

Talisay City, Negros Occidental Telefax No.: (034) 712-8404

Project Reference No:

CHMSC 21-014-0208-G

Name of the Project:

PROCUREMENT OF VARIOUS LABORATORY EQUIPMENT FOR SURVEYING CLASS

OF CIVIL ENGINEERING

Location of the Project: TALISAY CAMPUS

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			LOT 1		
1	2	unit	TOTAL STATIONS		
			Manual, Reflectorless with TSshield™		
			with the ff. features:		
			Angle Measurement: Accuracy: 5"		
			Min. Angle Resolution: 1"		
			Measuring Time: 0.9 seconds		
			Non- prism range: 800 meters		
			Non-prism accuracy: 2 mm + 2 ppm		
			Single prism range: 5,000 meters		
			Prism EDM accuracy: 1.5 mm + 2 ppm		
			Level Compensator: 6 mins.	1	
			Leveling System: Electronic		
			Memory USB: 4G		
			Battery Life: 28 hours		
			Communications: USB 2.0 slots environmentally protected and compatible	1	
			with industry standard thumb drives		
			Display: Dual graphic backlit LCD		
			Accessories:		
			Battery and battery charger, Range pole, Aluminum with graduation & level,		
			Prism with holder, Tripod(heavy duty aluminium).		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			Proof of conformity to specified standard/s		
			Sub-ABC = Php 1,078,000.00		
			LOT 2		
2	2	unit	HANDHELD GLOBAL POSITIONING SYSTEM (GPS)		
			with 8 Megapixel autofocus camera and automatic geo-tagging, and		
			Birds Eye Sattellite Imagery Subscription for I year, and can track both		

Signature of Bidder	
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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			GPS AND GLONASS satellites.		
			with the ff. features:		
			Display Resolution: 272 x 480 pixels (W X H)		
			Display Size: 2" W x 3.5" H (5.06 X 8.93 cm); 4" Diagonal (10.2 cm)		
			Display Type: Bright, Transflective 65k color TFT, dual-orientation		
			touchscreen; sunlight readable		
	Maria		Battery: rechargeable lithium-ion up to 16 hours battery life		
			Interface: High-speed USB and NMEA 0183 compatible		
			Electronic Compass: Tilt-compensated 3-axis		
			Waypoints/Favorites/Locations: 4000		
			Routes: 200		
			Track mLog: 10,000 points, 200 saved tracks		
			Water Resistant: IPX7		
			Built-in Memory: 4GB		
			Other Features:		
			High-sensitivity receiver; barometric altimeter; unit-to-unit transfer		
			wirelessly; basemap; ability to add maps; accepts microSD™ card; ability		V and V
			to add additional points of interests; automatic routing with optional		
			mapping for detailed roads; geocaching friendly (paperless); custom		
			maps compatible; Hunt/fish calendar; sun and mood information; tide		
			tables; area calculation; picture viewer; can connect to online community		
			to analyse, categorize and share data.		
			Accessories included:		
			Lithuim-ion battery, USB Cable, AC charger, Guide/Manual		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to specified standard/s		
			Sub-ABC = Php 122,000.00		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			LOT 3		
3	2	unit	AIR CONTENT APPARATUS, STANDARD, 1 Liter capacity		
			with the ff. features:		
			Specifications:		
			Meet Standards: ASTM C231, AASHTO T152		
			The testers are made of cast aluminum.		
			The test pot and the upper part are sealed air-tight together by means of		
			two quick-action spring clamps.		
			The air is compressed by means of a built-in hand pump.		
			The pressure gauge is installed recessed in the head of the meter.		
			The scale has an indication rannge of 0-50 volumetric %		
			Accessory: Filling ring		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		929 1199
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
			Sub-ABC = Php 100,000.00		
			LOT 4		
4	1	unit	LOS ANGELES (L.A.) ABRASION MACHINE		
			with 1-hp electronically controlled gear-motor that rotates the drum at		
			via enclosed chain drive.		
			with the ff. features:		
			Specifications:		
			Meet Standards: ASTM C131, AASHTO T96		
			Speed: 31-33 revolutions per minute		
			Abrasive charge: 12 hardened steel balls, each 46-48 mm in diameter		
			and weighing 390-445 grams.		
			Other features:		
			High stiffness welded steel frame		
			High resolution graphical display 128 x 80 pixels and 6 keys membrane keybo	ard	
			Double test procedure: machine is equipped with automatic counter,		
			which can be preset to the required number of revolutions of the drum		
			or the total working time.		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			The drum is rotated by a speed reducer driven by electric motor at		
			specified speed of 31-33 rpm.		
			The machine is sepplied with CE compliant safety cabinet with door		
			opening switch with noise reduction.		
			Accessories:		
			Catch Pan		
			12 abrasive charge with the above specifications		
			Safety cabinet with noise reduction		
			NOTE:		
			The supplier shall provide the following:		
			1. Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
			Sub-ABC = Php 590,350.00		
			LOT 5		
5	1	unit	MULTI-SPEED COMPRESSION TESTER, Automatic, 50KN capacity		
			with variable test speed from 0.05 to 51 mm per minute.		
			(FOR CBR, MARSHALL TEST AND UNCONFINED COMPRESSION TEST)		
			with the ff. features:		
			Specifications:		
			Power: DC Motor 750 W		
			Data Download: using LAN port		
			USB port for USB memory stick data storage		
			Resolution: 132000 divisions		
			Sampling Frequency: 50 Hz		
			Horizontal clearance (distance between columns): 270 mm		
			Maximum vertical clearance (without accessories): 730 mm		
			Platen travel: 100 mm		
			Touchscreen graphic display: 240x128 pixel		
			Large memory data storage in USB pen drive		
			Meet Standards: ASTM D1883, ASTM D1559, ASTM D5581,		
			AASHTO T245, ASTM D4123, AASHTO T193, ASTM D6927, ASTM D2166		

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Date:	
Date.	

Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			NOTE:		
10			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.	- 1	
			2. At least one (1) year warranty for defects.		1
		75	Certificate of calibration of the equipment.		
			Proof of conformity to standard/s		
6	1	unit	MARSHALL TEST ACCESSORIES		
			(to be used with the above MULTI SPEED COMPRESSION TESTER in		
			Analog Mode)		
			with the ff. features:		
			Load Cell, 50 KN capacity		
			Adapter to fit load cell (two pieces)		
			Displacement transcuder, 25 mm travel		
			Adjustable transcuder holder		
			Compression device extension		
			Compression device		
			Stability mould for 4 in. (101.6 mm) diameter specimens		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
- 4			4. Proof of conformity to standard/s		
7	1	unit	CALIFORNIA BEARING RATIO (CBR) TEST ACCESSORIES		
			(to be used with the above MULTI SPEED COMPRESSON TESTER)		
			with the ff. features:		
			adapter to fit load cell (two pieces)		
			Displacement transcuder, 25 mm travel		
			Adjustable transcuder holder		
			Adjustable CBR penetration piston		

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BILL OF QUANTITIES

Date		
Date:		

Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
8	1	unit	UNCONFINED COMPRESSION TEST ACCESSORIES		
			(to be used with the above MULTI SPEED COMPRESSION TESTER)		
			with the ff. features:		
			2.5 KN capacity strain gauge load cell		
			Connecting adapter load cell		
			Linear poptentiometric displacement transcuder, 25 mm travel with		
			cable 6 pin connector		
			Adjustable support for eletronic support		

Sub-ABC = Php 1,069,920.00

LOT 6

RIAXIAL TEST SET



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Date:	

Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			Linear Transcuder, 25 mm travel		
	III -		Connection shaft for triaxial cell piston		
			Additional Specification:		
			50 KN Maximum capacity		
			Speed range: 0.00001 to 50.8 mm/min		
			Maximum sample diameter: 70 mm		
			Minimum vertical clearance: 390 mm		
			Maximum vertical clearance: 725 mm		
			USB port to connect a memory stick (stick included)		
			Effective sampling rate up to 50/second		
			LAN communication, Automatic test start and stop		
			PC connection with data logger for real time monitoring		
			Standard Triaxial Cells and Accessories:		
			Standard triaxial cell for sample sizes 35 to 70 mm dia.		
			Top cap, Porous disc, Membrane(pack of 10),		
			O-ring(pack of 10), Membrane stretcher		
			Two-part split former, Two-part split mould		
			Lateral filter drains(pack of 50), Drainage burette		
			Hand sampler, Water repellent grease, Flaring tool		
			Greaser for triaxial cell, No-volume change valve		
			Pressure System and Cointrol Panels:		
			Triaxial panel 2-way system, air regulators		
			Air compressor (air bank), 3 hp 210 tank capacity, 220V/1-phase		
			Nylon tubing 8x6 mm dia. 10 m coil		
			Nylon tuding, 6x4 mm dia. 20 m coil		
			Digital pressure gauge, Bladder (2pcs.)		
			Water De-Airing System:		
			Vacuum pump, Vacuum gauge		
	bull Table		Rubber tube ID 6.5 mm x OD 16.5 mm		
			Special oil for vacuum pumps		
			De-airing tank, 23 liters capacity		
			Valve panel for de-airing tank, for connection to the air regulators and		
			Air drying unit		
			Volume change: Automatic Volume change, Transcuder extension cable		
			Pore water pressure: Pressure transcuder 10 bar, De-airing block		



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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			Data Acquisition and Processing:		
			8-Channels data acquisition system for geotechnical tests, 110-240V,		
			50-60Hz, 1 ph Geodatalog cable connecting loads cellls (set of 4)		
			Undrained (uu) triaxial testing geo-analysts template for MS-Excel,		
			compliant to ASTM D2650, Effective stress (CU, CD)		
			NOTE:	LOCAL TE	
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			Proof of conformity to standard/s		
			Sub-ABC = Php 2,055,200.00		
			LOT 7		
10	1	unit	DIRECT SHEAR TESTING MACHINE		
			direct/residual autoshear digital, automax control system		
			with the ff. features:		
			Speed range: Adjustable 0.00001 to 15.0000 mm/min		
			Maximum shear force, 5000 N		
			Maximum vertical force: 500N or 5000N using 10:1 lever ratio device		
			Speed drive ratio: stepper motor 1/10000 resolution		
			Horizontal travel: preset via firmware up to 20 mm		
			Displacement limits: controlled by optical safety switch		
			Digital Display: LCD 4 row by 20 characters, easy to operate with the		
			membrane keyboard		
			Specimen sizes: 60 and 100 mm square, 50 mm, 60 mm, and 100 mm diam	eter.	
			Accessories to fit it the analog mode:		
			Load Ring 5000N with adapters		
	14		Gauge dial 10 mm x 0.002 mm		
			Gauge dial 30 mm x 0.01 mm		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			3. Certificate of calibration of the equipment.	11.00	
			Proof of conformity to standard/s		
			Sub-ABC = Php 874,800.00		
			LOT 8		
11	1	unit	STANDARD PENETRATION TEST SET		
			(For Soil) conforming to ASTM D1586/D1586M-18		
			with the ff. features:		
			Drive-weight assembly:		
			63.5 kg hammer		
			Driving head (anvil)		
			Guide permitting free fall of 0.762 meter		
			Overlift capability of at least 100 mmm		
			Drill rod		
			Cathead:		
			operating at approximately 100 revolutions per minute		
			equipped with suitable rope and overhead sheave for lifting drive-weight		
			assembly (typically 25 mm in diameter)		
			Split-spoon sampler		
			conforming to ASTM D1586/D1586M-18		
		BUTT	Tripod with atleast 4 m clear height and one of legs of the tripod having		
			a ladder to facilitate a person to reach tripod head (containing tripod		
			head with hook)		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
			Sub-ABC = Php 804,600.00		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
12	1	unit	LOT 9	11100	
			OEDOMETER TEST SET		
			with the ff. features:		
			Main features:		
			Compact and robust design		
			3-lever arm ratio		
			Screw jack support		
			Same cell for standard and permeability test		
			Technical specification:		
			Max. loading (using 11:1 beam ratio) of 1848 kg corresponding to 9.061		
			Mpa (92.40 kgf/cm) on 20 cm specimen (50.47 mm dia.)		
			Overall dimension: 500 H X 200 W X 750 mm L		
			Standard set, analog type:		
			Oedometer front loading to BS 1377, ASTM D2435 (3 pcs)		
			Fix ring cell for 50.47 mm with upper and lower stones		
			Set of slotted steel weights 2x0.25 kg, 1x0.5 kg, 1x1 kg, 1x2 kg, 1x4 kg, 7x	8 kg	
			Gauge dial 10 mm x 0.02 mm		
			Bench oedometer to accept up to 3 oedometers		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			Certificate of calibration of the equipment.		
			Proof of conformity to standard/s		
			Sub-ABC = Php 747,150.00		
13	1	unit	LOT 10		
			WATER HAMMER TEST SET		
			with the ff. features:		
			Structural Specifications:		
			Stainless frame		
	-		Screws, nuts, plates and all metallic elements in stainless steel.		
			Diagram in the front panel with distribution of the elements similar to		
			the real one.		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			Quick connections for adaptation to feed hydraulics source		
			Technical Data:		
			Constant level deposit, in methacrylate.		
			Unload deposit, in methacrylate.		
			Pipe circuits in PVC.		
			Valves to selct the circuit.		
			2 adjustable equilibrium chimmneys and subjection clips		
			Connections system to the Hydraulics Bench	7	
			Easy and quick coupling system built-in.		
			Anodized aluminum structure		
			Other features:		
			This unit is supplied with 8 manuals: Required Services, Assembly		
	-		and Installation, Ineterface and Control Software, Starting-up, Safety,		
			Maintenance, Calibration & Practices Manuals		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
			Sub-ABC = Php 610,000.00		
			LOT 11		
14	1	unit	TILTING FLUME (WITH MODEL DAM AND SPILLWAY)		
			with the ff. features:		
			Description:		
			The unit shall come with an open channel made of transparent working		
			section mounted on a strong framework.		
			The unit shall be supplied with 2.5 meter flume which can be tilted using		
			calibrated screwjack.		
			The unit shall be fitted with pressure tappings and fixing points as well		
			as longitudinal scale. The scale shall be positioned at the top of the		
			channel so that the depth gauges and pitot-static tubes can be positioned		
			at the top of the channel length.		
			The unit shall be incorporated with a sump tank and a water pump.		

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Item No.	Qty	Unit	ARTICLES and DESCRIPTION	Unit Price	Total Price
			The flow rates shall be measured by a flow meter.		
			Specifications:		
			Flow channel: Clear acrylic; 2500 mm L x 250 mm H x 75 mm W		
			Sump Tank: 120 liters capacity; flow rate of up to 2 L/sec		
			Venier gauges: 3 units of Vernier caliper		
			Utility requirements:		
			Electrical Supply: 240 VAC/1-PHASE/50Hz		
			Water Supply: Laboratory mains supply		
			Accessories:		
			Venturi Flume		
			Sharp and broad crested weirs		
			3 vernier level gauges		
			Crump weir		
			Adjustable undershot weir		
			Model dam and spillway		
			NOTE:		
			The supplier shall provide the following:		
			Training of faculty on the use/operation of equipment.		
			2. At least one (1) year warranty for defects.		
			3. Certificate of calibration of the equipment.		
			4. Proof of conformity to standard/s		
			Sub-ABC = Php 1,947,980.00		
			-x-x-x-x-x-x-x-x-x-x-x-nothing follows-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x		
			TOTAL ABC = Php 10,000,000.00		
			PR # 21-016-0119 01-19-2021/Engr. G. Gerona		
			Income 004-164-21-01 01-15-2021		

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Section VI. Schedules of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

tem #	Description	Quantity	Total	Delivered, Weeks/Months
	LOT 1			
1	TOTAL STATIONS	2	2	
	Manual, Reflectorless with TSshield™			
	with the ff. features:			
	Angle Measurement: Accuracy: 5"			
	Min. Angle Resolution: 1"			
	Measuring Time: 0.9 seconds			
	Non- prism range: 800 meters			
	Non-prism accuracy: 2 mm + 2 ppm			
	Single prism range: 5,000 meters			
	Prism EDM accuracy: 1.5 mm + 2 ppm			
	Level Compensator: 6 mins.			
	Leveling System: Electronic			
	Memory USB: 4G			
	Battery Life: 28 hours			
	Communications: USB 2.0 slots environmentally protected and compatible			
	with industry standard thumb drives			
	Display: Dual graphic backlit LCD			
	Accessories:			
	Battery and battery charger, Range pole, Aluminum with graduation & level,			
	Prism with holder, Tripod(heavy duty aluminium).			
	NOTE:			
	(A. S. C.			
_	The supplier shall provide the following:			
	Training of faculty on the use/operation of equipment.			
	2. At least one (1) year warranty for defects.			
	Certificate of calibration of the equipment.			
	Proof of conformity to specified standard/s			
	Sub-ABC = Php 1,078,000.00			
	LOT 2			
	HANDHELD GLOBAL POSITIONING SYSTEM (GPS)	2	2	
	with 8 Megapixel autofocus camera and automatic geo-tagging, and			
	Birds Eye Sattellite Imagery Subscription for I year, and can track both			
	GPS AND GLONASS satellites.			
	with the ff. features:			
	Display Resolution: 272 x 480 pixels (W X H)			
	Display Size: 2" W x 3.5" H (5.06 X 8.93 cm); 4" Diagonal (10.2 cm)			
	Display Type: Bright, Transflective 65k color TFT, dual-orientation			
	touchscreen; sunlight readable			
	Battery: rechargeable lithium-ion up to 16 hours battery life			
	Interface: High-speed USB and NMEA 0183 compatible			
	Electronic Compass: Tilt-compensated 3-axis	-		
	Waypoints/Favorites/Locations: 4000			
	Routes: 200			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features:			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer wirelessly; basemap; ability to add maps; accepts microSD™ card; ability			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer wirelessly; basemap; ability to add maps; accepts microSD™ card; ability to add additional points of interests; automatic routing with optional			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer wirelessly; basemap; ability to add maps; accepts microSD™ card; ability			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer wirelessly; basemap; ability to add maps; accepts microSD™ card; ability to add additional points of interests; automatic routing with optional mapping for detailed roads; geocaching friendly (paperless); custom maps compatible; Hunt/fish calendar; sun and mood information; tide			
	Routes: 200 Track mLog: 10,000 points, 200 saved tracks Water Resistant: IPX7 Built-in Memory: 4GB Other Features: High-sensitivity receiver; barometric altimeter; unit-to-unit transfer wirelessly; basemap; ability to add maps; accepts microSD™ card; ability to add additional points of interests; automatic routing with optional mapping for detailed roads; geocaching friendly (paperless); custom			

1.	AND MILES WORLD COVER OF BUILDING			
	essories included:			
Lithui	im-ion battery, USB Cable, AC charger, Guide/Manual			
NOT	TE:			
The s	supplier shall provide the following:			
1. Tra	raining of faculty on the use/operation of equipment.			
	least one (1) year warranty for defects.			
	ertificate of calibration of the equipment.			
	roof of conformity to specified standard/s		-	
7. 110	our or comornity to specified standard/s		-	
0.1	ADC DI 422 000 00			
Sub-	-ABC = Php 122,000.00			
LOT				
	CONTENT APPARATUS, STANDARD, 1 Liter capacity	2	2	
	the ff. features:			
Specif	fications:			
Meet :	Standards: ASTM C231, AASHTO T152			
	testers are made of cast aluminum.			
	test pot and the upper part are sealed air-tight together by means of			
	quick-action spring clamps.			
			1	
	air is compressed by means of a built-in hand pump.			
	pressure gauge is installed recessed in the head of the meter.			
	scale has an indication rannge of 0-50 volumetric %		U.S.	
Acces	ssory: Filling ring			
NOTE				
The s	supplier shall provide the following:			
	aining of faculty on the use/operation of equipment.			
	least one (1) year warranty for defects.		-	
17 1	ertificate of calibration of the equipment.		-	-
3. Cei			+	_
3. Cer 4. Pro	oof of conformity to standard/s			
3. Cer 4. Pro				
3. Cer 4. Pro Sub -	oof of conformity to standard/s -ABC = Php 100,000.00			
3. Cer 4. Pro Sub-	oof of conformity to standard/s -ABC = Php 100,000.00			
3. Cer 4. Pro Sub-	oof of conformity to standard/s -ABC = Php 100,000.00 4 ANGELES (L.A.) ABRASION MACHINE	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1	oof of conformity to standard/s -ABC = Php 100,000.00 4 ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS 4 with 1	oof of conformity to standard/s -ABC = Php 100,000.00 4 ANGELES (L.A.) ABRASION MACHINE	1	1	
3. Cet 4. Pro Sub- LOT 4 LOS 4 with 1 via er	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive.	1	1	
3. Cet 4. Pro Sub- LOT 4 LOS with 1 via er with t	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at nclosed chain drive. the ff. features:	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Specific	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications:	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS 4 with 3 via er with t Specif Meet	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at nclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS 4 with 3 via er with t Specif Meet Speec	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute	1	1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Speec Abras	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Estandards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter	1	1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Speec Abras and w	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams.	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Speec Abras and w Other	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features:	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Speec Abras and w Other	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams.	1	1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Speci Meet Speec Abras and w Other High:	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: iffications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame		1	
3. Ce 4. Pro Sub- LOT A LOS A with 1 via er with t Speci Meet Speec Abras and w Other High High	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at nclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keyb		1	
3. Ce 4. Pro Sub- LOT A LOS A with 1 via er with t Specia Meet Speec Abras and w Other High Doub	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter,		1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Speec Abras and w Other High t Doubl which	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum		1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Special Abras and w Other High Doubl which or the	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. Ir features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum te total working time.		1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Special Abras and w Other High Doubl which or the	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at		1	
3. Ce 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Special Abras and w Other High Doubl which or the The d special	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at field speed of 31-33 rpm.		1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Specif Meet Speec Abras and w Other High t Doubl which or the The d specif The n	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 × 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door		1	
3. Cer 4. Pro Sub- LOT 4 Via er with t Specif Meet Spece Abras and w Other High t Doubl which or the The d specif The n openi	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. Ir features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction.		1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Specif Meet Speec Abras and w Other High t Doubl which or the The d specif The n openi	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 × 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door		1	
3. Cer 4. Pro Sub- LOT 4 Via er with t Specif Meet Spece Abras and w Other High t Doubl which or the The d specif The n openi	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum the total working time. drum is rotated by a speed reducer driven by electric motor at field speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction.		1	
3. Cer 4. Pro 5. Sub- LOT 4 Via er with t Specif Meet Spece Abras and w Other High Doubl which or the The d specif The n openi Acces Catch	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: in Pan		1	
3. Cer 4. Pro 5 ub- LOT 4 LOS 4 with 1 via er with t Specif Meet Specif Abras and w Other High 1 Doubl which or the The d specif The n openii Acces Catch 12 ab	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: iffications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybele test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: in Pan prasive charge with the above specifications		1	
3. Cei 4. Pro Sub- LOT A LOS A with 1 via er with t Specia Meet Speca Abras and w Other High Doubl which or the The d specif The n openii Acces Catch 12 ab Safety	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybele test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: in Pan prasive charge with the above specifications by cabinet with noise reduction		1	
3. Cer 4. Pro Sub- LOT 4 LOS with 1 via er with t Special Meet Special Abras and w Other High Doubl which or the The d special Acces Catch 12 ab Safet NOTE	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at field speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan prasive charge with the above specifications by cabinet with noise reduction.		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Special Meet Special Abras and w Other High Doubl which or the The d special The n openial Acces Catch 12 ab Safety NOTE The s	ARGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. Ir features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. Idrum is rotated by a speed reducer driven by electric motor at field speed of 31-33 rpm. In machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. In pan crasive charge with the above specifications by cabinet with noise reduction. It is supplier shall provide the following:		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Specif Meet Spece Abras and w Other High t Doubl which or the The d specif The n openii Acces Catch 12 ab Safety NOTE The s 1. Tra	AARGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum ee total working time. drum is rotated by a speed reducer driven by electric motor at field speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: in Pan orasive charge with the above specifications by cabinet with noise reduction supplier shall provide the following: alining of faculty on the use/operation of equipment.		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Specif Meet Spece Abras and w Other High t Doubl which or the The d specif The n openif Acces Catch 12 ab Safety NOTE The s 1. Tra 2. At 1	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan orasive charge with the above specifications by cabinet with noise reduction supplier shall provide the following: aning of faculty on the use/operation of equipment. least one (1) year warranty for defects.		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Specif Meet Speec Abras and w Other High t Doubl which or the The d specif The n openi Acces Catch 12 ab Safety NOTE The st 1. Tra 2. At 3. Cer	A ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 × 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at filed speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan orasive charge with the above specifications by cabinet with noise reduction sy cabinet of calibration of the equipment. least one (1) year warranty for defects. retificate of calibration of the equipment.		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Specif Meet Speec Abras and w Other High t Doubl which or the The d specif The n openi Acces Catch 12 ab Safety NOTE The st 1. Tra 2. At 3. Cer	ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 x 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at fied speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan orasive charge with the above specifications by cabinet with noise reduction supplier shall provide the following: aning of faculty on the use/operation of equipment. least one (1) year warranty for defects.		1	
3. Cer 4. Pro Sub- LOT A LOS With 1 via er with t Specif Meet Speec Abras and w Other High t Doubl which or the The d specif The n openi Acces Catch 12 ab Safety NOTE The s 1. Tra 2. At 3. Cer	A ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 × 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at filed speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan orasive charge with the above specifications by cabinet with noise reduction sy cabinet of calibration of the equipment. least one (1) year warranty for defects. retificate of calibration of the equipment.		1	
3. Cer 4. Pro Sub- LOT A LOS A with 1 via er with t Specia Meet Specia Abras and w Other High 1 Doubl which or the The d specif The n openi Acces Catch 12 ab Safety NOTE The s 1. Tra 2. At 1 3. Cer 4. Pro	A ANGELES (L.A.) ABRASION MACHINE 1-hp electronically controlled gear-motor that rotates the drum at inclosed chain drive. the ff. features: ifications: Standards: ASTM C131, AASHTO T96 d: 31-33 revolutions per minute sive charge: 12 hardened steel balls, each 46-48 mm in diameter weighing 390-445 grams. r features: stiffness welded steel frame resolution graphical display 128 × 80 pixels and 6 keys membrane keybole test procedure: machine is equipped with automatic counter, in can be preset to the required number of revolutions of the drum to total working time. drum is rotated by a speed reducer driven by electric motor at filed speed of 31-33 rpm. machine is sepplied with CE compliant safety cabinet with door ing switch with noise reduction. ssories: n Pan orasive charge with the above specifications by cabinet with noise reduction sy cabinet of calibration of the equipment. least one (1) year warranty for defects. retificate of calibration of the equipment.		1	

	LOT 5			
5	MULTI-SPEED COMPRESSION TESTER, Automatic, 50KN capacity	1	1	
	with variable test speed from 0.05 to 51 mm per minute.	Name of the last		
	(FOR CBR, MARSHALL TEST AND UNCONFINED COMPRESSION TEST)			
	with the ff. features:			
	Specifications:			
	Power: DC Motor 750 W			
	Data Download: using LAN port		-	
_	USB port for USB memory stick data storage			
_	Resolution: 132000 divisions			
	Sampling Frequency: 50 Hz			
	Horizontal clearance (distance between columns): 270 mm			
	Maximum vertical clearance (without accessories): 730 mm			
	Platen travel: 100 mm	eriel 7		
N	Touchscreen graphic display: 240x128 pixel			
	Large memory data storage in USB pen drive			
	Meet Standards: ASTM D1883, ASTM D1559, ASTM D5581,			
	AASHTO T245, ASTM D4123, AASHTO T193, ASTM D6927, ASTM D2166			
	NOTE:			
	The supplier shall provide the following:			
	Training of faculty on the use/operation of equipment.			
	2. At least one (1) year warranty for defects.			
	Certificate of calibration of the equipment.			
	Proof of conformity to standard/s			
6	MARSHALL TEST ACCESSORIES	1	1	
	(to be used with the above MULTI SPEED COMPRESSION TESTER in			
	Analog Mode)			
	with the ff. features:			
	Load Cell, 50 KN capacity			
	Adapter to fit load cell (two pieces)			
	Displacement transcuder, 25 mm travel			
-				
_	Adjustable transcuder holder			
	Compression device extension			
	Compression device			
	Stability mould for 4 in. (101.6 mm) diameter specimens			
	NOTE:			
	The supplier shall provide the following:			
	Training of faculty on the use/operation of equipment.			
	2. At least one (1) year warranty for defects.			
	3. Certificate of calibration of the equipment.			
	Proof of conformity to standard/s			
_	11 Froot of comorning to standard/5			
7	CALTEODNIA READING BATTO (CRR) TEST ACCESSORIES	-	-	
/	CALIFORNIA BEARING RATIO (CBR) TEST ACCESSORIES	1	1	
	(to be used with the above MULTI SPEED COMPRESSON TESTER)			
_	with the ff. features:			
	adapter to fit load cell (two pieces)			
	Displacement transcuder, 25 mm travel			
	Adjustable transcuder holder			
	Adjustable CBR penetration piston			
	NOTE:			
	The supplier shall provide the following:			
	Training of faculty on the use/operation of equipment.			
	At least one (1) year warranty for defects.			
	Certificate of calibration of the equipment.			
	Proof of conformity to standard/s			
	The Froot of Comornity to Standard/S			
8	UNCONSTNED COMPRESSION TEST ASSESSMENTS	-		
0	UNCONFINED COMPRESSION TEST ACCESSORIES	1	1	
	(to be used with the above MULTI SPEED COMPRESSION TESTER)			
	with the ff. features:			
	2.5 KN capacity strain gauge load cell			
	Connecting adapter load cell			
	Linear poptentiometric displacement transcuder, 25 mm travel with			
_	cable 6 pin connector			

	Adjustable support for elctronic support	T			
	Extension load cell	\neg			
	Compression platen (upper and lower)			_	
	NOTE:	-		-	-
-		-		-	_
_	The supplier shall provide the following:	-			
	Training of faculty on the use/operation of equipment.	_			
	2. At least one (1) year warranty for defects.				
	Certificate of calibration of the equipment.				
	Proof of conformity to standard/s				
	Sub-ABC = Php 1,069,920.00				
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	LOT 6	-		_	
)		+	- 1	+	-
_		-	1	+	
_	50 KN capacity with data logger complete testing for Unconsolidated	-			
	Undraided (UU), Consolidatted Undrained (CU), and Consolidated				
	Drained (CD) Test		and the same of		
	with the ff. features:				
	Composition:	\neg			
	Triaxial load frame 50 KN capacity conforming to ASTM D2850, ASTM D4767,				
	Strain gauge load cell, 10 KN capcity	1			
		-			
_	Linear Transcuder, 25 mm travel	-			
_	Connection shaft for triaxial cell piston	_			
	Additional Specification:				
	50 KN Maximum capacity				
	Speed range: 0.00001 to 50.8 mm/min				
	Maximum sample diameter: 70 mm				
	Minimum vertical clearance: 390 mm			_	
-	Maximum vertical clearance: 725 mm	-	-	-	
-		-		-	
_	USB port to connect a memory stick (stick included)	-		-	
	Effective sampling rate up to 50/second				
	LAN communication, Automatic test start and stop				
	PC connection with data logger for real time monitoring				
	Standard Triaxial Cells and Accessories:				
	Standard triaxial cell for sample sizes 35 to 70 mm dia.	\neg			
	Top cap, Porous disc, Membrane(pack of 10),	\neg			
_	O-ring(pack of 10), Membrane stretcher	-		-	
-		\rightarrow		+	
_	Two-part split former, Two-part split mould	-			
	Lateral filter drains(pack of 50), Drainage burette				
	Hand sampler, Water repellent grease, Flaring tool				
	Greaser for triaxial cell, No-volume change valve				
	Pressure System and Cointrol Panels:				
	Triaxial panel 2-way system, air regulators	\neg			
	Air compressor (air bank), 3 hp 210 tank capacity, 220V/1-phase	\rightarrow		_	-
	Nylon tubing 8x6 mm dia. 10 m coil	+			-
-		-			
-	Nylon tuding, 6x4 mm dia. 20 m coil	_		-	
	Digital pressure gauge, Bladder (2pcs.)				
	Water De-Airing System:				
	Vacuum pump, Vacuum gauge				
	Rubber tube ID 6.5 mm x OD 16.5 mm				
	Special oil for vacuum pumps				1 1 1
	De-airing tank, 23 liters capacity	\rightarrow			
		to		+	_
-	Valve panel for de-airing tank, for connection to the air regulators and pressure outle	LS		-	-
-	Air drying unit	-			-
	Volume change: Automatic Volume change, Transcuder extension cable				
	Pore water pressure: Pressure transcuder 10 bar, De-airing block				
	Data Acquisition and Processing:				
	8-Channels data acquisition system for geotechnical tests, 110-240V,				
	50-60Hz, 1 ph Geodatalog cable connecting loads cellls (set of 4)				
	Undrained (uu) triaxial testing geo-analysts template for MS-Excel,	1			
	compliant to ASTM D2650, Effective stress (CU, CD)	+	-	-	
-		-		-	
	NOTE: The supplier shall provide the following:	-			
	LDG CURROUGE CROUL REGULAGO PRO POLICIONAL				

	Company of the Administration		1	
	Compact and robust design	-	-	
\rightarrow	3-lever arm ratio			
	Screw jack support		-	
	Same cell for standard and permeability test			
	Technical specification:			
	Max. loading (using 11:1 beam ratio) of 1848 kg corresponding to 9.061			
	Mpa (92.40 kgf/cm) on 20 cm specimen (50.47 mm dia.)			
	Overall dimension: 500 H X 200 W X 750 mm L			
$\overline{}$	Standard set, analog type:			
	Oedometer front loading to BS 1377, ASTM D2435 (3 pcs)			
	Fix ring cell for 50.47 mm with upper and lower stones	1	1	
	Set of slotted steel weights 2x0.25 kg, 1x0.5 kg, 1x1 kg, 1x2 kg, 1x4 kg, 7x	2 ka		
-	Gauge dial 10 mm x 0.02 mm	T		
	Bench oedometer to accept up to 3 oedometers	+	+	-
-	NOTE:	-	+	+
-	The supplier shall provide the following:	-	+	_
	Training of faculty on the use/operation of equipment.	-	-	
	2. At least one (1) year warranty for defects.			
_	Certificate of calibration of the equipment.			
	Proof of conformity to standard/s			
	Sub-ABC = Php 747,150.00			
	LOT 10			
	WATER HAMMER TEST SET	1	1	
\rightarrow	with the ff. features:			
\rightarrow	Structural Specifications:			
\dashv	Stainless frame			
\dashv		_	+	
\dashv	Screws, nuts, plates and all metallic elements in stainless steel.	-	-	-
-	Diagram in the front panel with distribution of the elements similar to	-	-	-
_	the real one.	-	-	
	Quick connections for adaptation to feed hydraulics source	-		
	Technical Data:			
	Constant level deposit, in methacrylate.			
	Unload deposit, in methacrylate.			
	Pipe circuits in PVC.			
	Valves to selct the circuit.			
	2 adjustable equilibrium chimmneys and subjection clips			
	Connections system to the Hydraulics Bench			
	Easy and quick coupling system built-in.			
		1		
-	Anodized aluminum structure	+		-
	Other features:	-	+	
	This unit is supplied with 8 manuals: Required Services, Assembly	-		-
	and Installation, Ineterface and Control Software, Starting-up, Safety,	-		
	Maintenance, Calibration & Practices Manuals			
	NOTE:			
	The supplier shall provide the following:			
	Training of faculty on the use/operation of equipment.			
	2. At least one (1) year warranty for defects.			
	Certificate of calibration of the equipment.			
	Proof of conformity to standard/s			
	Sub-ABC = Php 610,000.00			
	LOT 11			
4	TILTING FLUME (WITH MODEL DAM AND SPILLWAY)	1	1	
	with the ff. features:			
	II)escription:			
	Description:	1		
	The unit shall come with an open channel made of transparent working			
	The unit shall come with an open channel made of transparent working section mounted on a strong framework.			
	The unit shall come with an open channel made of transparent working section mounted on a strong framework. The unit shall be supplied with 2.5 meter flume which can be tilted using			
	The unit shall come with an open channel made of transparent working section mounted on a strong framework.			

channel so that the depth gauges and pitot-static tubes can be positioned	
at the top of the channel length.	
The unit shall be incorporated with a sump tank and a water pump.	
The flow rates shall be measured by a flow meter.	
Specifications:	
Flow channel: Clear acrylic; 2500 mm L x 250 mm H x 75 mm W	
Sump Tank: 120 liters capacity; flow rate of up to 2 L/sec	
Venier gauges: 3 units of Vernier caliper	
Utility requirements:	
Electrical Supply: 240 VAC/1-PHASE/50Hz	
Water Supply: Laboratory mains supply	
Accessories:	
Venturi Flume	
Sharp and broad crested weirs	
3 vernier level gauges	
Crump weir	
Adjustable undershot weir	
Model dam and spillway	
NOTE:	
The supplier shall provide the following:	
Training of faculty on the use/operation of equipment.	
2. At least one (1) year warranty for defects.	
Certificate of calibration of the equipment.	
Proof of conformity to standard/s	
Sub-ABC = Php 1,947,980.00	
-x-x-x-x-x-x-x-x-x-x-nothing follows-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x	
TOTAL ABC = Php 10,000,000.00	
PR # 21-016-0119 01-19-2021/Engr. G. Gerona	
Income 004-164-21-01 01-15-2021	
Note: All items should be delivered within Thirty (30) calendar days	
upon receipt of notice to proceed.	

Section VII. Technical Specifications

ltem	Specification	Statement of Compliance
		Bidders must state here either
		"Comply" or "Not Comply" against
		each of the individual parameters of
		each Specification stating the
		corresponding performance parameter
		of the equipment offered. Statements
		of "Comply" or "Not Comply" must be
		supported by evidence in a Bidders Bid
		and cross-referenced to that evidence.
		Evidence shall be in the form of
		manufacturer's un-amended sales
		literature, unconditional statements
		of specification and compliance issued
		by the manufacturer, samples,
		independent test data etc., as
		appropriate. A statement that is not
		supported by evidence or is subse-
		quently found to be contradicted by the
		evidence presented will render the Bid
		under evaluation liable for rejection.
		A statement either in the Bidders
		statement of compliance or the
		supporting evidence that is found to be
		false either during Bid evaluation, post-
		qualification or the execution of the
		Contract may be regarded as fraudulen
		and render the Bidder or supplier liable
		for prosecution subject to the provisions
		of ITB Clause 3.1(a.2) and/or GCC
		Clause 2.1(a.2).
1	LOT 1	
1	TOTAL STATIONS	
	Manual, Reflectorless with TSshield™	
	with the ff. features:	
	Angle Measurement: Accuracy: 5"	
	Min. Angle Resolution: 1"	
	Measuring Time: 0.9 seconds	
	Non- prism range: 800 meters	
	Non-prism accuracy: 2 mm + 2 ppm	
	Single prism range: 5,000 meters	
	Prism EDM accuracy: 1.5 mm + 2 ppm	
	Level Compensator: 6 mins.	
	Leveling System: Electronic	
	Memory USB: 4G	
	Battery Life: 28 hours	
	Communications: USB 2.0 slots environmentally protected and compatible	
	with industry standard thumb drives	
	Display: Dual graphic backlit LCD	
	Accessories:	
	Battery and battery charger, Range pole, Aluminum with graduation & level,	
	Prism with holder, Tripod(heavy duty aluminium).	
	NOTE:	
	The supplier shall provide the following:	
	11. Training of faculty on the use/operation of equipment	
	Training of faculty on the use/operation of equipment. At least one (1) year warranty for defects.	
	2. At least one (1) year warranty for defects.	
	At least one (1) year warranty for defects. Certificate of calibration of the equipment.	
	2. At least one (1) year warranty for defects.	

	LOT 2	
_	HANDHELD GLOBAL POSITIONING SYSTEM (GPS)	
_	with 8 Megapixel autofocus camera and automatic geo-tagging,	
_	and Birds Eye Sattellite Imagery Subscription for I year, and can	
	track both GPS AND GLONASS satellites.	
	with the ff. features:	
	Display Resolution: 272 x 480 pixels (W X H)	
	Display Size: 2" W x 3.5" H (5.06 X 8.93 cm); 4" Diagonal (10.2 cm)	
Т	Display Type: Bright, Transflective 65k color TFT, dual-orientation	
ī	touchscreen; sunlight readable	
_	Battery: rechargeable lithium-ion up to 16 hours battery life	
_	Interface: High-speed USB and NMEA 0183 compatible	The second
-	Electronic Compass: Tilt-compensated 3-axis	
-	Waypoints/Favorites/Locations: 4000	THE REAL PROPERTY.
-	Routes: 200	
_		
_	Track mLog: 10,000 points, 200 saved tracks	
_	Water Resistant: IPX7	
	Built-in Memory: 4GB	
	Other Features:	
	High-sensitivity receiver; barometric altimeter; unit-to-unit transfer	
	wirelessly; basemap; ability to add maps; accepts microSD™ card;	
	ability to add additional points of interests; automatic routing with	
	optional mapping for detailed roads; geocaching friendly	
	(paperless); custom maps compatible; Hunt/fish calendar; sun and	
_	mood information; tide tables; area calculation; picture viewer;	
	can connect to online community to analyse, categorize and share data.	
-	Accessories included:	
-		
-	Lithuim-ion battery, USB Cable, AC charger, Guide/Manual	
_	NOTE:	
_	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	3. Certificate of calibration of the equipment.	
	4. Proof of conformity to specified standard/s	
	Sub-ABC = Php 122,000.00	
П		
	LOT 3	
П	AIR CONTENT APPARATUS, STANDARD, 1 Liter capacity	
	with the ff. features:	-Ville Helli
	Specifications:	
_	Meet Standards: ASTM C231, AASHTO T152	
-	The testers are made of cast aluminum.	-
-		
-	The test pot and the upper part are sealed air-tight together by	
_	two quick-action spring clamps.	_
_	The air is compressed by means of a built-in hand pump.	
_	The pressure gauge is installed recessed in the head of the meter.	
	The scale has an indication rannge of 0-50 volumetric %	
	Accessory: Filling ring	
	NOTE:	
	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	3. Certificate of calibration of the equipment.	
	Proof of conformity to standard/s	
	Sub-ABC = Php 100,000.00	
	300-ADC - FIID 100,000.00	-
_	LOTA	
_	LOT 4	
8	LOS ANGELES (L.A.) ABRASION MACHINE	
	with 1-hp electronically controlled gear-motor that rotates the drum at	
	via enclosed chain drive.	
	with the ff. features:	
-	Specifications:	

	eet Standards: ASTM C131, AASHTO T96	
Sp	eed: 31-33 revolutions per minute	
	rasive charge: 12 hardened steel balls, each 46-48 mm in diameter	
	d weighing 390-445 grams.	
	her features:	
	gh stiffness welded steel frame	
_	gh resolution graphical display 128 x 80 pixels and 6 keys membran	e keyboard
	puble test procedure: machine is equipped with automatic	
	unter, which can be preset to the required number of revolutions	
	the drum or the total working time.	
	e drum is rotated by a speed reducer driven by electric motor at	
	ecified speed of 31-33 rpm.	
	e machine is sepplied with CE compliant safety cabinet with door	
	ening switch with noise reduction.	
	cessories:	
\rightarrow	tch Pan	
_	abrasive charge with the above specifications	
	fety cabinet with noise reduction	
_	TE:	
_	e supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	At least one (1) year warranty for defects.	
	Certificate of calibration of the equipment.	
_	Proof of conformity to standard/s	
+"	or wormer the wormen wife	
Su	ıb-ABC = Php 590,350.00	
-	10 ADC - 1 11p 050/050100	
1.0	DT 5	
_	ULTI-SPEED COMPRESSION TESTER, Automatic, 50KN capa	acity
	th variable test speed from 0.05 to 51 mm per minute.	
	OR CBR, MARSHALL TEST AND UNCONFINED COMPRESSION TEST)
	th the ff. features:	
_	ecifications:	
	wer: DC Motor 750 W	
	ita Download: using LAN port	
	SB port for USB memory stick data storage	
	solution: 132000 divisions	
Sa	mpling Frequency: 50 Hz	
	prizontal clearance (distance between columns): 270 mm	
	aximum vertical clearance (without accessories): 730 mm	
Pla	aten travel: 100 mm	
То	uchscreen graphic display: 240x128 pixel	
	rge memory data storage in USB pen drive	
Me	eet Standards: ASTM D1883, ASTM D1559, ASTM D5581,	
	SHTO T245, ASTM D4123, AASHTO T193, ASTM D6927, ASTM D2	166
_	OTE:	
	e supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	At least one (1) year warranty for defects.	
	Certificate of calibration of the equipment.	
4.	Proof of conformity to standard/s	
	ARSHALL TEST ACCESSORIES	
	be used with the above MULTI SPEED COMPRESSION TESTER	
	Analog Mode)	
	th the ff. features:	
_	ad Cell, 50 KN capacity	
	lapter to fit load cell (two pieces)	
Dis	splacement transcuder, 25 mm travel	
Ad	ljustable transcuder holder	
MU	annuacion device extension	
Co	ompression device extension	
Co	ompression device extension ompression device ability mould for 4 in. (101.6 mm) diameter specimens	

	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	Certificate of calibration of the equipment. Proof of conformity to standard/s	
	4. Proof of conformity to standardys	
7	CALIFORNIA BEARING RATIO (CBR) TEST ACCESSORIES	
100	(to be used with the above MULTI SPEED COMPRESSON TESTER)	
N1445)	with the ff. features:	
V.XII00	adapter to fit load cell (two pieces)	
CHEVAN	Displacement transcuder, 25 mm travel	
37737	Adjustable transcuder holder	
188811	Adjustable CBR penetration piston	
DXXX	NOTE:	
	The supplier shall provide the following:	
	1. Training of faculty on the use/operation of equipment.	
MARK		
	Certificate of calibration of the equipment.	
	4. Proof of conformity to standard/s	
8	UNCONFINED COMPRESSION TEST ACCESSORIES	
	(to be used with the above MULTI SPEED COMPRESSION TESTER)	
	with the ff. features:	
	2.5 KN capacity strain gauge load cell	
	Connecting adapter load cell	
	Linear poptentiometric displacement transcuder, 25 mm travel with	
	cable 6 pin connector	
	Adjustable support for elctronic support Extension load cell	
	Compression platen (upper and lower)	
	NOTE:	
	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	At least one (1) year warranty for defects.	
	3. Certificate of calibration of the equipment.	
	4. Proof of conformity to standard/s	
	Sub-ABC = Php 1,069,920.00	
	LOT 6	
9	TRIAXIAL TEST SET	
	50 KN capacity with data logger complete testing for Unconsolidated	
	Undraided (UU), Consolidatted Undrained (CU), and Consolidated	
	Drained (CD) Test	
	with the ff. features:	
	Composition:	D4767
	Triaxial load frame 50 KN capacity conforming to ASTM D2850, ASTM	D7/0/,
	Strain gauge load cell, 10 KN capcity Linear Transcuder, 25 mm travel	
	Connection shaft for triaxial cell piston	
	Additional Specification:	
	50 KN Maximum capacity	
	Speed range: 0.00001 to 50.8 mm/min	
	Maximum sample diameter: 70 mm	
	Minimum vertical clearance: 390 mm	
	Maximum vertical clearance: 725 mm	
	USB port to connect a memory stick (stick included)	
	Effective sampling rate up to 50/second	
	LAN communication, Automatic test start and stop	
	PC connection with data logger for real time monitoring	
	Standard Triaxial Cells and Accessories:	
	Standard triaxial cell for sample sizes 35 to 70 mm dia.	
	Top cap, Porous disc, Membrane(pack of 10),	

	To an a self fermion True and collinguid	
	Two-part split former, Two-part split mould	
	Lateral filter drains(pack of 50), Drainage burette	
	Hand sampler, Water repellent grease, Flaring tool	
	Greaser for triaxial cell, No-volume change valve	
	Pressure System and Cointrol Panels:	
	Triaxial panel 2-way system, air regulators	
	Air compressor (air bank), 3 hp 210 tank capacity, 220V/1-phase	
	Nylon tubing 8x6 mm dia. 10 m coil	
_	Nylon tuding, 6x4 mm dia. 20 m coil	
	Digital pressure gauge, Bladder (2pcs.)	
	Water De-Airing System:	
	Vacuum pump, Vacuum gauge	
	Rubber tube ID 6.5 mm x OD 16.5 mm	
	Special oil for vacuum pumps	
	De-airing tank, 23 liters capacity	
	Valve panel for de-airing tank, for connection to the air regulators and	pressure outlets
_	Air drying unit	pressure succes
_		le .
	Volume change: Automatic Volume change, Transcuder extension cab	le
	Pore water pressure: Pressure transcuder 10 bar, De-airing block	
	Data Acquisition and Processing:	
	8-Channels data acquisition system for geotechnical tests, 110-240V,	
	50-60Hz, 1 ph Geodatalog cable connecting loads cellls (set of 4)	
	Undrained (uu) triaxial testing geo-analysts template for MS-Excel,	
	compliant to ASTM D2650, Effective stress (CU, CD)	
	NOTE:	
	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	3. Certificate of calibration of the equipment.	
	4. Proof of conformity to standard/s	
	Sub-ABC = Php 2,055,200.00	
	Sub-ABC = Php 2,055,200.00	
	Sub-ABC = Php 2,055,200.00	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE	
10	Sub-ABC = Php 2,055,200.00	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features:	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm	
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution	
110	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm	
110	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the	
110	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the membrane keyboard	n diameter.
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the membrane keyboard Specimen sizes: 60 and 100 mm square, 50 mm, 60 mm, and 100 mm	n diameter.
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the membrane keyboard Specimen sizes: 60 and 100 mm square, 50 mm, 60 mm, and 100 mm Accessories to fit it the analog mode:	n diameter.
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the membrane keyboard Specimen sizes: 60 and 100 mm square, 50 mm, 60 mm, and 100 mm Accessories to fit it the analog mode: Load Ring 5000N with adapters	n diameter.
10	Sub-ABC = Php 2,055,200.00 LOT 7 DIRECT SHEAR TESTING MACHINE direct/residual autoshear digital, automax control system with the ff. features: Speed range: Adjustable 0.00001 to 15.0000 mm/min Maximum shear force, 5000 N Maximum vertical force: 500N or 5000N using 10:1 lever ratio device Speed drive ratio: stepper motor 1/10000 resolution Horizontal travel: preset via firmware up to 20 mm Displacement limits: controlled by optical safety switch Digital Display: LCD 4 row by 20 characters, easy to operate with the membrane keyboard Specimen sizes: 60 and 100 mm square, 50 mm, 60 mm, and 100 mm Accessories to fit it the analog mode: Load Ring 5000N with adapters Gauge dial 10 mm x 0.002 mm	n diameter.
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	2 adjustable equilibrium chimmneys and subjection clips	
	Connections system to the Hydraulics Bench	
	Easy and quick coupling system built-in.	
	Anodized aluminum structure	
	Other features:	
	This unit is supplied with 8 manuals: Required Services, Assembly	
	and Installation, Ineterface and Control Software, Starting-up,	
	Safety, Maintenance, Calibration & Practices Manuals	
_	NOTE:	
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	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	3. Certificate of calibration of the equipment.	
_	Proof of conformity to standard/s	
_	4. Proof of comornity to standard/s	
	Sub-ABC = Php 610,000.00	
	LOT 11	
14	TILTING FLUME (WITH MODEL DAM AND SPILLWAY)	
	with the ff. features:	
	Description:	
	The unit shall come with an open channel made of transparent	
	working section mounted on a strong framework.	
	The unit shall be supplied with 2.5 meter flume which can be tilted	
_		
	using calibrated screwjack.	
	The unit shall be fitted with pressure tappings and fixing points	
	as well as longitudinal scale. The scale shall be positioned at the	
	top of the channel so that the depth gauges and pitot-static tubes	
	can be positioned at the top of the channel length.	
	The unit shall be incorporated with a sump tank and a water pump.	
	The flow rates shall be measured by a flow meter.	
	Specifications:	
	Flow channel: Clear acrylic; 2500 mm L x 250 mm H x 75 mm W	
	Sump Tank: 120 liters capacity; flow rate of up to 2 L/sec	
	Venier gauges: 3 units of Vernier caliper	
	Utility requirements:	
	Electrical Supply: 240 VAC/1-PHASE/50Hz	
	Water Supply: Laboratory mains supply	
	Accessories:	
	Venturi Flume	
	Sharp and broad crested weirs	
	3 vernier level gauges	
	Crump weir	
	Adjustable undershot weir	
	Model dam and spillway	
	NOTE:	
	The supplier shall provide the following:	
	Training of faculty on the use/operation of equipment.	
	2. At least one (1) year warranty for defects.	
	Certificate of calibration of the equipment.	
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	4. Proof of conformity to standard/s	
	Sub-ABC = Php 1,947,980.00	
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