

SECTION 1 : REQUIREMENTS FOR WATER TREATMENT PLANT AND WATER NETWORK

1-1	SPARE PARTS FOR 7-NISSAN CLARIFIERS	LUMP
1-2	SPARE PART FOR 2-B RES. ELECTRIC BOARD	LUMP
1-3	SPAR PARTS FOR ALUM DOSING PUMPS	LUMP
1-4	SPARE PART LIST FOR GAS DOSING SYSTEM 143-040 VOL/TO2	LUMP
1-5	SPARE PARTS FOR PUMPS / 2B STATION	LUMP
1-6	FILTERS FOR 7 NISSAN	LUMP
1-7	SPARE PART FOR CLARIFIERS IN KARAMA & DOURA PROJECT	LUMP
1-8	SPAR PART FOR CHLORINE GAS SYSTEM FOR KARAMA & DORA PROJECT	LUMP
1-9	MEDIUM VOLTAGE SWITCH BOARD FOR KARAMA PROJECT	LUMP
1-10	SPARE PART FOR QADDISIA WTP	LUMP
1-11	INDOOR GENERATOR FOR ABU GHRAIB RES.	LUMP
1-12	SPARE PART FOR N.R. CHLORINE STATION+B398	LUMP
1-13	SPARE PART FOR TAJI AND ABU - GHRAIB RES.	LUMP
1-14	SPARE PART FOR RAW WATER STATION	LUMP
1-15	SLUDGE PUMPS	LUMP
1-16	MEDIUM VOLTAGE SWITCH BOARD FOR DOURA PROJECT	LUMP
1-17	11 KV SWITCH BORD TO REPLACE THE EXISTING SWITCH BOARD IN RPS 3 , RP4 PUMPING STATIONS	LUMP
1-18	MOBILE WORK SHOP	LUMP
1-19	HIGH LIFT PUMPING STATION FOR 7 NISSAN	LUMP
1-20	CONTACTOR FOR 7 NISSAN	LUMP
1-21	ELECTRICAL ACTUATORS FOR 7 NISSAN	LUMP
1-22	CONTROL OF WATER LOSSES IN THE WATER SYSTEM OF BAGHDAD	LUMP
1-23	TREATED WATER PUMPING STATION SERIAL NO. C5/56383	LUMP
1-24	OUT DOOR L.T DEISEL GENERATOR FOR ALRASHED & WAHADA PROJECT	LUMP
1-25	ELECTRICAL DISCHARGE VALVES	LUMP
1-26	3PH TRANSFORMER FOR 7 NISSAN	LUMP
1-27	SPARE PART FOR DAIHATSU DIESEL ENGINE	LUMP
1-28	GENERATOR FOR 7 NISSAN TRETMENT PLANT	LUMP
1-29	NON-RETURN VALVES	LUMP
1-30	KARKH RES. SPARE PART	LUMP
1-31	1.75 MW DIESEL GENERATORS	LUMP
1-32	BONDSTRAND PIPE (5000) B1535AND FITTINGS B1517	LUMP
1-33	GENERATING STATIONS FOR RAW WATER PUMPING STATION	LUMP
1-34	MOTOR FOR CLARIFIRE SCRAPER	LUMP
1-35	AIR CONDITIONING COMRESSOR SETS	LUMP
1-36	KENT EQUIPMENT FLOWMETER SYSTEM	LUMP
1-37	DUCTILE IRON PIPES	LUMP

SECTION 1 : REQUIREMENTS FOR WATER TREATMENT PLANT AND WATER NETWORK

1-1:SPARE PARTS FOR 7-NISSAN CLARIFIERS-

CODE	DDESCRIPTION	QTY
03-01-1	COMPLETE TIMER , TYPE CHRONO CONTACT 6 WAY NO. 1147 ,	10
03-01-2	240 V , 50 Hz , WITH SPARES FOR 2 YEARS .	
03-01-3	FOR VALVE TYPE CP1,150mm DIAMETER DIAPHRAGM REF-0002021 089	120
03-01-4	SLUDGE BLOW-DOWN SOLENOID VALVES , TYPE V301-U-4,240V,50Hz	30
03-01-5	CLASS BT (LOW VOLTAGE) , HAND CONTROLLED	
03-01-6	PARTIALIZATION BOX (COMPLETE),TYPE DE40,WITH SPARES FOR 2 YEARS	30

1-2: SPARE PART FOR 2-B RES. ELECTRIC BOARD

CODE	DESCRIPTION	QTY
03-01-7	11 Kv , 630 A , YSF6 CIRCUIT BREAKER .TYPE YORKSHIRE	4
03-01-8	CLOSING AND TRIPPING COIL FOR ABOVE .	20
03-01-9	CHARGING MOTOR FOR ABOVE C.B .	10
03-01-10	VOLTAGE TRANSFORMER FOR SIGNALS AND PROTECTION FOR MAIN FEEDERS , TYPE Bs 3941 , RATIO 11000/110 , FREG-50 RVF 1.5/30 SEC , IL 28/75 Kv	4

**1-3:SPAR PARTS FOR ALUM DOSING PUMPS
PUMP CODE : MC 112 T 125 E5/Z , PLUNGER LIQUIDEND TYPE**

CODE	DESCRIPTION	QTY
03-01-11	WORM	4
03-01-12	TANGENTIAL GEAR	4
03-01-13	CONNECTING ROD	16
03-01-14	INCLINABLE CRANK	6
03-01-15	MICRO METER SCREW	2
03-01-16	CROSS HEAD	4
03-01-17	PLUNGER	8
03-01-18	VALVE ASSEMBLY (SUCTION)	8
03-01-19	VALVE ASSEMBLY (DISCHARGE)	8
03-01-20	CLAMPING NUT	4
03-01-21	SPANNER FOR CONNECTING ROD	4

**1-4: SPARE PART LIST FOR GAS DOSING SYSTEM 143-040
VOL/TO2**

Gs 143 , AS PER DRAWING NO. 125 141-000

CODE	DESCRIPTION	QTY
03-01-22	MEASURING TUBE SUPPORT	20
03-01-23	ITEM (1-1,1-2,1-3,1-4,1-5,1-5-2,1-5-3,1-5-4) PART NO. 12-5138-302P RATE VALVE , PART NO. 12-5100-203P ,	20
03-01-24	ITEM (2-1,2-2,2-3,2-4,2-5,2-6,2-7,2-8,2-9,2-10,2-11,2-12,2-13,2-14,2-15,2-16, 2-17,2-18,2-19,2-20,2-21) DIFFERENTIAL PRESSURE REGULATOR PART NO. 12-4258-102P,	20
03-01-25	ITEM (3-1 - 3-24)	20
03-01-26	SERVO MOTOR , PART NO. 12-5022-401P	10
03-01-27	VACUUM METER , PART NO. 12-5112-302P , ITEM (9-1 - 9-4)	10
03-01-28	CHLORINE EVAPORATOR CAP. 230 Kg/h , PRESSURE 14 bar , HEATERS 18KW , TEMPERATURE 60 - 65 °C	3
03-01-29	ELECTRICAL HOIST CRANE CAP. 3 TON , SPAN 7.30 m , HIGHT , 4.5m , HOIST SPEED 5m/min	1

**1-5: SPARE PARTS FOR PUMP TYPE 900/800/1024 DESC / 2B
STATION C5/62722**

code NO	DESCRIPTION	QTY
03-01-30	COMPLET ROTATING ASSEMBLY WITH MOTOR 8 POLE VERTICALLY FLANGED INDUCTION MOTOR DRW. NO : AO 1432427	4
103-01-31	BRUSH GEAR SPINDLE	12
03-01-32	BRUSH GEAR BRACKET	9
03-01-33	BRUSH	180
03-01-34	BRUSH HOLDER	90
03-01-35	SLIP RING FAN	2
03-01-36	SLIP RING	6
03-01-37	BRUSH HOUSING SLEEVE	2
03-01-38	INSULATION BUSH	12
03-01-39	THRUST BRG	20
03-01-40	INNER SPACER	2
03-01-41	BALL BRG	20
03-01-42	SLIP RING CLAMP (HALF)	2
03-01-43	RESISTOR HD7	200
03-01-44	BUTTER FLY VALVE ND 1000	3
03-01-45	BUTTER FLY VALVE ND 1600	1
03-01-46	BUTTER FLY VALVE ND 1200	2
1-6: filters FOR 7 NISSAN		
CODE	DESCRIPTION	QTY
	FILTERS company VANNES LEFEBVRE	
03-01-47	BUTTER FLY VALVE TYPE 310 DIAMETER 600 mm WITH PNEUMATIC ACTUATOR TYPE AP 75-250 WITH ADDITIONAL TWO FLANGES OF 600 mm .	14
03-01-48	BUTTER FLY VALVE TYPE 310 DIAMETER 450 mm WITH PNEUMATIC ACTUATOR TYPE AP 75-200 WITH ADDITIONAL TWO FLANGES OF 450 mm .	28
03-01-49	BUTTER FLY VALVE TYPE 310 DIAMETER 300 mm WITH PNEUMATIC ATNATOR TYPE AP 50-160 WITH ADDITIONAL TWO FLANGES OF 300 mm .	14
03-01-50	VIKING JONSON JOINT 600 m	28
03-01-51	VIKING JONSON JOINT 450 m	56
03-01-52	VIKING JONSON JOINT 300 m	28
03-01-53	VALVE 100 mm	14
03-01-54	VALVE 50 mm	14
03-01-55	NOZZLES TYPE D.20-CODE 60 436 WITH JOINTS Ø28 x 40 – 2 mm THICK – CODE 60463 .	92000
03-01-56	PARTIALIZATION BOX TYPE DE.40 COMPLETE WITH ALL ACCESSORIES .	14
03-01-57	SCOUR AIR BLOWER (HIBBON) TYPE DV50 COMPLETE WITH MOTOR AND STARTER (Q = 3900 m ³ /h , H = 0.3 bar) .	3
03-01-58	DESK AND WASHING AUTOMATION CABINET CONSIST OF THE FOLLOWING :- a- CYCLOMATIC TYPE SEM 70/2. b- SOLENOID VALVE M2T301 . c- HEAD LOSS METER . d- ON/OFF SWITCH . e- SIGNAL LAMPS . f- AIR VALVES . g- ALL CONTROL EQUIPMENTS FOR OPERATIONS .	14
03-01-59	GATE VALVE 450 mm	3
03-01-60	GATE VALVE 400 mm	3
03-01-61	NON – RETURN VALVE 400 m	3
03-01-62	NON – RETURN VALVE 200 m	3
03-01-63	IRON PIPE 600 mm	300 m
03-01-64	IRON PIPE 300 mm	200 m
03-01-65	IRON PIPE 350 mm	70 m

03-01-66	IRON PIPE 450 mm	80 m
03-01-67	IRON PIPE 900 mm	50 m
03-01-68	COPPER PIPE 8 mm	400 m
03-01-69	COPPER PIPE 10 mm	600 m
03-01-70	COPPER PIPE 12 mm	400 m
03-01-71	CONNECTING FITTINGS 8 mm	200
03-01-72	CONNECTING FITTINGS 10 mm	200
03-01-73	CONNECTING FITTINGS 12 mm	200
	- COMPRESSED AIR STAETING BY TWO COMPRESSORS ONE	
03-01-74	DIESEL OPREATED & ONE ELECTRICAL OPRATED	
	- ENGIN SPEED 1000 R.P.M	

1-7: SPARE PART FOR CLARIFIERS IN KARAMA & DOURA PROJECT

CODE	DESCRIPTION	QTY
	TYPE : R65 – 1023 – 400 – 4FR	
03-01-75	DRIVING GEAR , PART NO. = G-M 160-HFZ90	6
03-01-76	COUPLING , PART NO. = XW 1-110	6
03-01-77	DRIVING ROLLERS , PART NO. = P-0114/15	10
03-01-78	GUIDE ROLLERS , PART NO. = P-0114/09	10
03-01-79	LIMIT SWITCH , PART NO. = BC 1W	6
03-01-80	EST OF RUBBER LEDGES , PART NO. = P-0114/10 , POS 41-44	12
03-01-81	EST OF RUBBER LEDGES , PART NO. = P-0114/10 , POS 45-47	12
03-01-82	SLIP RING BODY , PART NO. = KSK 90-8	8
03-01-83	DISC FOR MIXING , PART NO. = 2 LA 7135/12	4
03-01-84	SET OF FRICTION WHEEL , PART NO. = 2 LA 7169/16	4
03-01-85	BEARING , PART NO. = UCP 216 ASAHISEJKO - JAPAN	24
03-01-86	STARS FOR ELECTRIC COUPLINGS , PART NO. = 0 LA 7169/6	12
03-01-87	WORM GEAR DRIVING MOTOR , PART NO. = 0 LA 7162/2,3	2
03-01-88	SETS OF RADIAL GASKETS , PART NO. = 0 LA 7169/7	12
03-01-89	BEARINGS , PART NO. = 0 LA 7169/13	12
03-01-90	DRIVING ROLLERS , PART NO. = 2 LA 7162/2,3	6
03-01-91	GUIDE ROLLER , PART NO. = 2 LA 7135/4,6,11	2
03-01-92	BANDAGE FOR THE ROLLERS , PART NO. = 2 LA 7135/6	6
03-01-93	DISCS , PART NO. = 2 LA 7135/12	24
03-01-94	BEARING BUSHED , PART NO. = 2 LA 7135/11	48
03-01-95	SERVO GEAR MOTOR , PART NO. = 0 LA 7169/16	2
03-01-96	SET OF RADIAL GASKETS , PART NO. = 0 LA 7169/16	4
03-01-97	SET OF FRICTION WHEELS , PART NO. = 0 LA 7169/16	2
03-01-98	BEARING BUSH , PART NO. = 1 LA 7100/8	2
03-01-99	RUBBER LEDGES , PART NO. = 1 LA 7140/15-23	EFM 160
03-01-100	SLIP RING	2
03-01-101	HOLDERS WITH BRONZE BRUSHES , PART NO. = 0 LA 7169/19	18
03-01-102	LIMIT SWITCH , PART NO. = 0 LA 7169/21	2

**1-8: SPAR PART FOR CHLORINE GAS SYSTEM
FOR KARAMA & DORA PROJECT**

CODE	DESCRIPTION	QTY
03-01-103	SET CONTAINER ROLLER TRUNNIONS CAPACITY FOR CONTAINER UP TO 1000 Kg .	16
03-01-104	ANCHOR BOLT M16 x 160 Mu , DIN 529 .	96
03-01-105	WASHER 17 , DIN 125 .	96
03-01-106	MANIFOLD 1" WITH 2 CONNECTIONS 1" DIN 11 , LENGTH 1000mm	4
03-01-107	MANIFOLD 1" WITH 1 CONNECTIONS 1" DIN 11 , LENGTH 1000mm	4
03-01-108	AUX. VALVE 1" - 1" DIN 11	24
03-01-109	DISC 1" .	4
03-01-110	GASKET 18/11mm .	200
03-01-111	BALL VALVE DN 25 FOR WELDING ,	4
03-01-112	COPPER CONNECTOR 1.0 m	16
03-01-113	AUTOMATIC GAS CHANGE OVER PANEL MEDIUM : CHLORIN , CAPACITY : 60 Kg CL2/h , CONNECTION : 1" DIN 11 , CONTACT PRESSURE GANGE WITH CONNECTOR , RANGE : 0 - 10	2
03-01-114	bar	2
03-01-115	CHLORINE FILTER WITH FLANGES , DN 25 WITH GROOVE AND TONGUE acc. DIN 2512 ,	2
	FLANGE PAIR FOR WELDING DN 25 , DIN 2635 WITH GROOVE AND	
03-01-116	TONGUE acc. DIN 2512 WITH SCREWS , HEX NUTS AND GASKETS ,	2
03-01-117	HEATER 220 V , 50 Hz , 48 w ,	2
03-01-118	CHLORINE GAS REGULATOR , CAPACITY : max. 200 Kg CL2/h FOR WALL MOUNTING WITH GAS PRESSURE GANGE ,	6
03-01-119	CONTACT PRESSURE GANGE WITH CONSISTING OF EACH 1 CONTACT PRESSURE GANGE 0 - 10 bar 1 WALL MOUNTING BRACKET 1 COPPER CONNECTOR , .	4
03-01-120	STEEL PIPE 1" , 33.7 x 2.6 mm , DIN 2448 .	24 m
03-01-121	WELDING ELBOW 90 , 1" , 33.7 x 2.6 mm , DIN 2605	6
03-01-122	ANGLE SEAT VALVE DN 25 , PVC , PTFE , SER. NO. 161 . 300 . 449	12
03-01-123	CHLORINE GAS DISPENSER:	16
03-01-124	COMPLETE CHLORINATOR WITHOUT	20
	VACUUM REGULATOR CAPPCITY:max.20 Kg CL2/h WITH INTEGRATED CHLOROMATIC VALVE OPERATED FROM SINGAL OF WATER FLOW POWER SUPPLIY : 220 V , 50 Hz , INPUT SIGNAL : 4 - 20 m A METERING RANGE : 1- 20 Kg B64 WITH EJECTOR FOR WATER PRESSURE 4.6 bar , BACK PRESSARE 2 bar , WATER FLOW 2.96 L/S , CA. 10.7 m3/h ,	
03-01-125	STRAINER DN 80 , PVC , EPDM WITH SCREEM , ORIFICE 2.2 mm ,	2
03-01-126	BALL VALVE DN 80 , PVC , EPDM , WITH FLANGES ,	2
03-01-127	ANGLE SEAT VALVE DN 25 , PVC , PE ,	12
03-01-128	ANGLE CHECK VALVE DN 80 , PVC , EPDM ,	2
03-01-129	FLANGE ADA+B229PTOR DN 80 , PVC ,	12
03-01-130	FLANGE DN 80 , PVC	12
03-01-131	FLAT GASKET DN 80 , CR ,	12
03-01-132	UNION DN 50 , PVC	24
03-01-133	ANGLE SEAT VALVE DN50 , PVC , PTFE ,	12
03-01-134	BALL CHECK VALVE DN 50 , PVC , FPM ,	6
03-01-135	UNION DN 50 , PVC	6
	SOLUTION WATER DIFFUSOR DN 50 , PVC , WITH ANGLE SEAT VALVE	6
03-01-137	RESIDUAL CHLORINE ANALYZER , CHLORTROL 2" , CONSISTING OF : PRIMARY UNIT , SECONDARY UNIT AND	2

CONNECTION CABLE , POWER SUPPLY : 220 V , 50 Hz, OUTPUT
SIGNAL : 4 - 20 m A , METERING RANGE : 0 - 2 mg CL2/L

03-01-138	CONNECTION ACCESSORIES WITH PRESSURE READUCING VALVE	2
03-01-139	SAMPLE LINE COMPLETE FOR LINE > DN 300 ,	2
03-01-140	CHLORINE COMPARATOR LOVIBOND 1000 METERING RANGE : 0.1 - 5 mg CL2/h ,	10
03-01-141	BREATHING PROTECTION MASK WITH FILTER B IN CARRYING BOX	20
03-01-142	CHLORINE LEAK DETECTOR POWER SUPPLY : 220 V , 50 Hz ,	2
03-01-143	SET ACCESSORIES ,	2
03-01-144	SET SPARE PARTS ,	2
03-01-145	ALARM HORN 220V , 50 Hz ,	2
03-01-146	ALARM RESET COMBINATION ,	2
03-01-147	PVC - CEMENT 500 cm3 ,	2
03-01-148	SPRAY NOZZLE DN 15 , PVC ,	20
03-01-149	PVC - PIPE 32 x 1.8 , DN 25 , DIN 8061/62	60m
03-01-150	SHUT - OFF VALVE R 1" WITH LONGER SPINDLE	4
03-01-151	ELBOW DN 25 , PVC	20
03-01-152	SOCKET DN 25 , PVC	12
03-01-153	TEC , REDUCING DN 25 - 15 - 25 , PVC ,	16
03-01-154	REDUCING BUSH DN 25-15 , PVC	4
03-01-155	UNION DN 25 , PVC	4
03-01-156	PE - PIPE CLAMP d = 32 mm ,	60
03-01-157	SCREW 4.5 x 40 , DIN 96	60
03-01-158	PLASTIC DOWEL S6 ,	60
03-01-159	FAN , TYPE DZQ 25/4D,CAPACITY:1100 m3/h, MOTOR:400V,3PH, 50Hz POWER : 55 w , SPEED : 1425 min-1 WITH TROPICAL ISOLATING FROM CL2	4

1-9: MEDIUM VOLTAGE SWITCH BOARD FOR KARAMA PROJECT

CODE	DESCRIPTION	QTY
	11 KV DISTRIBUTION BOARD FOR PROJECT NO. 3 KARAMA TREATMENT PLANT CONTAINS THE FOLLOWING :	
03-01-160	630 A , 11KV INCOMMING 1,2	2
03-01-161	630 A , 11KV EMMERGINCY 1,2	2
03-01-162	630 A , 11KV OUT GOING TO TRANSFORMERS 1 , 2 , 3	3
03-01-163	630 A , 11KV OUT GOING TO PROJECTS 1,2	2
	NOTE :- BWA ALLREDY HAVE 6 C.B S TYPE VM1 ABB CALOR EMAG THE OFFER SHOULD USE THESE BREAKERS IN ADDITION TO SUPPLY 3 NO. SIMILLAR C.B `S & 2NO. AS SPARE . - THE SWITCH BOARD SHOULD INCLUDES ALL THE D.C SYSTEM REQUIPMENT (CHARGER & BATTERIS) & ALL THE PROTECTION RELAYS . - SUPERVISION OF ERECTION THE SWITCH BOARD .	

1-10: SPARE PART FOR QADDISIA WTP

CODE	DESCRIPTION	QTY
03-01-164	BEARING 6213 ZZ	20
03-01-165	BEARING 6214	20
03-01-166	BEARING 6212	20
03-01-167	PACKING 5/8"	20 SET
03-01-168	ULTRA SONIC FLOWMETER RANGE (0-10000 m3/h) PIPE DIM. (700- 1200) MM CLAMP ON TYPE	10
03-01-169	PRESSURE METER WITH TRANSMITER (0- 10 BAR) , DIGITAL DISPLAY - OUTPUT SIGNAL (4-20 ma)	20
03-01-170	ULTRA SONIC LEVELMETER WITH TRANSMITER (0-10 meter) WITH DIGITAL DISPLAY -OUT PUT SIGNAL (4-20 ma)	20

1-11: INDOOR GENERATOR FOR ABU GHRAIB RES.

CODE	DESCRIPTION	QTY
03-01-171	<p>RATED POWER 925KVA FOR CONTINOUS DUTY,400V,3PH+N,50Hz,-</p> <p>1- THE ENGINE AND THE ALTERNATOR ARE MOUNTED ON AFABRICATED BASE FRAME WITH ANTI VIBRATION MOUNTING.</p> <p>2- THE SETS AS COMPACT AND FUEL SPECIFICATION CONSUMPTION.</p> <p>3- ENGINE INSTRUMENT PANEL (SUCH AS OIL , PRESSUER GAGES , WATER TEMPRATURE GAGES .</p> <p>4- 24 VOLT ELECTRICAL EQUIPMENT COMPRISING STARTOR MOTOR , BATTERY CHARGING ALTERNATOR WITH VOLTAGE CONTROL UNIT.</p> <p>5- FUEL , OIL , WATER FILTERS</p> <p>6- RADIATOR SUITABAL FOR THE SITE DIMENSIONS</p> <p>7- LOW OIL PRESSURE , HIGH TEMPERATURE , OVER SPEED SWITCHES AND MECHANICAL PROTECTION DEVICE .</p> <p>8- THERMOSTATS .</p> <p>9- THE ALTERNATOR IS OF THE SCREEN PROTECTED REVOLVING FIELED BRUSHLESS TYPE</p> <p>10- THE OUTPUT VOLTAGE OF THE ALTERNATOR IS MAINTAINED CONSTANT WITH IN +/- 2.5% FROM NO LOAD TO FULL LOAD .</p> <p>11- TERMINALS PROVIDED ARE FOR 3PHASE FOUR WIRE SYSTEM .</p> <p>12- POWER FACTOR BETWEEN 0.8 - 1.</p> <p>13- INSULATED CLASS F .</p> <p>14- ARANGE OF STANDARD CONTROL EQUIPMENT SUCH AS METERS , SETECTOR SWITCHS , .. Ect .</p> <p>15- THE ENGINE PROTECTION IN THE FORM OF ALARM AND AUTOMATIC SHUT DOWN EQUIPMENT IN THE EVENT OF LOW OIL, PRESSURE , WATER TEMPERATURE AND OVER SPEED .</p> <p>16- EXHAUST SYSTEM SUITABLE FOR THE SITE .</p> <p>17- ENGINE HEATER .</p> <p>18- STARTER BATTERIES .</p> <p>19- DAILY FUEL TANK 2000 L/D</p> <p>20- AUTOMATIC CHANGE OVER .</p> <p>21- SET OF SPEAR PARTS FOR 5 YEARS :-</p>	2
03-01-172	a- V-BELTS	10
03-01-173	b- OIL WATER , FUEL FILTERS	30
03-01-174	c- AUTOMATIC VOLTAGE REQLATER .	2
03-01-175	d- ROTATING DIODES (SET)	2
03-01-176	f- SET OF ENGINE SPARES	2
03-01-177	g- SET OF SPECIAL TOOLS	1
03-01-178	h- SET OF MANUALS FOR ALL EQUIPMENT	2

1-12:SPARE PART FOR N.R. CHLORINE STATION+B398		
CODE	DESCRIPTION	QTY
03-01-179	CHLORINATER , TYPE 31AE , CAPACITY 27 Kg/hr MAX MANUAL SET DOSE WITH AUTOMATIC PROPORTIONING TO FLOW .	2
03-01-180	CHLORINATER , TYPE 21AE , CAPACITY 14 Kg/hr MAX MANUAL SET DOSE WITH AUTOMATIC PROPORTIONING TO FLOW .	6
03-01-181	AUTOMATIC CHLORIN DRUM CHANGE OVER PANEL , FOR FIVE DRUM SEQUENCE CONTROL .	1
03-01-182	ANALYZER , SERIES 66 , RESIDUAL ANALYSER PORTAIACEL CO.	10
03-01-183	CLORINATER LEAK DETECTORS	5
03-01-184	ANGLE VALVE , TYPE 12mm , 5/2" BSP , CHLORINE DRUM CONNECTION HAND WHEEL	15
03-01-185	ANGLE VALVE , TYPE VC 35.25mm , HEADER ISOLATION PLUG VALVE 2 WAY , TYPE 067 - 25mm , ELETRIC ACTUATER WITH	10
03-01-186	MANUAL OVER RID SUPPLY 110V , 1PH , 50HZ	5
03-01-187	PLUG VALVE 2 WAY,TYPE 067 - 25mm ,LEVER WITH LOCKING DEVICE	8
03-01-188	PLUG VALVE 2 WAY,TYPE 067 - 12mm ,LEVER WITH LOCKING DEVICE NON-RETURN VALVE , TYPE A2/4821 ,25mm,1 1/2" BSP , FOR	13
03-01-189	PORTACEL CHLORINATOR	10
03-01-190	PRESSURE GAUGE FOR THE CHLORINE 150mm,D 3/4" , 12 bar DIAPHRAM TYPE.	10
03-01-191	CHLORINE GAS TEMP GAUGE CAPILLARY TUBE	3
03-01-192	PUMP R32 250 CHEMICALCENTERFUGAL PUMPS : DUTY 1.389 L/S , H = 76 m SPEED = 2950 rpm , MOTOR = 8.1 KW , SUPPLY 400V - 3PH - SO HZ	3
03-01-193	PUMP R32 - 250 CHEMICAL CENTERFUGAL PUMPS : DUTY 2.5 L/S , H = 91 m , SPEED = 2950 rpm , MOTOR = 12.6 KW , SUPPLY 400V - 3PH - SO HZ	1
03-01-194	PUMP R32 - 250 CHEMICAL CENTERFUGAL PUMPS : DUTY 1.389 L/S H = 87m , SPEED = 2950 rpm , MOTOR = 12.1 KW , SUPPLY 400V - 3PH - SO HZ	1
03-01-195	COMPLETE ROTATING ELEMENT FOR THE PUMP	6
03-01-196	COMPLETE ROTATING ELEMENT FOR THE MOTOR	2
03-01-197	STATAR MOTOR 8.1 KW	4
03-01-198	STATAR MOTOR 12.6 KW	2
03-01-199	STATAR MOTOR 12.1 KW	1
03-01-200	SET OF GLAND PACKING	20
03-01-201	BALL BEARING	20
03-01-202	SET OF BEARING	10
03-01-203	SET OF BEARING	10
03-01-204	OILER FILLING	2

1-13: SPARE PART FOR TAJI AND ABU - GHRAIB RES.		
CODE NO	DESCRIPTION	QTY
03-01-205	PUMPS TYPE 350/300/429 : PRESSURE SWITCH TYPE 107	17
03-01-206	DIFFERENTIAL PRESSUR SWITCH TYPE 217	17
03-01-207	ROTATING ELEMENT	5
03-01-208	GLAND PACKING 3ST	4
03-01-209	O-RINGS	4
03-01-210	THRUST WASHER (SET)	5
03-01-211	CASING SPACER RINGS 2ST	4
03-01-212	INDUCTION MOTOR	1
03-01-213	HALF COUPLING OF PUMP	8
03-01-214	HALF COUPLING OF MOTOR	4
03-01-215	ACTUATORS 400mm	6
03-01-216	BALL BEARING 7318	10
03-01-217	BALL BEARING 6315	10
03-01-218	BALL BEARING 22216E	10
03-01-219	GEAR BOX OF 400mm	6
03-01-220	PUMPS TYPE 250/225 : PRESSURE SWITCH TYPE 107	4

03-01-221	DIFFERENTIAL PRESSUR SWITCH TYPE 217 BASEMENT FLODED ALARM PANAL SERAL NO. 1880/47FO2	4
03-01-222	CONTROL SUPPLY 110V	3
03-01-223	ROTATING ELEMENT	2
03-01-224	GLAND PACKING 3ST	2
03-01-225	CASING SPACER RINGS 2ST	2
03-01-226	HALF COUPLING OF PUMP	2
03-01-227	ACTUATORS WITH VALVES 300mm N.C.E MANUAL VALVE 400mm PN6-METAL SEAL (FLANGES - BS4504	2
03-01-228	TABLE 6/11) GEAR OPERATOR 20/3 WITH HANDLE ACTUATORS 600mm SECTIONDL DRAWING SMC 04/5 WITH	2
03-01-229	HANDLE	2

1-14: SPARE PART FOR RAW WATER STATION

CODE	DESCRIPTION	QTY
	COMPLETE RAW WATER PUMPS,TYPE : VERTICAL PUMPS, Q=1m3/Sec , 3600 m3/h , H = 63m WITH MOTOR POWER = 840 KW , 1000rpm , 11KV .	17
03-01-230		
03-01-231	PRESSURE CONTROL VALVE (LIEZIER) 700mm .	8
03-01-232	CHECK VALVE (GUICHON) .	8
	COMPLETE COOLING PUMPS WITH MOTOR ,Q = 60m3/h H = 20m WITH MOTOR = 5.5 KW , 400V .	7
03-01-233		
03-01-234	TEM P4005 A/B RPS3 P5005 A/B RPS4 WITH COMPLET SPARE PART FORT BOTH AS FOLLOWS	4
03-01-235		
03-01-236	SHAFT	40
03-01-237	IMPLLER	40
03-01-238	SHAFT SLEEVE	80
03-01-239	ROTATING	80
03-01-240	MECHANICAL SEAL SLEEVE	80
03-01-241	STATIONARY RING	40
03-01-242	SET OF COVPLING PADS	200
03-01-243	SET OF BEARING SPARE PART FOR RAW WATER PUMPING STATION , MAIN PUMPS :	40
03-01-244	INTERMEDIATE SHAFT	20
03-01-245	TOP SHAFT	50
03-01-246	SHAFT SLEEVE	100
03-01-247	BAAVING BUSH	250
03-01-248	IMPELLER BEARING SLEEVE	100
03-01-249	ADJUSTING NUT	50
03-01-250	WASHERS (2PER SET)	40SET
03-01-251	WASHERS FOR BEARING NUT	40
03-01-252	COMPLETE MUFF COUPLING WITH SCREWS	200SET
03-01-253	IMPELLER (1ST - 2ND)	100
03-01-254	1ST STAGE PUMP BOWEL WITH RING & SCREW	40
03-01-255	2ND STAGE PUMP BOWEL WITH RING & SCREW	40
03-01-256	SET OF RADIAL AND THRUST BEARING	200SET
03-01-257	IMPELLER SHAFT THRUST BEARING CARRIER (COMPLETE WITH BEARING & WASHERS AND ACCESSORY)	56 Set
03-01-258		
03-01-259	BEARING COVER	20
03-01-260	IMPELLER BEARING SLEEVE	200
03-01-261	SHAFT TUNNEL TO BE (UPPER)	50
03-01-262	GREASE REGULATOR	20
03-01-263	THRWER	100
03-01-264	GLAND FLANGE	50
03-01-265	FOLLOWER , SPLIT	100
03-01-266	SHAFT TUNNEL TO BE (MIDDLE)	100
03-01-267	SHAFT TUNNEL TO BE (LOWER)	50
03-01-268	BEARING NUT	50
03-01-269	SCREW FOR ADJUSTING MLT	100
03-01-270	SEPARATION WASHER	100

03-01-271	FILTER (ISIS H) (DN 50)	10
03-01-272	AXIAL AND RADIAL BEARING FOR MOTOR VF 180 - 27 TYPE RNCB500 2PER SET+B612	40 SET
03-01-273	AXIAL AND RADIAL BEARING FOR MOTOR VF 460 - 31 TYPE RNCB560 2PER SET	20 SET
03-01-274	SPACER RING FOR COUPLING PUMP SIDE	20
03-01-275	LOCATING COLLAR FOR BEARING	20
03-01-276	BEARING ADAPTER SLEEVE	20
03-01-277	BEARING SLEEVE	250
CODE	DESCRIPTION	QTY
	SPARE FOR WINFLUX COPLING INCLUDE ;	
03-01-278	SPNING FOR COUPLING (GRID)	50
03-01-279	SEAD RING	50
03-01-280	HALF COVER	50
03-01-281	GASKET	50
03-01-282	CAP SCREW AND NUTS (COMPLETE FOR EACH)	50
03-01-283	GLAND PACKING	1000 m
03-01-284	SCREW AND MALE FEMALE UNIONS	100
03-01-285	VALVE	200
03-01-286	UNION ELBOW 1/2"	200
03-01-287	UNION FITTING 1 1/2"	200
03-01-288	UNION FITTING 1/2"	400
03-01-289	REDUCED NIPPLE FOR BEARING	50
03-01-290	INTERMEDIATE BEARING	100
03-01-291	TOP BEARING	100
03-01-292	COUPLING RING SPLIT	100
03-01-293	INTER STAGE SLEEVE	50
03-01-294	IMPELLER NUT WITH SCREW	100
03-01-295	STUD	1000
03-01-296	NUT	1000
03-01-297	SCREW	5000
03-01-298	LUBRICATING PIPE FOR IMPLLER	50
03-01-299	REDUCED NIPPLE FOR IMPLLER	50
03-01-300	BELL MOUTH WITH RING & SCREW	50
03-01-301	CASING WEAR RING	50
03-01-302	CONNECTING PIECE	10
	START RAW WATER PUMPS ;	
03-01-303	INTERMEDIATE SHAFT	20
03-01-304	TOP SHAFT	40
03-01-305	IMPELLER SHAFT	40
03-01-306	1ST STAGE IMPELLER	40
03-01-307	2ND STAGE IMPELLER	40
03-01-308	ADJUSTING NUT	10
03-01-309	INTERMEDIATE BEARING SLEEVE	100
03-01-310	IMPELLER BEARING SLEEVE	100
03-01-311	SET OF RADIAL & THRUST BEARINGS (2 PER SET)	40SET
	THRUST BEARING COVER (COMPLETE WITH BEARING & WASHERS	
03-01-312	AND ACCESSORY	20
03-01-313	BEARING COVER	20
03-01-314	BEARING BUSH	100
03-01-315	COMPLETE MUFF COUPLING WITH SCREWS (2 PER SET)	100SET
03-01-316	SHAFT SLEEVE	100
03-01-317	WASHERS (2 PER SET)	40
03-01-318	WASHERS FOR BEARING NUT	40
03-01-319	1ST STAGE PUMP BOWEL WITH RING & SCREW	20
03-01-320	2ND STAGE PUMP BOWEL WITH RING & SCREW	20
03-01-321	SHAFT TUNNEL TO BE (UPPER)	20
03-01-322	SHAFT TUNNEL TO BE (MIDDLE)	20
03-01-323	SHAFT TUNNEL TO BE (LOWER)	20
03-01-324	GREASE REGULATOR	10
03-01-325	THROWER	10
03-01-326	GLAND FLANGE	10
03-01-327	FOLLOWER , SPLIT	20

03-01-328	BEARING NUT	20
CODE	DESCRIPTION	QTY
03-01-329	SCREW FOR ADJUSTING NUT	50
03-01-330	SEPARATION WASHER	50
03-01-331	SPACER RING FOR COUPLING PUMP SIDE	20
03-01-332	LOCATING COLLAR FOR BEARING	20
03-01-333	BEARING ADAPTER SLEEVE	20
03-01-334	BEARING SLEEVE	150
CODE	DESCRIPTION	QTY
	SPARE FOR WINFLEX COUPLING INCLUDE ;	
03-01-335	SPRING FOR COUPLING (GRID)	20
03-01-336	SEAL RING	20
03-01-337	HALF COVER	20
03-01-338	GASKET	20
03-01-339	CAP SCREW AND NUTS (COMPLETE) FOR EACH COVER	20
03-01-340	GLAND PACKING	1000m
03-01-341	SCREW AND MDLE FEMALE UNIONS	100
03-01-342	REDUCED NIPPLE FOR BEARING	20
03-01-343	INTERMEDIATE BEARING	20
03-01-344	TOP BEARING	50
03-01-345	COUPLING RING SPLIT	50
03-01-346	IMPELLER NUT WITH SCREW	50
03-01-347	STUD FOR BELMOUTH	1000
03-01-348	NUT	1000
03-01-349	STUD FOR BOWEL WITH NUT SCREW	2000
03-01-350	LUBRICATING PIPE FOR IMPRLLER	20
03-01-351	REDUCED NIPPLE FOR IMPELLER	20
03-01-352	BELL MOUTH WITH RING & SCREW	20
03-01-353	CASING WEAR RING	20
03-01-354	CONNECTING PIECE	10
	BOOSTER PUMPS SPARES ;	
03-01-355	IMPELLER SHAFT	20
03-01-356	INTERMEDIATE SHAFT	20
03-01-357	TOP SHAFT	20
03-01-358	IMPELLER	40
03-01-359	CASING WEAR RING	20
03-01-360	INTER STAGE SLEEVE OF IMPELLER	40
03-01-361	INTERMEDIATE SOCKET	40
03-01-362	INTER STAGE SLEEVE	40
03-01-363	IMPELLER BEARING	40
03-01-364	INTERMEDIATE BEARING SLEEVE	44 Unit
03-01-365	BEARING BUSH	40
03-01-366	NON RETURN VALVE	8
03-01-367	SET OF COUPLING PADS	100SET
	PROBE RESISTANCE FOR MOTOR :	
	PLATINE 100 OHMS AT 00C , ACCORDING WITH RESSTANCE -	
	TEMPERATURE VARIATION LAW DEFINITED BY THE DIN 43760 NORM ;	
	THERE NOMINAL VALUE BEING 100 OHMS AT 00C AND 138.5 OHMS AT	
03-01-368	1000C .	50

1-15: SLUDGE PUMPS		
CODE	DESCRIPTION	QTY
03-01-369	PUMPS + MOTOR + BASE + STARER + SPARE PART (IMPELLER + WEARING PARTS ENOUGH FOR TWO YEARS OPERATION , 30 KW , 964 rpm, 63A , Q = 400 m3/h , H = 10m , END SUCTION .	8
1-16: MEDIUM VOLTAGE SWITCH BOARD FOR DOURA PROJECT		
CODE	DESCRIPTION	QTY
11 KV COMPLETE DISTRIBUTION BOARD FOR DOURA TREATMENT PLANT TO REPLACE THE EXISTING DISTRIBUTION BOARD CONTAINS CCBS TYPE OD4M - P350 CALOR EMAG		
03-01-370	630 A , 11KV INCOMMING 1,2	2
03-01-371	630 A , 11KV EMMERGINCY 1,2	2
03-01-372	630 A , 11KV OUT GOING TO TRANSFORMERS 1, 2 , 3	3
03-01-373	630 A , 11KV AS SPARE	1
NOTE :- WITH NI-CAD BATTERIES , BATTERY CHARGING AND CONTROL UNITS , PROTECTION & SUPERVISION CIRCUITS THIS BOARD INCLUDES ALL PROTECTIONS AND METERING		
1-17: 11 KV SWITCH BORD TO REPLACE THE EXISTING SWITCH BOARD IN RPS 3 , RP4 PUMPING STATIONS		
CODE	DESCRIPTION	QTY
03-01-374	SF6 1250 A 11 KV CIRCUIT BREAKERS (2 X INCOMMERS + 1 BUSCOUPLER) FOR RPS3	3
03-01-375	SF6 1250 A 11 KV CIRCUIT BREAKERS (2 X INCOMMERS + 1 BUSCOUPLER) FOR RPS4	3
03-01-376	SF6 630 A 11 KV CIRCUIT BREAKERS FOR (6) PUMPS & (2) TRANSFORMERS FOR RPS3	8
03-01-377	SF6 630 A 11 KV CIRCUIT BREAKERS FOR (8) PUMPS & (2) TRANSFORMERS FOR RPS4	10
03-01-378	PROTECTION RELAY & MONITIRING SYSTEM WITH THE SUITABLE SOFTWARE & HARDWARE	1 SET
03-01-379	SUPER VISION OF INSTALLATION FOR RPS3 SEPAM PROTECTION RELAY & MONITORING SYSTEM WITH THE SUITABLE SOFTWARE & HARDWARE SUPERVISION OF INSTALLATION FOR RPS4	1SET
CODE	DESCRIPTION	QTY
SPARE PARTS FOR HIGH TENSION SWITCH BORDS IN KPS1 & RPS1		
03-01-380	MCSET 630 A 11 KV	2
03-01-381	MCSET 1250 A 11 KV	1
03-01-382	SEPAM MONITIRING SYSTEM WITH THE SUITABLE SOFTWARE & HARDWARE FOR RPS1 SWTCH BORD	1 SET
03-01-383	INDICATING LAMPS	30
03-01-384	SELECTOR SWITCH	10
03-01-385	SUITABLE EQUIPMENT TO REPLACE THE PB – 600 EQUIPMENT WITH DETAILED DRAWINGS & PROGRAMS IN KPS1 , RPS1 , KPS3 , RPS4	4 SET
03-01-386	SOFTWARE REQUIRMENT & NECESSARY EQUIPMENT TO READ THE FLOW & PRESSURE IN KPS1 , RPS1 , RPS3 SYSTEM	4 SET
1-18: MOBILE WORK SHOP		
CODE	DESCRIPTION	QTY
03-01-387	* 2 TON VEHCLE , 2 CABINET , 5 PASSENGERS * ELECTRICAL GENERATOR 10 KVA , 3PH , 400V * SUBMERSIBLE PUMP 2" WITH SUITBLE HOSES , 20m CABLE * WELDWG MACHINE 7 KVA , 400 V , 3PH , 45-160 A * BATTERY CHARGER , 220V AC , 12-24 D.C , 30A * WORKING BENCH WITH MACHINE VICE 80mm * ELECTRICAL HAMMER DRILLS	20

- * ELECTRICAL DRILLS WITH STAND WITH DRILL SETS
- * FIXED GRINDING MACHINE
- * GREASING PUMP
- * ELECTRICAL AND MECHANICAL HAND TOOLS
- * WIRE STRIPPER
- * STRIPPING KNIFE

- * SCREWDRIVERS SETS STRAIG SLOT AND PHILLIPS HEAD SET
- * PLIERS
- * OPEN ENDED SPAMERS 6-36mm
- * COMBINATION PLIERS 6-36mm
- * ADJUS TABLE SPANNER SET
- * RING SPANNERS SET 6-36mm WITH LARGE OFF SET
- * ALLEN KEYS SET
- * HAMMERS
- * STEEL BRUSH
- * SOCKET SET 6-50mm
- * WRENCH SPANNERS 4"-8"
- * FILE SETS
- * ELECTRICAL SOLDERING IRON
- * WORKING CLOTHS (HEAVY DUTY) WITH RUBBER BOOTS
- * CHAIN BLOCKS WITH SUPPORT 2 TON

- * ALL THE NECESSARY FURNTURE AND SUGESTED ACCESSORIES
- * 3PH + N CABLE REELS (50m CABLE LEANGTH)
- * DISTRIBUTION BOARD WITH PLYG + SOCKETS 400 V , 50 Hz

1-19: HIGH LIFT PUMPING STATION FOR 7 NISSAN		
CODE	DESCRIPTION	QTY
03-01-388	HIGH LIFT PUMPING STATION ELECTRICAL SWITCH BOARD (7.2 Kv) DIMTION : L x W x H 323x100x224 THE BOARD CONTAIN 4 FOR CUBICLES WITH DRAWABLE CIRCUIT BREAKERS SF6 :- 2 IN COMERS 630 A 1 OUT GOING 630 A 1 BUS COUPLER 1250 A WITH PROTECTION RELAYS (S.CT. , THERMAL , UNDER VOLTAGE) AND MEASURMENTS (VOLTS , AMPS , SWITCHS , ETC) THE BOARD TO BE MATCHED WITH EXISTING EQUIPMENT.	1
03-01-389	ELECTRICAL SWITCH BOARD (7.2 Kv) DIMTION : L x W x H 370x100x224 THE BOARD CONTAIN 4 FOR CUBICLES WITH DRAWABLE CIRCUIT BREAKERS SF6 :- 2 IN COMERS 630 A 2 OUT GOING 630 A 1 BUS RISER WITH PROTECTION RELAYS (S.CT. , THERMAL , UNDER VOLTAGE) AND MEASURMENTS (VOLTS , AMPS , SWITCHS , ETC) THE BOARD TO BE MATCHED WITH EXISTING EQUIPMENT.	1
03-01-390	SPARES CIRCUIT BREAKERS FOR THE ABOVE ITEM 630 A	2
03-01-391	1250 A	1
CODE	DESCRIPTION	QTY
03-01-392	SF6 CONTACTOR 7.2 Kv , 300 A , TYPE SFC320 , FIXED TYPE , MAIN COIL VOLTAGE 110V A.C Cr 16.5 KA , EFFECT 6.6 KA , 16 AUXILLARY CONTACTS , DIMENTIONS L x W x H 56x54x40	14
1-20: CONTACTOR FOR 7 NISSAN		
CODE	DESCRIPTION	QTY
03-01-393	COMPANY : STROMBERG TYPE : OKYMSW22 , lth 400A , COIL VOILTAGE 110 V	30
03-01-394	COMPANY :(ABB)	6
03-01-395	TYPE : EH 550 , lth 800A , COIL VOILTAGE 110 V COMPANY : (ABB)	6
03-01-396	TYPE : EH 250 , lth 440A , COIL VOILTAGE 110 V COMPANY :(ABB)	12
	TYPE : EH 160 , lth 300A , COIL VOILTAGE 110 V	

1-21: ELECTRICAL ACTUATORS FOR 7 NISSAN		
CODE	DESCRIPTION	QTY
03-01-397	ROTORK CONTROLS LIMITED TYPE : 11 A , SERIAL NO. : Z10910 A WIRING DIG NO. 2220 OUTPUT SPEED : 24 REV/MIN MAXIMAM TORQUE SETTING 68 N.m MOTOR RATING : 0.15 KW MOTOR SUPPLY 420-3-50 NOMINAL MOTOR CURRENT : 1.75A AUXILIARY SWITH 15A 440 VA.C 0.5A 125 VD.C	4
03-01-398	SPARE : ELECTRICAL STATOR COIL	10
03-01-399	ROTORK CONTROLS LIMITED TYPE : 11 A , SERIAL NO. : Z10910 D1 WIRING DIG NO. 2220 OUTPUT SPEED : 48 REV/MIN MAXIMAM TORQUE SETTING 54 N.m MOTOR RATING : 0.24 KW MOTOR SUPPLY : 420.3.50. NOMINAL MOTOR CURRENT : 1.75A AUXILIARY SWITH 15A 440 VA.C 0.5A 125 VD.C	6
03-01-400	SPARE : ELECTRICAL STATOR COIL	10

1-22: CONTROL OF WATER LOSSES IN THE WATER SYSTEM OF BAGHDAD

CODE	DESCRIPTION	QTY
03-01-401	a. SCOPE OF WORK 1- COLLECTION OF DETAILED MAPS TRUNKS AND DISTRIBUTION NETWORKS CONTAINING DIAMETERS , LENGTHS , VALVES , PUMPING STATION , TREATMENT PLANTS AND OTHER INSTALLATIONS IN THE NETWORK. 2- CALCULATIONS STRUCTURE PLAN-BASED ON THE DOCUMENTATION OF THE NETWORK . ADIGITIZED MODE OF THE NETWORK SHOULD BE IMPLEMENTED ON THE COMPUTER . THIS CALCULATION STRUCTURE PLAN CONTAINS HYDRAULIC NETWORK NODES AND PIPE CONNECTING THESE NODES AS ABASIS FO 3- HYDRAULIC SIMULATION - BASED ON HYDRAULIC MODEL AND THE ALLOCATED CONSUMPTION AND PRODUCTION FIGURES. 4- OPTIMIZATION OF HYDRAULIC OPERATION BASED ON THE IMPROVED HYDRAULIC MODEL . 5- TRAINING OF BWA (BAGHDAD WATER AUTHORITY) STAFF. b. SCOPE OF SUPPLY	2
	1- HARDWARE : 1-A. SERVERS : QUALITY HARDWARE WITH MINIMUM REQUIRMENTS OF : * PENTUIM LATEST VERSION * 512 MB RAM * 100 GB INTERNAL STORGE (H.D) * DVD.CD-ROM * 21" SVGA MONITOR * LEVEL 2 CACHE 512KB * ADVANCED SYSTEM MANAGEMENT PROCESSOR * ETHERNET NETWORK CARD * OPERATING SYSTEM ; WINDOW NETWORK SERVER * PRE+B10DICTIVE FAILURE ANALYSIS SUPPORT * CD-WRITER * SMART UPS * KEY BOARD * MOUSE	

* EVENT PRINTER ; LASER PRINTER 16 PPM , 8MB INSTALLED RAM , RESOLUTION 1200x1200 PDI	
* 3.5" FLOPPY DISC DRIVE	
* SOUND CARD WITH 300 WATT SPEAKERS .	
1-B. STAND ALONE SERVER ; QUALITY HAND WARE WITH MINIMAM REQUIRMENTS OF :	6
* PENTIUM LASTEST VERSION	
* 768 MB RAM	
* 72.8 GB (INTERNAL STORAGE) (HARD DISC)	
* DVD.CD-ROM	
* 21" SVGA MONITOR	
* LEVL 2 CACHE 512KB	
* ETHERNET NETWORK CARD	
* PREDICTIVE FAILURE ANALYSIS SUPPORT	
* SMART UPS	
* KEY BOARD	
* MOUSE	
* 3.5" FLOPPY DISC DRIVE	
* SOUND CARD WITH 300 WATT SPEAKERS .	
* WINDOW NETWORK SERVER OPERATION SYSTEM WITH LATEST ANTIVARUS PACKAGE	
 1-C. PLOTTER ;	 1
* AO PLOTTER	
* COLOR INKJET	
* SUPERIOR LINE QUALITY AND SUPERIOR GRAPHICS FOR MAPS	
* ROLL FEED AND OUTOMATIC CUTTER	
* AO PAPER ROLLS (IOM PER ROLL) (10 NO.)	
* INK CARTRIDGES (100)	
1-D. SCANNING DEVICE ;	2
* AO SIZE SCANNER	
* REQUIRED SOFT WARE 400 DPI	
2- SOFT WARE ;	
2-A. SOFT WARE PRODUCT TO MANAGE THE NETWORK DATABASE TO BE CUSTOMIZED TO MEET BWA'S NEEDS	1
2-B.RELATION DATA BASE MANAGEMENT SYSTEM INCLUDING:	1
* 1 SERVER LICENSE	
* 4 USERS LICENSE	
2-C. SOFT WARE PROGRAM TO COMPUTE PRESSURE AND FLOW VALUES (WATER DISTRIBUTION MODELLING WITH AUTO-CAD INTEGRATION WITH UN LIMITED NUMBER OF PIPES)	1
2-D. FASTER DATA MANIPULATION AND MANAGEMENT SOFT WARE COMPATIBLE WITH SCANNING DEVICE PROPOSED	1
3- SUPPLY OF INSTRUMENTS	
3-A. PIPE LOCATOR	2
DIGITAL PIPE LOCATOR FOR LOCATING ALL BURIED PIPES CAPABLE OF DEFINING THE TYPE, THE LOCATION AND DEPTH OF PIPE LINE .	
3-B. PRESSURE METERS WITH TRANSMITTER.	40
3-C. ULTRA SONIC CLAMP-ON FLOWMETER WITH TRANSMITTER	40
3-D. RADIO/MODEMS WITH LOCAL DATA COLLECTOR FOR REMOTE SITES	40
4-E. OVER HEAD PROJECTOR CONNECTED TO MONITOR.	1
5-F. DATA LOGGING SYSTEM - AUTOMATED DATA COLLECTION (MASTER STATION) B1114INCLUDING :	2
1- RTVS	
2- SCADA PAKAGE	
3- PENTIUM 3 , 768 MB RAM , 17" SVGA MONITOR , 20 GB HARD DISC , WINDOWS NT , KEYBOARD , MOUSE	
4- RADIOS / MODEMS	
5- AERIALS WITH MOUNTING BRACKETES	
6- COAXIAL CABLES	
7- UPS FOR COMPUTER & RADIOS	

1-23; TREATED WATER PUMPING STATION SERIAL NO. C5/56383

CODE	DESCRIPTION	QTY
03-01-402	SHAFT NUT	8
03-01-403	THRUST NUT	8
03-01-404	LOCKING SCREWS FOR ITEM 8	24
03-01-405	LOCKING SCREWS FOR ITEM 9	24
03-01-406	SET SCREWS FOR ITEM 10	24
03-01-407	LOCKING EASHER FOR ITEM 11	8
03-01-408	GLAND STUDS	24
03-01-409	NUT FOR 30	12
03-01-410	BOLT FOR 67	24
03-01-411	WASHER FOR 32	12
03-01-412	WASHER FOR 30	12
03-01-413	MALG STUD CPLG	8
03-01-414	SEL LOCK SPRING DOWEL PINS	8
03-01-415	THRUST WASHER	24
03-01-416	NECK BUSH	24
03-01-417	THIN NUT	4
03-01-418	PRESSURE GAUGE	12
03-01-419	D.E. INTL BEARING CAP	4
03-01-420	SPRING	32
03-01-421	OIL THROWER	4
03-01-422	BEARING RING	4
03-01-423	INSULATION RING	8
03-01-424	FLANG RING	2
03-01-425	OIL BAFFLE RING	4
03-01-426	OIL THROWER COLLAR	4
03-01-427	OIL RETAINING SLEEVE	4
03-01-428	SHAFT SLEEVE	4
03-01-429	LOCKING COLLAR	4
03-01-430	STUD & SPRING WASHAR 2HEX NUT	32
	SPRING WASHAR 2 HEX HD SCREW & PLAN WASHR & INSULATION	
03-01-431	BUSH (22DNA X 30I)	32
03-01-432	INSULATION PACKER	4
	DIAL TYPE THERMOMETER ONE EACH END WITH TWO JEB OF	
03-01-433	ADJUSTABLE	16
03-01-434	ROTATING DUST SEAL	4
03-01-435	CONICAL DEFLECTOR	6
03-01-436	INSULATION GASKET	7
03-01-437	HEX.HO. SCREW	8
03-01-438	S.C SPRING WASHAR	9
03-01-439	LOCKING COLLER M100	16
03-01-440	INSULATION THRUST COLLER COMP	17
03-01-441	KEY	18
03-01-442	BRG. COVER PLATE	19
03-01-443	SPRING	23
03-01-444	SUPPORT BRG. HOUSING	24
03-01-445	CAP HD SCREW	25
03-01-446	INSULATION RING	29
03-01-447	BRG.HSG SLEEVE COMP.	30
03-01-448	OIL RETAINING SLEEVE	31
03-01-449	OIL THROWER	33
03-01-450	OIL PIPE	34
03-01-451	MALE STUD COVPLING	48

CODE	DESCRIPTION	QTY
03-01-452	2000 mm BUTTERFLY VALVE TEE KEY OPERATED	1
03-01-453	2000 mm BUTTERFLY VALVE MANUAL OPERATED BUS HEADER SECTIONING	1
03-01-454	2000 mm BUTTERFLY VALVE ELECTRIC OPERATED MAIN ISOLATION	1

	1200 N.B BUTTERFLY VALVE ELECTRIC OPERATED MAIN ISOLATION	
03-01-455	PUMP DISCHARGE	4
03-01-456	1200 N.B MANUAL BUTTERFLY VALVE ISOLATION PUMP	4
03-01-457	1200 N.B MANUAL BUTTERFLY VALVE SUCTION PUMP	4
03-01-458	1200 mm REFLUX VALVE	4
03-01-459	1400 mm REFLUX VALVE FOR RAW WATER	2
	SPARE FOR VALVE 1200mm N.B :	
03-01-460	SEAL SEATING RING	12
03-01-461	METAL SEAL	12
03-01-462	BEARING BUSH	24
03-01-463	THRUST WASHER	24
03-01-464	GLAND BUSH	12
03-01-465	O RING SEAL	12
03-01-466	SEAL GASKET	12
03-01-467	LIMITORQUE ELECTRIC ACTVATOR	4
03-01-468	COUPLING	4
03-01-469	SPARE FOR VALVE 2000mm N.B :	
03-01-470	SELA SEATING RING	3
03-01-471	METAL SEAL	3
03-01-472	BEARING BUSH	6
03-01-473	THRUST WASHER	6
03-01-474	GLAND BUSH	3
03-01-475	O RING SEAL	3
03-01-476	SEAL GASKET	3
03-01-477	LIMITORQUE ELECTRIC ACTVATOR	1
03-01-478	COUPLING	3
03-01-479	GLAND RING	3
03-01-480	END COVER GASKET	3
03-01-481	1000mm PUMP WATER LUBRICATION SYSTEM COMPLETE	6
03-01-482	DIAL INDICATING THERMOMETER	8
03-01-483	UNITE : SURFACE SCATTER , TURBIDIMETER , : RANGE (0-999NTU) , RESPONSETIME (30SEC) , POWER 115/230 VAC 50/60 Hz , RECORDER O/P (0.10mV - 0.1mV , OR 4-20 mA CHLORINE RESIDUAL , ANALYSER SERLIES 66 , COMPLET WITH ,	5
03-01-484	BUFFER PUMP RANGE (0-10mg/L) , RESOLUTION (0.01mg/L) , RESPONSETIME (30SEC) , POWER 115/230 VA.C 50/60 Hz , O/P (0.10mA , OR 4-20 Ma) , FLOW 500mL/m , MAX PRESSURE 2 bar	8
03-01-485	UNITE : DS900 SCANNER , FOR R.W + TW , CONTROL PANAL COMPANY : ORANGE INSTRUMENTS L.T.D. SPECIFICATION : RANGE = VARIOUS READING ACCURACY = TYPICAL 2.5% OF FULL SCALE TRIP POINT ACCARACY = 0.5% OF FULL SCALE TRIP POINT REPEATABILITY = 0.1% OPERATING TEM. RANGE = 10C + 60C SUPPLY VOLTAGE = 110V + 10% AC FRAQUANCY = 48 - 63 Hz SCAN TIME = FIXED AT SECOND PER POINT METER INDICATOR = 60mm SEAK LENGTH CAN BE SULTCHED TO INDICATE INPUTOR SET POINT VOLUE HOUSING = STANDARD 144 x 77 PANAL MONNTING DIN BOX CONNECTIONS = SCREW TERMINALS	20

1-24: OUT DOOR L.T DEISEL GENERATOR FOR ALRASHED & WAHADA PROJECT

CODE	DESCRIPTION	QTY
03-01-486	GENERATOR : POWER = 1.25 MVA ENG POWER = 1 MW (CONTINUOUS AT 55 C) TYPE OF STARTING : AIR STARTING TYPE OF COVERNOR : MECH/HYDRULIC AMB. TEMP = 550	2

TYPE OF RADIATOR : TROPICAL
 COOLING : WATER
 CLASS OF INSULATION : F
 STARTER : DIESEL COMPRESSOR + ELECTRIC COMPRESSOR
 ELECTRIC BATTERY CHARGER = 24V , 70A
 L.O PRESSURE SHUTDOWN PROTECTION
 H. WATER TEMP SHUTDOWN
 OVER SPEED SHUTDOWN
 DAILY FEEL TANK 48 HOURS
 OIL DRIAN PUMP
 SPEED = 1000 rpm
 MEASURMENTS : V , A , COSQ , KVAR , h , f , KW , SPEED
 AUTO CHANGE OVER SWITCH
 BATTERY : NI - CD BATTERIES
 WITH TYPE RATING OF C.B ELECTRIC PROTECTION E EARTH FAULT ,
 PHASE REVERSE , SHORTCCT
 SET OF ENGINE SPARE PARTS :

03-01-487	INJECTOR NOZZEL	20
03-01-488	INJECTOR WASHER	40
03-01-489	AIR FILTER ELEMENT	12
03-01-490	RADIATOR CAP	4
03-01-491	WATER PUMP R/KIT	2
03-01-492	WATER HOSE	8
03-01-493	CORRUGATE HOSE	4
03-01-494	CRANK SHAFT BEARING	8
03-01-495	CONNECTING ROD	10
03-01-496	GEAR OIL PUMP	10
03-01-497	SHAFT OIL PUMP	2
03-01-498	DRIVE SHAFT GEAR PUMP	2
03-01-499	ALTERNATOR ASSY	2
03-01-500	STATER ASSY	2
03-01-501	LINER ASSY	2
03-01-502	O.SEAL	2
03-01-503	PISTION ASSY	20
03-01-504	TRAPERED STONE RING	40
03-01-505	TRAPERED RING	20
03-01-506	CONTRAL RING	20
03-01-507	INLET VALVE	20
03-01-508	EXHAUST VALVE	20
03-01-509	TURBO CHANGE R/KIT	4
03-01-510	FUEL FILTERS	40
03-01-511	OIL FILTERS	40

1-25: ELECTRICAL DISCHARGE VALVES

CODE	DESCRIPTION	QTY
	SUPPLY OF MOTORIZED BUTTERFLY VALVES	
	* MAXIMUM PRESSURE = 16bar AT 200C	
	* ELECTRIC ACTUATOR : 380V , 3PH , 50Hz , WITH SUITABLE LIMIT SWITCHES	
	* MANUAL HANDLE SHOULD BE AVAILABLE TO OPERATE THE VALVE MANUALLY	
	* FLANGE DRILLS ACCORDING TO PN 16	
	* MOMINAL	
	DRAMERER (DN) ;	
03-01-512	150mm	20
03-01-513	200mm	20
03-01-514	250mm	40
03-01-515	300mm	20
03-01-516	350mm	20
03-01-517	400mm	20
03-01-518	ELECTRIC SWITCH BOARD TO OPERATE 7x250mm + 2x200mm VALVES WITH NECESSARY PROTEETION & INDICATING SIGNALS	4

1-26: 3PH TRANSFORMER FOR 7 NISSAN		
CODE	DESCRIPTION	QTY
03-01-519	STANDARD BS 170 -1970 H633 10.03 RATED POWER 1000 KVA RATED FREQUENCY 50Hz DYN 11 LIQUID INSULATION H.V = 5500 V , L.V = 403 V TYPE OF COOLING O+B1352NAN	1
03-01-520	RATED POWER 4000 KVA RATED FREQUENCY 50Hz DYN 11 LIQUID INSULATION OIL H.V = 11000 V , L.V = 5750 V TYPE OF COOLING ONAN	1
1-27: SPARE PART FOR DAIHATSU DIESEL ENGINE		
CODE	DESCRIPTION	QTY
03-01-521	DAIHATSU DIESEL ENGINE MODEL DV-26 TO REPLACE THE DAMAGE ENGINE OF GENERATOR 2600KVA , 750 rpm ,11 KV	1
1-28: GENERATOR FOR 7 NISSAN TRETMENT PLANT		
CODE	DESCRIPTION	QTY
03-01-522	SUPPLY AND INSTALL 11 KV GENERATOR OF CAPACITY 2600KVA TO REPLACE THE EXISTING DAMAGE ONE IN 7NISSAN PROJECT WITH THE SAME DIMENTIONS SPECIFICATIONS :- OPERATION = CONTINOUS AT 55 C COOLING = WATER STARTING = COMPRESSED AIR VOLTAGE = 11KV , 3PH , 50HZ SPEED = 750 rmp WITH ALL ACCESSORIES TO OPERATE GENERATOR PARALLEL WITH ANOTHER GENEARTOR AND S.O.E	1
1-29: NON-RETURN VALVES		
CODE	DESCRIPTION	QTY
	FACE TO FACE SERIES F6 DIN 3202 :	
03-01-523	ITEM 1 , NORMAL SIZE 40mm , PN16 , D150 ,K110 ,HOLES 4 , DE18 , B18	10
03-01-524	ITEM 2 , NORMAL SIZE 50mm , PN16 , D165 ,K125 ,HOLES 4 , DE18 , B20	20
03-01-525	ITEM 3 , NORMAL SIZE 65mm , PN16 , D185 ,K145 ,HOLES 4 , DE18 , B20	10
03-01-526	ITEM 4 , NORMAL SIZE 80mm , PN16 , D200 ,K160 ,HOLES 8 , DE18 , B22	20
03-01-527	ITEM 5 , NORMAL SIZE 100mm , PN16 , D220 ,K180 ,HOLES 8 , DE18 , B24	30
03-01-528	ITEM 6 , NORMAL SIZE 125mm , PN16 , D250 ,K210 ,HOLES 8 , DE18 , B26	10
03-01-529	ITEM 7 , NORMAL SIZE 150mm , PN16 , D285 ,K240 ,HOLES 8 , DE22 , B26	20
03-01-530	ITEM 8 , NORMAL SIZE 200mm , PN10 , D340 ,K295 ,HOLES 8 , DE18 , B26	20
03-01-531	ITEM 9 ,NORMAL SIZE 250mm , PN10 , D395 ,K335 ,HOLES 12 , DE18 , B28	24
03-01-532	ITEM 10, NORMAL SIZE 300mm,PN10 , D445 ,K395 ,HOLES 12 , DE22 , B28	10

1-30: KARKH RES. SPARE PART

CODE	DESCRIPTION	QTY
	SERIAL NO. C5/56429/30 , 600/600/600 D.E.S.C. PUMP , SECTIONAL DRAWING NUMBER P2003177	
03-01-533	1- ROTATING ELEMENT WITH INDUCTION MOTOR	6
03-01-534	2- CASING SPACER RING 2ST	2
03-01-535	3- MOTOR HALF COUPLING	2
03-01-536	4- PUMP HALF COUPLING	2
03-01-537	5-DRIVE SHAFTING THREE PEACESES	2

CODE	DESCRIPTION	QTY
	SERIAL NO. C5/56404 ,500/500/405 D.E.S.C. PUMP , SECTIONAL DRAWING NUMBER P2003179	
03-01-538	1- ROTATING ELEMENT WITH INDUCTION MOTOR	2
03-01-539	2- SPHERIAL ROLLER BEARING	4
03-01-540	3- MOTOR HALF COUPLING	2
03-01-541	4- PUMP HALF COUPLING	2
03-01-542	5-DRIVE SHAFTING THREE PEACESES	2
03-01-543	6- SKF 1216 BEARING	10
03-01-544	7- SKF 1215 BEARING	10

1-31: 1.75 MW DIESEL GENERATORS

CODE	DESCRIPTION	QTY
	TYPE 16VS12 FXBC	
03-01-545	COMPLETE SPARE KITS FOR ENGINES SIZE 10	4
03-01-546	AIR RECEIVER & CONTROL VALVE ASSEMBLY	2
03-01-547	GOVENER+B1234	2
03-01-548	AIR COMPRESSOR SIZE D112M , 1420r/min , 50HZ , 4KW , 400V , 8.4A	2
03-01-549	DIESEL+B1422 ENGINES 1.0511.4 bar - 1500 r/min , 20 bar	2
03-01-550	GLACIER G.F2 FILTER	10
03-01-551	MANUAL DRAIN AIR FILTER	10
	SEMI-ROTARY HAND PRIMING LUB-OIL PUMP RUN WEL DOUBLE	
03-01-552	ACTING	4
03-01-553	STARTING AIR VALVE	24
03-01-554	FUEL INJECTION PUMP ASSEMBLY	12

1-32: BONDSTRAND PIPE (5000) B1535AND FITTINGS B1517

CODE	DESCRIPTION	QTY
	PIPE (PIPE LENGTH 6 METERS) B1342:	
03-01-555	50mm	50
03-01-556	75mm	30
03-01-557	100mm	30
03-01-558	ELBOW 900 :	
03-01-559	50mm	20
03-01-560	75mm	10
03-01-561	100mm	5
	ELBOW 450 :	
03-01-562	50mm	20
03-01-563	75mm	10
	TEE :	
03-01-564	50mm	10
03-01-565	75mm	5
	FLANGE 150	
03-01-566	50mm	15
03-01-567	75mm	5
03-01-568	100mm	5
	QUICK-LOCK COUPLING	
03-01-569	50mm	20
03-01-570	75mm	10
03-01-571	100mm	10
03-01-572	ADHESIVE KIT (30ZS) RP34 (BLACK)	24
03-01-573	ADHESIVE KIT (30ZS) RP48 (BROWN)	24

1-33: GENERATING STATIONS FOR RAW WATER PUMPING STATION

CODE	DESCRIPTION	QTY
	SUPPLY AND INSTILATION OF (4) GENERATING STATION TO SUPPLY ELECTRICAL POWER FOR BAGHDAD RAW WATER PUMPING STATIONS	
03-01-574	<p>* EACH GENERATING STATION SHOULD INCLUDE (2) 750 RPM DIESEL GENERATOR SET WITH CAPCITY SUITABLE TO OPERATE (2) PUMPS WITH MOTOR OF (840KW) , 11KV , 1000 rpm , DIRECT ON LINE SQUIRREL - CAGE ROTOR (DETAILED SPECIFICATION IS ATTACHED)</p> <p>* OPERATION : CONTNIONUS AT 550C</p> <p>* COOLING : WATER</p> <p>* STARTING : COMPRESSED AIR BY TWO COMPRESSORS ONE ELECTRIC + OTHER DIESEL MACHINE WITH AIR VESSEL</p> <p>* VOLTAGE : 11KV , 3PH , 50Hz</p> <p>* AMBIENT TEMP : 550C</p> <p>* ALL THE NECESSARY HIGH TENSION & LOW TENSION SWITCH BOARDS WITH SUITABLE 11/0.4KV TRANSFORMER</p> <p>* D.C EQUIPMENT</p> <p>* SYNCHRONIZING EQUIPMENT TO ALLOW PARALLEL OPERATION OF THE GENERATORS & WITH THE MAINS SUPPLY</p> <p>* STEEL STRUCTORE BUILDING SUITABLE FOR THE GENERATING STATION+ OPERATOR ROOM AND WORKSHOP ROOM</p> <p>* OVER HEAD GRANE</p> <p>* VENTILATORS</p> <p>* DAILY FUEL TANK TO OPERATE THE SET FOR 48 HOURS</p> <p>* STORGE TANK TO ALLOW OPERATION FOR 10 DAYS</p> <p>* LOAD CURVED ARE REQUIRED</p> <p>* HIGH TENSION CIRCUIT BREAKER IN GENERATING STATION AND IN MAIN DISTRIBUTION BOARD OF THE PUMPING STATION SUITABLE FOR OPERATION DISCRIBED ABOVE</p> <p>THE GEN.SET SHALL BE ABLE TO ACCEPT 50% IMPACT LOAD OF THE OUTPUT LOAD WITH AMAX. SPEED DROP 10%</p> <p>SPEAR PARTS FOR 2 YEARS</p>	

MOTOR SPECIFICATION
 COMPANY : JEUMENT SCHNEIDER
 MODEL : RNC BY 560 D6
 RATED POWER : 840 KW
 MECH ABSORBED POWER : 793 KW
 SYNCHRONOUS SPEED : 1000 rpm , SPEED AT FULL LOAD :994
 SUPPLY SYSTEM : 11KV + 107 , 3PH , 50 HZ
 ENCLOSURE : JEFC IP 55
 METHOD OF STARTING : DIRECT
 FULL LOAD CURRENT : 51.9 A
 STARTING CURRENT : 550% FLC
 STARTING TIME (FULL LOAD) : 1.55 : 550% FLC
 STARTING TORQUE /FULL LOAD TORQUE : 0.75
 MINIMUM RVN - UP TORQUE : TORQUE C/C : 6CN
 INSULATION CLASS : F
 TEMP RISE : 700C

DRIVEN MACHING TYPE CENTRIFUGAL PUMP MOUNTING = VERTICAL
 LOAD - TORQUE TYPE : PARABOLIC
 STANDARD : IEC

1-34: MOTOR FOR CLARIFIRE SCRAPER

CODE	DESCRIPTION	QTY
03-01-575	POWER : 3.00 KW , 1039rpm , 400V , 50 HZ , 4A , SHAFT DIA 38 KEY WAY 10x4mm , FLANGE MOUNTING BOLTE SIZE M12	10

1-35: AIR CONDITIONING COMPRESSOR SETS

CODE	DESCRIPTION	QTY
03-01-576	COMPLETE COMPRESSOR SINGL STAGE AIR COMPRESSOR TYPE 2050B CAPACITY EACH 10 L/S AT 10bar WITH MOTOR 5.5 KW P55TEFV 400V , 3PH , 50HZ , RECOMMENDED 6 COMPRESSOR WITH MOTOR .	

1-36: KENT EQUIPMENT FLOWMETER SYSTEM

CODE	UNIT	QTY
03-01-577	MAGNETIC FLOWMETER SYSTEM	6
03-01-578	MAGNETIC FLOWMETER SYSTEM	3
03-01-579	MAGNETIC FLOWMETER SYSTEM	12
03-01-580	TOTALISER COUNTER	6
03-01-581	INDICATOR	10

1-37: DUCTILE IRON PIPES

CODE No.	DESCRIPTION	QTY.
03-01-582	Supply of spigot -socket ductile iron pipes according to ISO 2531 STANDARD,type K9 with the following speci- fications: 1-pipes of push-fit joints. 2-length of pipe should be 6 meters or more. 3-pipes should have spun-cement mortar inside lining and outside bitumen&zinc coating. SCOPE OF SUPPLY SPUN DUCTILE IRON SPIGOT-SOCKET PIPES 1800mm diameter pipe with rubber joint.	20000 m
	SUPPLY OF DUCTILE IRON FITTINGS Fittings should be suitable for ductile iron pipes accordi- ng to ISO 2531 STANDARDS.with the following specific- ations. 1-Flanges should be of type NP16. 2-All sockets joints should be mechanical .	

3-Fittings should have inside cement lining & outside bituman coating.

4-The scope of supply include all necessary rubber joint ,gaskets,bolts,nuts&washers.

SCOPE OF SUPPLY

03-01-583	1-Flange socket 1800mm	No. .45
03-01-584	2-Flange spigote1800mm.	No. .10
03-01-585	3a-Collar 1600mm.	NO. 20
03-01-586	3-Collar 1800mm.	NO. 8
03-01-587	4-Double socket bend 45,1800mm.	NO. 4
03-01-588	5- " " " 22 1/2,11 1/4 (each)1800mm	NO. 22
03-01-589	6-All flange equal tee.1600*1600.	NO. 1
03-01-590	6a-All flange equal tee.1800*1800.	NO. 3
03-01-591	7-All flange tee,1800*400.	NO. 21
03-01-592	8-Double sockets tee with flanged branch,1800*400.	NO. 21
03-01-593	9-Double flanged taper,1800*1600.	NO. 10
03-01-594	10-Tied dismantling joint,1800mm.	NO. 3
03-01-595	11- " " " ,1600mm.	" "
03-01-596	12- " " " ,1400mm.	" 5
03-01-597	13-Polyethylene sleeve WT 400 mic.1800mm	l.m 22000
03-01-598	14- " " " " " " ,1600mm.	l.m33000
03-01-599	15-Blank flange 400mm.	NO. 50
03-01-600	16-Double air valve ventex, 200mm.	NO. 25
03-01-601	17-Isolating valve ,200mm.	NO. 25
03-01-602	18-Reducing flange,400*200mm.	NO. 25
03-01-603	19-Flavged pipe length .5&2m,400mm,(each).	NO, 50
03-01-604	20-Flanged anchoring pipe with puddle1800,1600,1400 mm(each)	NO. 3

SUPPLY OF BUTTERFLY VALVS

- 1-Valve should be of rubber disc seal type.
- 2-Flange should be PN16 type.
- 3-Testing pressure should be 18 bars agenst seal & 25 bars agenst body.
- 4-Water tiagtness should be complet between gearbox &body.
- 5-Coating should be of epoxy paint internaly&externaly
- 6-All coating from inside should be of foodstuff quality.

SCOPE OF SUPPLY

03-01-604	1-Butterfly valves diam1800.mm.	NO, 3
03-01-605	2- " " " .1600mm.	.NO 3
03-01-606	3- " " " 1400mm.	.NO 3

SECTION 2: REQUIREMENTS FOR THE REHABILITATION OF SEWAGE TREATMENT PLANT AND SEWAGE NETWORK

2-1	ELECTRICAL REQUIRMENTS FOR TREATMENT PLANTS	LUMP
2-1-1	CABLES	LUMP
2-2-2	LIGHTING	LUMP
2-2-3	BATTERY CHARGER	LUMP
2-2-4	H.V & M.V SUB- STATIONS	LUMP
2-2	LAB . EQUIPMENTS	LUMP
2-3	3RD EXTENTION TREATMENT PLANT REQUIRMENT	LUMP
2-3-1	BELT CONVEYER FOR SCREEN ROOM	LUMP
2-3-2	HIGH VOLTAG CIRCUET BREAKER	LUMP
2-3-3	DISTRBUTION TRANSFORMER	LUMP
2-3-4	ACTUATORS	LUMP
2-3-5	MOTORS	LUMP
2-3-6	PANEL FOR FINAL SETTLING TANK	LUMP
2-3-7	PANEL FOR PRE .SETTLING TANK	LUMP
2-3-8	SUBMERSIBLE SLUDGE PUMP	LUMP
2-4	MECHANICAL AND ELECTRICAL MATERIALS TO RUS. 0,1,2 TREATMENT PLANT	LUMP
2-4-1	GATE VALVE	LUMP
2-4-2	NON-RETURN VALVE	LUMP
2-5	MECHANICAL REQUIREMNTS FOR AL KHARKH TREATMENT PLANT	LUMP
2-5-1	COMBRESSERS	LUMP
2-5-2	AERATION TANKS	LUMP
2-5-3	VALVES	LUMP
2-6	MECHANICAL AND ELECTRICAL EQUIPMENTS OF AL-ATARIAH PROJECT	LUMP
2-7	SEWAGE TREATMENT COMPACT UNIT	LUMP
2-8	DRAINAGE SUBMERSIBLE PUMPS	LUMP
2-9	EXCUSION OF DOURA II PUMPING STATION AND DUPLICATE WEST TRUNK SEWER	LUMP
2-10	EXCUSION OF KERKH SEWAGE TREATMENT WORKS/ STREAM 7	LUMP

SECTION 2 : SEWAGE TREATMENT PLANTS REQUIREMENT

2-1: Electrical Requirements for Treatment Plants

2-1-1: CABLES

UNDER GROUND CABLES . GARDER , CABLESARE FOR SUBMERSIBLE PUMPS (RUBBER TYPE)

CODE NO	DESCRIPTION	QTY
03-01-607	11KV -3 x 150MM2	1500 m
03-01-608	3.3KV- 3 x 150mm2	2500m
03-01-609	1000V-4x50mm2(flax.)	1500 m
03-01-610	L.V- 4 x 25mm2(flax.)	1750 m
03-01-611	L.V- 4 X 16 mm 2(flax.)	1750m
03-01-612	L.V- 4 x 10mm2(flax.)	1000m
03-01-613	L.V- 4 x 6mm2(flax.)	1000m

POWER FACTOR IMPROVING UNITS

CODE NO	DESCRIPTION	QTY
03-01-614	Weather proof ,oil type , 600KVAR ,3-p, 50HZ,3.3KV, scaling 100KVAR with units input controller and all necessary operation relays with cable of length 25m	2
03-01-615	Weather proof, oil type , 500KVAR , 50HZ , 400V, with all relays and controllers , distribution 50KVAR , with cable of length 25m	7
03-01-616	Weather proof , oil type , 400KVAR , 50HZ , 400V , with all relays and controllers , distribution 50KVAR , with cable of length 50m (KAR)	10

2-1-2: LIGHTING

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

03-01-617	1000W sodium bulb screw type 220V 50HZ with fitting	
03-01-618	(out door)	1000
03-01-619	250W mercury bulb with fitting (weather proof) chock 200V 50HZ	300
03-01-620	400W mercury fitting out -door (weather proof) chock.	400
03-01-621	Emergency rechargeable light 220V , 50HZ, 20W	100
03-01-622	100W fitting (water proof) 220V 50HZ with bulb	500
03-01-623	Portable Torch rechargeable 5W with spare bulb	100

2-1-3 : Battery Charger

CODE NO	DESCRIPTION	QTY
03-01-624	Alkaline type simplex type TSRT AR 11/7,NS 91A86,110 v DC,125A,or equivalent with battery container and solution	10

2-1-4: H.V & M.V SUB- STATIONS

CODE NO	DESCRIPTION	QTY
	<p>All H.V & M.V sub-stations in the below tables should satisfied the following recommendations :-</p> <p>a- Each sub – stations must have 110 V D.C battery charger (Alkaline type)and complete spare battery set and its solution (with rate of mixing)The battery container should be separated from the charger container .</p> <p>b- Provide the protection according to I.E.C or B.S standers.</p> <p>c- The Provider should be responsible for the physical dimensions.</p> <p>d- Provide all panels with measuring system and electronic digital indicators coated by a layer against gases with spare parts for each panel .</p> <p>e- Provide three sets of operating maintenance catalogs for equipment and complete single line diagram for the system.</p> <p>f- All isolators and equipment should be oil type and works by motor or manual with spare oil tank .</p> <p>g- Each panel must have digital fault indicator and tester .</p> <p>h-All panels should be designed to work in the sewage station with existence of gases (CH4 & H2S) and all connections should be covered by a layer against rust .</p> <p>i- Power and protection systems must use C.B's in stead of fuses.</p> <p>j- The system must have Inter- lock (electrical-mechanical) when it is need.</p> <p>k- All sub-stations will be operating inside rooms (indoor).</p> <p>l- Provide joins for each (income-outgoing-feeders).</p>	

CODE NO	DESCRIPTION	QTY
03-01-625	<p>High voltage sub- station of length 348 cm and width 145 cm consist of 6 cubicles with the following lengths and contains (from right to left) see H.V- 1</p> <p>Cubicle 1 66 cm for 11KVoutgoing feeder with motorized C-B</p> <p>Cubicle 2 66 cm for 11KV outgoing feeder with motorized C-B.</p> <p>Cubicle 3 66 cm , 11KV cables pass room (cables connect Room 6 & Room 1 , Room 5& Room 2) .</p> <p>-Cubicle 4 50cm,metering instruments</p> <p>-Cubicle 5 50 cm , for 11 KV incoming feeder with isolator .</p> <p>-Cubicle 6 50 cm , for 11 Kv incoming feeder with isolator</p>	1
03-01-626	<p>High voltage sub – station of length 408 cm and width 80 cm consist of 4- cubicles with the following length and contains (from right to left) see H.V – 2 a & b .</p> <p>- Cubicle 1 (102 cm)</p> <p>11 KV , 400A generator feeder with motorized C.B The generator cable in cubicle from the side at height 166 cm.</p> <p>- Cubical 2 (102 cm)</p> <p>11KV , 630 A feeder with isolator and change over which connect this feeder with the gen . feeder in cubicle 1.</p>	1

03-01-628	<ul style="list-style-type: none"> - Cubical 3 (102 cm) 11KV , 630 A feeder with isolator and change over which connect this feeder with the gen . feeder in cubicle 4. - Cubical 4 (102 cm) 11KV , 400A generator feeder with motorized C.B. The generator cable in the cubicle from the side at height 166 cm <p>High Voltage sub– station of length 183 cm and width 66 cm consist of 3- cubicles with the following length and contains (from right to left) see H.V- 3a & b .</p> <ul style="list-style-type: none"> -Cubicle 1 (61 cm) 11KV , 400A incoming feeder (which in the cubicle from the rear at height 140 cm) with motorized C.B - Cubicle 2 (61 cm) 11 KV , 400A outgoing feeder (which out the cubicle from rear at height 140 cm) with motorized C.B . - Cubicle 3 (61 cm) 11 KV , 400A outgoing feeder (which out the cubic from rear at hight 140cm) with motorized C.B . 	1
03-01-629	<p>High voltage sub – station of length 210 cm and width 69 cm consist of 6- cubicles with the following length and contains (from right to left) seeH.V- 5b</p> <ul style="list-style-type: none"> - Cubicle 1 30 cm , 11KV , 630A , 2MVA transformer feeder with motorized C.B. - Cubicle 2 30 cm , 11KV , 630A , 2MVA transformer feeder with motorized C.B. <p>Note:- feeders in cubicle 1& 2 are connected together at the top of C.B.s .</p> <ul style="list-style-type: none"> - Cubicle 3 30 cm , 11KV, bus coupler with isolator . - Cubicle 4 60 cm at half height of the rest cubicles. 11KV, 630A bus metering . - Cubicle 5 30 cm, 11 KV, 630A outgoing feeder with motorized C.B. - Cubicle 6 30 cm , 11 KV , 630 A incoming feeder with motorized C.B. <p>Note:- feeders in cubicles 5 & 6 are connected together at the top of C.B's and connected with feeders in cubicle 1 & 2 through cubicle 3 & 4.</p>	1
03-01-630	<p>Medium Voltage sub-station of length 120cm and width 69 cm. consist of 3- cubicles with the following length and contains (from right to left) see HV-5C</p> <ul style="list-style-type: none"> - Cubicle 1 30cm , 3.3 KV, 630A, 750 KVA transformer feeder with motorized CB. - Cubicle 2 60 cm at half high of the rest cubicles, 3.3 KV 630A bus metering (C. T) - Cubicle 3 30 cm , 3.3 KV , 630A incoming feeder with motorized CB. 	2
CODE NO	DESCRIPTION	QTY
03-01-631	<p>High voltage sub- station of length 180 cm and width 64 cm consist of 6- cubicles with the following length and contains (from right to left) see HV – 6 & 7 .</p> <ul style="list-style-type: none"> - cubicle 1 30 cm , 11KV/400V , 2MVA , trans. feeder with motorized C.B . - cubicle 2 30cm 11KV/400V, 2MVA , trans . feeder with motorized C.B. <p>Note:- feeders in cubicle 1& 2 are connected together at the top of C.B's.</p> <ul style="list-style-type: none"> - cubicle 3 30cm ,11 KV bus coupler with isolator . - cubicle 4 30 cm , at half height of the rest cubicles , 11KV bus metering (C.T) . - cubicle 5 30 cm 11KV , outgoing feeder with motorized C.B. - cubicle 6 30cm ,11 KV, incoming feeder with motorized C.B. 	2
03-01-632	<p>Medium voltage sub-station of length 580cm width160cm cables in(out)from rear at height 32cm consist of 10 cubicles</p>	

with the following length and contains (from right to left)see H.V 12a .

03-01-633	<p>-Cubicle 1 with 58cm empty for future</p> <p>Cubicles 2,3,4,6,8,9&10 with 58cm each ,3.3kv feeders with motorized C.B</p> <p>Cubicles 5&7 with 58 cm each 3.3 KV bus coupler</p> <p>High voltage sub - station of length 118 cm and width 160cm cables in from rear at height 23 cm and out from sides at height 81cm consist of 2-Cubicles with the following length and contains (from right to left) see HV -12b</p>	1
	<p>Cubicles 1&2,59cm for each 11KV\3.3KV.630A transformers feeders with motorized C.B.s</p> <p>Medium Voltage sub -station of length 244 cm and width 160cm consist of 4 - Cubicles with the following length and contains (form right to left) see HV -12C</p>	1

CODE NO	DESCRIPTION	QTY
03-01-634	<p>Cubicles 1&4 61 cm for each at half height of rest Cubicles and fixed in the middle side of other cubicles .contains 3.3KV power factor correction</p>	1
03-01-635	<p>cubicles2&3 61cm for each 3.3 Kv feeder with motorized C.B.s</p> <p>Medium voltage sub -station of length 174 cm and width 90 cm consist of 3- Cubicles with the following length and contents (from right to left) see H.V 8&9-</p>	2
03-01-636	<p>Cubicle1 with 58 cm .3.3KV outgoing feeder with motorized C.B</p> <p>Cubicle 2 with 58cm .3.3KV \400V 400KV A transformer feeder with motorized C.B</p> <p>Cubicles3 with 58cm 3.3KV incoming feeder with motorized C.B</p> <p>Medium voltage sub - station of length232 cm and width 90cm consist of 4- cubicles with the following length and contains (from right to left) see H.V 10</p>	1
03-01-637	<p>Cubicle 1 with 58 cm 3.3 KV\400V 1 MVA transformer feeder with motorized C.B</p> <p>Cubicle 2 with 58 cm 3.3KV outgoing feeder with motorizedC.B</p> <p>Cubicle3 with 58 cm 3.3KV \400V trans. feeder with motorized C.B</p> <p>Cubicle4 with 58 cm 3.3KV, incoming feeder with motorized C.B</p> <p>High voltage sub -station of length 324cm and width 160cm consist of 5- cubicles with the following length and containst (from right to left) see HV - 11</p>	1
	<p>Cubicle 1 with 58 cm 11 KV \400V 1 MVA transformer feeder with motorized C.B .</p> <p>Cubicle 2 58 cm 11 KV \400V 1 MVA transformer feeder with motorized C.B .</p> <p>Cubicle 3 58 cm, 11 KV bus (C.T)</p> <p>Cubicle 4 75 cm ,11KV outgoing feeder with motorized C.B</p> <p>Cubicle 5 75 cm ,11KV incoming feeder with motorized C.B</p>	1

CODE NO	DESCRIPTION	QTY
03-01-638	<p>Medium voltage sub - station of length 800cm and width 140cm consist of 10cubicles with the following length and contains (from right to left) see HIV -13</p> <p>cubicles 2,3,5,8,9 80cm each . 3.3KV outgoing feeders with motorizedC.B's and change over between two incoming feeders</p> <p>Cubicles 1&10 80cm each 3.3KV incoming feeders with motorized C.B</p> <p>Cubicles 4&7 80 cm each .3.3kv/400v.600kva trans . Feeders with motorized C.B's and C.O's between two inc . Feeders</p> <p>Cubicle 6 80cm .3.3kv , 2MVA generator feeder with motorized C. B and change over with each incoming feeder</p>	1
03-01-639	<p>Medium voltage sub-station of length 186cm and width 70cm consist of 3-cubicles with the following length and contains</p>	

	(from right to left) see HV-14&15	
	cubicle 1 62cm, 3.3KV feeder with motorized C.B	2
	cubicle 2 62cm , 3.3 KV/400v , 500KV trans . feeder with motorized C.B.	
	cubicle 3 62 cm ,3.3 kv outgoing feeder with motorized C.B.	
03-01-640	Medium voltage sub - station of length 575 cm with 106 cm, consist of 5 cubicles with the following length and contains (from right to left) see HV-16	
	cubicles 1&5 with 115 cm each . 3.3 KV incoming feeder with motorized C.B.	

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

03-01-641	Cubicles 2&4 with 115 cm each . 3.3 KV outgoing feeders with motorized C.B and C.O. between two incoming feeders	
	Cubicle 3 with 115cm .3.3KV /400v 100KVA trans . feeder with motorized C.B and C.O between two incoming feeders .	1

03-01-642	Medium voltage(3.3kv)penal of length 680 cm and width 76 cm consist of 4 cubicles with the following contains and length (from right to left) see XNE 10-300.	
	Cubicles 1.2.3&4 length 170 cm cubicle each consist of 2-parts.The right one contain 3-sets of resistance (3 resistance\ set)connected to the rotor winding of 220.150.150.90KW I.M respectively with vacuum contractors . The left parts contains motorized C.B and isolator connected to the stators of the above motors .	1

03-01-643	H.V sub-station of length 4mand width of 1.5 m, consists of 5 cubicles with the following length and contains (from right to left; KAR)	
	cubicle 1-80cm,11kv,1MVA transformer feeder with motorized C.B and protection .	
	cubicle 2-80cm ,11kv,1MVA transformer feeder with motorized C.B and protection .	5
	cubicle 3-80cm, 11kv ,bus -bar , measuring	
	Cubicle 4-80cm, 11kv . Incoming feeder with motorized C.B and protection .	
	Cubicle 5-80cm, 11kv . Outgoing feeder with motorized C.B and protection .	
	The control voltage is 110v DC	

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

	All L.T panels must have the following specification :	
	a. Sewage panels (anti- corrosive resistance) .	
	b.Inter-lock system (elector -mechanical).	
	c. Using MCCB and instead of fuses.	
	d. Using MCCB instead of isolators.	
	e. Using bus - bar zone	
	f. Using cable (out going) zone	
	g. Using earth system .	
	h. Using digital indicators .	
	I. Using oil p.f with controller .	
	j. The provider responsible for physical dimensions.	
	k. ALL bus - bars are coated and isolated - by bandage .	
	l. Using factor of safety not less than 3 times the rated .	
	m.Using big area for heat dissipation because of working in ambient temp . 70c (heavy duty).	
	n. The motor starters should be operated on two positions (Man-Auto).	

03-01-644	L.T control panel of length 876 cm and width 35 cm consist of 14Cubicles (the panel operates 60 motors) with the following Dimensions and contains (from right to left)	
	Cubicles 1-6&9-14 have length 60cm/cubicles. each cubicle is Divided into 6sections isolated from each other with dimensions	

(60cm x35cmx30cm) ,the top one contains an isolator and the others contain D.O.L starters of type LEI -D325 or equivalent . an electronic O.L each to start 15 kw motor .
 Cubicles 7&8 of length 78cm Cubicles each cubicle is divided in to 3 sections isolated from each other . The top contains C.B. the middle contains metering instruments(C.T&B.T)and the bottom contains control circuit (PLC) to auto . start 10% .20%.50% and 100% of the motors as needed

1

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

03-01-645	LT. Control panel of length 800cm and width 30cm consist of 18-cubicles with the following dimensions and contains (from right to left) the panel operate 80motors. Cubicles 1-8&11-18 have length 40cm cubicles. Each cubicle is divided in to 5 section isolated from each other with dimensions (40cm x30cm x30cm) , the top one contains an isolator and the others contain D.O.L starters of type LE1-D325 or equivalent and electronic O.L each to start 7.5 kw motor . Cubicles 9&10 of length 80cm/cubicles each cubicle is divided into 3 sections isolated from each other , the top contains C.B ,the middle contains metering instruments(C.T&p.T) and the bottom contains control circuit (PLC) to auto . Start 10% 20% ,50% and 100% of the motors as needed .	1
-----------	--	---

03-01-646	L.T control panel of length 600cm and width 60cm consist of 6-cubicles with the following dimensions and contains (from right to left) the panel operates 20motors. Cubicles 1.2.5.6 have length 100cm cubicles .Each cubicle is divided into 6 sections isolated from each other with dimensions (100cmx60cmx65cm) . The top one contains an isolator and the others contain auto transformer starters and electronic O.L with thermostat to start 37 kw motor . Cubicles 3&4 of length 100cm/ Cubicles 1 have length 48cm for cables house Cubicle 2 have length 60cm and divided in to 4 section.The top 2 sections contain C.Breakers(125/100),the3rd section contains miniatures (1x50A2x52A.2x16A.4x6A). Cubicle 3 have length 48 cm. Cables house . Cubicle 4 have length 60cm , divided in to 5-sections , the top 4- sections have hight 40 cm and contain C.B (125/100).	1
-----------	---	---

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

03-01-647	Cubicle 5 have length 60,400v feeder with isolator and metering instrument (C.T). Cubicle 6 have length 60cm . Cable pass . Cubicle 7 have length 60cm. Contains p.f correction units Cubicle 8 and 11 have length 48 cm, cable pass with isolator . Cubicle 9&10 have length 60cm/cubicle 400v feeder with 1600A isolator. Cubicles 12 & 13 have length 60cm/ cubicle , 11kv /400v 2mVA transformer feeder with 3200A isolator and metering instruments (C.T) and phase failure L.T control panel of length 888 cm and width 40cm and height 225 cm consist of 16- cubicles with the following length and contains (from right to left) See XNE 1070AA. Cubicles 1.3&5have length 48cm for cables house Cubicles 2 &6 have length 60 cm/cubicle and divided into 6 sections the top 5 sections contain C.Breakers (125/100), Cubicle 4 have length 60 cm Cubicles each cubicle divided is divided into3 sections isolated from each other , the top contains C.B. the middle contains metering instruments(C.T&B.T)and the bottom contains	1
-----------	---	---

control circuit (PLC) to auto. Start 10%.20%.50% and 100% of the motors as needed
 L.T control panel of length 585 cm and width 40cm and height 225cm consist of 10-cubicles with the following length and contains (from right to left)
 Cubicles 1 have length 48 cm for cables house
 Cubicle 2 have length 60cm and divided into 6 sections , the top 4 sections contain C.Breakers (125/100) ,the 5th section contains Miniatures (4x6A,1x16A,2x32A).
 Cubicle 3have length 60cm, 400v feeder with isolator and metering instrument (C.T)

03-01-648		1
-----------	--	---

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

Cubicle 4 have length 60cm cable pass .
 Cubicle 5 have length 72 cm. Power factors correction units.
 Cubicle 6 have length 48 cm . Cable pass with isolator.
 Cubicle 7 have length 60cm. 400 v feeder with 125 A isolator and metering instrument (C.T) .
 Cubicle 8 have length 48cm. Cable pass with isolator
 Cubicle , 9&10have length 60cm / cubicle , 11kv /400v ,1mva transformers feeders with 1600A isolators and phase failure.
 L.T control panel of length 800cm and width 40cm and height 225 cm consist of 13- cubicle with the following length and contains (from right to left) See XNE10-101.

03-01-649		1
-----------	--	---

Cubicle 1 service(6- starters)
 Cubicle 2 relay
 Cubicle 3 PLC
 Cubicle 4 (6 - valve) starters
 Cubicles 5,6,7,(2 - No) of Compressor auto Trans Starter
 Cubicles 8 incoming 2.630A MCCB.with 5 - starters
 Cubicles 9 incoming 1.with ring 630 A MCCB.with2-starters
 Cubicles 10.11.12 .each 2no of compressor starter auto trans.30 KW The control voltage 110Vdc
 L.T control panel (KAR) have length 640cm.consist the following (from right to left)

03-01-650		3
-----------	--	---

Cubicles 1 servicet (battery & fuses)
 Cubicles 2 drawible 1600A C.B(generator in)
 Cubicles 3 drawible 1600A C.B (ring)
 Cubicles 4 drawible 1600A C.B incoming 1
 Cubicles 5 MCCB feeder I \R2 630A
 Cubicles 6 MCCB feeder \R1630A
 Cubicles 7 MCCB feeder Incoming 630A
 Cubicles 8 MCCB feeder 1\250A

CODE NO	DESCRIPTION	QTY
---------	-------------	-----

L.T control panel (KAR) have length 450cm.consist the following (from right to left)
 Cubicles 1 MCCB 630 A incoing feeder
 Cubicles 2 MCCB 250 A feeder
 Cubicles 3 MCCB 630 A feeder
 Cubicles 4 MCCB 630 A feeder
 Cubicles 5 drawibl 1600 A incoming trans . 2
 Cubicles 6 drawibl 1600 A ring

03-01-651		3
-----------	--	---

L.T control panel(KAR) have length 100 cm.consist the following (from right to left)
 Cubicles 1 service
 Cubicle 2 vavle starter
 Cubicle 3 (two-starters , 5kw, 110kw) auto. trans .
 Cubicle 4 (110kw) motor auto. trans .
 Cubicle 5 drawible 1250 A C.B

03-01-652		1
-----------	--	---

Cubicle 6 drawible 1250 A ring
 Cubicles 7&8 (110kw) motor starters .
 Cubicle 9-6 motors starters up to 7.5kw .
 Cubicle 10-two starters up to 10kw .
 Cubicle 11-7 no .starters up to 1 kw.

CODE NO	DESCRIPTION	QTY
03-01-653	divided into 5-sections . The top 3-sections contain C.B (400/100).the 4th section contains miniature (2x82A.2x16A.4x6A) Cubicle 7.9&14 have length 48 cm/cubicle cable pass with isolator . Cubicle 8 have length 60 cm 400v feeder with isolator and metering instrument (C.T) Cubicle 10have length 60cm. cable pass. Cubicle 11 have length 60cm. Contains p.f correction units . Cubicles 12&13 have length 60cm/cubicle . 400v feeder with metering instruments and 160A isolator. L.T control pale of length 880cm and width 70cm (110v dc.KAR) consist of the following length and contains (from right to left) the panel work in two modes (auto-man) . Cubicle 1control relays to control 12starters to work sequentially Cubicle 2 service . Cubicles (3,4,5,6,7,8) each (60,60,80) cm .have two starter area (auto - trans starter) for operating 12 motors each 18.5 kw. Cubicle 9 incoming 1&2 with measuring & 630AMCCB2-NO. L.T 700cm consist the following (from right to left) KAR. Cubicle 1 incoming 1&2 with 630A MCCB and measuring . Cubicles(2,3,4,5,6,7) each have two motors auto trans 18.5 kw starters (60.60.80) cm . Cubicle 8.control relay PLC. The control voltage 110dc.	6
03-01-654		6

2-2 : LAB . EQUIPMENTS

CODE No.	Description	QTY
03-01-655	Balance analytronic- mettler	6
03-01-656	BFE 610- I capacity 100 gm 220-240 50HZ Readability o:1mg	6
03-01-657	Cooled - Incubator - Gallenkamp Inf - 600- O 1 OR 220 - 240V 50H2	4
03-01-658	Oven , B5 GallenKamp 250 Oven - 220- 110m 220 - 240V 50H2 size	5
03-01-659	Spectra photometer- Bausch and lomb,spectronic 710 Digital reading - spr - 610 wave length 200 to 1000 - 010 B - 220 - 240V - 50HZ multiple sample compartment	6
03-01-660	Distillation apparatus 5 litter \h -220-240V 50HZ	6
03-01-661	PH meter apparatus Digital 220 - 240V 50HZ	3
03-01-662	Water Bath 220-240v-50 h2 50 litter capacity with 8 sample place	8
03-01-663	Burette automatic zero burettecapacity 50 *0.1ml	25
03-01-664	burette ordinary 50 x 0.1 ml	15
03-01-665	pipette one mark 100 ml ,25 ml ,5ml ,50ml ,10ml	15
03-01-666	Graduated pipette 25 x 0.2 ml 10 x 0.1 ml 5 x 0.05 ml pipette filler	4
03-01-667	vacum pump , Edwards py B-920 - 010 V	50
03-01-668	Conical flask 500 ml ,250 ml , 150 ml ,100 ml ,50 ml	30
03-01-669	Beaker Pyrex glass Gaduatel 1000 ml ,500 ml ,250 ml ,150 ml, 100ml , 50ml	20
03-01-670	Buchner filter flask 100ml, 500 ml	25
03-01-671	Volumetric Flask 1000 ml,500 ml,250 ml ,250 ml ,100ml ,	6
03-01-672	Conical Funnels-Sodalime glass 55mmDia-70mmDia-100mmDia	15
03-01-673	Separating funds-conical 1000 ml,500ml,250ml,	6
03-01-674	Magnetic stirrers with hotplate Max sbeed 1300 \min max temp 450 C	40
03-01-674	Glasscylinder granulated 1000ml,500ml,250ml,100ml,50ml,25ml	

	,10ml,5ml	
03-01-675	Disiccater , pyrex glass with plate 219mm Dia	6
03-01-676	Gooch filter crucible 25 ml x 38 x 40 mm	10
03-01-677	Gooch funnel 33 mm , 43 mm	6
03-01-678	Round bottom flask , Pyrex glass 1000ml , 500ml , 250ml	40
03-01-679	Flat bottom flask , Pyrex glass 1000ml , 500ml , 250ml	25
03-01-680	Polythene wash bottles 600ml , 250ml	40

2-3 : 3rd extention Treatment plant

code no	Description	QTY
03-01-681	Lower bearing for screw pumps Type =OL 180make: ESMIL-HUBERT Oil Seal ring :BA180x210x15(with s.s spring) Make Esmil-HUBERT OR Equivalent	24
03-01-682	V-Belt reduction Motor Pulley = PCD 400 - 5 SPC with Adapter sleeve =MGT100 Bore=85H8(key way22x90,4mm)	8
03-01-683	v-Belt reduction Motor pulley =PCD 400-6 spc with Adapter sleeve =MGT100 Bore= 85H8 (key way 29x90.4mm)	16
03-01-684	lower beaing for Screw pumps return sludge Type = OL 60 Oil seal ring =BA 60x75x8(with s.s.spring)	12
03-01-685	v-belt reduction Motor pulley =pcd 200 2SPA with Adapter sleeve =MGT 50 Bore= 42H8 (key way 12x45,3mm) V-belts	12
03-01-686	SPC(2500x22)	300
03-01-687	SPA(1650x17)	60
03-01-688	Gear box for surface Aerator Manufacturer : HANSEN H.TI ype=Power plus R.N. G.36 Assembly=AN Ratio =49.5/1 Input speed =1488/990 r.p. m Output speed =30/20 r.p.m Efficiency at 100% load =approx. 95% Weight= appro x 1730 kg Oil capacity =approx 65 litres Out line drawing nr : 97 RNG 36 AN-504	12
	2-3-1: Belt Conveyer for screen Room Manuf =FMW	
03-01-689	Type or Dimension=(650 widthx15000 lengthx10thickness)mm	150m
03-01-690	Idler 89x250mm	120
03-01-691	Idler 89x750mm	20
03-01-692	Single roller chain 1x17,02 for screen	300m
03-01-693	Pillow block INA RASE 50 (uc210)	50
03-01-694	ball bearing INA GRAE 50NppB (uc210)	50

2-3-2: High Voltag Circuet Breaker

code no	Description	QTY
	complete high voltag 11 kv circuet breaker groups with its cubatures , for each power station in AL Rustamiyah L3 Sewage treatment plant , where aphysical fitting dimensions, can be obtained from . four (4) groups are request . Having uniform power supply (ups) systems , chargers and batterys , all protections needs,	

	vacuum type request , motorized and mechanically charging , details and drawings , all accessories, internal distribution bus- bars , spare parts needs for 3 years.	
03-01-695	group 1 Incoming feeder C.B Voltage 12 kv Current 125 OA Short time currnt 3Sec \ 25 KA Making current 70 KA	2
03-01-696	Bus , section C.B Voltage 12 KV Current 125 OA Short time currnt 3Sec \ 25 KA Malcing current 70 KA	1
03-01-697	Measuring section cubature with fuses set .	1
03-01-698	Cable feeder C.B Voltage 12 kv Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	3

code no	Description	QTY
03-01-699	Transformer feeder C.B Voltage 12 KV Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	5
03-01-700	group 2 and 3 resembling each other incoming feeder C.B Voltage 12kv Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	4
03-01-701	Measuring section cubature with fuses set .	2
03-01-702	Transformer feeder C.B Voltage 12 kv Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	8
03-01-703	Group 4 Incoming feeder C.B Voltage 12 kv Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	2
03-01-704	Measuring section cubature with fuses set .	1
03-01-705	Transformer feeder C.B Voltage 12 kv Current 800 A Short time currnt 3Sec \ 25 KA Making current 70 KA	3

2-3-3: DISTRBUTION TRANSFORMER

code no	DESCRIPTION	QTY
03-01-706	Oil type , Dov 1600 /10,EBG Austria or equivalent replacement , indoor type,all obligatory protective, indicators, spare parts needs for 3 years . power :1600 KVA , 50 HZ voltage : 11000 / 400 V current :84 / 2309 A insulation level : 10 N \ 0. 6	12

cooling : ONAN
temp : 60 C 0
Supporting and weels dimension ,can be obtained from AL-
Rustumiyah L 3 Sewage Treatment Plant .before offering .

2-3-4: ACTUATORS

code no	DESCRIPTION	QTY
03-01-707	type :servo motor SA 6 or equivalent replacment type of Auma . closing and opening torque 20 / 60 speed : 90 r.p.m motor power : 0.55 K W 50 HZ voltage : 220 / 380 V . motor type :MD 71- 2/60 speed :2800 r .p. .m Amper :3.3 / 1. 9 A	10

2-3-5: MOTORS

code no	DESCRIPTION	QTY
03-01-708	type : AM 315 MP 4 (B 3) AEG or equivalent replacement type. power : 160 KW speed : 1480 r.p.m voltage: 380 V delta / 50 HZ protection:IP 54.	5
03-01-709	type: AM 315 MQ 4 (B 3) AEG or equivalent replacment type power : 200 KW speed : 1485 r. p. m voltage : 380 V delta / 50 HZ protection: IP 54.	10
03-01-710	type:315 MM 416 (V 1), AEG or equivalent replacment type. power :110 / 75 K W speed :1480 / 990 r .p. m. voltage : 380 V delta /delta CS protection: IP 54.	12
03-01-711	Type: LS 63 L2 horizontal flange type or equivalent replacement. of LERROY _ SOMMER Power : 0.37 KW Speed : 1390 r.p.m voltage : 380 . 50H2	50

2-3-6: PANEL FOR FINAL SETTLING TANK

code no	DESCRIPTION	QTY
03-01-712	control cubature panel fixed into another cubatare for weather proof .starting out put load power of two revoluter motors of 0.37 KW ,1.6 Amp, 380 V , fitting on settling tank bridge in AL Rustumiyah L 3 sewage treatment plant where foundations , drawings can be obtained from .before offering . input voltage : 380 V Control voltage: 220 V AC manual and auto operation , if one of motors stopped with any reasone, second one must be stopped ,panel having all protections needng , details and wiring drawings, spare parts for 3 years.	

2-3-7: Panel For Pre .Settling tank

code no	DESCRIPTION	QTY
03-01-713	control panel cubature panel fixed into another cubature for weather proof starting two revoluter motors at the bridge in AL Rustumiyah sewage treatment plant , where foundation	

dimensions, wiring drawings can be obtained from , before offering panel controls so the operation of flotage oil skim rase. in manual and auto. input voltag : 380v \ 50hz . Starting loads out put are :
 1- 2 x 0.37 kw \ 2 x 1.6 Amp \ 380v \ two motor .
 2- 1.1kw \ sub . Pumb \ 380v \ DIN 3 .
 3- 0.18kw \ skim race motor \ 380v .
 4- control voltage 220v AC.
 Panel including all protections , indicators, details and wiring drawings , spare parts needing for 3 years .

2-3-8: Submersible sludge pump

CODE NO	DESCRIPTION	QTY
03-01-714	Submersible pumps shall be of the closed,coupled centrifugal type Solids size upto 70 -80 mm Class "F" insulation Anti friction bearings ,grease lubricated for life Rated Voltage 380V AC Rated Power 1.1 KW (3)inch diameter Din :80 Solide size 70-80mm Q and H,dueto Rated Power Smaller frame size if possible Suported on foundation with screws and nuts -at the base .	15

2-4: MECHANICAL AND ELECTRICAL MATERIALS TO RUS. 0,1,2 TREATMENT PLANT

CODE NO	DESCRIPTION	QTY
	2-4-1: GATE VALVE FOR SUCTION AND DISCHARGE OF SEWAGE PUMPS WORKING ELECTRICALLY AND MANUALLY BY ACTUATES , ALL THE LIMIT SWITCHES SHOULD BE INSIDE THE ACTUATER WITH DIAL INDICATOR SHOWING THE POSITION . VOLTAGE 380 V 50 HZ 3 PH ROTORK TYPE OR EQUIVALENT	
	DIA LENGTH	QNT
03-01-715	400MM 400MM	2
03-01-716	600MM 500 MM	4
03-01-717	700MM 920 MM	2
03-01-718	400MM 360 MM	2
03-01-719	700MM 900 MM	6
03-01-720	500MM 350MM	4
03-01-721	700MM 440 MM	8
03-01-722	800MM 450 MM	4

2-4-2: NON-RETURN VALVE

CODE NO	LENGTH	QNT
03-01-723	9.30MM	1
03-01-724	12.30MM	2
03-01-725	1100MM	1
03-01-726	730MM	1
03-01-727	440MM	3
03-01-728	1120MM	2
03-01-729	1500MM	4
03-01-730	1470MM	2

2-5: MECHANICAL REQUIRMENTS OF KERKH TREATMENT PLANTS**2-5-1: COMBRESSERS**

CODE NO	DESCRIPTION	QTY
03-01-731	1- AIR BLOWER " ROOTS " TYPE - (WITHOUT- INSONOR HOUSING) CAPACITU : 4.200M3 \H PRESSURE : 600MBAR POWER RATE :110KW SPEED : 1155 R.P.M WITH MOTOR POWER :110KW SPEED : 1500 R.P.M IP 55 CLASSE F, 380V . 50HX	5
03-01-732	2- AIR BLOWER " ROOTS " TYPE - (WITHOUT- INSONOR HOUSING) CAPACITU : 1000M3 \H PRESSURE : 600MBAR POWER RATE :30KW SPEED : 1500 R.P.M PROTECTION IP 55 CLSS F 380 V . 50 HZ	7
03-01-733	3- COMPRESSER (GEBER BECKRE) TYPE : KDT 2.6 SPEED: 1420 R.P.M POWER: 3 KW CAPACITY: 60 C.F.M MAX PRESSUER : 1.5 BAR (WITH CARBON VANES) MOTOR AS : HG UC 100LL4 380V \7A	6
03-01-734	2-5-2: AERATION TANKS 1- GEAR BOX WITH COUPLING TYPE : NC 36 AN POWER : 18.5 KW SPEED : 1455/ 74 /19.595 R.P.M WITH MOTOR VERTICAL COUPLING MOTOR BB.C SPEED : 1455 R.P.M POWER : 18.5 KW 380 V 36A	15
03-01-735	2. VANE'S AERATOR DIAM : 125 CM LENGTH OF VANES : 16 CM NUMBER OF VANES : 24 WITH SHAFT DIAM : 44 CM LENGTH OF SHAFT : 120 CM	30

CODE NO	DESCRIPTION	QTY
03-01-736	2-5-3: VALVES 1- GATE - VALVES 9 "INCH DIRECT DRIVE WITH SHAFT STAINLESS STEEL LENGTH OF SHAFT: 2.5 M HAND VALVE OPERATING ACCESSORIS	8
03-01-737	2- PENSTOCKS HAND WHEEL OPERATION DIRECTLY MOUNTED ON EXTENSION SPINDLE DIA: 9" INCH 27 CM	24
03-01-738	3- FLOOR COLUMN OPERATED WITH HANDWHEEL , AN EXTENSION SPINDLE AND ACOUPLING FOR ATTACHING AUOTHER EXTENSION SPINDLE PIECE DIA: 9' INCH (27 CM)	16
03-01-739	4-TELESCOPIC VALVE WITH HANDLE STAINLESS STEEL SHAFT FOR PVC PIPE DIA : 9" INCH LENGTH: 140 CM STAINLESS SHAFT LENGTH : 240CM DIA OF SHAFT : 38.8 MM	50

2-6: MECHANICAL AND ELECTRICAL EQUIPMENTS OF AL-ATARIAH PROJECT

03-01-740	Pump station No 1 sewage Vertical pumps with motors	3
-----------	--	---

	flowrate: 1m ³ /s head :10m	
03-01-741	All accessories of pipes, valves , elbows and strainers with dia 700mm and whatever needed to achieve the work for installation of the above pumps	3set
03-01-742	Water Hammer Protection Unit inclde Tanks , accessories and valves to achieve the work.	1set
03-01-743	Main pipe Material :Ductile Dia :1200mm	500m
03-01-744	the pipe with its accessories are lining with cement High tension equipments 11K.V Transformer Cap. 630KVA Indoor tupe 11/0.4KV with all accessories.	1set
03-01-745	Lightening protection system .switches, isolaters and fuses with all other needed accessories to achieve the work. Low tension equipments 220/380volt Distribution panel made of steel plates notless than 2mm thickness firmly closed with circut breakers. Protection metering equipments. Lightings and all other accessories	1set
03-01-746		lumpsum
03-01-747	Cable with various sizes Earthing with needed accessories	lumpsum
03-01-748	For main receiving pit	lumpsum
03-01-749	Ductile pipe dia: 1000mm the pipe and its accessories are lining with cement suitable for sewage works penstock uses for pipe dia :1000mm over head crane electrically operoted with 7 ton Capacity	20m 2set 1set
	Pump station No 2 Sewage vertical pumps with motors	
CODE NO	Discription	QTY
03-01-750	Sewage vertical pumps with motors flowrat :1m ³ /s head :10m	3
03-01-751	All accessories of pipes . Valves , elbows and strainers with dia 700mm and whatever needed to achieve the work for installation of the above pumps	3 set
03-01-752	Water Hammer protection Unit include Tanks , accessoires and Valves to achieve the work	1set
03-01-753	main pipe material :Ductile. Dia: 1800mm the pipe with its accessories are lining with cement	1820m
03-01-754	High tension equipments 11K.V Transformer Cap . 630KVA Indoor tupe 11/0.4 KV with all accessories.	1set
03-01-755	Lightening Protection system . Switches , isolaters and fuses with all other neededd accessories to achieve the work .	1set
03-01-756	Low tension equipments 220/380volt Distribution panel made of steel plates notless than 2mm thickness firmly closed with circut brkeakers . Protection metering equipments. Lightings and all other accessories	lumpsum
03-01-757	Cable with various sizes	lumpsum
03-01-758	Earthing with needed accessories For main receiving pit	lumpsum
03-01-759	Ductile pipe dia :1000mm the pipe and its accessories are lining with cement	20m
03-01-760	penstock uses for pipe dia :1000mm	2set
03-01-761	over head crane electrically operoted with 7 ton Capacity	1set

Pump station No 3		
CODE NO	Discription	QTY
03-01-762	Sewage Vertical pumps with motors flowrat :1m3/s head :10m	8
03-01-763	All accessories of pipes valves , elbows and strainers with dia 700mm and whatever needed to achieve the work for installation of the above pumps	8set
03-01-764	Water Hammer protection Unit include Tanks , accessories and valves to achieve the work.	1 set
	main pipe materail :Ductile . Dia :1600mm the pipe with its accessoires are lining with cement	1900m
03-01-765	High tension equipments 11k.v Transformr cap .1000 KVA Indoor tupe 11/0.4 KV with all accessories.	3set
03-01-766	Lightning protection system . Switches , isolaters and fuses with all other needed accessoies to achieve the work .	1set
03-01-767	Low tension equipments 220/380 volt distribution panel made of steel plates notlessthan 2mm thickness firmly closed with circut breakers ,Protection metering equipments. Lightings and all other accessoies	lumpsum
03-01-768	cable with various sizes	lumpsum
03-01-769	Earthing with needed accessories	lumpsum
03-01-770	For main receiving pit Ductile pipe dia :1000 mm the pipe and its accessoires are lining with cement Penstck uses for pipe dia 1000mm . over head crane electrically operoted with 7 ton Capacity	70m 7set 1set
Pump station No 4		
CODE NO	Discription	QTY
03-01-771	Sewage Vertical pumps with motors flowrat :1m3/s head :10m	13
03-01-772	All accessories of pipes valves , elbows and strainers with dia 700mm and whatever needed to achieve the work for installation of the above pumps	lumpsum
03-01-773	Pressure Pipe size 800mm length 10m with all accessories	130m
03-01-774	High tension equipments 11k.v Transformr cap .1000 KVA Indoor type 11/0.4 KV with all accessories.	4set
03-01-775	Lightning protection system . Switches , isolaters and fuses with all other needed accessoies to achieve the work .	1set
03-01-776	Low tension equipments 220/380 volt distribution panel made of steel plates notless than 2mm thickness firmly closed with circut breakers ,Protection metering equipments. Lightings and all other accessoies	1set
03-01-777	Cable with various sizes	lumpsum
03-01-778	Earthing with needed accessories	lumpsum

03-01-779	Lightings system	lumpsum
03-01-780	over head crane electrically operoted with 7 ton Capacity	1set
Pump station No 5		
CODE NO	Discription	QTY
03-01-781	Sewage Vertical pumps with motors flowrat :1m3/s head :10m	13
03-01-782	All accessories of pipes valves , elbows and strainers with dia 700mm and whatever needed to achieve the work for installation of the above pumps	lumpsum
03-01-783	Pressure Pipe size 800mm length 10m with all accessories	130m
03-01-784	High tension equipments 11k.v Trans formr cap .1000 KVA Indoor tupe 11/0.4 KV with all accessories.	4set
03-01-785	Lightening protection system . Switches , isolaters and fuses with all other needed accessories to achieve the work .	1set
03-01-786	Low tension equipments 220/380 volt distribution panel made of steel plates notlessthan 2mm thickness firmly closed with circut breakers ,Protection metering equipments. Lightings and all other accessoies	1set
03-01-787	Cable with various sizes	lumpsum
03-01-788	Earthing with needed accessories	lumpsum
03-01-789	Lightings system	lumpsum
03-01-790	over head crane electrically operoted with 7 ton Capacity	1set
Pump station No 6		
CODE NO	Discription	QTY
03-01-791	Sewage Vertical pumps with motors flowrat :1m3/s head :10m	13
03-01-792	All accessories of pipes valves , elbows and strainers with Dia 700mm and whatever needed to achieve the work for Installation of the above pumps	lumpsum
03-01-793	Pressure Pipe size 800mm dia length 40m with all accessories	520m
03-01-794	High tension equipments 11k.v Transformr cap .1000 KVA Indoor type 11/0.4 KV with all accessories.	4set
03-01-795	Lightening protection system . Switches , isolaters and fuses with all other needed accessories to achieve the work .	1set
03-01-796	Low tension equipments 220/380 volt distribution panel made of steel plates notless than 2mm thickness firmly closed with circat breakers ,Protection metering equipments. Lightings and all other accessoies	1set
03-01-797	cable with various sizes	lumpsum
03-01-798	Earthing with needed accessories	lumpsum
03-01-799	Lightings system	lumpsum
03-01-800	over head crane electrically operoted with 7 ton Capacity	1set

2-7: Sewage Treatment Compact Unit

CODE NO	DESCRIPTION	QTY
03-01-801	Sewage treatment compact unit flow 10000m/day population 50000 B.O.D equal or less than 10P.P.M S.S equal or less than 5 P.P.M Po 4 equal or less than 1 P.P.M including Suitable lifting pump station Automatic screen and Grit Removal Sludge treatment equipment	4

CODE NO	DESCRIPTION	QTY
	UPVC pipes for sewage and shall comply with the requirements of Din 8061-8062 wall thickness to comply with Din 8061-8062 all pipes shall have rubber ring joint + 10% additional Quantity of rubber ring joints .	
03-01-802	Dia 710mm	4000m
03-01-803	Dia 800mm	4000m
03-01-804	Dia 900mm	3000m
03-01-805	Dia 1000mm	250m

2-8: Drainage Submersible pumps

CODE NO	DESCRIPTION	QTY
03-01-806	Submersible pumps for drainage Size 4" inch H 15 m Q 30-40 L\ sec KW 0.5 kw will Built in motor protection Over Temperature . Stator winding protection the Sub. Pump should be supplied with Control panel Chain 15 m length Elbow and hose 50 m length	10

SECTION: 3: SEWAGE PUMPING STATION REQUIREMENTS

3-1	ELECTRIC MOTOR	LUMP
3-2	VERTICAL SEWAGE PUMP	LUMP
3-3	ELECTRIC CIRCUIT BREAKER	LUMP
3-4	ELECTRIC TRANSFORMER	LUMP
3-5	COMPLETE CONTROL PANEL	LUMP
3-6	EXHAUST FAN	LUMP
3-7	SCREEN CONTROL PANEL	LUMP
3-8	CRANE CONTROL PANEL	LUMP
3-9	BALL BEARING	LUMP
3-10	PACKING	LUMP
3-11	BRACKET	LUMP
3-12	OVERLOADS	LUMP
3-13	CURRENT MEASUREMENT	LUMP
3-14	MECHANICAL WORK REQUIREMENT WELDING MACHINE	LUMP

SECTION 3 : SEWAGE PUMPING STATION REQUIREMENTS :

3- 1: ELECTRIC MOTORS AND MATERIALS

CODE NO.	DESCRIPTION	QTY
03-01-814	380V, 585 RPM, 90KW	1
03-01-815	3.3KV, 736 RPM , 250 KW	1
03-01-816	3.3 KV, 590 RPM, 450 KW	1

03-01-817	380V, 725 RPM, 160KW	1
03-01-818	380V,588 RPM, 132KW	1
03-01-819	STARTER (200HP, SLIPRING)	2
03-01-820	STARTER (145HP, SLIPRING)	1
03-01-821	STARTER (105HP, SLIPRING)	1
03-01-822	STARTER (22KW, SLIPRING)	3
03-01-823	STARTER (30KW, SLIPRING)	19
03-01-824	ELECTRICAL FLOATERS / FOR SEWAGE WORK , H: 13M	100
03-01-825	ROTAR FUSE , 200A, 400V.	30
03-01-826	ROTAR FUSE ,100A, 400V.	40
03-01-827	COMPLETE SALT SOLUTION STARTER FOR 37 KW SLIPRING MOTOR	6
03-01-828	VERTICAL ELECTRIC MOTOR , S.CAGE 90KW, 720RPM, 380V ,	3
03-01-829	VERTICALELECTRIC MOTOR , 75KW, 720RPM, 380V ,	4
03-01-830	VERTICALELECTRIC MOTOR , 32KW, 720RPM, 380V ,	6
03-01-831	VERTICALELECTRIC MOTOR , 22KW, 950RPM, 380V ,	4

3-2: VERTICAL SEWAGE PUMP

CODE NO.	DESCRIPTION	QTY
03-01-832	736 RPM, 14M(H) , Q: 1M/SEC	1
03-01-833	RPM: 590, H:14, Q: 2M/SEC	1
03-01-834	RPM: 585, H:14, Q: 0.5 M/SEC	1

3-3: ELECTRIC CIRCUIT BREAKER

CODE NO.	DESCRIPTION	QTY
03-01-835	380V , 200A , 3PH	1
03-01-836	380V ,400A , 3PH	1
03-01-837	380V ,100+ D7 A , 3PH	1
03-01-838	AIR TYPE , 16A	50
03-01-839	AIR TYPE , 25	50
03-01-840	AIR TYPE ,63A	50
03-01-841	AIR TYPE , 100	50
03-01-842	AIR TYPE ,125A	50
03-01-843	AIR TYPE ,250 A	25
03-01-844	AIR TYPE ,400A	15
03-01-845	AIR TYPE ,630A	10
03-01-846	MCCB , 630 A, 400V	2
03-01-847	DROWABLE , 400A, 400V.	6
03-01-848	MCCB , 200 A, 400V	2
03-01-849	MCCB, 63 A, 400V	20
03-01-850	20AM, 1PH	100
03-01-851	16 A, 1 PH	100
03-01-852	10 A, 1 PH	100
03-01-853	6A, 1PH	100
03-01-854	1400A	25
03-01-855	400A	30
03-01-856	250A	30
03-01-857	100A	30
03-01-858	60A	30
03-01-859	30	30
03-01-860	L.T DRAWABLE TYPE , OPEN TYPE, 4 POLE , 3200A, 380V, WITH COMPLETE PROTECTION ACCESSORIES	2
03-01-861	COMPLETE SALT SOLUTION STARTER FOR SLIPRING MOTOR (90-120)KW	2
03-01-862	COMPLETE SALT SOLUTION STARTER FOR SLIPRING MOTOR (200-225)KW	4
03-01-863	COMPLETE SALT SOLUTION STARTER FOR SLIPRING MOTOR (290-300)KW	2

3-4: ELECTRIC TRANSFORMER

CODE NO.	DESCRIPTION	QTY
03-01-864	630KV.A , 11000/380V	1

03-01-865	250KV.A , 11000/380V	1
03-01-866	1250KV.A , 11000/3300	1
3-5: COMPLETE CONTROL PANEL		
CODE NO.	DESCRIPTION	QTY
03-01-867	COMPLETE CONTROL PANEL CONTROL POWER MOTOR 90 KW CONSIST OF : CONTACTER 355A, 220V, CONTACTER 255A, 220V, OVERLOAD PROTECTION 250- 300A ISOLATOR 400A ISOLATOR 160A AUTOTRANSFORMER POWER FACTOR(P.F) (50 K-Fr) MINCHER- PRODUCTION 1PH , 10A MINCHER- PRODUCTION 3PH , 10A C.T PRODUCTIONS AND LEVEL VOLTAGE A 250/5 SELECTOR SWITCH 10A	9 2 2 1 1 1 1 1 1 1 1
03-01-868	COMPLETE CONTROL PANEL CONTROL POWER MOTOR 45 KW CONSIST OF : CONTACTER 225A, 220V, CONTACTER180A, 220V, ISOLATOR 250A ISOLATOR 125A AUTOTRANSFORMER POWER FACTOR(P.F)(50 K-Fr) TIMER 60 SEC 220v. MINCHER- PRODUCTION 1PH , 10A , MINCHER- PRODUCTION 3PH , 10A C.T PRODUCTIONS AND LEVEL VOLTAGE A 150/5 SELECTOR SWITCH 10A	22 2 2 1 1 1 1 1 1 1 1 1
03-01-867	COMPLETE CONTROL PANEL CONTROL POWER MOTOR 160 KW CONSIST OF : CONTACTER 400A, 220V, CONTACTER355A, 220V, ISOLATOR 600A ISOLATOR 300A AUTOTRANSFORMER POWER FACTOR(P.F)(50 K-F) TIMER 60 SEC , 220v. OVERLOAD 250-400A SELECTOR SWITCH 10A C.T 400/5 A AND LEVEL VOLTAGE MINCHER- PRODUCTION 1PH , 10A	7 2 2 1 1 1 1 1 1 1 1 1
	COMPLETE CONTROL PANEL CONTROL POWER MOTOR315 KW HIGH TENSION CONSIST OF : VACUUM SWITCH , HIGH TENSION FUSE , 100A COIL, 110 V,MECHANICAL TIMER AUTO TRANSFORMER H.T. CONTROL 110 V D.C MECHANICAL TIMER CONTACTER 400A,H.T	5 1 1 2
03-01-868	COMPLETE CONTROL PANEL CONTROL POWER MOTOR 160 KW HIGH TENSION CONSIST OF :	5

VACUUM SWITCH , HIGH TENSION FUSE , 100A COIL, 110 V,MECHANICAL TIMER	
AUTO TRANSFORMER H.T. CONTROL 110 V D.C	1
MECHANICAL TIMER	1
CONTACTER 400A,H.T	2

03-01-869	COMPLETE CONTROL PANEL WITH DIMENSION TO BE MEASURED ON SITE , CONSIST OF : MAIN PANEL WITH C.B 800A AND FOUR (4) PANELS OPERATING TWO MOTOR WITH POWER OF 45KW ANF TWO MOTORS WITH POWER 37KW WITH ALL PROTECTION DEVICES	2
03-01-870	COMPLETE CONTROL PANEL WITH DIMENSION TO BE MEASURED ON SITE , CONSIST OF : MAIN PANEL WITH C .B 1250A A AND FOUR (4) PANELS OPERATING FOUR MOTORS , 2 MOTORS WITH POWER OF90KW ANF TWO MOTORS WITH POWER75KW WITH ALL PROTECTION DEVICES	2
	COMPLETE CONTROL PANEL WITH DIMENSION TO BE MEASURED ON SITE , TO OPERATE THE WHOLE STATION , CONSIST OF THE FOLLOWING :	
	A. THREE SECONDARY PANELS TO OPERATE 3 MOTORS EACH PANEL FOR ONE 37 KW MOTOR CONSIST OF THE FOLLOWING FOR EACH PANEL :	
	SUITABLE CCT. BARKER (100-125A)	
	CONDUCTER 180-200A COIL 220 V	
	SUITABLE O.L	
	POWER FACTOR COVRALTION UNIT WITH SWITCH FUSE	
	SUITABLE CONTROL MINTUER CCT BREAKER FOR CONTROL	
	B. CONTROL PANEL FOR LIGHTING , SWITCH FUSE + M.C.B SQ	10
	C. CONTROL PANEL FOR SCREEN	1
	D. CONTROL PANEL FOR SCREEN	1
	E. CONTROL PANEL FOR SUBMERCIBLE PUMP	1
	F. CONTROL PANEL FOR EXUES FAN	6
	G. AUTOMATIC OPERATING CONTROL PANEL TO CONTROL THE OPERATION OF PUMPS WITH LEVEL OF WATER , SONIC SYSTEM WITH COMPLETE PROTECTION ACCESSORIES O.V, U.V, ..ETC.	1
	COMPLETE WIRING FOR THE ABOVE DETAILS CONNECTED AS ONE UNIT	1
	630 A MANUAL CHANGE OVER SWITCH	1

3-6: EXUES FAN

CODE NO.	DESCRIPTION	QTY
	380 V , 3PH, 150 MM MIN MOTOR :	
03-01-871	IKW, 600RPM, CONTACTER: 25A , STARTER 1.6-2.5 A , SELECTOR SWITCH : ON-OFF ,10A	130

3-7: SCREEN CONTROL PANEL

CODE NO.	DESCRIPTION	QTY
	MOTOR : 4.4 KW	10
	CONTROL COIL 220 V	1
	CONTRACTOR 25 A	2
	OVERLOAD 9-11 A	1
	TIME RELAY 60 SEC	1
	AILLY AND BASE	1
	ELECTROLIGHT SENSOR	1
03-01-872	ISOLATOR 100A , 3PH	1

3-8: CRANE CONTROL PANEL

CODE NO.	DESCRIPTION	QTY
	MOTOR POWRE : 4.4 KW , CONTROL COIL 220V	12
	TRANSFORMER 380VL48	1
	START OPERATION 2 VICTORS (ON-OFF)	1
	CONTACTOR 25A	2
	OVERLOAD 10-15A	2

	SWITCH LIMIT OPERATION 10A	1
03-01-873	FUSE LINE 100A , 3PH,	1

3-9: BALL BEARING

CODE NO.	DESCRIPTION	QTY
03-01-874	CRM 24	12
03-01-875	RMS 24	12
03-01-876	6214	12
03-01-877	6212	12
03-01-878	6318	10
03-01-879	22318	6
03-01-880	22309	44
03-01-881	6316	40
03-01-882	NU 416	20
03-01-883	6224	6
03-01-884	6222	6
03-01-885	11206 K	48
03-01-886	6208	12
03-01-887	7330	12
03-01-888	2228	6
03-01-889	6312	6
03-01-890	511	8
03-01-891	22211P1	8
03-01-892	1209 P2	8
03-01-893	7319	40

3-10:PACKING

CODE NO.	DESCRIPTION	QTY
03-01-894	1/2 INCH	2000
03-01-895	3/4 INCH	500
03-01-896	5/8 INCH	1000
03-01-897	1 INCH	100
03-01-898	1/4 INCJ	100

3-11:BRACKET

CODE NO.	DESCRIPTION	QTY
03-01-899	NO. 507	100
03-01-900	NO.508	50
03-01-901	NO. 515	30
03-01-902	NO. 616	30
03-01-903	GARDEN BALL BEARING BRACKETS TYPE (SN511-609)	20

3-12:OVERLOADS

CODE NO.	DESCRIPTION	QTY
03-01-904	7-10A	30
03-01-905	75-95	30
03-01-906	50-65	30
03-01-907	22-32	30
03-01-908	13-18	10
03-01-909	7-13	10
03-01-910	5 -10	10
03-01-911	250-450 , 3PH	3
03-01-912	200-400A, 3PH	4
03-01-913	80-160 A, 3PH	2
03-01-914	850160A, 3PH	3
03-01-915	60-100A, 3PH	3
03-01-916	18-25A, 3PH	15
03-01-917	13-18A, 3PH	15
03-01-918	7-10A, 3PH	25

3-13:CURRENT MEASURING INSTRUMENTS

CODE NO.	DESCRIPTION	QTY
----------	-------------	-----

03-01-920	0-100 WITH C.T (100L5)	25
03-01-921	0-10	9
03-01-922	0-30	15
03-01-923	C.T (600/5)	3
03-01-924	0-400 WITH C.T (400L5)	2
03-01-925	0-200 WITH C.T (200/5)	2
03-01-926	VOLTAGE MEASUREMENT (0-500)	25
03-01-927	FREQUENCY MEASUREMENT (40-60)HZ	25
03-01-928	DIGITAL VOLTMETER MULTI RANGE	4
03-01-929	CLAMP METER 1000A , SIZE	4
03-01-930	MEGGER 5000V	2

3-14: MECHANICAL WORK REQUIREMENT WELDING MACHINE

CODE NO	DESCRIPTION	QTY
03-01-931	WELDING MACHINE 100A WITH SPARE PARTS FOR TWO YEARS OPERATION	4
03-01-932	MANUAL MOVEABLE ELECTRIC CUTTER , MEDIUM POWER SIZE	2
03-01-933	MANUAL MOVEABLE ELECTRIC DRILL , MEDIUM POWER SIZE	2
03-01-934	BLOWER WITH 10 INCH DIAMETER FLEXIBLE HOSE 10M LONG COMPLETE DIVE SUITE WITH OXYGEN BOTTLE WITH ALL NECESSARY ACCESSORIES	20
03-01-935	SUBMERSIBLE PUMP : 220V, H:6 , 40MM DIAMETER , Q: 80L/MIN, 0.25 KW, WITH CABLE AND AUTOMATIC OPERATION DEVICE WITH FLOAT SWITCH	10
03-01-936	SWITCH	25
03-01-937	SUBMERSIBLES PUMP KW , 1500 RPM, 30 UTLET , H: 10 CAST IRON PIPE , 8": DIAMETER , 1M LENGTH WITH FLANGE WITH 8 HOLES FROM BOTH SIDES WITH SUITABLE GASKET , PIPE THICKNESS: 8MM, FLANGE: INNER=8" , OUTER 13"	4
03-01-938	CAST IRON PIPE , 8": DIAMETER , 1.99 M LENGTH WITH FLANGE WITH 8 HOLES FROM BOTH SIDES WITH SUITABLE GASKET , PIPE THICKNESS: 8MM, FLANGE: INNER=8" , OUTER 13"	30
03-01-939	CAST IRON PIPE , 10" DIAMETER , 1M LENGTH WITH FLANGE WITH 8 HOLES FROM BOTH SIDES WITH SUITABLE GASKET , PIPE THICKNESS: 8MM, FLANGE: INNER=8" , OUTER 13"	30
03-01-940	CAST IRON PIPE , 10" DIAMETER , 2M LENGTH WITH FLANGE WITH 8 HOLES FROM BOTH SIDES WITH SUITABLE GASKET , PIPE THICKNESS: 8MM, FLANGE: INNER=8" , OUTER 13"	30
03-01-941	THICKNESS: 8MM, FLANGE: INNER=8" , OUTER 13"	15
03-01-942	MANUAL VALVE , D=8" WITH FLANGE 8 HOLES ON BOTH SIDES , L=220MM , FLANGE : D=8" INNER , 13" OUTER	15
03-01-943	MANUAL VALVE , D=10" WITH FLANGE 8 HOLES ON BOTH SIDES , L=220MM , FLANGE : D=8" INNER , 13" OUTER	15

SECTION 4: MACHINERY AND EQUIPMENT AND SPARE PARTS

4-1	GARBAGE TREATMENT PLANT	4
4-2	COMPRESSORS	50
4-3	AERIAL PLAT FORM	3
4-4	WHEEL LOADER	10
4-5	BITUMEN SPRAYING TANKER	4
4-6	CRAWLER DOZER	14
4-7	WHEEL ROLLERS	12
4-8	STEEL ROLLER	8
4-9	SINGLE DRUM ROLLERS	6
4-10	COMBINED STEEL AND WHEEL ROLLER	6
4-11	SMALL STEEL DRUM ROLLER	30
4-12	WHEEL EXCAVATOR	18
4-13	BITUMEN TANKERS TRAILER	6
4-14	CEMENT AND FILLER TANKERS	8
4-15	CRANE EQUIPPED TRUCK	4
4-16	CRAWLER STREET PAVERS	2
4-17	WHEEL STREET PAVERS	4
4-18	CRAWLER PATH-PAVER	12
4-19	STREET MAINTENANCE TRUCK	30
4-20	GUARD RAIL	LUMP

4-21	CUTTER TOOLS	LUMP
4-22	ASPHALT PLANTS	4
4-23	300T. ASPHALT PLANTS SPARE PARTS	LUMP
4-24	MNI GARBAGE COLLECTING VEHICLE.	40
4-25	ROAD SWEEPERS	20
4-26	FIELD VEHICLE , DOUBLE CAP , PICK-UP	200
4-27	PORTABLE WATER PUMPS DIESEL OPERATED	50
4-28	FORK LIFT	16
4-29	TREE SPADE	6
4-30	WHEEL LOADER	20
4-31	STEEL GARBAGE CONTAINERS	2000
4-32	TIPPING TRUCKS	100
4-33	SMALL TIPPING DAMPERS	40
4-34	SEWAGE AND DRINKING WATER SUBMURGIBLE PUMPS	LUMP
4-35	GRASS CUTTING MACHINE	10
4-36	SPARE PARTS FOR MACHINERY AND EQUIPMENT	LUMP
4-37	TIRES	3250
4-38	BATTRIES	2250
4-39	FUEL TANKERS	25
4-40	MOBIL WORK SHOP	20
4-41	MULTI PURPOSE IMPACT CRUSHER WITH COMPLETE WASHING PLATS	LUMP
4-42	VIBRATING SCREENS WITH SPRAY WASHING SYSTEMS	2
4-43	SPARE PARTS FOR HAMMER MILL OF IMPACT CRUSHER.	LUMP
4-44	SURVEYING REQUIREMENT	LUMP
4-45	GEOGRAFIC INFORMATION SYSTEM REQUIREMENT	LUMP
4-46	PLANNING DESING REQUIREMENT	LUMP
4-47	GENERATORS	LUMP

SECTION 4: MACHINERY AND EQUIPMENT

4-1: GARBAGE TREATMENT PLANT

CODE NO.	DESCRIPTION	QTY
03-01-944	SUPPLY OF COMPLETE GARBAGE SORTING AND TREATMENT PLANTS WITH SPARE PARTS FOR TWO YEARS OPERATION .	4
	THE OFFER SHOULD INCLUDE AS AN OPTION THE EXECUTION OF ALL CIVIL , MECHANICAL , ELECTRICAL WORK ERECTION , AND THE SUPPLY OF ANY SPECIAL MACHINERY REQUIRED TO OPERATE THE PLANTS	
	THE MACHINERY AND EQUIPMENT SHOULD BE GUARANTEED FOR ONE YEAR AS MINIMUM PERIOD FROM THE DATE OF OPERATION .	
	STAND BY GENERATOR TO BE SUPPLIED WITH EACH PLANT , WITH A SUITABLE CAPACITY TO OPERATE THE WHOLE PLANT DURING THE FULL DAILY WORKING HOURS.	
	EACH PLANT SHOULD BE DESIGNED TO SORT AND TREAT THE WASTE WITH THE FOLLOWING COMPOSITION WITH A POSSIBILITY OF MINER CHANGES DUE TO CHANGE OF . SEASON	
	% FOOD AND ORGANIC MATERIALS : 52.79 – 58.74	
	% PAPER: =6 -12.87	
	% PLASTIC = 9.02 – 12	
	% GLASS = 1 – 5.29	
	% FABRIC AND LATHER = 5.16-6.16	
	% METAL = 1- 4.78	

NO CLINIC(HOSPITAL) WASTE IS INVOLVED

DETAILS OF THE PLANT AS FOLLOWS :

THE CAPACITY : THE PLANT SHOULD BE DESIGNED TO SORT AND TREAT 500 TON OF UNSORTED AND UN PACKED WASTE , AND TO TREAT ALL KIND OF WASTE WITHOUT SPECIFIC CONDITIONS

THE SORTING OF WASTE TO BE IN TWO STAGES : PRELIMINARY SORTING FOR LARGE SIZE MATERIAL , AND MAIN SORTING STAGE TO SORT THE RECYCLABLE MATERIAL (PLASTIC, PAPER , GLASS, METAL(FERROUS AND NON FERROUS MATERIAL) ORGANIC MATERIAL , REMAINING WASTE (TO BE

ALL SORTING SHALL BE MECHANICAL (NOT MANUAL)

NO RECYCLING FOR THE RECYCLABLE MATERIAL IS REQUIRED

ALL RECYCLABLE MATERIALS TO BE COLLECTED MECHANICALLY IN CONTAINERS OR OTHER SUGGESTED WAY OR RAPPED AND PRESSED AND PACKED

ORGANIC MATERIAL TO BE USED TO PRODUCE COMPOST FOR AGRICULTURE USE

THE COMPOST TO BE COLLECTED MECHANICALLY AND PACKED , AND THE PACKING SIZE TO BE SUGGESTED

SORTING AND COMPOST PROCESS TO BE DONE IN CLOSED AREAS , WITH OPTION TO BE IN OPEN AREAS

MORE THAN ONE PRODUCT LINE FOR THE SORTING AND COMPOSTING IS PREFERABLE TO INSURE THE CONTINUOUS OPERATION OF THE PLANT DURING TIME OF MAINTENANCE OR REPAIR

ALL EQUIPMENT TO BE PROVIDED WITH SAFETY PRECAUTION , AND THE PLANT SHOULD BE PROVIDED WITH COMPLETE FIRE PROTECTING SYSTEM

FOLLOWING DETAILS SHOULD BE PROVIDED WITH THE OFFER :

PLANT CAPACITY

NO OF HOURS REQUIRED TO SORT AND TREAT (500 TON) OF UNSORTED WASTE PER DAY

THE DAILY PRODUCT OF COMPOST PER EACH PLANT AND TIME PERIOD REQUIRED TO PRODUCE THE COMPOST

SITE LAYOUT SPECIFYING AREA REQUIRED FOR EACH ACTIVITY

PROCESS LAYOUT STARTING FROM THE DELIVERY OF GARBAGE AND ENDING WITH THE PACKING OF COMPOST.

ALL DRAWINGS FOR CIVIL DESIGN WORK

ALL CATALOGUES OF MACHINERY AND EQUIPMENT

COMPLETE DETAILS OF COMPOST PROCESS

COMPLETE STUDY OF MANPOWER REQUIRED TO OPERATE THE PLANT SPECIFYING THE CLASSIFICATION OF MANPOWER

COMPLETE STUDY OF MACHINERY REQUIRED TO OPERATE THE PLANT

4-2: AIR COMPRESSOR
CODE NO.

DESCRIPTION

QTY

03-01-945	POWER: 70-75 HP. RPM : 1500-2500 WORKING PRESSURE (7-10) BAR VOLUME FLOW : (200-300) M3/H AIR DELIVERY VALVE : 3 X ¼ INCH TIRE SIZE : 750/X16 NO. OF TIRE: 2 WITH : - COMPLETE CABIN - ROCK DRILL , JACK HAMMER AND ALL NECESSARY TOOLS AND ACCESSORIES , PNEUMATIC CUTTER - WITH SPARE PARTS FOR TWO YEARS OPERATION	50
-----------	--	----

4-3: AERIAL PLAT FORM								
03-01-946	<table border="0"> <tr> <th style="text-align: left;">CODE NO.</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">QTY</th> </tr> <tr> <td></td> <td> CHASSIS : 4 x 2 DIESEL IN LINE , WATER COOLED TROPICAL , SIX CYLINDER GEAR MANUAL CLUTCH: DRY SINGLE PLATE EQUIPPED WITH POCKET IM x IM LIFTING WEIGHT NOT LESS THAN 0.5 TON LIFTING HEIGHT :17 M SWING ANGLE :360° WITH SPARE PARTS FOR TWO OPERATING YEARS </td> <td style="vertical-align: top;">3</td> </tr> </table>	CODE NO.	DESCRIPTION	QTY		CHASSIS : 4 x 2 DIESEL IN LINE , WATER COOLED TROPICAL , SIX CYLINDER GEAR MANUAL CLUTCH: DRY SINGLE PLATE EQUIPPED WITH POCKET IM x IM LIFTING WEIGHT NOT LESS THAN 0.5 TON LIFTING HEIGHT :17 M SWING ANGLE :360° WITH SPARE PARTS FOR TWO OPERATING YEARS	3	
CODE NO.	DESCRIPTION	QTY						
	CHASSIS : 4 x 2 DIESEL IN LINE , WATER COOLED TROPICAL , SIX CYLINDER GEAR MANUAL CLUTCH: DRY SINGLE PLATE EQUIPPED WITH POCKET IM x IM LIFTING WEIGHT NOT LESS THAN 0.5 TON LIFTING HEIGHT :17 M SWING ANGLE :360° WITH SPARE PARTS FOR TWO OPERATING YEARS	3						

4-4:WHEEL LOADER								
03-01-947	<table border="0"> <tr> <th style="text-align: left;">CODE NO.</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">QTY</th> </tr> <tr> <td></td> <td> ENGINE : 6 CYLINDER , DIESEL , WATER COOLED , TROPICAL , IN LINE, DIRECT INJECTION POWER (180-190) HP TORQUE : (850-900) N.M WEIGHT 17-18 TON BUCKET CAPACITY : (3-3.5)M³ WITH SPARE PARTS FOR TWO OPERATING YEARS </td> <td style="vertical-align: top;">10</td> </tr> </table>	CODE NO.	DESCRIPTION	QTY		ENGINE : 6 CYLINDER , DIESEL , WATER COOLED , TROPICAL , IN LINE, DIRECT INJECTION POWER (180-190) HP TORQUE : (850-900) N.M WEIGHT 17-18 TON BUCKET CAPACITY : (3-3.5)M³ WITH SPARE PARTS FOR TWO OPERATING YEARS	10	
CODE NO.	DESCRIPTION	QTY						
	ENGINE : 6 CYLINDER , DIESEL , WATER COOLED , TROPICAL , IN LINE, DIRECT INJECTION POWER (180-190) HP TORQUE : (850-900) N.M WEIGHT 17-18 TON BUCKET CAPACITY : (3-3.5)M³ WITH SPARE PARTS FOR TWO OPERATING YEARS	10						

4-5: BITUMEN SPRAYING TANKER								
03-01-948	<table border="0"> <tr> <th style="text-align: left;">CODE NO.</th> <th style="text-align: left;">DESCRIPTION</th> <th style="text-align: left;">QTY</th> </tr> <tr> <td></td> <td> CHASSIS CAB : 4X2 ENGINE: DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER, WATER COOL , TROPICAL , DIRECT INJECTION PUMP . CLUTCH : DRY SINGLE PLATE GEAR BOX : (8+1) MANUAL POWER: NOT LESS THAN 240 HP TIER SIZE : 1200 X 20 G.V.W: 19 TON PAY LOAD : (10-11) TON CENTRIFUGAL TANK SPECIFICATION : CAPACITY9000 LITER THE TANK SHALL BE CLOSED AND THERMALLY ISOLATED OIL HEATED STORAGE TANK PROVIDED WITH : - PLACE FOR TWO SPARE WHEEL . SUCTION AND DISCHARGE PUMPING SYSTEM , MANUALLY OPERATION VIA P.T.O. - COMPLETE BITUMEN HEATING SYSTEM . - COMPLETE FIRE PROTECTION SYSTEM . </td> <td style="vertical-align: top;">4</td> </tr> </table>	CODE NO.	DESCRIPTION	QTY		CHASSIS CAB : 4X2 ENGINE: DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER, WATER COOL , TROPICAL , DIRECT INJECTION PUMP . CLUTCH : DRY SINGLE PLATE GEAR BOX : (8+1) MANUAL POWER: NOT LESS THAN 240 HP TIER SIZE : 1200 X 20 G.V.W: 19 TON PAY LOAD : (10-11) TON CENTRIFUGAL TANK SPECIFICATION : CAPACITY9000 LITER THE TANK SHALL BE CLOSED AND THERMALLY ISOLATED OIL HEATED STORAGE TANK PROVIDED WITH : - PLACE FOR TWO SPARE WHEEL . SUCTION AND DISCHARGE PUMPING SYSTEM , MANUALLY OPERATION VIA P.T.O. - COMPLETE BITUMEN HEATING SYSTEM . - COMPLETE FIRE PROTECTION SYSTEM .	4	
CODE NO.	DESCRIPTION	QTY						
	CHASSIS CAB : 4X2 ENGINE: DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER, WATER COOL , TROPICAL , DIRECT INJECTION PUMP . CLUTCH : DRY SINGLE PLATE GEAR BOX : (8+1) MANUAL POWER: NOT LESS THAN 240 HP TIER SIZE : 1200 X 20 G.V.W: 19 TON PAY LOAD : (10-11) TON CENTRIFUGAL TANK SPECIFICATION : CAPACITY9000 LITER THE TANK SHALL BE CLOSED AND THERMALLY ISOLATED OIL HEATED STORAGE TANK PROVIDED WITH : - PLACE FOR TWO SPARE WHEEL . SUCTION AND DISCHARGE PUMPING SYSTEM , MANUALLY OPERATION VIA P.T.O. - COMPLETE BITUMEN HEATING SYSTEM . - COMPLETE FIRE PROTECTION SYSTEM .	4						

- SPRAYING BAR 10CM DIAMETER, UP TO 6 M WIDTH , 2M LONG WITH EXTENSION OF 1M. ON EACH SIDE TO MAKE TOTAL LENGTH EQUAL TO 4M. AND TO BE FIXED IN THE REAR SIDE OF THE TANK . WITH POSSIBILITY OF HAND SPRAYING WITH SPARE PARTS FOR TWO YEARS OPERATION

4-6: CRAWLER DOZER

CODE NO.	DESCRIPTION	QTY
03-01-949	ENGINE: DIESEL IN LINE ,SIX CYLINDER WATER COOLED , TROPICAL ,DIRECT INJECTION POWER :(140 –160)HP TORQUE : (70-80)KG .M AT 1.000 R.P.M OPERATING WEIGHT (16-18)TON GREADABILITY : NOT LESS THAN 30 DEGREE WITH SPARE PARTS FOR TWO OPERATING YEARS WITH DRIVER CABIN	14

4-7: WHEEL ROLLERS

CODE NO.	DESCRIPTION	QTY
03-01-950	NO OF TIRES 8 OPERATING WEIGHT 10-11 TON ROLLING WIDTH 1800 MM SIZE OF TIRES 1100x20 12PR POWER: NOT LESS THAN 68 KW WITH SIDE CUTTER WITH DRIVER CABIN WITH SPARE PARTS FOR TWO OPERATING YEARS	12

4-8: STEEL ROLLER

CODE NO.	DESCRIPTION	QTY
03-01-951	DOUBLE DRUM VIBRATING ROLLER OPERATING WEIGHT 9-10 TON DRUM WEIGHT : NOT LESS THAN 1700 MM POWER RATING 85-95 KW WITH DRIVER CABIN WITH SPARE PARTS FOR TWO OPERATING YEARS	8

4-9: SINGLE DRUM ROLLERS

CODE NO.	DESCRIPTION	QTY
03-01-952	FOR SUBASE COMPACTING OPERATING WEIGHT 12-13.5 TON POWER RATING 95-100 KW TOTAL WEIGHT NO LESS THAN 2M WITH SPARE PARTS FOR TWO OPERATING YEARS	6

4-10: COMBINED STEEL AND WHEEL ROLLER

CODE NO.	DESCRIPTION	QTY
03-01-953	STEEL IN THE FRONT AND WHEEL IN THE REAR SIZE OF TIRES 1100 x 20 OPERATING WEIGHT 9-10 TON POWER RATING 70-76 KW WIDTH NO LESS THAN 1700 MM WITH SPARE PARTS FOR TWO OPERATING YEARS	6

4-11: SMALL STEEL DRUM ROLLER

CODE NO.	DESCRIPTION	QTY
03-01-954	TWO DRUM STEEL ROLLER WITH HAND DRIVE WITH WEIGHT NOT MORE THAN 1 TON WITH SPARE PARTS FOR TWO OPERATING YEARS	30

4-12: WHEEL EXCAVATOR

CODE NO.	DESCRIPTION	QTY
	ENGINE: DIESEL, DIRECT INJECTION , 4 CYLINDER, IN LINE , WATER COOLED , FOUR STROKE ,	

03-01-955 BUCKET CAPACITY : 0.5 AND 0.75 m3.
 OPERATING WEIGHT 20-22 TON
 POWER : (120-140)HP
 GRADEABILITY : 30-35
 DRIVE SYSTEM: HYDRAULIC DRIVE
 TRANSMISSION: FORWARD, REVERES, 2 SPEED GEAR
 MAX. DIGGING DEPTH: 6-8 M
 PRODUCTION SHOULD BE UNDER ISO 9001 CERTIFICATION FOR
 QUALITY

WITH SPARE PARTS FOR 2 OPERATING YEARS , AND JACK HAMMER

4-13: BITUMEN TANKERS TRAILER
 CODE NO DESCRIPTION QTY.
 CHASSIS CAB : 6X4
 GCMR: NOT LESS THAN 50 TON.
 ENGINE:

DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER,
 WATER COOL , TROPICAL , DIRECT INJECTION PUMP .
 POWER: NOT LESS THAN 320 HP.
 CLUTCH : PRESS TYPE , (HYDRAULIC + AIR) , SERVO
 GEAR BOX : MANUAL , (9+1) OR (8+1)
 FIFTH WHEEL :3.5 INCH
 TIER SIZE : 1200 X 24
 CENTRIFUGAL
 TANK SPECIFICATION :
 CAPACITY : 40000 LITER.
 THE TANK SHALL BE CLOSED AND THERMALLY ISOLATED
 TIER SIZE : 1200 X 24.
 NO. OF AXLE :3 WITH 4 TIRES EACH , 305 " KING PIN
 PROVIDED WITH :
 - TWO JUKES MANUALLY OPERATED SUITABLE FOR LOADS NOT LESS
 THAN 50 TON WITH KING PIN 3.5 INCH SIZE
 - PLACE FOR TWO SPARE WHEEL .
 - SUCTION AND DISCHARGE PUMPING SYSTEM , MANUALLY
 OPERATION VIA P.T.O. WITH PIPING 4 INCH DIAMETER .
 - COMPLETE BITUMEN HEATING SYSTEM .
 - COMPLETE FIRE PROTECTION SYSTEM .

03-01-956 WITH SPARE PARTS FOR TWO YEARS OPERATION

4-14: CEMENT AND FILLER TANKERS
 CODE NO DESCRIPTION QTY.
 TRUCK SPECIFICATIONS:

CHASSIS CAB : 6X4
 GCMR: NOT LESS THAN 50 TON.
 ENGINE:
 DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER,
 WATER COOL , TROPICAL , DIRECT INJECTION PUMP .
 POWER: NOT LESS THAN 300 HP.
 CLUTCH : PRESS TYPE , (HYDRAULIC + AIR) , SERVO
 GEAR BOX : MANUAL , (9+1) OR (8+1)
 (FIFTH WHEEL):3.5 INCH
 TIER SIZE : 1200 X 24
 TANK SPECIFICATION :
 CAPACITY : ABOUT 30- 35 TON , STRAIGHT TYPE (NOT V TYPE) WITH
 COMPLETE UNLOADING SYSTEM
 TIER SIZE : 1200 X 24.
 NO. OF AXLE : 3 WITH 4TIERS IN EACH AXLE WITH TWO SPARE TIRE ,
 KING PIN 3.5"

SUPPLIED WITH :
 - TWO JUKES MANUALLY OPERATED SUITABLE FOR LOADS NOT
 LESS THAN 50 TON .
 - PLACE FOR TWO SPARE WHEEL .
 - COMPLETE FIRE PROTECTION SYSTEM .

03-01-957 WITH SPARE PARTS FOR TWO YEARS OPERATION

4-15: CRANE EQUIPPED TRUCK

CODE NO.	DESCRIPTION	QTY
	CHASSIS CAB : 4 X 2 ENGINE: 6 CYLINDER, 4 STROKE IN LINE DIRECT INJECTION , WATER COOLED TROPICAL , POWER ONT LESS THAN 240 HP . TURBOCHARGER, POWER: NOT LESS THAN 240 HP. CLUTCH : DRY SINGLE PLATE 420 MM GEAR BOX : 8 SPEED , MANUAL +1 G. V. W : NOT LESS THAN 19 TON PAYLOAD : NOT LESS THAN 10-11 TON TIER SIZE : 1200 X 20 DISK TYPE LIFTING CAPACITY : 1 TON AT THE MAXIMUM POINT NOT LESS THAN 7 TON - M	4

03-01-958 WITH SPARE PARTS FOR TWO YEARS OPERATION

4-16: CRAWLER STREET PAVERS

CODE NO.	DESCRIPTION	QTY
	BASIC WIDTH 3 MAXIMUM WIDTH 16M WITH EXTENSIONS RATING POWER 205-220KW MATERIAL CAPACITY NOT LESS THAN 16TONS WEIGHT AT WORKING WIDTH UP TO 8.5M 28TON PAVING DEPTH UP TO 40 CM LAY DOWN RATE UP TO 1500TON/H ALL FUNCTION AUTOMATIC WITH SENSORS WITH SPARE PARTS FOR TWO YEARS OPERATION	2

03-01-959

4-17: WHEEL STREET PAVERS

CODE NO.	DESCRIPTION	QTY
	BASIC WIDTH 2.5-5M MAX PAVING WIDTH WITH EXTENSION 8M ENGINE OUT PUT NOT LESS THAN 87KW POWER : NOT LESS THAN 130-140 HP LAY DOWN RATE UP TO 600TON/H PAVING DEPTH UP TO 300MM HOPPER CAPACITY 12 TON ALL FUNCTION AUTOMATIC WITH SENSORS WITH SPARE PARTS FOR TWO YEARS OPERATION	4

03-01-960

4-18: WHEELED PATH-PAVER

CODE NO.	DESCRIPTION	QTY
	PAVING WIDTH:1.10M UP TO 3M PAVING DEPTH : MAX 15CM LAY DOWN RATE : UP TO 50T/HR ENGINE OUTPUT:28KW(38H.P) HOPPER CAPACITY:3.5T WITH SPARE PARTS FOR TWO YEARS OPERATION	12

03-01-961

4-19: STREET MAINTENANCE TRUCK

CODE NO.	DESCRIPTION	QTY
	DOUBLE CABIN CHASSIS CAB : 4 X 2	

	WITH TIPPING BACK DEVILED INTO TWO PARTS AND THE TIPPING PART FOR LOADING ASPHALT NOT LESS THAN 1.5 TON , COMPRESSOR WITH JACK HAMMER AND ALL NECESSARY ACCESSORIES , BITUMEN TANK (300 L . CAPACITY) WITH HEATER, ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER POWER : NOT LESS THAN240 HP. CLUTCH : SINGLE PLATE GEAR BOX : 8 SPEED G. V. W : NOT LESS THAN 19 TON PAYLOAD : NOT LESS THAN 12 TON TIRE SIZE : 1200 X 20 DISK TYPE LIFTING CAPACITY : 6 TON - M	30
03-01-962	WITH SPARE PARTS FOR TWO YEARS OPERATION	
4-20: GUARD RAIL		
CODE NO.	DESCRIPTION	QTY
03-01-963	GUARD RAIL TYPE B/BLADE THICKNESS 3 M/M LONG 4000 C/C , INCLUDING POST , SERROUS NUTS AND WASHERS ALL TO BE ON	20000 M.L , 5000 PCS
4-21: CUTTER TOOLS		
CODE NO.	DESCRIPTION	QTY
	CUTTER TOOLS FOR TYPE W1000F & W600DC/WIRTGEN COLD MILLING MACHINE	
03-01-964	134725 W5L	4000
03-01-965	134728 W1-10	2000
03-01-966	128302 W6	4000
4-22: ASPHALT PLANTS		
CODE NO.	DESCRIPTION	QTY
	COMPLETE ASPHALT PLANT WITH CAPACITY NOT LESS THAN (250-300) T/HR WITH COMPLETE FILTERING SYSTEM (FILTERED)AGAINST POLLUTION. DETAILS OF PLANT FIXED PLANT TWO FILLER TANKS WITH CAPACITY NOT LESS THAN 120TON EACH FIVE BITUMEN TANKS WITH AUTOMATIC HEAT CONTROL FOR OIL TEMPERATURE FOR EACH TANKS. THE CAPACITY OF EACH BITUMEN TANK IS 50TON. ALL ACTIVITIES ARE AUTOMATIC AND CONTROLLED BY COMPUTER.	
03-01-967	SCREENING SYSTEM WORKS ON SCREENING AND BY PASS. THE DRYER TO BE DRIVEN EITHER BY FRICTION OR CHAIN. FIVE HOPPERS WITH CAPACITY OF 12M ³ FOR EACH ONE. SILOS FOR STORING ASPHALT WITH CAPACITY NOT LESS THAN 300TON WITH HEATING SYSTEM. TURBINE PUMP SHALL BE MECHANICAL TYPE (NO RUBBER PARTS). GENERATOR WITH AUTOMATIC CHANG OVER(1000KVA). ADDITIONAL GENERATOR OF 100KVA FOR BITUMEN HEATER AUTOMATIC FIRE PROTECTION SYSTEM FOR BITUMEN HEATER AND MAIN CABIN . COMPLETE SYSTEM FOR FIRING TREATMENT (FIRING ACCIDENT MUST BE PROVIDED FOR THE PLANT .	4
4-23:WIBAU, 300T. ASPHALT PLANTS SPARE PARTS		
CODE NO.	DESCRIPTION	QTY
03-01-968	GEAR MOTOR 1,5 KW;N=92/3000	10
03-01-969	ROLLER CHAIN SPROCKET 14-19,05-30-30+20P	10
03-01-970	CHAIN LINK 12-B-1(84 LINKS)	10
03-01-971	CHAIN LINK H 12-B-1	10
03-01-972	PLUG-IN LINK E12-B-1	10
03-01-973	CONVEYOR BELT 650X2,86 FOR CONVEYOR BELT TS FD 22481 AND FA 18881	10
03-01-974	GEAR MOTOR 7,5 KW / N=125	10

03-01-975	SPROCKET WHEEL Z=13/T=31,75-55	5	
03-01-976	SPROCKET WHEEL Z=18/T=31,75-550	5	
03-01-977	CHAIN T=31,75 (69 PIECES)	5	
03-01-978	END LINK	5	
03-01-979	CONVEYOR BELT EP 315/3;3:1; 46000LG X 800	5	
03-01-980	BELT ROLLER 89/290 LONG	45	
03-01-981	LOWER CHORD ROLLER O 89X900	12	
03-01-982	THRUST RING	96	
03-01-983	CONVEYOR BELT TO DRUM FA 18881, BELT LENGTH 383730	2	
	BELT WIDTH 800 CONVEYOR BELT COMPLETE		
	DRYING DRUM TFO 928		
03-01-984	AHAKER TUBE COMPLETE WITH VIBRATOR, RUBBER SPRINGS, LAGGING AND MOTOR BRAKE	2	
03-01-985	RING OUTLET	2	
03-01-986	BUCKET	64	
03-01-987	BUCKET	32	
03-01-988	SHOVEL 270X150-10000-15	40	
03-01-989	SHOVEL 270X150-15 CLOSED	160	
03-01-990	SPIRAL 843X311-6	24	
03-01-991	SPIRAL 843X280	24	
03-01-992	SPIRAL 843X311	48	
03-01-993	CHAIN RIM Z=14;T=103,2; O 130;NA210	2	
03-01-994	ROTARY CHAIN; 102 LINKS	2	
03-01-995	TENSION BLOCK	2	
03-01-996	RUNNER	8	
03-01-997	CLUTCH A 200	2	
03-01-998	PILLOW BLOCK BEARING HOUSING SN 616	8	pcs
03-01-999	SELF ALIGNING ROLLER BEARING 1316 KC3	8	pcs
03-01-1000	STRETCHING SLEEVE H 316	8	pcs
03-01-1001	FIXED RING 170X14,5	4	pcs
03-01-1002	OIL PUMP UNIT	2	
	HOT ELEVATOR H300		
03-01-1003	BUCKET CDY 1 630X280X5	144	
03-01-1004	HEXAGON SCREW	576	
03-01-1005	HEXAGON NUT	1152	
03-01-1006	WASHER	1152	
	THERMAL OIL SUPPLY		
03-01-1007	THERMAL OIL SUPPLY FOR 5 TANKS INCL; HEATED VALVES, HEATED MOTOR VALVE, PIPES, FLANGES, BOLT, NUT AND SEAL MATERIAL	2	
03-01-1008	THERMAL OIL HEATER WTO-700-EL	2	
	TECHNICAL DATA : WTO 700		
	MAX. CONTINUOUS POWER: 700 KW		
	MAX. FEED TEMPERATURE: 700 C		
	HEAT CAPACITY: 440 L		
	HEATING AREA: 35,1 M2		
	THICKNESS OF INSULATION: 100MM		
	PER. EXCESS OPERATING PRESSURE: 10 BAR		
	MAX. FUEL CONSUMPTION: 40,0 KG/H		
	CIRCULATED VOLUME: 30,0 M3/H		
	DELIVERY HEAD: 44M LIQUID COLUMN		
	MOTOR RATING OF CIRCULATING PUMP: 5,5 KW		
	TOTAL CONNECTED LOAD:8,5 KW		
	EXPANSION TANK, CAPACITY: 1000L		
	STORAGE TANK, CAPACITY: 2000L		
	FILLER SUPPLY		
03-01-1009	MOTOR; 4 KW; N=125/1420;15,6/90A;220/380 V	6	pcs
03-01-1010	MOTOR; 4 KW; N=125/1420;15,6/90A;220/380 V	3	
03-01-1011	MOTOR; 4 KW; N=125/1420;15,6/90A;220/380 V	3	
03-01-1012	REGULATOR SLUICE 41,5 T	3	
03-01-1013	LOCKING VALVE DN 350	3	
03-01-1014	CELL SLUICE 598 H	3	
03-01-1015	WORKING CYLINDER	3	

03-01-1016	SOLENOID VALVE 5/2 / NW 7	3	
03-01-1017	THROTTLE NON RETURN VALVE	3	
03-01-1018	AIR FILTER M 22X1,5	3	
03-01-1019	SPARE COIL FOR SOLENOID VALVE	3	
03-01-1020	SMALL PARCEL SPARE PARTS FOR BASE VALVE	3	
	SMALL PARCEL SPARE PARTS FOR SERVO VALVE	3	pcs
03-01-1021	EXHAUSTOR EX II 90-140-60		
03-01-1022	PILLOW BLOCK BEARING HOUSING SN 522	4	
03-01-1023	BALL BEARING 22222 KC3	4	
03-01-1024	SLEEVE H 322	4	
03-01-1025	PERSENNING	4	
	MACHINE PARTS TO WHIRLING MIXER		
03-01-1026	PILLOW BLOCK BEARING HOUSING SN 626	8	
03-01-1027	SELF ALIGNING BALL BEARING	8	
03-01-1028	ADAPTER SLEEVE	8	
03-01-1029	FIXED RING	4	
03-01-1030	SEALING RING	8	
03-01-1031	SEALING FLANGE M 8213	8	
03-01-1032	SPUR WHEEL M15;Z=53-110-110+65	4	
03-01-1033	SEALING DISK M 8448	8	
	MIXER DRIVE		
03-01-1034	TURBO CLUTCH 422 TVB	2	
03-01-1035	SPUR WHEEL GEAR SZN 200	1	
03-01-1036	LINK N 40 B-2	2	
03-01-1037	CHAIN PROTECTION	2	
03-01-1038	MODIFICATION SPRIDOMAT TO AG 19 WITH PANEL COUNTER	1	
	PARTS TO ROUND SLIDE		
03-01-1039	COMPR. AIR CYLINDER A 160X400	4	pcs
03-01-1040	FORK JOINT M 36X2	2	
03-01-1041	OPPOSED BEARING 25X210X160	2	
03-01-1042	ROUND SLIDE	1	
03-01-1043	SHAFT O 60/65-245 LONG	1	
03-01-1044	SOLID JOURNAL BEARING 65X90X80/40	2	pcs
03-01-1045	LEVER 123X20-110/50	2	
	WEARING PLATES AND WEARING SHEETS		
03-01-1046	WEARING PLATE	2	
03-01-1047	WEARING PLATE	2	
03-01-1048	WEARING SHEET	2	
03-01-1049	SCREW RAIL	4	
03-01-1050	CYLINDER SCREW	28	
03-01-1051	HEXAGON NUT	16	
03-01-1052	WASHER	36	
03-01-1053	SPRING RING	16	
03-01-1054	DISC	28	
03-01-1055	AIR FILTER M 22X1,5	2	
03-01-1056	SPARE COIL FOR MAGNETIC VALVE	2	
03-01-1057	SPARE COIL FOR BASE VALVE	2	
03-01-1058	SPARE PARTS FOR SERVO VALVE	2	
03-01-1059	MAGNETIC VALVE	2	
	OUTLET PIECE 5+2		
03-01-1060	WORKING UNIT (COPR. AIR CYLINDER WITH MAGNETIC VALVE	14	
	SCREEN UNIT		
03-01-1061	SCREEN MACHINE HN 22/40/3/4 COMPLETE WITHOUT HOUSING	2	
	MOTOR, SCREENS AND TIGHTENER		
03-01-1062	SCREEN BOTTOM	8	
03-01-1063	SCREEN BOTTOM	8	
03-01-1064	SCREEN BOTTOM	4	
03-01-1065	SCREEN BOTTOM	8	
03-01-1066	SCREEN BOTTOM	4	
03-01-1067	MOTOR 15 KW; N=1450;30A;380 V	6	pcs
03-01-1068	V-BELT SPBX2240	60	pcs
03-01-1069	MACHINE BELT PULLEY 5XSPB	4	
03-01-1070	MOTOR BELT PULLEY 5XSPB	4	
03-01-1071	SCREEN TIGHTENER V-26353 V	6	

03-01-1072	SCREEN TIGHTENER V-26353 II	10	
03-01-1073	AIR COMPRESSOR TECHNICAL DATA MAX. PRESSURE: 10 BAR DELIVERY VOLUME: 3,12 M3/MIN DRIVE : 22,0 KW AIR TANK CAPACITY: 1000L VOLTAGE : 400 V/ 50 HZ TYPE OF PROTECTION : IP 54	2	
03-01-1074	AIR COMPRESSOR WITHOUT TANK TECHNICAL DATA: MAX. PRESSURE: 10 BAR DELIVERY VOLUME: 3,12 M3/MIN. DRIVE: 22,0 KW VOLTAGE : 400 V / 50 HZ TYPE OF PROTECTION : IP 54	2	
03-01-1075	WEIGHING- AND PROCESS CONTROL CONSISTING OF: LUMINOUS PUSH BUTTONS, BULBS, CIRCUIT BREAKER, POTENTIOMETER, MINIATURE, SWITCHES AND REGULATOR BUTTON COMPLETE WITH PRINTED AND CIRCUIT BOARDS	2	
03-01-1076	ELECTRICAL CABLES FOR ASPHALT PLANT	1 SET	
03-01-1077	CHANGE OVER SWITCH MECHANICAL 1500 A	2	pcs
03-01-1078	ELECTRICAL TOOLS WITH TOOL BOX	1 SET	
03-01-1079	SET BOLT, SEALING, AIR HOSE, CONNECTING PIECES, GREASE NIPPLE, PIPES AND GREASE HOSE.	2 SETS	
	STEEL PLATES 2 MM, 3MM, 4MM, 6MM, THICKNESS 1000MMX 2000MM ANGLE STEEL 20MMX20MM, 3MM THICK, 6M LONG ANGLE STEEL 30 MMX30MM, 3MM THICK, 6M LONG ANGLE STEEL 40 MM X 40MM, 4MM THICK, 6 M LONG ANGLE STEEL 60 MMX60MM, 6MM THICK, 6 M LONG FLAT STEEL 20MM, 3 MM THICK, 6 M LONG FLAT STEEL 30MM, 3 MM THICK, 6 M LONG FLAT STEEL 40MM, 4 MM THICK, 6 M LONG FLAT STEEL 60MM, 6 MM THICK, 6 M LONG U-STEEL 40 MM, 6 M LONG U-STEEL 60 MM, 6 M LONG U-STEEL 80 MM, 6 M LONG U-STEEL 100 MM, 6 M LONG PAINT 50 LITTER GROUND PAINT 50 LITTER SILVER PAINT 50 LITTER PAINT BRUSHES DIFFERENT TYPE 30 PIECES SPARE PARTS FOR DUST COLLECTING SYSTEM		
03-01-1080	AIR COMPRESSOR TECHNICAL DATA: MAX. PRESSURE : 10 BAR DELIVERY VOLUME: 3,12 M3/MIN DRIVE: 22,0 KW AIR TANK CAPACITY: 1000L VOLTAGE: 400V / 50 HZ TYPE OF PROTECTION : IP 54	6	
03-01-1081	MOTOR; 3 KW;N=125;220/380 V	4	
03-01-1082	CLUTCH ROFLEX D48	4	
03-01-1083	BEARING HOUSING SNH 524-620	4	
03-01-1084	SELF ALIGN ROLLER BEARING 2320 K	4	
03-01-1085	SLEEVE H 2320	4	
	ELECTRICAL SPARE PARTS ELECTRICAL SPARE PARTS FOR 5 YEARS OPERATION INCL. RELAYS, CONTACTORS, SWITCHES, DIFFERENT FUSES, ACTORICAL AND SENSORICAL ITEMS	2 SETS	
03-01-1086			
03-01-1087	EXTERNAL VIBRATOR HV4-2-60	4	

03-01-1088	V-BELT 2650X17	80	pcs
03-01-1089	EL- MOTOR 22KW	4	
03-01-1090	EL-MOTOR 7.5 KW	4	
03-01-1091	EL-MOTOR 11 KW	4	
03-01-1092	EL-MOTOR 75 KW	4	
03-01-1093	EL-MOTOR15 KW	4	
	V-BELTS		
03-01-1094	SPB 1800 LW	50	pcs
03-01-1095	SPB 5000 LW	50	pcs
03-01-1096	SPB 3150 LW	80	pcs
03-01-1097	SPB 180	50	pcs

4-24: MINI GARBAGE COLLECTING VEHICLE

CODE NO.	DESCRIPTION	QTY
	CHASSIS CAB 4X2	
	ENGINE : 4 CYLINDER, WATER COOLED, DIRECT ENG. DIESEL ENG.	
03-01-1098	POWER : SUITABLE FOR 2TON PAYLOAD CLUTCH : SINGLE PLATE GEAR BOX : 6 SPEED CAPACITY :2 M3 COMPACT RATIO :1:(1.5 -2)	40

4-25: ROAD SWEEPERS

CODE NO	DESCRIPTION	QTY.
	CHASSIS CAB : 4X2 (LEFT AND RIGHT STEERING) G.V.W= 16-18 TON PAY LOAD: 6-7 TON FRONT ENGINE: DIESEL , WATER COOLED , 6 CYLINDERS , DIRECT INJECTION PUMP . POWER: NOT LESS THAN 140 HP. BODY CAPACITY : 6-7 M3 WATER TANK: 1-1.2 M3 SUCTION PIPE : 250 MM DIAMETER SIDE BRUSH : 750 MM DIAMETER CENTER BRUSH : 400 MM X 1500 MM	
03-01-1099	SWEEP END BAND : 2400 – 2500 MM SWEEP SPEED : 2-20 KM/H. SWEEP END PERFORMANCE : 40000-50000 M3/H. AUXILIARY ENGINE : DIESEL , 4 CYLINDER WATER COOLED DIRECT INJECTION PUMP . ENGINE POWER : 90-100 HP TIER SIZE : 900X20 EQUIPPED WITH REAR SUCTION HOSE - PLACE FOR TWO SPARE WHEEL . - COMPLETE FIRE PROTECTION SYSTEM . WITH SPARE PARTS FOR TWO YEARS OPERATION	20

4-26: FIELD VEHICLE , DOUBLE CAP , PICK-UP

CODE NO	DESCRIPTION	QTY
	ENGINE :PETROL, 4 CYLINDER, IN LINE , WATER COOLED , POWER:120-140 HP FOUR STROKE CLUTCH: DRY SINGLE PLATE GEAR BOX:5 SPEED MANUAL TIRE SIZE: 650X14 (2FRONT + TWO REAR+1SPARE)	
03-01 2000	DRIVEN TYPE: REAR-WHEEL DRIVE SEATS:5 STEERING : POWER STEERING , LEFT POSITION OF STEERING WHEEL , RACK AND PINION DOUBLE CAP , PICK UP WITH FOUR DOORS	200

WITH AIR CONDITIONING , FIRE DINGUISH , RADIO CASSETTE
WITH 20% SPARE PARTS FOR 2 OPERATING YEARS

.4-27: PORTABLE WATER PUMPS DIESEL OPERATED

CODE NO	DESCRIPTION	QTY
	DIESEL ENGINE WITH HORIZONTAL CENTRIFUGAL PUMP SELF PRIMING WITH VACUUM MOBILE SUCTION HEAD NOT LESS THAN 8 M DELIVERY HEAD NOT LESS THAN 30 M FUEL TANK CAPACITY IS 10 H/WORK ALL ACCESSORIES FOR CONNECTION WITH HOSE 20 M LONG AIR COOLED MAX SOLIDS SIZE 50 MM MECHANICAL SHAFT SEAL CAPACITY NOT LESS THAN 600 M3/HR IMPELLER : SINGLE STAGE AND SUCTION , MIXED FLOW OF MINIMUM NUMBER OF VANES CAST IRON PUMP SHALL BE DESIGNED TO PUMP SEWAGE CONTAINING SOLIDS AND STRANGE MATERIALS WITH A NIMISM OF CLOGGING WITH SPARE PARTS FOR TWO OPERATING YEARS	
03-01-2001	PUMP SIZE SUCTION X DISCHARGE 100X100 MM	10
03-01-2002	PUMP SIZE SUCTION X DISCHARGE 150X150 MM	10
03-01-2003	PUMP SIZE SUCTION X DISCHARGE 200X200 MM	10
03-01-2004	PUMP SIZE SUCTION X DISCHARGE 250X250 MM	10
03-01-2005	PUMP SIZE SUCTION X DISCHARGE 300X300 MM	10

4-28: FORK LIFT

CODE NO.	DESCRIPTION	QTY
	CAPACITY : 5 TON H.P : 80-100	
03-01-2006	ENGINE :DIESEL 4 CYLINDER, FOUR STROKE MAX FORK HEIGHT : 3,000 MM GROUND CLEARANCE : 200-300 MM WITH SPARE PARTS FOR TWO OPERATING YEARS	16

4-29: TREE SPADE

CODE NO	DESCRIPTION	QTY.
03-01-2007	TREE SPADE (TREE PLANTING VEHICLE) CHASSIS CAB : 6X4 FOR UP ROOTING AND TRANSPORTING AND REPLANTING TREES AND PALM TREES WITH 2-10 M. HEIGHT , 15-70CM DIAMETER COMPLETE MAOUNTED ON TRUCK CHASSIS 3 AXLE DIESEL ENGINE , 6 CYLINDER IN LINE , 4 STROKE. TURBOCHARGER, WATER COOL , TROPICAL , DIRECT INJECTION PUMP . POWER: NOT LESS THAN 240 HP. CLUTCH : PRESS TYPE , (HYDRAULIC + AIR) , SERVO 420MM GEAR BOX : MANUAL , (9+1) OR (8+1) TIER SIZE : 1200 X 24 SUPPLIED WITH CAP PROTECTOR , RACK AND HYDRAULIC STABILIZER WITH SPARE PARTS FOR TWO YEARS OPERATION	6

4-30: WHEEL LOADER

CODE NO	DESCRIPTION	QTY
	ENGINE : DIESEL, DIRECT INJECTION , 4 CYLINDER, IN LINE , WATER COOLED , FOUR STROKE ,	
03-01-2008	BUCKET CAPACITY : 0.8m3 POWER: 80-100 HP OPERATING WEIGHT : 6-7 TON	20

HYDRAULIC OPERATING: MANUAL HYDRAULIC OPERATION , NOT BY
ELECTRIC OR AIR SYSTEM
PRODUCTION SHOULD BE UNDER ISO 9001 CERTIFICATION FOR
QUALITY
WITH SPARE PARTS FOR 2 OPERATING YEARS

4-31: STEEL GARBAGE CONTAINERS

CODE NO	DESCRIPTION	QTY
03-01-2009	PORTABLE TYPE (ON WHEEL) (1M3 SIZE)	1000
03-01-2010	CAPACITY OF (16)M3	500
03-01-2011	CAPACITY (8) M3	1000 Nos

4-32: TIPPING TRUCKS

CODE NO	DESCRIPTION	QTY
03-01-2012	CHASSIS CAB : 6 X 4 ENGINE : 4- STROKE , 6 CYLINDER IN LINE TURBOCHARGED POWER : NOT LESS THAN 280 HP. CLUTCH : SINGLE PLATE GEAR BOX : 9 SPEED +1 G. V. W : NOT LESS THAN 30 TON PAYLOAD : NOT LESS THAN 20 TON TIRE SIZE : 1200 X 20 DISK TYPE TIPPER CAPACITY : 16m 3 WITH SPARE PARTS FOR TWO YEARS OPERATION	100

4-33: SMALL TIPPING DAMPERS

CODE NO	DESCRIPTION	QTY
03-01-2013	ENGINE :DIESEL , 2 CYLINDER , DEIUTZ TYPE , THE ENGINE TO BE SUITABLE FOR 2 TON PAYLOAD PAYLOAD :2 TON 4 TIRES POCKET CAPACITY 1-2 M3 HYDRAULIC AND MANUAL DAMPING WITH SPARE PARTS FOR TWO YEARS OPERATION	40

4-34:SEWAGE SUBMERGIBLE PUMPS WITH THE FOLLOWING INSTALLATION

CODE NO	DESCRIPTION	QTY
03-01-2014	ACCESSORIES:DISCHARGE ELBOW WITH FLANGE FLANGE SLEEVE DISCHARGE HOSE WITH HOSE CLIPS (L HEAD) SKIRT BASE CHAIN WITH SHACKLE CONTROL PANELS AND CONTROL SYSTEM CABLE TYPE STARTING : Y WET TRANSPORTABLE 3 INCH DIAMETER, DN: 80 SOLID SIZE: 70-80 MM H: 15-18 M Q: 15-20 L/S POWER TAKEN FROM MAIN: 8-12 KW POWER AT MOTOR SHAFT: 5.5-7.5 KW RATED VOLTAGE : 380	200
03-01-2015	4 INCH DIAMETER, DN: 100MM SOLID SIZE: 90-110 MM H: 20-22 M Q: 40-60 L/S POWER TAKEN FROM MAIN: 16-18 KW POWER AT MOTOR SHFT:13-15 KW RATED VOLTAGE : 380	200
	6 INCH DIAMETER, DN: 150 SOLID SIZE: 90-110 MM	50

	H: 10-12 M	
	Q: 60-80 L/S	
	POWER TAKEN FROM MAIN: 16-18 KW	
	POWER AT MOTOR SHFT:13-15 KW	
03-01-2016	RATED VOLTAGE : 380	
	8 INCH DIAMETER,	20
	DN: 200MM	
	SOLID SIZE:90-110 MM	
	H:10-12 M	
	Q: 120-140 L/S	
	POWER TAKEN FROM MAIN:24-26 KW	
	POWER AT MOTOR SHFT:22-24 KW	
03-01-2017	RATED VOLTAGE : 380	
	12 INCH DIAMETER,	10
	DN: 300 MM	
	SOLID SIZE: 110-140 MM	
	H: 10-12 M	
	Q:220- L/S	
	POWER TAKEN FROM MAIN:34-36 KW	
	POWER AT MOTOR SHAFT: 28-30 KW	
03-01-2018	RATED VOLTAGE : 380	

DRINKING WATER SUBMURGIBLE PUMPS WITH THE FOLLOWING INSTALLATION

CODE NO	DESCRIPTION	QTY
	ACCESSORIES:DISCHARGE ELBOW WITH FLANGE	
	FLANGE SLEEVE	
	DISCHARGE HOSE WITH HOSE CLIPS (L HEAD)	
	SKIRT BASE	
	CHAIN WITH SHACKLE	
	CONTROL PANELS AND CONTROL SYSTEM	
	CABLE TYPE STARTING : Y	
	WET TRANSPORTABLE	
03-01-2019	3 INCH DIAMETER,	200
03-01-2020	4 INCH DIAMETER,	200
03-01-2021	6 INCH DIAMETER,	50
03-01-2022	8 INCH DIAMETER,	10
03-01-2023	12 INCH DIAMETER,	10

4-35: GRASS CUTTING MACHINE

CODE NO	DESCRIPTION	QTY
03-01-2024	GASOLINE ENGINE , TORO TYPE OR EQUIVALENT	10
	4 TIRES	

4-36: SPARE PARTS FOR MACHINERY AND EQUIPMENT

1. SPARE PARTS FOR STYRE CRANE

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2025	DRIVE GEAR		5
03-01-2026	STARTER MOTOR		5
03-01-2027	STARTER ROTOR		10
03-01-2028	EXCITING WIDING		10
03-01-2029	DRIVE PLATE ASSY		5
03-01-2030	REPAIRING KIT FOR GEAR BOX		4

2. SPARE PARTS FOR STYRE GARBAGE

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2031	SEAVENGE LINE ASSY	16150008009	20
03-01-2032	BRAK LINING	19900034006	100
03-01-2033	BEARING	2.6013E+10	10
03-01-2034	SUPPORT	2.6013E+10	10
03-01-2035	BEARING	2.6013E+10	10
03-01-2036	BRACKET	2.6013E+10	10
03-01-2037	SPRING ASSY	3Z156016108	30
03-01-2038	SPRING	3Z156016108	30

03-01-2039	SEPARTING LEVER ASSY	3Z156016109	50
03-01-2040	ADJUSTING FORK	3Z156016110	10
03-01-2041	BUTTON	LA39-11/G-22	10-
03-01-2042	BUTTON	A39-02M/R-2	10
03-01-2043	BUTTON	A39-11Y/K-2	10
03-01-2044	BUTTON	A39-20XS/K-2	10

3. SPARE PARTS FOR WATER TANKER ,MODEL ; DAEWOO-YD62C1,ORIGIN;KOREA
ENGINE TYPE ; DE12T1

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2045	CYLINDER BLOCK	35.01101-606	1
03-01-2046	LINER	35.90201-005	12
03-01-2047	BUSH CAM SHAFT	35.04410-001	10
03-01-2048	CRANK SHAFT	35.02101-705	1
03-01-2049	BEARING -MAIN STD (SET)	35.01110-605	1
03-01-2050	BEARING -MAIN 0.25 (SET)	35.01110-606	2
03-01-2051	BEARING -MAIN 0.50 (SET)	35.01110-606	2
03-01-2052	BEARING -MAIN 0.75 (SET)	35.01110-607	2
03-01-2053	BEARING -MAIN 1.00 (SET)	35.01110-607	2
03-01-2054	WASHER :THRUST(UPPER)	35.01151-002	6
03-01-2055	WASHER : THRUST(LOWER)	35.01151-003	6
03-01-2056	PISTON RING	35.02503-823	125
03-01-2057	PISTON	35.02501-016	12
03-01-2058	CONNECTING-ROD	35.02401-601	10
03-01-2059	BEARING :BIGEND STD(SET)	35.02410-610	2
03-01-2060	BEARING :BIGEND 0.25(SET)	35.02410-610	2
03-01-2061	BEARING :BIGEND 0.75(SET)	35.02410-610	2
03-01-2062	CYLINDER HEAD(FRONT)	35.03101-605	2
03-01-2063	CYLINDER HEAD(REAR)	35.03101-605	2
03-01-2064	GASKET (FRONT)	35.03901-005	20
03-01-2065	GASKET (REAR)	35.03901-005	20
03-01-2066	GASKET	35.03905-000	5
03-01-2067	CAM SHAFT	35.04500-600	2

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2068	VALVE-EXHAUST	35.04101-004	24
03-01-2069	VALVE-INTAKE	35.04101-004	24
03-01-2070	OIL PUMP	35.05100-603	5
03-01-2071	GASKET (OIL PAN)	35.05904-002	5
03-01-2072	GASKET	35.05904-009	5
03-01-2073	GANGE :OIL LEVEL	35.05805-517	2
03-01-2074	GUIDE TUBE	35.05806-509	2
03-01-2075	OIL COOLER	35.05601-706	2
03-01-2076	OIL FILTER	35.05501-705	10
03-01-2077	WATER PUMP	35.06500-639	10
03-01-2078	SEAL	35.06520-600	25
03-01-2079	PIPE	35.06301-012	10
03-01-2080	FAN COUPLING	35.06650-601	15
03-01-2081	FAN	35.06601-001	10
03-01-2082	EXHAUST -MANIFOLD	35.08100-604	5
03-01-2083	NOZZLE & HOLDER	35.10101-707	10
03-01-2084	NOZZLE	35.10102-603	60
03-01-2085	FUEL FILTER	35.12501-700	100
03-01-2086	INJECTION PUMP	35.11101-726	2
03-01-2087	ALTERNATOR	35.26101-712	10
03-01-2088	ROTOR	210136	20
03-01-2089	STATOR	210132	20
03-01-2090	BEARING	210281	10
03-01-2091	FRAME	210131	10
03-01-2092	STARTER	35.26201-706	10
03-01-2093	RELAY	35.98814-700	25

03-01-2094	ARMATURE	SB0064	20
03-01-2095	AIR COMPRESSOR	35.54101-7059	3
03-01-2096	CYLINDER HEAD SUB	35.54114-6006	10
03-01-2097	RING KIT	35.02503-8569	30
03-01-2098	FLY WHEEL	35.01401-6002	5
03-01-2099	SEAL	35.01510-0026	50
03-01-2100	OIL FILTER	35.05510-5012	200
03-01-2101	FUEL FILTER-FIRST	DPN-5024	100
03-01-2102	FUEL FILTER-SECOND	35.12503-5004	100
03-01-2103	CARTRIDGE	35.12503-5011	200
03-01-2104	PEDAL A.ACCEL	3221100100	10
03-01-2105	CABLE A-ENGINE CONTROL	3221600117	10
		3221600263	
03-01-2106	MOTOR A-ENGINE STOP	3792000110	5
		3792000112	
03-01-2107	ELEMENT A-ONTER	3243500126	50
		3243500127	
03-01-2108	INTER COOLER A	3263000040	10
03-01-2109	CLUTCH BOOSTER	3317101050	20
		3317101051	
03-01-2110	REPAIR KIT -CLUTCH BOOSTER	6317101050	50
		309200010	
03-01-2111	CLUTCH MASTER	3316101012	20
03-01-2112	REPAIR KIT -CLUTCH MASTER	6316101012	50
		3092000020	
03-01-2113	SHOCK-ABSORBER A	3424000080	10

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2114	STEERING COLUMN	3431300185	10
		3431300186	
03-01-2115	POWER STEERING GEAR A	3433100080	10
		3433100081	
03-01-2116	REPAIR KIT -POWER STEERING	6433100080	20
		3093000090	
03-01-2117	SHOE & LINING A(FRONT)	343100080	100
		3453100081	
03-01-2118	WHEEL CYLINDER (FRONT)	3453100480	25
03-01-2119	SHOE&LINING A(REAR)	3453200100	100
		3453200102	
03-01-2120	WHEEL CYLINDER(REAR)	3453200590	50
03-01-2121	PRESSURE CONTROL VALVE	3453401110	30
03-01-2122	ASR DIFF CONTROL VALVE	3453401120	30
03-01-2123	DOUBLE CHECK VALVE	3473401900	30
03-01-2124	RELAY VALVE	3454400021	30
03-01-2125	AIR MASTER	3453300601	10
		3453300591	
03-01-2126	REPAIR KIT -AIR MASTER	6453300610	25
		309300060	
03-01-2127	LEVER A-PARKING BRAKE	3453910193	5
03-01-2128	GOVERNOR	3473702172	10
03-01-2129	MAGNETIC VALVE	3879100011	30

4..SPARE PARTS FOR BUS FAW, MODEL :CA498 , 24 -PASSENGER

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2130	FRONT SUPPORT CUSHION	1001025-X2	20
03-01-2131	ENGINE BRACKET	1001042-X2	20
03-01-2132	CYLINDER BLOCK	1002011-X2	5
03-01-2133	CYLINDER LINER	1002026-X2	24
03-01-2134	SPACER GASKET	1002082-X2	20
03-01-2135	GEAR CHAMBER SPACER	1002081-X2	10
03-01-2136	GEAR CHAMBER COVER	1002061-X2	10

03-01-2137	CYLINDER -HEAD COVER	1003041-X2	10
03-01-2138	SEALING GASKET -HEAD COVER	1003046-X2	30
03-01-2139	CYLINDER HEAD	1003021-X2	5
03-01-2140	CYLINDER GASKET ASSEMBLY	1003030-X2	60
03-01-2141	OIL FILLING CAP	1003048-X2	25
03-01-2142	TOP COMPRESSION RING	1004026-X2	50
03-01-2143	INTERMEDIATE COMP. RING	1004027-X2	50
03-01-2144	COMBINATION OIL RING	1004035-X2	50
03-01-2145	PISTON	1004016-X2	50
03-01-2146	CONNECTING ROD	1004046-X2	30
03-01-2147	CONNECTING ROD BOLT	1004062-X2	25
03-01-2148	UPPER CONNECTING ROD BEARING	1004058-X2	50
03-01-2149	LOWER CONNECTING ROD BEARING	1004059-X2	50
03-01-2150	CONNECTING ROD CAP	1004056-X2	50
03-01-2151	CONNECTING ROD NUT	1004067-X2	50
03-01-2152	CONN. SMALL END BUSHING	1004069-X2	50
03-01-2153	PISTON PIN	1004021-X2	50
03-01-2154	PULLEY- CRANK SHAFT	1005040-X2	10
03-01-2155	FRONT OIL SEAL -CRANK SHAFT	1005090-X2	30
03-01-2156	TIMING GEAR -CRANK SHAFT	1005031-X2	10
03-01-2157	UPPER MAIN BEARING	1005081-X2	50
03-01-2158	LOWER MAIN BEARING	1005082-X2	50
03-01-2159	UPPER THRUST PLATE	1005068-X2	30
03-01-2160	LOWER THRUST PLATE	1005087-X2	30
03-01-2161	CRANK SHAFT	1005021-X2	3
03-01-2162	1ST MAIN BEARING CAP	1005071-X2	10
03-01-2163	2ND MAIN BEARING CAP	1005072-X2	10
03-01-2164	3RD MAIN BEARING CAP	1005073-X2	10
03-01-2165	4TH MAIN BEARING CAP	1005074-X2	10
03-01-2166	5TH MAIN BEARING CAP	1005076-X2	10
03-01-2167	ROCKER SHAFT FRONT AND REAR	1007091-X2	20
03-01-2168	VALVE SPRING	1007021-X2	30
03-01-2169	OIL SEAL	1007035-X2	30
03-01-2170	INTAKE&EXHAUST VALVE	1007032-X2	30
03-01-2171	INTAKE VALVE SEAT	1007081-X2	30
03-01-2172	INTAKE VALVE	1007011-X2	30
03-01-2173	EXHAUST VALVE SEAT	1007082-X2	30
03-01-2174	EXHAUST VALVE	1007012-X2	30
03-01-2175	INTAKE MANIFOLD	1008011-X2	2
03-01-2176	EXHAUST MANIFOLD	1008021-X2	10
03-01-2177	OIL PAN	1009011-X2	6
03-01-2178	OIL DRAINING PLUG	1009018AB1	20
03-01-2179	OIL DIPSTICK	1009033-X2	10
03-01-2180	FLITTER ASSEMBLY	1010020-X2	200
03-01-2181	BASE ASSEMBLY-OIL FILTER	1012060-X2	25

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2182	R ROTARY-CUP OIL FILTER	1012010-X2	100
03-01-2183	OIL COOLER	1013020-X2	25
03-01-2184	FUEL INJECTION PUMP	1111010-X2	3
03-01-2185	TRANSMITTING GEAR	1111216-X2	10
03-01-2186	INJECTOR	1112010-X2	100
03-01-2187	FUEL INJECTION LINE	1129025-X2	20
03-01-2188	FUEL INJECTION LINE	1129020-X2	20
03-01-2189	FUEL INJECTION LINE	1129015-X2	20
03-01-2190	FUEL INJECTION LINE	1129010-X2	20
03-01-2191	WATER PUMP	1307010-X2	20
03-01-2192	FAN	1308010-X2	20
03-01-2193	FAN CLUTCH	1313010-X2	20
03-01-2194	ALTERNATOR	3701010-X2	15
03-01-2195	STARTER	3708010-X2	15

03-01-2196 VACUUM PUMP 3551010-X2 10

5.. SPARE PARTS FOR TRACTOR BELARUS -800 ORIGIN : BELARUS ,
 PRODUCT YEAR : 1998 , ENGINE TYPE : D-243

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2197	FLITTER	240-1002440	50
03-01-2198	GEARING ASSY.	240-1006240-A	25
03-01-2199	SET OF PISTON RING	240-100460-A	100
03-01-2200	SET OF SELLS SI. STD	240-01.74.240	100
03-01-2201	SET OF SELLS SI. 10		200
03-01-2202	SET OF SELLS SI. 20		100
03-01-2203	SET OF SELLS SI. 30		100
03-01-2204	CONNECTING ROD	240-1004100-A	20
03-01-2205	PISTON STD	40-1004021-A	100
03-01-2206	PISTON SI.10		200
03-01-2207	PISTON SI 30		100
03-01-2208	PIN	240-1004042-A	200
03-01-2209	SET OF SHELL STD	240-1005100-B:	100
03-01-2210	SET OF SHELL 10		200
03-01-2211	SET OF SHELL 20		200
03-01-2212	SET OF SHELL 30		200
03-01-2213	FLY WHEEL	240-1005114	10
03-01-2214	CRANK SHAFT	240-1005015-E	10
03-01-2215	PULLEY	240-1005131-B-	20
03-01-2216	HALF RING	240-01.10-40'	30
03-01-2217	HALF RING	240-01.10403	30
03-01-2218	CYLINDER BLOCK	240-1002001-B2	10
03-01-2219	LINER	240-1002021-A:	200
03-01-2220	OIL-DIPSTICK	240-1002320-L	20
03-01-2221	OIL DEFLECTOR	50-1002066	10
03-01-2222	GASKET	240-1003020-A2-	200
03-01-2223	GEAR	240-1006214-A	20
03-01-2224	CAM SHAFT	240-1006015-A	10
03-01-2225	FLANGE	240-1006327	10
03-01-2226	HYDRAULIC PUMP	240-1022030	30
03-01-2227	PULLEY	50-1103010-E	25
03-01-2228	FILTER	70-1101080	25

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2229	FUEL PUMP	TNM-1111005	25
03-01-2230	PIPE	240-1104320-A1	50
03-01-2231	FUEL INJECTOR	240-1112010-0'	200
03-01-2232	FILTER -SETTLER	240-30.000-0'	50
03-01-2233	FUEL -FILTER	240-1117010-A	100
03-01-2234	BY PASS -VALVE	16-S13-1B	100
03-01-2235	BOLT	240-01-003-0'	50
03-01-2236	RACK	JTN-5-111135	10
03-01-2237	VALVE	JTN-5-111122	150
03-01-2238	PUMP-COMPONENT	TNM-1111410	100
03-01-2239	PLUNGER	JTNM-111142	200
03-01-2240	FUEL BOOSTER PUMP	N-3-1106010-	50
03-01-2241	FILTER	240-30.000-01-'	50
03-01-2242	AIR FILTER	240-1109015-A-06	50
03-01-2243	FILTER- ELEMENT	65-01-100-02	25
03-01-2244	PIPE	240-1101345-B	50
03-01-2245	PIPE	35-1101002-0:	50
03-01-2246	SHAFT	50-1702063	50
03-01-2247	1ST SPEED -REVERES GEAR	50-1701212-A	20
03-01-2248	DIFFERENTIAL	52-2303010-A	20
03-01-2249	WATER PUMP	0-1307010-A-	50

03-01-2250	BODY	245-1307020	25
03-01-2251	SEAL	240-1307030	100
03-01-2252	IMPELLER	140-1307074-F	100
03-01-2253	FAN	40-1308040-C	50
03-01-2254	OIL PUMP	40-1403010-C	50
03-01-2255	CLUTCH DISK	70-1601130	100
03-01-2256	PRESSER DISK	70-1601093	50
03-01-2257	SPRING	50-1601083-E	200
03-01-2258	BEARING PLACE OF CLUTCH	50-1601185	80
03-01-2259	RELEASE LEVER	70-1601094	100
03-01-2260	BEARING OF CLUTCH	986714K517	100
03-01-2261	OIL PAN	J-1401015.A2	10
03-01-2262	ROTOR FILTER	40-1404020-A	50
03-01-2263	OIL COOLER	70U-1405010	30
03-01-2264	BEARING OF GEAR	210K5	50
03-01-2265	SEAL		50
03-01-2266	GEAR BOX	70-1700010	20
03-01-2267	CARDEN	50-3401060	25
03-01-2268	STEERING SHAFT	70-3401050-E	20
03-01-2269	STEERING SHAFT	70-3401074-E	20
03-01-2270	FRONT WHEEL HUB	70-310-3010	50
03-01-2271	BRAKE VALVE	29.61.000V-U	25
03-01-2272	STATOR	46.37011	50
03-01-2273	ROTOR	46.37012	50
03-01-2274	FRONT COVER	46.37014	50
03-01-2275	FAN	46.3701003	30
03-01-2276	BRUSH ROCKER ARM	24.3708003-A	50
03-01-2277	COVER	24.3708300-A	20
03-01-2278	COIL	24.3708135	30
03-01-2279	BODY	24.37081	25
03-01-2280	ARMATURE	24.37082	50

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2281	STARTER RELAY	T212-3708.8C	50
03-01-2282	ALTERNATOR	4646.3701	50
03-01-2283	PIPE	40-1104300-C	30
03-01-2284	PIPE	40-1104300-C	30
03-01-2285	PIPE	40-1104300-C	30
03-01-2286	PIPE	40-1104300-C	30

6. SPARE PARTS FOR TRACTOR NASSER, MODEL: NASSER 651,
ORIGIN TYPE: DM34

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2287	CRANK SHAFT	800075	5
03-01-2288	PISTON	811042	80
03-01-2289	SET OF SHELLS STD	811084	50
03-01-2290	SET OF SHELLS 0.25		50
03-01-2291	SET OF SHELLS 0.50		50
03-01-2292	CAM SHAFT	716663	10
03-01-2293	OIL FILTER	812290	100
03-01-2294	FUEL FILTER(1)	711296	100
03-01-2295	FUEL FILTER(2)	810405	100
03-01-2296	HYDRAULIC PUMP	819542	15
03-01-2297	FUEL INJECTION PUMP	811262	5
03-01-2298	WATER PUMP	814747	10
03-01-2299	OIL PUMP	816854	15
03-01-2300	CLUTCH DISK	814327	20
03-01-2301	CLUTCH COVER	814228	10
03-01-2302	SHAFT STEERING	822809	20
03-01-2303	ALTERNATOR	814484	20
03-01-2304	STATOR	815812	25
03-01-2305	ROTOR	815809	25
03-01-2306	SARTOR	813259	15

03-01-2307	STARTER RELAY	815327	25
03-01-2308	ARMATURE OF STARTER	815335	20
03-01-2309	PISTON RING (1)	718193	180
03-01-2310	PISTON RING (2)	812851	180
03-01-2311	PISTON RING (3)	700157	180
03-01-2312	GEAR STARTER	815337	

**1. SPARE PARTS FOR DUMP TRUCK COMATOSE
SERIAL NUMBER (HD500-3) :1001 AND UP**

CODE NO.	DESCRIPTION	PART NO.	QT
03-01-2313	TURBO CHARGER	6502-30-2001	5
03-01-2314	LINER ,CYLINDER	6162-23-2210	24
03-01-2315	SEAL , CLEUIS	6162-23-2250	24
03-01-2316	ORING ,CENTER	6162-23-2220	24
03-01-2317	ORING LOWER	6162-23-2240	24
03-01-2318	GEAR CASE ASSY.	6162-23-3012	1
03-01-2319	FLY WHEEL ASSY.	6162-33-1700	1
03-01-2320	BUSHING CAM	6162-231490	35
03-01-2321	GEAR RING	6645-31-1321	4
03-01-2322	MAIN METAL ASSY.(0-50)	6162-28-8010	84
03-01-2323	THURST METAL ASSY.	6162-28-8050	4
03-01-2324	PISTON	6162-33-2140	24
03-01-2325	PISTON RING ASSY.	6162-33-2060	48
03-01-2326	CONNECTING ROD ASSY.	6162-33-3101	12
03-01-2327	METAL ASSY.	6162-38-3040	48
03-01-2328	BUSHING	6162-33-3131	72
03-01-2329	OIL PUMP ASSY.	6162-53-1012	20
03-01-2330	FILTER -CARTRIDGE	600-211-1230	100
03-01-2331	INJECTION -PUMP ASSY.	6162-73-2120	5
03-01-2332	REAR BRAKE ASSY.	569-33-41001	4
03-01-2333	AIR COVERENOR ASSY.	500-44-14110	5
03-01-2334	RELAY VALVE	567-35-11201	10
03-01-2335	DUAL BRAKE VALVE ASSY.	566-35-44110	10
03-01-2336	HAND BRAKE VALVE ASSY.	566-35-11134	10
03-01-2337	PARKING BRAK VALVE ASSY.	566-35-11150	10
03-01-2338	RELAY VALVE ASSY.	565-44-11200	10
03-01-2339	SLACK ADJUSTER	569-35-41103	5
03-01-2340	CHECK VALVE	281-34-11511	10
03-01-2341	STEERING VALVE ASSY.	569-40-42500	5
03-01-2342	STEERING CYLINDER ASSY.	569-63-41202	8
03-01-2343	PUMP ASSY.	705-52-32001	10
03-01-2344	PUMP ASSY.	705-12-40010	5
03-01-2345	ELEMENT	195-60-16320	100
03-01-2346	HOIST VALVE ASSY.	700-91-15001	10
03-01-2347	MAIN RELIEF VALVE ASSY.	700-91-53000	10
03-01-2348	VALVE ASSY.	702-21-21500	10
03-01-2349	VALVE ASSY.	702-21-22000	10
03-01-2350	CHECK VALVE ASSY.	702-13-43900	10
03-01-2351	CARTRIDGE	600-311-8291	200
03-01-2352	NOZZLE	6162-13-3820	60
03-01-2353	WATER PUMP ASSY.	6162-63-1012	10
03-01-2354	FAN	600-645-1120	5
03-01-2355	CARTRIDGE	600-411-1040	100
03-01-2356	ALTERNATOR ASSY.	600-821-9308	10
03-01-2357	SARTING MOTOR ASSY.	600-813-3610	20
03-01-2358	AIR -COMPRESSOR ASSY.	6162-83-6100	10
03-01-2359	CYLINDER HEAD GASKET KIT	6162-K1-140C	20
03-01-2360	CYLINDER BLOCK GASKET KIT	6162-K2-190C	20
03-01-2361	WATER PUMP GASKET KIT	6162-K6-190C	20
03-01-2362	AIR -COMPRESSOR GASKET KIT	6162-K8-120C	20
03-01-2363	OUTPUT SHAFT ASSY.	569-01-52000	20
03-01-2364	FLANGE	568-01-12162	20

CODE NO.	DESCRIPTION	PART NO.	QT
----------	-------------	----------	----

03-01-2364	BODY OUTER	568-01-12144	5
03-01-2365	COVER OUTPUT SHAFT	569-01-12115	10
03-01-2366	ELEMENT INNER	561-02-12320	100
03-01-2367	ELEMENT OUTER	561-02-12330	100
03-01-2368	PANEL	566-06-41211	2
03-01-2369	FRONT PROPELLER ASSY.	568-20-11003	5
03-01-2370	TORQUE CONVERTER ASSY.	711-35-00051	5
03-01-2371	PUMP	711-35-11120	5
03-01-2372	P.T.O ASSY.	711-35-00200	5
03-01-2373	VALVE ASSY.	711-35-00300	10
03-01-2374	TRANSMISSION ASSY.	569-15-00300	2
03-01-2375	CONTROL VALVE ASSY.	569-15-00800	10

4-37:TIRES

NO.	DESCRIPTION	NO.OF PAGE	QTY.
03-01-2376	(PRODUCTION 2001)		
03-01-2377	TIRE SIZE : 1200/20	18	1000
03-01-2378	TIRE SIZE:750/16	12	300
03-01-2379	TIRE SIZE: 900/20	14	200
03-01-2380	TIRE SIZE: 650/14	8	1000
03-01-2381	TIRE SIZE: 1100/20	16	500
03-01-2382	TIRE SIZE: 1200/24	18	300
03-01-2383	1000/20	16	100
03-01-2384	20.5/25	16	100
03-01-2385	R15 265/ 70		250

4-38: BATTRIES

CODE NO.	DESCRIPTION	QTY
	(PRODUCT YEAR 2001)	
03-01-2386	60 A , 12 V	500
03-01-2387	90 A , 12 V	300
03-01-2388	135A , 12 V	1000
03-01-2389	150A , 12V	200
03-01-2390	180A , 12V	250

4-39: FUEL TANKERS

CODE NO.	DESCRIPTION	QTY
	CHASSIS : 4X6	
	ENGINE:	
	DIESEL , DIRECT INJECTION , 6 CYLINDER IN LINE, WATER COOLED FOUR STROKE.	
	POWER: NOT LESS THAN 300 HP	
	PAY LOAD : 19 TON	
	CLUTCH: DRY SINGLE PLATE 420 MM	
03-01-2391	GEAR BOX : MANUAL 9+1	25
	10 TIRES SIZE 1200x20 AND ONE SPARE TIRE, WITH PLACE FOR FIX TANK CAPACITY : 15000-16000 LIT. 5MM THICKNESS STEEL PROVIDED WITH:	
	1- FUEL PUMP , NOT LESS THAN 60 M3 /H HEAD 10 M FLEXIBLE HOSE 4 PIECES , LENGTH 5M (FOR EACH), DIA. 75 MM FLEXIBLE HOSE DIA. 25MM , LENGTH 10M WITH GUN AND COUNTER FIRE EXTINGUISHER	

4-40: MOBIL WORK SHOP

CODE NO.	DESCRIPTION	QTY
	CHASSIS :	
	ENGINE :	
	PETROL , 4 CYLINDER IN LINE , WATER COOLED , TROPICAL, CARBURETOR	
	POWER: NOT LESS THAN 100 HP	
	VOLTAGE : 12 VOLT	
	CLUTCH : DRY SINGLE PLATE	
03-01-2392	STEERING : POWER (LEFT HAND)	20
	FOUR TIRES SIZE 650x14 AND ONE SPARE TIRE GEAR BOX : MANUAL 5+1	

ONE REAR DOOR , ONE SLIDING DOOR , TWO DOORS
 SEATS : TWO SEAT IN FRONT , FOUR SEAT IN REAR
 PROVIDED WITH : COMPLETE TOOL BOX FOR DIFFERENT REPAIRING

4-41: MULTI PURPOSE IMPACT CRUSHER WITH COMPLETE WASHING PLATS		
CODE NO.	DESCRIPTION	QTY
03-01-2393	1- PRODUCTION 140 LIT./ H 2- SIZE OF FEED MATERIAL 0--400 MM 3- FINAL PRODUCT (0-4 , 4-8, 8-15,15-30) MM 4- THE SYSTEM PROVIDE TWO CRUSHER(PRIMARY & SECONDARY CRUSHERS) WITHVIBRATING SCREEN WITH WATER SPRAY	4

4-42: VIBRATING SCREENS WITH SPRAY WASHING SYSTEMS		
CODE NO.	DESCRIPTION	QTY
03-01-2394	PRODUCTION = 150 m3/hour TYPE OF PRODUCTION:- 1. GRAVEL SIZE (5-10) mm 2. GRAVEL SIZE (10-19)mm 3. GRAVEL MORE SIZE(20 mm) 4.SAND (0-5)mm	2

4-43: SPARE PARTS FOR HAMMER MILL OF IMPACT CRUSHER ,TYPE COMEC SERIES SUG , MODEL 1100 , SERIAL NO. C3048 M12200		
CODE NO.	DESCRIPTION	QTY.
03-01-2395	HAMMER MODEL 423 L	500
03-01-2396	ARMOUR PLATES MOD. 214A MN	200
03-01-2397	ARMOUR PLATES MOD. 437 MN	200
03-01-2398	ARMOUR PLATES MOD.436 MN	200
03-01-2399	ROTER UNIT	6
03-01-2400	HAMMER MOD. 391 MN	500
03-01-2401	HAMMER MOD. 391L	500
03-01-2402	BODY OF THE ROTOR	50
03-01-2403	SHAFT	50
03-01-2404	PLATE FOR THE LOCKING OF THE HAMMER	100
03-01-2405	ARMOUR MOD. 334L	200
03-01-2406	WEAR PROOF PLATE MOD. 383/L	100
03-01-2407	TRIANGULAR PLATE MOD. 400/L RIGHT SIDE	100
03-01-2408	TRIANGULAR PLATE MOD. 401/L LEFT SIDE	100
03-01-2409	WEAR PROOF PLATE MOD. 219	100
03-01-2410	WEAR PROOF PLATE MOD. 387/L	100
03-01-2411	TRIANGULAR PLATE MOD. 409 RIGHT SIDE	100
03-01-2412	TRIANGULAR PLATE MOD.410 LEFT SIDE	100
03-01-2413	WEAR PROOF PLATE MOD. 349	100
03-01-2414	WEAR PROOF PLATE MOD. 344	100
03-01-2415	WEAR PROOF PLATE MOD. 343	100

4-44: SURVEYING REQUIREMENT		
CODE NO	DESCRIPTION	QTY
03-01-2416	Pentium III 500 MHZ ,20 GB hard disk,128 MB RAM,21" monitor SVGA (SAMSUNG),50X CD-ROM DRIVE,160 W speakers,keyboard,mouse	1
03-01-2417	A0 color scanner	1
03-01-2418	A0 color plotter	1
03-01-2419	Diskettes 3.5" (box of 10 each)	5 BOXES
03-01-2420	survey works soft ware including calculating cross - section (cut & fill)	1
03-01-2421	calculating of contour lines, traverse, triangulation and drawing topographic maps	2
03-01-2422	Topaz ups , pcr -1230, 12 volt 30 A.H Latest advanced theodolites for measuring distance (laser with out reflector) for distance between 250 - 500 m	10

03-01-2423	Latest advanced distomat	10
03-01-2424	Latest advanced instrument for maximize and minimize maps	1
4-45:GEOGRAFIC INFORMATION SYSTEM REQUIREMENT		
CODE NO	DESCRIPTION	QTY
	complete GIS soft ware set (lateast release) for municipality application , map digitizing ,design and creation of city map data base, urban planning & development including : Map capture e.g (Auto CAD Map or Map info)	
03-01-2425	Map capture e.g (Auto CAD Map or Map info) Data capture e.g (Map info, Arc info) Desk top GIS e.g (Arc view) GIS for utilities e.g (Arc FM) Raster / Hybrid editing & raster to vector conversion software	1 SET
TRAINING REQUIREMENT		
	Technical & practical training for 5 staff member in an operational gis project Professional GIS expert to create & develop aworkable GIS system with the above trained staff	
HARD WARE REQUIREMENT		
03-01-2426	A0 color plotter	1
03-01-2427	Laser colored printer	1
03-01-2428	Tape drive 40 GB	1
03-01-2429	Tape cartridge 40 GB	5
4-46: PLANNING DESING REQUIREMENT		
03-01-2430	Pentium III 500 MHZ ,20 GB hard disk,128 MB RAM,15" monitor SVGA (SAMSUNG),50X CD-ROM DRIVE,160 W speakers,keyboard,mouse	4
03-01-2431	A0 scanner	1
03-01-2432	A4 color scanner	1
03-01-2433	Drawing Board	4
03-01-2434	field vehicle	3
03-01-2435	Laser printer	1
03-01-2436	Pentium III 600 MHZ ,20 GB hard disk,128 MB RAM,15" monitor SVGA (SAMSUNG),64X CD-ROM DRIVE,160 W speakers,keyboard,mouse	5
03-01-2437	A4 color scanner	2
03-01-2438	A0 color plotter	4
03-01-2439	A0 color scanner	2
03-01-2440	Laser printer	3
03-01-2441	Digitizer	1
03-01-2442	Vertical cabenets for maps saving Vertical sticeres	10
03-01-2443	An artchilectural software Geometry transportation and roads design eng. Including (HCS) software . Refrencies about geometry transpotation and roads design engineering .	1
03-01-2444	Board	10
03-01-2445	Maps printing machien	2
03-01-2446	Laser colored printer	3
03-01-2447	complete cogo or autocogo soft ware set (latest release) working under windc	1set
4-47 : GENERATORS		
CODE NO.	DESCRIPTION	QTY
.	1. LOW TENSION : 400-230 V , 50 HZ AC-THREE PHASE SUCHRONOUS GENERATOR , BRUSH LESS, SELF EXCITED , SELF REGULATED INSULATION, CLASS H TROPICALIZED	

DATA TABLE FOR THE STAND BY (KVA), PRIME(KVA) AND CONTINUOUS
TROPICAL RADIATOR
WHETHER PROOF CANOPY
ELECTRONIC BATTERY CHARGE

MANUAL CHANGE OVER SWITCH WITH SUITABLE CABLE 20 M LONG
GEN- SET 100KVA IS MOBILE
CHARGING ALTERNATOR
SPARE PARTS FOR TWO OPERATING YEARS
PROTECTION FOR TEMPERATURE , PRESSURE, OVER SPEED AND
OVER VOLTAGE

THE WAY OF STARTING : ELECTRICAL MOTOR (12V-24V) AS DESIGN
FUEL TANK CAPACITY : NOT LESS THAN 12H
ALL ACCESSORIES FOR CONNECTION WITH THE LOAD
SPARE PARTS FOR TWO OPERATING YEARS

2. HIGH TENSION :
3.3 KV.

AC-THREE PHASE SYNCHRONOUS GENERATOR , BRUSH LESS, SELF
EXCITED , SELF REGULATED , insulation class h tropicalized

DATA TABLE FOR STAND BY (KVA) , PRIME (KVA) AND CONTINUOUS
KVA

TROPICAL RADIATOR
WHETHER PROOF CANOPY
ELECTRONIC BATTERY CHARGE

MANUAL CHANGE OVER SWITCH WITH SUITABLE CABLE 20 M LONG
COMPLETE PROTECTION FROM: TEMP, PRESSURE, OVER SPEED,
EARTH LEAKAGE

FUEL TANK CAPACITY : NOT LESS THAN 12H
ALL ACCESSORIES FOR CONNECTION WITH THE LOAD
SPARE PARTS FOR TWO OPERATING YEARS
CONTINUOUS KVA :

03-01-2448		250	20	
03-01-2449		630	5	
03-01-2450		75	8	
03-01-2451		175	29	
03-01-2452	750 H.T		2	
03-01-2453	800 L.T		6	
03-01-2454		400	25	
03-01-2455	1000 H.T		1	
03-01-2456	1000 L.T		8	
03-01-2457	1500 H.T		1	
03-01-2458	2MVA		1	
03-01-2459	mechanical and electrical equipment for Al- Attarulah project		1	LUMPSUM