG FILIPINAS
KAGAWARAN NG TURISMO
REHIYONG MIMAROPA

CERTIFICATION

This refers to the Application of Mr. William Tan for a Reclamation Project covering 2.22 hectares located in Sitio Tawiran, Barangay Luzviminda, Puerto Princesa City.

The said area is neither covered under a specific program or project identified in the MIMAROPA Tourism Development Plan 2020-2026 nor the Puerto Princesa City's Official Zoning Map (Marine ECAN) duly certified by the City's Tourism Office on 29 June 2022.

The DOT MIMAROPA interposes no objection to the application for the proposed reclamation project as it has been certified to be OUTSIDE of the tourism zone, subject to the following conditions:

1. The applicant has submitted all documentary requirements as stipulated in DENR Administrative Order 2018-14 **and** PRA Administrative Order 2019-4; and,

2. The LGU and other concerned stakeholders have been consulted and the development plan is in line with the Comprehensive Land Use Plan (CLUP) or zoning ordinance of the City.

This certification is pursuant to Section 8.5 of DENR Administrative Order 2018-14 or the Guidelines on the Issuance of Area Clearance for Reclamation Projects and Proclamation/Special Patents over Reclaimed Lands.

Issued upon the request of Mr. William Tan for whatever legal purpose it may serve.

City of Makati
22 September 2022

ATTY. BEVIENNE G. MALATEO
Regional Director

cc: *DENR MIMAROPA*
City Tourism Office of Puerto Princesa City

Republic of the Philippines
City Government of Puerto Princesa
CITY TOURISM DEPARTMENT

CERTIFICATION

THIS IS TO CERTIFY that under the **Official Zoning Map (Marine ECAN)** of Puerto Princesa City, the area subject of application by Mr. William Tan as shown in the sketch Map containing a total land area of 222,000 square meters, situated in Barangay Luzviminda, this City is NOT within the Tourism zone.

Given this 29th day of June 2022 at the City of Puerto Princesa upon request of **Mr. William C. Tan** for whatever legal purpose it may serve best.

DEMETRIO C. ALVIOR JR.
Asst. City Tourism Officer

2/F New Green City Hall, Barangay Sta. Monica
Tel. Nos. (048) 717 8035 / (048) 717 8005
Email: puertoturismo@yahoo.com

Republic of the Philippines
OFFICE OF THE CITY BUILDING OFFICIAL
Land Use and Zoning Division
City of Puerto Princesa

N
W E
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0 >1 m

Universal Transverse Mercator - Zone 50 (N)
Luzon (Philippines - Mindanao)
1:9800

ZONING MAP
Barangay Luzviminda

LEGEND:

ZONING CLASSIFICATION
- Agro Industrial Zone
- General Agricultural Zone
- General Commercial 1 Zone
- General Commercial 2 Zone
- General Industrial Zone
- General Institutional Zone
- General Residential Zone
- Light Industrial Zone
- Parks and Recreation Zone
- Protected Agriculture
- Recreational Commercial Zone
- Tourist Zone
- Roads/ Rivers and Creeks
- Controlled Use Zone
- Core Zone
- Restricted Use Zone
- Traditional Use Zone
- Multiple Use Zone

MARINE ECAN
- Buffer Zone
- Core Zone
- Fish Corrals and other Structures
- Mariculture Zone
- Special Zone for Agriculture & Tourism

FOR REFERENCE ONLY

THI SITE

118°43'30" E 118°43'40" E 118°43'50" E 118°44'00" E 118°44'00" E 118°44'10" E 118°44'20" E 118°44'20" E 118°44'30" E

9°41'50" N 9°41'40" N 9°41'30" N 9°41'20" N 9°41'10" N 9°41'00" N

Attachment 5-D
CERTIFICATION FROM PPA

PHILIPPINE PORTS AUTHORITY

CERTIFICATION

THIS IS TO CERTIFY that this Office interposes no objection to the proposed reclamation activity that will be undertaken by the proponent, **MR. WILLIAM C. TAN** located at Bgy. Luzviminda, Puerto Princesa City, Province of Palawan, provided that all the requisite requirements from other concerned agencies are complied.

This certification is being issued upon request of Mr. William C. Tan in connection with its application for Area Clearance from the Department of Environment and Natural Resources (DENR).

Issued this 3rd day of August, 2022 at PPA Administration Building, Puerto Princesa City, Palawan.

ELIZALDE M. ULSON
Port Manager

PORT MANAGEMENT OFFICE – PALAWAN
PPA Administrative Building, Port Area

REPUBLIC OF THE PHILIPPINES
PHILIPPINE PORTS AUTHORITY
TIN 000-352-232-163
BIR Accr # 0313-116-00252-CBA/AR

OFFICIAL RECEIPT
OR-BP20-000000290613

10:45:38 AM 08/05/2022
Account: Collection

Received from: WILLIAM C. TAN (1)
TIN: null
Address: C/O FMO PUERTO PRINCESA

Description	Qty	Rate	Amount
OTHER BUSINESS INCOME (CERTIFICATION FEE)	1.00 @	20.000	20.00

TOTAL	20.00
VAT	2.40
TOTAL SALES (VAT Inclusive)	22.40
LESS : EWT	0.00
CVAT	0.00
AMOUNT DUE	22.40

Amount in Words: Twenty-two peso(s) and Forty cents

Tax Info

VAT Sales	20.00	Form of Payment: Cash	22.40
VAT	2.40	Check	0.00
VAT Exempt Sales	0.00	Change:	0.00
Zero Rated Sales	0.00		

Collection Officer: [illegible] (17677)

Sheet Control No. L-00511174366

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BIR Accreditation No.: 038MP201900000000107 January 15, 2019
PPA PERMIT NO. 0313-116-00252-CBA/AR DATED MARCH 14, 2013

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O. R. No. : 290613
AMOUNT : 22.40

LUCILA N. TAMAYO

PAID
05 AUG 2022
290613

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE - PALAWAN
FORESHORE LEASE APPLICATION

ORDER OF PAYMENT

August 05, 2022
Date

THE CASHIER
Philippine Ports Authority
PMO Puerto Princesa

Please accept payment of **TWENTY-TWO AND 40/100 PESOS ONLY (₱22.40)**

C a s h f r o m WILLIAM C. TAN

f o r CERTIFICATION (For Area Clearance)

Please indicate:

Date : AUG 05 2022
O. R. No. : 290613
AMOUNT : 22.40

LUCILA N. TAMAYO

AIA
05 AUG 2022
290613

6. GEOHAZARD ASSESSMENT REPORT (GAR)

Geohazard Assessment Report (GAR) of the Proposed Reclamation Project in Puerto Princesa City, Province of Palawan

Prepared by:

Xavier Gil S. Garcia

Geologist

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1.0 INTRODUCTION

This report discusses the results of Geological Assessment conducted on the site of the proposed Reclamation Project in Puerto Princesa City, Province of Palawan. The field investigation and literature studies aims to formulate an assessment focusing on the potential impacts of geologic and natural hazards that could affect the project site and structures, and to recommend mitigating measures and engineering interventions.

The geological and geohazard information cited in this report are based on the available data from the Mines and Geosciences Bureau (MGB) and Philippine Institute of Volcanology and Seismology (PHIVOLCS). Also, relevant materials were sourced from the National Mapping and Resource Information Authority (NAMRIA) and Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). The secondary data were verified in addition with the gathered field information in order to properly evaluate the project.

2.0 GENERAL INFORMATION

2.1 Project Location & Description

The proposed Reclamation Project is located in Barangay Luzviminda, Puerto Princesa City, Palawan within Region IVB or the MIMAROPA Region. The project will convert a portion of the sea front in Barangay Luzviminda to a 22.2-hectare land reclamation. The reclamation and development project is designed to address the future commodity imports and exports transport needs of the Province of Palawan and neighboring provinces. Thus, it would accommodate port facilities such as ships and transshipments, warehouses, piers, fueling and repairs stations, berth marina etc. The proposed reclamation site is centered at geographic coordinates, 118°43'59.981"E & 9°41'27.351"N (PRS92).

Puerto Princesa City is the capital of Palawan Province. It is located at the midsection of island and is bounded to the east by the Sulu Sea, to the west by the South China Sea, to the north by the municipalities of San Vicente and Roxas, and to the south by the municipality of Aborlan. It is approximately 306 nautical miles (567 km) from the Philippine capital of Manila.

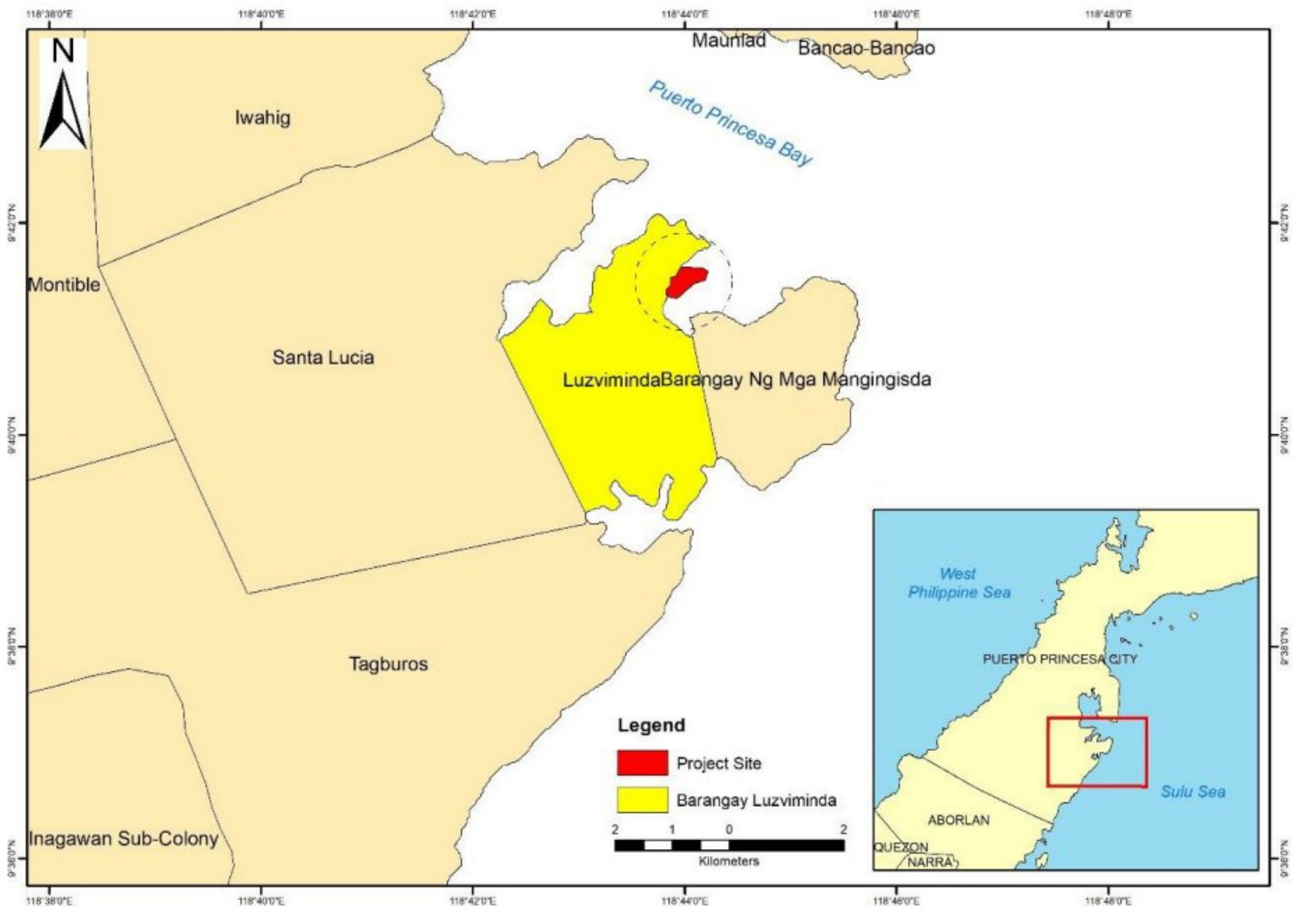


Figure 1. Location Map of Barangay Luzviminda in Puerto Princesa City, Palawan

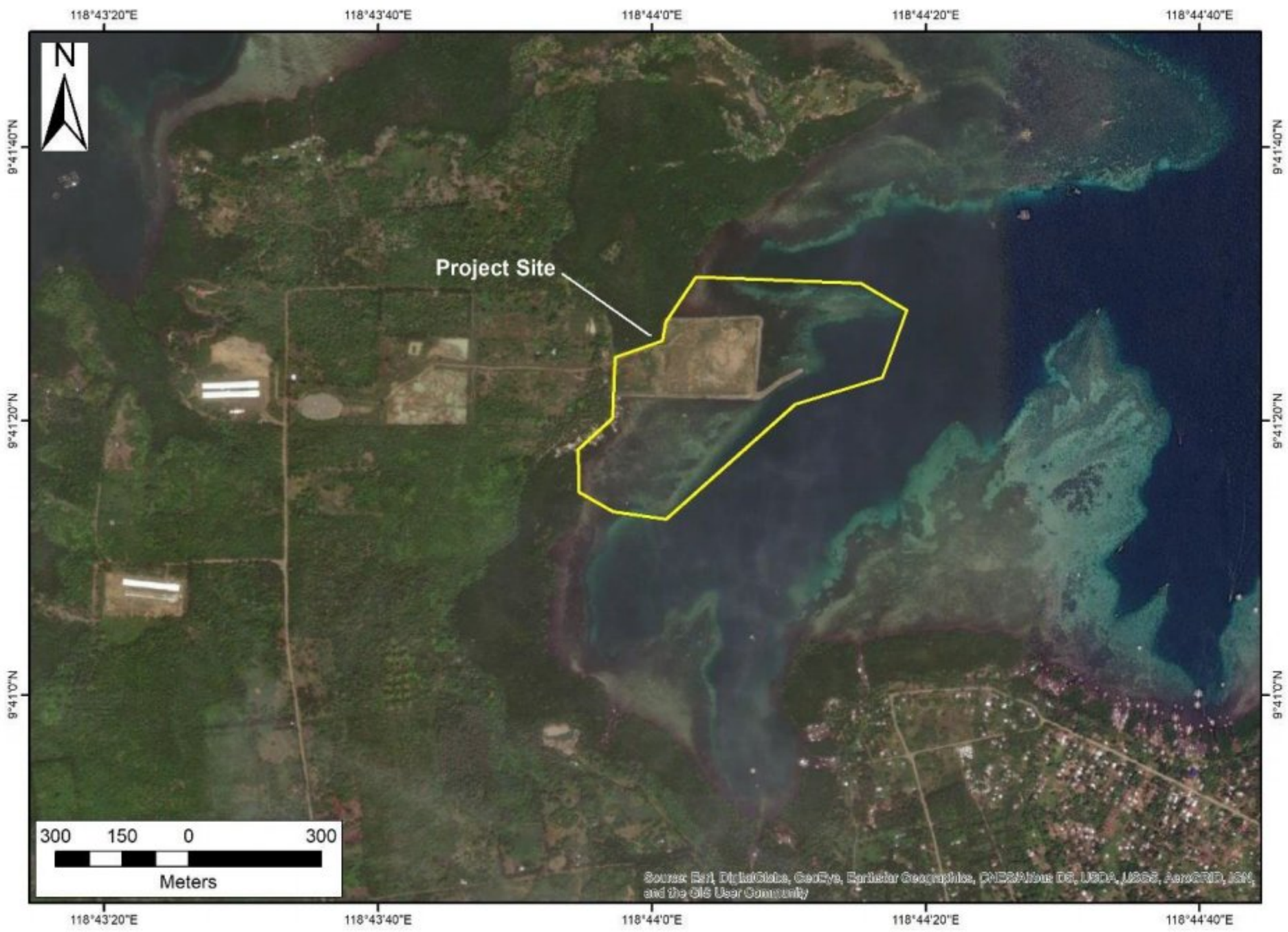


Figure 2. Satellite imagery showing the Project Site in Puerto Princesa City

2.2 Methodology

The study was guided by the Department of Environment and Natural Resources (DENR) Administrative Order No. 2000-28, which requires all land development projects to undertake engineering geological and geohazard evaluation. The study serves as safeguard from the hazards caused by geological phenomena. The guidelines and checklist in carrying out the study and the preparation of the corresponding report follows Memorandum Circular No. 2000-33 issued by the MGB.

Aside from bibliographic research and desk studies, the general procedures in carrying out the project activities are as follows:

a) Field verification of secondary information guided by the available geological maps, quadrangle topographic maps, index/location maps and pertinent project information;

b) Study of the lithology, structural elements, and three-dimensional distribution of the earth materials exposed or inferred within the area;

c) Assessment of the geomorphologic characteristics of the project area including soil types and the evaluation of natural hazards such as seismic risk, volcanic hazards, active slope movement, and climate-related hazards; and

d) The use of Geographic Information System (GIS).

3.0 REGIONAL SETTING

3.1 General Geology

Palawan Archipelago forms part of the Palawan-Mindoro microcontinent, which together with the Philippine Mobile Belt (PMB), comprise the two geological entities that made up the Philippine Archipelago. The Palawan-Mindoro geological block rifted from the Asian mainland during late Cretaceous–Late Eocene time and drifted to approximately its present position with the opening of the South China Sea Basin (Geology of the Philippines, MGB 2010). The PMB is the group of landmasses that make up most of the country of the Philippines. It is apparently originated from sub-equatorial regions to its present position with the rotation and spreading of the Philippine Sea Plate during Eocene to Miocene times (MGB 2010).

Previous studies suggest that Palawan is made up of three geological blocks such as the continental (Northern Palawan), accreted (Central Palawan) and oceanic materials (Southern Palawan). Northern Palawan has been a part of the Eurasian continent prior to rifting associated with the opening of the South China Sea. Subsequently after the opening of the South China Sea and its southward translation, Northern Palawan collided with the Philippine Mobile Belt (Holloway, 1982; Karig, 1983). Central Palawan is considered as the accreted part of Northern Palawan (Susuki et al., 2001). Southern

Palawan is recognized to be made up of oceanic materials composed of Cretaceous ophiolite and mélange units (Claveria and Fisher, 1991; Santos, 1996).
The Palawan Block is considered stable or aseismic region of the Philippine Archipelago, which is characterized by minimal or no seismic activity and inactive subduction. Tectonic features such as the Palawan and Sulu trenches appear as generally inactive subduction zones with northern Palawan as remnant of a continental platform. The regional geologic map is shown in **Figure 3**.

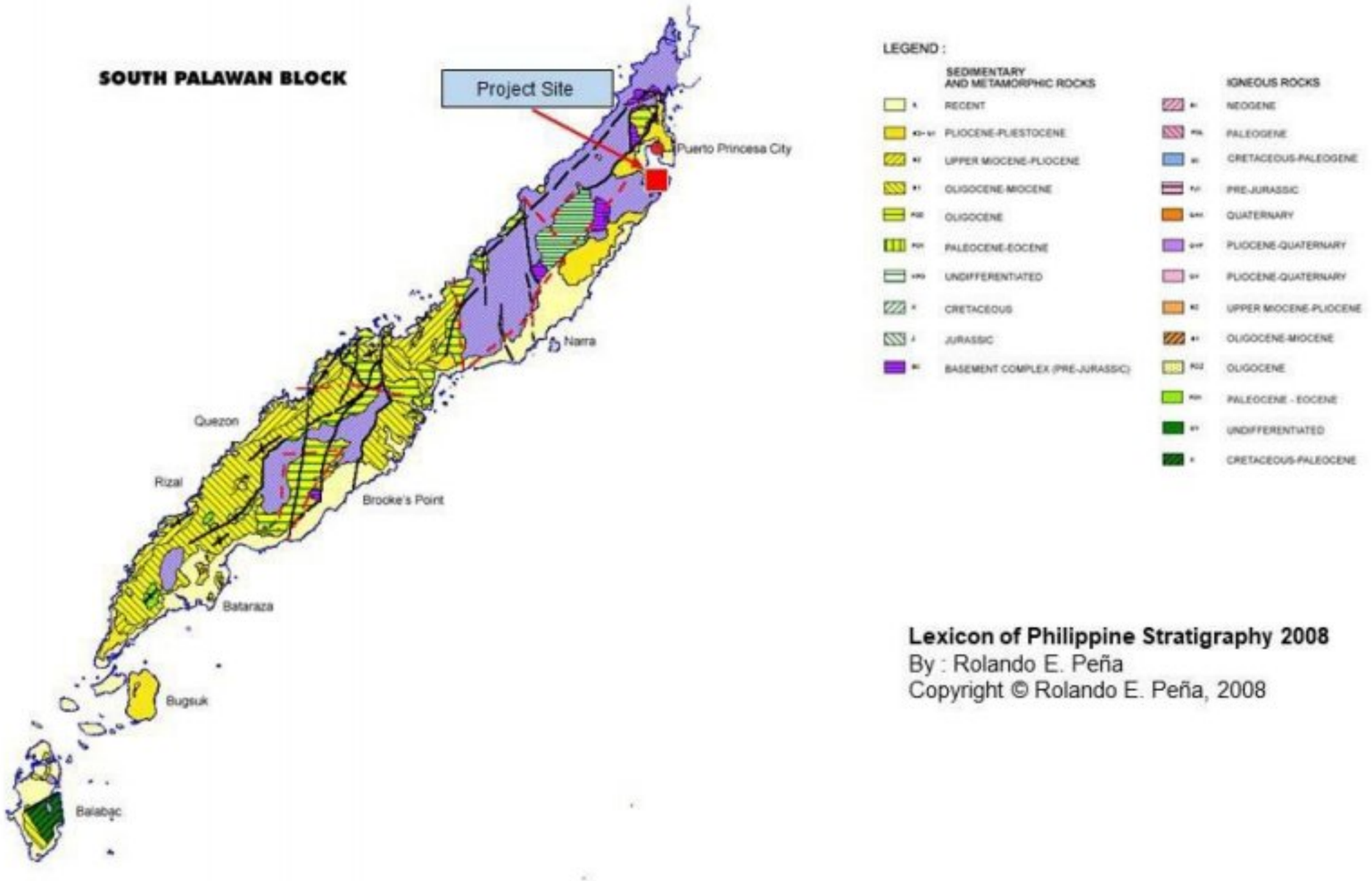


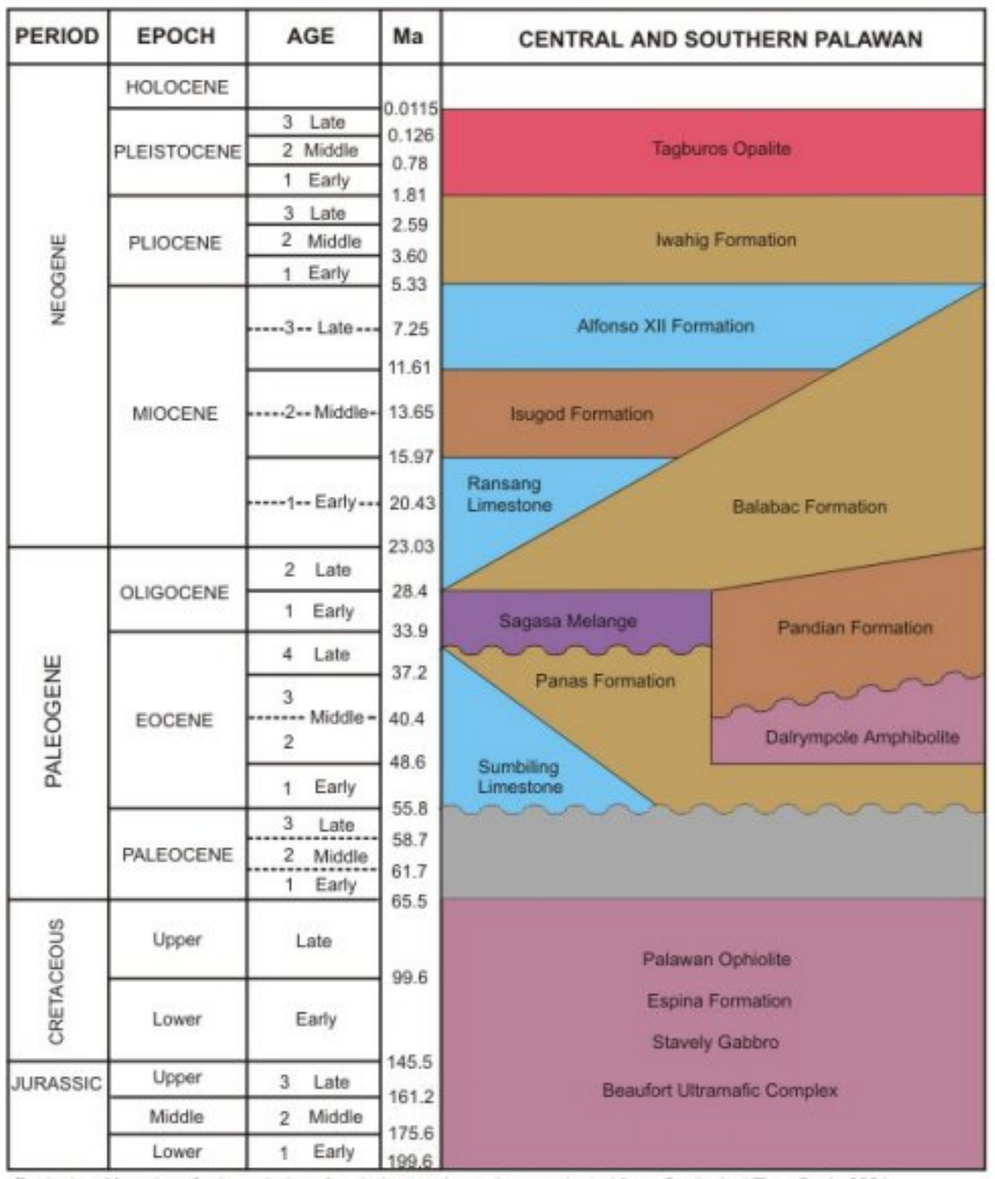
Figure 3. Stratigraphic Map of Central & Southern Palawan Block

3.2 Stratigraphy

The Project Site is within the Central and Southern Palawan Block. This block is made up of oceanic materials composed of Cretaceous ophiolite and mélange units. The Beaufort Ultramafic Complex constitutes the basement rocks of Southern Palawan Block. It consists of harzburgite, dunite, pyroxenite & peridotite. On top of these basement rocks are young sedimentary rock successions which are widely distributed in southern Palawan. These are the Eocene to Oligocene Panas (Pulute) Formation and the Oligocene to Miocene carbonate rocks.

Some of the lowlands of Puerto Princesa City including the project site are underlain with sedimentary rock sequence such as limestone and conglomerate with siltstone and sandstone interbeds belonging to Iwahig Formation. In some areas, this formation consists of shale and sandstone with stringers of bitumen. The sandstone is medium to thick bedded, fine to coarse grained, micaceous and feldspathic. The limestone unit is coralline, reefal and biostromal and conglomeratic in places. It has interbeds of marl and calcareous shale. The Iwahig Formation has thickness ranging from 60 to 90 m. The general stratigraphy column of Southern Palawan Block is presented in **Table 1**.

Table 1. Stratigraphic Column of Central and Southern Palawan (MGB)



Equivalent Ma values for boundaries of periods, epochs and ages adopted from Geological Time Scale 2004 (Gradstein and others, 2004)

MGB (2004)

3.3 Geological Structures

Geological structures are those significant imprints on the lithological units resulted from different tectonic processes, such as the subduction zone, faults, folding and collision boundaries. Based from previous works, there are notable geologic structures identified and mapped in Palawan Archipelago.

The Palawan Microcontinental Block is considered as part of the stable or aseismic region of the Philippine Archipelago, which is characterized by minimal or no seismic activity and inactive subduction. Tectonic features in Palawan Archipelago such as the Ulugan Bay Fault, Palawan Trench and Sulu Trench are concluded as inactive geological structures.

The seismic study of National Earthquake Information Center of U.S. Geological Survey on the earthquake focal points in the Philippines from year 1960's to 2015 shows some few points fall inside the Palawan Archipelago (**Figure 4).**

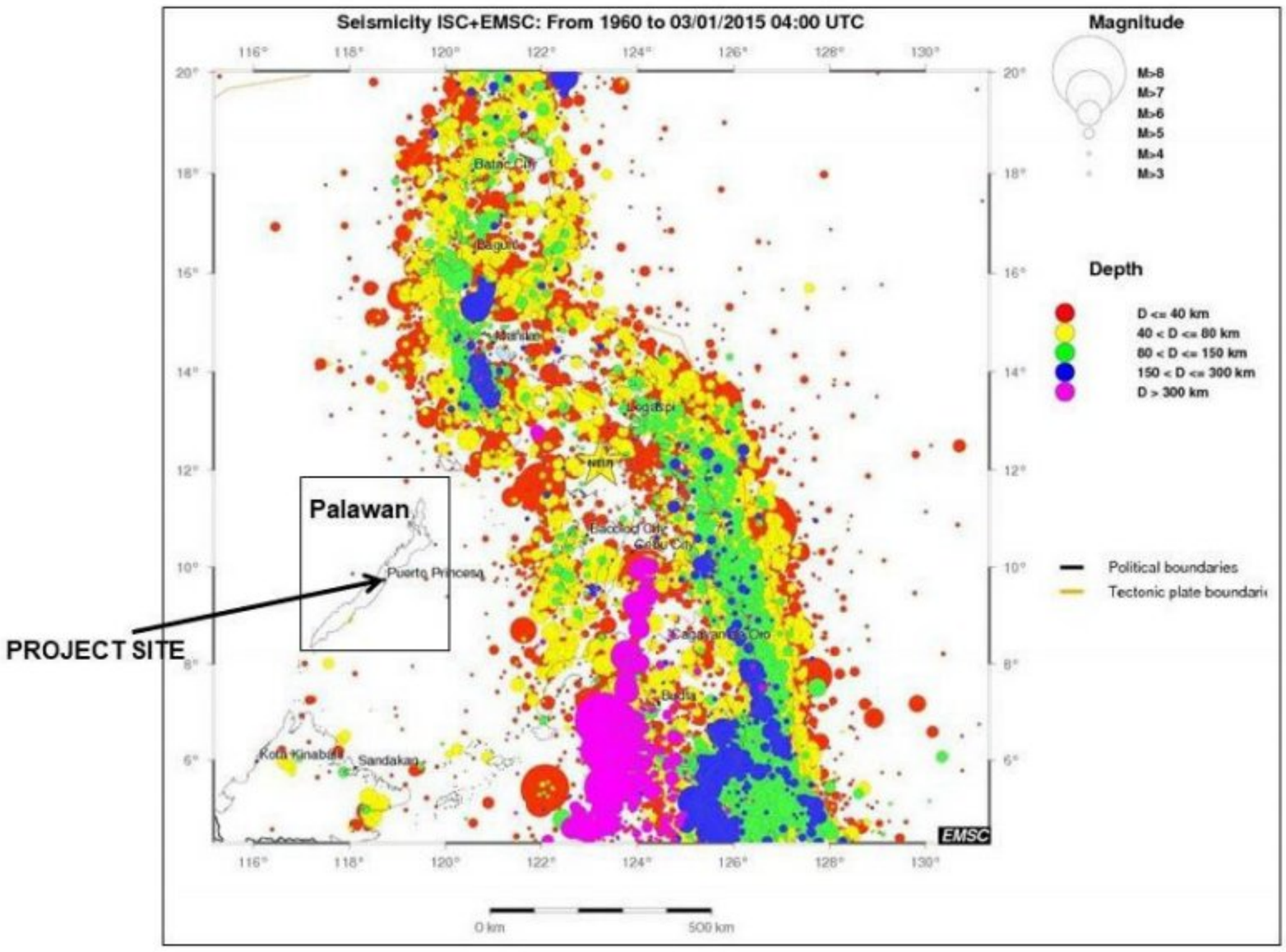


Figure 4. Seismic Map of the Philippines showing earthquake focal points from year 1960's to 2015

3.4 Geomorphology

The City of Puerto Princesa is located at the midsection of Palawan mainland. It exhibits flat topographic terrains on the eastern section and moderately to rugged landforms from central portion extending up to the western and northern portion. The mountain ranges located in the city has maximum elevation of about 1000 meters (masl) with prominent peaks such as Thumb Peak, Mt. Beaufort, and Central Peak which rises at 1,166 meters (masl), 1,098 meters (masl), and 998 meters (masl), respectively.

Aside from small perennial and intermittent streams and creeks, the major rivers dissecting the city are Bacungan River, Iwahig River, Tagduan River, and Inagauan River. These water bodies exhibit dendritic drainage pattern which apparently influenced by the topographic configuration. All the surface water that flows towards east direction exits on Honda Bay, Puerto Princesa Bay and Sulu Sea and on the west direction towards West Philippine Sea.

3.5 Climate

The southeastern portion of Palawan Island including the location of the project site falls under the Type III climate zone. Seasons in these areas are not very pronounced. Usually the dry season are at the months of November to April and rainy season for the remaining months of the year (**Figure 5**).

Based on the 1981 to 2010 climatological normal values collected from the Puerto Princesa Weather Station of PAGASA, the average annual rainfall in the island is

1527.3 mm for an average rainy days of 146. The average max temperature was recorded at 31.5°C, while the average min temperature is recorded at 23.8 °C.

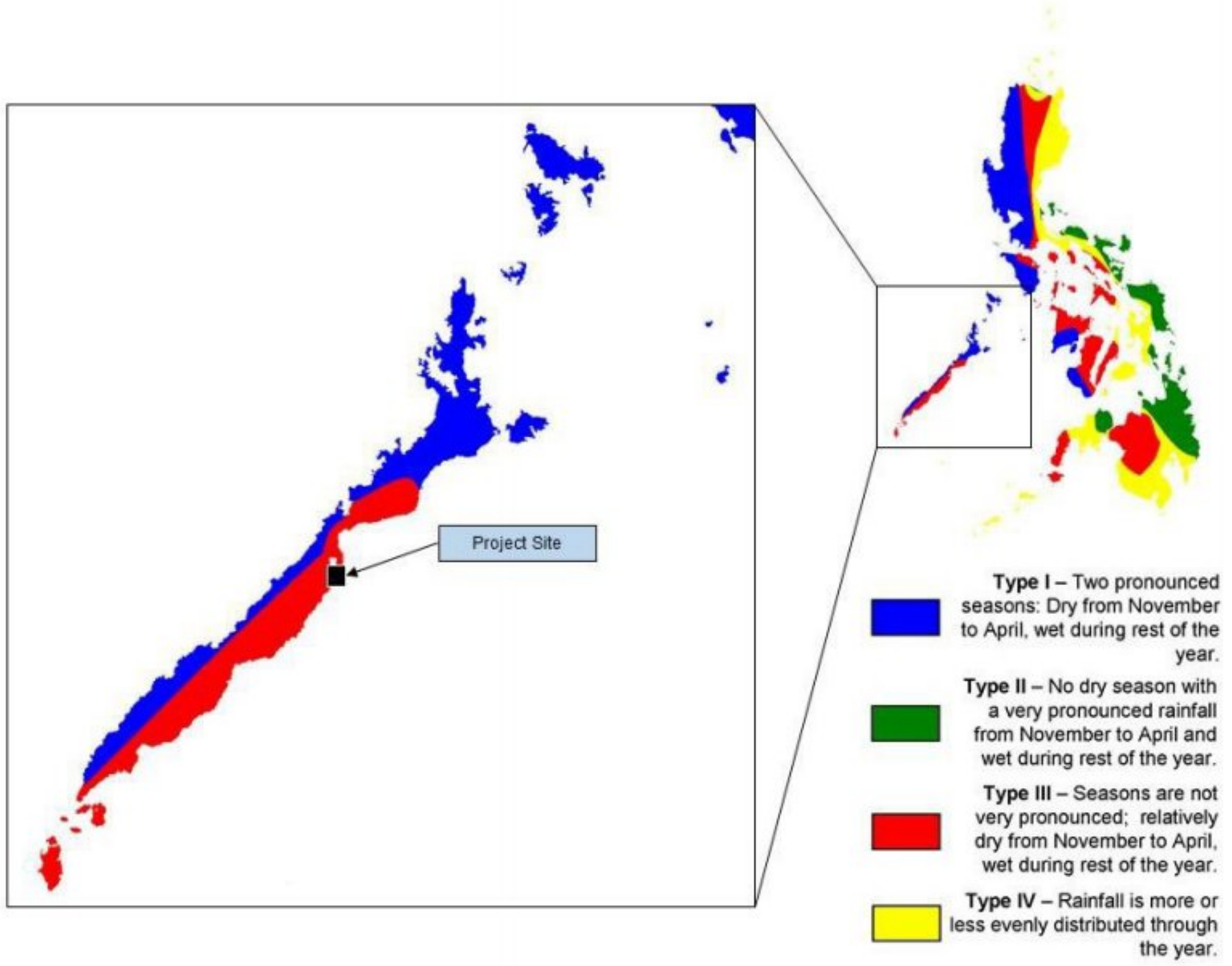


Figure 5. Climate Map of Palawan Island

4.0 SITE GEOLOGY

4.1 Rock and Soil Types

The available geologic map from Mines and Geosciences Bureau shows that the immediate land surface from the project site underlain with Quaternary Alluvium and Iwahig Formation. Iwahig Formation is essentially made up of sedimentary rock sequence such as limestone and conglomerate with siltstone and sandstone interbeds. Based on the survey at the project site, the rock units identified are highly weathered samples of conglomerate, siltstone and sandstone. However, fresh rock exposures are expected in case of deep excavation in the area. There were no prominent geologic structures observed within and at the immediate vicinity of the project area.

The soil type in the area was observed as clayey in composition. It appears as dark brown moist clay with strong sub-angular to granular structure. The texture is very sticky and very plastic with very firm presence of narrow cracks and few fine gravels compact few fine tubular pores.

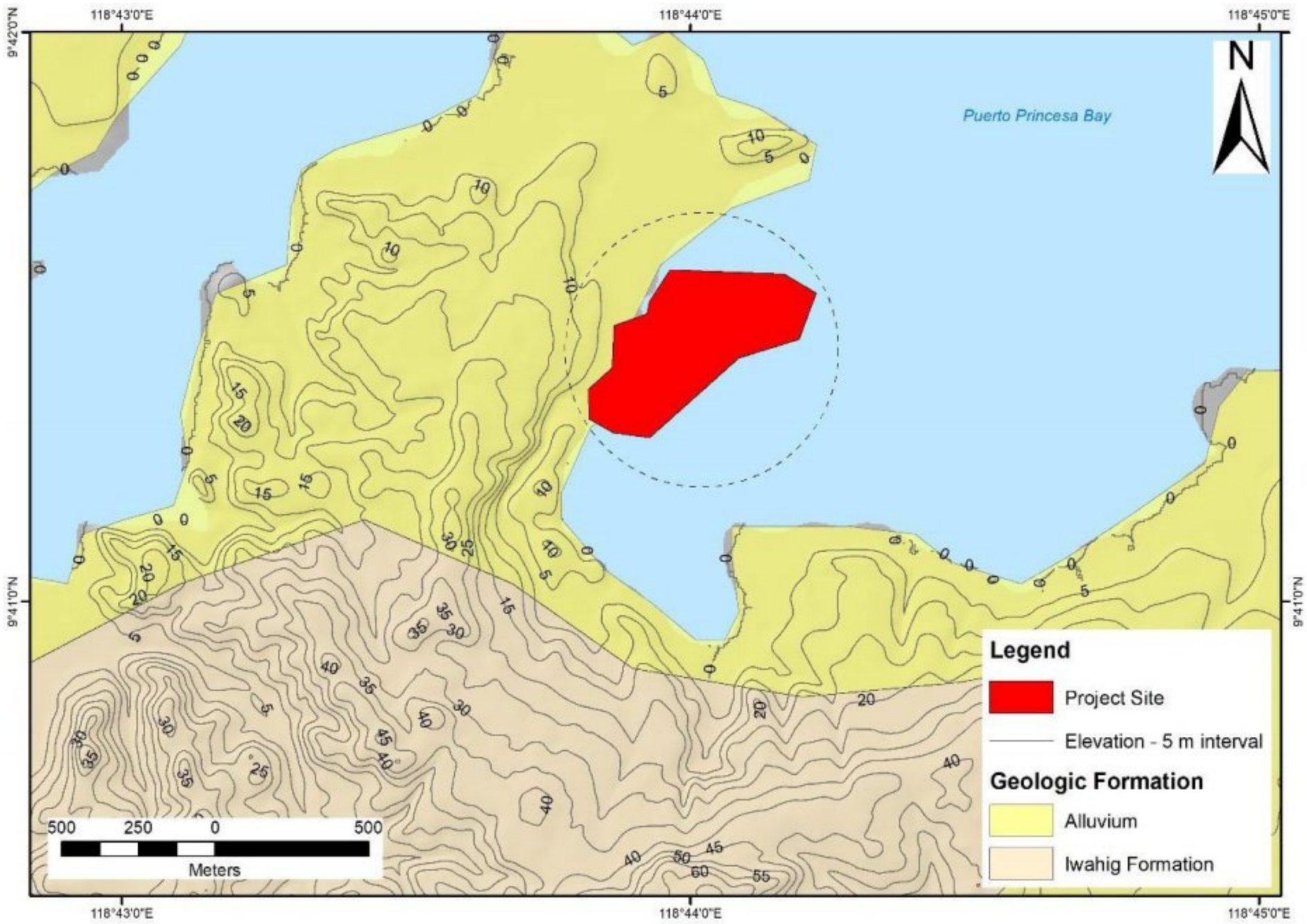


Figure 6. Geologic map of the project site and vicinity (Data sourse: MGB)

4.2 Topography

The adjacent land surface from the reclamation project exhibits relatively flat and gently sloping landforms (**Figure 7),** with elevation between 0 to 15 masl. The reclamation project covers about 600 meters of the shoreline. The shoreline in this portion of Barangay Luzviminda has an orientation of NE-SW.

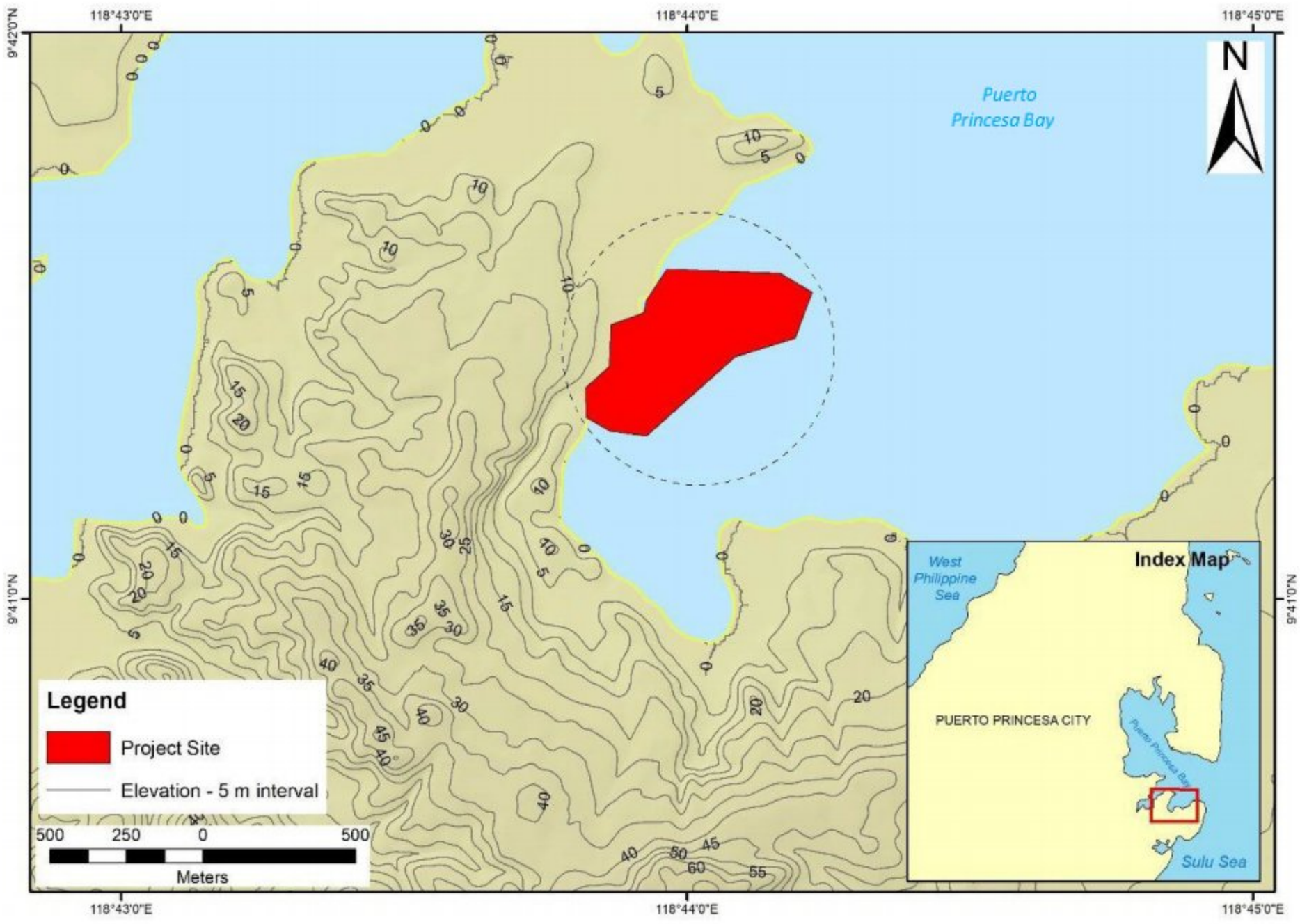


Figure 7. Elevation map of the project site and vicinity

5.0 GEOHAZARD AND RISK ASSESSMENT

The term "geohazard" or geologic hazard pertains to the natural disasters from natural phenomena such as earthquake, volcanic eruption, mass wasting, flooding, etc. Below are the discussions on the degree of susceptibility of the project site to various geologic hazards.

5.1 Fault-Related/Seismic Hazard

Seismicity is defined as the probability of an area subjected to a sudden motion or tremble caused by the abrupt release of accumulated strain, either tectonic or volcanic in origin, underneath the earth's surface. Such movements generate earthquakes.

The proposed land development is situated in Puerto Princesa City in Palawan Province. Based on previous seismic studies, the entire Palawan Archipelago has been established as aseismic region with little or no seismic activities. As shown in **Figure 4**, the earthquake focal distributions of the Philippines have shown very minimal points falling inside the Province of Palawan. The observation was made from year 1960's to 2015 by the National Earthquake Information Center of U.S. Geological Survey.

The nearest fault structure identified from the project site is the segment of Southern Mindoro Fault which is around 380 kilometers northeast of the project site (**Figure 8**).

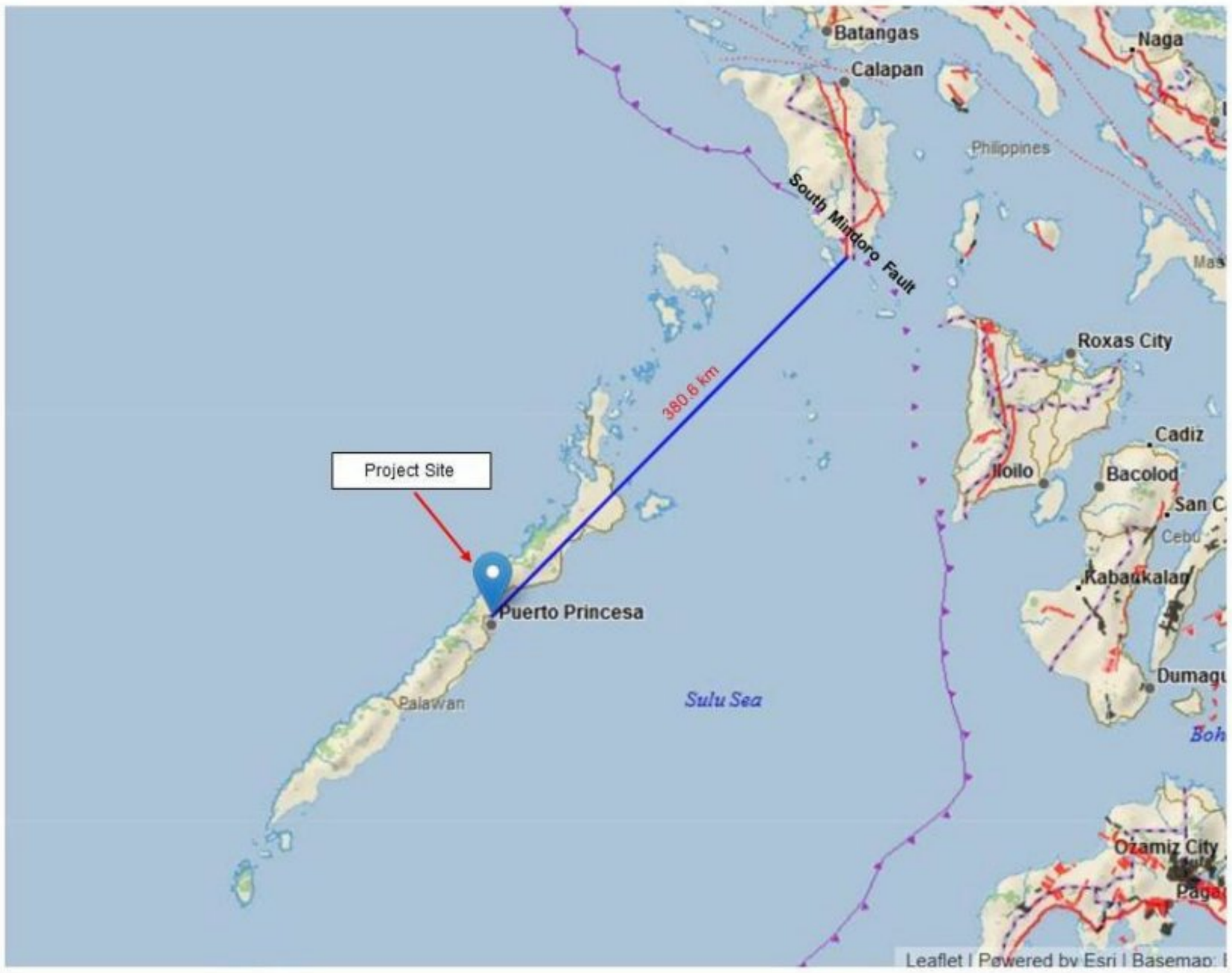


Figure 8. Map showing the approximate distance of the nearest active fault to the project site (Data source: PHILVOCS)

5.2 Landslide/Mass Movement Hazard

Mass movements (also called mass-wasting) are the down-slope movement of Regolith (loose mixture of soil and rock particles that covers the Earth's surface) under the influence of gravity. They are classified depending on the materials involved and the type of movement (fall, flow and slide). Some distinctive classifications for mass movement hazards include landslides and ground settlement.

The parameters considered influencing the stability of the ground are the following: (a) Slope gradient, height and angle; (b) degree or rate of rock weathering including soil thickness; (c) adverse ground structure (joints, fissure etc.) and; (d) water seepage. The following parameters were utilized in evaluating the landslide potential spots within the proposed project.

The adjacent land surface from the reclamation site exhibits low relief and relatively flat terrain. This kind of landforms are safe from landslide hazards. Moreover, based on the landslide susceptibility map of the MGB (**Figure 9**), the nearby coastal areas from the reclamation site are outside the identified landslide hazard zones.

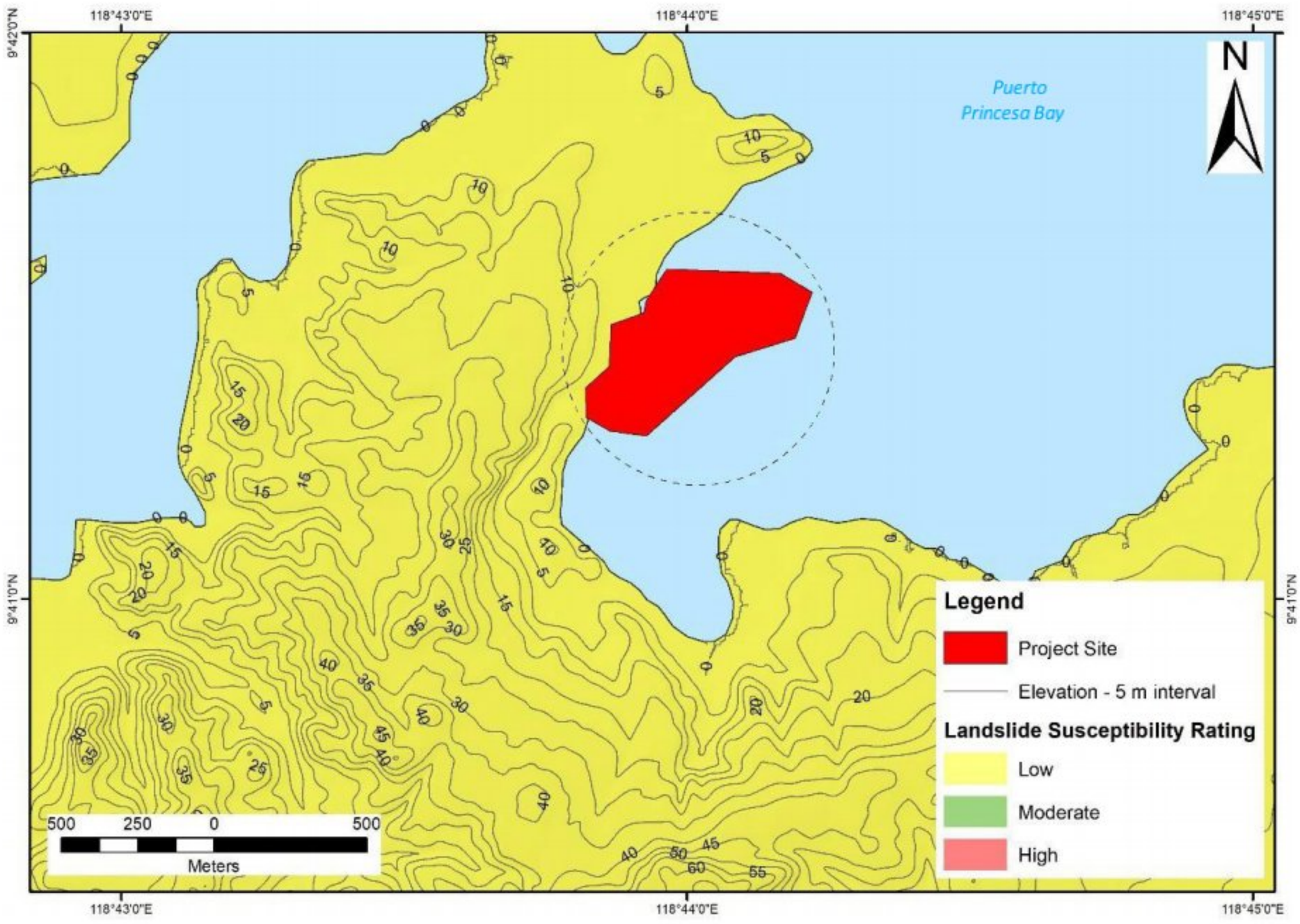


Figure 9. Landslide Susceptibility Map of the project site and vicinity (Data source: MGB)

5.3 Flood Hazard

Flooding is characterized by the rise in the water level resulting to submerged land. Heavy rains, whether sudden or prolonged, may create several scenarios of flooding and its impact depends on artificial or human interventions.

Due to the project site's proximity to the sea, the reclamation project may be affected by coastal flooding (**Figure 10**). Coastal flooding is an onshore flooding caused by high tides, storm surge (due to high winds and low pressure), and wave set-up (energy transfer from offshore waves to the coast). The coastal areas of Palawan are included in the areas that are most vulnerable to high storm surges due to the gently sloping coasts, shallow bays and are also frequently passed by typhoons (J. P. Lapidez et al.2015). These areas should be subjected to detailed storm surge studies to implement appropriate site-specific solutions. Also, during intense and prolonged rainfall condition, voluminous surface runoffs coming from the higher ground may create localized flooding along the low-lying portions of the site.

As indicated in the flood susceptibility map of MGB for Palawan Province, the nearby coastal areas from the reclamation site was identified as high flood susceptible zone (**Figure 11**). The MGB's susceptibility ratings to flooding are discussed in **Table 2**.

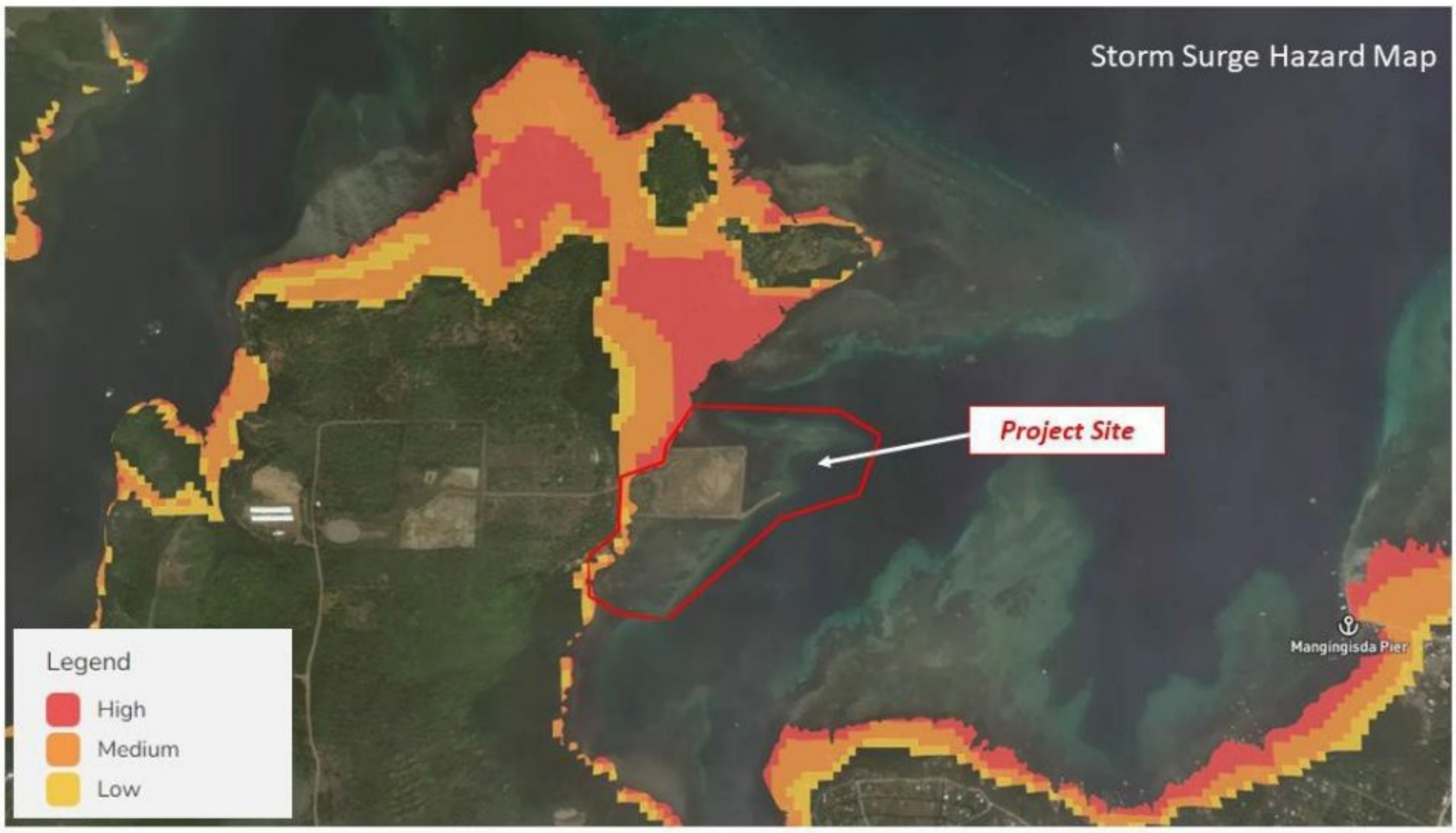


Figure 10. Storm Surge Hazard Map of the project site and vicinity (Data source: Project Noah)

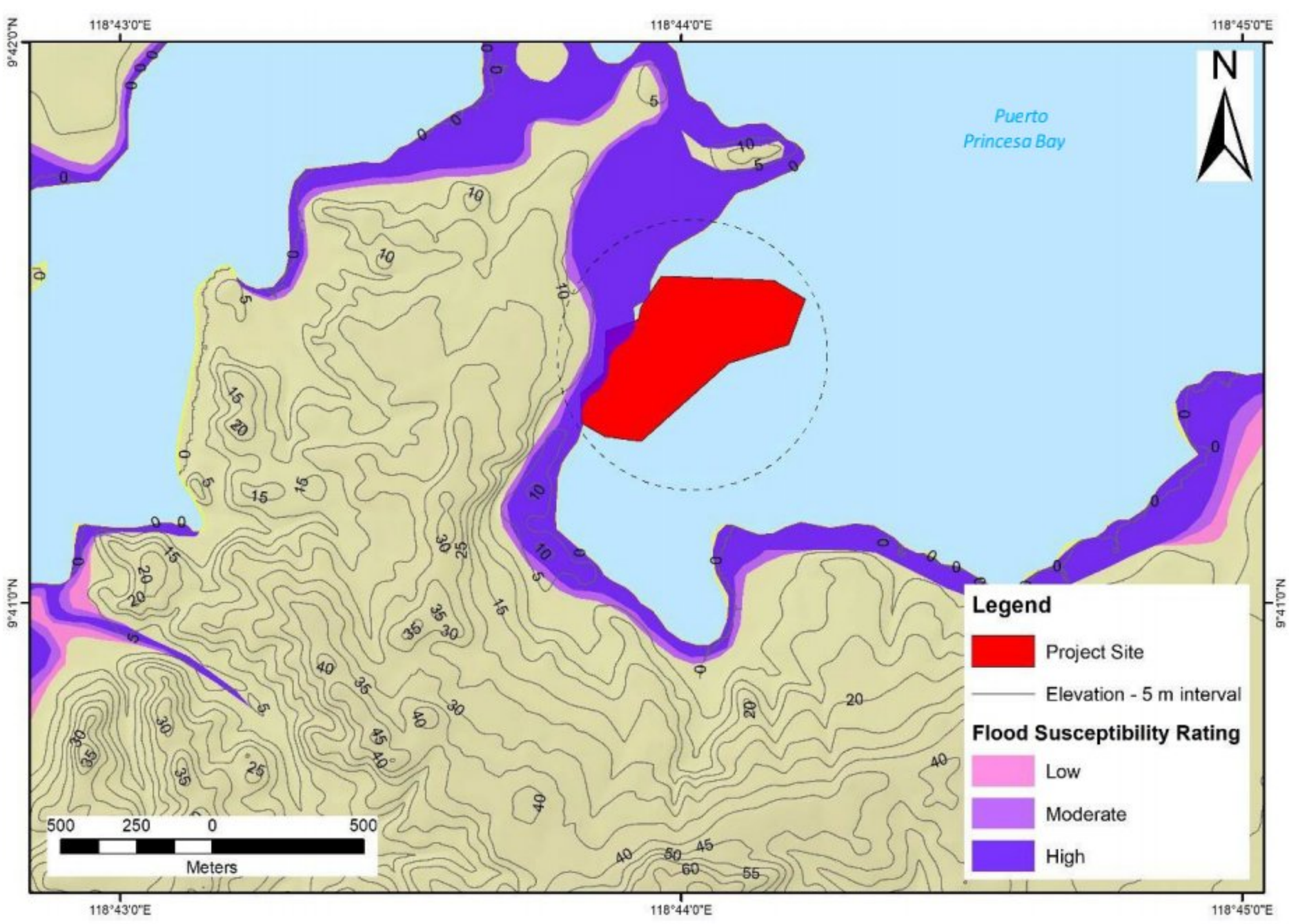


Figure 11. Flood Susceptibility Map of the project site and vicinity (Data source: MGB)

Table 2. Flood Susceptibility Rating (MGB)

Rating	Explanation
High Flood 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 that are prone to flashfloods.
Moderate Flood Susceptibility	Areas likely to experience flood heights of 0.5 to 1.0 meters 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 Flood 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.

5.4 Ground Differential Settlement

The reclamation on soft ground will require a substantial amount of time to achieve primary consolidation due to low permeability and long drainage path of the underlying soft clay. Non-uniformity of the underlying soil and the uneven spread of future loads on soil may lead to differential settlement resulting to damage to structures to be built on the newly reclaimed land. Hence, soil improvement is required to increase the effectiveness stress throughout the profile of the compressible soil layer.

6.0 HAZARD IDENTIFICATION AND MITIGATION MEASURES

The natural hazard or "geohazard" that can affect the project site was identified as storm surges. The occurrence of storm surges may cause coastal flooding in the low-lying portions of the site. As shown in the available hazard maps (**Figures 10 & 11**), the nearby coastal lands from the reclamation site are within the storm surge hazard zone and high flood susceptible zone. In terms of seismic hazards, Palawan Archipelago has been established as aseismic region with little or no seismic activities.

Prior to commencement of the reclamation works, a pre-survey must be conducted and delineation of reclamation boundary must be established. The boundary must be demarcated with lighted buoys to ensure a safe navigation in the area.

Turbidity control measures shall also be constructed and installed like perimeter bund and silt curtain to prevent sediment dispersion during dredging and sand filling activities.

The elevation of the reclamation platform must be above the highest astronomical tide occurring during high tide season and more than the recorded wave height in Barangay Luzviminda, Puerto Princesa City. Hence, the platform level must be strictly aligned with the safe design parameter with the inclusion of the safe environment against overtopping effects.

The materials that will be used for the reclamation project must undergo in a series of laboratory tests (e.g. shape, size, mass, relative density, roundness, etc.), to ensure that the type and quality of the filling materials met the required specifications of the project to prevent differential settlement.

The reclamation project shall adopt pre-fabricated vertical drain (PVD) installed at certain intervals in the compressible soil mass to improve drainage capacity of the soil and additional anchoring system must be adopted to strengthen stability of the marine soils.

Coastal protection using revetment is necessary to protect the completed profile of the reclaimed land from erosion induced by wave, current and tide. The construction of revetment structure must be installed after the formation of the reclaimed land. The revetment design should be based on the seabed level and distribution of wave energy along the shorelines with the adoption of 100-years return period for the possible tsunami and storm surges.

Finally, all concerned entities including the Engineering Office of the Puerto Princesa Government and the EMB-IV MIMAROPA office must conduct regular site inspection during the development stage of the project, in order to guarantee that all protection measures vis-à-vis geohazard mitigation activities will be adopted.

XAVIER GIL S. GARCIA
Geologist
PRC Reg. No. 1875

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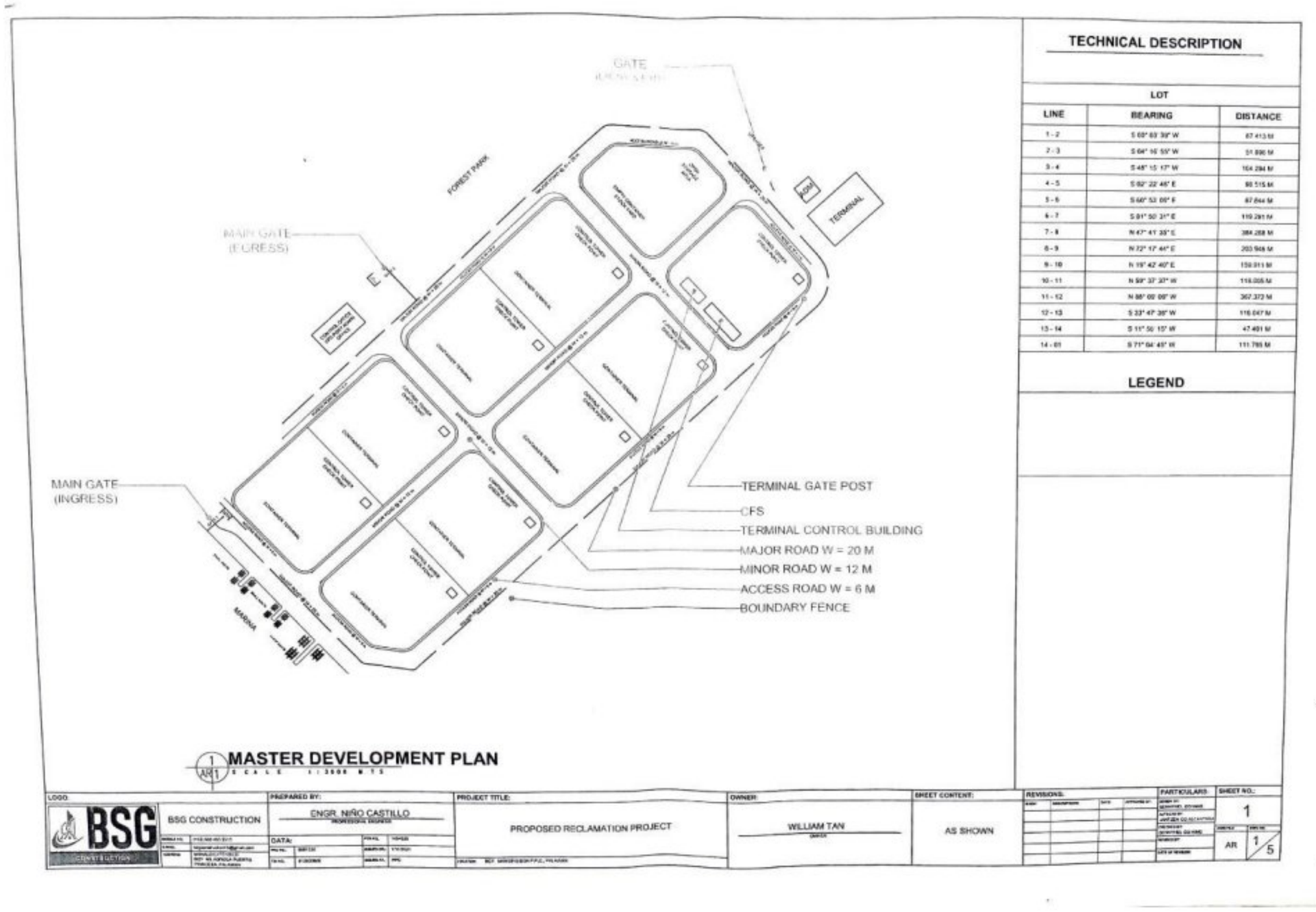
APPENDIX

Site Development Plan of the Reclamation Project



7. OTHER DOCUMENT

Attachment 7-A

Coastal Resource Assessment

Coastal Resources in a Development Site, Purok Tawiran, Luzviminda, Puerto Princesa City

Benjamin J. Gonzales, Bernaldo S. Montaño,
and Rodulf Anthony T. Balisco

WESTERN PHILIPPINES UNIVERSITY, *COLLEGE OF FISHERIES AND AQUATIC SCIENCES*
Rafols Street, Sta. Monica, Puerto Princesa City
5300 Philippines

February 2017

Executive Summary

The William Tan Enterprises Inc. requested the services of the researchers of the Western Philippines University – College of Fisheries and Aquatic Sciences to conduct a Coastal Resource Assessment in a development site in Purok Tawiran, Puerto Princesa City on February 11, 2017. The objectives of the assessment were to: a) provide information on the coastal marine resource (coral, seagrass, fishes) found in the development area, b) provide information on the present condition of the resources in the development area, and c) give recommendations for the sustainable utilization of such coastal resources in the area.

The reef check technique was employed to assess the coral reef site, while fish assemblage were studied using fish visual census technique. Mangrove and seagrasses were assessed using a 300m-transect quadrat method.

The development site was covered with five species of seagrasses: *Enhalus acoroides*, *Halophila ovalis*, *Halodule pinifolia*, *Halodule uninervis*, and *Thalassia hemprichii*. There were small patches of corals found outside (seaward) the development/foreshore lease application zone. The corals outside of the development/foreshore lease application zone was about 100 sqm in area and has 3% live coral cover.

The existing mangrove area was in-tact and in good condition, having two species, *Xylopcarpos sp.* and *Rizophora sp.*. There was no sign of present destruction of mangrove in the shore area/zone.

It is recommended that the proponent shall identify an area to enhance marine resources such as seagrass planting, mangrove planting and coral enhancement as part of its corporate social responsibility. The proponent shall plant seagrasses of at least the same

area as the affected area size or compensate the disturbed seagrass beds by resource enhancement. Other recommendations for the sustainable use of the resources in the area is provided in this report.

I. INTRODUCTION

Biodiversity cuts across the mountains to the seas. It is in this context that the Ridge to Reef approach in biodiversity management was conceptualized. The marine portion of our coastal zone is composed of such distinct yet interconnected and interrelated major habitats and resources as mangrove forests, seagrass beds, and corals reefs – functioning as a single larger coastal ecosystem. As such, numbers of marine organisms spend some stages of their lives among these habitats at a specific period of time. In addition, these habitats shelter valuable species important to both fisheries and tourism sectors (Gonzales et al. 2006).

In order to preserve the fragile ecological, commercial and aesthetic assets of our coastal zones, advance and appropriate interventions should be in place to protect and manage them properly. Sustainable tourism areas here in the Philippines and across tropical countries have become popular destination for tourists because of its pristine coastal marine environment.

Puerto Princesa City has become one of the popular nature tourism destinations in the Philippines. This circumstance necessitates the need for quick and proper conservation and management of these resources for the optimum sustainable utilization of the local community and the tourism sector. In order to effect right management, resources have to be measured and monitored - “what get measured, get managed”.

The researchers of the Western Philippines University was requested to conduct a resource assessment in a coastal development in Luzviminda, Puerto Princesa City, as one of the requirements of the City Government relative to the establishment of commercial structure in the area. Similar surveys has been done by the Western Philippines University in

Puerto Princesa Bay (Gonzales et al, 1999; Dolorosa and Galon 2016), but not in Tawiran, Luzviminda, Puerto Princesa Bay.

1.1. The Western Philippines University on scientific researches

The Western Philippines University is the Center of Excellence for Fisheries Education in Region IV. It is a member of the National Agriculture and Fisheries System in the Philippines and recognized as the National University for Fisheries and Agriculture for Region IVB MIMAROPA. Behind the Western Philippines University is more than 30 years of mentorship and practice in coastal and fisheries management. The University has a Coastal resource team that engages in coastal and fisheries management researches and projects since 1997. They also publish results of their studies in national and international scientific journals. The University has conducted more than 60 externally funded R & D projects since 2000, and earned more than 23 paper awards between 2005 and 2012.

WPU has conducted series of researches on the marine and coastal ecological assessments since 1998 in the Sulu Sea (Romblon, Palawan, Mindoro). Subsequently, species inventories were conducted for the entire province of Palawan - the east and west coasts of northern Palawan and the southeast coast extending to the Balabac area. Farther offshore, the Tubbataha Reefs on the east and the Spratlys Group of Islands on the west.

Status of major coastal ecosystems: seagrass, mangroves and corals reefs and the resources therein including birds are being studied by WPU researchers and scientists. WPU undertakes coastal resources surveys of small islands some of which were: Apulit Island, Denot Island, Tecas Island, Tombud Island, Taytay; Snake Island, Puerto Princesa City; Pandan Island, Puerto Princesa City; Arreceffi Island, Puerto Princesa City; Pambato Reef,

Puerto Princesa City; Araceli Island; Ursula Island, Bataraza; Pag-asa Island, (Spratlys, Kalayaan), and Tubbataha Reefs, Cagayancillo, Palawan.

WPU has also engaged in resource assessments of bays: Coral Bay, Bataraza; Taytay Bay,Taytay; St. Paul Bay, Puerto Princesa City; Ulugan Bay, Puerto Princesa City; Puerto Princesa Bay, Puerto Princesa City; Honda Bay, Puerto Princesa City; Bacuit Bay, El Nido; Malampaya Sound, Taytay; and Dumangquillas Bay, Zamboanga Sibugay.

The University has conducted coastal resource assessments outside Palawan in Romblon, Mindoro, Zamboanga del Sur and Zamboanga Sibugay.

The University has also established linkage and received research and project funds from different organizations and agencies such as the World Bank, USAID, ADB, JICA, WWF, CI, CTI, UNDP, UNESCO, IFAD, Nagao Foundation Inc. Haribon Philippines, MFI, CIDA and foreign universities in Korea, Japan, United States, Canada, and the United Kingdom, etc..

The University facilitated and hosted the Biodiversity Summit (UNDP), International Coastal Resource Management Symposium (CIDA) and the International Conference on the West Philippine Sea (WPU) held every two years.

II. OBJECTIVES

The purpose of this assessment is to: a) provide information on the coastal marine resource (coral, seagrass, fishes) found in the development area, b) provide information of the present condition of seagrasses, mangrove forests and coral reefs in the development area, and c) give recommendations for the sustainable use of such coastal resources.

III. METHODOLOGY

Field work was conducted on February 11, 2017. The team used mask and snorkel and transect lines to survey corals, fishes, mangrove, and seagrasses. Plots of 10 m x 10 m were established in each mangrove station. Seedlings and saplings were counted in each plot. Relative frequency, relative density, and diversity were computed following the methods of English et al. (1994). Live coral cover and fishes were surveyed using the same station. Four stations were used in Seagrass assessment, while the coral and fishes assessments were done in one station that exhibited live corals. Photograph and video documentation of the sampling stations were also done.

3.1 Coral Cover Assessment

Live coral cover and fishes were surveyed using the same station. Coral and fish assessments were done in one station that exhibited live corals (Fig. 1). To record the categories of substrate, Reef Check Methods (Hodgson et al. 2004) was used. Point intercept method was used to record the different categories of substrates. One hundred-meter belt transect was laid parallel to the shoreline of the sampling site, covering an area of 500 m^2. The transect line was laid from 1.5m to 3m water depth.

3.2 Fish Communities Assessment

Survey of reef fishes was done using underwater visual census (English et al, 1994). Fish survey was done on the coral station, using 100 m transect. All fishes encountered within 2.5 m on both sides of transect were identified, counted and the total length estimated, and noted to compute the biomass. The fish species identification was made to the lowest possible taxon using the works of Myers (1999), Lieske and Myers (2002), Allen et al. (2003),

and Gonzales (2013). Surveys were conducted from 8:00 AM to 2:00 PM in the reef areas with 1.5-3 m depth.

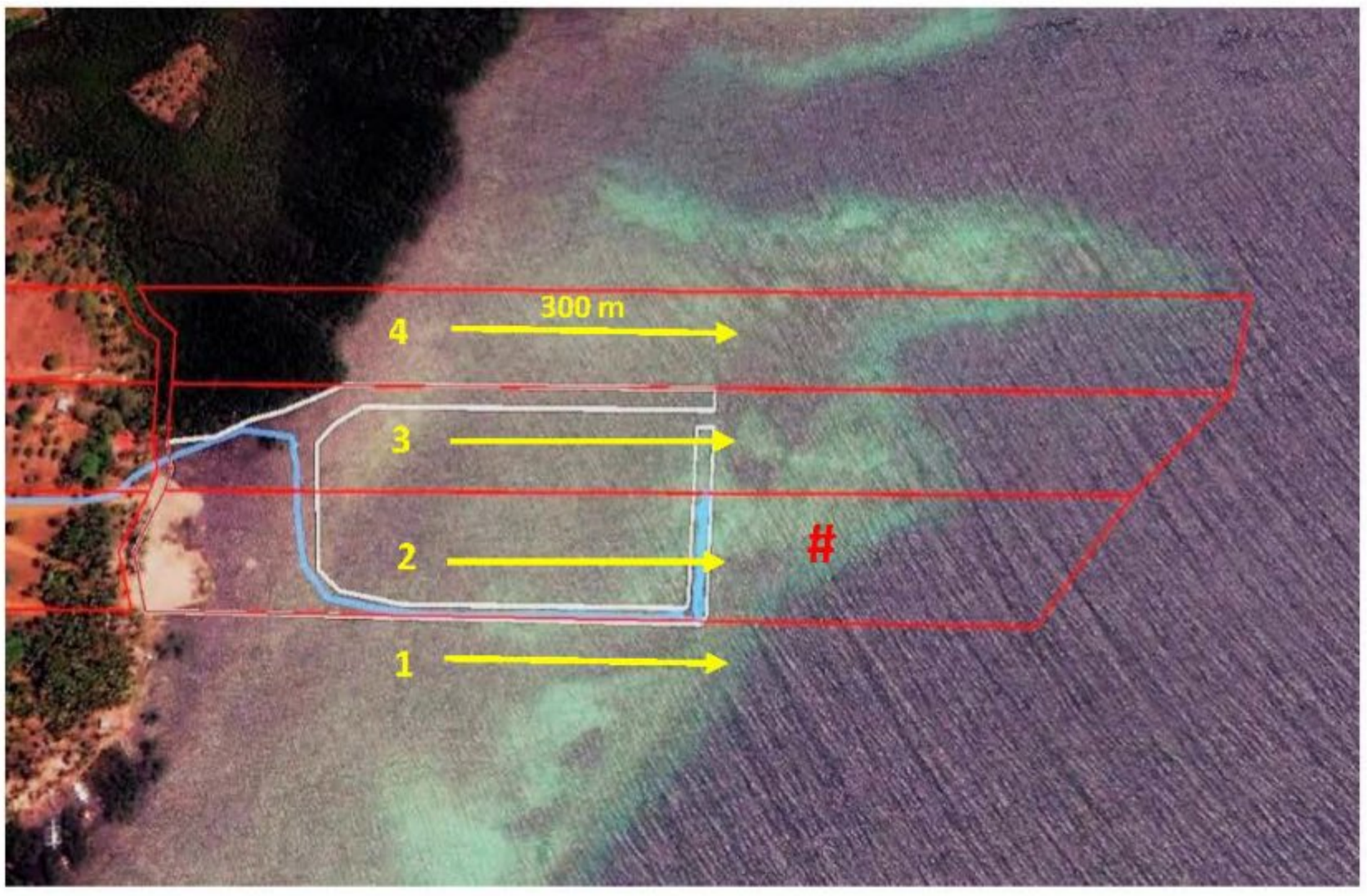


Figure 1. Map of part of Luzviminda foreshore line in Puerto Princesa Bay, showing development site and survey stations (1,2,3,4 = seagrass and mangrove stations; # = coral station) .

Fishes were also categorized as target, major families, and indicators. Target species were those commonly targeted (commercially-important) by fishermen, which included groupers (Serranidae; lapu-lapu), snappers (Lutjanidae; maya-maya), surgeonfishes (Acanthuridae; labahita), rabbtfishes (Siganidae; danggit), parrotfishes (Scaridae; mul-mol), and wrasses (Labridae; mul-mol). Major families were those with less commercial importance,

other than the target species. On the other hand, indicator species were those highly territorial species that their presence/absence may indicate the reef condition in the area, including butterflyfishes (Chaetodontidae; alibangbang) and damselfishes (Pomacentridae; palata).

3.3. Mangrove Community Assessment

Four sampling stations were established across the development site: three stations inside, while one station located outside the development site (Fig. 1). Plots of 10 m x 10 m were established in each station. Counting of seedlings and saplings were done in each plot. Relative frequency, relative density, and diversity were computed following the methods of English et al. (1994).

3.4. Seagrasses

An ocular inspection was conducted around the area before actual sampling was conducted. Four seagrass sampling stations were identified. Sampling employed the line transect/quadrant method (English et al. 1994), using a 300m transect in each station. All seagrass species found within the quadrant were identified in the field. The frequency and cover of all seagrasses were estimated using the method described by Saito and Atobe (1970). Densities of seagrass species were obtained by actual counting of the number of individuals per species inside the quadrat.

IV. RESULTS AND DISCUSSION

4.1 Coral Cover

Table 1. Average percent live coral cover in shoreline of Tawiran, Luzviminda development site, February 2017

Category	Mean % cover	Standard Error
HC	3%	1%
SC	0%	0%
RKC	28%	9%
NIA	23%	6%
SP	0%	0%
RC	4%	1%
RB	11%	3%
SD	31%	9%
SI	0%	0%
OT	0%	0%

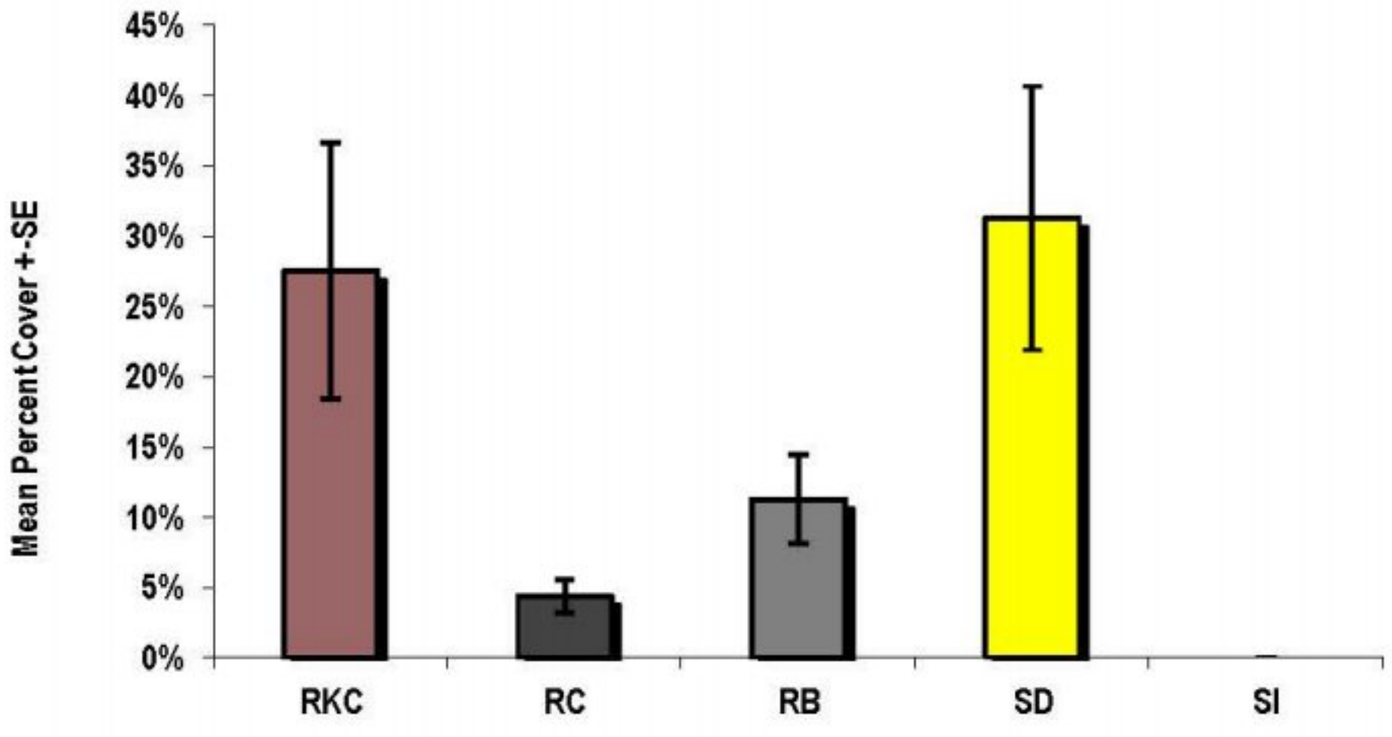


Fig. 2 Mean percent non-living cover for Tawiran, Luzviminda Reef, Puerto Princesa Bay, February 2017.

Table 2. Substrate categories used in the assessment of live coral reef cover

HC	hard coral	**SC**	soft coral	**RKC**	recently killed coral
NIA	nutrient indicator algae	**SP**	sponge	**RC**	rock
RB	rubble	**SD**	sand	**SI**	silt/clay
OT	other				

4.2 Reef fish communities

Only Foreshore 2 have coral reef and assessed for reef fish communities. Foreshores 2 and 3 are mostly seagrass area and very few visiting fish were observed.

There were 27 fish species belonging to seven families encountered during the survey. Of these species, 12 were indicator species, nine major species and six target species (Table 3). The number of fish per 500m^2 can be classified as moderately diverse (Hilomen et al 2000)

Table 3. Summary of the species composition and category of reef fishes encountered in Tawiran, Luzviminda shoreline, Puerto Princesa City, Palawan.

Station	# of Family	# of Species	Target Species	Major Species	Indicator Species
Foreshore 2	7	27	6	9	12

The fish density (ind. 1000 m^{-2}) in reef near developing Luzviminda Pier was 66 , which was very poor (Hilomen et al 1998). On the other hand, the estimated biomass was to be 16.35 kg. ha^{-1}, which can be classified as very low (Hilomen et al 1998) (Table 4).

Table 4. Fish density and biomass of reef fishes encountered in near developing Luzviminda Pier.

Station	# of indv. 1000 m^{-2}	Category (Hilomen et al. 1998)	Biomass (kg. ha^{-1})	Category (Hilomen et al. 1998)
Foreshore 2	66	Very poor	16.35	Very low

In terms of biomass per fish category, the indicator fishes (i.e. damselfishes, butterfly fishes) had recorded a biomass of 9.86 kg. ha-^{1}, followed by target fishes (4.19 kg. ha^{-1}) and major fishes (2.31 kg. ha^{-1}) (Table 5).

Table 5. Biomasses of target, major, and indicator fish groups in Tawiran, Luzviminda, Puerto Princesa Bay, Palawan.

Station	Target Biomass (kg. ha^{-1})	Major Biomass (kg. ha^{-1})	Indicator Biomass (kg. ha^{-1})	Total Biomass (kg. ha^{-1})
Foreshore 2	4.19	2.31	9.86	16.35

Table 6. Family and species of reef fishes encountered during the survey in coast of Tawiran, Luzviminda, Puerto Princesa Bay

FAMILY	SPECIES
Apogonidae	*Apogon* sp.
	Choerodon anchorago
	Diproctacanthus xanthurus
	Epibulus insidiator
	Halichoeres hortulanus
	Halichoeres sp.
	Hemigymnus melapterus
	Labroides dimidiatus
	Thallasoma lunare
Mullidae	*Parupeneus barberinoides*
	Parupeneus barberinus
Nemipteridae	*Pentapodus caninus*
	Scolopsis margaritifer
Pomacentridae	*Abudefduf sexfasciatus*
	Amblyglyphidodon curacao
	Chromis viridis
	Dascyllus aruanus
	Dascyllus melanurus
	Dischistodus melanotus
	Dischistodus perspicilliatus
	Dischistodus prosopotaenia
	Dischistodus pseudochrysopoecillus
	Plectroglyphidodon lacrymatus
	Pomacentrus lepidogenys
	Pomacentrus mollucensis
Scaridae	*Chlorurus sordidus*
Siganidae	*Siganus guttatus*

4.3. Mangrove Communities

Fig. 3 Mangrove forest at the development site (foreshore 3) in the shoreline of Tawiran, Luzviminda, Puerto Princesa City, February 2017.

Table 7. Mangrove species and density at foreshores 3 and 4							
Foreshore 3 Species	**A**	**B**	**C**	**D**	**Mean**	**Area**	**Trees/ha.**
Xylocarpos sp.	3	4	2	2	2.75	100	275
Rizophora sp.	8	18	1	0	6.75	100	675
Foreshore 4 Species	**A**	**B**	**C**	**D**			
Xylocarpos sp.	2	0	0	0	0.5	100	50
Rizophora sp.	0	6	9	12	6.75	100	675

Two species were identified to thrive in the shoreline of Tawiran, Luzviminda, Puerto Princesa Bay. They were *Xylocarpos sp.* and *Rizophora sp.* Foreshore 3 has more number of trees per unit area than in Foreshore 2 (Table 7). Rizophora sp. was the dominant genus in both Foreshores 1 and 2.

4.4. Seagrass Communities

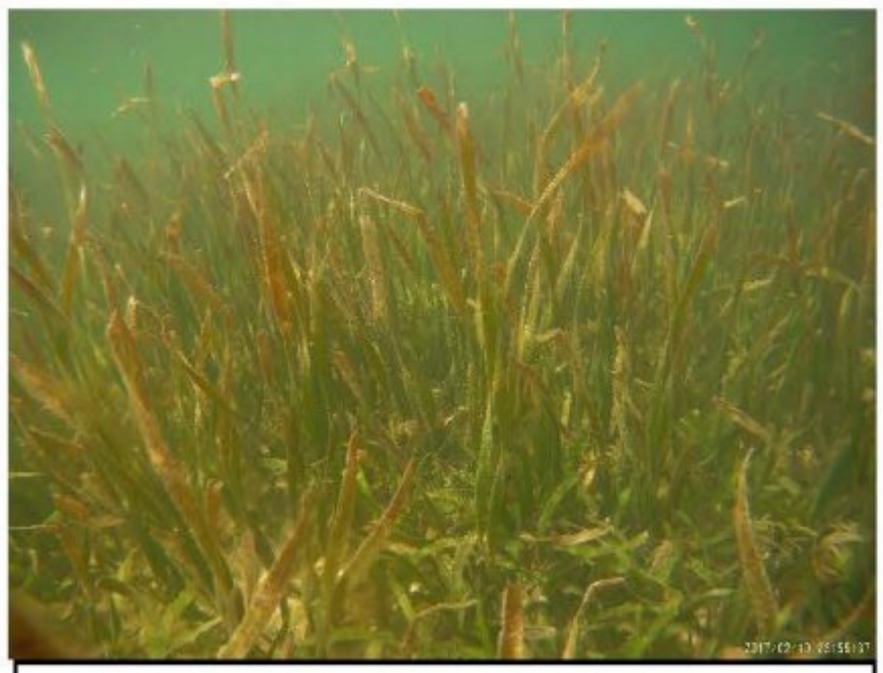


Fig. 4. Seagrass bed found in Foreshore 3, inside the development area.

Fig. 8. Seagrass density (no. of seagrass/m^2) per station with respective qualitative categories

	Density/m^2			
	Foreshore			
Species	1	2	3	4
Enhalus acoroides	66.364	39.600	58.909	40.000
Halophila ovalis	2.182			15.636
Halodule pinifolia	35.455	19.200	137.818	
Halodule uninervis	11.273			
Thalassia hemprichii	300.364	406.800	465.091	169.818
Category	Good	Excellent	Excellent	Fair
Average category	Good			

In terms of density, the stations in the development area (foreshores 2 and 3) have the highest density (excellent) (Table 7). While the outer (one and four) foreshore stations were categorized as good and fair, respectively. The category across the assessment area was generally “good”.

This implies that the adjacent outer portions of the development area has poorer condition, hence, it is imperative to conserve and enhance these seagrass areas.

V. Conclusion

Table 9. Status and actions to be made regarding the coastal resources in Tawiran, Luzviminda, Puerto Princesa City Ordinance, February 2017.

Resource	Status	Action/Remarks
Coral	Very poor	Should be rehabilitated
Mangrove	good	Should be protected and conserved
Seagrass	Fair to excellent	Should be protected and enhanced
Fishes	Very poor	Should be protected and enhanced

VI. RECOMMENDATIONS FOR SUSTAINABLE USE OF COASTAL RESOURCES

1. The proponent shall partner with an agency to identify areas to conduct activities in order to enhance the resources such as seagrass planting, mangrove planting and coral reef transplanting as part of its corporate social responsibility. In addition, proponent shall plant seagrasses of at least the same area affected by the development.
2. The proponent must use anchor buoys to avoid further coral, seagrass damage and other life forms associated with it. The buoys shall also serve as markers to specific area where sea vessels are allowed to anchor.
3. Changing, spilling, and discharging of oil and fuel by vessels shall be prohibited. Fuel and oil floating in water surface is detrimental to adult individuals, eggs and larvae of marine organisms.
4. Boats shall not spill any form of pollutants and contaminants in the waters of the development site.
5. Proponent shall maintain the good condition of the mangrove and other beach flora and fauna.

6. The conditions of the resources in the development area shall have permanent monitoring mechanism to check on the progressive conditions, changes, and trends of resources for proper conservation and management for sustainable use.
7. The proponent must provide more passage of water between inside and outside of the development area in order to effect natural flow of water to the area inside the development site.

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Attachment 7-B

Attendance Sheets

ATTENDANCE SHEET
IEC/PERCEPTION SURVEY/SCOPING ACTIVITY
WRDC PORT PROJECT [LUZVIMINDA & MANGINGISDA AREA]
SEPTEMBER 30, 2020; 9:00AM – LUZVIMINDA COVERED GYM

	Name	Address/Agency	Signature
1.	Laddy R. Germans	P/B Luzviminda	
2.	EDUARDO G. ELIBED	L.G.U. LUZVIMINDA	
3.	Lionel V. DURAN	LGU. LUZVIMINDA	
4.	RICARDO R ROSALES	" "	
5.	DOMINADOR A HERMOSO	LUPON	
6.	Eugenio Manul	Prok President	
7.	Antonio Taling	Chief Tanod	A. Taling
8.	JONATHAN EGAÑA	L.G.U LUZVIMINDA	
9.	NELSON BASTIDA	PUROK PRESS	
10.	Arnulfo I. Abid	LUPON	
11.	Nestor B. Racanto Sr.	Prk. President	
12.	Gregorio Arroz	V-President	
13.	Floro G. Sabanal	President	
14.	JULITO L. DELOVINO	PRESIDENT	
15.	Elvira B. Cabuog	Secretary/Prk. Official	
16.	Elenie B. Besingga	Prk. Official	
17.	Rosalie B. Casayog	Prk. Official	R Casayog
18.	Rose melinda Balingit	Prk. Official	
19.	Zosima M Patiguda	Prk. Official	
20.	RAMON A. ARDIENTE	PRK PRESIDENT	
21.	NOEMI J. GONZALES	Prk. Official	
22.	WILLIE P. PARKS	" - "	
23.	MARY ANN PASCUAL	" PRESIDENT	
24.	Hayde S. Jimenez	P. President	
25.	Manilus Pacilan	Prk. treasurer	
26.	GLORIA M. SAYLOM	PRK. Kapalaran	
27.	ROSARIO R. CALINGA	PRK. KALINISAN	
28.	Teodora O Cascaño	PRK. KATIWASAYAN	
29.	ANNALEE C. Lumanta	Prk. Kasipagan	
30.	Merla L. Reño	Prk. Kaunlaran	

ATTENDANCE SHEET

IEC/PERCEPTION SURVEY/SCOPING ACTIVITY

WRDC PORT PROJECT [LUZVIMINDA & MANGINGISDA AREA]

SEPTEMBER 30, 2020; 9:00AM – LUZVIMINDA COVERED GYM

31.	Emilie T. Mahilum	21G2AG-I	
32.	CRISTINA MARIE	KALINISAN	
33.	Winema T Lampago	Kaunlaran	
34.	Marilo N. Kung	Kalinisan	
35.	Cherry P. Manuel	Katiwasayan	
36.	Annabelle B. Factor	Kalinisan	
37.	Deborah G. Arna	Rubber	
38.	Rosarilyn S Alonzo	Kalinisan	
39.	Mary Grace S. Larioza	Kapalaran	
40.	Melanie T. Pasner	Kalinisan	
41.	Lilia C. Blanco	Kapalaran	
42.	Teresita N. Ibarra	Kaunlaran	
43.	Reynaldo F. San Pedro	Kagawad LGU	
44.	Gerezen R. Dingcel	LGU Luzvi	
45.	Arlene Martinez	P. President	
46.	CLARENCE I. ARCIENTE	BRGY. SECRETARY (LUZVIMINDA)	
47.	ARSHON M. UMPAD	MANGINGISDA L.G.U	
48.	MICHAEL M. UMPAD		
49.	CRESENCIO M. GAPUZ JR	BGY. MANGINGISDA KGD.	
50.	ELIZA O. PEKITPEKIT	BGY. MANGINGISDA	
51.	Alma P. Umboc	Brgy Kagawad-Manginggisda	
52.	ROSELYN JOY MATHUSAY	Manginggisda SK	
53.	MARIA FE V. PROSPERO	BHT	
54.	Maritez R. Jarme	Bgy. Kgd. - Manginggisda	
55.	Ma. Rossela P. Escandallo	Bgy. Admin	
56.	Romnick T. Pasner	SK Kagawad	
57.	Anita K. Gemang	Comm. Representative	
58.	Rebecca D. Rosales	Comm. Representative	
59.	Digna S. Sombero	Bgy Utility	
60.	Anabel D. Saludar	Bgy. Staff	
61.	ERWIN M. PATIGDAS	BRGY. TANOD	
62.	Antonio Tolong	CHIEF Tanod	
63.	CRESENCIO S. REYES	LUPON	
64.	Ramon T. Agar	Rufino Lupon	

ATTENDANCE SHEET

IEC/PERCEPTION SURVEY/SCOPING ACTIVITY

WRDC PORT PROJECT [LUZVIMINDA & MANGINGISDA AREA]

SEPTEMBER 30, 2020; 9:00AM – LUZVIMINDA COVERED GYM

65.	NOLI O. ESPINA	TANOD	
66.	Joey Rapsing	TANOD	
67.	NORMAN C. BONITA	TANOD	
68.	OSCAR S FERNANDEZ	TANOD	
69.	Rex C. CUYAS	TANOD	
70.	Shirryl F Ardiente	TUPAD	Sfardiente
71.	Juanita S. Sabar	TUPAD	Sabar
72.	HELEN D. Sismoan	TUPAD	H. Sismoan
73.	Monina D. Toledo	11	MDToledo
74.	PAUL M. GERIACO	TUPAD	
75.	AGNES B. Manga	TUPAD	
76.	Rolando T. Amurao	EA IV	
77.	Christopher Ian Razonable	TANOD	
78.	Jewisky D CASTANEDO	TANOD	
79.	Dinah P. Dayrit	Brk. President	
80.	Ella Crisostomo	Brk. President	
81.	Felicidad S. Gemang	Brk President	FSGemang
82.	Rhea Santonimia	WRDC	
83.	Carla Jane Casabuena	11	
84.	Vicente Marina	11	
85.	EDNA J. VELASCO	DENR-ENRB. Palawan	
86.	Florida D. Gaba	PSU	
87.	Omar Alfonso	PPC	
88.	Beverly Villanueva	216-2A6 11	
89.	Analyn Carlobos	11	ASC
90.			
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Attachment 7-C

Proposed Monitoring Plan and Livelihood Projects, Purok Tawiran

Proposed Monitoring Plan for Marine Ecology of Purok Tawiran, Luzviminda, Puerto Princesa Bay, Palawan

Aspect to Monitor	Frequency	Responsible	Remarks	Estimated Cost/Budget
Marine habitat a. Seagrass Bed b. Mangrove Forest c. Coral Reef d. Phytoplankton Community	Semi-annual	Project Proponent LGU- City and Barangay Levels CENRO/DENR Palawan State University Stakeholders/Barangay Residents	5-years monitoring activities@ P150,000/year	**P750,000.00**
Water Quality a. Temperature b. Salinity c. pH d. Transparency e. Dissolved Oxygen f. Total Suspended Solids	Quarterly	Project Proponent LGU- City and Barangay Levels CENRO/DENR Palawan State University	5-years monitoring activities@ P100,000/year	**P500,000.00**
			Total Cost (5-years)	**P1,200,000.00**

Note: Monitoring cost may change depending on budget allotment for these activities as indicated in the project proposal and/or from result of resource economic valuation study.

Proposed Social/Community Development Projects for Residents of Purok Tawiran, Luzviminda, Puerto Princesa Bay, Palawan

Activities	Timeframe	Responsible	Remarks	Cost/Budget
Marine/Resource Assessment and Protection Awareness	Year 1	Project Proponent LGU- City and Barangay Levels CENRO/DENR PCSDS Palawan State University Stakeholders/Barangay Residents	Training and IEC	**P200,000.00**
Livelihood Projects (e.g. Siganids and Sea cucumber grow-out culture at seagrass bed in Purok Tawiran	Year 2	Project Proponent LGU- City and Barangay Levels Palawan State University Stakeholders/Barangay Residents	At least three (3) aquaculture units in seagrass bed of Purok Tawiran	**P300,000.00**
Mud crab rearing in mangrove forest of Purok Tawiran	Year 2		At least three (3) aquasilviculture units in mangrove forest of Purok Tawiran	**P300,000.00**
Monitoring of success indicators	Year 3-Year 5	Stakeholders/Barangay Residents	For three (3) years	**P150,000.00**
			Total Cost	**P950,000.00**

Note: Monitoring cost may change depending on budget allotment for these activities as indicated in the project proposal and/or from result of resource economic valuation study.

Proposed Restoration Options for Marine Resources/Habitats at Purok Tawiran, Luzviminda, Puerto Princesa Bay, Palawan

Marine Resource	Activity	Timeframe	Cost/Budget
Seagrasses	Cover enhancement of seagrass bed at sampling stations 3 and 4 in Purok Tawiran, Luzviminda and its monitoring for at least 5 years	Year 1-Year 5	**P 500,000.00**
Mangroves	Mangrove tree planting in Puerto Princesa Bay or other sites endorsed/approved by the DENR and its monitoring for at least 5 years	Year 1-Year 5	**P 500,000.00**
Corals	Coral transfer from sampling station 1 to sampling station 2 and coral cover enhancement through establishment of artificial coral reef system and its monitoring for 5 years.	Year 1-Year 5	**P1,000,000.00**
		Total Cost	**P2,000,000.00**

The above-recommended restoration options are based on the following:

1. Large-scale seagrass restoration is very expensive, approximately P950,000 per hectare (for developing countries) and its success rate is relatively low Bayraktarov et al. (2016). So far, no large-scale seagrass restoration initiative had been conducted in Palawan that will serve as baseline for such activity in Purok Tawiran or at nearby places. Although seagrass transplantation protocols are available in the literature, the overall activity, starting from site selection of recipient and donor beds as well as the specific planting method to be employed will require technical expertise (Lanuru et al., 2018). Enhancement of seagrass cover at sampling stations 3 and 4 by transplanting seagrasses from sampling station 1 (will be affected/altered by the proposed project) is the most feasible restoration option. Transplant of seagrasses, *Syringodium isoetifolium* and *Halodule uninervis* from sampling station 1 to sampling stations 2 and 3 should be given priority to conserves seagrass species diversity in the area.

2. Mangrove tree planting in Puerto Princesa Bay or other sites endorsed/approved by the Department of Environment and Natural Resources (DENR) is recommended. Mangrove tree planting is less expensive and with notably high success rate. It is being done on small and large-scale bases in various coastal areas of Palawan. The method is simple and can be performed by the community as well as the monitoring aspect. This will only require training of stakeholders on available mangrove tree planting and monitoring technologies.

3. Coral transplantation is also expensive, P500,000-P12M per hectare (https://rappler.com/environment/coral- transplantation-philippines), with relatively low success rate, and will require long- term monitoring, 10 years or more (Bayraktarov et al., 2016). Further, the method is intricate and will require technical expertise from planting site to coral species selections. Coral transfer from sampling station 1 to sampling station 2 is recommended instead of a large-scale coral transplantation. Coral transfer from sampling station 1 (will be damaged/altered by the proposed project) to sampling station 2 is most likely feasible because coral species there are in solitary form, the Fungiidae, which has no steady or sturdy attachment in reef sediment. Coral cover at sampling station 2 can further be enhanced by establishing an artificial reef system. This will require only submerged platform for coral-planula settlement and recruitment. Result of this initiative will also contribute to coral reef restoration data in the country, which is currently limited and wanting.

Cited Literature:

Bayraktarov, E, MI Saunders, S Abdullah, M Mills, J Beher, HP Possingham, PJ. Mumby and CE Lovelock. 2016. The cost and feasibility of marine coastal restoration. Ecological Applications, 26 (4), pp. 1055–1074.

Lanuru, M, S Mashoreng and K Amri. 2018. Site-selection model to identify suitable sites for seagrass transplantation in the west coast of South Sulawesi. Journal of Physics: Conf. Series, 979.

https://rappler.com/environment/coral-transplantation-philippines