












LEGEND:

-  400mm X 400mm VERTICAL PILES (396 PCS)
-  500mm X 500mm VERTICAL PILES (6 PCS)
-  BATTER PILES 500mm X 500mm (136 PCS)
-  BEAMS
-  PILE CAP
-  PILE
-  CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER WITH UNDERWATER EPOXY)
-  CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER)



**SCHEMATIC PLAN FOR THE REPAIR OF RC PILES & BEAMS**  
SCALE 1:400

 <p>Republic of the Philippines <b>PHILIPPINE PORTS AUTHORITY</b> PMO-SOCSARGEN</p>	PROJECT TITLE	PREPARED BY:	CHECKED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT:	DATE: 1/20/2017
	RETROFITTING OF RC PILES, PILE CAPS AND BEAMS AT EASTERN WHARF  LOCATION MAKAR WHARF, PORT OF GENERAL SANTOS	JOECARLO T. SORIANO ENGINEERING ASSISTANT (L.O.)	RHEA MAE P. CABRERA SENIOR ENGINEER A	MARIA VIVIAN M. TANCO ACTING PRINCIPAL ENGINEER A	JAMESON L. LEE ESD MANAGER	ATTY. CESAR M. DATAYA ACTING PORT MANAGER	1. SCHEMATIC PLAN FOR THE REPAIR OF RC PILES & BEAMS	2/8

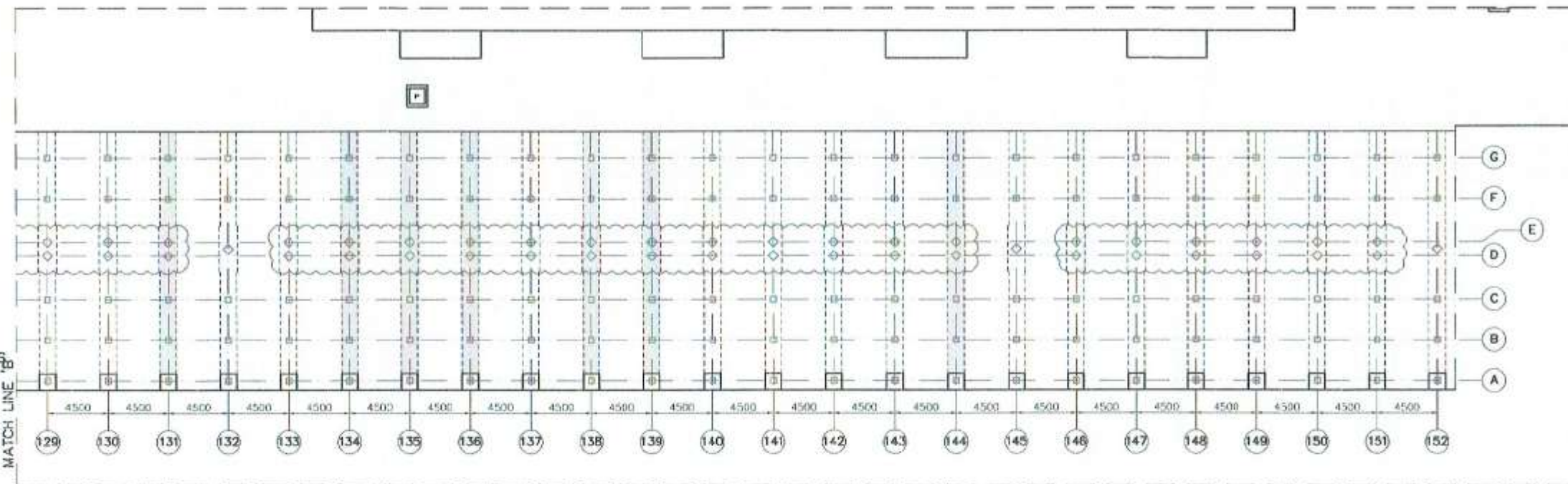


LEGEND:

- 400mm X 400mm VERTICAL PILES (396 PCS)
- 500mm X 500mm VERTICAL PILES (6 PCS)
- BATTER PILES 500mm X 500mm (136 PCS)

- BEAMS
- PILE CAP
- PILE

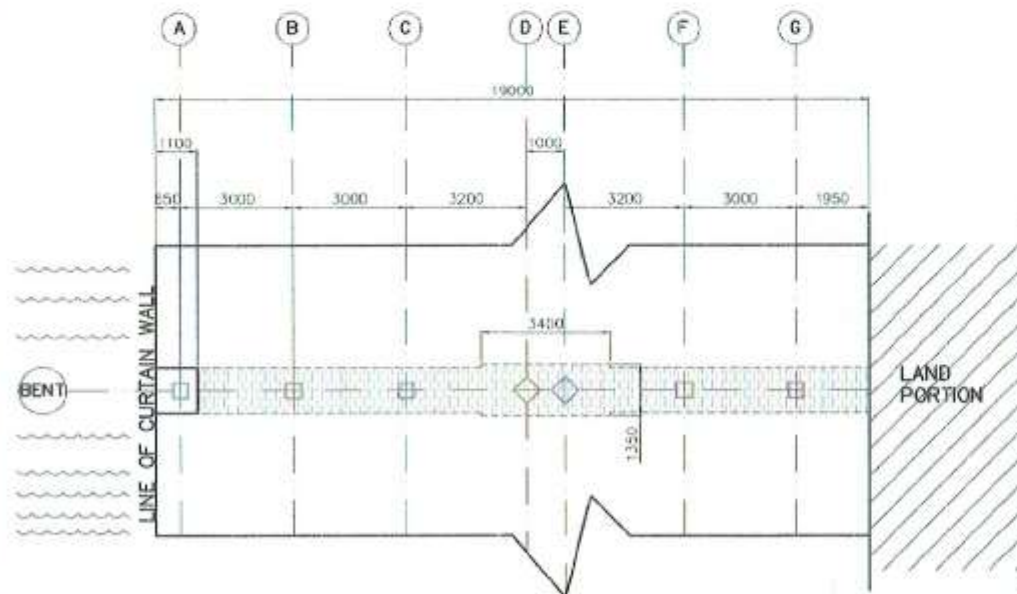
- CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER WITH UNDERWATER EPOXY)
- CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER)



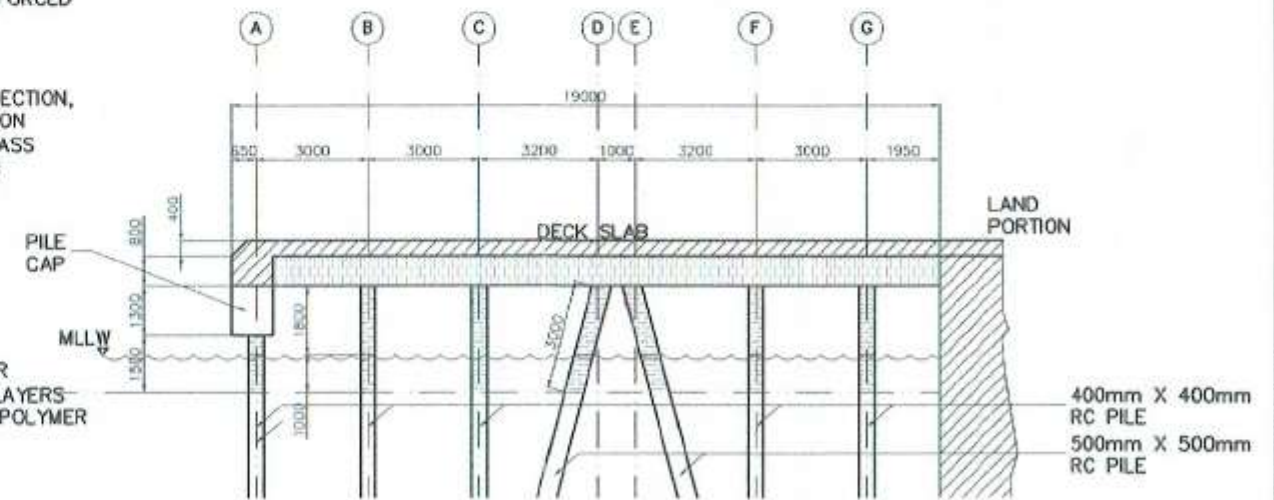
**SCHEMATIC PLAN FOR THE REPAIR OF RC PILES & BEAMS**  
SCALE 1:400

LEGEND:

- CRACKS, CORRODED REBAR & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER "U WRAP")
- CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER WITH UNDERWATER EPOXY)
- 1 METER BELOW MLLW WITH FIBER REINFORCEMENT APPLICATION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER W/ UNDER WATER EPOXY)



**REFLECTED BEAM PLAN (TYP. FRP APPLICATION)**  
SCALE 1:200



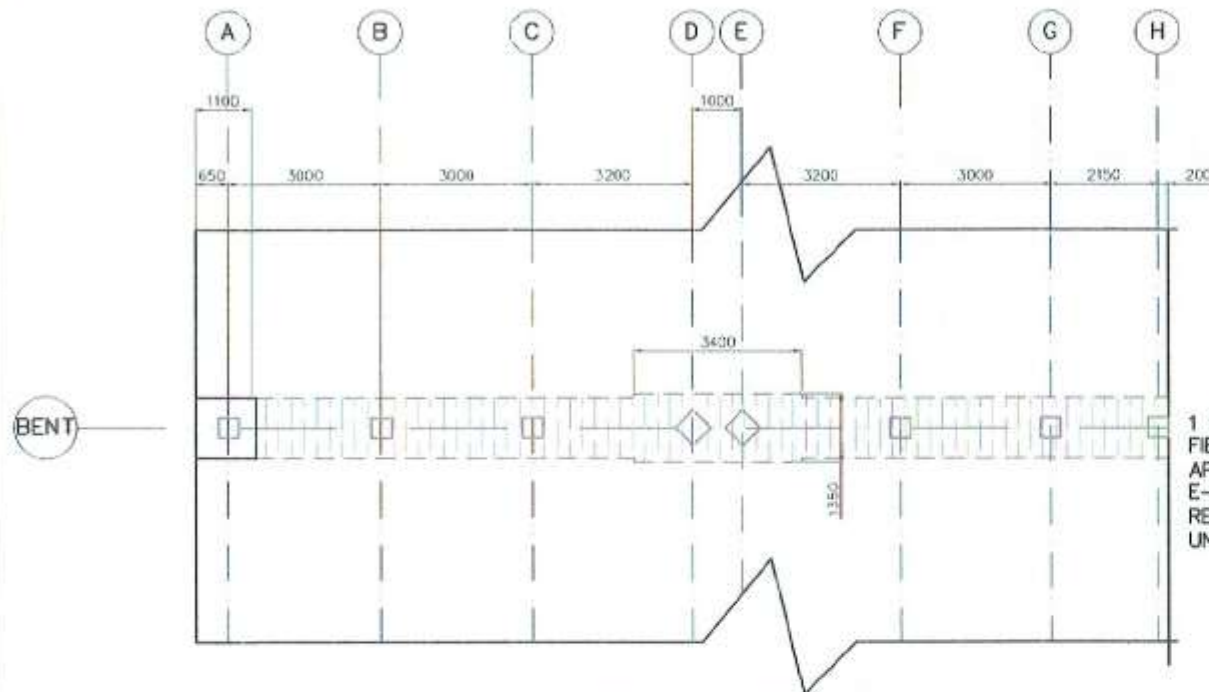
**CROSS SECTION (TYP. FRP APPLICATION)**  
SCALE 1:200



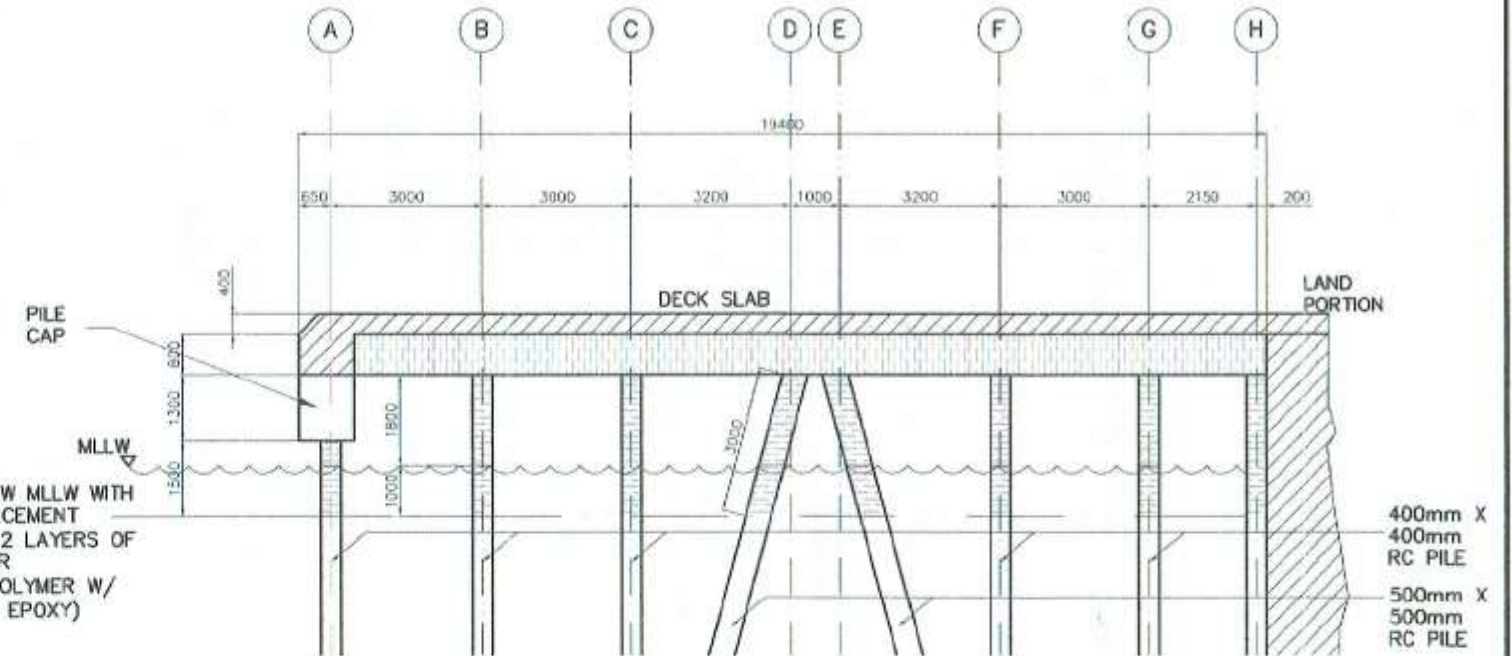
LEGEND:

CRACKS, CORRODED REBAR & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER "U WRAP")

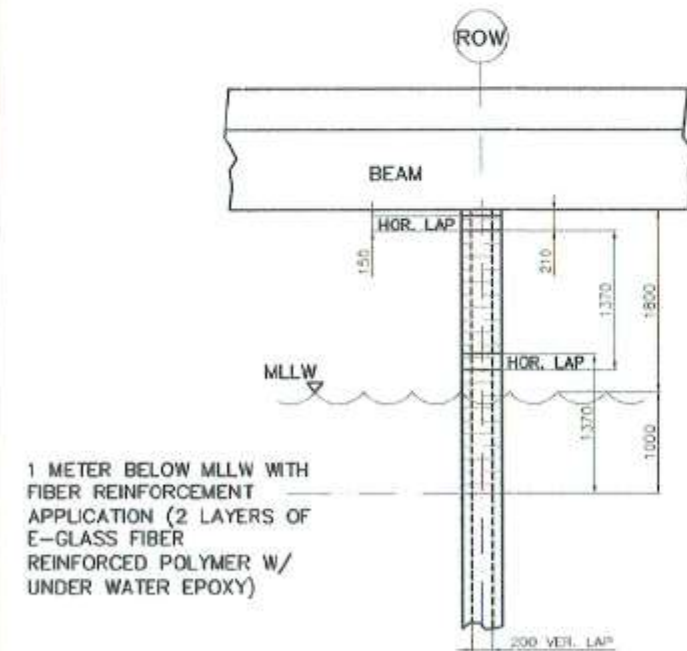
CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER WITH UNDERWATER EPOXY)



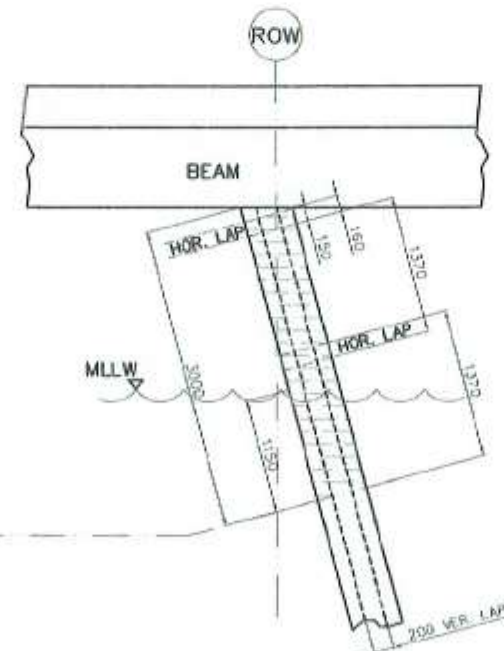
REFLECTED CEILING PLAN (TYP. FRP APPLICATION)  
SCALE 1:150



CROSS SECTION (TYP. FRP APPLICATION)  
SCALE 1:150



TYPICAL FRP APPLICATION DETAIL ON VERTICAL PILE  
SCALE 1:75



TYPICAL FRP APPLICATION DETAIL ON BATTER PILE  
SCALE 1:75

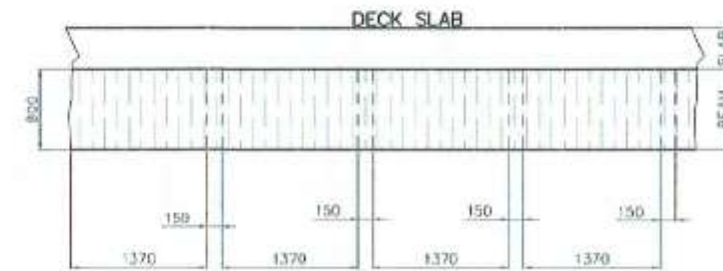
LEGEND:

BEAM FRP APPLICATION

RC PILE FRP APPLICATION

CRACKS, CORRODED REBAR & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER "U WRAP")

CRACKS, CORRODED REBAR, & SPALLED CONCRETE EPOXY INJECTION, MORTAR APPLICATION & CORROSION PROTECTION (2 LAYERS OF E-GLASS FIBER REINFORCED POLYMER WITH UNDERWATER EPOXY)

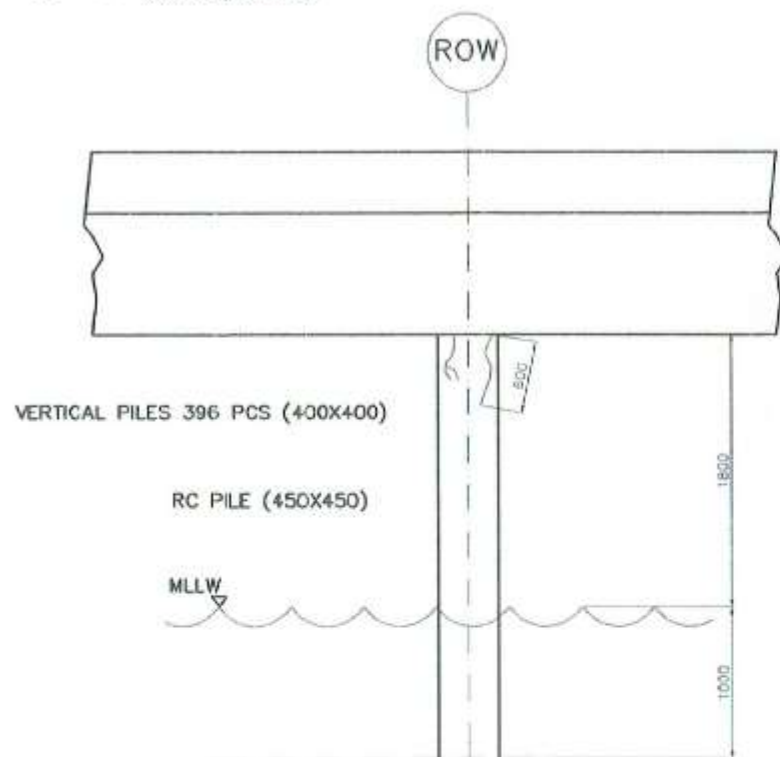


TYPICAL FRP APPLICATION DETAIL ON BEAM  
SCALE 1:75

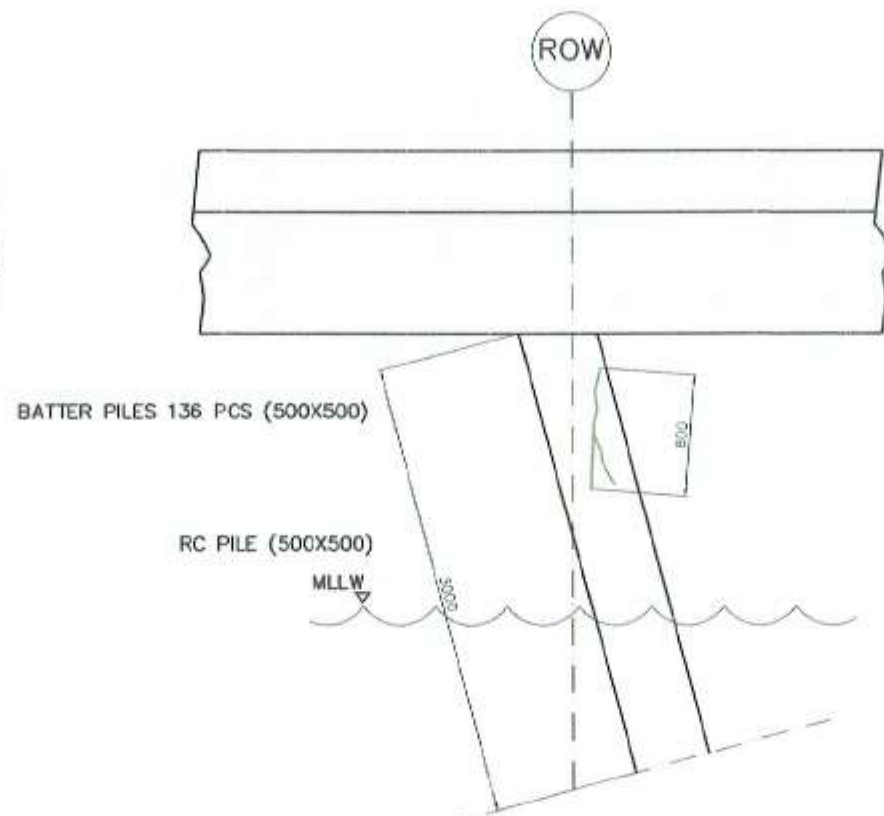
<p>Republic of the Philippines <b>PHILIPPINE PORTS AUTHORITY</b> PMO-SOCSARGEN</p>	<p>PROJECT TITLE RETROFITTING OF RC PILES, PILE CAPS AND BEAMS AT EASTERN WHARF</p> <p>LOCATION MAKAR WHARF, PORT OF GENERAL SANTOS</p>	<p>PREPARED BY: JOECARLOT SORIANO ENGINEERING ASSISTANT (J.O.)</p>	<p>CHECKED BY: RHEA MAE P. CABRERA SENIOR ENGINEER A</p>	<p>REVIEWED BY: MARIA VIVIEN M. TANCO ACTING PRINCIPAL ENGINEER A</p>	<p>RECOMMENDING APPROVAL: JAMESON L. LEE EEO MANAGER</p>	<p>APPROVED BY: ATTY. CESAR M. DATAYA ACTING PORT MANAGER</p>	<p>SHEET CONTENT: 1. REFLECTED CEILING PLAN (TYP. FRP APPLICATION) 2. CROSS SECTION (TYP. FRP APPLICATION) 3. TYP. FRP APPLICATION DETAIL ON BEAM, BATTER PILE AND VERTICAL PILE</p>	<p>DATE: 1/20/2017  4/8</p>
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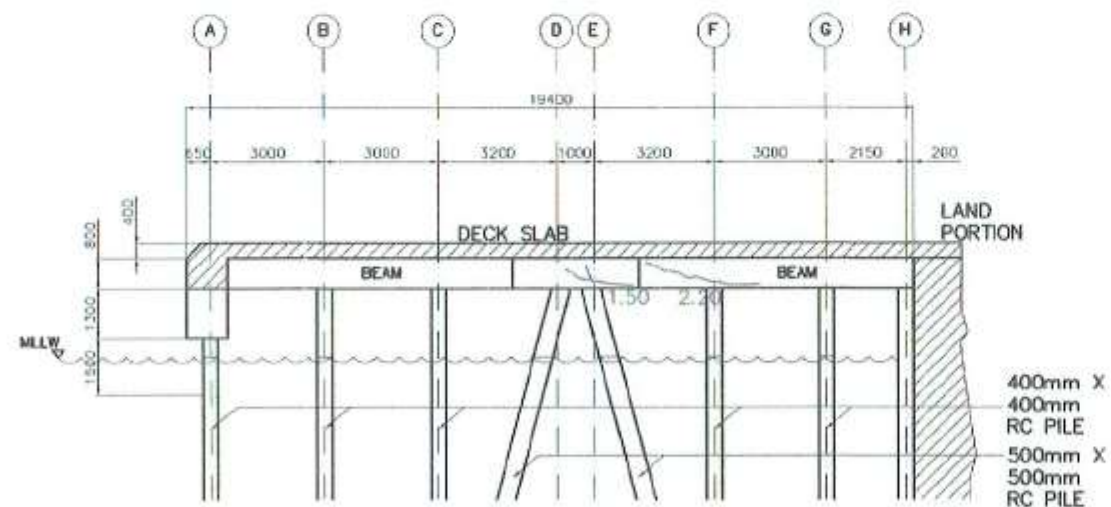
CRACKS/DAMAGE



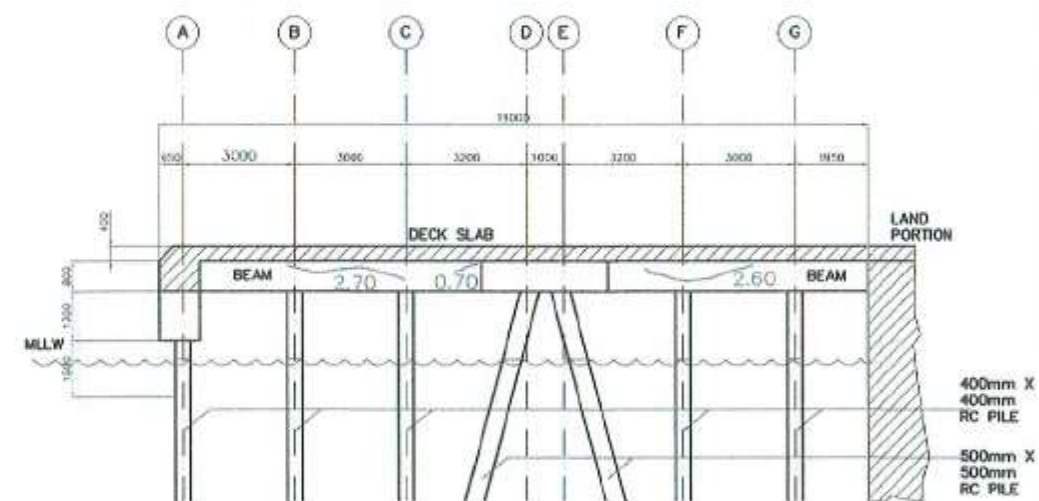
**TYPICAL CRACK DAMAGE ON VERTICAL PILES**  
SCALE 1:50



**TYPICAL CRACK DAMAGE ON BATTER PILES**  
SCALE 1:50



 **CRACK MAPPING OF BEAM (BENT 86)**  
SCALE 1:200



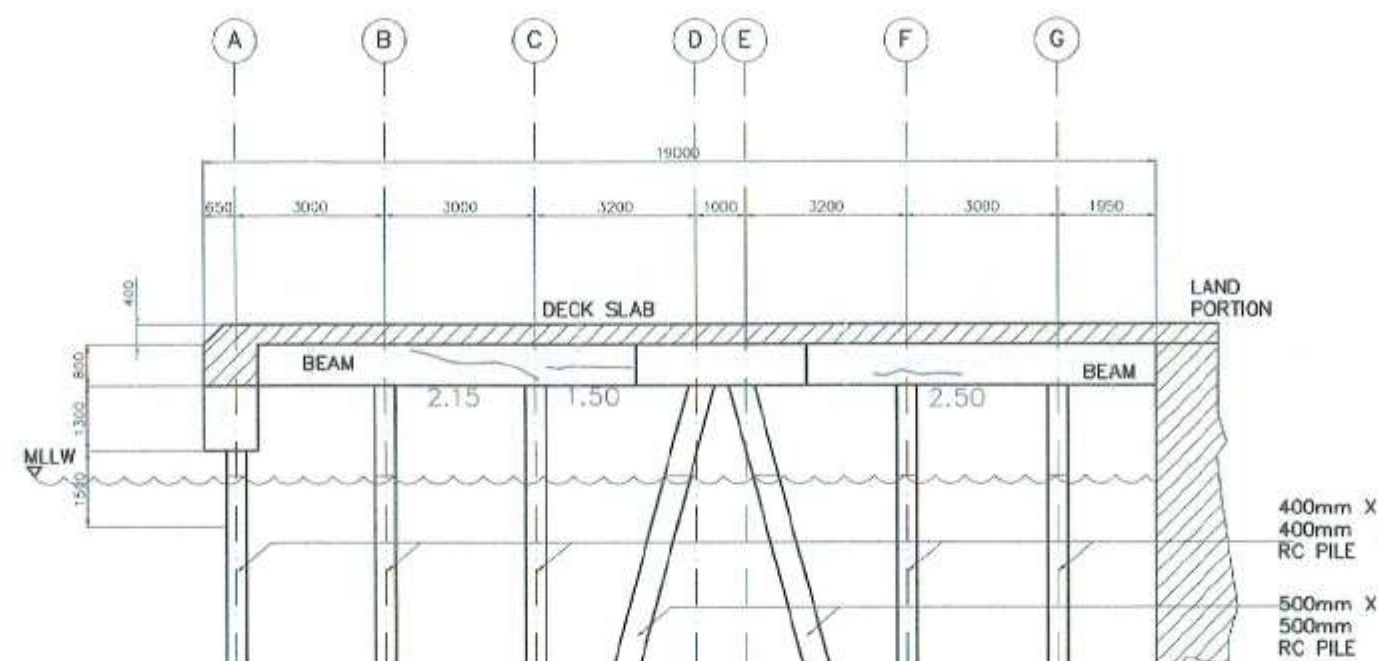
**CRACK MAPPING OF BEAM (BENT 110)**  
SCALE 1:200



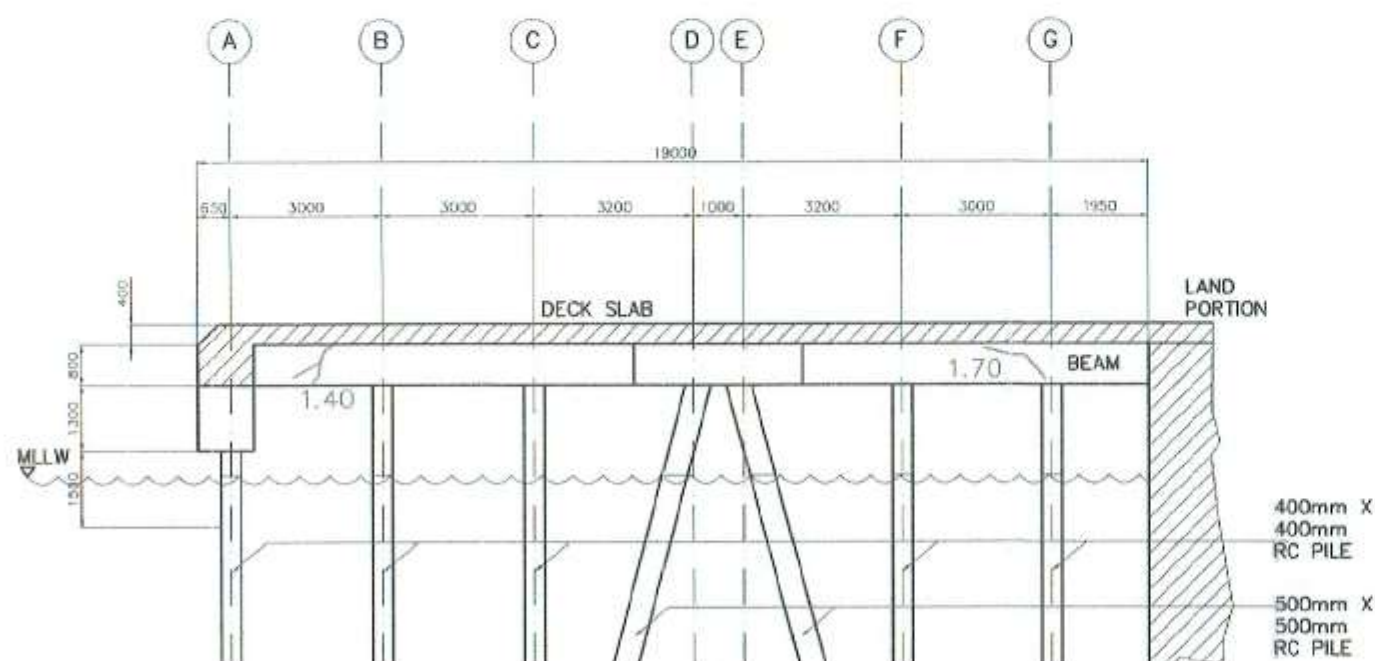


LEGEND:

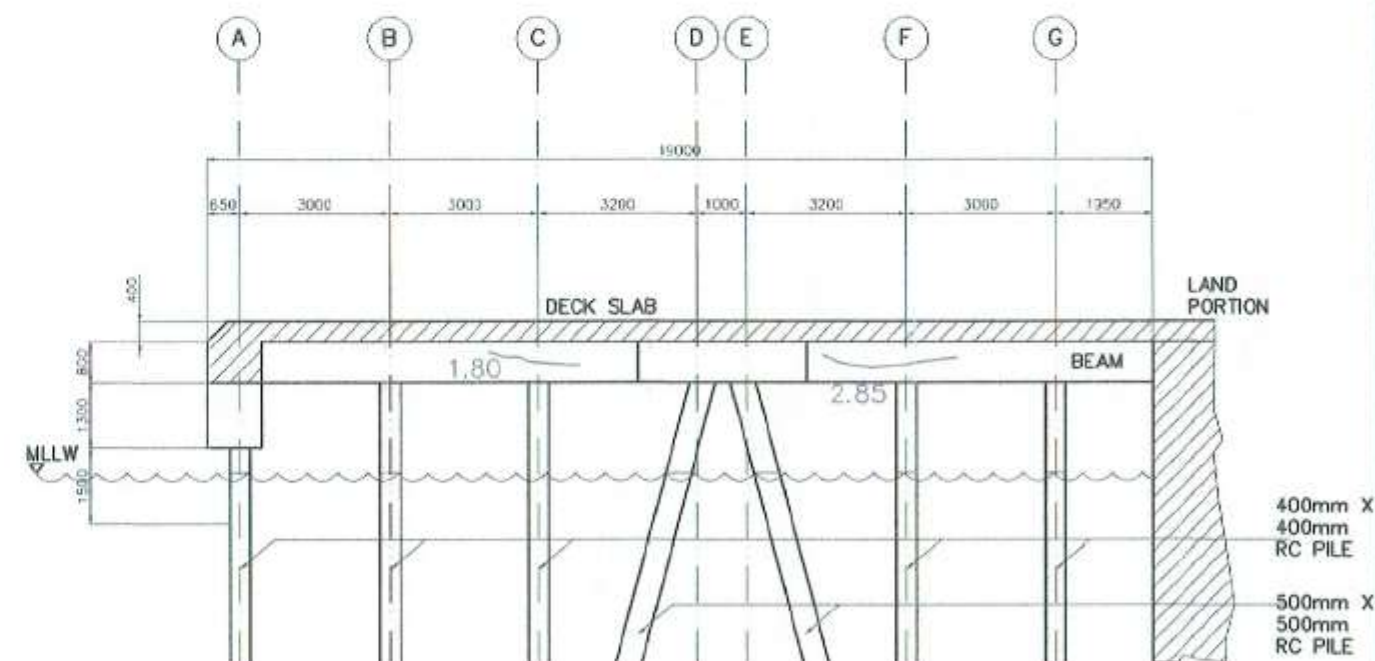
CRACKS/  
DAMAGE



CRACK MAPPING OF BEAM (BENT 138)  
SCALE 1:150



CRACK MAPPING OF BEAM (BENT 139)  
SCALE 1:150



CRACK MAPPING OF BEAM (BENT 144)  
SCALE 1:150

8 FEET



**Fund Source/s:** Corporate Funds

IMPLEMENTING AGENCY: PHILIPPINES PORTS AUTHORITY  
CONTRACTOR: XXXXXXXX  
BRIEF DESCRIPTION OF PROJECT: RETROFITTING OF RC PILES, PILE CAPS AND BEAMS AT EASTERN WHARF

PROJECT DETAILS:

PROJECT DATE			PROJECT STATUS				REMARKS
DURATION	STARTED	TARGET DATE OF COMPLETION	PERCENTAGE OF COMPLETION	AS OF (DATE)	COST INCURRED TO DATE	DATE COMPLETED	





FOR PARTICULARS OR COMPLAINTS ABOVE THIS PROJECT, PLEASE CONTACT THE REGIONAL OFFICE OR CLUSTER WHICH HAS AUDIT JURISDICTION ON THIS PROJECT:

COA REGIONAL OFFICE NO./CLUSTER: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CONTACT NO.: \_\_\_\_\_ OR TEXT COA CITIZEN'S DESK AT 0915-539-1975.

NOTE: TARPAULIN WHITE 8 FEET BY 8 FEET. RESOLUTION: 70 dpi. FONT: HELVETICA. FONT SIZE: MAIN INFORMATION - 3", SUB-INFORMATION - 1". FONT COLOR: BLACK. (BASE ON COA CIRCULAR NO. 2013-004 DATED JANUARY 30, 2013. "INFORMATION AND PUBLICITY ON PROGRAMS / PROJECTS / ACTIVITIES OF GOVERNMENT AGENCIES").

**COA STANDARD BILLBOARD DESIGN**

SCALE 1:15

 <p>Republic of the Philippines <b>PHILIPPINE PORTS AUTHORITY</b> PMO-SOCSARGEN</p>	PROJECT TITLE	PREPARED BY:	CHECKED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT:	DATE: 1/20/2017
	RETROFITTING OF RC PILES, PILE CAPS AND BEAMS AT EASTERN WHARF	 JOE CARLO T. SORIANO ENGINEERING ASSISTANT (I/O)	 RHEA MAE P. CABRERA SENIOR ENGINEER A	 MARIA VIVIEN M. TANCO ACTING PRINCIPAL ENGINEER A	 JAMESON L. LEE ESD MANAGER	 ATTY. CESAR M. DATAYA ACTING PORT MANAGER	1. COA STANDARD BILLBOARD DESIGN	8/8
	LOCATION						MAKAR WHARF, PORT OF GENERAL SANTOS	