

Republic of the Philippines
 Department of Public Works and Highways
 Bureau : DPWH
 Region : IX
 District/City : Zamboanga City
PROGRAM OF WORK
 (For all types of Project)

Date :

NAME/LOCATION OF PROJECT : CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE		Appropriation : P 110,000,000.00 Source of Funds : CY-2018 Issued Obligated Authority : Released : Cal. Days to Complete : 323 Calendar Days Desirable Starting Date : Upon Approval Mode of Implementation :
PROJECT CATEGORY : FLOOD CONTROL		
PROJECT DESCRIPTION : Scope of Work : Construction of Seawall		NET LENGTH : Upstream: 0 + 000.00 Beg. Of Project 0 + 140.00 End Of Project 0 + 152.00 Beg. Of Project 0 + 181.22 End Of Project 0 + 312.28 Beg. Of Project 1 + 152.56 End Of Project Net Length : 1,009.50 In.m.

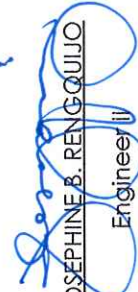
MINIMUM EQUIPMENT REQUIREMENT :			TECHNICAL PERSONNEL REQUIRED :		
Description	No.	Description	No.	Description	No.
Dumptruck (10-Wheeler)	12	Water Pump	1	Project Engineer	1
Drop Hammer	4	Cutting Outfit	1	Materials Engineer	1
Crawler Crane	2	Concrete Vibrator	2	Geometric Surveyor	1
Truck mounted Crane	1	Air compressor	2	Foreman	1
Road Grader	2	Bar Cutter	1	Materials Lab. Tech.	1
Road Roller	2	Bar Bender	1	Mason	10
Payloader	4	Conc. Mixer (1-Bagger)	2	Carpenter	6
Water Truck	2	Plate Compactor	1	Laborers (Skilled)	10
Water Tank	2	Jack Hammer	1	Laborers (Unskilled)	20
Backhoe with breaker	1	Diesel Hammer	1	Laborers (Unskilled)	20
Vibro Hammer	1	Service Truck	1		

ESTIMATED COST OF PROPOSED WORK					
ITEM NO.	DESCRIPTION	% OF TOTAL	UNIT	QUANTITY	DIRECT COST
					TOTAL
PART A - FACILITIES FOR THE ENGINEER					
A.1.1(3)	Construction of Field Office for the Engineer	0.569	L. S.	1.00	486,611.56
A.1.1(11)	Provision of Furnitures/Fixtures, Equipment & Appliances for the Field Office for the Engineer	0.229	L. S.	1.00	196,288.00
A.1.2(5)	Operation & Maintenance of Go'vt Service Vehicle	0.531	L.S.	1.00	454,329.27
PART B - OTHER GENERAL REQUIREMENTS					
B.4(1)	Construction Survey and Staking	0.121	k.m.	1.01	103,387.46
B.5	Project Billboard	0.009	units	2.00	7,538.90
B.7	Occupational Safety and Health Program	0.717	L. S.	1.00	613,806.00
B.9	Mobilization & Demobilization	0.637	L. S.	1.00	544,688.00
PART F - BRIDGE CONSTRUCTION					
404(1)a	Reinforcing Steel, (Grade 40)	1.723	kg.	29,878.00	1,474,258.82
404(1)b	Reinforcing Steel, (Grade 60)	25.536	kg.	424,513.00	21,851,984.19
405(1)b3	Structural Concrete, Class "A", f'c = 27.58 MPA	59.785	cu.m.	7,705.00	51,159,997.13
407(8)	Lean Concrete	2.377	cu.m.	460.00	2,033,896.63
414(1)	Forms and Falseworks	1.649	L.S.	1.00	1,410,751.32
PART J - FLOOD CONTROL AND DRAINAGE					
1701(1)a	Structure Excavation(Common Soil)	0.334	cu.m.	1,243.00	286,033.75
1701(1)b	Structure Excavation(Soft Rock)	0.738	cu.m.	5,488.00	631,494.10
1716(6)	Structural Steel Sheet Piles, Furnished (0.40m. wide)	3.971	In.m.	1,053.00	3,398,219.77
1716(12)	Structural Steel Sheet Piles, Driven	1.029	In.m.	1,053.00	880,684.06
1716(16)	Steel Sheet Test Piles, Furnished and Driven	0.016	In.m.	6.00	13,725.02
1718(1)	Pipe Culvert	0.030	cu.m.	12.00	25,663.32
TOTAL					P 85,573,357.28

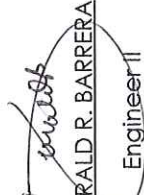
NAME OF PROJECT : CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

BREAKDOWN OF ESTIMATED EXPENDITURES	% OF TOTAL	AMOUNT
I. ESTIMATED COST		
A. DIRECT COST		
A.1. Materials	65.80	72,380,817.54
A.2. Labor	6.29	6,922,583.66
A.3. Equipment Expenses	5.70	6,269,956.07
SUB-TOTAL (DIRECT COST)	77.79	85,573,357.28
B. INDIRECT COST (Per D.O. # 57)		
B.1. Overhead, Contingency & Misc. (10 % Max. of D.C.)	7.61	8,376,424.60
B.2. Profit (8 % Max. of D.C.)	6.15	6,765,947.20
C. VAT (5 % of D.C. and I.C. per D.O. 197 S. 2016)	4.58	5,035,786.45
SUBTOTAL (CONTRACT COST)	96.14	105,751,515.54
II. ESTIMATED GOVERNMENT EXPENDITURES		
1. Engineering and Administrative Overhead (3.5%)	3.50	3,850,000.00
2. Detailed Engineering (1%)	0.00	
3. Reserved for the Payment of RROW	0.00	
4. Provisional Sum	0.36	398,484.46
TOTAL ESTIMATED PROJECT COST	100.00	110,000,000.00

Prepared :


JOSEPHINE B. RENGQUIJO
Engineer II

Checked :


JERALD R. BARRERA
Engineer II

Submitted :


LEONCIO B. SOLAMILLO
Chief, Construction Division

Recommending Approval:


CAYAMOMBAO D. DIA
Assistant Regional Director

Approved:


JORGE U. SEBASTIAN
Regional Director

APPROVED BUDGET FOR THE CONTRACT

CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Project Name and Location

Stations : Upstream:
Length : 1,009.50000

Contract Duration : 323 Calendar Days

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UPS		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) x (8)	(10) 5%[(5) + (9)]	(11) (9) + (10)	(12) (5) + (11)	(13) (12) / (3)
PART B - OTHER GENERAL REQUIREMENTS												
A.1.1(3)	Construction of Field Office for the Engineer	1.00	L. S.	486,611.56	10.00	8.00	18.00	87,590.08	28,710.08	116,300.16	602,911.72	602,911.72
A.1.1(11)	Provision of Furnitures/Fixtures, Equipment & Appliances for the Field Office for the Engineer	1.00	L. S.	196,288.00		8.00	8.00	15,703.04	10,599.55	26,302.59	222,590.59	222,590.59
A.1.2 (5)	Operation & Maintenance of Go'vt Service Vehicle	1.00	L.S.	454,329.27				-	22,716.46	22,716.46	477,045.73	477,045.73
B.4(1)	Construction Survey and Staking	1.01	k.m.	103,387.46	10.00	8.00	18.00	18,609.74	6,099.86	24,709.60	128,097.07	126,891.60
B.5	Project Billboard	2.00	units	7,538.90	10.00	8.00	18.00	1,357.00	444.80	1,801.80	9,340.70	4,670.35
B.7	Occupational Safety and Health Program	1.00	L. S.	613,806.00		8.00	8.00	49,104.48	33,145.52	82,250.00	696,056.00	696,056.00
B.9	Mobilization & Demobilization	1.00	L. S.	544,688.00			0.00	-	27,234.40	27,234.40	571,922.40	571,922.40
PART F - BRIDGE CONSTRUCTION												
404(1)a	Reinforcing Steel, (Grade 40)	29,878.00	kg.	1,474,258.82	10.00	8.00	18.00	265,366.59	86,981.27	352,347.86	1,826,606.68	61.14
404(1)b	Reinforcing Steel, (Grade 60)	424,513.00	kg.	21,851,984.19	10.00	8.00	18.00	3,933,357.15	1,289,267.07	5,222,624.22	27,074,608.41	63.78
405(1)b3	Structural Concrete, Class'A', f'c' = 27.58 MPA	7,705.00	cu.m.	51,159,997.13	10.00	8.00	18.00	9,208,799.48	3,018,439.83	12,227,239.31	63,387,236.44	8,226.77
407(8)	Lean Concrete	460.00	cu.m.	2,033,896.63	10.00	8.00	18.00	366,101.39	119,999.90	486,101.29	2,519,997.92	5,478.26
414(1)	Forms and Falseworks	1.00	L.S.	1,410,751.32	10.00	8.00	18.00	253,935.24	83,234.33	337,169.57	1,747,920.89	1,747,920.89
PART J - FLOOD CONTROL AND DRAINAGE												
1701(1)a	Structure Excavation(Common Soil)	1,243.00	cu.m.	286,033.75	10.00	8.00	18.00	51,486.08	16,875.99	68,362.07	354,395.82	285.11
1701(1)b	Structure Excavation(Soft Rock)	5,488.00	cu.m.	631,494.10	10.00	8.00	18.00	113,668.94	37,258.15	150,927.09	782,421.19	142.57
1716(6)	Structural Steel Sheet Piles, Furnished(0.40m. wide)	1,053.00	ln.m.	3,398,219.77	10.00	8.00	18.00	611,679.56	200,494.97	812,174.53	4,210,394.30	3,998.48
1716 (12)	Structural Steel Sheet Piles, Driven	1,053.00	ln.m.	880,684.06	10.00	8.00	18.00	158,523.13	51,960.36	210,483.49	1,091,167.55	1,036.25
1716(16)	Steel Sheet Test Piles, Furnished and Driven	6.00	ln.m.	13,725.02	10.00	8.00	18.00	2,470.50	809.78	3,280.28	17,005.30	2,834.22
1718(1)	Pipe Culvert	12.00	cu.m.	25,663.32	10.00	8.00	18.00	4,619.40	1,514.14	6,133.53	31,796.85	2,649.74
				85,573,357.28				15,142,371.80	5,035,786.45	20,178,158.26	105,751,515.54	

Prepared /Submitted by :

BELEN A. SAPALLIDA
Engineer IV - Chairman Estimating Committee

Recommending Approval:

CAYANOMBAO D. DIA
Assistant Regional Director

Approved :

JORGE U. SEBASTIAN, JR.
Regional Director

NET LENGTH : 1,009.50

WORK PROGRAMME/SCHEDULE

[illegible]

Prepared:

JOSEPHINE B. RENGQUIJO
Engineer II

Submitted:

Submitted: 

LEONCIO B. SOLAMILLO
Chief, Construction Division



Approved:

JORGE URSUAZU NÚÑEZ OSO III
Regional Director

DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: A.1.1(3) Construction of Field Office for the Engineer

Unit of Measurement: L. S.

Output per hour:

Quantity: 1.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor					
a. Const. Foreman		1	15.00	611.92	9,178.80
b. Masons		4	15.00	443.20	26,592.00
c. Carpenters		4	15.00	443.20	26,592.00
d. Laborers		8	15.00	342.24	41,068.80
Sub-total for A					103,431.60
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)					
a. Bagger Mixer		1	15.00	1,376.00	20,640.00
b. Water Truck		1	1.00	19,600.00	19,600.00
c. Minor Tools, 10% of Labor				P	10,343.16
Sub-total for B					50,583.16
Total (A+B)					154,014.76
D. Output/day					
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials					
Gravel Bedding		0.00	cu.m.	1,063.00	-
Selected Fill		0.00	cu. m.	563.00	-
Soil Poisoning		0.00	lit.	1,900.00	-
Portland Cement		220.00	bag	283.00	62,260.00
Crushed gravel		15.00	cu.m.	1,063.00	15,945.00
Washed Sand		25.00	cu.m.	1,063.00	26,575.00
Deformed Bars, Grade 60		800.00	kg.	43.00	34,400.00
No. #16 G.I. Tie Wire		35.00	kg.	70.00	2,450.00
Coco Lumber		600.00	bd.ft.	15.00	9,000.00
Ordinary Plywood, 1/4" x 4' x8"		0.00	pcs.	577.00	-
CWN, Assorted		20.00	kg.	75.00	1,500.00
CHB 6" thick		850.00	pc.	20.00	17,000.00
10mm dia. X 6m RSB		150.00	kg.	41.00	6,150.00
D-1, Hollow Core Flush Type swing door, complete w/ accessories		1.00	set	1,495.20	1,495.20
W-1, Jalousie window, 1.4mx 1.2m.		0.00	set	1,176.00	-
W-2, Jalousie window, 2.8m x 1.2m		0.00	set	2,352.00	-
65 x 65 x 6mm Angle Bar		400.00	kg.	48.00	19,200.00
50 x 50 x 6mm Angle Bar		200.00	kg.	48.00	9,600.00
50 x 50 x 4mm Angle Bar		120.00	kg.	48.00	5,760.00
Purlins C-150x50x3mm		35.00	kg.	48.00	1,680.00
16mm dia. Cross Bracing		65.00	kg.	50.00	3,250.00
16mm dia. Turn Buckle		30.00	pc.	230.00	6,900.00
12mm thk. Base plate		45.00	kg.	48.00	2,160.00
10mmthk batten plate		30.00	kg.	48.00	1,440.00
Sub-total for E					P
Total Cost For Materials					226,765.20
Direct Cost (C + E)					332,596.80
G. Overhead, Contingencies and Miscellaneous			10% per D.O. 197 S. 2016		48,661.16
H. Contractor's Profit(CP)			8% per D.O. 197 S. 2016		38,928.92
I. Value Added Tax (VAT)			5% per D.O. 197 S. 2016		28,710.08
Total Unit Cost					602,911.72

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE
Item No./Description: A.1.1(3) Construction of Field Office for the Engineer

Unit of Measurement: L.S.

Output per hour:

Quantity: 1.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A.	Labor				
a.	Const. Foreman	1		611.92	-
b.	Masons	4		443.20	-
c.	Carpenters	6		443.20	-
d.	Laborers	10		342.24	-
Sub-total for A					
				P	-
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B.	Equipment, (2014 ACEL Rates)				
a.	Bagger Mixer	1		1,376.00	-
b.	Water Truck	1		19,600.00	-
c.	Minor Tools, 10% of Labor			0.00	-
Sub-total for B					
				P	-
C.	Total (A+B)				-
D.	Output/day				-
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E.	Materials				
	10mm dia. Sag rod	15.00	kg.	48.00	720.00
	20mm dia. X 350mm Anchor Bolts	15.00	pc.	150.00	2,250.00
	Welding Rod	25.00	kg.	130.00	3,250.00
	Primer, Zinc Cromate	5.00	gal.	531.00	2,655.00
	Pre-painted G.I. Roofing Sht. Long span	55.00	sq.m.	420.00	23,100.00
	Pre-painted flashing Ridge Roll GA24.0.60m w	10.00	ln.m.	189.00	1,890.00
	Pre-painted flashing, GA 24	2.00	ln.m.	189.00	378.00
	Teckscrew 1-1/2"	1,000.00	pc.	1.25	1,250.00
	Roof Sealant	2.00	lit.	230.00	460.00
	Rough Lumber, Sun dries Tanguile	700.00	bd.ft.	37.00	25,900.00
	Finishing Nails	5.00	kg.	280.00	1,400.00
	Wood Preservative Brown	-	lit.	7,245.00	-
	2 x 40w Fluorescent lighting fixtures	5.00	set	1,450.00	7,250.00
	Porcelain Ceiling Outlet w/female	2.00	pc.	50.00	100.00
	Duplex Convenience Outlet	3.00	pc.	170.00	510.00
	Two gang Switch	3.00	pc.	132.00	396.00
	3.50mm2 THW	2.00	roll	3,600.00	7,200.00
	8.00mm2 THW	20.00	m.	69.33	1,386.60
	15mm dia. PVC pipe	20.00	pc.	76.00	1,520.00
	15mm dia. PVC Coupling	20.00	pc.	27.00	540.00
	15mm dia. PVC Elbow	20.00	pc.	26.00	520.00
	15mm dia. PVC Clamp	50.00	pc.	8.00	400.00
	20mm dia. RSC Pipe	4.00	pc.	240.00	960.00
	20mm dia. RSC Coupling	3.00	pc.	36.00	108.00
	20mm dia. RSC Elbow	3.00	pc.	30.00	90.00
	20mm dia. RSC Clamp	10.00	pc.	18.00	180.00
	20mm dia. Service Entrance Cap	2.00	pc.	101.50	203.00
	Wire Holder	2.00	pc.	50.00	100.00
	Utility Box	7.00	pc.	32.00	224.00
	Octagon Box	50.00	pc.	34.00	1,700.00
Sub-total for E					
				P	86,640.60
F.	Direct Cost (C + E)				86,640.60
G.	Overhead, Contingencies and Miscellaneous		10% per D.O. 197 S. 2016		
H.	Contractor's Profit(CP)		8% per D.O. 197 S. 2016		
I.	Value Added Tax (VAT)		5% per D.O. 197 S. 2016		
L.	Total Unit Cost				

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
 CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE
 Item No./Description: A.1.1(3)
 Unit of Measurement: L. S.
 Output per hour: Construction of Field Office for the Engineer
 Quantity: 1.00

Name and Specifications	Quantity	Unit	Unit Cost	Amount
E. Materials				
Electrical Tape(big)	7.00	pc.	28.00	196.00
Panel Board 9 Side main w/ branches)	2.00	set	2,750.00	5,500.00
Water Closer(include,fitting&Accessories)	1	set	6,062.00	6,062.00
Lavatory(include fitting & accessories)	1	set	4,512.00	4,512.00
1/2" GI Pipe S-40	2	pc.	292.00	584.00
1/2" Water Faucet	2	pc.	165.00	330.00
1/2" Assorted Connector	8	pc.	19.00	152.00
4" PVC Series 1000	1	pc.	640.00	640.00
2" PVC Series 1000	1	pc.	305.00	305.00
4" PVC Assorted Connector	6	pc.	77.00	462.00
2" PVC Assorted Connector	8	pc.	56.00	448.00
				-
				-
Sub-total for E			P	19,191.00
F. Direct Cost (C + E)				19,191.00
G. Overhead, Contingencies and Miscellaneous				-
H. Contractor's Profit(CP)				
I. Value Added Tax (VAT)				
L. Total Unit Cost				

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: A.1.1(11) Provision of Furnitures/Fixtures, Equipment & Appliances for the Field Office for

Unit of Measurement: L. S. the Engineer

Output per hour:

Quantity: 1.00

Name and Specifications	Quantity	Unit	Unit Cost	Amount
E. Materials				
Office Equipment/Facilities& Supplies				
White Board , 3' x 6'	1	each.	2,000.00	2,000.00
8-seater Monoblock Dining Table	1	unit	3,000.00	3,000.00
Monoblock Backrest Chair	12	pcs.	500.00	6,000.00
Plastic Pail & Basin	2	set	300.00	600.00
Aluminum Cookware	1	set	3,000.00	3,000.00
each Plate, Glass, Spoon & Fork	1	doz	1,900.00	1,900.00
6" Sleeping Bed, Good Quality w/ pillows & blanket	3	each.	5,000.00	15,000.00
Office Table, Jr. Executive type	1	each.	7,000.00	7,000.00
w/ chair				-
Drawing Table	1	each.	5,000.00	5,000.00
Computer Table	1	each.	3,000.00	3,000.00
Cartridge(Computer Printer/Ink)	6	sets	1,800.00	10,800.00
CD RW	15	pc.	35.00	525.00
DVD Recordable & Writer	2	pc.	55.00	110.00
Bond paper (Long)	16	ream	330.00	5,280.00
Bond paper (Short)	15	ream	270.00	4,050.00
Yellow pad	6	pads	34.00	204.00
Scotch Tape	6	rolls	45.00	270.00
Masking Tape	6	rolls	134.00	804.00
Batteries" Energizer"	15	pc.	48.00	720.00
Ballpen	4	box	200.00	800.00
Pencil Lead, No. 5	4	box	150.00	600.00
Paper Clip(Plastic coated)	4	box	40.00	160.00
Fastener(plastic coated)	6	box	60.00	360.00
Eraser(ink, pencil)	6	box	20.00	120.00
Staple wire	6	box	250.00	1,500.00
Cutter blade	3	box	250.00	750.00
Glue, 130 grams	6	bottle	85.00	510.00
Correction Fluid Pen	6	bottle	50.00	300.00
Brown Envelope, Long & Short	5	doz.	85.00	425.00
Expanded Envelope, long	5	doz.	125.00	625.00
Colored Pencil, 12's	6	set	145.00	870.00
Folder, short	6	doz.	90.00	540.00
Folder, long	6	doz.	95.00	570.00
Pentel pen (Assorted colors)	6	pcs.	60.00	360.00
White Board Marker(Assorted colors)	6	pcs.	85.00	510.00
Letter Envelope, White(Long)	1	box	100.00	100.00
Data File Folder	6	pcs.	100.00	600.00
Sign Pen, Assorted Colors	2	doz.	900.00	1,800.00
				-
F. Sub-total for E		P		80,763.00
F. Direct Cost (C + E)				196,288.00
G. Overhead, Contingencies and Miscellaneous				-
H. Contractor's Profit(CP)		8% per D.O. 197 S. 2016		15,703.04
I. Value Added Tax (VAT)		5% per D.O. 197 S. 2016		10,599.55
L. Total Unit Cost				222,590.59

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME:

CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:

A.1.1(11)

Unit of Measurement: L. S. the Engineer

7.5

Output per hour:

Quantity: 1.00

[illegible]

jcbor

DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: A.1.2 (5) Operation & Maintenance of Go'vt Service Vehicle

Unit of Measurement: L.S.

Output per hour: 1.00

Quantity:

[illegible]

jcbv

DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:

Unit of Measurement: k.m.

Output per hour:

Quantity: 1.01

Quantity:	Designation	No. of Persons	No. of Days	Daily Rate	Amount
A.	Labor For Fieldworks: (assumed output = 300 In.m.) a. Geodetic Engineer b. Skilled Laborer c. Laborer	1 1 1	3.37 3.37 3.37	833.31 443.20 342.24	2,804.09 1,491.37 1,151.64
	For Office works: (assumed output = 100 In.m.) a. Geodetic Engineer b. Skilled Laborer	1 1	10.10 10.10	833.31 443.20	8,412.26 4,474.10
	Sub-total for A		P		18,333.46
B.	Equipment, (2014 ACEL Rates) Total Station complete w/ accessories	1	3.37	800.00	2,692.00
	Sub-total for B		P		2,692.00
C.	Total (A+B)				21,025.46
D.	Output/day				
E.	Materials Standard Stake Plan (800mm x 910mm plotting) blue print as stake plan miscellaneous(5% of Materials)	212.00 1,060.00	sheets pcs.	200.00 34.00	42,400.00 36,040.00 3,922.00 - - - - -
	Sub-total for E			P	82,362.00
F.	Direct Cost (C + E)				103,387.46
G.	Overhead, Contingencies and Miscellaneous		10% per D.O. 197 S. 2016		10,338.75
H.	Contractor's Profit(CP)		8% per D.O. 197 S. 2016		8,271.00
I.	Value Added Tax (VAT)		5% per D.O. 197 S. 2016		6,099.86
L.	Total Unit Cost				126,891.60

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Project Billboard

Item No./Description: B.5 units
Unit of Measurement: units

Output per hour:

Quantity: 2.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor	Foreman	1	0.25	611.92	152.98
	Carpenters	1	0.25	443.20	110.80
	Laborer	2	0.25	342.24	171.12
					-
Sub-total for A					434.90
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)					-
					-
					-
					-
Sub-total for B					-
Total (A+B)					434.90
Output/day					
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials	Marine Plywood 3/16" thk 4' x 8'	2.00	pc.	577.00	1,154.00
	Tarpaulin (4' x 8')	2.00	pc.	800.00	1,600.00
	Assorted Sizes Lumber	100.00	bd. ft.	42.00	4,200.00
	Assorted Sizes C.W. Nails	2.00	kg.	75.00	150.00
Sub-total for E					-
Sub-total for E					7,104.00
Direct Cost (C + E)					7,538.90
Overhead, Contingencies and Miscellaneous					753.89
Contractor's Profit (CP)					603.11
Value Added Tax (VAT)					444.80
Total Unit Cost					4,670.35

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: B.7 Occupational Safety and Health Program

Unit of Measurement: L. S.

Output per hour:

Quantity: 1.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor	a. Safety Practitioner	1	80.75	443.20	35,788.40
	b. First Aider	1	323.00	342.24	110,543.52
	c. laborers (flagmen) - 2 laborers/shift	4	323.00	342.24	442,174.08
					-
Sub-total for A					588,506.00
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)	a.				-
					-
					-
					-
Sub-total for B					-
Total (A+B)					588,506.00
D. Output/day					
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials	a. Pairs, Rubber Boots Men, Long, with Steel Toe, Black	20.00	pair	400.00	8,000.00
	b. Pairs, Working Gloves (Maong Materials)	20.00	pair	15.00	300.00
	c. Pairs, Rain Coats (Rainforced, Hip Length Small, Medium, & Large)	20.00	pcs.	100.00	2,000.00
	d. Barricades/Signboards	1.00	L.S	15,000.00	15,000.00
					-
Sub-total for E					25,300.00
Direct Cost (C + E)					613,806.00
G. Overhead, Contingencies and Miscellaneous					
Contractor's Profit(CP)			8% per D.O. 197 S. 2016		
Value Added Tax (VAT)			5% per D.O. 197 S. 2016		
Total Unit Cost					696,056.00

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PROJECT NAME:	CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE
Item No./Description:	B.9 Mobilization & Demobilization

Item No./Description:	B.9
Unit of Measurement:	L. S.
Output per hour:	
Quantity:	1.00

jcbor

404(1)b

0

kg./hr.

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icbor

DETAILED UNIT PRICE ANALYSIS

Structural Concrete, Class "A", $f_c' = 27.58 \text{ MPA}$

cu.m.

cu.m./hr.

cu.m./hr.

7,705.0

jcbor

Q

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:	407(8)	Lean Concrete

Unit of Measurement: cu.m.

Output per hour: 1.40 cu.m./hr.

Quantity:	460.00	Use 3 gangs of equipment & labor
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Designation	No. of Persons	No. of Days	Daily Rate	Amount
A. Labor				
a. Foreman	1	13.69	611.92	8,377.48
b. Skilled	12	13.69	443.20	72,811.43
c. Unskilled	24	13.69	342.24	112,450.29
-				-
-				-
-				-
-				-
Sub-total for A				P 193,639.19
B.				
Name and Capacity	No. of Equipment	No. of Days	Daily Rate	Amount
Equipment, (2014 ACEL Rates)				
a. One bagger mixer	1	13.69	1,376.00	18,838.10
b. Concrete vibrator	1	13.69	730.00	9,994.05
c. Water truck	1	1.37	19,600.00	26,833.33
Minor Tools (5% of Labor)				9,681.96
-				-
-				-
-				-
-				-
-				-
Sub-total for B				P 65,347.44
C:	Total (A+B)			258,986.63
D. Output/day	33.60	In.m./day		
E.				
Name and Specifications	Quantity	Unit	Unit Cost	Amount
Materials				
a. Portland Cement	3,680.00	bag	283.00	1,041,440.00
b. Fine Aggregates	230.00	cu.m.	1,063.00	244,490.00
c. Coarse Aggregates	460.00	pc.	1,063.00	488,980.00
-				-
-				-
-				-
-				-
-				-
-				-
Sub-total for E				P 1,774,910.00
F. Direct Cost (C + E)				2,033,896.63
G. Overhead, Contingencies and Miscellaneous		10% per D.O. 197 S. 2016		203,389.66
H. Contractor's Profit(CP)		8% per D.O. 197 S. 2016		162,711.73
I. Value Added Tax (VAT)		5% per D.O. 197 S. 2016		119,999.90
L. Total Unit Cost				5,478.26

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: 414(1) Forms and Falseworks

Unit of Measurement: L.S.

Output per hour:

Quantity: 1.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor					
a. Foreman		1	30.00	611.92	18,357.60
b. Skilled		6	30.00	443.20	79,776.00
c. Unskilled		8	30.00	342.24	82,137.60
Sub-total for A					180,271.20
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)					
Minor Tools (10% of Labor)					- - - 18,027.12 - - - - - -
Sub-total for B					18,027.12
Total (A+B)					198,298.32
Output/day		In.m./day			
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E: Materials					
a. 63 mm dia. G.I. Pipes	1,101.60	In.m.	933.33		1,028,160.00
b. 63 mm dia C-clamp	3,365.00	pc.	54.00		181,710.00
c. Tie wire	36.90	kg.	70.00		2,583.00
					- - - - - - -
Sub-total for E					1,212,453.00
Direct Cost (C + E)					1,410,751.32
Overhead, Contingencies and Miscellaneous					10% per D.O. 197 S. 2016
Contractor's Profit(CP)					8% per D.O. 197 S. 2016
Value Added Tax (VAT)					5% per D.O. 197 S. 2016
Total Unit Cost					83,234.33
					1,747,920.89

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description: 1701(1)a Structure Excavation(Common Soil)

Unit of Measurement: cu.m.

Output per hour: 20.00

Quantity: 1,243.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor	a. Const. Foreman	1	7.77	611.92	4,753.85
	b. Laborers	3	7.77	342.24	7,976.33
					-
Sub-total for A					12,730.18
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)	a. Dump Truck	2	7.77	11,360.00	176,506.00
	b. Backhoe	1	7.77	12,296.00	95,524.55
	Minor Tools(10% of Labor Cost)				1,273.02
Sub-total for B					273,303.57
Total (A+B)				P	286,033.75
Output/day		160.00 cu.m./day			
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials	a.				-
					-
					-
Sub-total for E					286,033.75
Direct Cost (C + E)				P	286,033.75
Overhead, Contingencies and Miscellaneous		10% per D.O. 197 S. 2016			
Contractor's Profit(CP)		8% per D.O. 197 S. 2016			
Value Added Tax (VAT)		5% per D.O. 197 S. 2016			
Total Unit Cost					285.11

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:	1701(1)b	Structure Excavation(Soft Rock)

Unit of Measurement: cu.m.

Output per hour: 42.00 cu.m./hr.

Output per hour: 42.00

Quantity: 5,488.00

[illegible]

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME:

CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:	1716(6)	Structural Steel Sheet Piles, Furnished(0.40m. wide)
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Unit of Measurement: In.m.

Output per hour: 48

Quantity: 1,053.00

Use 2 gangs of labor & equipment

1000

[illegible]

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE
Item No./Description: 1716 (12) Structural Steel Sheet Piles, Driven
Unit of Measurement: In.m.
Output per hour: 10.00 In.m./hr.
Quantity: 1,053.00

Use 2 gangs for labor & equipment

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor	a. Const. Foreman	1	6.58	611.92	4,027.20
	b. Skilled Laborers	12	6.58	443.20	35,001.72
	c. Unskilled Laborers	12	6.58	342.24	27,028.40
					-
Sub-total for A					66,057.32
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)	a. Truck Mounted Crane	2	6.58	20,848.00	274,411.80
	b. Vibro Hammer	2	6.58	16,984.00	223,551.90
	c. Gen. Set	2	6.58	10,373.36	136,539.35
	d. Welding Machine	2	6.58	2,968.00	39,066.30
	e. Cutting Outfit	2	3.29	363.60	2,392.94
Sub-total for B					-
Sub-total for B				P	675,962.29
Total (A+B)					742,019.62
Output/day		In.m./day			
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials	a. Welding Rod	25.27	m.	145.00	3,664.44
	b. Oxygen/Acetylene	36.00	set	3,750.00	135,000.00
Sub-total for E					-
Sub-total for E					138,664.44
Direct Cost (C + E)					880,684.06
Overhead, Contingencies and Miscellaneous					10% per D.O. 197 S. 2016
Contractor's Profit (CP)					8% per D.O. 197 S. 2016
Value Added Tax (VAT)					5% per D.O. 197 S. 2016
Total Unit Cost					51,960.36
Total Unit Cost					1,036.25

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DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS -
CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE
Item No./Description: 1716(16) Steel Sheet Test Piles, Furnished and Driven
Unit of Measurement: In.m.
Output per hour: 8.000 In.m./hr.
Quantity: 6.00

Designation		No. of Persons	No. of Days	Daily Rate	Amount
A. Labor	a. Const. Foreman	1	0.09	611.92	57.37
	b. Skilled	6	0.09	443.20	249.30
	c. Laborers, Unskilled	6	0.09	342.24	192.51
					-
Sub-total for A					P 499.18
Name and Capacity		No. of Equipment	No. of Days	Daily Rate	Amount
B. Equipment, (2014 ACEL Rates)	a. Truck Mounted Crane	1	0.09	20,848.00	1,954.50
	b. Vibro Hammer	1	0.09	16,984.00	1,592.25
	c. Gen. Set	1	0.09	10,373.36	972.50
	d. Welding Machine	1	0.09	2,968.00	278.25
	e. Cutting Outfit	1	0.05	363.60	49.92
Sub-total for B					P 4,847.42
Total (A+B)					5,346.60
Output/day		64.00 In.m./day			
Name and Specifications		Quantity	Unit	Unit Cost	Amount
E. Materials	a. Coco logs	1.53	m.	520.00	795.60
	b. Good Lumber	7.20	bd.ft.	42.00	302.40
	c. Nail/Spike	0.29	kg.	42.00	12.10
	d. Steel Sheet Pile	1.80	m.	3,998.48	7,197.26
	e. Welding Rod	0.04	kg.	145.00	6.26
	f. Oxy/Acetylene	0.02	set	3,750.00	64.80
Sub-total for E					P 8,378.42
Direct Cost (C + E)					13,725.02
Overhead, Contingencies and Miscellaneous		10% per D.O. 197 S. 2016			
Contractor's Profit(CP)		8% per D.O. 197 S. 2016			
Value Added Tax (VAT)		5% per D.O. 197 S. 2016			
Total Unit Cost					2,834.22

DETAILED UNIT PRICE ANALYSIS

PROJECT NAME: CONSTRUCTION/MAINTENANCE OF FLOOD MITIGATION STRUCTURES AND DRAINAGE SYSTEMS - CONSTRUCTION OF SEAWALL, BAYBAY, LILOY, ZAMBOANGA DEL NORTE

Item No./Description:	1718(1)	Pipe Culvert
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Unit of Measurement: In.m.

Output per hour: 1.00

Quantity: 12.00

[illegible]

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UNIT COST DERIVATION FOR PORTLAND CEMENT

TOTAL QUANTITY REQUIREMENTS FOR PORTLAND CEMENT

DESCRIPTION	QUANTITY (Bags)
Portland Cement Concrete Pavement, 0.28 m. thick	1.53
Reinforced Concrete Culvert Pipe, 910 mm. (36") diameter	0.00
Structural Concrete, Class"A", fc' = 27.58 MPA	84,755.00
Elastomeric Bearing Pad	0.00
Grouted Riprap, Class "A"	1,224.00
Construction of Field Office for the Engineer	220.00
RCCP, 610 mm dia.	14.00
Catch Basin	4.00
Concrete Cover	1.00
Concrete Curb & Gutter	157.38
Sidewalk	231.80
Informatory Signs	1.00
T O T A L	86,609.71

Quantity = 86,609.71 Bags

Delivery Charge = P 0.120 / bag / km.

S I T E	HAULING DISTANCE
Zamboanga DEL Norte 2nd DEO	20.00
PROJECT SITE	

*Average hauling distance from Source to assumed Stockpiling area :
say 20.00 km.

Delivery Charge = P 0.120 x 20.00
= P 2.40 / bag

*Delivery Truck : 86,609.71 bags., (hauling works)
20,000.00 kgs., (capacity per haul)
or 500.00 bags. (capacity per haul)

*Capacity of Laborers unloading bags of Cement from Delivery Truck :

Assume (10) laborers can unload 500.00 bags of Cement.

*Dumptruck (10 Wheeler) days computation : TIME-MOTION ANALYSIS

Speed when loaded : 30.00 kph
Speed when unloaded : 40.00 kph
Loaded running = $\frac{20.00 \times 60}{30.00}$ = 40.00 mins.

Unloaded running	=	$\frac{20.00 \times 60}{40.00}$	=	30.00	mins.
Loading and Unloading	:	45.00	mins.		
Capacity of Dumptruck	:	8.00	cu.m.		
	:	500.00	bags		
Total Cycle time	:	115.00	mins.		
No. of trips for Dumptruck per day	=	$\frac{8.0 \times 60.00}{115.00}$	=	4.17	say 4.17 trip
Dumptruck daily output	=	500 x 4.17	=	2,086.96	cu.m.
Using (4) Dumptrucks	=	4 x 2086.96	=	8,347.83	cu.m.
1. No. of days for Delivery Truck	=	$\frac{86,609.71}{8,347.83}$	=	10.38	say 0.00 days
2. No. of days for Labor, for unloading	=	complimentary to D. Truck days			= 0.00 days

DELIVERY COST :

86,609.71	- Bags, Portland Cement	@ P	2.40	/ bag	= P	207,863.30
				Sub - Total	P	207,863.30

LABOR :

1	- Foreman	@ P	611.92 /day	x	0.00	days = P	0.00
10	- Laborers. unloading	@ P	342.24 /day	x	0.00	days = P	0.00
				Sub - Total	P		0.00

MATERIALS :

86,609.71	- Bags, Portland Cement	@ P	283.00	/ bag	= P	24,510,547.93
	(Pick-Up Price)			Sub - Total	P	24,510,547.93

Estimated Quantity		86,609.71	Bags
Unit Cost	P	285.40 / Bag,	say P 283.00 / Bag
Grand Total	P	24,718,411.23	
Delivery Cost	P	207,863.30	
Labor	P	0.00	
Materials	P	24,510,547.93	

UNIT COST ANALYSIS FOR HAULING COST FOR ALL AGGREGATES

Hauling Cost from the District Office to Site

Item No. : ALL AGGREGATES	Terrain : Flat to Rolling
Quantity : 1,000.00	Unit : cu.m.
	Hauling Distance : 5.00 km.
	Effective Working Hours : 8.00 hrs.

Hauling: Using	10.00 cu.m.capacity Dumptruck		
	Weight of Dumptruck (cap. 10.00 cu.m.)	: 16,000.00	kgs.
	Unit weight of Fine Aggregates	: 1,640.00	kg/m3
	Unit weight of Coarse Aggregates	: 1,534.00	kg/m3
	Maximum Volume to be Carried per DT	: 11.57	cu.m.

*Dumptruck (10 Wheeler) days computation : TIME-MOTION ANALYSIS

Speed when loaded	:	30.00	kph
Speed when unloaded	:	40.00	kph
Loaded running	=	$\frac{5.00 \times 60}{30.00}$	= 10.00 mins.
Unloaded running	=	$\frac{5.00 \times 60}{40.00}$	= 7.50 mins.
Loading and Unloading	:	5.00	mins.
Capacity of Dumptruck	:	10.00	cu.m.
Total Cycle time	:	22.50	mins.
No. of trips for Dumptruck per day	=	$\frac{8 \times 60.00}{22.50}$	= 21.33 say 21.33 trips
Dumptruck daily output	=	10 x 21.33	= 213.33 cu.m.
Using (4) Dumptrucks	=	4 x 213.33	= 853.33 cu.m.

1. No. of days for Dumptrucks	=	$\frac{1,000.00}{853.33}$	= 1.17 say 1.17 days
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EQUIPMENT USED : (2009 ACEL RATES)

4 - Unit Dumptruck	@ P	11,360.00 /day	x	1.17 days = P	53,250.00
				Sub - Total	P 53,250.00

Estimated Quantity		1,000.00 cu.m.
Unit Cost	P	10.65 / cu. m./km. (Unit Cost, Hauling per cu.m.per km.)
Grand Total	P	53,250.00
Equipment	P	53,250.00
Labor	P	
Materials	P	

ZAMBOANGA DEL NORTE 2nd DEO

	Ave. Hauling Distance	Unit Cost per cu.m./km.	Hauling Cost per cu.m.	Unit Price	Unit Cost per cu.m.
Cost of Fine Aggregates:	20.00 x	10.65 =	213.00 +	850.00 =	1,063.00
Cost of Coarse Aggregates:	20.00 x	10.65 =	213.00 +	850.00 =	1,063.00
Cost of Item 200 Materials:	20.00 x	10.65 =	213.00 +	618.00 =	831.00
Cost of Item 201 Materials:	20.00 x	10.65 =	213.00 +	663.00 =	876.00
Cost of Item 300 Materials:	20.00 x	10.65 =	213.00 +	755.00 =	968.00
Cost of Boulders:	20.00 x	10.65 =	213.00 +	1,100.00 =	1,313.00
Cost of Embankmen, Common Borrow:	20.00 x	10.65 =	213.00 +	270.00 =	483.00
Cost of Embankmen, Selected Borrow:	20.00 x	10.65 =	213.00 +	350.00 =	563.00