



**Annex B: Bill of Quantities (BOQ)**  
**REQUEST FOR PROPOSAL: UNHCR RFP 544**  
**Rehabilitation and Expansion works of Aras and Ronahi Schools in Zakho District, Duhok Governorate, Iraq**

1 All the work items should be done according to IRAQI General Technical Specifications (IGTS) that complies with ACI-Code 2005 applied according to the instructions of the supervisor Engineer.

2 All materials must be NEW, approved by supervisor Engineer.

3 All construction materials should be tested according to Construction Works Specification by NCCL (1981 edition), and (ASTM) specifications for water supply pipes. Supplier to cover the cost of lab tests.

4 The contractor Shall provide samples for all materials to be used in the project prior to using them in order to get approval from supervisor Engineer.

5 It is the duty of the contractor to check the designs for accuracy and adequacy, otherwise the Employer take no risk of the contractors failure to accomplish the work.

6 The contractor shall provide all required manpower, transportation, equipment, tools, machinery ...etc. unless otherwise stated below.

7 In case of any difference between BOQ, designs and/or drawings; the instruction of supervisor Engineer will govern.

8 After all works finished the site must be cleaned from all debris and neglected materials must be removed to any where defined by municipality.

9 PREFABRICATED UNITS FOR THE ENGINEER : Constructing or providing caravans (with all necessary items) for Site Engineers' Office, furniture and office equipment, including consumable materials, stationary, internet, maintenance of office and all requirements according to the request of Engineer including the landscape, park areas and etc. Supplying electricity, heating features and water as well as well air-conditioning till the end of Project are also included in the Unit Price.

**PART A: Rehabilitation and Expansion works of Aras Primary School in Zakho District, Duhok Governorate, Iraq**

No.	Item Description	Unit	Qty.
1	<b>Cleaning and removing:</b> Cleaning the roof of the main building from dirt and remove all the debris to a location designated by local municipality, the work include clean and open drainage pipes. All the work to be done according to instructions of supervisor Engineer.	L.S	1
2	<b>Concrete Work:</b> All concrete works includes provision of materials (sand, gravel, cement, steel of grad 60, plastic cover ,plastic sheet (nylon), water, curing, shuttering (faire face for the roof (slab) and side of footings with steel columns and supports)... etc.), vibrators, manpower and equipment. All work should be done according to I.G.T.S section 600 and instructions of supervisor Engineer.		
3	<b>Building works:</b> All works includes provision of materials (sand, blocks, cement, curing, pointing works, manpower, equipment and other requirement of works. All work should be done according to I.G.T.S section 500 and instructions of supervisor Engineer.		
3.1	<b>Concrete blocks work for the fence:</b> Provide materials and all requirements for building by solid block (15x20x40) cm, 20 cm thickness, required height, above the existing fence, using cement sand mortar 1:3, filling spaces between joint (horizontal and vertically), the work include plastering and well painting for both sides of the wall. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	m <sup>2</sup>	180
4	<b>Metal Works</b>		
4.1	<b>Main Steel Gate maintenance:</b> Providing materials, manpower for fixing the main gate by welding, with painting all steel structure by antrist paint and two layers of oil paint, and install new locks for closing. All works should be conducted according instructions of supervisor Engineers.	no	4.0
4.2	<b>Supply &amp; install (PVC) Windows:</b> Provide and install reinforced PVC windows, the standard cross-section, double glass 4mm and the filters between 4 mm. The price includes supplying and fixing of all required, washers, locks, hinges, handles, anti-fly mesh and opening holes for discharging water, filling the gap in between the windows frame and walls using the silicon sealant, furthermore. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	6.0
4.3	<b>Repairing the existed PVC Windows:</b> Provide materials, manpower and equipment to repair existing PVC windows the work include replacing the broken glasses, applying required re adjustment, washers, locks, hinges, handles, filling the gap in between the windows frame and walls using the approved type of silicon sealant. All the works should be conducted according to instructions of supervising Engineer. note: most of the window have 2 movable wings	no	50.00
4.4	<b>Repairing the existed wooden Doors:</b> Provide materials, manpower and equipment to repair the existing wooden doors of classrooms. The work includes supplying, replacing and installing of all required, washers, locks, hinges, handles, Kylon, latch hole, slide locks (Sakata), switch, and re-painting the door with oil paint and to change the damaged glass of the upper part if required, the work to be done as per the instruction of supervisor Engineers.	no	20.00
4.5	<b>Repairing the existed Iron Doors:</b> Provide materials, manpower and equipment to repair the existing iron doors, The work includes supplying, replacing and installing of all required, washers, locks, hinges, handles, Kylon, latch hole, slide locks (Sakata), switch, and re-painting with oil paint, as per the instruction of supervisor Engineers.	no	9.00
4.6	<b>Repairing the existed PVC Doors:</b> Provide materials, manpower and equipment to repair the existing PVC doors of the toilets, The work includes supplying, replacing and installing of all required, locks, hinges, handles, Kylon, latch hole, re-adjustments as per the instruction of supervisor Engineers.	no	13.00
4.7	<b>Fly mesh:</b> Supply and install new aluminium frame with fiber fly mesh for the movable wings of the PVC windows (0.5*1.1) m using screws for fixing. the work include removing the existing damaged parts, all work to be done according to the instruction of supervisor Engineers.	no	180.00
5	<b>Tilling floor works:</b> Provide materials, labours, equipment, machines and all requirements according to IGTS 600 ,900 and instructions of supervising Engineer.		
5.1	<b>Tilling works:</b> Supply materials, labours and equipment for tilling the roof of the main building and the lab and art building, with mosaic Tiles (40x40) cm and cement sand mortar 1:3, with filling the tile joints with necessary white Cementous materials, with levelling the surface to the drainage pipes, the work include to construct expansion joints each 4 meter length to be filled with proper and approved mastic materials, the work include cleaning the roof from residuals. All the work to be executed according to the drawing and instructions of supervisor Engineer.	m <sup>2</sup>	1,200
5.2	<b>Repairing the facade:</b> Supply materials, tools, manpower to fix the previously installed decorative stone (Hillan) at the front side of the school (the facade) properly with steel pins or screws and adhesive material, with all requirements, the work include replacing the damaged parts (same thickness of the existing stone). all the work should be done according to the instructions of the supervisor Engineer.	m <sup>2</sup>	40
5.3	<b>Marble skirtings:</b> Supply materials, tools, manpower for installing the marble of skirting (10 cm) inside the building, with cement sand mortar (1:3), all the work should be done according to the instructions of supervisor Engineers.	m.l	50
6	<b>Finishing works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS 100,1400,600 ,900 and instructions of supervising Engineer.		
6.1	<b>Repair cracks of wall:</b> Provide materials and all requirements for repairing the wall cracks by demolishing exist plaster 20cm, install mesh, and re-plastering, if required re-painting the crack places by emolshin paint. All the works should be conducted according to instructions of supervisor Engineers.	m.l	45.00
6.2	<b>Painting:</b> Provide materials and all requirements for painting outside of building, by silicon based paint (moisture blocker) include the paint for fence (Betek, Polisan, or equivalent) in three layer or more until final appearance is accepted by the supervisor engineers. All the works should be conducted according to IGTS and instructions of supervising Engineer.	m <sup>2</sup>	4,250.00
6.3	<b>False Ceiling:</b> Supply materials, tools, manpower for covering the ceiling by Gypsum Board (60x60) cmx1.0 cm thickness, the price include fixing of rail (Sikka) with metal rods 38 mm, 120 cm by screws, rod steel fisher, rod 3mm with all requirements, installation of plastic skirting panel for ceiling (10x2) cm under the false ceiling on the circumference of all rooms for the existed and new part, connecting the beams by Skka 120cm,60cm long (32mm height ), the measurement will be engineering square meter only all the work should be done according to the drawing and instructions of supervisor Engineer.	m <sup>2</sup>	50.00
6.4	<b>Replace missing part of gypsum false ceiling:</b> Supply materials, tools, manpower for install gypsum (60x60) false ceiling parts, cmx1.0 cm thickness, same as exist type, all the work should be done according to the drawing and instructions of supervisor Engineer.	no	80.00
6.5	<b>Repair gypsum plastering:</b> Provide materials and all requirements for repair the Gypsum plaster of interior walls, roofs existed, new part and the cracked places. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	5
6.6	<b>Repair expansion joints:</b> Provide materials and all requirements for repair the expansion joints both vertically and horizontally for walls and ceilings using Hypalon tape plus Epoxy paste (Sagging vertical type) with a width of tape 15 cm and 1.5mm thickness. The price includes using an special 18 cm width Aluminium sheet or stainless steel brackets with elastic (intermediate rubber) inserts . Styrofoam, special pasty mastic according to the details and instruction of site engineer.	m.l	15
7	<b>External Works</b>		
7.1	<b>Painting for the play yards:</b> Provide materials and all requirements for painting using coloured roads paint type (Betek, Polisan, or equivalent) width 5 cm for the yard of volleyball, football, and basketball according to standard dimensions in three layers or more until final appearance is accepted. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	LS	1

7.2	<b>Supply and install Volleyball and flag poles and handball goals frame:</b> Supply materials, labours and equipment to install two poles for Volleyball net using galvanized pipe 55 mm diameter, 3 mm thickness with hooks and seat, and a pole from Galvanized pipe 7.5 cm will be movable 6 m for the flag, to be fixed with the ground by excavating (50*50*60) cm for footing and casting with ordinary concrete. two handball goals frame from galvanized pipe 55 mm diameter, 3 mm thickness, 600 mm width with net and hooks. All the works should be conducted according to the instructions of supervising Engineer.	LS	1
8.0	<b>Sanitary Works</b>		
8.1	<b>PPR pipe for liquid soap:</b> Supply materials, provide and installation and connect PPR pipe(size ¼ inch) for liquid soap, special soap tank, and stainless steel wall-mounted push taps, the work include using clamps and screws for installation with all necessary works and according to specifications and instructions of Supervisor Engineers.	m.l	25
8.2	<b>Maintenance of Eastern Latrine base:</b> Provide all the materials, machines, and manpower needed to maintain existing eastern latrine (Ceramic pan Eastern type), the work include demolish and remove the existing toilet base and the ceramic of the floor (1.2*1.4) and reinstall new ceramic for the floor with all necessary fittings (gully trap, chromium water Valve No. 1, pipes fittings, special glue,.....etc.), according to the specifications and instructions of the supervisor Engineer.	no	2
8.3	<b>Water Pipe PPR:</b> Provision of materials and manpower to install <b>water pipes</b> from the roof to the corridor using PPR Composite Water Pipes (size ¾ inch). All materials to be from approved quality & sample, and the supplier should provide certificate of origin and quality of all supplied materials. The work also include fixing valve 20mm, float valve of the tank, and connecting to the existed water tanks with all fitting and necessary work.	m.l	20
8.4	<b>Ductile Iron manholes (300x300)cm cover:</b> Provision of materials and manpower to install ductile iron manhole cover (30x30) cm, for gray & rain water. The work also includes removing the exist covers with all required work. The contractor is required to clean and wash all the existed manholes with water as per the instruction of the supervisor Engineers	LS	1
8.5	<b>Siphon replacement:</b> provide material and manpower to replace and install the plastic flushing system (Siphon) of the eastern toilets base, the work include all required connection with water source. All work should be done according to the instructions of supervisor engineers.	no	11
8.6	<b>Chromium water taps:</b> Provision of materials and manpower to install new chromium taps size 1/2" with all fitting and necessary work.	no	40
8.7	<b>Galvanized Steel pipe 3":</b> Provision of materials, manpower and equipment to install galvanized steel pipe diameter 3" ,heavy weight not less than ( 9 Kg/m.l) for roof drainage including the required fittings, elbow, connecting joints ,The price including removing the old pipes and install the new pipes according to the specification and instruction of supervisor Engineer.	m.l	120
8.8	<b>Floor drain:</b> Provision of materials, manpower and equipment to install stainless steel floor drain size (15x15) cm, The work is according to the specification and instruction of supervisor Engineer.	no	8
8.9	<b>Filter operation:</b> Supply manpower of professional crew to install and test the RO water filter system for the water coolers, the work includes all required connections to water source and drainage. Sample to be provided for approval prior the installation.	no	3
8.10	<b>Galvanized steel Garbage Bins:</b> Supply materials, provide and transportation of Galvanized Garbage bins with rollers 10 cm diameter capacity 300 Liters for outside buildings with all necessary works and according to specifications and instructions of Supervisor Engineer.	no	2
8.11	<b>Plastic Garbage Bins:</b> Supply materials, provide and transportation of plastic Garbage bins with rollers 5 cm diameter capacity 100 Liters for inside buildings with all necessary works and according to specifications and instructions of Supervisor Engineer.	no	6
9	<b>Electrical work: Electrical points including provision and installation of all materials and labour, wires 2x2.5 mm2 for powering and 2x1.5 mm2 for lighting, galvanized boxes, switch 15 amp. All the works shall be according to British Standards, Drawings and Section 1600 of I.G.T.S.</b>		
9.1	<b>Electricity Water Cooler:</b> Provide all the materials, machines, and manpower needed to install Electricity water cooler Galvanized metals, two taps Storage Capacity 80 L, Cooling Capacity 60 L/Hr. The work includes all necessary fitting and connection with main drinking water network & electricity using cable 2x2.5 mm, and drainage pipe. The supplier should provide certificate of origin and quality of all supplied materials according to IGTS and instructions of supervisor Engineers.	no	2
9.2	Supplying, installing, connecting, exchanging and checking spot light panel <b>led type 18 watts</b> (85v-265v) for the Wash facilities, if needed using a cable (2*1.5) mm2 inside a plastic trunk size (25) mm with a switch on/off and the price includes all requirements work according to the instructions and directives of the supervisor engineers.	no	14
9.3	Supplying, installing, testing and connecting <b>LED Light panel (60x60)cm (54w-72)</b> , operate range is (85-265)v both choke and led, the price include changing switches (if needed) and wires using standard copper wires (2 x 1.5) mm (if needed), type and model should be selected according to supervisor engineer instructions	no	285
9.4	Supplying, installing, connecting and checking a <b>4 inch exhaust fan</b> using wire (2 * 1.5) mm² inside 25mm plastic trunk with a switch on/off, and the price includes all work requirements and according to the instructions and directions of the supervisor engineers.	no	5
9.5	Supplying, installing, connecting and checking a <b>6 inch exhaust fan</b> using wire (2 * 1.5) mm² inside 25mm plastic trunk with a switch on/off, and the price includes all work requirements and according to the instructions and directions of the supervising engineer.	no	16
9.6	Supplying, installing, testing exchanging and connecting <b>LED lights outdoor and waterproof</b> min (20w-24w) ,operate range is (85-265)v both choke and led, the price include wires using standard copper wires(2 x 1.5) mm² if needed, type and model should be selected according to supervisor engineer instructions.	no	6
9.7	<b>Ceiling Fan Switch Exchange:</b> Replacing and installing a switch of fan according to the exist fan's specifications, with all its accessories and wiring too, if needed. According to the instructions of supervisor engineer.	no	15
9.8	<b>Ceiling Fan Exchange:</b> Supplying, installing, testing and connecting ceiling fan, the price include regulator switch and wires using standard copper wires (2 x 1.5) mm inside plastic Trunk if required, type and model should be selected according to supervisor engineer's instructions.	no	35
9.9	Supplying, installing, connecting and inspecting <b>switch plug and sockets (13 amps)</b> using a wire (3 * 2.5)mm² inside (25)mm plc. trunk, and the price includes all work requirements and according to the instructions and directions of the supervising engineer.	no	10
9.10	Supplying, installing, connecting and operating the <b>split units (inverter type</b> Wall Mounted Split Unit) (T3 compressor), type (Gree, Samsung, LG or equivalent) capacity of (1.5) tons of heating and cooling , using standard copper wires, (3 x4) mm² inside a PVC pipe or Trunk, the price include the on/off switch capacity (45) ampere with an indication lamp with the installation of the outdoor unit with plastic dampers floor on iron base with anti-rust paint and greasy dye, and with the establishment of pipes for condensation water and drainage to the nearest point of drainage, with a warranty for the conditioner for a period of 6 years and with all that is required to work according to the instruction of the supervising engineer	Unit	3
9.11	Supply materials and manpower for <b>Maintenance of all size AC split unit</b> including (Refrigerant leakage in split AC, adding Refrigerant or AC gas, cu pipe, washing choked filter, clear out the drainage system, PCB of the AC unit, capacitor, thermostat)	Unit	8
9.12	Connect the Wash facilities building with the electrical source by using CU cable 2*10 mm², about the price including extending the cable, demolishing of concrete floor, excavation, backfilling and recasting the floor with new concrete. All the work to be done according to the instruction of the supervisor Engineers.	m.l	28
9.13	<b>Checking and repair the electrical secondary distribution board</b> of the corridor at the meeting hall and replace the damaged item with new one such as circuit breakers, cables. Note: All board components must be ABB, Schneider, Fanar or equivalent type assembled by specialist with proper installation with inspection and commissioning.	LS	1
9.14	Supplying, installing, and connecting new <b>fluorescent led light</b> , (85v-265v) 72 watt, to replace the not working ones. if needed to using a cable (3*1.5) mm² with a switch on/off and the price includes all requirements work according to the instructions and directives of the supervisor engineers.	no	24

PART B: Rehabilitation and Expansion works of Ronahi School in Zakho District, Duhok Governorate, Iraq			
Part B.1 ( Construction of Two new classroom)			
No.	Item Description	Unit	Qty.
1	<b>Demarcation, Clearing and Grubbing up Plots:</b> Providing survey equipment and instrument (Total station is recommended) to demarcate main building as shown in the drawings and to be used throughout the construction duration. The contractor shall demolish, break up and remove all temporary buildings, cabinate, structures and superficial obstructions on the Site to place indicated by Municipality, , repairing the damages caused by works for the existed infrastructures (Electricity poles, wires, sewerage pipe, water pipes, etc...) <b>(according to the requirement of Section R2 of S.O.R.B. and I.G.T.S section 200 )</b> . The works include removing of topsoil with a depth not less than 30 cm for to the 1.2 m depth for all types of soil (clay, rocky, Asphalt, concrete) . The price includes cleaning the site from the debris as per instruction of engineers representative to a location identified by the local municipality, opening the access road to location of construction. Furthermore, for the area contains high moisture percentage, the work includes replacing of the soil by a boulder (oversize aggregates) including construction of the required fill with dimension 50 X50 cm cross section with all the works should be conducted according to instructions of supervisor Engineer.	m <sup>2</sup>	140
1.1	<b>Excavation works:</b> Provision of materials, manpower, and equipment to excavate the foundation of the all building ( as Box shape), according to the measurements described in the drawings for sections and according to SORB R5, the work includes: 1. Excavation in (all types of soil, concrete and rocky soil). 2. Compacting subgrade. 3. Backfilling by boulders (oversize) for the places required to be filled: for the areas with high water content or poor quality if soil, minimum with 50 cm depth. 4. A compacted layer of sub-base type A with 15 cm thickness under the concrete layer. 5. Backfilling the sides with compacted sub-base type B.		

	6. Repairing all accrued damage to existing infrastructures due to implementation. 7. Demarcation, surveying, removing of the debris to the outside of the camp, to an area allocated by the municipality, cleaning the existing box culverts in six locations under the main road. All the work should be done according to drawings, technical specifications, and instruction of the supervisor Engineer.	m <sup>3</sup>	85
2	<b>Backfilling Works:</b> Provide materials, machines and all other requirements to backfilling the main building using sub-base type A, in layers each one 20 cm after compaction according to R6 S.O.R.B with variable width indicated in cross section drawings for sections. The works include spreading the final layer by Chlorine or equivalent materials ,watering (moisturizing) and compaction of and all works should be according to supervisor Engineer instructions.	m <sup>3</sup>	85
3	<b>Concrete Work:</b> All concrete works includes provision of materials of materials (sand, gravel, cement, steel of grad 60, plastic cover ,plastic sheet (nylon), water, curing, shuttering (faire face for the roof (slab) and side of footings with steel columns and supports)... etc.),vibrators, painting adhesive materials between columns, beams and slabs with finishing , manpower and equipment. All work should be done according to I.G.T.S section 600 and instructions of supervisor Engineer.		
3.1	<b>Reinforced Concrete for Foundation:</b> Supply material and cast Reinforced concrete 40 cm thickness, different widths, (210 Kg/cm2), for the foundation of walls and columns bases including reinforcement of steel bars, shuttering works, grading and levelling of the foundation . According to the specifications and instructions of supervisor engineers.	m <sup>3</sup>	16
3.2	<b>Lean concrete:</b> Supply material and manpower to cast a lean concrete 10 cm and a layer of plastic sheet. According to specification and instruction of supervisor Engineers.	m <sup>2</sup>	32
3.2	<b>Reinforced Concrete for Beam:</b> Supply material and cast Reinforced concrete for the Tie beam under DPC, beams, Lintels, and the lover around windows and doors (210 Kg/cm2), including reinforcement, shuttering works, grading, and levelling of the caste concrete. According to specifications, drawings, and instructions of supervisor Engineers.	m <sup>3</sup>	7
3.3	<b>Reinforced Concrete for Columns:</b> Supply material and cast Reinforced concrete for the columns under and above DPC (250 Kg/cm2), including reinforcement steel bars to be bent 40 cm to slab reinforcement, shuttering works, grading and levelling of the caste concrete. According to specifications, drawings and instruction of supervisor Engineers.	m <sup>3</sup>	5
3.4	<b>Reinforced Concrete for slab:</b> Supply material and cast Reinforced concrete for the slabs, stairs, parapet, and decorations parts (210 Kg/cm2), including reinforcement steel bars diameter 12 mm, c/c 17.5 cm, shuttering works, grading and levelling of the caste concrete, furthermore laying a layer of high-density Styrofoam (35kg/m3) under the roof for Isolation for the final floor roofs. According to specifications, drawings and instructions of supervisor Engineers.	m <sup>3</sup>	19
3.5	<b>Ordinary Concrete for walkway:</b> Supply material and cast ordinary concrete 10 cm thickness and reinforce with BRC 150x150x5mm, (210 Kg/cm2) for walkways, paths, floor under tiles, and ramps the final surface should be smooth including layers of compacted crushed stone 10 cm, shuttering works were needed, and expansion joint each 4 m length. According to specifications, drawings, and instructions of supervisor Engineers.	m <sup>2</sup>	160
4	<b>Building works:</b> All works includes provision of materials of materials (sand, blocks, cement, curing, pointing works , manpower , equipment and other requirement of works. All work should be done according to I.G.T.S section 500 and instructions of supervisor Engineer.		
4.1	<b>Concrete blocks work under DPC:</b> Provide materials and all requirements for building by solid block (15x20x40) cm, required height, (40-100) cm thickness, using cement sand mortar 1:3, filling spaces between walls for buildings, The works include Styrofoam 2.5 cm thickness, PVC pipes 4 " and filling behind by oversize for retaining walls every 5 m. All the work should be conducted according to instructions of the supervising Engineer.	m <sup>3</sup>	14
4.2	<b>Concrete blocks work above DPC :</b> Provide materials and all requirements for building walls by Hollow concrete block (20x20x40) cm, height to the roof, 40 cm thickness, using cement sand mortar 1:3, filling spaces between joint (horizontal and vertically) and foam for the reinforced concrete part with walls for Exterior walls and 20 cm thick for interior walls . All the works should be conducted according to IGTS and instructions of supervising Engineer.	m <sup>3</sup>	70
5	<b>Metal works:</b> Provide materials, labours, equipment, machines and all requirements according to IGTS and instructions of supervising Engineer.		
5.1	<b>Aluminium Windows:</b> Provide and install reinforced Aluminium windows, the standard cross-section G-60, double glass 6 mm and the filters between 4 mm . The price includes supplying and fixing of all required, washers, locks, hinges, handles, anti-fly mesh and opening holes for discharging water ,furthermore, installing of protection steel from square bars 12 mm @ 15 cm c/painting one layer of anti- rust paint and two layer of oil paint. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	16
5.2	<b>Windows protection:</b> Supply materials and manpower to install iron protection for windows using square bars (solid) 1x1 cm, the spacing between vertical bars are 20 cm, the work includes painting with anti-rust paint and oil paint. .All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	16
5.3	<b>Iron Doors:</b> Provide and install iron hinged door with different dimension made of square pipe 1.5" X 1.5" with thickness between (1.8 to 2)mm. Covered with 1.25mm (thickness) iron plate from both side. The frame made of 2"x2" 3mm thickness iron angle or double charchobe ((25x5) cmx3 mm). The price includes protecting all iron surface by anti-rust paint, finished with two coat of oil base paint. Moreover, supplying and installing all required parts like handles, locks, three 8cm hinges, slide locks (Sakata),...etc. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	5
5.4	<b>Supply and install Stairs:</b> Supply materials, labours and equipment to install steel stair (50 cm width), from steel pipe 8x8 cm,1.8 mm with 30 cm vertical partition interval from pipe 5x5x1.8 mm materials No. 2 and Two poles from Galvanized pipe 7.5 cm one of them will fix on the roof of building (4 m) and the other will be movable 6 m for the flag . The price includes protecting all iron surface by anti-rust paint, finished with two coat of oil base paint. All the works should be conducted according to instructions of supervising Engineer.	LS	1
6	<b>Tilling floor works:</b> Provide materials, labours, equipment, machines and all requirements according to IGTS 600 ,900 and instructions of supervising Engineer.		
6.1	<b>Tilling works:</b> supply materials, labours and equipment for tilling the floor of the rooms with mosaic Tiles (40x40) cm, and cement sand mortar 1:3, with filing the tile joints with necessary white Cementous materials, the price include, cleaning the tile and smoothing it by mechanical machines (Chely) in site, the measurement will be just in m2 .According to the drawing and instructions of supervisor Engineer.	m <sup>2</sup>	70
6.2	<b>Ceramic skirtings:</b> Supply materials, tools, and manpower for installing the ceramic tile for skirting 12 cm height, with cement sand mortar (1:3), with all requirements, all the work should be done according to the drawing and instructions of the supervisor Engineer.	m.l	50
7	<b>Finishing works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS 100,1400,600 ,900 and instructions of supervising Engineer.		
7.1	<b>Plastering by cement:</b> Provide materials and all requirements for plastering using cement: sand mortar 1:3 for walls, outside slab, by three layers (filling joint and spray layer, plastering layer with layer (kavmal) then final layer which should be smooth) the thickness not less than 2 cm, straight angle using Aluminium rule 3 m, covering the intersection of columns and beams with walls by mech wire . All the work should be conducted according to the instructions of the supervising Engineer.	m <sup>2</sup>	210
7.2	<b>Plastering by Gypsum:</b> Provide materials and all requirements for plastering by Gypsum for interior walls, roofs existed, new part and the cracked places. The price include plastering one layer of cement using cement: sand mortar 1:3 for (kavmal) then final layer which should be smooth) the thickness not more than 3 cm, covering intersection of columns and beams with walls by plastic mech wire . All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	175
7.3	<b>Outside Painting:</b> Provide materials and all requirements for painting the school using emulsion for outside of Building, rooms corridors for existed and fence, anti humidity (moisture blocker) for out side walls in three layers (one layer of prime coat and two layers of colour paint) or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	m <sup>2</sup>	175
7.4	<b>Inside Painting:</b> Provide materials and all requirements for painting using emulsion for inside the Building, rooms corridors for existed in three layers (one layer of prime coat and two layers of colour paint) or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	m <sup>2</sup>	150
7.5	<b>Oil Painting:</b> Provide materials and all requirements for painting using oil paint for 150 cm skirting inside of rooms corridors for existed and new part and (Betek, Polisan or equivalent) in three layer or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of the supervising Engineer.	m <sup>2</sup>	175
7.6	<b>Covering interior of windows:</b> Supply materials, tools, manpower for covering the face of windows by single marble 2 cm according to width of walls 25 using cement mortar 1:3 (cement: sand) and adhesive materials with all requirements, filling the joints with suitable Cementous, smoothing and circling the face of copen materials, all the work should be done according to the drawing and instructions of supervisor Engineer.	m.l	32
7.7	<b>Covering Exterior windows:</b> Supply materials, tools, and manpower for covering the face of windows with single stone copen 5 cm using cement mortar 1:3 (cement: sand) and adhesive materials with all requirements, filling the joints with suitable Cementous materials, the measurement will be the circumference of windows, one time only. All the work should be done according to the drawing and instructions of supervisor Engineer.	m.l	32

7.8	<b>Marble for doors:</b> Supply materials, tools, and manpower for covering the face of doors with <b>single marble copen</b> according to the width of walls 25 cm, 2 cm thickness, using cement mortar 1:3 (cement: sand) and adhesive materials with all requirements, filling the joints with suitable Cementous materials, smoothing and circling the face of copen, all the work should be done according to the drawing, and instructions of supervisor Engineer.	m.l	14
7.9	<b>False Ceiling:</b> Supply materials, tools, and manpower for covering the roof with by Gypsum Board (60x60) cmx1.0 cm thickness for existing and new parts, the price includes fixing rail with rod volt, screws, washers with all requirements, installation of plastic copen (10x2) cm under the false ceiling on the circumference of all rooms for the existed and new part, the measurement will be engineering square meter only all the work should be done according to the drawing and instructions of supervisor Engineer.	m <sup>2</sup>	54
7.1	<b>Galvanized Steel pipe 3":</b> Provision of materials, manpower and equipment to install galvanized steel pipe diameter 3" ,heavy weight not less than ( 9 Kg/m.l) for roof drainage including the required fittings, elbow, connecting joints ,According to the specification and instruction of supervisor Engineer.	m.l	12
7.11	<b>Covering walls by MDF:-</b> Supply materials and covering the class room walls with colourful wood MDF 200 mm length, thickness ( 18 mm ),the price include covering the edge of wood with Aluminium angle. according to the specifications and instruction of the site engineer.	m.l	34
8	<b>External works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS and instructions of supervising engineer.		
8.1	<b>White board:</b> Supply materials, provide and installation of white board size of (2.2*1.2)m and 3 mm thickness for class rooms using screws and washers with all accessories (set of pens and rubbers (2 No)) with all accessories according to the instruction of site engineer.	NO.	2
8.2	<b>Galvanized Steel pipe 3":</b> Provision of materials, manpower and equipment to install galvanized steel pipe diameter 3" ,heavy weight not less than ( 9 Kg/m.l) for roof drainage including the required fittings, elbow, connecting joints ,According to the specification and instruction of supervisor Engineer.	m.l	6
9	<b>Electrical work :</b> Electrical points including provision and installation of all materials and labour, wires 2x2.5 mm <sup>2</sup> for powering and 2x1.5 mm <sup>2</sup> for lighting, galvanized boxes, switch 15 amp. All the works shall be according to British Standards, Drawings and Section 1600 of I.G.T.S.		
9.2	Supplying, extending and connecting a cable made of pure copper of size (4 x 10) mm <sup>2</sup> , with all needed accessories from main Gride to the Main board according to the instruction of the electrical engineer supervising the work with the test and all that is necessary to work.	M.I	300
9.1	Supplying and installing a secondary distribution board of capacity (6) lines with the main circuit breaker three-phase (100)amp and with circuit breakers of 20 amp size of Single Pole MCB with all necessary to work <b>Note:</b> All board components must be ABB, Schneider, Fanar or equivalent type assembled by specialist With professional installation with inspection, commissioning .	Unit	1
9.2	Supplying, extending and connecting a cable made of pure copper of size (4 x 6) mm <sup>2</sup> , with all needed accessories from main board to the 6 line board according to the instruction of the electrical engineer supervising the work with the test and all that is necessary to work.	M.I	100
9.3	Supplying, extending and connecting a cable made of pure copper of size (2 x 6) mm <sup>2</sup> , with all needed accessories from 6 line board to the each class according to the instruction of the electrical engineer supervising the work with the test and all that is necessary to work.	M.I	25
9.4	Supplying, installing, testing and connecting ceiling fan, the price include regulator switch and wires using standard copper wires(2 x 1.5) mm inside plastic Trank ,type and model should be selected according to supervisor engineer instructions	each	2
9.5	Supplying, installing, testing, and connecting LED light panels 60x60 cm, 96W, operating range is (85-240)v both choke and led, the price includes switches and wires using standard copper wires(2 x 1.5) mm inside plastic Trank/ pipe, type, and model should be selected according to supervisor engineer instructions.	each	8
9.6	Supplying, installing, testing and connecting LED lights outdoor and waterproof min (20w-24w) ,operate range is (85-240)v both choke and led ,the price include wires using standard copper wires(2 x 1.5) mm <sup>2</sup> , connecting to 2*4mm <sup>2</sup> cable type and model should be selected according to supervisor engineer instructions	each	8
9.7	Supplying, installing, connecting and checking a 12 inch exhaust fan using wire (2 * 1.5) mm 2 inside 25mm plastic pipe with a switch on/off, and the price includes all work requirements and according to the instructions and directions of the supervisor engineers.	No.	2
9.8	Supplying, establishing and connecting an electrical outlet with a (13) amp switch plug, using standard copper wires (2 x 2.5) mm <sup>2</sup> , according to supervisor engineer instructions, operation and all that is necessary to work.	each	6
9.9	Supplying, installing, connecting and operating the split units (inverter type Wall Mounted Split Unit) (T3 compressor), type (Gree, Samsung, LG or equivalent) capacity of (1.5) tons of heating and cooling , using standard copper wires, (3 x4) mm <sup>2</sup> inside a PVC pipe or Trank, the price include the on/off switch capacity (45) ampere with an indication lamp with the installation of the outdoor unit with plastic dampers floor on iron base with anti-rust paint and greasy dye, and with the establishment of pipes for condensation water and drainage to the nearest point of drainage, with a warranty for the conditioner for a period of 6 years and with all that is required to work according to the instruction of the supervising engineer	Unit	3

Part B.2 (Rehabilitation works)			
1	<b>Building works:</b> All works includes provision of materials of materials (sand, blocks, cement, curing, pointing works , manpower , equipment and other requirement of works. All work should be done according to I.G.T.S section 500 and instructions of supervisor Engineer.		
1.1	<b>Concrete blocks work above DPC for the fence :</b> Provide materials and all requirements for building walls block (20x20x40) cm, height 50 cm, 20 cm thickness, above the existing fence, using cement sand mortar 1:3, filling spaces between joint (horizontal and vertically). All the works should be conducted according to IGTS and instructions of supervising Engineer.	m <sup>3</sup>	10
2	<b>Metal works:</b> Provide materials, labours, equipment, machines and all requirements according to IGTS and instructions of supervising Engineer.		
2.1	<b>Shade works for the interial Yard:</b> Supply materials and labours for constructing truss shade for the interial yard and above the slab. The work includes: A.The columns to be made using iron square pipe 100 * 100 mm, 3 mm thickness. The height of the column is minimum 1.0 m height above the existing roof, and the column will be fixed on the slab with steel base 20x20cm from plate, 4mm thickness. C.The truss will be fixed to columns with steel base 15x15cm from plate, 4mm thickness, main truss from square pipe 5x10cm, (2) mm thickness, bracing bars between trusses and columns as per drawings m c/c, square pipe 4x8cm, (1.8) mm thickness (75-85) cm c/c (Taraheya). D.All steel structure is fixing by welding, covering steel structure by Galvanized corrugated sheet 0.6mm thickness, fixing the sheet with steel structure by using screws. E. Installing the drainage channel from galvanized plate 1.25mm U-shape dimension (30x22x18)cm, for drainage the rains water with good fixing, installing Galvanized pipes 4 inch diameter, min. 1.0m height at the ends and the center of drainage channels, fixing with iron column until the ground and to open channel. The channel should be drained to manholes and then through plastic pipes 4 inches, casted by 8 cm concrete around pipes and manholes to be drains to the roof drainage. F.All metallic materials to be painted with anti-corrosion paint, and two layers of oil paint. G.Measurement of quantities will be the top view/top area of the Shade (not inclined). All works to be executed according to specifications, drawings, and instructions of supervising Engineer.	M <sup>2</sup>	100
2.2	<b>Supply and Install hand rail around the stairs and garden:</b> Supply materias, labours and equipment to install steel hand rail with all requirements (90 cm height), from steel pipe 8*4 cm and 2 mm thickness with 20 cm c/ vertical partition invertal from pipe 5*5 cm and 2 mm thickness. The price includes protecting all iron surface by inti-rust paint, finished with two coat of oil base paint. All the works should be conducted according to instruction of supervisor engineers.	M.L	30
2.3	<b>Covering walls by MDF:-</b> Supply materials and covering the class room walls with colourful wood MDF 200 mm length, thickness ( 18 mm ),the price include covering the edge of wood with Aluminium angle. according to the specifications and instruction of the site engineer.	M.L	90
2.4	<b>Supply &amp; install (PVC) Windows:</b> Provide and install reinforced PVC windows, the standard cross-section, double glass 4mm and the filters between 4 mm . The price includes supplying and fixing of all required, washers, locks, hinges, handles, anti-fly mesh and opening holes for discharging water, filling the gap in between the windows frame and walls using silicon sealant, furthermore. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	16
2.5	<b>Repairing the existed Iron Windows:</b> Provide materials, manpower and equipment to repair the existing iron windows. The work includes supplying and fixing of all required, washers, locks, hinges, handles, filling the gap in between the windows frame and walls using silicon sealant and also paint all iron even protection steel bars with surface by anti rust paint, finished with two coat of oil base paint . The price also include remove the existing glass paste and put a new layer to fix glasses and also replacing the broken glasses. All the works should be conducted according to instructions of supervising Engineer.	m2	80
2.6	<b>Repairing the existed PVC Windows:</b> Provide materials, manpower and equipment to repair existing PVC windows the work include replacing the brocken glasses, applying required, washers, locks, hinges, handles, filling the gap in between the windows frame and walls using silicon sealant. All the works should be conducted according to instructions of supervising Engineer.	m2	12
2.7	<b>Repairing the existed Iron Doors:</b> Provide materials, manpower and equipment the existing doors in different sizes. The work includes supplying and fixing of all required, washers, locks, hinges, handles, Kylon, latch hole, slide locks (Sakata), switch, protecting all iron surface by anti-rust paint, finished with two coat of oil base paint .All the works should be conducted according to instructions of supervising Engineer.	No.	8

2.8	<b>Iron Doors:</b> Provide and install iron hinged door with different dimension made of square pipe 1.5" X 1.5" with thickness between (1.8 to 2)mm. Covered with 1.25mm (thickness) iron plate from both side. The frame made of 2"x2" 3mm thickness iron angle or double charchobe ((25x5) cmx3 mm). The price includes protecting all iron surface by anti-rust paint, finished with two coat of oil base paint. Moreover, supplying and installing all required parts like handles, locks (switch), three 8cm hinges, slide locks (Sakata),...etc. The work includes removing the old wooden doors, fixing the new iron doors and repairing the walls. All the works should be conducted according to instructions of supervising Engineer.	m2	20
2.9	<b>Aluminium Doors for latrine:</b> Provide and install reinforced Aluminium doors, the standard cross-section G-60, glass tinted wooded 6 mm and the filters between 6 mm. The work includes removing the existing doors repairing the door copen. The price includes supplying and fixing of all required, washers, locks, hinges, handles, Kylon, switch, anti-fly mesh and opening holes for discharging water. Also the work includes removing the old wooden doors. All the works should be conducted according to instructions of supervising Engineer.	m <sup>2</sup>	16
3	<b>Tiling floor works:</b> Provide materials, labours, equipment, machines and all requirements according to IGTS 600, 900 and instructions of supervising Engineer.		
3.1	<b>Tiling polish works:</b> supply materials, labours and equipment for polishing the floors of the rooms (mosaic Tiles 40x40 cm), with filling the tile joints (if necessary) with white cementous materials, the work includes cleaning the tile and smoothing it by mechanical machines (Chely) in site , the price includes polishing the stairs and all measurements will be by M2. According to instructions of supervisor Engineer.	m <sup>2</sup>	1,000.00
3.2	<b>Ceramic skirtings:</b> Supply materials, tools, manpower for installing the ceramic tile for skirting 12 cm height, with cement sand mortar (1:3) ,using straight Aluminium rule 3 m with all requirements, all the work should be done according to the drawing and instructions of supervisor Engineer.	m.l	35
4	<b>Finishing works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS 100,1400,600, 900 and instructions of supervising Engineer.		
4.1	<b>Plastering by cement:</b> Provide materials and all requirements for plastering using cement: sand mortar 1:3 for walls, outside slab, fence by three layer (filling joint and spray layer, plastering layer with layer (kavmal) then final layer which should be smooth) the thickness not less than 2 cm, straight angle using Aluminium rule 3 m ,covering intersection of columns and beams with walls by mech wire . All the works should be conducted according to instructions of supervisor Engineers.	m <sup>2</sup>	80
4.2	<b>Repair cracks of wall:</b> Provide materials and all requirements for repairing the wall cracks by demolishing exist plaster 20cm, install mesh, and re-plastering, if required re-painting the crack places by emolshin paint. All the works should be conducted according to instructions of supervisor Engineers.	m.l	50
4.3	<b>Outside Painting:</b> Provide materials and all requirements for painting the school using emulsion for outside of Building, rooms corridors for existed and fence, anti humidity (moisture blocker) for out side walls in three layers (one layer of prime coat and two layers of colour paint) or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	m <sup>2</sup>	4,000
4.4	<b>Inside Painting:</b> Provide materials and all requirements for painting using emulsion for inside the Building, rooms corridors for existed in three layers (one layer of prime coat and two layers of colour paint) or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervisor Engineers.	M <sup>2</sup>	4,000.00
4.5	<b>Oil Painting:</b> Provide materials and all requirements for painting using oil paint 150cm height, for skirting inside of rooms corridors for existed and new part in three layers or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervising Engineer.	m <sup>2</sup>	1,635.00
4.6	<b>False Ceiling:</b> Supply materials, tools, manpower for covering the ceiling by Gypsum Board (60x60) cmx1.0 cm thickness, the price include fixing of rail/ hanging beams (Skka 38 mm height) every 120cm by screw, rod steel fisher, rod 3mm, connecting the beams by Skka every 120cm, 60cm long (32mm height ), by screws, rod steel fisher, rod 3mm with all requirements, installation of plastic skirting panel for ceiling (10x2) cm under the false ceiling on the circumference of all rooms for the existed and new part, the measurement will be engineering square meter only all the work should be done according to the drawing and instructions of supervisor Engineer.	m <sup>2</sup>	50
5	<b>External works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS and instructions of supervising engineer.		
5.1	<b>Painting for the play yards:</b> Provide materials and all requirements for painting using coloured roads/ pavement paint type width 5 cm for the yard of volleyball, basketball and handball according to standard dimensions in three layer or more until final appearance is accepted by the supervising engineer. All the works should be conducted according to IGTS and instructions of supervising Engineer.	LS	1
5.2	<b>Supply and install Counter:</b> Supply materials, labour, and equipment to install Aluminium counter size (60 cm width x85 cm Height ) covered from the top by artificial marble (3 cm thickness,65 cm width ) with skirting one basin two wings with all accessories, connection with water supply (cold &hot) stainless steel mixture with valves, supply and install electricity exhaust fan above the cooker with tube for discharging gazes outside inside the above extension top counter. Supplying and installing Aluminium doors same colour, and a bench inside each one with locks, hinges handles, and more. All the work should be conducted according to the instructions of the supervising Engineer.	m.l	2
5.3	<b>Supply and install Basketball, Volleyball ,handball and flag poles :</b> Supply materials, labours and equipment to install two basketball boards from main pipes 4" ,5 mm No. 2 while the board from steel angle 38x38x5 mm as frame covered by standard boards ,base plate (400x400x50mm) , two for Volleyball from galvanized pipe 55 mm diameter ,3 mm thickness with hooks and seat, two handball goals from galvanized pipe 55 mm diameter ,3 mm thickness,600 mm width, with net and hooks, and Two poles from Galvanized pipe 7.5 cm one of them will fix on the roof of building (4 m) and the other will be movable 6 m for the flag . The price includes casting the concrete for the bases of the facilities (210 Kg/cm2) and protecting all iron surface by anti-rust paint, finished with two coat of oil base paint. All the works should be conducted according to drawings and instructions of supervising Engineer.	LS	1
6	<b>Sanitation works:</b> Provide materials, labours, equipment, machines, curing and all requirements according to IGTS 1500 and instructions of supervising engineer.		
6.1	<b>Connection with main source of water:</b> Provision of materials, manpower and equipment to install water pipes from main source to main water tanks, using PPR, PN20, Composite Water Pipes (size 25mm) with Min. 3 Layers side walls (PPR/GF or AL/PE), PPR-C inner layer and a special mixture of GF PP or Aluminium middle layer and should be coated with an external layer of LDPE (Low Density of Polyethylene Layer) dark grey colour to provide protection against ultraviolet rays, including excavation (30"60) cm, layer of soft sand and back filling including all fitting, valves, hoses. Following the specification and instruction of supervisor engineer. All materials to be from approved quality & sample, and the supplier should provide certificate of origin and quality of all supplied materials.	m.l	50
6.2	<b>PVC Pipe 4":</b> Supply and install PVC pipe 4" for gray water, PVC wall thickness about 3.2mm SN4; including connecting gray water with existing sewerage pipe, excavation works, removing existing, casting around pipe 8 cm concrete, required fittings and 3 plastic manholes (30x30) according to the specifications and instructions of supervisor Engineers	M.L	60
6.3	<b>PVC manholes (400x400)mm:</b> Provision of materials and manpower to install PVC manholes (40x40) cm with heavy plastic cover, for black gray & water from building to main manholes. The work also includes excavation, , covering the manholes by concrete 7 cm thickness (40 cm width), with all fitting and necessary work.	No.	4
6.4	<b>WATER TANK:</b> Provision and installation of (HDPE) water tanks with capacity of 2000 liters, approved sample vertical water tank with top/open cover, the walls with 3 Layers, The tanks also should be Anti -ultra violet (U.V.) resistance The work includes provision of float valve , also the work includes connection form the tank to the source of water using PPR Composite Water Pipes (size 25 mm) with Min. 3 Layers side walls (PPR/GF or AL/PE), PPR-C inner layer and a special mixture of GF PP or Aluminium middle layer and should be coated with an external layer of LDPE (Low Density of Polyethylene Layer) PN25 and also installation of a valve with size 25 mm on the main pipe with 4 pieces of Styrofoam and wood 100x20x1000 mm as abase . All materials to be from approved quality & sample, and the supplier should provide certificate of origin and quality of all supplied materials. The work also includes fixing the tanks using a metallic chain or band, with all necessary work.  <b>Two tanks to be added to the students' bathrooms, and two other tanks to be added to the administration's bathrooms. The price include Suppling and exchanging four Float Valves for galvanized Water Tank (existing ones), As well as organizing all administration's bath and kitchen tanks at one place as one straight line and re-connect with new water network pipes.</b>	No.	4
6.5	<b>Galvanized Steel pipe 3":</b> Provision of materials, manpower and equipment to install galvanized steel pipe diameter 3" ,heavy weight not less than ( 9 Kg/m.l) for roof drainage including the required fittings, elbow, connecting joints ,The price including removing the old pipes and install the new pipes according to the specification and instruction of supervisor Engineer.	M.L	10
6.6	<b>Stainless steel taps:</b> Provide materials and manpower to install stainless steel taps size 1/2" with all fitting and necessary work.	No.	10
6.7	<b>Stainless steel mixture (with connection):</b> Provision of materials, manpower, and equipment to install stainless steel mixer, The work includes fixing stainless steel mixture on the wall with connection to the water tanks using PPR Composite Water Pipes 20 mm with Min. 3 Layers side walls (PPR/GF or AL/PE), The work is according to the specification and instruction of supervisor Engineer.	No.	3

6.8	<b>Water pipe:</b> Provision of materials and manpower to install and exchange galvanize water pipes by new PPR water pipes 3/4" from the water tanks to kitchens, shower and toilet, Lab and also exchanging pipes inside laterin facilitie wall if needed using PPR Composite Water Pipes (20 mm) ) with minimum 3 Layers side walls (PPR/GF or AL/PE), PPR-C inner layer and a special mixture of GF PP or Aluminium middle layer and should be coated with an external layer of LDPE (Low Density of Polyethylene Layer) Dark gray colour to provide protection against ultraviolet rays, PN25 PPR80 UV resistant (approved sample and suitable for drinking purpose/food grade. All materials to be from approved quality and sample, the supplier should provide certificate of origin and quality of all materials supplied). The work also includes installation of existing water tanks with float valve and chromium water tap (3) inside, shower and toilet and fixing two 20mm valves with all fitting and necessary work.	M.L	150
6.9	<b>WESTREN LATRINE WORK:</b> Provision of materials, manpower and equipment to install western latrine base (ceramic type) with flush tank and all requirement Gulley trap 4" and other 4"fitting,, the work includes providing and fixing chromium Valves 12 mm fix on wall. The work must be done according to the specification and instruction of supervising Engineer. The price include removing the old exist laterin with all its accessories.	No.	1
6.1	<b>Eastern Latrine Base and Siphon Exchange:</b> Provide all the materials, machines, and manpower needed to Check, maintain and gully trap re-opening for 'Ceramic Eastern type' by exchanging the flushing system (Siphon) (Turkuaz, Tota or equivalent) with all necessary fittings (gully trap, chromium water Valve No. 1, pipes fittings, special glue, etc.), the price include removing the existing Siphons	No.	10
7	<b>Electrical work : Electrical points including provision and installation of all materials and labour. All the works shall be according to British Standards, Drawings and Section 1600 of I.G.T.S.</b>		
7.1	<b>Ceiling Fan Exchange:</b> Supplying, installing, testing and connecting ceiling fan, the price include regulator switch and wires using standard copper wires(2 x 1.5) mm inside plastic Trank, type and model should be selected according to supervisor engineer's instructions.	each	3
7.3	<b>Exhausting fan:</b> Supplying, installing and connecting an exhaust fan (6 inches) using copper wires of size (2 × 1.5) mm <sup>2</sup> inside a plastic conduit or Trunk , the price also include on/off switches with cutting the window glass if needed, according to instruction of supervisor engineers.	each	15
7.4	<b>Exhausting fan 12 inch:</b> Supplying, installing and connecting an exhaust fan (12 inches) using copper wires of size (2 × 1.5) mm <sup>2</sup> inside a plastic conduit or Trunk , the price also include on/off switches with cutting the window glass if needed, according to instruction of supervisor engineers.	each	4
7.5	<b>Electricity Boiler:</b> Supplying, installing and establishing an electric boiler, capacity of (200) liters and power of (3000) watts, the price include on/off switch with an indication lamp capacity (45) ampere, using standard copper wires. (3 x 4) mm <sup>2</sup> inside plastic pipe or trunk and connected to an separate circuit breaker and a separate line with connection to feeders of hot and cold water with inspection, operation and all that is necessary to work.	No.	1
7.6	<b>Replace AC split Unit:</b> - Dismantling and removing the old split outside the work site. - Supplying, installing, connecting and operating the split units (inverter Wall Mounted Split Unit) (T3 compressor), type (Gree, Samsung, LG or equivalent) capacity of (2) tons of heating and cooling, using standard copper wires (3x4) mm <sup>2</sup> inside a PVC pipe or Trank. The price include the on/off switch capacity (45) ampere with an indication lamp with the installation of the outdoor unit with plastic dampers floor on iron base with anti-rust paint and greasy dye, and with the establishment of pipes for condensation water and drainage to the nearest point of drainage, with a warranty for the conditioner for a period of 6 year and with all that is required to work the instruction of the supervising engineer.	Unit	1
7.7	<b>Split Repair:</b> Repairing the old splits, in terms of filling gas and finding the leakage problem in AC units, and when there is any other defect or need to replace the items, the contractor is obligated to repair them according to the supervision and observations of the supervising engineer.	unit	3
7.8	Supplying, installing, testing and connecting LED Lamp 220V Fluorescent Light (54w-72) Wall Lamp, operate range is (85-240)v both choke and led ,the price include switches and wires using standard copper wires(2 x 1.5) mm inside plastic Trank ,type and model should be selected according to supervisor engineer instructions	each	41
7.9	Supplying, installing, connecting, exchanging and checking spot light panel led type 18 watts (85v-265v), if needed using a cable (2*1.5) mm2 inside a plastic pipe size (25) mm with a switch on/off, and the price includes all requirements Work according to the instructions and directives of the supervisor engineers.	each	3
7.1	Supplying, installing, testing exchanging and connecting LED lights outdoor and waterproof min (20w-24w) ,operate range is (85-240)v both choke and led ,the price include wires using standard copper wires(2 x 1.5) mm2 if needed, connecting to 2*4mm2 cable type and model should be selected according to supervisor engineer instructions.	each	5
7.11	The exist main electrical board or ATS for the school need supplying and exchanging a three phase watt meter the work should be done according to the instructions of supervisor engineers.	Ls	1
7.12	Supplying and installing a secondary distribution board of capacity (6) lines with the main circuit breaker three-phase (200)amp and with circuit breakers of 30 amp size of Single Pole MCB and contains two copper rails or connector, one for neutral and the second for ground with all necessary to work <b>Note:</b> All board components must be ABB, Schneider, Fanar or equivalent type assembled by specialist With proper installation with inspection, commissioning .	Unit	3
7.13	Supplying, extending and connecting a cable made of pure copper of size (4 x 16) mm <sup>2</sup> , with all needed accessories from main source to distribution box according to the instruction of the electrical engineer supervising the work with the test and all that is necessary to work.	M.I	220