

**Lot2, Part B - Construction of Three Classrooms at Shubat Primary School**
**General notes:**

1. All the work items should be done according to IRAQI General Technical Specifications (IGTS) that comply with ACI-Code 1995 applied according to the instructions of the supervisor Engineer.
2. All materials must be NEW, and approved by the supervisor Engineer.
3. All construction materials should be tested according to Construction Works Specification by NCCL (1981 edition), and (ASTM) specifications.
4. The contractor shall provide samples for all materials to be used in the project before using them to get approval from the supervisor Engineer.
5. The contractor must check the designs for accuracy and adequacy. Otherwise, the Employer takes no risk of the contractor's 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 the supervisor Engineer will govern.
8. After all works are finished the site must be cleaned of all debris, and unwanted materials must be removed to anywhere defined by the municipality.

#	Item Description	Unit	Qty.
<b>A</b>	<b>Site Preparation</b>		
A1	<b>SITE PREPARATION AND DEMARCATION:</b> according to Section 200 of I.G.T.S. and instructions of the site engineer. Removal of debris, grading, levelling to the appropriate level (+30cm to -30cm), clearance and layout and demolition of all existing materials such as (concrete, foundations, asphalt, and even rock layers) and transporting resulting materials (Debris) to an appropriate location outside municipalities border and approved by the site engineer, also removing and transport and reinstall and establish water network pipes and electrical networks and poles considering extra materials if needed, the price includes opening access road according to the work requirements. Fixing proper centre lines in two directions and benchmarks according to the specifications, attached drawing, and instructions of the site engineer. The works should be done according to section (200) of I.G.T.S, and any depth of cutting or Removal of Debris required for all the areas must be done according to drawings and instructions of the site engineer. the levelling of the site is according to the assigned design elevation.	L.S.	1.0
A2	<b>Backfilling works:</b> Supplying materials and filling with approved screened sub-base materials type B maximum size is 2" where required within the area inside or outside of the fence such as aprons, walkways, garden, etc. with compaction (according to the specification) in layers 25 cm thickness, the compaction for garage and play yard must be not less than 90% MDD, and using anti termite chemical (chordin) to prevent and treat the white termite according to the instructions of the manufacturer and site engineer with all necessary works for the final two layers.	M <sup>3</sup>	100
<b>B</b>	<b>CONCRETE WORKS:</b> Including supply of materials (steel reinforcement, connection steel wires, <b>Ready mix concrete</b> , plastic cover for fixing the steel reinforcement in the proper level, bolts, nuts, washers, G. I. pipes, etc.), and all necessary works, according to the section (600) of I.G.T.S, drawings and instructions of the site engineer. 1- All support for wooden forms work should be steel (jacks). 2- All steel bar must be according to ASTM A 615 Fy = 420 Mpa for all steel bars. <b>(Tensile test required)</b> 3. Allowable bearing capacity of soil = 120 KN / m2 (assumed). 4. concrete compressive strength at 28 days based on standard 150 mm cubes should not be less than <b>25MPa for slab and 30MPa for foundation (Compressive test required)</b> . 5. The reinforcement details should be according to ACI detailing manual 2004. 6.All formworks must be made of plywood or standard forms (not local way) for all structural parts.		
B1	<b>Lean Concrete under raft foundation:</b> Supply materials and cast plain concrete (C10) 1:3:6 10cm (min. thickness) under the raft foundation to the required elevations. The price includes laying two layers of thick nylon before casting the lean.	M <sup>2</sup>	300
B2	<b>Raft foundation:</b> Provide all materials and cast reinforced concrete (ready mix C30) for a raft foundation with reinforcement 12mm dia steel bar @25cm/c two layers for both directions, ensuring the concrete thickness of 30cm according to the drawings, fair face surfaces using copter machine and vibrator during casting and all the required works should be conducted as per the standard specifications and instructions of supervisor engineer.	M <sup>3</sup>	65

#	Item Description	Unit	Qty.
B3	<b>Slabs:</b> Provide all materials and cast reinforced concrete(ready mix C 25) for the building slab, 20cm thick, with all the required works. The price includes casting the parapet of the slab (marad) (30x20 cm). Note: All the roofs must be treated and smoothed by a copter instrument and using a vibrator during casting.	M <sup>3</sup>	56
B4	<b>Beams:</b> Provide all materials and cast reinforced concrete (ready mix C25) for beams, lintels according to drawings, specifications and instructions of site engineer.	M <sup>3</sup>	9
B5	<b>Polystyrene XPS Styrofoam:</b> Provide materials, fixing and laying Styrofoam 5cm thickness (high density not less than 25kg/m3), under the ceiling according to specification, the drawings and instructions of the site engineer.	M <sup>2</sup>	147
<b>C</b>	<b>Masonry works:</b> Including provision of material, erection, pointing, curing with all necessary work according to section (5) of I.G.T.S., drawings, and instructions of the site engineer.		
C1	<b>Solid Concrete Blocks (15x20x40) cm Works:</b> Supplying materials & construction of the first raw of the walls with solid concrete blocks (15x20x40) cm and cement sand mortar (1:3) under DPC according to specifications and instructions of the site engineer with all necessary work.	M <sup>3</sup>	3
C2	<b>Clay Bricks Works:</b> Supplying materials and construction of walls with load-bearing clay bricks (20 X 20 X 40 cm) (INTERLOCKING TYPE) weight not less than (14 kg.), with cement mortar(1: 3) for above the solid concrete block raw, the price includes filling joints vertically by cement and sand 1:3 and fixing the bricks by G.I. metal holdfast 30cm long 4mm thick at every alternative course fixed to the wall.	M <sup>3</sup>	56

#	Item Description	Unit	Qty.
<b>D</b>	<b>ELECTRICAL INSTALLATIONS:</b> Electrical points including provision and installation of all wiring ( three lines Line, Neutral and earth ). 1.5 mm <sup>2</sup> for illumination and 2.5 mm <sup>2</sup> for the rest), inside-PVC conduits 20-25 mm with thickness 1.8 mm galvanized boxes 0.9 mm thickness cables should be laid inside PVC pipes. All work should be done according to the specifications and instructions of a supervisor engineer. - The contractor is responsible for designing all electrical boards and networks and submitting them to UNHCR TU for approval before starting the works.		
D1	LED Light (60x60cm): Supply materials, install, connect, and test electrical LED lights (60x60cm)(50-80 W) with all annexed parts using (2x1.5)mm <sup>2</sup> wires inside false ceiling (daylight type) with switch on/off all (2-3) lamp controlled by one button.	Unit	24
D2	LED 18Watt (outdoor): Supply, install and test lighting points LED 18Watt (outdoor) IP 65 with all required using (single wires 1.5mm <sup>2</sup> with a suitable cable tray or cable conduit). The price includes installing photocells.	Unit	8
D3	Plug Socket 13 Amp: Supply materials, install and test socket 13amp. (samples required for final approval) using (single wires 2.5mm <sup>2</sup> with a suitable cable tray or cable conduit).	Unit	6
D4	Supply, install and test FDB Circuit breaker, 12 lines (Different circuit breakers), with main 90Amps (Approved type), including connections, interconnections, painting, lettering, loop earth etc. as required. The price includes provision of a protection box.	Unit	1
D5	Supply, install, and test copper cable (4 x 10 mm <sup>2</sup> ) with an insulator to connect the distribution boards with the main board, inside 2" diameter PVC pipes in the ground, or suspended cable inside the cable tray with all required and necessary works (such as hidden manholes) dimensions (40 x 40) cm.	ml	100
D6	Supply, install, and test split points using copper cable 4x6mm <sup>2</sup> inside PVC pipe with electric switch 45 Amp , with using mini 32x3 Amp +10Amp with box, also install 3/4" PVC pipe inside the wall for the water drain.	Unit	3
D7	Supply, install, and test electric Ceiling Fan with the regulator. The price includes installing the electrical points by isolation copper wire 1.5 mm <sup>2</sup> and 10mm steel bar for hanging the fan according to the instructions of the supervisor electrical engineer.	Unit	8
D8	Supply material, install, test and do earthing protection system for electric devices by using three copper rods 1.50m with dia 16mm inside three ground holes 80cm dia and 50cm deep and connecting the road with the mainboard by cable 1 X 16mm <sup>2</sup> and distributed to (FDB) by 1 X 16mm <sup>2</sup> finally by 1 X 2.5mm <sup>2</sup> for sockets, the price includes concreting manhole 40*40cm with covering it and adding 5 Kg (humidity materials).	L.S.	1
D9	Supply, install, and test a split AC unit (24,000 BTU) (inverter technology and Ampere Control); the work also includes installing a 32-amp Amp residual current circuit breaker with overcurrent protection (RCBO) and connecting it with the electrical source using (2X4) mm <sup>2</sup> cable with all accessories. The price also includes fixing PVC 3" pipe with slab casting or coring the wall using a proper machine (if needed) and filling the hole with foam and adequate cover. The price includes fixing and suspending the outdoor unit on the wall or making a proper steel stand.	No.	3
D10	Supply, install, and test evaporative Air Cooler With a large air delivery rate of up to 18,000 m <sup>3</sup> /hr, cool an area of up to 2,500 sq. ft. The cooler features a high-quality honeycomb cooling pad with Case/Shell Material: PP, UV-proof, plastic cabinet, anti-corrosion, and anti-aging. fully automatic control panel that allows you to adjust the speed and cooling settings as per requirements. The Pluto air cooler has a durable and sturdy body, making it a reliable and long-lasting cooling solution.	No.	6
D11	Supply, install, and test Stainless steel Drinking water cooler min 100 litres, four taps Compressor capacity ¼ hp. The price includes the connection with the water source using water pipes of OD 25 mm, PN 16 with all fittings and accessories, excavation (required depth), and backfilling 10cm of clean soil with all necessary works. Also, the electrical connection using wire (3*2.5mm <sup>2</sup> ).	Unit	2
D12	Maintenance of the main distribution board of the school: Provide and install a circuit breaker of 120-amp, re-arranging the wiring, joining and extending the cables (if needed) with all necessary accessories. All the work should be done according to the site requirements and instructions of the supervisor engineer.	L.S	1.0
<b>E</b>	<b>FINISHING: Including provision of all necessary materials, works and curing to do the finishing works. The works should be done according to section 10, &amp; 14 of I.G.T.S, drawings and instructions of site engineer with all necessary works, and use SBR at a rate of 200gr per m<sup>2</sup>.</b>		
E1	<b>Cement plastering:</b> Provide materials, staff, and plastering with cement sand mortar 1:3, three layers (cement splatter dash, kafmal, saf ) 20mm thick min at outside the building. The final layer should be smooth, using aluminium straight edges for plastering guides. Using SBR at a rate of 200gr per m <sup>2</sup> . The price includes fixing steel wire mesh for the edges between walls and columns.	M <sup>2</sup>	335
E2	<b>Gypsum plastering for the block walls inside the rooms:</b> Supplying materials and plastering with gypsum using gypsum approved by the site engineer in 2 layers with a minimum thickness of 25mm, using aluminium straight edges for plastering guides each 80 cm for walls and roofs and the area indicated in the drawings, also fixing steel wire mesh, and then using one layer of cement plastering to cover the wire mesh.	M <sup>2</sup>	360
E3	<b>Skirting:</b> Supply materials and skirting in rooms using porcelain tiles (15 cm height) and tile adhesive materials ( flex type) according to the drawings and instructions of the site engineer.	ml	110
E4	<b>windows frame:</b> Provide materials and cover the windows frame (four sides) and for the staircase with marble 2cm thick, width 30cm, the price includes spin-off the outer edges of the granite and using kalakim paste FLEX type. for fixing.	ml	80

#	Item Description	Unit	Qty.
E5	<b>Acrylic internal paint:</b> Provide materials and staff to paint the interior walls of the building with Acrylic painting (colour approved by the site engineer) three layers after prime coat with all the required works to make the wall fair-face before painting using paste or any works needed as indicated by the site engineer. The work should be done according to IGTS. <b>Note: Products must be ISO 9001 certified for quality management.</b>	M <sup>2</sup>	360
E6	<b>External painting(Silicone):</b> Provide materials and Painting with External painting (colour approved by the site engineer) three layers after prime coat for the areas indicated in the drawings (for exterior walls). The work should be done according to the site engineer's specifications, drawings, and instructions. <b>Note: Products must be ISO 9001 certified for quality management.</b>	M <sup>2</sup>	335
E7	<b>Oil Painting:</b> Provide materials and Painting 120 cm Height using oil paint (colour approved by the site engineer), (Matte light colour), 3 layers 1.2 m high for the classrooms.	M <sup>2</sup>	126
E8	<b>Roof treatment:</b> Supply materials, equipment, and skilled labour for coating the surface with ceiling insulation material (UV resistant) using (Perlite) at a rate of 3 cm. The price includes cleaning and treating the surface well and coating the ceiling using a prime coat before starting the process of applying thermal insulation to the surface and then applying thermal insulation on the entire surface with a height of 25 cm of the wall, and then coating the surface with acrylic material of well-known origin with layers.	M <sup>2</sup>	200
E9	<b>MDF Wooden Panels:</b> to protect the walls with 18mm thickness and 15 cm Hight for classrooms; the price includes fixing the wall by using screw bolts, each 30cm and covering the hole with a proper sticker.	M.L.	72
E10	<b>Gypsum false ceiling:</b> Provide materials and fix gypsum false ceiling 60*60cm. The price includes hanging beams (Skka 38 mm height) every 120cm by screw, rod steel fisher, rod 3mm, connecting the beams by Skka 120cm,60cm long (32mm height), and all necessary works.	M <sup>2</sup>	147

#	Item Description	Unit	Qty.
<b>F</b>	<b>Doors &amp; Windows: Providing all necessary materials and installing doors according to sections 11, 12, 13 of I.G.T.S, details, and instructions of site engineer with all necessary works, prior samples should be approved by site engineer.</b>		
F1	<b>Metal Door(QASA):</b> Provide and install decorative metal doors (QASA) of an approved type for the rooms, double-faced of plate thickness 1.50mm including glass pans, door frame 13.5*4.5cm 2.5mm thickness, film-coated residential steel entrance door glassy finished style, including special switch, gate lock, door stopper, rubber, polycarbonate filled, special guard bar, thermal paint, and metal frames 6*22cm, transparent glass or poly glass 15x40cm with 3 cm Styrofoam polystyrene inside the door, Central lock system, with additional horizontal a lock with three concealed hinges with all necessary works, samples required for final approval.	M <sup>2</sup>	5
F2	<b>Composite Doors:</b> Providing and installing standard decorative high-quality Composite wooden doors HDF Laminated thermoformed sheet water and fire-resistant coloured made, 200 mm minimum frame thickness and 100mm cornice outer measurement, double faces wooden plywood, each face 8mm thickness, the sample should be provided for approval, The price includes installing 6 mm glass pans, switch, gate lock, hinges, rubber, door stopper, and wooden frames, the price includes covering the bottom of the door with 15 cm aluminium plat for two faces.	M <sup>2</sup>	9
F3	<b>Steel guard bars:</b> Provide and install metal guard bars windows, with primer and two layers of oil paint, using square bar 12 x 12 mm welded inside an angle frame 1.25**1.25**3mm, fixed by screw and fisha to the wall according to the details, and instructions of the site engineer.	M <sup>2</sup>	33
F4	<b>Aluminium Windows:</b> Supply material and install Aluminium windows using a wide section 6cm profile width with a 2mm profile thickness plate. The price includes fixing a 4x3cm 3mm thickness steel pipe frame to the wall, a Double glass pan (4mm+6mm) thickness, ordinary or mushajar, rubber, handle, flywire mesh for opening Areas, cleaning the glasses by machine before composing.	M <sup>2</sup>	33
F5	<b>Curtain:</b> Provide materials, & install stand curtain (Zebra Type) approved materials with all accessors.	M <sup>2</sup>	40
F6	<b>Drain water Pipe:</b> Provide materials and fix galvanized steel pipes 3" diameter for rainwater vertical draining from the roof with all fittings and accessories.	M.L	15
F7	<b>Sign board:</b> Supply and install steel sign board (2.5mX1.5m) plate gage 18, with steel angle frame (1.25x1.25) inch (3mm) thickness, with one anti-rust paint layer and two approved colour oil paints. The price includes printing the school's name. DoE and UNHCR logos with the foundation year in detail.	Unit	1
<b>G</b>	<b>Flooring: (Including provision of materials, works, curing and installation) the work should be done according to the sections 6 and 9 of I.G.T.S. drawings, and instructions of site engineer with all necessary works.</b>		
G1	<b>Porcelain Tiles:</b> Porcelain Tiles: Supply materials and paving Porcelain Floor Tiles (60x60 cm) or (60x120 cm), 14mm thickness (a sample should be provided for approval) for classroom Non-slip, Acid-resistant, Low water-absorption 0.5% with all necessary works on a layer of cement sand mortar in a 1:3 mix ratio, under a layer of min 1cm of Kalakem, also using cement mortar and sealing the joints with white cement and lime grout and SPR color if required, making a 1.0 cm expansion joint in each 25 m2 and filling with flexible epoxy. The price includes cleaning the porcelain after the end of the work.	M <sup>2</sup>	160