

STATEMENT OF WORK
TH- BBQ shed
PROPERTY OBO-136
TH Residential compound
USA EMBASSY KHARTOUM, SUDAN

1. Description of Services:

The US Embassy, Khartoum has a requirement to create a BBQ shed in the townhouses complex, known as OBO # 136 in Garden City, Khartoum. The works shall be done as per drawings, scope of work, specifications and General contract conditions. This project requires an experienced contractor to design and execute the job.

The Contractor shall provide all labor, material tools, equipment, supervision and other related items required to complete the project as per scope of work, specifications and attached drawings.

Contractors are advised to visit the site, verify the existing site conditions to develop their proposal.

2- Statement of work

1- The contractor shall carry out the following

a- The contractor clear the area for the new BBQ from all the grass, trees and other materials.

b- Divert all the existing plumbing and electrical existing pipes, conduits, appliances...etc as requested by the COR

c- Place and mechanically compact modified soil to a depth of thirty centimeter at least to cover the area and remove all the debris on daily basis.

d- Pour the reinforced concrete pad.

e- Pour the concrete foundation for the columns of the shed structure

f- Install the four galvanized steel columns for the shed

g- Build the BBQ brickwork structure with the dimensions as shown in the diagram

H- Fabricate and install the steel structure BBQ shed, as shown in diagram.

I- Install the marble tiles floor

J- Furnish and install all the BBQ sink, supply and drainage plumbing fixtures, pipes, valves.....etc

K- Furnish and install all the lighting and electrical fixtures, with all the related works

L- Spray paint the steel structure of the BBQ patio

M- Install misting system to cover the BBQ.

2 The contractor shall maintain existing utilities indicated to remain and protect them against damage during the works. Damages caused by demolition and renovation operations, shall be repaired by the contractor at no additional cost to the Government.

3 The contractor shall transport from site all debris, rubbish, and materials resulting from demolition operations and dispose off site on a daily basis in accordance with local regulations.

3- Scope of Work

A. Construction Works

a- The contractor remove the plants and the unsuitable soft clay soil from the location as shown in diagram. The area shall be 4.5 meters X 4.5 meters

1- The contractor shall pour 15 cm reinforced concrete platform. The reinforcement shall be 12mm bars mesh every 15 cm. The area of the pad shall be 4.5 m X 4.5 m. prepare the proper slope to install the new tiles properly as approved by the COR.

2- The contractor shall build the BBQ brickwork cabinets structure from mortar Load-bearing red bricks, 120 mm thick, as shown in diagram.

3- Below the countertop, the contractor shall pour concrete top to hold the marble countertop, the thickness of the concrete shall be 10 cm at least. The reinforcement shall be 10 mm bars mesh every 12 cm. The concrete shall be poured over a cement fiber sheet, 10 mm thickness at least.

4- The contractor shall furnish and install white Italian marble sheets (60 cm X 30 cm) to tile the western side of the patio. The marble shall be of fine quality- Italian marble or similar quality approved by the COR, with thickness not less than two cm. The tiles shall be laid on a mixed layer of sand and cement mortar to the ratio of 3:1. The grouting shall be of white cement.

5- The job shall include placing curbstones on a base of concrete mix at the sides of the marble tiles and the adjacent green area. The curbstones shall be of NIBCO, or similar quality as approved by the COR, with size 45X 25 X 12.5 cm. The shape shall be similar to the existing shape. The grouting shall be of cement mortar.

B. Steel Work:

1- The BBQ shed shall be made of galvanized steel

- Each steel column shall be of two 10 X 5 cm steel channel sections welded front to front, 3 mm thickness at least, filled with concrete. The column shall be embedded in the foundation and welded to the foundation steel.
- All the main girders shall be made of rectangular pipes (10 X 5 cm) 2mm thickness at least, (spacing is around 60 cm) unless otherwise specified.
- The main mesh shall be made of rectangular steel pipes (3 X 1.5 cm), welded at 45 degrees. The spacing between the pipes is around 1 cm.

- The footings shall be made of reinforced concrete, 80 cm long X 80 cm wide X 100 cm deep at least. The bars and anchor reinforcement shall be 16 mm in thickness, the steel plate shall be 1 cm at least and the bolts shall be 20 cm in thickness.

C- Marble works

C.1 The extent of tile work is as shown on the drawings and includes marble tiles for the floor of the BBQ area

The contractor shall provide marble countertop for the kitchen cabinets; the marble shall be in two levels as shown in diagram.

C.2 Job Condition

The installer must examine the substrate and the condition under which tiles are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

C.3 Submittals

The contractor shall submit several color samples for the marble sheets for countertops and floor tiles for the selection and approval of the COR.

C.4 Works:

- The contractor shall furnish and install white Italian marble sheets (60 cm X 30 cm) to tile the floor. The marble shall be of fine quality- Italian marble (carrara) or similar quality approved by the COR, with thickness not less than two cm. The tiles shall be laid on a mixed layer of sand and cement mortar to the ratio of 3:1. The grouting shall be of white cement.

-The contractor shall provide marble countertop for the kitchen cabinets; the marble shall be in two levels (90 & 110 from F.F.L) as shown in diagram. The countertops shall be of natural marble. The marble countertops shall be 3 cm thick at least, grade level 1 with a half-bevel edge profile.

D-Plumbing works

- **Summary of works**

The contractor shall provide all the plumbing works to install a high quality stainless steel commercial sink. The contractor shall be responsible to connect the drainage water to the existing waste water drainage pipes next to the pump room. The contractor shall connect the supply water to the nearest supply pipe

- **B. Products:**

The contractor shall be responsible for furnishing any other materials to finish the required work stated herein.

The contractor shall furnish:

- **PPR Pipes:** for hot & cold water supply , size at least ¾ inch)
- **Polyvinyl Chloride (PVC):** for waste water
- **Sink mixer:** single lever hot and cold water type with ceramic disc, in wall as manufactured by Ideal Standard, Model "Ceraflex" or approved equal. Samples to be submitted for approval.
- **Valves: valves, Grohe or approved equal.**
- **Kitchen sink: high quality stainless steel commercial sink.**

E- Electrical Works

1. The extent of the electric work shall include all the rough-in and the finished electric work for the BBQ as detailed below:

The contractor shall furnish and install, including all the wiring, conduits and switches.

- 4 exterior weather tight lighting fixtures
- 5 GCFI duplex receptacles 220V, 13 Amp, (2 in the BBQ island, 3 embedded in columns)
- A fan with a dimmer switch.
- The receptacles and light fixtures shall be of high quality and approved by the COR before installation.

2 General

- 2.1 All equipment layouts are provisional. Final layouts are to be determined by the contractor after coordination with other trades
- 2.3 Conductors for lighting circuits shall be in general 3 mm² & protected by 16 amps. Circuit breakers unless otherwise indicated
- 2.4 Conductors for receptacles outlets circuits shall be in general 4 mm² & protected by 20 amp circuit breakers unless otherwise indicated
- 2.5 Protective earth conductors are not indicated on the drawings, but are to be run with all circuits in accordance with the NEC 70 (article 250).
- 2.6 All lighting switches and receptacles outlets located in general areas shall be installed at 400 & 950 mm above F.F.L. respectively. Lighting switches shall be mounted inside the room on the side of the door handle within 200mm from door frame unless otherwise indicated
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- 2.8 The contractor shall coordinate all works with other trades and services and incorporate all their exact and final requirements

- 2.9 In the absence of any indication on the drawings or in the specifications, the installations are to be in accordance with NEC 70
- 2.10 All receptacles in wet areas shall be protected from a ground fault current interrupter GFCI 10mA.
- 2.11 Equipment ampere ratings are for continuous operation in 50 C ambient temperature outdoors, or in non-air conditional space indoor and 40 C in air-conditioned spaces unless otherwise noted.

3 Products

3.1 All materials will be supplied and installed by the contractor. Other than what is listed on the attached sheet, the contractor shall be responsible for furnishing any other materials to finish the required work stated herein.

1. Light fixtures (as specified on the drawings)
2. Wiring devices, products of (Legrand, Gewiss), or equal approved
3. Power panels, products of (Merlin Gerin), or equal approved
4. Wires and cables, products of (El Sewedy), or equal approved
5. Conduits and boxes, products of (Engineering home) or equal approved

4 Execution

- 4.1 The work will be performed according to approved shop drawings. Any changes due to field condition are to be discussed with the COR
- 4.2 Conduit joints shall be made by brushing plastic solvent cement on insides of plastic coupling fittings and on outsides of duct ends. Each duct and fitting shall be slipped together with a quick 1/4 turn twist to set the joint tightly.
- 4.3 A 1/4 nylon or polypropylene pulling rope shall be pulled in each unused or spare conduit.
- 4.4 All conduits shall be rigid steel conduit.
- 4.5 Field-made bends and offsets shall be made with an approved conduit air heaters or a special fittings can be used. Crushed or deformed raceways shall not be installed.
- 4.6 Conduits shall be securely and rigidly fastened in place at intervals of not more than 2 meters and within 300 mm of boxes, cabinets, and fittings with approved wall brackets, conduit clamps, conduit hangers or ceiling trapeze.
- 4.7 Conduits shall be fastened to boxes and cabinets with connectors, locknuts and bushings.
- 4.8 Exposed raceways shall be installed parallel or perpendicular to walls or structural members.
- 4.9 Power raceways shall not contain more than four 90-degree bends or the equivalent in any one run. Communication raceways shall not contain more than two 90-degree bends or the equivalent in any one run.
- 4.10 A conduit-coupling fitting, threaded on the inside, shall be installed flush with the finish floor.
- 4.11 The bottom of boxes installed in ceramic tiles for concealed wiring shall be mounted flush with the tiles and at edges of the tiles to minimize cutting of tiles.

- 4.12 Color-coding shall be provided for service, feeder, branch and ground conductors. Color shall be green for grounding conductors and white for neutrals. Grounding conductor shall be bare copper, except where installed in conduit with associated phase conductors. Insulated conductors shall be of the same material as phase conductors and green color coded.
- 4.13 When the installation is complete, the conduits shall be sealed with approved sealing compound.
- 4.14 Provide expansion connector for every expansion joint in the building
- 4.15 Conductor phase and voltage identification shall be made by color-coded insulation. Conductors with black insulation may be furnished and identified by the use of half-lapped bands of colored electrical tape wrapped around the insulation for all entire length inside power panels and boxes. Phase identification shall be maintained continuously for the length of a circuit, including junctions.
- 4.16 The color coding for 3-phase low voltage system shall be as follows: Red (A), Yellow (B), and Blue(C).
- 4.17 The feeders shall be tagged to indicate the electrical characteristics (voltage, HZ, cable size, circuit number and panel designation).
- 4.18 Control circuit conductors shall be identified by color-coded insulation (black color-coded) and marked by numbers.
- 4.19 All wires and C.B.'s inside power panels shall be marked by numbers.
- 4.20 All wires inside light fixtures, receptacles, disconnect switches and boxes shall be marked with circuit numbers and panel configuration.
- 4.21 All power panels shall be provided with circuit directory card to indicate clearly circuit no., CB size, wire size and load.
- 4.22 All power panels, disconnect switches... etc, shall be tagged with labels.

5 Test:

- 5.1 Megger test for cables and wires.
- 5.2 Performance test for light fixtures, receptacles, A/C system, ... etc

F- PAINT

- F.1** The extent of paint work is as shown on drawings and specified herein. Paint includes painting and finishing of exposed interior items "Paint" as used herein means all coating system materials including primers, emulsions, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

The paint works include

- The steel works and frame

F.2 Products

All Paint materials shall be contractor furnished, subject to compliance with requirements to products of "JOHTUN", "SCIB", or equal.

F.3 Paint schedule:

Shop spray Semi-gloss enamel paint, the color shall be grey similar to the perimeter wall

F.4 EXECUTION

F.4.1 Preparation

1. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, for complete painting of the items and adjacent surfaces. Cover all the wood works, aluminum work, and built in work to protect them during the painting operation.
2. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved. Prepare the surfaces to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to receive paint primers. For newly plastered walls, apply sufficient layers of primers necessary for receiving paint. For previously painted walls, remove the deteriorated and damaged paint layers as required. For wooden frames and trims, remove previous paint layers by sanding and scraping and prepare surfaces as required to receive new paint. Use washed enamel technique to have smooth finished surfaces. For the corner beads, sand previous paint layers and prepare to reach aligned and true vertical corners.
3. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
4. Stir material before application to produce a mixture of uniform density; stir as required during application.
5. Use only thinners approved by the paint manufacturer, and only within recommended limits.

F.4.2 Application

1. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied and to ensure full and adequate coverage.
2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
3. Provide finish coats that are compatible with primers used.
4. Apply a minimum of two coats; do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
5. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance.
6. Texture of Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, or other surface imperfections.

G. Misting system

1- The contractor shall be responsible to provide and install high pressure flexible misting system for the walkway between in the BBQ roof. The misting line for the system is around 16 meters. The height of the above ceiling ranges between 2.75.

1. Submittals

- 1- A general description of the system and drawings of the main components.
- 2- Manufacturer's technical literature with installation and storage instructions for each product specified.
- 3- pumps: pump performance curves indicating GPM vs. TDH, maximum efficiency point, and maximum amperage draw, together with current characteristics and service factor of motor

2. The system shall include the following items

1- High pressure misting system pumps at least (1000 PSI High Pressure Pump). The pump shall be 220 V, 50 HZ, 1 phase. The pump shall supply 2 gallon per minute at least. The High efficiency pump module with built-in POLY-PHOSPHATE FILTER and GFCI shock protection. The pump shall be in Powder coated steel enclosure with pressure gauge.

The pump shall be equipped with the following items

- Automatic Pressure Release : When the spray stops the pressure is automatically released from the hose to prevent leaking/dripping nozzles
- Control System: Dual timer assembly with settings for minutes and seconds to set the exact misting and stop times desired.
- Pressure Switch: The pump will automatically stop when the water supply is interrupted, protecting the pump from damage.
- Inlet Filter: 0.1mm mesh filter prevents debris from entering the pump. Stainless steel for easy cleaning.
- Motor: Low-noise motor with Low power consumption, but strong enough to create a natural fog effect.

2- Nylon 11 tubing (Black/ white) Coil 3/8' poly hose - 1000 PSI rated. Tubing will be painted to match the color of walls.

3- Misting Tee brass Nozzles, 0.008" nozzle orifice. The nozzles intervals shall be at adjusted to cover the whole line, not more than 0.75 meters intervals.

4- All necessary hardware to install complete misting system and its accessories(end caps, elbows, Tees, unions, couplings, Tube Cutters, Rubber Mounting Clamps, Nickel Plated Slip-Lock Fittings, Drain Valve, Replacement Misting Nozzles and Plugs)

3. Installation

1- The contractor shall install the system according to the manufacturer's recommendations to cover the areas as shown in drawing. The height of the tubes is around 2.75..

3- The contractor shall be responsible to connect the new mister system pump to the nearest water supply and the electrical source as shown in diagram. The contractor shall carry out all the construction works as approved by the COR. The contractor shall conceal all the system parts. All the conduits away from the walkway shall be embedded beneath the ground. All the wiring, pipes, metal conduits, fittings shall comply with US and local standards.

Conditions of Contract

1. General

This is a firm fixed price turnkey job for the entire work and amount quoted shall include all work described in attached drawing, scope of work and general condition of contract. The lump sum price quoted shall be fixed and nothing extra will be entertained on any account.

Contractor's staff is subject to such restriction for entry and exit as are required by the Embassy's security requirement. Contractor's staff will be subject to security cleared as required by the Embassy.

Contractor shall restore all surfaces disturbed by construction to match with existing finish.

Any deviation from the original contract/scope of work shall be informed to COR before work begins. No additional work or changes will be carried out without a contract modification.

2. Responsibilities of Contractor

Contractor shall be responsible for procuring, supplying, transporting, and providing all labor, materials, tools and plant and equipment etc., required for completion of the work in all respects and as per the scope of the work.

All expenses towards mobilization at site and demobilization including bringing in equipment, workforce and materials, dismantling the equipment, clearing the site etc. shall be deemed to be included in the rates quoted by the contractor against various items of schedule of rates and no separate payment on such expenses shall be entertained.

Contractor shall employ and provide one full time engineer to supervise the project and has experienced of carrying out such type of work.

Contractor shall not proceed with next activity until previous activity will be checked and approved by COR. Contractor shall mentioned all inspection dates in the schedule chart

Contractor should keep the site clean and accessible to Embassy employee all time

3. Specifications

Work under this contract shall be carried out strictly in accordance with specifications attached and will meet US and Local codes.

4. Execution of Work

The Contractors are advised to review the material specifications and scope of work. The Contractor should visit and walk through the site to familiarize themselves with the site conditions to understand the exact quantum of work.

On award of the work, Contractor shall submit all items below via email:

- a. Bar chart within 3 days for approval by the Contracting Officer Representative (COR). All dates and time schedule agreed upon should be strictly adhered to. Contractor shall notify the COR in advance regarding anticipated problems through the project.
- b. Proposed start date
- c. Weekly schedule/activity plan for the duration of the project *prior to the start date*.

For dismantling/blocking or making connection to any existing services or any shut-down, contractor shall inform the COR at least three working days in advance and proceed with the work only after the permission from the COR.

The duration of the project shall be 30 working days.

5. Materials

All materials used on this work shall be new and conforming to the contract specifications as per US and local codes.

Materials shall conform to the latest US Standards specifications as amended to date and carry certification mark. Contractor shall submit material samples and catalog for pre-approval.

All materials used on the project shall be approved by the Contracting Officer Representative (COR) before use. Any changes/substitutes on material shall be approved by COR before proceeding.

6. Storage of Materials

All materials shall be stored in a proper manner protected from natural elements so as to avoid contamination and deterioration.

7. Site Clearance and Cleanup

The Contractor shall clear away all debris and excess materials accumulated at the site and dispose of it away from Embassy premises, maintaining a neat site condition.

On completion of project, Contractor shall remove all surplus materials and leave the site in a broom clean condition.

8. Workmanship

Workers working on the site shall be skilled in their job and have related job experience.

9. Working Hours

Working hours shall be 8:30 A.M. to 4:30P.M Sunday to Thursday. No work shall be done on Fridays, Saturdays and holidays without the prior approval of the Contracting Officer.

10. Security Clearance

The Contractor shall inform and provide in writing transportation details (vehicle registration number, drivers name, and date of delivery) to the COR at least 24 hours in advance for material deliveries.

Contractor shall give workers names at least 3 days in advance to get the security clearance. All the workers shall have an official photo ID or photo ID with the company name on it.

11. Safety

Contractor is responsible and shall continue management and implementation of a safety and health program throughout construction.

The Contracting Officer and the Post Occupational Safety and Health Officer [OSHA] reserve the right to suspend work when and where Contractor's safety and health program is considered to be operating in an inadequate or non-complying manner.

Contractor shall provide all Personal Protective Equipment for the workers as per the requirement of the site. Work will be stopped in case the proper protection equipment is not found with the workers and the lapse of time shall be at the Contractor's expense.

Contractor will not leave the work site in an unsafe condition or any other condition that might cause injury to personnel, damage to existing work, plants or equipment.

Contractor will use all safety gadgets e.g. hard hats, cotton gloves and goggles as required on site to avoid the accident.

Any equipment or work considered dangerous shall be immediately discontinued.

11. Warranty

The contractor shall guarantee that all work performed will be free from all defects in workmanship and materials and that all installation will provide the capacities and characteristics specified. The contract further guarantees that if, during a period of three years from the date of the certificate of completion and acceptance of the work, any such defects will be repaired by the contractor at his expenses.