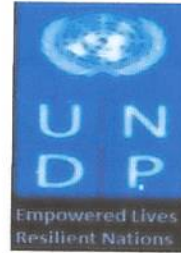




**Republic of Sierra Leone
Ministry of Fisheries and Marine Resources
Sierra Leone**

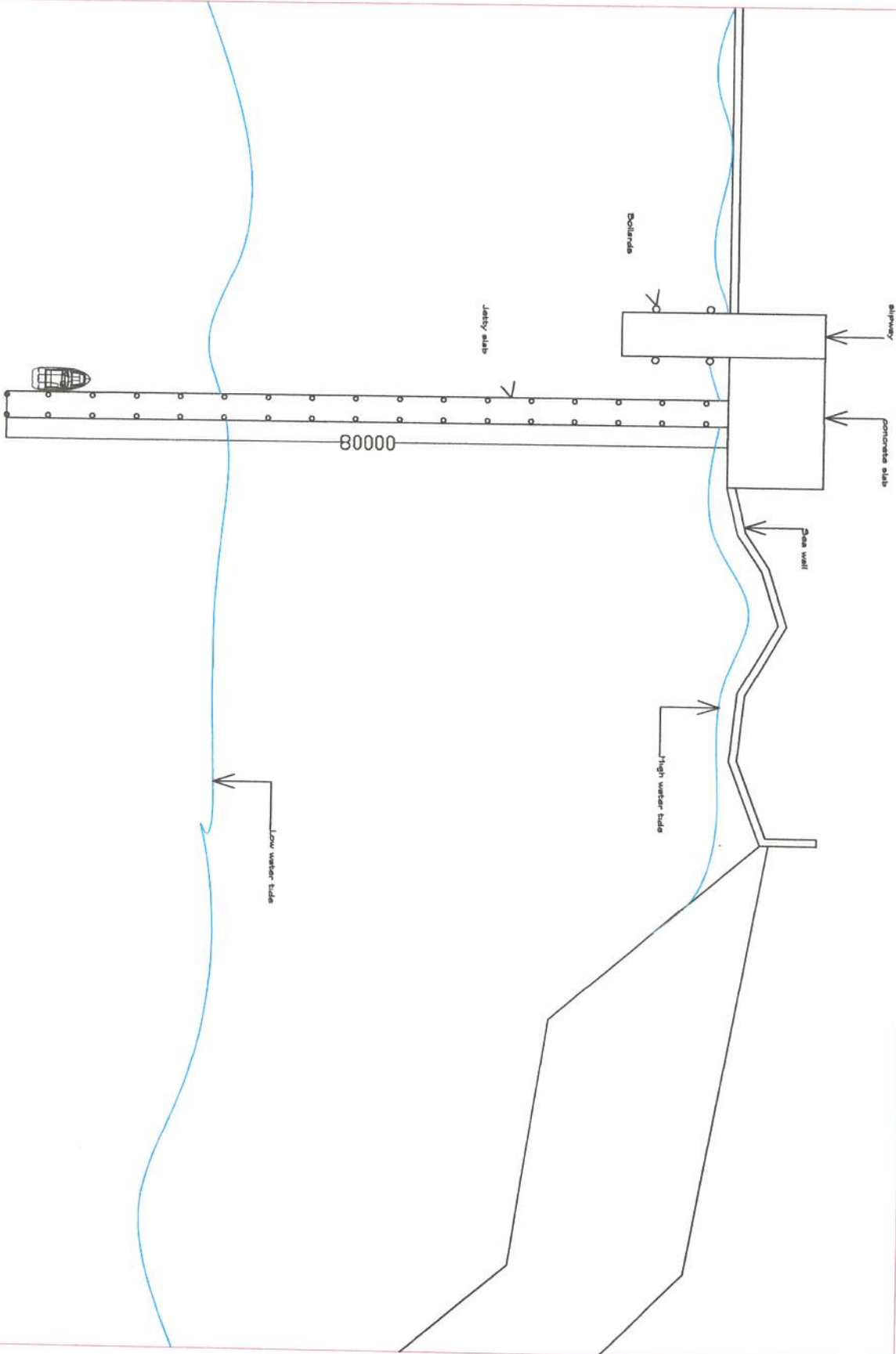


**United Nation Development Program
Wilberforce
Freetown, Sierra Leone**

DRAWINGS

**Submitted by
UNDP'S Independent Consultant Civil Engineer
Freetown
Sierra Leone**

July 2019



PLAN VIEW

NOTE
This drawing should not be used for construction without the approval of the Engineer. Dimensions only may be verified on site and should be reported to the Engineer immediately.

Rev Date

Design Consultant

ING SAHIL MEYAD

Drawn By

ING ANJUN R WILSON

Project Date JULY 2018

PROPOSED CONSTRUCTION
OF JETTY

Location

THREE ISLAND
DRAA CHIRSON
BONTHE ISLAND

Client

UNDP

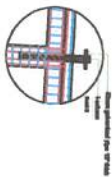
Drawing Description

Scale 1:100

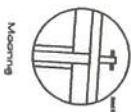
Standard Plan Type

Drawing Number Revision

001



DETAIL OF I COLUMN EMBEDDED INTO PIER



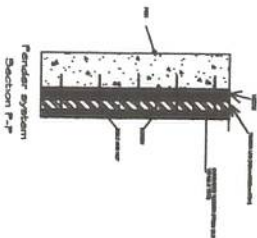
Mooring



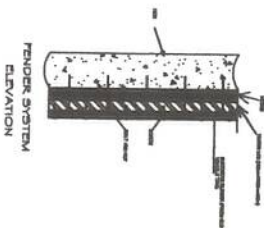
FENDER SYSTEM
PLAN VIEW



Mooring
PLAN VIEW



Fender system
Section F-F



Mooring system
Section G-G



Mooring system



Mooring system

DETAIL SECTIONS

Rev	Description
001	Revision

Rev	Description
001	Revision

Design Consultant	ING SAHLE MEAYO
Drawn By	ING ARJOUN R. WILSON
Project	DATE JULY 2011
PROPOSED CONSTRUCTION OF JETTY	
Location	TURKIE ISLAND DRAVA CHIRPOM BONKITE DISTRICT
Client	UNOP
Drawing Description	
Scale	1 : 100
Standard Plan Type	
Drawing Number	001
Revision	

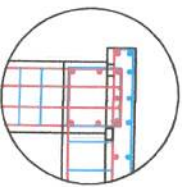
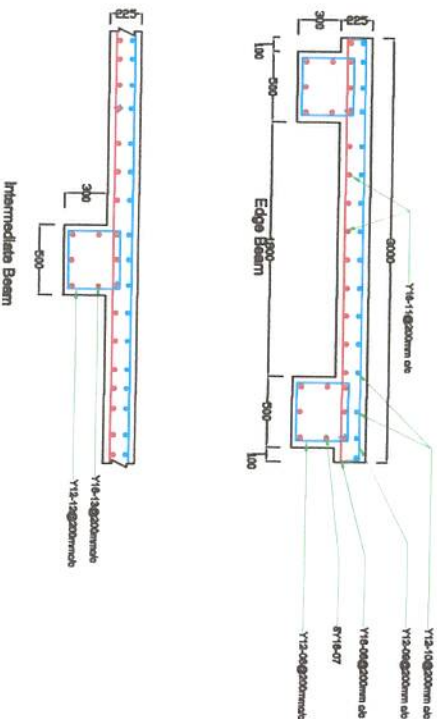
NOTE
This drawing should not be used and dimensions only may be used on site and any necessary amendments should be made to the drawing in accordance to the Engineer's instructions.

Rev

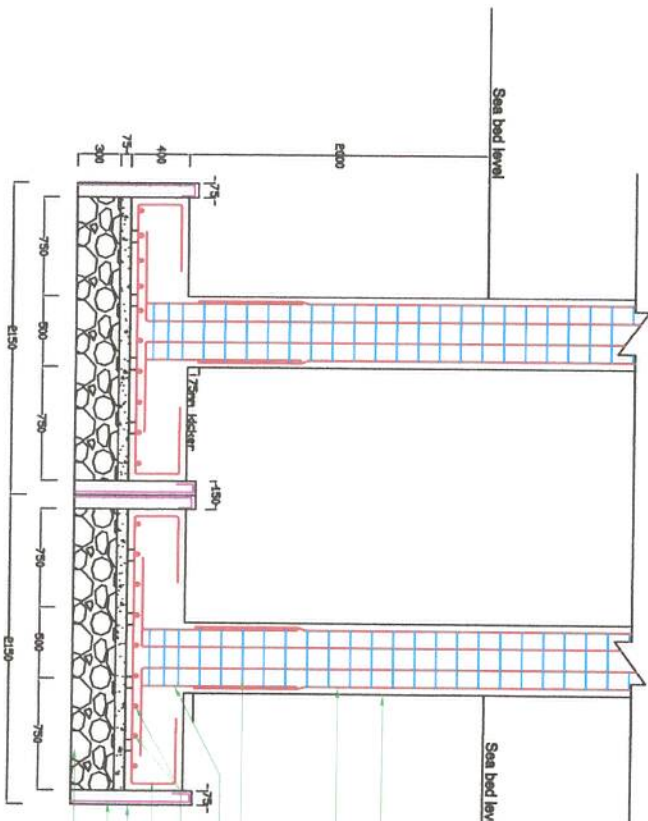
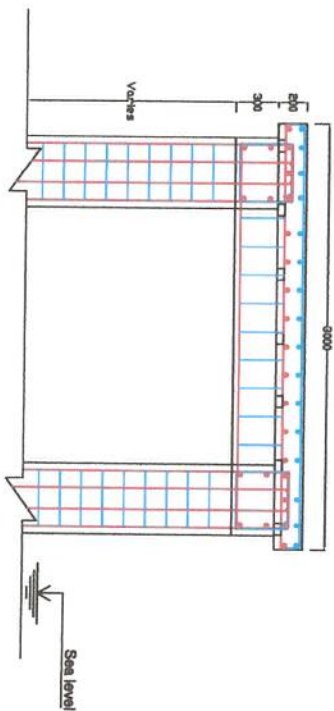
Date

BIM BENDING SCHEDULE									
PORTION	QUANTITY	REINFORCEMENT		LENGTH	BAR TOTAL	REINFORCEMENT	QUANTITY	REMARKS	UNIT
		IN THIS PORTION	OF ELEMENT			IN THIS PORTION			
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02	1	1	1	100	100	100	1	100	1
03	1	1	1	100	100	100	1	100	1
04	1	1	1	100	100	100	1	100	1
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100	1	1	1	100	100	100	1	100	1

BEAM DETAIL AND BENDING SCHEDULE



Design Consultant	
ING DANIE MBANO	
Drawn By	
ING ABOUN R WILSON	
Project	
Date JULY 2018	
PROPOSED CONSTRUCTION	
OF JETTY	
Location	
TURTLE ISLAND	
BOMA CHIEFOOM	
BOMBE DISTRICT	
Client	
UNDP	
Drawing Description	
Scale 1 : 100	
Standard Plan Type	
Drawing Number	Revision
001	



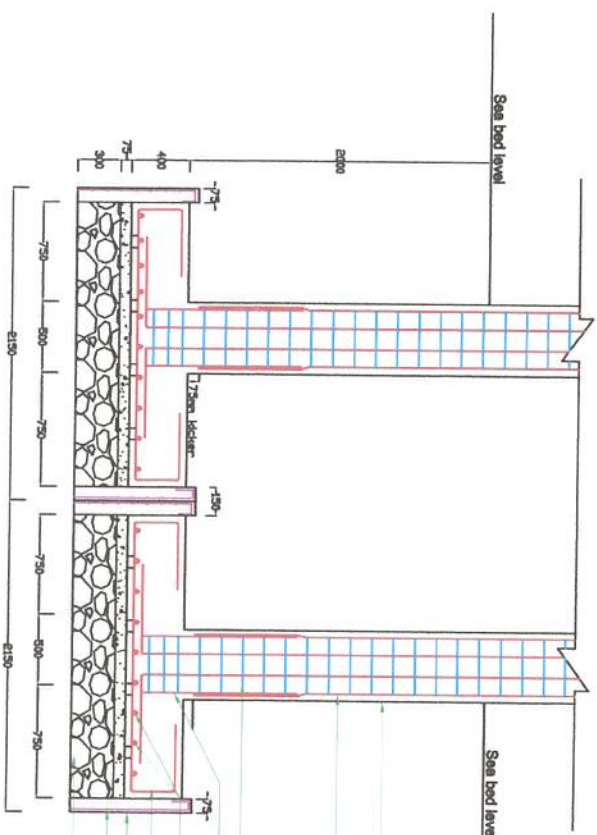
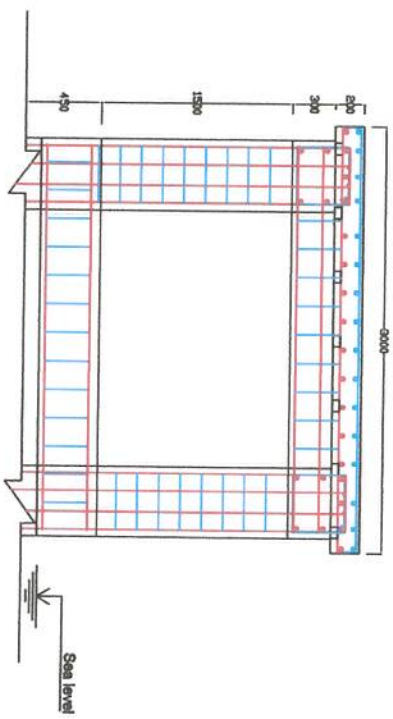
SECTION X-X

- Ø500mm pier
- 8Y16-05
- Y12-04@200mm c/c
- 8Y16-03
- 8Y16-02@200mm c/c
- 8Y16-01@200mm c/c
- calisson basket
- 6mm BRC mesh
- crushed rocks

NOTE
This drawings should not be
reproduced or used for any
purpose other than that
intended on site and any
modification or alteration
without the consent of the
Engineer/Architect

Rev 1

Design Consultant	ING SAHIL MEVAT
Drawn By	ING ARDUN R WILSON
Project	Date JULY 20
PROPOSED CONSTRUCTION	OF JETTY
Location	TURTLE ISLAND DENIA CHIEFTOWN BOVANTE DISTRICT
Client	UNOP
Drawing Description	
Scale	1 : 100
Standard Plan Type	
Drawing Number	001
Remark	



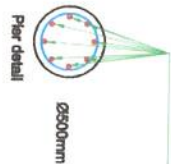
SECTION X-X AT CROSS BEAM

- Ø500mm pier
- 8Y16-05
- Y12-04@200mm c/c
- 8Y16-03
- 8Y16-02@200mm c/c
- 9Y16-01@200mm c/c
- calson basket
- 6mm BRC mesh
- crushed rocks

NOTE
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altered dimensions only may be
verified on site and any
alterations should be
approved by the
Engineer in-charge to the
Responsible

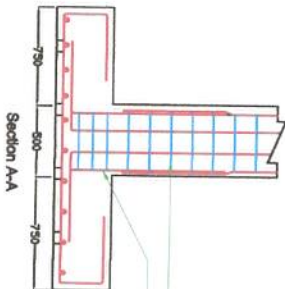
Design Consultant	ING SAHIL MEHRA
Drawn By	ING ARJUN R WILSON
Project	Date JULY 20
PROPOSED CONSTRUCTION	OF JETTY
Location	TURKITE ISLAND DEWA CHITROM BOMBE DISTRICT
Client	UNDP
Drawing Description	
Scale	1 : 100
Standard Plan Type	
Drawing Number	Rev 001

8Y16-03

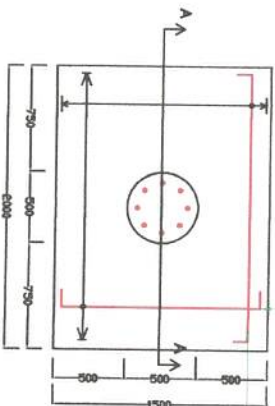


2500mm

Y12-04@200mm c/c
8Y16-03



8Y16-01@200mm c/c
8Y16-02@200mm c/c



Plan view of pier

PIER DETAILS AND BENDING SCHEDULE

BAR BENDING SCHEDULE							
PORTION	DIAMETER	RELATION			BAR TOTAL	BAR NO.	QUANTITY mm
		BY THE NUMBER	OF BAR NUMBER	TOTAL			
01	16	1	42	279	3400	951300	1.4
02	16	1	42	280	1400	392000	1
03	16	1	42	280	2750	770000	1.2
04	12	20	42	840	200	168000	1.7
05	16	1	42	280	1600	448000	1
06	16	1	42	280	1600	448000	1
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98	16	1	42	280	1600	448000	1
99	16	1	42	280	1600	448000	1
100	16	1	42	280	1600	448000	1

NOTE
This drawing should not be
used for construction
without the approval of the
designer. The designer
should be consulted for
any changes or
modifications to the
drawing.

Design Consultant	ING SAHIL KUMAR
Drawn By	ING ARJUN K WILSON
Project	DELA JULY 2017
PROPOSED CONSTRUCTION	OF JETTY
Location	TURTLE ISLAND DELA CHIEFDOM BONTHE DISTRICT
Client	UNDP
Drawing Description	
Scale	1 : 100
Standard Plan Type	
Drawing Number	Revision
001	

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
1.00	PRELIMINARIES				
1.01	Mobilization of all Plants and equipment to start work	Lump Sum	1		
1.02	Provision of Costs incurred in obtaining all bonds, insurances for all plants and equipment, contractor's staff and other third parties	Lump Sum	1		
1.03	Provision of Signboard (No 1: Size, 1200 mm wide x 1500mm high	Lump Sum	1		
1.04	Provision of progress photographs , both underwater and surface photos) at the end of every two working weeks	Lump Sum	1		
1.05	Demobilization: Removal of all equipment and other resources belonging to the contractor including cleaning the site completely	Lump Sum	1		
	Preliminaries carried to summary				
2.00	SITE PREPARATION AND SETTING UP				
2.01	Underwater survey and setting out works	lump sum	1		
2.02	Setting up Contractor's work yards and temporary site office	Lump Sum	1		
	Site Preparation and setting up carried to summary				

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
3.00	JETTY'S SUBSTRUCTURE WORKS 2.0m X 1.5m x 1.0m deep reinforced concrete (1:2:4 mix) caisson 75mm thick				
3.01	Formwork for construction the rectangular caisson	m ²	500		
3.02	Reinforcement for caissons with 6mm mild steel mesh	tonne	1.5		
3.03	Precast concrete caisson in 1:2:4: concrete mix aggregate 3-8mm and concrere seals . Prescribed mix 40N/mm ² grade, cement to BS 12, 2000mm , 75mm thick and 1000mm high	m ³	21		
3.04	Sinking caissons below seabed to a depth not less than 2m	m	68		
3.05	Excavating soft material within the depth range of 2m below seabed	m ³	425		
3.06	Extra over excavation in hard materials within the depth of 2m	m ³	76		
3.07	Filling in of caissons with 30 - 40 mm diamter crushed rock bedding and compacting to the depth of 400mm	m ³	45		
3.08	Cast in-situ concrete in mormal mix 1:2:4 -12mm agggregates . Thickness of concrete 500mm	m ³	51		
3.09	16mm Ø high yield reinforced bars in caissons as starter bars to receive pile rebars	tonne	1.7		
3.1	12mm Ø high yield bars as stirrups	tonne	0.7		
	Subtotal Jetty substructure works B/D				

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
	Subtotal of jetty substructure works B/F				-
3.10	REINFORCED CONCRETE WORKS ON PIERS (Deck Support) 500mmØ, 75mm thick precast reinforced concrete caisson				
3.11	Formwork for constructing the caissons	m ²	445		
3.12	Reinforcement for caissons with 6mm mild steel mesh	tonne	0.6		
3.13	Precast concrete caisson in 1:2:4: concrete mix aggregate 3-8mm and concrete seals . Prescribed mix 40N/mm ² grade, cement to BS 12, 500mmØ 75mm thick and 1000mm high	m ³	21		
3.14	Installation of (500mmØ , 75mm thick caisson from seabed to the underside of the jetty beams	m	62		
3.15	Reinforced concrete fill, (1:2:4 mix -12mm aggregates) in 500mmØ , 75mm thick caisson	m ³	29		
3.16	16mm Ø high yield steel bars in caisson with pier starter bars	tonne	2.5		
3.17	12mm Ø high yield bars as stirrups	tonne	1.2		
	Total jetty substructure works carried to summary				
4.00	JETTY SUPERSTRUCTURE WORKS Reinforced concrete cast in-situ concrete 1:2:4 mix 10mm aggregates, cement to BS 12				
4.01	Walkway slab to Jetty head	m ³	58		
4.02	Edge Beams	m ³	26		
4.03	Intermediate beams	m ³	8		
4.04	Rectangular cross-beams at 10 m interval	m ³	4		
	Jetty Superstructure works B/D				

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
	Jetty Superstructure works B/f				-
	High yield steel reinforcement bent straight or hook complete with all spaces , distance blocks and bracing wire to the following				
4.05	12mm Ø top steel bar in Walkway slab to Jetty head	tonne	2		
4.06	16mm Ø bottom steel bars in Walkway slab to jetty head	tonne	3		
4.07	16mm Ø steel bars in Edge beams	tonne	3.2		
4.08	12mm Ø steel bars as stirrups/links in Edge beams	tonne	2.5		
4.09	16mm Ø steel bars in intermediate beams	tonne	0.8		
4.10	16mm Ø steel bars in cross beams at 10m interval	tonne	0.4		
4.11	12mm Ø steel bars as stirrups/links intermediate and Cross-beams at 10 m interval	tonne	1.1		
	Formwork to provide Class F3 surface finish to the following				
4.12	Walkway slab to Jetty head	m ²	310		
4.13	Edge beams	m ²	184		
4.14	intermediate beams and Cross-beams at 10m interval	m ²	100		
	FENDERING SYSTEMS				
4.15	Provide and install 250mm x 250mm x 6mm equal structural steel I-section complying with the requirement of BS EN 10025 attached horizontally to piers(Piles) along the jetty faces to receive vertical energy-aborbing timber fenders - unit weight 7.0 Kg/m	m	80		
4.16	Provide and install energy-absorbing hardwood timber (200mm x 200mm) fenders fixed securely to horizontal receiving steel I-beams by gavanized steel bolts and nuts	m	80		
4.17	Provide 100mm thick synthetic rubber (from old truck tyres or conveyor belts) and fix on the berthing inspact faces of timber fender with bolted on the jetty piers	m	80		
	Jetty Superstructure Works B/D				

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
	Jetty Superstructure works B/F				-
	BOLLARDS FOR MOORING				
4.18	Provide Universal Column (152x152x6.8) length 1600mm to be bedded into the last pier under the slab, the edge beam and the slab and projected 400mm above the slab level to be used for mooring	no	30		
4.19	Provide anti-rust paint and "black tar" both to be rubbed on the Universal column before installation for mooring and on the I-beam fenders	m ²	120		
	NAVIGATION LIGHT SYSTEM ON JETTY STRUCTURE				
4.18	Provide six solar powered navigation lights with all the assessories (solar panels, batteries, standing galvanized pipes and light bulbs) on the jetty structure, two at the end, two in the middle and two and the beginning of the jetty structure	No	6		
	Jetty Superstructure Works carried to summary				

Construction of Fishermen Reinforced Concrete landing Jetty at Tombay, (3m wide x 80m long) Bonthe District

Bill of Quantities

Item No	Description	Units	Quantity	Unit Rate (Le)	Amount (Le)
	SUMMARY				
1	Preliminaries				
2	Site Preparation and Setting up				
3	Jetty Substructure works				
4	Jetty superstructure				
	Subtotal				
	Contingency 5%				
	TOTAL CONSTRUCTION COST				

In Words

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