REPUBLIC OF THE PHILIPPINES

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

NATIONAL CAPITAL REGION

NORTH MANILA DISTRICT ENGINEERING OFFICE

OFFICE OF THE DISTRICT ENGINEER

Nagtahan, Sta. Mesa, Manila

C.Y. 2025 PROJECT

DETAILED ENGINEERING DESIGN PLAN FOR

REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY

SECTION	:
LOCATION	: TONDO, MANILA CITY
STATION LIMIT	: STA. 0+946.60 TO STA. 0+899.00
NET LENGTH	: 47.60 L.M.
ROAD SECTION/ BRIDGE I.D.	:

SUBMITTED:

ARLENE S. MENDOZA
OIC - CHIEF, PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:

DENRYL CAESAR S. CORTUNA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

DENNIS E. SANDOVAL
DISTRICT ENGINEER

DATE:

BILL OF QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
PART A	FACILITIES FOR THE ENGINEERS	-	-
A.1.1.(3)	CONSTRUCTION OF FIELD OFFICE FOR THE ENGINEER	1.00	L.S.
PART B	OTHER GENERAL REQUIREMENTS	-	-
B.5(1)	PROJECT BILLBOARD/SIGN BOARD (DPWH BILLBOARD)	2.00	EACH
B.5(1)	PROJECT BILLBOARD/SIGN BOARD (COA BILLBOARD)	2.00	EACH
B.7(1)	OCCUPATIONAL SAFETY AND HEALTH	1.00	L.S.
B.9(1)	MOBILIZATION/DEMOBILIZATION	1.00	L.S.
PART C	EARTHWORK	-	-
801(1)	REMOVAL OF STRUCTURES AND OBSTRUCTION	1.00	L.S.
PART D	REINFORCED CONCRETE	-	-
900(1)h	STRUCTURAL CONCRETE (CLASS A, 14 DAYS)	30.20	CU.M.
902(1)a1	REINFORCING STEEL (DEFORMED) (GRADE 40)	853.00	KG.
902(1)a2	REINFORCING STEEL (DEFORMED) (GRADE 60)	1,586.00	KG.
PART L-B	BANK AND SLOPE PROTECTION WORKS	-	-
1716(17)a	CONCRETE PILES CAST IN DRILLED HOLES (DIA. 0.80m)	105.00	M.
1716(23)a1	PERMANENT CASING (DIA. 0.80. m, 10mm THK)	105.00	M.
1716(26)b	PILE INTEGRITY TESTING (LOW STRAIN)	4.00	EACH
1716(27)	HIGH STRAIN DYNAMIC TESTING (P.D.A.)	1.00	EACH
1717(4)a2	FURNISHED AND DRIVEN OF STEEL SHEET PILE	1,785.00	M.

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4	SITE DISPOSAL MAP		DETAIL OF PILE CAP
	SOURCE MAP	8	DPWH STANDARD PROJECT BILLBOARD
	CONTOUR MAP		ISOMETRIC VIEW
	LEGEND		ORIENTATION
	ROAD NETWORK		TYPICAL FRAME ELEVATION
	BENCHMARCK DESCRIPTION		FRONT ELEVATION (OPTION 1)
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	PROFILE	9	SAFETY ROADS AND DEVICES
	LEGEND		COA BILLBOARD
6	SECTION		

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PROJECT NAME AND LOCATION:
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY

SHEET CONTENTS:
- BILL OF QUANTITIES
- SHEET CONTENTS

DRAFTED:
MARK ANDREW M. MARTINO
ENGINEERING ASSISTANT

PREPARED:
DIANNER F. BARROZO
ENGINEER II

REVIEWED:
EUNICE JOY R. GAGAP
ENGINEER II
DATE:

SUBMITTED:
ARLENE S. MENDOZA
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ASSISTANT DISTRICT ENGINEER
DATE:

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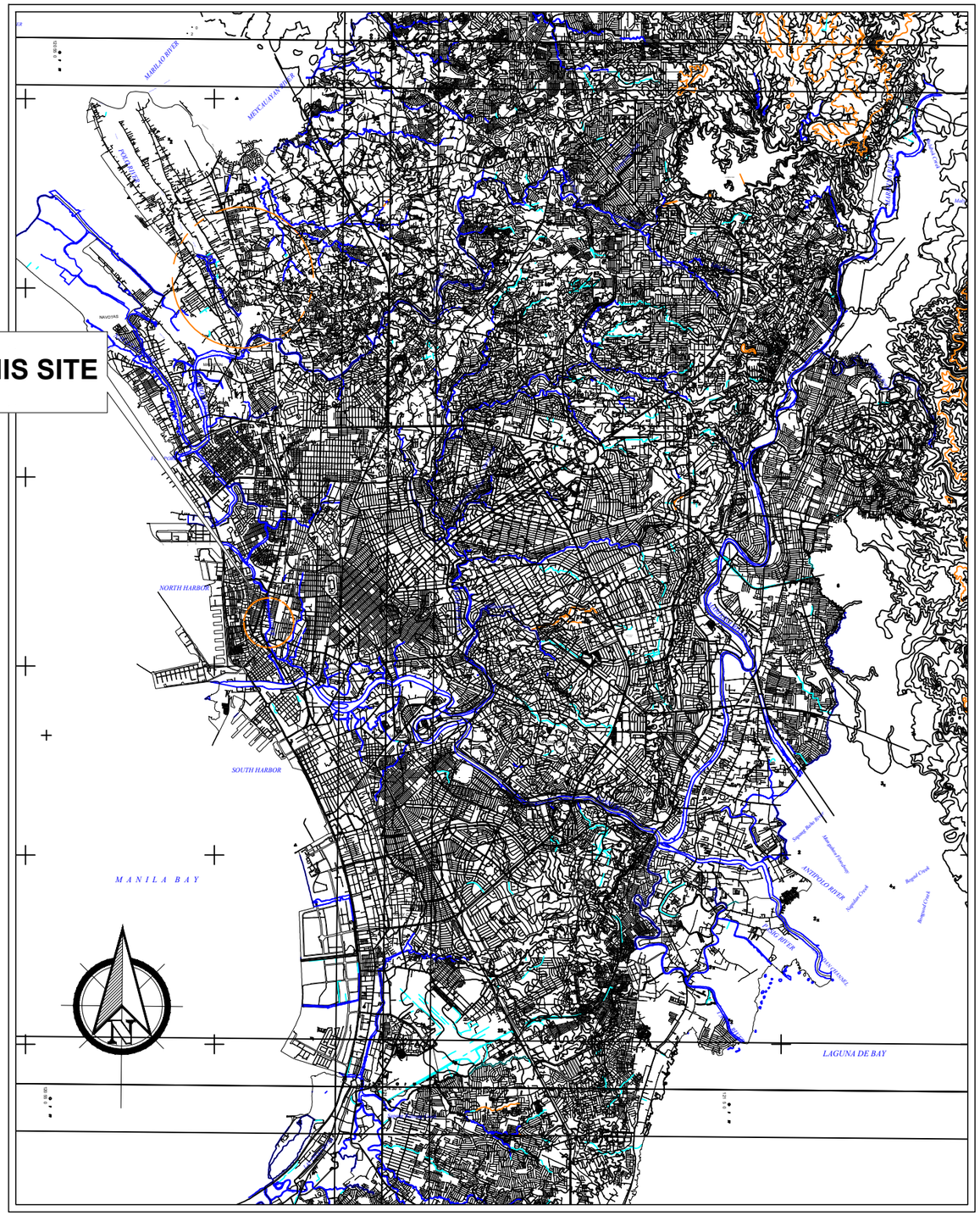
DENNIS E. SANDOVAL
DISTRICT ENGINEER
DATE:

SET NO.

SHEET NO.
02
9

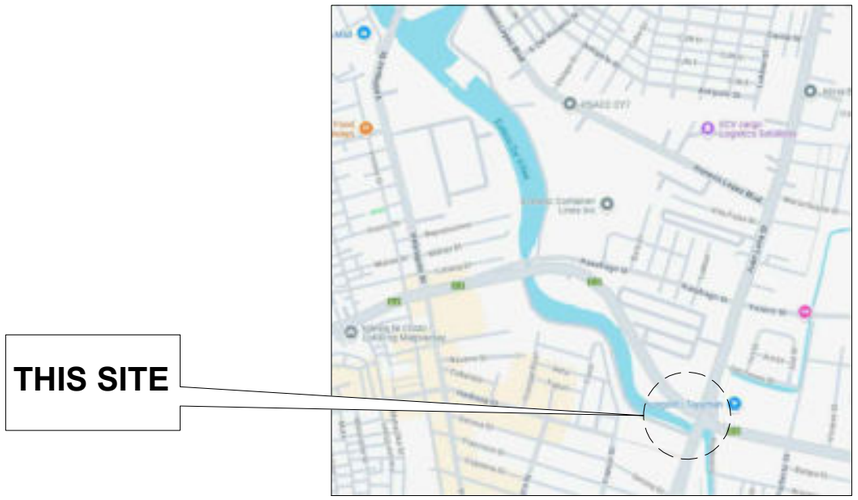
VANN M.



TOPOGRAPHIC MAP

1 / 3

NOT TO SCALE



VICINITY MAP

2 / 3

NOT TO SCALE

LOCATION MAP

3 / 3

NOT TO SCALE

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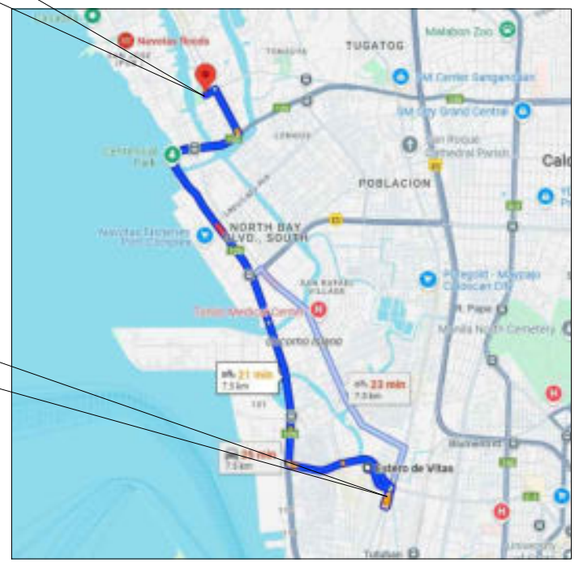
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY	- TOPOGRAPHIC MAP - LOCATION MAP - VICINITY MAP	**MARK ANDREW M. MARTINO** ENGINEERING ASSISTANT PREPARED: **DIANNER F. BARROZO** ENGINEER II	**EUNICE JOY R. GAGAP** ENGINEER II DATE:	**ARLENE S. MENDOZA** OIC - CHIEF, PLANNING AND DESIGN SECTION DATE:	**DENRYL CAESAR S. CORTUNA** ASSISTANT DISTRICT ENGINEER DATE:	**DENNIS E. SANDOVAL** DISTRICT ENGINEER DATE:		03 / 9

VANN M.

DUMP SITE

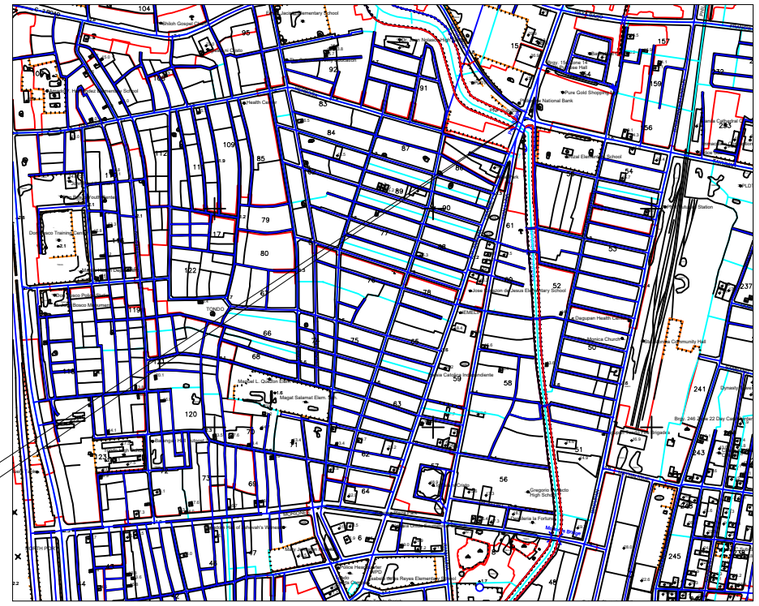
SITE



1/4 **SITE DISPOSAL MAP**

NOT TO SCALE

SITE

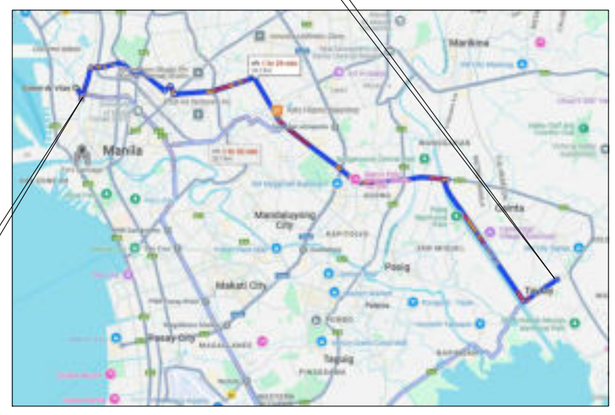


2/4 **CONTOUR MAP**

NOT TO SCALE

CROWNMIX CORP.

SITE



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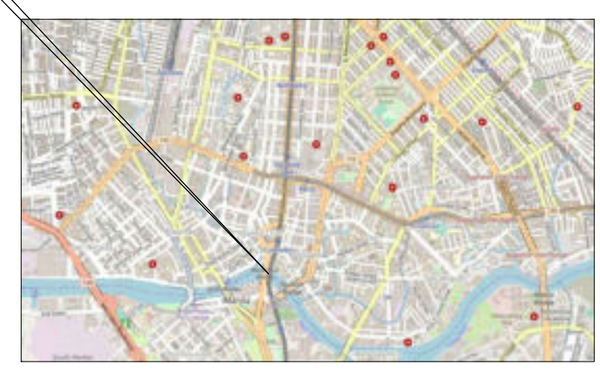

4/4 **ROAD NETWORK DIAGRAM**

NOT TO SCALE

LEGEND

Administrative Boundary		Buildings	
Provincial Boundary		Independent Building (More than 13m in Height)	
City and Municipal Boundary		Other Independent Building / Houses	
Approximate Barangay Boundary		Abandoned House	
Roads		**Landmarks**	
Highway		Monument	
Toll Gate		Water Tank	
More than 2.0m in Width		Storage Tank	
Road Under Construction		Radio Tower	Radio
Less than 2.0m in Width		Tower	
Footpath		Power Transmission Line	
Sidewalk		Power Plant Sub-Station	
Road Island		Lighthouse	
Bridge / Grade Separation (More than 2.0m in Width)		Airport / Airfield	
Bridge (Less than 2.0m in Width)		Aero Beacon	
Pedestrian Overpass		Gas Station	GS
Road Underpass		Helipad	Heli
Road Underpass (Culvert)		Water Supply Sewerage	MWSS
Route Marker (National / Provincial)		Pipeline	
Railways		**Control Points**	
Railway (Single Track / Double Track)		Horizontal Control Station	PMG-1
Railway Under Construction		Control Point	155.95
Bridge / Grade Separation		Bench Mark	4.241
Railway Underpass		Direct Leveling Point	37.2
Railway Underpass (Culvert)		Spot Height by Photogrammetry	69.0
Railway Station		**Land Use**	
Water Area		Military	Military
More than 2.0m in Width		Cemetery	Cem
Less than 2.0m in Width		Park	Park
Indefinite (More than 2.0m in Width)		Vegetation Boundary	
Indefinite (Less than 2.0m in Width)		Boundary of Cultivated Area	
Channel / Causeway (More than 2.0m in Width)		Broad Leaf Tree (Area)	
Channel / Causeway (Less than 2.0m in Width)		Broad Leaf Tree	
Lake / Pond / Shoreline		Grass Field	
Falls		Swamp / Marsh	
Weir		Coconut	
Dam		Paddy Field	
Slipway	Slipway	Upland Field	
Flood Gate		Orchard	
Flow Arrow		Mangrove	Mg
Pier / Jetty		Sand	S
Breakwater		**Contours**	
Fishpen	FP	Index Contour	15
Wreck		Intermediate Contour	
Salt Bed	Salt	Supplementary Contour	
Face of Slope		Depression	
Concrete Revetment			
Encircling Features			
Wall / Fence			

LEGEND

PRIMARY ROADS

SECONDARY ROADS

TERTIARY ROADS

BENCHMARK DESCRIPTION

ALL ELEVATION WERE REFERRED TO THE EXISTING REFERENCE @ VITAS PUMPING STATION

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PROJECT NAME AND LOCATION:
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY

SHEET CONTENTS:
- DISPOSAL MAP
- CONTOUR MAP
- SOURCE MAP
- ROAD NETWORK DIAGRAM
- LEGEND

DRAFTED:
MARK ANDREW M. MARTINO
ENGINEERING ASSISTANT

PREPARED:
DIANNER F. BARROZO
ENGINEER II

REVIEWED:
EUNICE JOY R. GAGAP
ENGINEER II
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ASSISTANT DISTRICT ENGINEER
DATE:

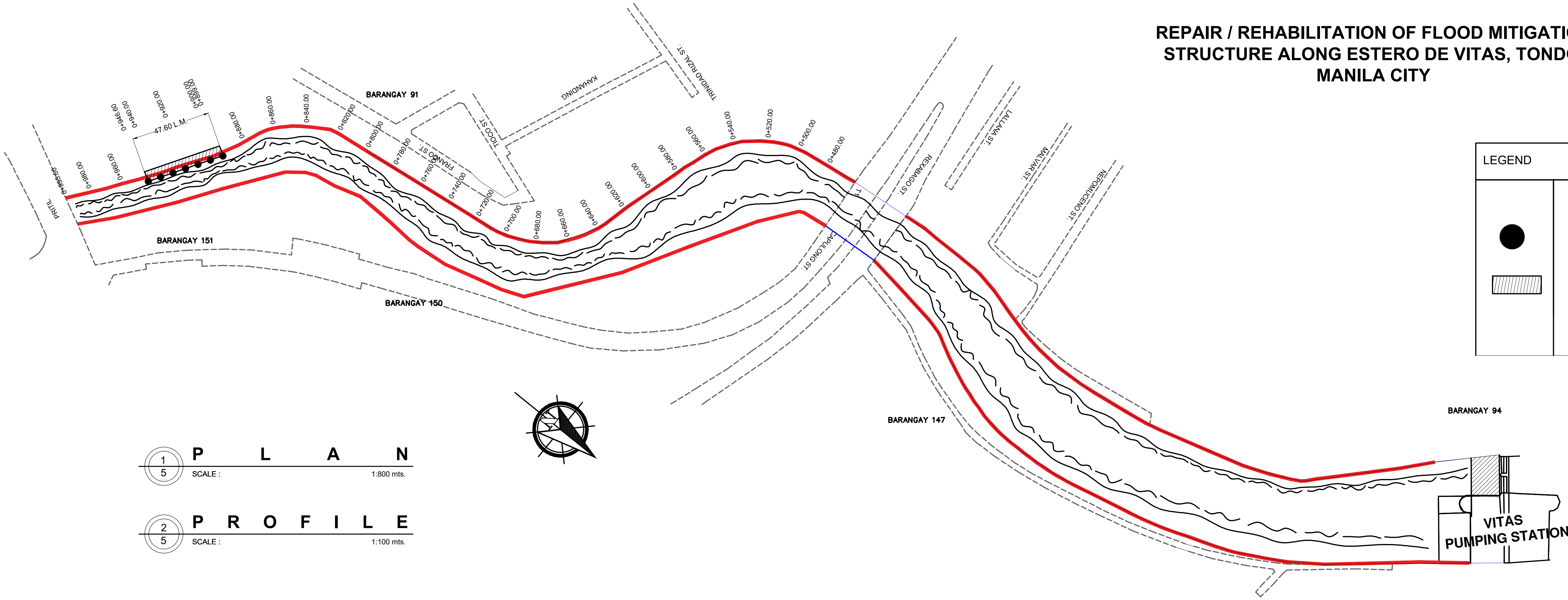
APPROVED:
DENNIS E. SANDOVAL
DISTRICT ENGINEER
DATE:

SET NO.

SHEET NO. 04/9

VANN M.

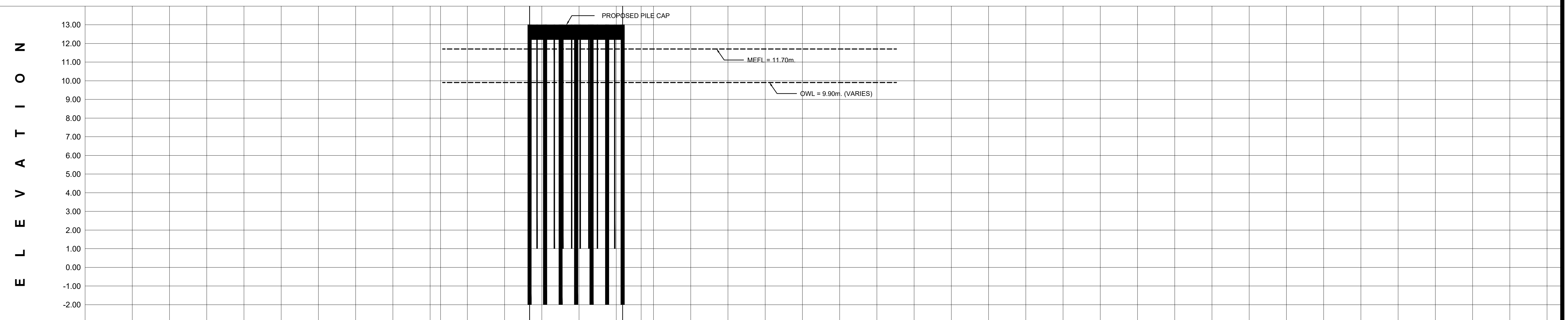
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY



LEGEND	
●	PROPOSED BOREDPILE 8 UNITS
▨	PROPOSED PILECAP

1/5 **P L A N**
SCALE : 1:800 mts.

2/5 **P R O F I L E**
SCALE : 1:100 mts.



STATIONING	DESIGN ESTERO BED	PILE CAP
0+995.60	6.500	
0+980.00	6.502	
0+960.00	6.504	
0+946.60	6.270	
0+940.00	6.504	
0+920.00	6.504	
0+900.00	6.240	
0+899.00	6.260	
0+880.00	6.260	
0+860.00	6.220	
0+840.00	6.310	
0+820.00	6.200	
0+800.00	6.160	
0+780.00	6.270	
0+760.00	6.270	
0+740.00	6.230	
0+720.00	6.200	
0+700.00	6.310	
0+680.00	6.310	
0+660.00	6.310	
0+640.00	6.310	

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SHEET CONTENTS:
PLAN
PROFILE
LEGEND

DRAFTED: **MARK ANDREW M. MARTINO**, ENGINEERING ASSISTANT
PREPARED: **DIANNER F. BARROZO**, ENGINEER I

REVIEWED: **EUNICE JOY R. GAGAP**, ENGINEER II
DATE:

SUBMITTED: **ARLENE S. MENDOZA**, OIC - CHIEF, PLANNING AND DESIGN SECTION
DATE:

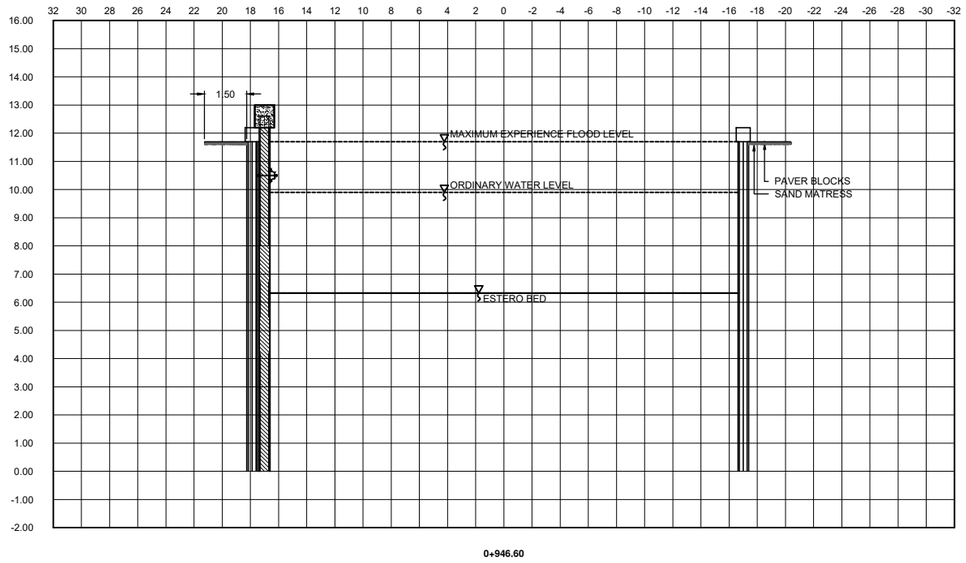
RECOMMENDED: **DENRYL CAESAR S. CORTUNA**, ASSISTANT DISTRICT ENGINEER
DATE:

APPROVED: **DENNIS E. SANDOVAL**, DISTRICT ENGINEER
DATE:

SET NO.:

SHEET NO.: 5 / 9

VANN M.



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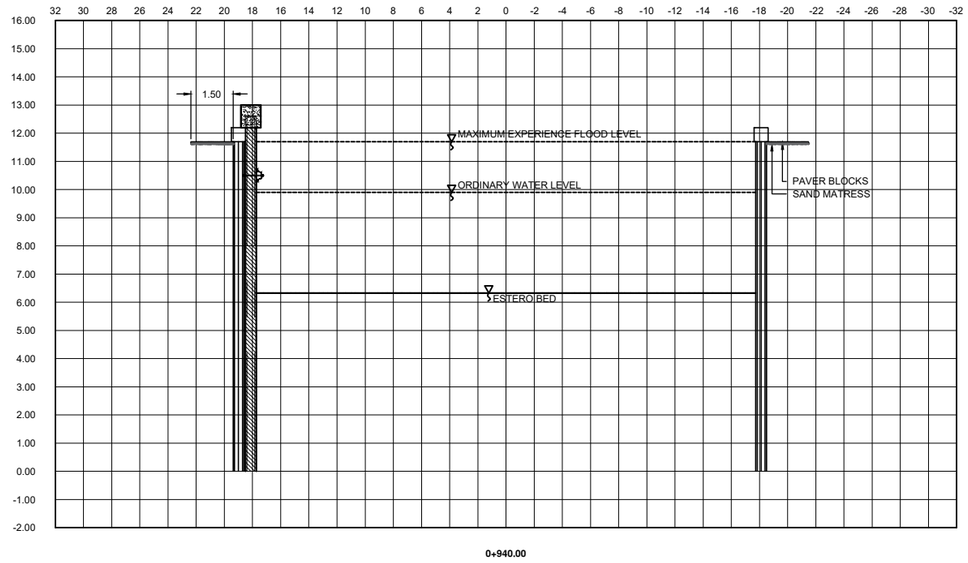

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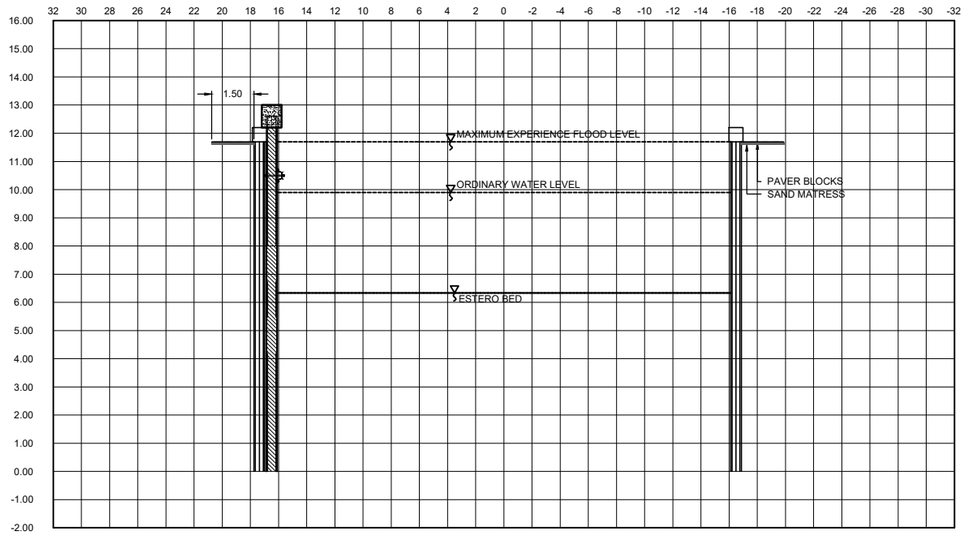

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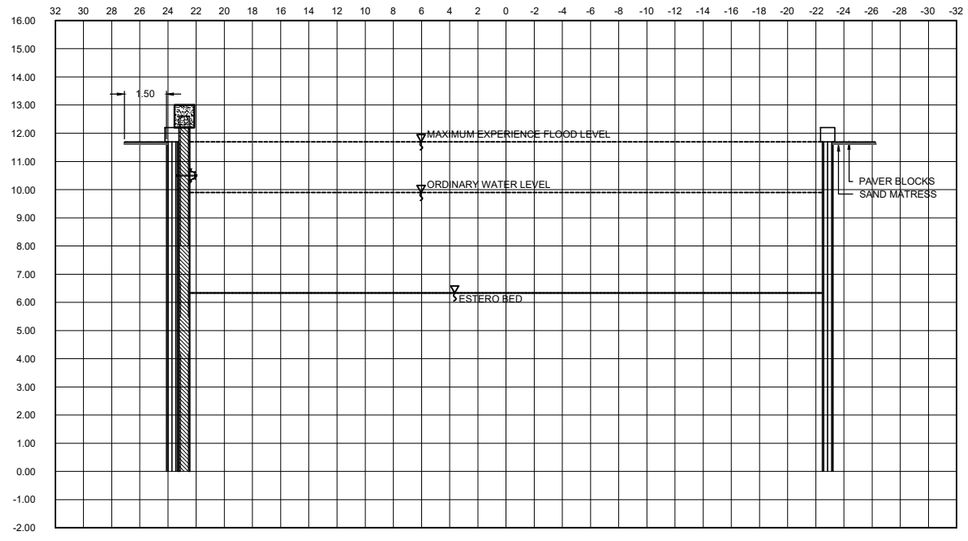

0+899.00

1
6

CROSS SECTION

SCALE : 1:100 mts.

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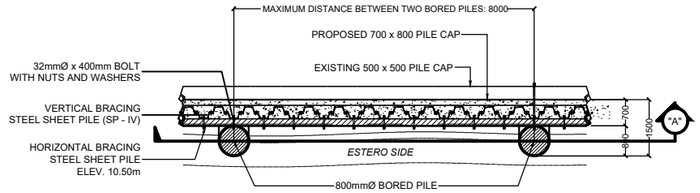
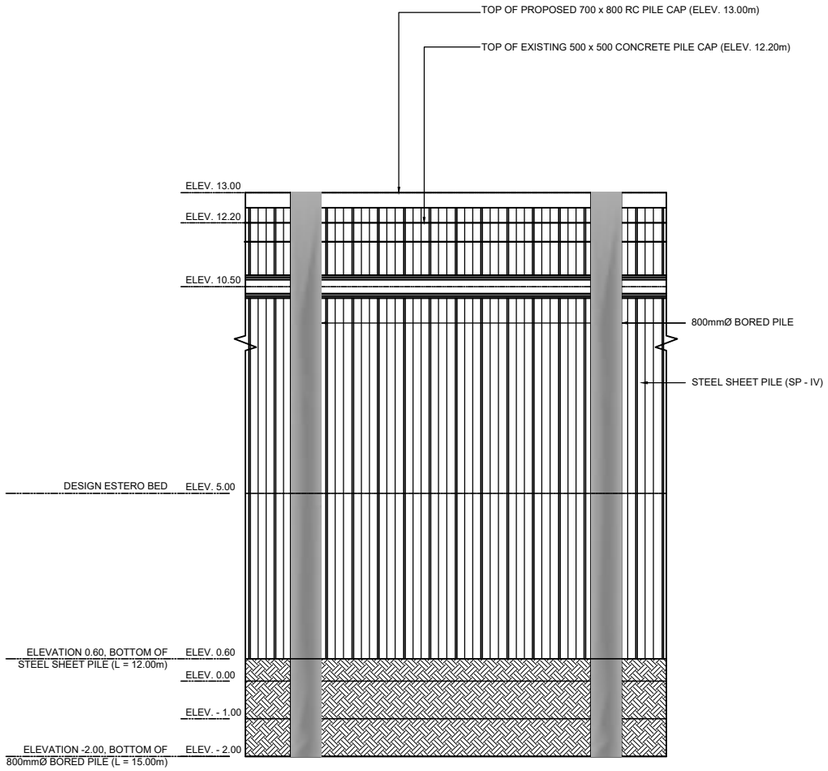
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY	**CROSS SECTION**	**MARK ANDREW M. MARTINO** ENGINEERING ASSISTANT PREPARED: **DIANNER F. BARROZO** ENGINEER II	**EUNICE JOY R. GAGAP** ENGINEER II DATE:	**ARLENE S. MENDOZA** OIC - CHIEF, PLANNING AND DESIGN SECTION DATE:	**DENRYL CAESAR S. CORTUNA** ASSISTANT DISTRICT ENGINEER DATE:	**DENNIS E. SANDOVAL** DISTRICT ENGINEER DATE:		6 9

VANN M.



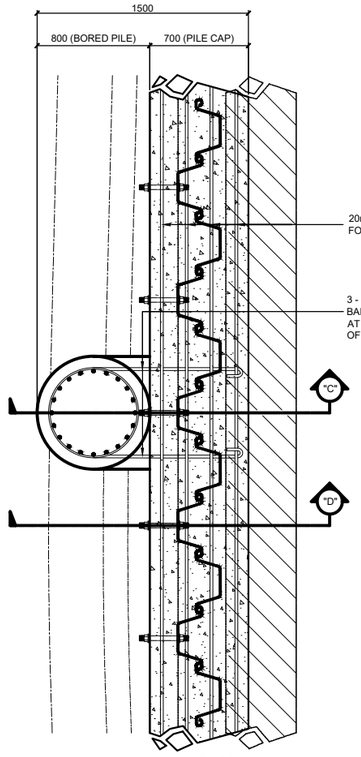
1/7 PART PLAN SHOWING RIVERWALL/REVETMENT

SCALE 1:75 METERS

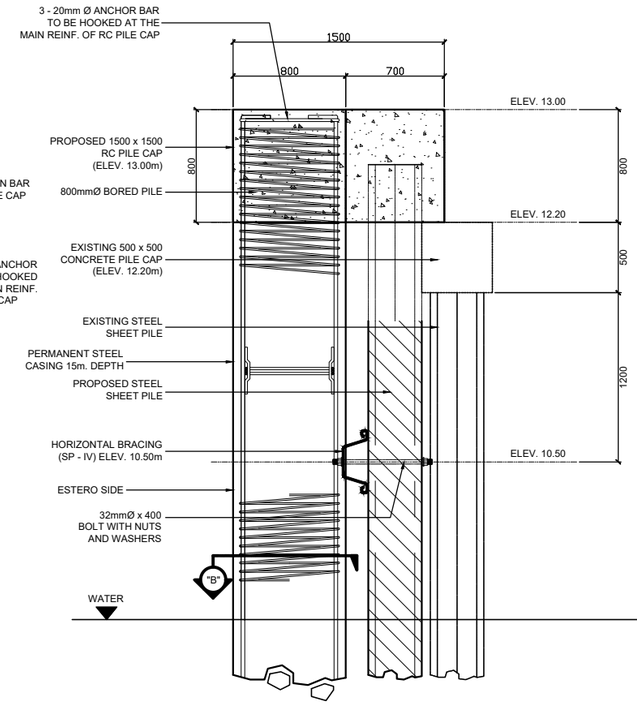


2/7 PART ELEVATION / SECTION "A"

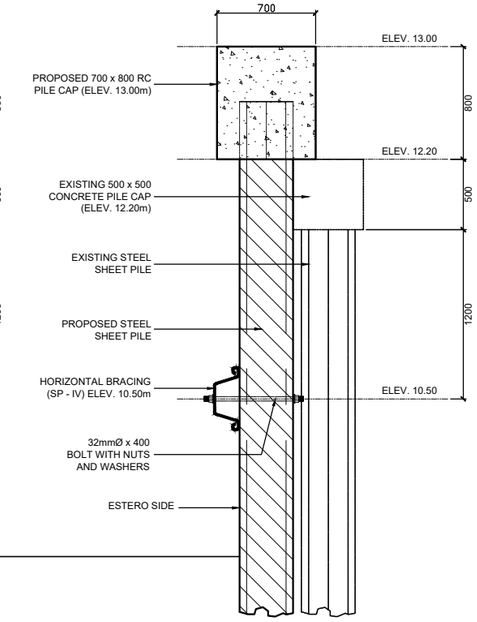
SCALE 1:75 METERS



PLAN



SECTION "C"

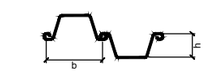


SECTION "D"

3/7 DETAIL OF PILE CAP & BORED PILE

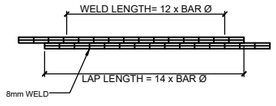
SCALE 1:20 METERS

SHEET PILE SECTIONAL DIMENSIONS AND PROPERTIES											
Type	EFFECVTIVE WIDTH b (mm)	EFFECTIVE HEIGTH h (mm)	THICKNESS t (mm)	Sectional Area (cm^2)	Moment of Inertia cm^4	Section Modulus cm^3	Unit Mass kg/m	Sectional Area cm^2/m	Moment of Inertia cm / m	Section Modulus cm^3/m	Unit Mass kg/m^2
SP-IV	400	170	15.5	96.99	4,670	362	76.1	242.5	38,600	2,270	190



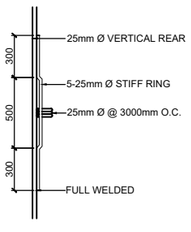
4/7 SHEET PILE DETAIL

SCALE 1:20 METERS



5/7 SPIRAL SPLICE DETAIL

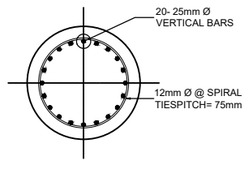
SCALE 1:10 METERS



NOTE: PROVIDE STIFFENER RING AT EVERY 3000mm INTERVAL

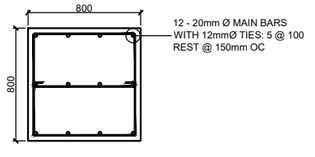
6/7 STIFF RING DETAIL

SCALE 1:20 METERS

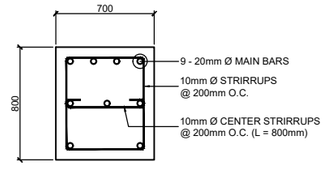


7/7 SECTION "B"

SCALE 1:20 METERS



PILE CAP AT SHEET PILE WITH BORED PILE



PILE CAP AT SHEET PILE ONLY

8/7 DETAIL OF PILE CAP

SCALE 1:20 METERS

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DETAIL OF PILE CAP & BORED PILE
SHEET PILE DETAIL
SPIRAL SPLICE DETAIL
STIFF RING DETAIL
DETAIL OF PILE CAP

DRAFTED:
MARK ANDREW M. MARTINO
ENGINEERING ASSISTANT II

PREPARED:
DIANNER F. BARROZO
ENGINEER II

REVIEWED:
EUNICE JOY R. CAGAP
ENGINEER II
DATE:

SUBMITTED:
ARLENE S. MENDOZA
OIC - CHIEF, PLANNING AND DESIGN SECTION
DATE:

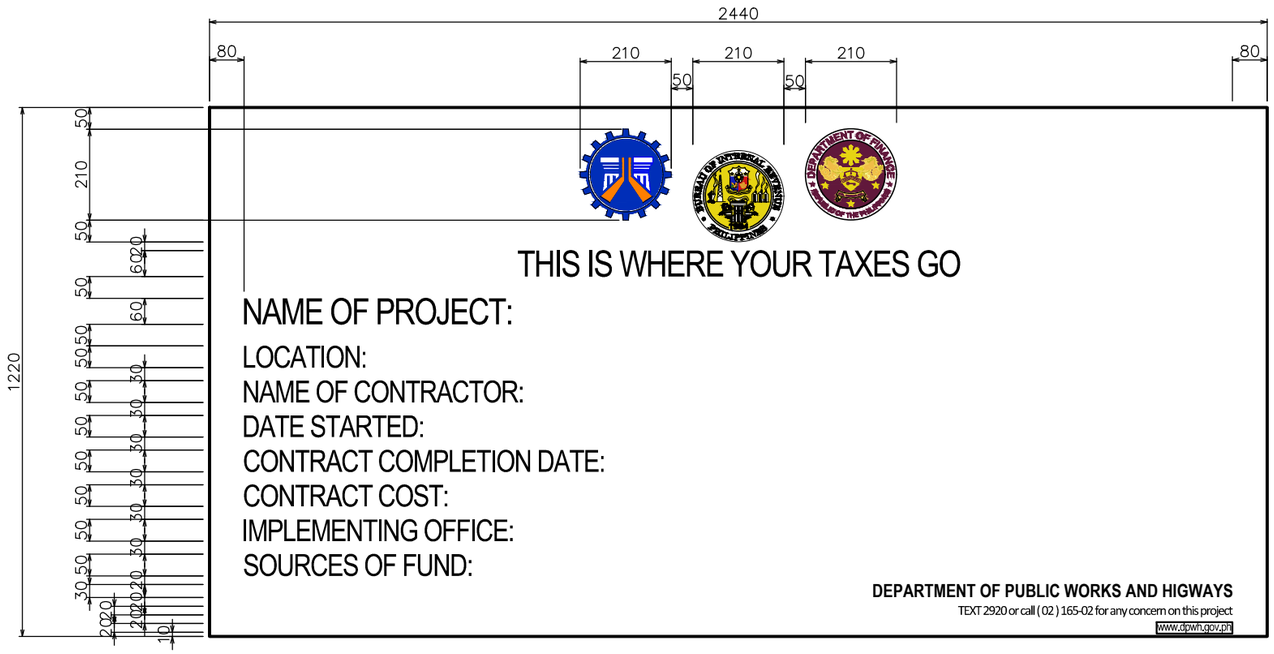
RECOMMENDED:
DENRYL CAESAR S. CORTUNA
ASSISTANT DISTRICT ENGINEER
DATE:

APPROVED:
DENNIS E. SANDOVAL
DISTRICT ENGINEER
DATE:

SET NO.

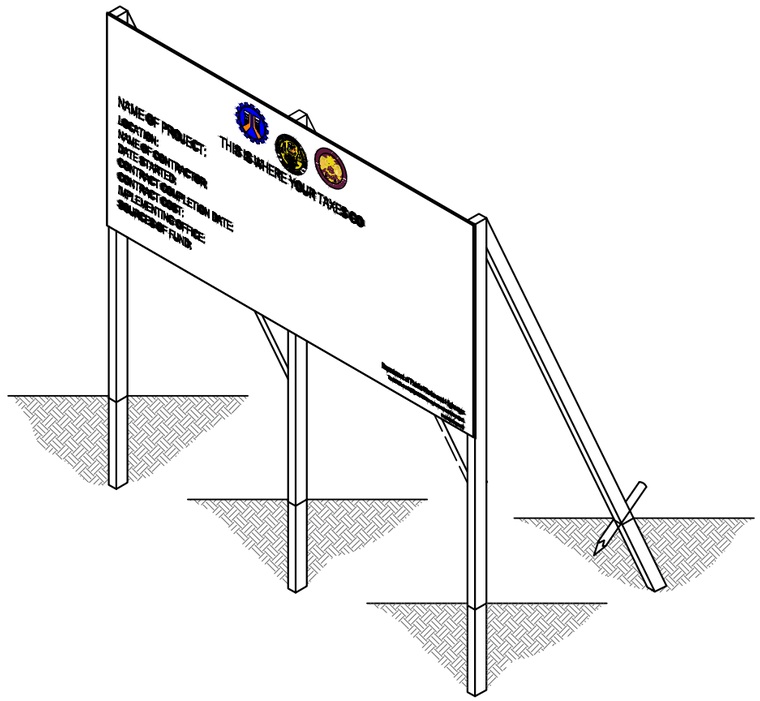
SHEET NO. 7/9

VANN M.



1/8 **DPWH PROJECT BILLBOARD**

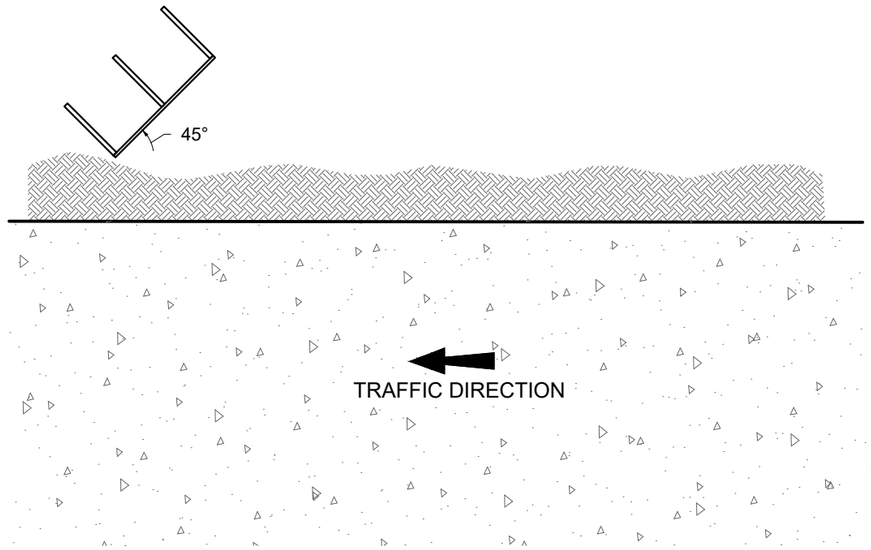
SCALE : NTS



2/8 **ISOMETRIC VIEW**

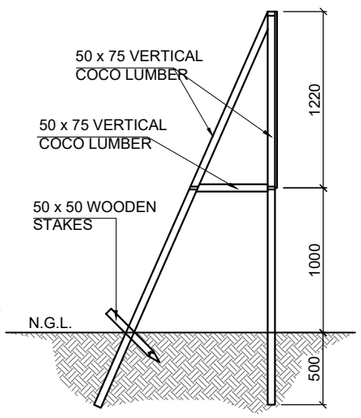
SCALE : 1:10

NOTES:
1. LAYOUT OF PROJECT BILLBOARDIS BASED ON D.O. 11,SERIES OF 2022. FOR SOURCE OF FUND,STATE IF DPWHREGUKAR BUDGET, PRIORITY DEVELOPMENT ASSITANCE FUND,DEPED/DA/DAR BUDGET, CALAMITY FUND ,MVUC FUND, ETC.
2.ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.



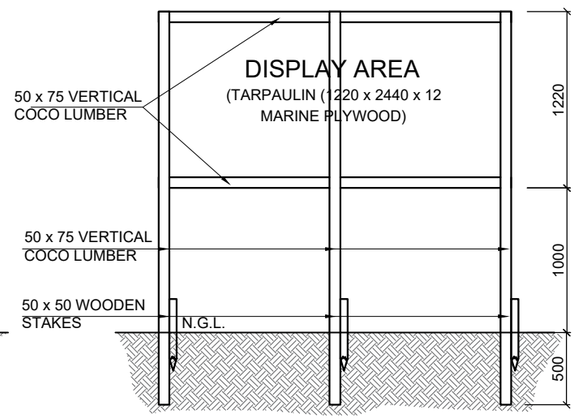
3/8 **ORIENTATION**

SCALE : 1:10



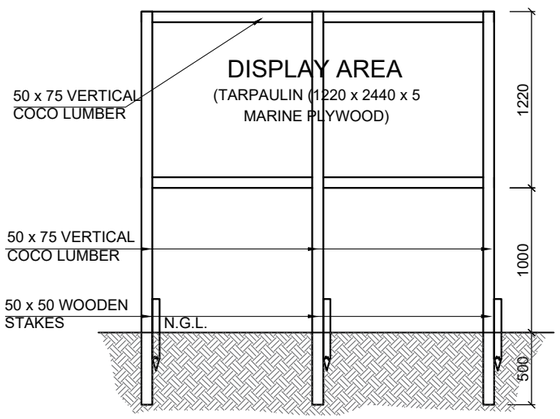
4/8 **TYPICAL FRAME ELEVATION**

SCALE : 1:10



5/8 **FRONT ELEVATION (OPTION 1)**

SCALE : 1:10



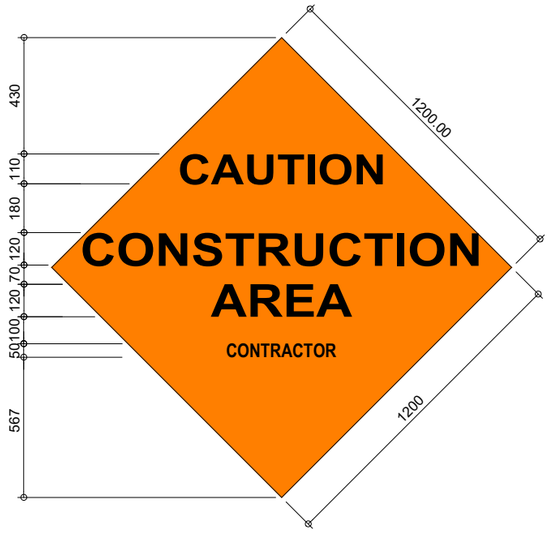
6/8 **FRONT ELEVATION (OPTION 2)**

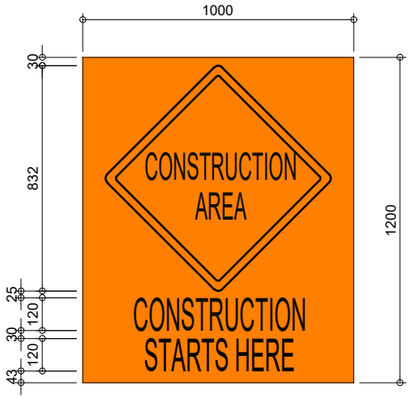
SCALE : 1:10

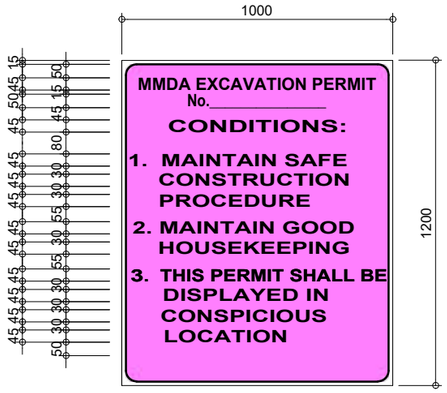
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NATIONAL CAPITAL REGION
NORTH MANILA DISTRICT ENGINEERING OFFICE
OFFICE OF THE DISTRICT ENGINEER
Nagtahan, Sta. Mesa, Manila

PROJECT NAME AND LOCATION:	SHEET CONTENTS:	DRAFTED:	REVIEWED:	SUBMITTED:	RECOMMENDED:	APPROVED:	SET NO.	SHEET NO.
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY	- DPWH STANDARD PROJECT BILLBOARD - ISOMETRIC VIEW - ORIENTATION - TYPICAL FRAME ELEVATION - FRONT ELEVATION (OPTION 1) - FRONT ELEVATION (OPTION 2)	**MARK ANDREW M. MARTINO** ENGINEERING ASSISTANT PREPARED: **DIANNER F. BARROZO** ENGINEER II	**EUNICE JOY R. GAGAP** ENGINEER II DATE:	**ARLENE S. MENDOZA** OIC - CHIEF, PLANNING AND DESIGN SECTION DATE:	**DENRYL CAESAR S. CORTUNA** ASSISTANT DISTRICT ENGINEER DATE:	**DENNIS E. SANDOVAL** DISTRICT ENGINEER DATE:		8/9

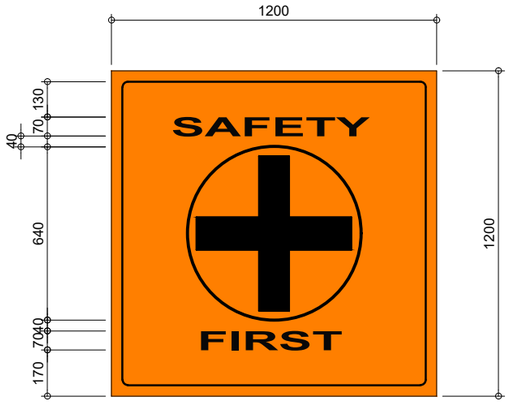
VANN M.

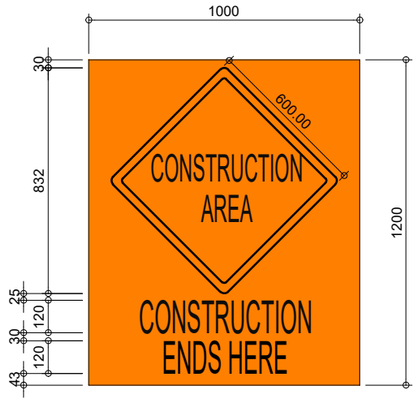


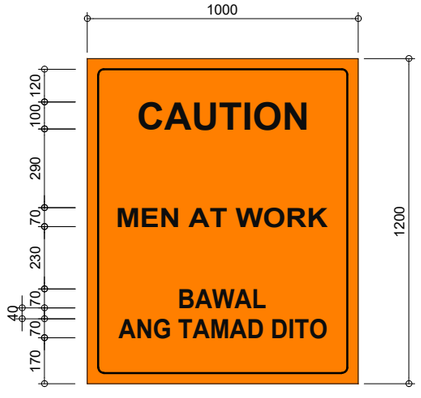


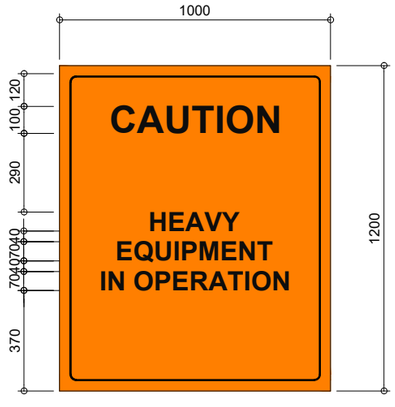


TARPAULINE , WHITE , 8FT X 8 FT
RESOLUTION : 70 dpi
FONT: NELVETICA
FONT SIZE : MAIN INFORMATION : 3"
SUB-INFORMATION : 1"
FONT COLOR : BLACK









1 / 9 **SAFETY ROADS AND DEVICES**
SCALE : NTS

Republic of the Philippines
COMMISSION ON AUDIT
National Capital Region

Name of Project :

Location :

Cost :
Fund Source(s) :
Development Partner(s) :
Implementing Agency :
Contractor Supplier :
Brief Description of Project :

Project Details :

Project Date			Project Status				
Duration	Started	Target Date of Completion	Percentage of Completion	As of (Date)	Cost Incurred to Date	Data Completed	Remarks

For particulars or complaints about this project, please contact the Office or Cluster which has audit jurisdiction of this project

COA Regional Office No./Cluster 7 - Transport Energy and Public Works
Address: Commonwealth Ave. - Quezon City
Contact Number: 952-5700 or Text COA Citizen's Desk at 0915-539-1957

2 / 9 **C O A B I L L B O A R D**
SCALE : NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NATIONAL CAPITAL REGION
NORTH MANILA DISTRICT ENGINEERING OFFICE
OFFICE OF THE DISTRICT ENGINEER
Nagtahan, Sta. Mesa, Manila

PROJECT NAME AND LOCATION:	SHEET CONTENTS:	DRAFTED:	REVIEWED:	SUBMITTED:	RECOMMENDED:	APPROVED:	SET NO.	SHEET NO.
REPAIR / REHABILITATION OF FLOOD MITIGATION STRUCTURE ALONG ESTERO DE VITAS, TONDO, MANILA CITY	- SAFETY ROADS AND DEVICES - COA BILLBOARD	**MARK ANDREW M. MARTINO** ENGINEERING ASSISTANT PREPARED: **DIANNER F. BARROZO** ENGINEER II	**EUNICE JOY R. GAGAP** ENGINEER II DATE:	**ARLENE S. MENDOZA** OIC - CHIEF, PLANNING AND DESIGN SECTION DATE:	**DENRYL CAESAR S. CORTUNA** ASSISTANT DISTRICT ENGINEER DATE:	**DENNIS E. SANDOVAL** DISTRICT ENGINEER DATE:		9 / 9

VANN M.