**Technical Scope of Work for Rehabilitation/Improvement of WASH Infrastructures in Health Facilities of Karowcha/Adraskan in Herat Province**

**INTRODUCTION**

The intent of this scope of the works is the determine and identify the best vendor for the rehabilitation of improvement work in Health facilities of Karowcha/Adraskan in Herat province which the detailed location mentioned below:

The main activities in this Scope of work include rehabilitation/improvement of:

* Construction of Boundary wall in length of (49.2m).
* Repairing and Rehabilitation of the Existing Building (6 rooms with corridor).
* Repairing of the Existing Delivery Room (2.8\*4 m).
* Construction of New Guard Room (3.85\*2.78 m).
* Construction of one Stand tap (4\*1.5 m).
* Construction of waste management pits (soak and Placenta Pits, portable incinerator).
* Construction of Wash standards Emergency (2 BLOCK, 2 toilets for male and 2 toilets for female).
* 7.68 m3 Septic tank Construction (3.2\*1.6\*1.5 m).
* Filling, and levelling the yard (150m2).
* Construction of water supply system (digging new water well, provision of submersible, water tanks, and water supply network complete).
* Constrution of Bore well (80m) length.
* Construction of HF Electrical system (Solar panel, solar Stand, batteries, and cabling work complete).

**PROJECT LOCATION:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Province** | **District** | **Village** | **GPS** |
| 1 | Herat | Adraskan | Karowcha | 33.730272, 62.743892 |

**PROJECT DURATION:**

The project's anticipated completion time is calculated as 3 months or 90 calendar days after the contract award and NTP on starting physical work on the ground.

**PROJECT SCOPE:**

**Sub-contractor General Responsibility**

1. The vendor shall mobilize tools, materials, equipment, and team to the project site, and should coordinate the project commencement with the IRC representative, community and DOPH (if required) before work starts and should avoid conflict among the community and his team during project implementation.
2. The vendor is expected to carry out all works as instructed in the project documents such as this SoW, BoQ, and design drawings in the thorough best manner and with professional standards.
3. The vendor shall carry out operations with due efficiency in accordance with the terms of the contract and to the satisfaction of the stakeholders such as the community, DOPH, and IRC representatives. For this purpose, the sub-contractor shall use suitable equipment and supply efficient and experienced staff.
4. Sub-contractor should consider safety and security measures of his staff, tools, and equipment during project implementation, IRC is not taking any responsibility for loss, damage, and harm to the sub-contractor’s staff, tools, equipment, and machinery.
5. Transportation of all project's required equipment, tools, and materials to the project site is the sub-contractor's responsibility and IRC will not accept any equipment and materials that are damaged and unfunctional delivered to the project site.
6. The sample of tools and equipment used for the project should be verified and confirmed by IRC representative and DOPH (if required) prior to delivering to the project site and without verifying the sample, using such materials and equipment will not be accepted.
7. The sub-contractor is responsible for clearing the site for commencing the project work that includes but is not limited to debris removal, ground levelling, and barriers set up to demarcate the area of the project. The layout of the site should allow for easy access to the project site for removing excavated materials and dispose them in the assigned location identify by the community or local government.
8. Water well and pump tests should be performed prior to start any other physical work. The test includes water well discharge time (should not be less than 8 hours), the volume of discharge (should not be less than 10 to 11 Liter /Minute), potable and drinkability of water (should not have smell, tests, and colour). The sub-contractor should make sure that all the basic parameters are achieved during the test and the result of the test should be verified by an IRC representative.
9. The contractor should perform overall project activities described in this SoW, project BoQ, and material specification such as digging well, maintenance of casing and filter pipes, provision, and installation of PVC pipes, handpump rods, cylinder, handpumps, construction of a well apron, and provision and installation of all other accessories, necessary materials, and parts required for fully functional water well and handpumps.
10. All materials and equipment required for this rehabilitation and construction project such as bricks, cements, shuttering’s, stones, gravels, sands, doors and windows appliance, steel structures components such steel pillars, steel doors and windows, solar panels, inverters, wiring and caballing’s, switches, sockets, pipes and connectors, rebars, and other accessories and fitting material should be best quality and as per the project SoW and specification mentioned in below and in attached BoQ and IRC assigned engineers instruction and guidance.
11. Individual and joint monitoring might take place by IRC, DOPH, or community. sub-contractor is responsible for any inquiry about the work quality, quantities, and time-consuming. If any concern is raised during the monitoring of the project work, the sub-contractor is responsible for removing and re-executing the activities and has no right to claim any additional cost.
12. The sub-contractor should demobilize the project site bring the site to a normal condition and remove all necessary and unused materials such as sand, cement bags, stones, and additional soil from the project site after work completion and clear the site for normal operation.
13. Sub-contractors are part of the handover process and should actively contribute to the handover process and make sure there is no raise of any concern regarding work quality. Final project completion will be considered upon the handover of the project from DOPH has been confirmed and the handover letter is provided.
14. Site Journal should be available at the project site and should record external visitors such community, DOPH, or any other party and internal visitors such as IRC's own personnel and engineers if they have comments or recommendations on project activities implementation, quality, quantities, mobilization.

**Activities:**

1. **Site Preparation:**

For the implementation of this project, the contractor is required to do site preparation and cleaning of the Fixed health centre before commencing, during work and after completion of work, levelling ground level, and removing old cement and sand.

For all works, the ground and surfaces should be levelled, and barriers set up to demarcate the working areas. During excavation for foundations of toilets, foot-path preparation, room foundation, and septic tank, excavated soil will transfer far from the working area if there is no place available, after completion of work, the contractor is required to do final clean-up of all areas nearby the work areas. For toilets, site clearance will also include existing extra removal for rehabilitation and improvement.

1. **HF compound area grading and levelling and graveling:**

the work includes but not limited to the provision of tools, equipment, machinery and manpower to properly grad the Karowcha Health Facilities compound yard, cut upper surface and fill the down surface of the compound yard include provision of additional soil from outside if feel required, levelling the area with proper and suitable sloped for rainwater flow safe direction As well as include the gravel of the yard with crushed gravel with size of 20 to 25mm along with primary compaction of the access footpath to HF facilities.

1. **Repairing and Rehabilitation of the Existing Building**

The Repairing of the Existing building includes Gravel and PCC for the floor, two types of partition, two wooden doors size (2.1\*0.9), one window steel grill size (0.8\*0.8m), one steel window size (1.2\*1.2m), High quality fixed single side steel shelf for Pharmacy Size (Hight 2M: Depth 20Cm: width 95Cm ) the every piece of shelf must have 5 layers and mounted to the walls and Steel door for waste area according to the Drawing, Size (2.10\*0.90). for the more details of each part refer to the BoQ,

1. **Repairing of the Existing Delivery Room**

The repairs for this room encompass the following components:

The floor will be prepared using PCC to ensure a solid and level base. Ceramic tiles will be installed on the floor, walls, and latrine of the delivery room. The dimensions for the tiles are specified as 0.3 x 0.3 square meters. The selection of ceramic tiles will consider durability, ease of cleaning, and aesthetic appeal. The mortar used for the ceramic installation will be mixed in a ratio of M1:4, ensuring a strong bond. The mortar layer will have a thickness of 2.5 cm to provide adequate support for the ceramic tiles. All necessary materials will be supplied, including White cement, Water, Transportation of cement to the site, both skilled and unskilled labor will be employed to ensure proper installation and adherence to quality standards.

Regular inspections by IRC Engineer will be conducted throughout the repair process to ensure compliance with specifications. For more details, please refer to the drawings.

1. **Construction of New Guard Room**

This new construction project includes the following components: Pouring 50mm of gravel for the floor of the guard room under the PCC (Plain Cement Concrete) and Using PCC (M: 200) for the floor, Stone masonry for the foundations, Walls and Roof, Brick masonry for the walls and roof covering.

1. Roof Structure: The roof covering will be constructed using brick masonry and a cast method. It will include I-shaped iron beams weighing 135 kg per 12 meters. The distance between each pair of I-shaped beams must not exceed 90 cm. The unit cost includes all relevant expenses, such as materials (bricks, cement, sand, water), as well as skilled and unskilled labor.
2. Roof Covering: The upper part of the roof will be covered with plastic, including all necessary requirements and installation.
3. Soil Straw Layer: The upper part of the roof will also feature two layers of soil straw (1 inch thick) and water, along with all necessary requirements for skilled and unskilled labor.
4. **Construction of Stand Tap (Hand washing):**

This includes but not limited to the provision of materials, equipment and labours to construct one hand washing station for the targeted HFs with size mentioned in drawings and, Sow and Bill of quantities. The activities include the excavation of foundation, construction of brick masonry hand washing station body, Provision of Pipes and taps along with ceramic and plaster work. The construction of this Handwashing station should follow the project drawings and site engineer instruction, and this construction should result proper operation and function.

1. **Construction of waste management facilities:**

This construction including the excavation of Pits for placenta and Soak pits but not limited to the provision of gravel, PCC work, RCC rings provision and installation, ventilation Pipe for placenta pits and top cover over each pit and boundary fence wall around the HF waste management area as per the attached detailed drawings, this SoW and Bill of quantities. The provision of high resistant metallic incinerators also included. Type, Details and dimension of the incinerators also included in the attached drawings.

1. **Brick masonry toilets construction:**

This is the construction of brick masonry made toilets for the Karowcha HF, the work includes the excavation of foundation, stone masonry foundation, brick masonry walls, construction of slabs, interior and exterior plaster work, provision and installation of doors and window having proper locking system, sinks, commodes, ramp for the access of disabled people, connect it with the new planned septic tank along with other required accessories required for fully functional and operational toilets. The dimensions and other details are mentioned in the attached drawings and BoQ.

1. **Septic Tank:**

The contractor will construct 7.68 -Cum with the dimensions that are mentioned in the drawings for Karowcha HF, the land for excavation may be of different conditions and the contractor should consider this for excavation of the septic and foundation.

In the construction phase, the contractor will take care of the sizes or dimensions of each part of the septic tank. All sizes are shown in the detailed drawing and will be provided to the contractor before starting work and details of materials and activities are specified below.

1. **Plain Cement Concrete (PCC):**

PCC will take place on pavements, for the floor of the existing building and new guard room. PCC will be of indifferent marks shown in the BOQ and drawings for each type of work. Crushed aggregates of maximum size 25 mm, sand of Fineness modulus (1-3) mm, and cement according to ASTM C150 will be used in making the concrete mix. The usage of gravel is not allowed in any part of the work.

**NOTE:** The contractor is required to use a small diesel fuel mixer (PCC/RCC) for mixing concrete if a part of the construction work (PCC/RCC) is cast with hand-mixed concrete, that part of the work will be rejected directly by the IRC Engineer. It is denied that additional costs of removal, disposal, and redoing of the work are the responsibility of the contractor and IRC has no responsibility.

**Note:** Before casting all types of PCC, the contractor is required to do the levelling of ground do the compaction of the subgrade to the degree of 95% of compaction, and then, pour at least 5cm gravel, and then cast the PCC.

The water used for every concrete part needs to be clear (turbidity less than 5 NTU) and not have more clay-suspended particles so that can absorb the cement. (It means the contractor is required to use potable water for all types of construction works.)

Do not add too much water to avoid excessive shrinkage and separation/segregation of the concrete.

Protect cast concrete from the sun (plastic sheeting, cement bags, mats, etc.) and moisten exposed surfaces, covers, and shuttering to ensure slow drying and sufficient humidity for the chemical reaction of hardening to continue.

Vibrate the concrete well to compact it. Curing will be considered for a minimum of 7 days after the shuttering is removed.

1. **Reinforced Cement Concrete (RCC):**

RCC will cast for the bed, walls and top slabs, of the septic tank, solar stand, and pits according to the Marks specified and the attached drawing. and (pre-cast RCC slab over manhole the united cost includes all relevant costs i.e., materials (formwork and curing, skill and unskilled labors).

Septic RCC slab should be provided in two nets, the over net from [pi 12@10](mailto:#12@10) cm C/C and the lower net from bar [pi 12@15cm](mailto:#10@7.5cm) C/C, according to the drawings, The mark will be M200 considered for other all RCC works unless otherwise specified in the BOQs and drawings.

Note (Every construction work must be done according to the drawings and standard specification and under the direct instruction of IRC Engineer.)

1. **Steel Work for Septic Top Slab:**

All steel rebars will be according to the standard steel specification, the contractor will be responsible for preparing the required shape bars in each type of work and all steel will be clean and have no rust. Steel quality will be approved before purchasing or using a sample will be submitted to organization Engineers or to the IRC-related office and the ASTM code will be considered to achieve the quality.

1. **Shuttering (Formwork):**

Shuttering should be correct according to the dimensions of the objects, plywood/wooden planks or steel formwork can be used and should be cleaned and clear surface to get good quality RCC and PCC concrete, shuttering will be safe and tight. After standard days and conditions of de-shuttering for each element of the RCC and PCC concrete should be considered by the contractor then formwork can be removed, which means stick to the correct times for removal of moulds and shuttering.

1. **Provision and installation of Solar Panels and PV mounted Frame:**

We have 12 Best quality Solar Panels for the mentioned Fixed health Centres Solar panels must be of (400 Watt) high-quality with-it frame.

The Poly crystalline solar panel Pmax (400 Watt), Vamp (48 V), Imp (9.5 A), 2094mm\*1038mm\*35mm, Net weight 24kg. best quality with installation and connection to the electric system. and its inverter, with all required accessories, works and activities under the assigned engineer instruction.

The contractor will build one solar panel frames according to the acceptance of IRC engineer-approved specifications. The frame type would rotatable fit for 12– solar panels according to the Drawings). The frame with specifications of GI 4-Inches pipe with, Main frame Wight 14kg/6m, main frame middle span is Japanese girder (container) or equivalent. and with having rotating bearing (fielder cut cutting bearing). IRC Engineering team will select and approve all fabrication specification and brand of solar frame (as shown in the drawings and as locally made in Herat province best quality both type).

1. **Drilling of Bore Well:**

Digging of bore well should be done with 12” diameter percussion method according to drawing and BOQ under IRC EH Engineer instruction. For percussion method, temporary casings must be used to cover the unstable formations and ensure the straight vertical alignment of borewell.

1. **Filter Gravel Pack Material**

Prior to installation of the gravel pack the borehole depth must be measured via the annulus space – further measurements should be taken throughout the installation of the gravel pack, sand, bentonite, backfill material and concrete to verify correct emplacement.

The gravel pack material will consist of durable, naturally rounded quarzitic/silica particles properly washed and cleaned prior to insertion in the borehole.

The contractor shall be required to submit samples of the material for approval. The gravel shall be of 2.0-4.0 mm grade and be introduced in the annular space between the borehole wall and the casing and screen. Effective gravel-packing will be necessary to minimize fine sand ingress and clays clogging the screens.

Sufficient gravel shall be installed to completely cover the uppermost screen by an additional 6 meters length to allow for settling. A good supply of water should be introduced with the gravel to prevent bridging. The gravel pack shall be capped with a 1 m sand seal to prevent any grout clogging the filter pack. Above the sand seal a two-meter vertical column of clay seal (bentonite) to prevent any seepage that may contaminate aquifers from the back fill.

The annular space above the clay seal shall be backfilled with inert drill cuttings up to 5m below ground level. The quantity of the gravel pack and backfill to be installed shall be measured using a suitable volumetric method as agreed with IRC engineer.

1. **Sanitary Seal:**

The annular space at 5m below ground level will be filled with neat cement mixture to stop the entry of surface and shallow contaminated water into the borehole. The annulus space shall be sealed using cement slurry (1.85-2.15kg/litter). Never use hardening accelerators with PVC Casing.

In addition, any aquifer bearing saline or poor-quality water shall also be sealed off.

1. **Borehole Development**

Development and cleaning of the wells, to remove native silts, clay and drilling fluids residues deposited on the well during the drilling process shall be carried out by the company upon completion of the drilling and installation of the casing.

1. **PVC Pipe:**

Providing and installation of 5” PVC pipe Kowsar, high quality, or equivalent class C with 14kg weight for casing and filter of the water well with all the required work and accessories.

The PVC filter Slot Length should be 60 mm + - 5 and the Slot Width of 0.5 mm + - 1 under IRC engineer instructions.

The PVC pipe and PVC filter overlaps are not considered in pipe length and the contractor will not be paid for extra pipe length.

1. **Water Supply, Wastewater Networks construction and rehabilitation:**

Water Supply work for the Fixed health centre, includes providing and installation of Submersibles with Solar system for providing water to the reservoir tank in the Fixed health Centre, extension of pipes for water points to the reservoirs and water tanks and from reservoirs to the water networks of Fixed health center, installation of sinks and their plumbing works. The plumbing work will be of PPR, PVC 3,4, &6 inches, and PPR pipe Polyethylene of ¾ - 1 and 1 inches will be used for connecting the water tank and pipelines, wastewater, and sewer system. In addition to it, this work also includes required fittings for water supply in the static health centre such as manholes with top cover as well for fresh water and wastewater supply system. with proper technical and proficiently manner. the PVC and PPR pipe Polyethylene pipe will be correctly installed using specified Anchors, hinges, and bolts. All fittings will be of good quality and will be correctly fixed by the skilled and qualified labours, if the skilled labours are not qualified the IRC engineers reserve the right to remove such kinds of labour and the contractor will replace that immediately and the work delay will not have considered over the IRC, but the contractor will complete the work according to the schedule plan. The contractor will fix all these instruments as per IRC engineering team guidance.

1. **Water Tank**

The contractor should install a new water tank at Fixed Health Centre, the water tank will made in Kabul or equivalent from plastic with a capacity of 3000 Litter and should covered to a glass wool wall (glass wool covered), the contractor must reserve all necessary equipment for the installation of water tank to the water network and water well according to direction of responsible engineer and specification.

The water tank should be installed at the peak point of the static health centre to provide enough pressure of the water network at each point.

1. **Pipe Extension:**

The PPR pipes for supply of the water from water sources to the Fixed health Center newly installed sinks and newly constructed latrines will be used. (1 & 3/4)" inches in diameter of PPR pipe will be used. Placing of these pipes will need excavation and backfilling of trenches of sizes almost 20 x 30cm, and the use of warning plastic after filling of 10cm of the trenches and then backfilling of the remaining part of it.

1. **General Activities and Materials Specification:**
2. **Excavation:**

Excavation will take place for the pits and the water trenches, septic tanks, foundation of waiting area, boundary fence wall and toilets. The contractor should get guidance from IRC technical staff (preferably IRC engineers) for the excavation of selected sites for pits, waste management area and trenches for water pipes. IRC will provide technical drawings to the contractor for the understanding of the dimensions of excavation for each part of the work. Contractors is required to hire all unskilled labourers from the local community, where the static health Centre existed. The excavation will remove the excavated materials should remove and dumped at the disposal site indicated by the community and local government.

The work includes but not limited to provision of labours, tools and equipment completed the activities for excavation where required mentioned in this SoW, BoQ and Drawings.

1. **Brick masonry:**

Brick masonry is used in each part specified on some off the construction activities such as toilets construction, hand washing station construction, powerhouse construction, septic tank construction and some partition wall which has been shown in the drawings, BOQ, and this SoW, the contractor should use first class brick and mortar M:150 with a ratio of 1:3 based on engineering norms and standards.

The contractor should use 1st class brick during the construction. The strength of bricks should be around 140 kg/cm2 of brick area. During brick melding, no saline deposit should be used. Bricks will not absorb water more than 20% of brick weight when immersed in water for 24 hours. For brick masonry sand cement mortar of 1:4 will be used. These walls perform as load-bearing walls, thus essential care is required during its construction regarding alignment, curing, and mortar quality.

1. **Ston Masonry**

Stone masonry work with M (1:4), (from good rock, without cracks, and exposed to weathering, with absorption of less than 20%) for foundation of toilets and Handwashing foundations and some other component of this project construction activities.

1. **Ceramic Tile work:**

For working on ceramic at the mentioned HFs the ceramic must have the best quality from different sizes (50\*50 and 30\*30) cm, also must prepare and level the area before it and use 1:4 mark of the cement to working, the strength of tiles for walls and floor will be around 250kg/cm2 of tile area.

1. **Backfilling:**

The execution place must be backfilled after improving work, the contractor should backfill by layers at every part excavated, every layer must have 25 up to 30 cm trichinizes and after filling of every layer must be compacted by compaction machine and the end contractor must be done site cleaning and demobilization of overall rehabilitation area.

1. **Cement Sand Plaster:**

Cement sand plaster is required for interior and exterior walls of toilets, inner and outer faces of septic tank, with cement sand mortar (1:4). The plaster will be straight and not have vertical and horizontally up and downs beyond 5mm and with of waves appearing on it, the plasterwork should be based on needs. Before starting the plaster, the contractor will ensure curing to ensure the quality of the plaster. After finishing the plaster, curing is required for 14 days.

1. **Curing:**

Curing of concrete is defined as providing adequate moisture, temperature, and time to allow the concrete to achieve the desired properties for its intended use.

The contractor is required to ensure the curing to ensure the quality of PCC, RCC, Bricks masonry, and plaster. After finishing the mentioned activities as plaster, PCC and RCC curing is required for 14 days and up to 28 days to have reached full strength 28 days after placement.

1. **Painting**

Painting of doors, and windows will be carried out by the contractor. The contractor will provide and apply three coats of washable painting emulsion paint to interior plastered surfaces and water-repellent, high-breathable painting to exterior faces of walls. In accordance to DOPH Norms an IRC Technical engineer.

1. **Steel Doors, and Windows:**

Two doors with size of (2.1\*0.90) M: 1.5 mm steel sheet with having main frame profile pipe having 14 kg/6M Wight, and dimensions(3inch\*1.5inch) and internal frame 11kg/6m with fabrication, Lock, Handle, Transportation, and installation the unite cost includes cost of 3 coats of painting (one coat red oxide +two coat of enamel paint).

According to BoQ we have two size of window (2\*1.5 m) and (0.4\*0.5 m) that Made of profile for 14kg /6m with Flyscreen, for Delivery Room the unite cost includes cost of materials the fabrication, transportation, henge, handle, Lock, and three 3-coats of paint (one coat red oxide +two coats of enamel paint) and with glasses installation.

1. **Materials and equipment Specification:**

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| **S/N** | **Description** | **Photo** |
| 1 | Poly crystalline solar panel Pmax (400 Watt), Vamp (48 V), Imp (9.5 A), 2094mm\*1038mm\*35mm, Net weight 24kg (best quality available at the market. | A close-up of solar panels  Description automatically generated |
| 2 | Inverter Hybrid 4.5 kilo watt (48 volts), Growth (made of USA) best quality or Equivalent. |  |
| 3 | Battary200Amp made in Vietnam gel deep cycle (12v 200amp) best quality or Equivalent. | 200AH/12V Ritar Dry Cell Battery - CEETRON TECHNOLOGIES LTD |
| 4 | Three phase Submersible AC Water pump having module 4SS MOTOR, 1.5 KW/2HP, 380V/50Hz 3-Mot, best quality or Equivalent. | A close-up of a water pump  Description automatically generated |
| 5 | Glass wool for covering the new water tank and all pipes with thickness 10mm best quality at market. | Glass Wool – Rock Wool Insulation – Sankalp Preformed Systems Pvt. Ltd |
| 6 | Plastic water tank (3000 Liters) of the best quality available in the market. | A white plastic container with a lid  Description automatically generated |
| 7 | flush tank at male and female toilets. | TURKEY DUAL FUNCTION MEGA FLASH TANK 3022 : Amazon.ae: Home |
| 8 | Complete set of Shower with Muslim shower. | A white hose with a black handle  Description automatically generated |
| 9 | Water closet(commode) complete set. | طراحی سرویس های بهداشتی - گروه معماری هورنوابعاد توالت فرنگی و اندازه استاندارد توالت فرنگی وال هنگ - چیدوپلاس |
| 10 | sink Complete set. | Hindware Full Pedesatal Wash Basin Complete Set Michelangelo 10040 (58X43)  Pedestal Basin Price in India - Buy Hindware Full Pedesatal Wash Basin Complete  Set Michelangelo 10040 (58X43) Pedestal Basin online at Flipkart.com |
| 11 | Ceramic work (30\*30) or (50\*50) cm best quality. |  |
| 12 | Tile work (60\*30) cm best quality. | قیمت،خرید جزئی و عمده انواع کاشی سرامیک 30 در 90- مانامستر |
| 13 | Plastic paint NIKON or equivalent available in the market best quality | NIKON Paints | Lahore |
| 14 | Oil paint Beraj or equivalent available in the market best quality. | Beraj Paints |
| 15 | copper wire 1\* 2.5 mm2 from main electric source available in the market | 1 Core 1.5mm 2.5mm 4mm Copper Flexible PVC Wire Cable Price - China  Flexible PVC Wire Cable, Wire Cable Price | Made-in-China.com |
| 16 | copper wire (1\*1.5) mm2 for inside electric system | Buy Dependable Wholesale 1.5 mm electrical wire - Alibaba.com |
| 17 | Supply and installation of main joint box. | Junction box M20/M25 175x110x66 |
| 18 | fuse box. | جعبه فیوز 24 عددی ویکتور مدل توکار خرید و قیمت |
| 19 | fuse 16 Ahm 32 Ahm and 20 Ahm | Fuse/Fuse holders – TDSI |
| 20 | change over 100 Ahm. | HAVELLS SIDE HANDLE CHANGEOVER SWITCH – 100A – Electric Mall |
| 21 | Bulb with holder 15–25-Watt best quality | Feit Electric 150-Watt Equivalent Oversized High Lumen Daylight (5000K) HID  Utility LED Light Bulb (1-Bulb) T80/2600/5K/LED/HDRP - The Home DepotLED Ceiling Light - Round, 18W silver |
| 22 | Single switch and two-way switch | Turkish Switches And Sockets | DCZ Elektrical and Automation | Turkey3D Electrical Wall Double Switch With Up Down Symbol - TurboSquid 1809134 |
| 23 | single socket | merxu.com/media/v2/product/large/single-socket-out... |
| 24 | 1\*35mm2 cable for connection of batteries to inverter | Battery Cable: 35mm (+) Positive (Red) (BC35+) - Solar Europe Importers |
| 25 | PPR pipe for water supply 1” and 1,5” |  |
| 26 | High quality fixed single side stell shelf for Pharmacy Size (hight 2M: Depth 20Cm: width 95Cm) | A white shelf in a garage  Description automatically generated |

1. **Warranty**

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

1. **Site Visit and Pre-bid meeting**

Pre-bid meetings are not mandatory; they will be held based on the suppliers' questions after the site visit. Project site visits are mandatory for suppliers and Will schedule in RFP. review and analysis the project location, current condition, raising question regarding the drawings, specifications, project SoW as well as in the RFP prior filling the bid technical and financial documents and submits.