# VOLUME 3

# TECHNICAL SPECIFICATIONS

**Contract title: “Implementation of construction work”**

**Location:** Suloglu, Edirne province, Republic of Turkey

**1. Brief description of the activity**

Disaster Management Centre will be established in the municipal centre of Suloglu in order to improve the conditions and prerequisites for prevention and mitigation of the consequences of natural and man-made disasters in the area. Technical design projects have been elaborated to renovate the building, aiming at making it functional for its purpose. The building is located in Suloglu on land, registered with an area of 4600 m2, map section 12, plot no. 1997. Both of them are owned by the Municipality of Suloglu. With decision of the Council of Suloglu Municipality no. 2018015 of 07/03/2018, it has been provided for the purposes of Disaster Management Centre. The repair works will be closely monitored by the Investment control expert and will be implemented in compliance with the Turkish legislation.

**2. Scope and description of the construction works**

A) CONSTRUCTION WORKS:

Located on the 1997 parcel with a surface area of 4.600 m2 in Edirne province - Suloglu District; The building with a total area of 242 m2, consisting of a ground floor and a mezzanine floor with a living area of 172.00 m2, is planned to be renovated as a project (Disaster Manangement Center).

Within this plan, there is a staff room, repair room, 2 storage areas, a staff bathroom and wc area, a kitchen and an entrance hall on the ground floor for the Disaster Management Center. On the mezzanine floor there is a meeting room, administrative office, wc and equipment room. In accordance with this use, the existing areas inside the building should be strengthened and renewed according to the approved architectural and static project.

New usage areas built according to the project should be arranged according to the site list in the project. For example, in wet areas, floor ceramic walls should be covered with tiles.

In addition, the steel roof of the existing building has been corroded depending on the time and should be completely renewed in accordance with its project since it has lost its bearing strength. For the same reasons, the roofing will be renewed.

As the warehouse entrance doors are old and have completed their economic life, they should be converted to automatic doors in accordance with their project.

As a result, this building will be designed and renewed in accordance with the project objectives.

B) ELECTRICAL WORK:

In the building to be renovated in accordance with its project, some of the walls should be broken and new walls should be built. Due to the renewal of the walls, all electrical installations in the building should be changed. In addition, as the building to be renovated will increase electricity consumption, the main supply line should also be changed in accordance with the project. The main supply line will be taken from the nearest distribution network.

Again, in the event of a disaster or a general power outage, the generator purchase was deemed appropriate in order not to cut the system. In accordance with the building, the generator power has been calculated as 20 kW.

C) MECHANICAL WORKS:

WC and shower volumes are completely renewed in the building, which will be renovated in accordance with its project, and therefore clean water and waste water installations in the building should change.

D) ELECTRICITY GENERATION WITH SOLAR ENERGY:

For the Disaster Management Center, which is planned to serve the region for many years, 39 solar panels should be installed on the roof of the building to be built in accordance with its project in order to benefit from more economical electricity generation and solar energy. Therefore, 39 panels with a capacity of 250 w should be purchased and installed.

**3. Quantitative description**

**3.1. Bill of quantities**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** |  | **Description** | **Unit** | **Quantity** |
|  |  | **Part CONSTRUCTION** |  |  |
| 1 | 14013/2 | NARROW, HAND EXCAVATION | m3 | 28.00 |
| 2 | 150006/1A | FREE EXCAVATION BY MACHINE | m3 | 400,00 |
| 3 | 16050/02 | PLAIN CONCRETE C15/20 | m3 | 19,20 |
| 4 | 16050/5 | REINFORCED CONC. B TON C20/25 | m3 | 72,87 |
| 5 | 18001/C11 | 8/5 HALF BRICK WALL | m3 | 34,25 |
| 6 | 18001/N14 | MASONRY WALL | m3 | 27,20 |
| 7 | 15140/02 | STONE CHIPS AND HARDCORE | m3 | 250,00 |
| 8 | 18187 | DEMOLITION OF ANY KIND OF MASONRY CONS. | m3 | 20,00 |
| 9 | 18193 | EXTERIOR PLASTER STRIPPING | m3 | 215,00 |
| 10 | 21001/02 | FLAT R.C. FORM | m2 | 320,00 |
| 11 | 21050/C02 | STEEL PIPE FALSEWORK (FROM 401 TO 600MT) | m3 | 300,00 |
| 12 | 21051/C01 | STEEL PIPE SCAFFOLD | m2 | 1200,00 |
| 13 | 21051/C03 | STEEL PIPE CEILING SCAFFOLD | m3 | 1300,00 |
| 14 | 22081 | UNDERCOUNTER CABINET MADE OF MDF | m2 | 4,20 |
| 15 | 22082 | COUNTERTOP CABINET MADE OF MDF | m2 | 8,06 |
| 16 | SPECIAL | TILING REMOVAL | m2 | 200,00 |
| 17 | 19,061/008 | ROOF SPACE ROCKWOOL INSULATION | m2 | 80,00 |
| 18 | 23014 | HANDLING 8-12 RIBBED IRON | t | 3,050 |
| 19 | 23015 | HANDLING 14-28 RIBBED IRON | t | 2,150 |
| 20 | 23081 | MANUFACTURING ROOF TRUSS FROM STRUCTURAL SHAPE | t | 8,270 |
| 21 | 23176 | MISCELLANEOUS IRON WORKS | kg | 1210,00 |
| 22 | SPECIAL | AUTOMATIC PULL-DOWN SHUTTER INSTALLATION | m2 | 25,00 |
| 23 | 21280/03 | LAMINATE FLOORING INSTALLATION | m2 | 45,67 |
| 24 | 18233/6 | SANDWICH COVERING ON STEEL ROOF | m2 | 224,96 |
| 25 | 25003/22 | Painting SATEEN plastered surfaces (interior) | m2 | 115,00 |
| 26 | 25003/30 | PAINTING OF NEWLY-PLASTERED SURFACES (INTERIOR) | m2 | 490,00 |
| 27 | 25004/03 | PAINTING OF PLASTERED SURFACES (EXTERIOR) WITH ACRYLIC PAINT | m2 | 310,00 |
| 28 | 26005/402 | CERAMIC TILING OF FLOORS | m2 | 113,4 |
| 29 | 26006/403 | CERAMIC TILING OF WALLS | m2 | 147,30 |
| 30 | 26020/031A | INSTALLATION OF MARBLE STAIR STEPS | m | 37,20 |
| 31 | 26020/051A | MARBLE SILL INSTALLATION | m2 | 4,20 |
| 32 | 26.020/051B | MARBLE PARAPET INSTALLATION | m2 | 4,20 |
| 33 | 27501/01 | EXTERIOR PLASTERING | m2 | 310,00 |
| 34 | 27501/02 | INTERIOR PLASTERING | m2 | 490,00 |
| 35 | 27501/03 | CEILING PLASTERING | m2 | 120,00 |
| 36 | 27501/08 | RENDERING | m2 | 147,30 |
| 37 | 27581 | 200 D2 LEVELING CONCRETE MANUFACTURING | m2 | 320,00 |
| 38 | 27581 | 450D2 SCREEDING | m2 | 320,00 |
| 39 | 23241 | PVC DOOR AND WINDOW MANUFACTURING | kg | 2110,00 |
| 40 | 28645/C04 | Double-glazing of pvc and wooden joinery with a top rail of 4+4 mm 12 mm | m2 | 35,10 |
| 41 | 23152 | MANUFACTURING IRON GATE FROM PROFILE | kg | 163,00 |
| 42 | 25,002/02 | APPLYING 2 COATS OF LEAD + 2 COATS OF PAINT ON IRON SURFACES | m2 | 109,72 |
| 43 | SPECIAL | TILE MOSAIC COVERING (30X30) | m2 | 426,70 |
| 44 | 18.140/B2 | MANUFACTURING REVERSE CEILING WITH PLASTER BOARD | m2 | 80,00 |
| 45 | SPECIAL | REMOVAL AND STACKING OF METAL SHEET COVERING ON STEEL ROOF | m2 | 224,76 |
| 46 | SPECIAL | REMOVAL AND STACKING OF PURLINE-TRUSS OF EXISTING STEEL ROOF | m2 | 224,76 |
| 47 |  | SHIPMENT OF MATERIALS, LOADING AND UNLOADING COST |  |  |
| 48 |  | AIR-CONDITIONER (18.000BTU LUH) |  | 3 |
|  |  | **Part SOLAR SYSTEM** |  |  |
| 1 |  | INTERFACE PROTECTION RELAY | Each | 1 |
| 2 |  | 11 KW INVERTER | Each | 1 |
| 3 |  | SURGE ARRESTER | Each | 3 |
| 4 |  | 4\*50 300 MA RCCB | Each | 2 |
| 5 |  | TWO-WAY COUNTER | Each | 1 |
| 6 |  | 3\*63 A MCCB | Each | 1 |
| 7 |  | 20/5 CURRENT TRANSFORMER | Each | 3 |
| 8 |  | 3\*25 K CB | Each | 2 |
| 9 |  | 3\*10 K CB | Each | 4 |
| 10 |  | 3\*6 K CB | Each | 2 |
| 11 |  | 2,5 KVAR CAPACITOR | Each | 2 |
| 12 |  | 1,67 KVAR CAPACITOR | Each | 3 |
| 13 |  | 250 W PANEL | Each | 39 |
| 14 |  | STEEL CONSTRUCTION | Each | 1 |
| 15 |  | TOTAL WORKMANSHIP | Each | 1 |
|  |  | **Part ELECTRICITY** |  |  |
| 1 | 705-104 | BUILT-IN SHEET METAL BOARD: UP TO 0,30-0,40M2 (INCLUSIVE OF 0,40M2) | name | 1 |
| 2 | 704-103 | SURFACE MOUNTED METAL SHEET BOARDS UP TO 0,20-0,30M2 (INCLUSIVE OF 0,30M2) | name | 1 |
| 3 | 718-509 | RESIDUAL CURRENT CIRCUIT BREAKER UP TP 4X63 A.e (30mA) | name | 1 |
| 4 | 718-522 | RESIDUAL CURRENT CIRCUIT BREAKER UP TO 4x63A.e (300mA) | name | 1 |
| 5 | 723-401 | AUTOMATICALLY-CONTROLLED CENTRAL COMPENSATION BATTERIES UP TO 400v.A | name | 1 |
| 6 | 723-514 | REACTIVE POWER CONTROL RELAY (UNIT: EACH) | name | 1 |
| 7 | 724-408 | THREE-PHASE, SWITCHED UP TO 63A.e | name | 1 |
| 8 | 724-401 | UP TO 16A.e, A.O.S | name | 13 |
| 9 | 726-105 | BARE STRANDED OR LOADED COPPER WIRE, 25mm | m | 4 |
| 10 | 726-404 | BARE STRANDED OR LOADED COPPER WIRE, 16mm2 | m | 5 |
| 11 | 727-525 | 4X10mm2 NYY | m | 50 |
| 12 | 727-526 | 4X6mm2 | m | 55 |
| 13 | 734-101 | PLAIN OUTLET | Each | 9 |
| 14 | 734-102 | COMMUTATOR OUTLET | Each | 4 |
| 15 | 734-104 | PARALLEL OUTLET | name | 12 |
| 16 | 735-101 | SOCKET OUTLET | name | 23 |
| 17 | 742-246 | Armature, S1-4X20 W (square) | Each | 11 |
| 18 | 742-284 | ARMATURE, U-2X40W | Each | 6 |
| 19 | 742-124 | WATERPROOF ARMATURE, TYPE L I | Each | 6 |
| 20 | 742-128 | CEILING ARMATURE W/360 DEGREE SENSOR | Each | 1 |
| 21 | 815-101 | TELEPHONE INSTALLATION OUTLET | name | 6 |
| 22 | 818-201 | TRUNK LINE INSTALLATION OUT OF THE BUILDING: UP TO 2 PAIRS | m | 50 |
| 23 | 819-101 | TELEPHONE HUBS: UP TO 10 PAIRS | Each | 1 |
| 24 | 830-101 | FIRE ALARM BUTTON AND INSTALLATION | Each | 1 |
| 25 | 832-100 | FIRE ALARM DETECTOR AND INSTALLATION | Each | 11 |
| 26 | 833-201 | CONVENTIONAL FAS UP TO (INCLUSIVE OF) 5 CIRCUITS | Each | 1 |
| 27 | 845-103 | TELEVISION OUTLET | name | 5 |
| 28 | SPECIAL | SATELLITE DISH | Each | 1 |
| 29 | 880-2002 | 2 X2 X 0.8+0.8mm2 | m | 50 |
| 30 | 742-501 | M | name | 2 |
| 31 | 952-311 | SOUND INSULATION CABIN:100KVA | Each | 1 |
| 32 | 950-102 | 20KVA (continuous operation power at full-load) Generator | name | 1 |
| 33 | 951-101 | Automatic activation device for the groups up to (and inclusive of) 45kVA | Each | 1 |
|  |  | **Part SANITARY SYSTEM** |  |  |
| 1 | 071-112 | TILING LAVATORY 45x55 | Each | 4.00 |
| 2 | 072-601 | LAVATORY INSTALLATION FAUCET | Each | 4.00 |
| 3 | 073-201 | MIRROR CRYSTAL 40x50 | Each | 4.00 |
| 4 | 079-100 | INSTALLING FLUSH TOILET WITH RESERVOIR 35X55 | Each | 3.00 |
| 5 | 084-202 | KITCHEN SINK (2 COMPARTMENT), STAINLESS STEEL | Each | 1.00 |
| 6 | 074-101 | SHELVING UNIT, GLASS 50x10 | Each | 4.00 |
| 7 | 090-300 | BRASSCHROMED SOAP DISPENSER | Each | 6.00 |
| 8 | 092-501 | BRASSCHROMED SOAP GLASS-HOLDER | Each | 4.00 |
| 9 | 093-400 | TOWEL RACK | Each | 4.00 |
| 10 | 094-400 | PAPER HOLDER | Each | 3.00 |
| 11 | 095-100 | CLOTHES HOOK | Each | 3.00 |
| 12 | 097-201 | BATH TRAP | Each | 5.00 |
| 13 | 103-105 | COLD WATER COUNTER DIA: 32 mm. | Each | 1.00 |
| 14 | SPECIAL | ELECTRICAL WATER HEATER (80 LITERS 2150 Kcal/h 2000 watt) | Each | 1.00 |
| 15 | 126-102 | COLLAR PLUG DIA: 40 mm. | Each | 1.00 |
| 16 | 204-3102 | PN 20 CLEAN WATER PIPE 1/2 "20/3.4 mm. | m | 30.00 |
| 17 | 204-3103 | PN 20 CLEAN WATER PIPE 3/4 "25/4.2 mm. | m | 60.00 |
| 18 | 204-3104 | PN 20 CLEAN WATER PIPE 1 "32/5.4 mm. | m | 30.00 |
| 19 | 089-601 | SHOWER FITTINGS | Each | 2.00 |
| 20 | 204-401 | SEWAGE PIPE, INSERT SOCKET DIA: 50-40 mm. | m | 17.00 |
| 21 | 204-402 | SEWAGE PIPE, INSERT SOCKET DIA: 75-70 mm. | m | 20.00 |
| 22 | 204-403 | SEWAGE PIPE, INSERT SOCKET DIA: 100-110 mm. | m | 38.00 |
| 23 |  | MATERIALS FOR CLEAN WATER INSTALLATION 45% | 45% | 0.45 |
| 24 |  | MATERIALS FOR SEWAGE WATER INSTALLATION 45% | 35% | 0.35 |
| 25 | 210-625 | BALL VALVE, BRASS CASTING DIA : 32 mm. | Quantity | 2.00 |
| 26 |  | HOLDING VALVE DIA: 32 mm. | Quantity | 1.00 |

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **3.2. Specification of pull-down shutter installation** /p.22 from Part: Construction/ | | | |  | |  |  |
|  | Characteristics | Discription | Image | |
| 1 | Model | Sectional garage door |  | |
| 2 | Dimensions light neck opening L x H mm | 3850х3600 |  | |
| 3 | Type of construction | Low contour | |  | | --- | |  | | |
| 4 | Thermo panels for sectional doors | double-skinned steel lamellas, thickness 40mm and high-insulating thermoplastic filling |  | |
| 5 | Drive type | manual and electric |  | |
| 6 | Wind resistance | class 3 |  | |
| 7 | Moisture resistance | class 3 |  | |
| 8 | Rubber gasket | Four-sided |  | |
| 9 | Rails and profiles | Galvanized; Aluminum |  | |
| 10 | Coefficient of thermal conductivity | 1.5 W |  | |
| 11 | Quality match | European standards EN 13241-1:2003+A1:2011 |  | |

**3.3 Works design - available in Volume 5**

* Part Architecture
* Part Construction
* Part Electricity
* Part Water supply and sewerage
* Part Solar System

**4. TECHNICAL REQUIREMENTS REGARDING THE CONSTRUCTION WORKS**

The Contractor shall carry out the planned construction works on the subject of the contract on the basis of the prepared, agreed and approved technical investment projects. For the successful implementation of the planned construction works, the Contractor shall:

* execute the construction and reconstruction works within the agreed deadline by organizing and coordinating the entire construction process according to the technical specifications; the offer with its attachments, the current legislation, incl. the rules of the Interreg-IPA CBC Bulgaria-Turkey Programme;
* invest quality materials, structures and products in the construction process during the implementation of the construction and reconstruction works on the site;
* secure his work under the contract with the necessary machinery and equipment;
* provide access to the construction site of the authorized representatives of the Contracting Authority and the Supervisor;
* draw up all acts and protocols during construction, using the required acts and protocols forms according to the Turkish legislation for drafting acts and protocols during construction;
* carry out at his own expense all work on elimination of mistakes made by him, deficiencies, etc., ascertained by the bodies of local / state authority and / or by the investor control of the site, and / or by the Programme;
* notify the Contracting Authority promptly and in writing of its readiness to draw up the protocol for establishing the suitability for use of the site;
* submit to the Contracting Authority a complete set of documents for the site upon its acceptance according to the relevant legislation;
* guard the site on its own account until its delivery to the Contracting Authority.

**6. CONTROL OF WORKS**

The Contracting Authority will provide a consultant who will supervise construction with investment functions. The Contracting Authority and the supervisor may at any time inspect the work, control technology performance and issue instructions to remove the defects, according to the specified technology and method of implementation. If found serious defects, errors and low-quality performance, the Contracting Authority shall notify the Contractor that he breached the contract and should stop work.

**6.1 Contractor's equipment**

The Contractor shall furnish equipment which will be efficient and appropriate to secure satisfactory quality of work and a rate of progress which will insure the completion of the Works within the time, stipulated in the Tender. If at any time that equipment appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for the rate of progress, the Supervisor may be entitled to order the Contractor to increase the efficiency, change the character or hire additional equipment, and the Contractor shall conform to such order.

**6.2 Protection of existing structures and utilities**

The Contractor shall assume full responsibility for the protection of all buildings, structures and roads existing in the area of the construction site, public or private, whether or not they are shown on the drawings.

When starting the contract all companies and institutions exploiting underground lines and facilities shall be invited, specifying the exact location of existing underground lines/facilities and in their vicinity excavation should be carried out very carefully and in places where necessary, manually.

Any damage, resulting from the Contractor's actions, shall be repaired at his expense.

**6.4 Approval of sources, materials and products**

Materials and products incorporated may originate from any country.

The Contractor has to ascertain by continuous control check measurements that only material which complies with the requirements specified in the various clauses of these specifications will be used for the Works.

**6.5 Requirements regarding environmental protection**

In the execution of construction works contractor must confine its action within the construction site.

After completion of construction works the Contractor shall withdraw all their machinery and unused materials and leave the site clean of debris and completely finished. The Contractor shall clear way and remove from the site any wreckage, rubbish and temporary works, which are no longer required.

**7. ADMINISTRATIVE SPECIFICATIONS**

**7.1 Implementation Plan**

Implementation plan for delivery of works shall be prepared consistent with the duration of the project’s implementation and the works activities implementation. The plan shall be presented in a format which presents in a clear way all the major activities.

**7.2 Progress meetings**

The Contractor shall agree with the Contracting Authority for dates for regular progress meetings.

**7.3 Quality assurance**

The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of this contract. The system shall be in accordance with the details stated in the Contract. The Supervisor shall be entitled to audit any aspects of the system.

**8. IMPLEMENTATION OF THE WORKS**

**8.1 Materials**

All Materials supplied under the contract shall be new products. Second-hand materials will not be accepted.

Supply of all materials and equipment required for the execution of construction - assembly work according to the approved investment project is the responsibility of the Contractor. Any change to the approved design must be coordinated and approved the Contracting Authority.

The Tender drawings constitute the drawings issued for construction/ installation/ execution.

**8.2 Testing**

Reliable shall be only the type and amount of tests performed in conformity with the prescription of this Technical specification, except when this right is granted to the Contracting Authority.

Tests and the measurements of the performed construction works should be carried out and shall be certified by protocols. The Contracting Authority may require additional tests when the results obtained are uncertain.

Beside the tests specified in this Specification, the Contracting Authority may require additional tests to establish possible hidden omissions and effects. Costs for these tests shall be entirely at the Contractor’s expense if such defects are confirmed.

**8.3 Inspection and measurement of works**

In the process of construction and assembly works must be composed all the necessary documents and records provided for in the respective legislation for preparation of documents and reports during construction.

The Contracting Authority may at any time inspect the quality and measure the amount of works performed. If this cannot be done with the Contractor’s assistance, a deadline shall be fixed for hiring external specialists. In this case, the expenses shall be paid by the Contractor.

**9. PREPARATORY WORKS**

Before starting the works the Contractor has to perform some preparatory works at the site.

**9.1 Boards and signs**

The Contractor shall mount and maintain in good condition a board with the name of the project, the financing institution and the relevant information according to the Turkish legislation.

**9.2 Setting out the site**

The Contractor shall in co-operation with the Contracting Authority set out the total site to be used for construction.

**9.3 Temporary facilities**

The Contractor shall effect all expenditure for establishing, operation and removal of temporary facilities if such are needed for the good performance of the Contract. All needs for establishing such facility shall be duly justified.

**9.4 General supply facilities**

***Sanitary Arrangements***

The Contractor shall provide for and maintain temporary sanitary facilities on the site for the use of all persons connected with the Works. The Contractor shall keep the facilities in a clean and sanitary condition, and shall post notices and take such precautions as may be necessary to keep the site clean.

***Water supply***

The Contractor shall provide for and maintain an adequate supply of potable water for his use. The water supply shall be used for construction purposes and for consumption in the temporary facilities.

***Power supply***

All electrical power required by the Contractor shall be provided by him at his own expense. The Contractor prior to taking-over of the Works shall remove all temporary installations if it is not agreed upon that the Contracting Authority takes over the installations.

**IMPORTANT:**

**All works must be implemented in accordance with investment design and corresponding standards.**

In case that in investment design - explanatory notes, bills of quantities, drawings, specifications, and everywhere in the documentation for tendering are set specific brand/mark, model, type, standard materials and products, it should be considered as whereas “and equivalent”.

The Contracting Authority does not require specific brand, model, type, standard materials and products that will be in the works as long as you comply with the specifications of the designers and the essential requirements for building works.