



Lanka IOC

LANKA IOC PLC
LEVEL 20, WEST TOWER, WORLD TRADE CENTRE,
ECHELON SQUARE,
COLOMBO - 01
SRI LANKA

- 1 TENDER NUMBER :LIOC/ ENG/ PT/02/2016-17
- 2 NAME OF WORK : SUPPLY AND LAYING OF ONSHORE PIPELINES FOR PETROLEUM PRODUCT (MGO) FROM JETTY TO PRODUCT TANK AT LIOC TERMINAL TRINCOMALEE
- 3 COMPLETION TIME: 12 WEEKS
- 4 BID BOND: LKR 426,200.00 (BY DD/ BG AS PER FORMAT ISSUED IN TENDER)
- 5 DUE DATE & TIME : 22/ 02/ 2017 AT 10:30 HRS

SCHEDULE OF WORKS

SL NO	DESCRIPTION OF WORK	QTY	RATE(LKR)	UNIT	AMOUNT (LKR)
PART 1 : PIPELINE WORKS FROM JETTY TO PRODUCT TANK NO 5 FOR MGO					
1	PIPELINE INSTALLATION WORKS Laying and welding (3 runs min.) above ground/ below ground pipelines from supplied MS pipes (pipes to be supplied anywhere within the depot and the contractor shall shift the same to the site of work at no extra cost with all leads and lifts) of the following sizes as described below, including cutting bevelling and fixing the supplied specials such as elbows, bends tees, reducers etc complete The job includes blast cleaning of the outer surfaces of above ground piping (product) to SA 2.5 ; AG piping shall be painted with one coats of Zinc Ethyl Silicate primer for a DFT of 75 microns, one coat of Epoxy Micaceous Iron Oxide (MIO) paint to a DFT of 125 microns & two coats of 2 pack aliphatic acrylic polyurethane paint for DFT of 100 microns. Total DFT of painting system shall be 300 microns (min). Finish colour of the piping shall be Aluminium. The entire works shall be completed as per enclosed specifications & directions. Note: a. The primer and paint shall be as per the list of paint manufacturers enclosed. The make and quality of paint shall be decided in consultation with LIOC prior to use. b. Pipeline colour coding shall be carried out as per LIOC specifications at no extra cost for product piping. c. Successful tenderer shall prepare the complete pipeline routing and get the same approved prior to execution of works				
1.1	PRODUCT PIPELINES Above ground pipeline to be laid on concrete pedestals (which is to be constructed as per the respective item of this schedule)/ bowser shed/ pump house and manifolds & painting the pipeline as per the specifications enclosed including colour coding coding as per IOC specifications. Welding of pipeline should conform to Radiography quality. Note: a. Any repairs to the defective welding shall be made good at no extra cost. b) The rates quoted also to include colour coding of pipelines as per the standards.				
1.1.2	300mm dia pipes	1180	6,900.00	RM	8,142,000.00
1.1.3	250 mm dia pipes	10	5,750.00	RM	57,500.00
1.1.4	80 mm dia pipes	5	1,975.58	RM	9,877.90
1.1.5	25 mm dia pipes	40	617.37	RM	24,694.80

SL NO	DESCRIPTION OF WORK	QTY	RATE(LKR)	UNIT	AMOUNT (LKR)
1.2	Welding of the supplied WNRF flanges on the pipe lines with welding on inside and outside etc compete and as per specifications				
1.2.1	300 mm dia	44	7,200.00	NO	316,800.00
1.2.2	250 mm dia	4	6,000.00	NO	24,000.00
1.2.3	80 mm dia	4	2,061.47	NO	8,245.88
1.2.4	25 mm dia	16	644.21	NO	10,307.36
1.3	Making flanged joints for both weld neck and blind flanges including supplying and fixing 3 mm thk non metallic compressed asbestos Fibre gaskets, studs/ nuts etc of approved make for the following sizes as per IOC specifications and site instructions. The flange joints shall also include providing and fixing 8 SWG copper wire for bonding of product pipelines.				
1.3.1	300 mm dia	52	9,950.00	NO	517,400.00
1.3.2	250 mm dia	4	7,875.00	NO	31,500.00
1.3.3	80 mm dia	10	2,722.86	NO	27,228.60
1.3.4	25 mm dia	8	850.89	NO	6,807.12
1.4	Fixing supplied GOVs/ CS gate valves/ HBV/ NRVs/ball valves of the following sizes on the pipeline including supplying & fixing 3 mm thk non metallic gaskets, studs/ nuts etc of approved make for the following sizes as per specifications and site instructions. Note: The rate quoted for the above items should include a. mechanical cleaning of the valves after erection. b. supplying and painting the valves/ fittings etc. with two coats of Zinc phosphate primer and two coats of Synthetic enamel finish paint of approved colour and shade as per colour coding specifications for fittings on product lines.				
1.4.1	300 mm dia	23	22,200.00	NO	510,600.00
1.4.2	80 mm dia (includes ball valves)	4	9,534.32	NO	38,137.28
1.4.3	25 mm dia (includes ball valves)	18	4,934.00	NO	88,812.00
1.5	Supplying and providing GI strips for bonding of valves & fittings to be installed in product piping . The job includes bending of GI flats including drilling of holes for bolting purposes.				
1.5.1	30mm x 6mm GI strip for fittings of size upto & including 250 mm dia	100	500.00	NO	50,000.00
1.5.2	50mm x 6mm GI strip for fitting of size 300 mm and above	250	600.00	NO	150,000.00

SL NO	DESCRIPTION OF WORK	QTY	RATE(LKR)	UNIT	AMOUNT (LKR)
1.6	Carrying out hydrotesting of the newly laid product pipelines from the jetty up to and including exchange pit to a pressure not exceeding 10.5 KSC. All equipment required for conducting pressure test comprising of pipeline spools, nipples, pressure gages, pressure pumps, water tanks etc shall be supplied by the contractor. Water required for carrying out the pressure test shall be supplied by the terminal free of cost. Note: a) Pressure test to be carried out after mechanical completion of works including erection of valves & fittings and prior to undertaking the pipeline painting. b. The pressure shall be maintained for a period of 4 hrs (during day time) and pressure readings shall be submitted for review by LIOC. c. In case of repairs to piping due to leak, the pipelines shall be once again pressure tested for integrity before commissioning.				
	Piping from 300 mm - 400mm dia including all connected fittings	1	150,000.00	NO	150,000.00
1.7	Supplying, fabricating, erecting including cutting, welding, fixing in position of structural MS gratings for catwalks comprising of 25 mm X 6 mm FB for outer framework and main members; 25 mm X 3 mm FB as intermediate members bent to shape and welded as per drawings and requirement. The finished gratings shall be mechanically cleaned and painted in 2 coats of Epoxy Zinc Phosphate primer & 2 coats of Synthetic enamel finish paint as per specifications Note: Gratings shall have outer members as 25 mm X 6 mm FB.	600	375.00	KG	225,000.00
1.8	Supply, installation, erection, testing and commissioning of GI earth electrode of 80 mm dia, 3.8m long perforated pipe with necessary funnel etc complete as per drawing enclosed. Hot Dip Galvanizing (Galvanizing 910 gm/M ² - BS Codes) to be done after all fabrication. The Electrode shall be made from one pipe. The scope of work include earthwork excavation, refilling with alternate layers of charcoal and salt, back filling, construction of brick masonry earth pit including plastering in CM 1:4 . The chambers shall be provided with MS 6 mm thk Chequered plate cover with CI frame for size 600 mm x 600 mm including fixing the frame in the masonry. All works shall be complete as per relevant drawings issued. Note: a. The earth pit resistance shall be measured & test certificate shall be issued by successful tenderer after completion of works. The earth pit also shall be numbered on the chequered plate. Rate quoted to include the same.	2	42,720.00	NO	85,440.00
1.9	Supply and installation of hot dip galvanized GI earth bus (Galvanizing 910 gm/M ²) as per drawing issued. The work includes drilling of holes, bending earth bus as per shape and dimensions given in the drawing including fixing the GI bus in the earth pits using necessary anchor bolts.	4	1,975.00	NO	7,900.00
1.10	Supplying and laying of following sizes of hot dip galvanized flat (Galvanizing 910 gm/M ² as per BS Codes) for the main earth grid to be laid in the cable trench, shed, earth, etc. including necessary cutting, jointing, welding, applying bituminous compound at the joints, providing spacers, backfilling etc complete and as per directions of site engineer. Note: The conductors shall be laid at a minimum depth of 600 mm in earth trenches. At all other places, the conductors shall be laid on walls, flooring etc as the case may be. The job also includes joining the conductors end to end by welding and painting the joints in bituminous paint for protection against corrosion. The necessary fasteners (nuts/ bolts etc) at the earth pits and tanks for bolting of the earth conductors shall also be part of the scope of works and no separate payment shall be made in the above regard.				

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1.10.1	32 mm x 6 mm	200	650.00	RM	130,000.00
1.10.2	50 mm x 6 mm	200	745.00	RM	149,000.00
1.11	Supply, fabrication, cutting, welding for saddle plates for pipeline	200	940.00	NO	188,000.00
2	SUPPLY OF ITEMS TO SITE				
2.1	Supply of MS pipes as per specifications. Note: 1. All items under this section shall be quoted for supply to site including unloading. The materials must be ordered based on ascertaining the exact requirement at the site. The materials to be supplied must also be associated with the manufacturer's test certificate for acceptance by LIOC.				
2.1.1	300 mm dia (API 5L GRADE B PSL 1)	1180	11,020.00	RM	13,003,600.00
2.1.2	250 mm dia (API 5L GRADE B PSL 1)	10	10,256.40	RM	102,564.00
2.1.3	80 mm (BS 1387 Heavy Duty)	5	1,666.66	RM	8,333.30
2.1.4	25 mm (BS 1387 Heavy Duty)	40	458.33	RM	18,333.20
2.2	Supply of following WRNF flanges (Class 150; ANSI B 16.9 as per BS 4360)				
2.2.1	25 mm dia	16	737.00	NO	11,792.00
2.2.2	80 mm dia	4	1,935.00	NO	7,740.00
2.2.3	250 mm dia	4	9,332.00	NO	37,328.00
2.2.4	300 mm dia	44	13,790.00	NO	606,760.00
2.3	Supply of following BLRF flanges (Class 150; ANSI B 16.5 as per BS 4360)				
2.3.1	80 mm dia	4	1,150.00	NO	4,600.00
2.3.2	300 mm dia	8	18,000.00	NO	144,000.00
2.4	Supply of CS rising stem valves as per API 600 & testing as per API 598/ 6D				
2.4.1	300 mm dia valves	20	235,000.00	NO	4,700,000.00
2.4.2	80 mm dia valves	4	32,500.00	NO	130,000.00

SL NO	DESCRIPTION OF WORK	QTY	RATE(LKR)	UNIT	AMOUNT (LKR)
2.4.3	25 mm dia valves	8	10,500.00	NO	84,000.00
2.5	NRV				
2.5.1	300 mm dia valves	2	238,000.00	NO	476,000.00
2.5.2	25 mm dia valves	15	10,500.00	NO	157,500.00
2.6	Stainer				
2.6.1	300 mm dia valves	2	67,800.00	NO	135,600.00
2.7	1/2" Pressure Gauge arrangement	7	13,090.00		91,630.00
2.8	Supplying the following sizes of Elbows/ Tees/ Reducer made of carbon steel seamless pipes with bevelled ends as per enclosed specifications for the following sizes Note: The fittings shall be as per ASTM A 234 Grade WPB schedule 40 and dimensions as per ASME B 16.5 Note: The quantities given are only indicative. The actual quantities to be supplied will be based on the finalised drawing for pipeline routing.				
2.8.1	90 Deg LR elbow (1.5D)				
2.8.1.1	300 mm dia	15	18,975.00	NO	284,625.00
2.8.1.2	250 mm dia	4	14,000.00	NO	56,000.00
2.8.1.3	25mm dia	12	96.00	NO	1,152.00
2.8.2	45 Deg Elbow (1.5D)				
2.8.2.1	300 mm dia	11	11,000.00	NO	121,000.00
2.8.3	Equal Tee				
2.8.3.1	300 X 300 X 300 mm	11	11,300.00	NO	124,300.00
2.8.3.2	25X 25 X 25 mm	11	150.00	NO	1,650.00
2.8.3	Reducer				
2.8.3.1	300mm x 250mm	4	8,000.00	NO	32,000.00

SL NO	DESCRIPTION OF WORK	QTY	RATE(LKR)	UNIT	AMOUNT (LKR)
3	CIVIL WORKS FOR ROAD FORMATION, CULVERTS, PIPELINE PEDESTALS/ RCC HUME PIPES, MS STRUCTURAL WORKS ETC				
3.1	Earthwork excavation in all kinds of soil including soft rock except for hardrock for foundation including shoring, shuttering, bailing out subsoil water if necessary, back filling the sides of foundation/ pits with excavated earth and disposal of surplus earth outside depot premises as directed with all leads and lifts and as per site directions. up to 2.0 M depth	250	900.00	CUM	225,000.00
3.2	Mass mechanical excavation of Land, excavated earth in all kinds of soils excluding hard rock. Item includes dewatering, leveling of surface, filling at site if necessary, stacking serviceable material & disposing off surplus excavated materials within LIOC premises to an unobjectionable location including all lead & lift, as directed by LIOC. Note: Measurement will be only for the quantity of cutting) Note: The item shall be operated for earth cutting for culvert	800	880.00	CUM	704,000.00
3.3	Supply and filling sand free from dirt, lumps, stones for foundations including consolidation with copious watering etc as directed at site.	170	4,735.00	CUM	804,950.00
3.4	Supplying and Providing PCC 1:3:6 using 25- 40 mm HG metal for foundations including necessary shuttering, mixing, laying of concrete, compaction and curing etc. complete as directed.	17	15,174.00	CUM	257,958.00
3.5	Providing, mixing, placing, vibrating, curing, reinforced cement concrete grade G 25 (with minimum cement content of 400 kg per Cum. of finished concrete) in foundations footings, bases, columns , plinth/grade beams, tanks/ equipment foundation, cable pedestals,rafts,supports, walls etc. upto plinth level using graded stone aggregates 20 mm nominal size & below including the cost of form work (plain and curved), de-shuttering of but excluding the cost of reinforcement complete. <u>NOTE:-</u> a) Contractor shall be permitted to convert design mix of concrete into suitable volumetric mix to achieve reqd. design strength. b) Unless stated otherwise, the rates shall include the works to be carried out at all levels and for all linear shapes and sizes. c) Rates shall include the watering/ curing as required. d) Unless otherwise specified, all shuttering above ground level shall be with plywood of approved quality. e) For all concreting works, mechanical mixer, vibrator to be used .				
3.5.1	Footing/ Plinth/ Columns/ Beams/ Foundations/ Pipe sleepers/ Foundation of product pumps, all places in siding etc. Note: a. Steel reinforcement for concrete works shall be measured and paid separately under respective items. b. For all concrete works, mechanical mixer shall be used. c. Exposed surfaces of concreting shall be finished in CM 1:3, 12 thk including curing as required	35	22,507.00	CUM	787,745.00
3.5.2	Same as above but cement concrete in G 20 grade (with minimum 300 Kg of cement per cum of concrete) corresponding to CC 1:2:4 Coping (75 mm thick)	70	758.00	SQM	53,060.00
3.6	Supplying and providing ribbed tor steel reinforcement (HYSD) using 8 to 25 mm dia bars (Fe 460) including cutting, bending, tying with binding wires and placing in position as per specifications etc. & as per directions of site in charge.	1700	220.00	KG	374,000.00

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	Note: For reinforcement work, no extra payment for laps/ anchor chairs/ binding wires will be given. Tenderers to note this aspect while quoting the rates for reinforcement work.				
3.7	Providing and laying 230 mm thick and above, BRICK MASONRY using locally available burnt table moulded clay bricks (minimum compressive strength of 75 KSC) at all levels in cement mortar 1:5 including scaffolding, curing etc. complete. Note: The bricks shall be used after the same are tested and approved by the site engineer	9	13,008.00	CUM	117,072.00
3.8	Providing RANDOM RUBBLE masonry in CM 1:5 at all levels including below & above super structure etc., including providing bond stones at 2m c/c in each layer with raised pointing (20mm thk & 20 mm wide) including scaffolding, curing, lead and lift for all materials, labour etc complete and as directed by site engineer.	90	10,302.00	CUM	927,180.00
3.9	Supplying and providing stone pitching works including laying stones on a well prepared base to even slope and shape, filling the voids with stone chips and sand, pointing the joints in CM 1:3 including curing etc complete and as per directions of site engineer. Pitching Stones supplied by contractor	50	2,878.00	SQM	143,900.00
3.10	Plastering the exposed surfaces of brick & RR masnory in CM 1:4, 16 mm thk. at all levels including all materials & labour, curing, etc. complete and as directed at site.	100	667.00	SQM	66,700.00
3.11	Supply, fabrication, cutting, welding, erection of MS structural steel works comprising of beams/ channels/ angles/ flat bars/ rods/ plates etc as per complete details shown in relevent drgs. for columns/ base plates/ purlins/ rafters/ bracings/ ties/ gussets and all other places as required including blast cleaning of the structure to SA 2 1/2 and painting the structure with 1 coats of Epoxy Zinc Phosphate primer to a DFT of 75 microns & 2 coats of Synthetic enamel finish paint to a DFT of 40 microns per coat as per enclosed specifications complete and as per directions of site in charge. Total DFT of the painting system shall be 155 microns (min) Note: The item shall be operated for all new structural works/ pipeline supports/ tank valve approaches and similar such utiities etc. The quantity shall also be used for supports for catwalks/ crossovers at all places.	1700	375.00	KG	637,500.00
3.12	Spreading, levelling excavated earth free from vegetation, ash & foreign materials etc. brought from inside the terminal in layers not exceeding 250 mm thick including all leads and lifts, watering, rolling with power roller of 8 - 10 MT capacity to its maximum dry density at optimum moisture content to the required level & profile etc complete & as per technical specifications etc and as directed by site engineer. The job also includes consolidating the original ground level of with a maximum of 6 (six) passes of 8 - 10 MT power roller prior to starting of filling operations. NOTE: a. For the purpose of this item, any land cutting that would be required within terminal area in order to arrive at the final levels shall be included as part of the rate quoted towards the item. The payment towards the item shall be made on initial and final level of GL based on consolidated land area.	500	490.00	CUM	245,000.00

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3.13	Providing and laying ABC metal filling to a thickness of 225 - 250 mm average and consolidating by 8 - 10 tones road roller etc complete to receive 80mm Thk interlocking pavers or Asphalt. ABC metal filing in driveway	35	4,535.00	CUM	158,725.00
3.14	Supply & laying of Interlocking Paving blocks of Thickness 80 mm Uni type, natural colour, average compressive strength 50 N/ mm ² (British Standard 1993); Laying on the 50mm thk compacted river sand bedding consolidated with mechanical vibrator, filling the grooves with Seaved sand. Supply & laying of inter locking pavers (Natural Colour)	35	3,400.00	SQM	119,000.00
3.15	Same as above for paver works but pavers dismantled and belonging to LIOC to be used	100	1,468.00	SQM	146,800.00
	GRAND TOTAL				37,058,348.44
QUOTE RATE IN TERMS OF PERCENTAGE OVER ESTIMATED AMOUNT GIVEN ABOVE					
1	PLUS (+) IN FIGURES				
	PLUS (+) IN WORDS				
2	MINUS (-) IN FIGURES				
	MINUS (-) IN WORDS				
3	AT PAR				

NOTE

- 1 The amount quoted towards the tender shall be arrived at based on applying the percentage quoted on the above indicated estimated amount.
- 2 In case "0" percentage is quoted then it shall be presumed that the tenderer shall accept to carry out the works at par.
- 3 VAT at prevailing rate shall be paid on the above quoted amount.

SVP (ENGG)
LANKA IOC PLC