



شركة السمرا لتوليد الكهرباء
Samra Electric Power Co. [SEPCO]

Tender 13/2024

Supply, Erection, Testing, and Commissioning of New Demin Water Storage Tank 2000 m³

February 2024

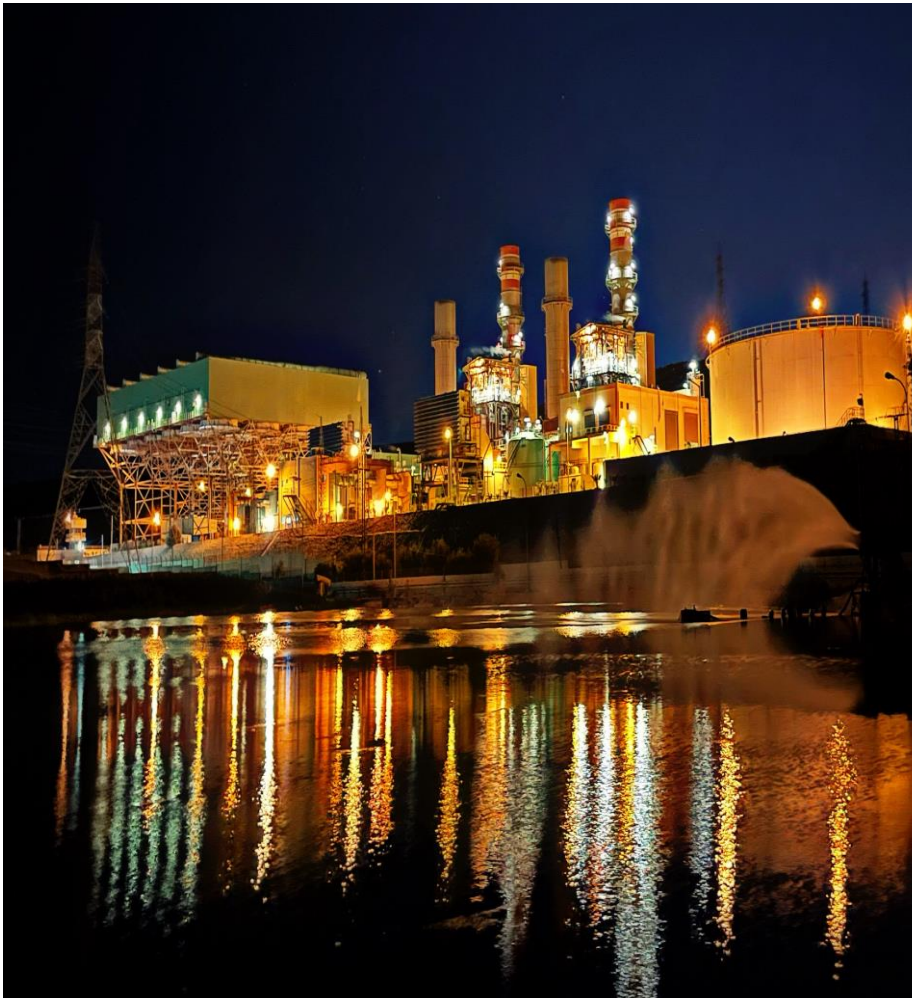


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1 General Conditions

1.1 Tender Scope

The tender is for providing a demineralized water supply system to meet the requirements of the Fogging System. The existing Phase I, II, and III demineralized water systems are interconnected. A new DM water tank with a working capacity of 2000 m³ will be installed.

The Project will be implemented on a turnkey basis and shall include all civil works, equipment, material, systems, and services to complete the new DM water tank render the system fully complete and functional for safe, reliable, and commercial operation under all conditions and respects. The selected Bidder will be responsible for cover design, engineering, supply of material, proper packing and forwarding, shipment & delivery at site, fabrication, installation, inspection, testing & commissioning, and start-up of the required new 2000 m³ Demin Water Tank as per the technical specifications and requirements.

Bidders are invited to submit a firm fixed lump sum price to the aforementioned Tender Scope and warrant for eighteenth (18) months following completion of all Work which is the subject of this Tender. **No partial tendering will be accepted.**

1.2 Project Schedule and Completion Date

All Work under this Tender will have to be completed within 100 calendar days from the Commencement Date.

1.3 Applicable Documents

The documents listed herein, and the enclosed table of contents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect at the time of the order shall apply.

- a) Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.
- b) The owner shall be notified immediately by writing if a conflict between this document and laws, regulations or other documents cited herein occurs.

1.4 The Site

The work location is the Samra Power Plant / Al-Hashimiya – Zarqa.

1.5 The Contractor's Qualifications

- 1 A registered company in Jordan classified by The Government Tenders Department (GTD) not less than Third grade in the field of the mechanical works.
- 2 The Contractor must provide a detailed reference list indicating specifics of similar works, date of installation and other details, the Contractor shall have completed Project(s) similar in nature to the work of this tender at least.
- 3 The Contractor must have proven experience at least 5 years of mechanical works.
- 4 Bidders may form a joint venture or consortium for the purpose of submitting a Proposal. And they must comply with the following requirements:

- One of the partners shall be nominated as the Lead Member. This authorization shall be evidenced by submitting a power of attorney, effective for the duration of the Proposal validity, signed by legally authorized signatories of all the partners,
- The Lead Member shall be authorized to receive instructions for and on behalf of any and all partners of the joint venture or consortium and shall be authorized to execute the Contract on behalf of the consortium; and
- A copy of the agreement entered into by the joint venture or consortium partners shall be submitted with the Proposal.

The Bidder shall enclose the followings with his proposal:

- Copy of the Certificate of registration and Vocational License.
- A copy of Classification Certificates from GTD.
- The Contractor's Reference List.
- In case of the proposal submitted by a joint venture or consortium, the followings shall be submitted for all the joint venture or consortium members:
 - Copy of the Certificate of registration and Vocational License.
 - A copy of Classification Certificates from GTD.
 - The Contractor's Reference List.
 - The agreement entered into by the joint venture or consortium partners.
- The Contractor shall provide one (1) electronic copy of the submitted proposal.

1.6 Clarification Process

Any Bidder requiring clarification of this Tender must notify the Owner in writing in accordance with Section 2.3 at the following addresses:

Samra Electric Power Company (SEPCO)
 P.O. Box 1885 Amman 111821
 Jordan
 Attn: Mohammad Khreasat
 Fax: (962)-6-5506520
 Email: mkhresat@sepco.com.jo
 With a copy to: mmadani@sepco.com.jo
morawashdeh@sepco.com.jo
murad-omari@nepco.com.jo

1.7 Site Survey

The contractor shall visit the work site and review all conditions surrounding the work and shall bear any damage to the company's existing properties and infrastructure.

Any additional equipment, material, services etc., which are not specifically mentioned in the technical specification, but required to make the scope of this Tender complete in all respects, in accordance with the intent of the technical specification, relevant/applicable codes/standards, good engineering practices, and for safe and trouble-free operation, shall be deemed to be covered under the scope of the technical specification.

The Bidder is required to present the bank deposit receipt for the purchase of Tender documents in order to be allowed for the site visit.

1.8 Proprietary Documents

All documents and drawings furnished by the Owner shall be treated as proprietary information and shall not be used for other than their original purpose without written permission from the Owner. Similarly, all documentation provided by the bidder will be treated as proprietary information and only used for bid evaluation purposes.

1.9 Taxes, Duties, and Regulations

The Contractor shall be responsible for investigating and conforming with all requirements of Jordanian laws and regulations, which will affect or apply to the Contractor or the Project.

1.9.1 Stamps and Award Fees

The Contractor is responsible for the costs applicable for the payment to the Ministry of Finance of revenue stamps and award fees in proportion to the total Contract Price. Penalties are to be paid by the Contractor for noncompliance or delay.

1.9.2 Custom Duties

Materials, equipment and supplies which are required for the installation portion of the Tender Scope of Work and which will become the property of the Owner are exempted from customs duties and import license fees, and other taxes according to Custom Law Number 20 for the year 1998 and its amendments, provided that those materials, equipment and supplies are not having a substitute available from local products, especially if such products have been adopted by the Jordanian government. In this case, the Contractor shall be responsible for payment of all customs duties and other related charges for materials, equipment and supplies that are not exempted as above. The Owner will provide any necessary assistance to obtain the required permits or licenses.

1.9.3 Custom Clearance

The Contractor shall, at its own expense, handle all imported materials at the point(s) of import and shall handle any formalities for customs clearance, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Owner, then the Owner will take all necessary steps to comply with such laws or regulations. The Contractor shall not be entitled to an extension of the Required Tender Completion Date due to the customs clearance process and any delays in achieving the required completion date in connection therewith shall be the contractor's responsibility. The Contractor shall provide a copy of the shipping documents or any other documents required for the Owner at least seven (7) days prior to the shipment's arrival at the port to provide the necessary support for customs clearance.

The owner remains responsible for providing at the time of customs clearance of materials, equipment and supplies, the Council of Minister's Resolution or other appropriate documentation which includes exemption for custom duty and import license fees.

Upon completion of the equipment, material, and system design, the Contractor shall submit the Contract Annex of the bill of materials, which includes the equipment, material, and systems supplied aboard and within Jordan, separately for the Owner's review and approval. This submission is intended to enable the Owner to provide the necessary support for customs clearance. The bill of materials shall reflect the original Contract Price, which shall not be affected in any case.

The Contractor shall submit to the Owner the shipping documents as follows:

- Bill of Lading/ Airway Bill.
- Invoice.

- Packing List.
- Certificate of Origin.
- Certificate of Conformity issued by the Contractor which confirms compliance with the technical specifications, applicable standards, and scope of Work in the Contract Agreement.

According to the regulations, the Contractor shall furnish to the Ministry of Finance and Customs, Bank Guarantee for securing the customs duties and charges. This requirement may be enforced for each and every shipment and must be in force from the time the goods leave the port of entry until the Owner certifies the expiry of their use on Site. As soon as the goods arrive on Site, installed, tested and commissioned, such certification must be issued and released by the Owner.

1.9.4 Release of liens and Clearances

After completing the project and fulfilling all the necessary Tender Scope of Work requirements, the Contractor shall furnish the Release of Liens/Clearances from the customs department in connection with this Tender.

1.10 Project Time Schedule

1.10.1 General

The Contractor shall prepare and submit for approval by the Owner the project time Schedule covering all Work to be carried out under the Tender. The Tender Completion date shall be observed for the planning of all Work to be carried out by the Contractor. The time Schedule will fully reflect the sequence and timing of the activities by which the Contractor proposes to carry out the Tender scope of work.

1.10.2 Scheduling

1. The Contractor shall complete the Works of the Tender within the time specified.
2. Modifications to the Schedule required by the Owner shall be incorporated by the Contractor and submitted with his next weekly update of the Schedule.
3. The schedule shall indicate when interface works with the Owner or others must be completed so as not to delay the Contractor's work.
4. The Contractor shall arrange his work to conform to the requirements of the Tender Dates specified herein and shall complete the scope of work within the time specified. There will be no compensation for extra work which the Contractor must perform due to his failure to coordinate his work with the Owner's or others work.
5. The Time Schedule shall contain full details of procurement, manufacturing, shipment, transport, installation, and commissioning activities.
6. Approval by the Owner of the time Schedule shall not relieve the Contractor of any of his obligations under the Tender.

1.11 Time Schedule and Liquidated Damages

The duration of the project is one hundred twenty (100) calendar days from Commencement Date (The Date of signing the Contract Agreement).

If the Contractor fails to attain the required completion date for reasons attributable to the Contractor, the Contractor shall pay to the Owner liquidated damages in the amount of 0.5% of

the Total Contract Price per day of delay or fraction thereof. The total amount of paid liquidated damages by the Contractor herewith shall not exceed 10% of the Contract Price.

However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the tender scope of work or otherwise comply with its obligations under the Contract Agreement.

1.12 Performance Bond

The Contractor shall, upon receiving the Letter of Award, provide a Performance Bond to the extent of ten percent (10%) of the Contract Price as a guarantee for the due and faithful performance of the Contract. Such guarantee shall be binding notwithstanding any variations, alterations or extensions of time that may be given or be agreed upon.

The Performance Bond shall be drawn on a Bank in Jordan approved by the Owner and shall be payable to the order of the Owner at his first request.

1.13 Maintenance Bond

The Contractor shall submit a duly executed Maintenance Bond (Warranty Bond) in the amount of five percent (5%) of the final Contract Value valid for (18) months from the Certificate of Completion of Work date.

The Maintenance Bond shall be drawn on a Bank in Jordan approved by the Owner and shall be payable to the order of the Owner at his first request.

1.14 Payment Terms and Condition

The Contract Price will be paid to the contractor according to the work progress and achieved milestones as follows:

- **20%** Advanced payment and shall be secured by advance payment bond drawn on a Bank in Jordan approved by the Owner and shall be payable to the order of the Owner at his first request.
- **20%** after the completion of the civil works and approved by the Owner.
- **20%** after the tank material arrived at site and inspected and approved by the Owner.
- **40%** after the completion of all the required works under the Scope of Work of this tender and approved by the Owner, and the Maintenance Bond is submitted and approved by the Owner.

1.15 Surplus Material

The Contractor shall hand over the surplus construction materials, supplies, and remaining items at the Site to the Owner at no cost upon Final Operational Acceptance, excluding the Contractor's Construction Equipment and Tools.

1.16 Progress of The Work

The Work shall be started promptly and shall be performed with such progress as may be required to ensure the completion of the Work in accordance with the Key Contract Date referred to herein or any extension thereof granted by the Owner. The Work shall be executed at such time and with such forces, materials and equipment as may be required or requested by the Owner to attain the above requirement.

1.16.1 Progress Report and Meetings

Progress Report and Meeting at Weekly intervals after approval of the Project Schedule, the contractor is to submit to the Owner written detailed progress reports in an approved form, indicating the stage reached in the ordering of material, manufacture, and delivery of all components of the material, Construction, Commissioning. The reports should include details of any delays and the remedial action proposed. These reports are to be forwarded promptly so that on receipt by the Owner the information contained therein is not more than three days out of date.

A daily site progress meeting shall be conducted with the Owner, these meetings shall take place at a mutually agreed-upon time and location. with the purpose of discussing and reviewing the daily progress of the project, addressing any concerns or challenges, and ensuring effective communication between all parties involved. The Contractor shall provide updates on work completed, milestones achieved, and any potential issues that may impact the project schedule.

1.17 Subcontracting

In the event that subcontracting becomes necessary:

1.17.1 Approval and Notification

The Contractor shall not subcontract any portion of the work under this contract without the prior written approval of the Owner.

If subcontracting is deemed necessary, the Contractor shall submit a written request for approval to the Owner detailing the scope of the subcontracted work, the identity of the proposed subcontractor, and the qualifications of the subcontractor.

The subcontractor shall be registered company in Jordan classified by The Government Tenders Department (GTD) not less than third grade in the required subcontracting field.

1.17.2 Right to Reject Subcontractors

The Owner reserves the right to reject any proposed subcontractor for any reason.

1.17.3 Responsibility of Subcontractors

The Contractor shall remain fully responsible for the performance of all subcontractors and their compliance with the terms and conditions of this Tender. The subcontractors shall follow the Contractors procedures and quality plan.

Any breach or default by a subcontractor shall be deemed a breach or default by the Contractor.

1.17.4 Financial Responsibility

The Contractor shall be financially responsible for all payments due to subcontractors. The Owner shall have no direct financial obligations to subcontractors.

1.17.5 Notification of Changes

The Contractor shall promptly notify the Owner in writing of any proposed changes to subcontractors during the term of this Tender.

Changes to subcontractors require prior written approval of the Owner.

1.17.6 Compliance with Laws

All subcontracting activities must comply with applicable laws and regulations.

1.17.7 Termination of Subcontractors

The Owner may, at its sole discretion, require the Contractor to terminate a subcontractor if the subcontractor's performance is unsatisfactory or if there is a violation of the terms of this Tender conditions and terms.

The Owner may also terminate the contract in whole or in part if the Contractor fails to comply with the subcontracting provisions.

1.18 Site Regulations

The Contractor and his employees shall be subject to rules and regulations for the conduct of the Work at the Site as the Owner may establish. The Contractor shall be responsible for the enforcement among his employees of the Owner's instructions regarding signs, advertisements, the prevention of fires and accidents and other general regulations.

1.18.1 Site Supervisors

The Contractor shall provide the services of competent specialists to supervise the construction of the Works and erection / installation of equipment and equipment at the Site.

The Contractor Construction Manager shall be given full responsibility and authority to negotiate and agree regarding points arising out of the erection, in order that the work may proceed with a minimum of delay. Directions and instruction given by the Owner to the Construction Manager shall be interpreted as having been given to the Contractor.

1.18.2 The Contractor's Site Representative and Personnel

The Owner will be at liberty to object and to require the Contractor to remove from the site any representative or person employed by the Contractor who shall misconduct himself or is incompetent or negligent in the proper performance of his duties. The Contractor shall remove any person objected to upon receipt of the Owner written request for him to do so and shall provide in his place a competent representative at the Contractor expense.

1.18.3 Working hours

No work shall be carried out on the site outside of the normal working hours stated in the labor laws, or on the locally recognized days of rest, unless the work is unavoidable, or necessary for the saving of life or property or for the safety of the works, in which case the Contractor shall immediately advise the employee of the situation.

The Contractor is responsible for obtaining any required permits or approvals from the Owner in written related to extended working hours or outside the standard normal working hours and ensuring compliance with company's regulations governing such activities.

1.18.4 Site Entry Permits

The Contractor shall adhere to entry, exit instructions and working hours in accordance with the Owner's instructions.

1.18.5 HSE Instructions

1.18.5.1 Health and Safety (HSE) Management at Site

The Contractor shall appoint a qualified HSE officer at site to be responsible for maintaining the safety and protection against accidents of personnel on the site. The HSE specialist shall be qualified and experienced with a proven track record and shall have the authority to issue instructions and take protective measures to prevent accidents.

The Contractor shall adhere to the health, safety and environmental regulations and instructions followed in the Site and preserve the Owner's public property.

1.18.5.2 Precautions Against Fire

The Contractor shall take all reasonable precautions to avoid outbreaks of fire on the Works, Temporary Works, offices, stores and other places and things connected therewith, especially with respect to the safe storage of dangerous and hazardous goods.

1.18.5.3 Health and Safety Responsibility

The Contractor shall be responsible for any damage to the health of his staff, laborers or any project persons engaged on the project site.

The Contractor shall comply with all the relevant labor laws of the Government of Jordan and also international labor rules where applicable and shall apply them to his employees. The Contractor shall duly pay and afford these employees all their legal rights. The Contractor shall require all such employees to obey all applicable laws and regulations concerning safety at work and on the site.

The Contractor shall indemnify and hold the Owner harmless from any claims, damages, or liabilities arising out of or related to injuries, illness, or death of the Contractor's workers occurring on the construction site. The Contractor assumes full responsibility for the safety and well-being of its employees and shall ensure adequate workers' insurance to cover any work-related injuries or illnesses.

1.18.5.4 Craneage and Scaffolding

The Contractor shall ensure that the craneage and handling of all plant and equipment is carried out in a safe and workmanlike manner. The manufacturer's lifting instructions shall be adhered to, including the use of all proper lifting and jacking points.

The Contractor shall assess and provide for the Contractor's own use such craneage and lifting equipment as is necessary to complete the Work.

The Contractor shall assess and provide for the Contractor's own use such scaffolding as is required to safely complete the installation and testing of the Work. All scaffolding shall be erected in accordance with Occupational Safety and Health Administration (OSHA) safety orders and Jordan regulations, whichever provides the greater degree of safety.

All scaffolding shall be installed using safe trade practices and maintained in a safe condition.

1.18.6 Temporary Construction Offices

The Contractor shall provide, if required, furnish, and maintain temporary construction offices and provide /obtain safe services and infrastructure using mobile caravans.

1.18.7 Housekeeping

The Contractor shall maintain housekeeping practices to ensure a safe working environment for the workers where waste generation and environmental damage will be minimized.

1.19 Liability for Equipment, Material, and Systems Damages

The Contractor shall be responsible for loss or damage to the existing equipment, material and system in the work execution area until the work is being completed and commercial operation is achieved.

1.20 Utilities

The Owner will supply the construction power to the Contractor. The Contractor will be charged 0.115 JD/KWh.

The Owner will supply the service water and Demin Water to the Contractor for the Tank testing only. The contractor will be charged 1 JD/m³ of Service Water.

The Contactor shall provide the service water for its temporary offices and labors.

1.21 Coordination / Interface

1.21.1 General

The Contractor shall be responsible for coordinating his Work and equipment with the Work and equipment of the Owner at the Site. In all instances where his Work is affected by the existing equipment, he shall take the initiative in obtaining or giving information required for proper coordination for his work or equipment. The Contractor shall ask the Owner in writing, for all data and information needed from him for the execution of the Work under this Contract. Such requirements shall be itemized.

The Contractor shall perform all coordination directly with the Owner and shall check all physical interference's, clearances, and interfaces with the existing equipment or which under construction.

1.21.2 Interface Requirements

The interface points identified in the Technical Specification shall be made by the Contractor with the existing equipment and installations. It is not the intent of the Tender Documents to identify every interface point and, consequently, the lack of such identification shall not relieve the Contractor from the responsibility of ascertaining the location of all interface points.

The Contractor shall also be responsible for composite drawings within his scope of work for the purpose of interference check. The Contractor shall bring to the attention of the Owner any interference affecting the design or safety of components or systems.

2 Scope of Work

2.1 General

Samra Electric Power Company (SEPCO) is a company established by the Ministry of Energy under the Government of the Hashemite Kingdom of Jordan (GOJ). SEPCO currently owns and operates the Samra Power Plant located at the Samra Site. Samra Power Plant is an operating power generating complex set up through successive stages of installation since the year 2004 under EPC turn-key type contracts.

The Site of the Samra Power Plant is located approximately 35 km to the north of Amman on the outskirts of Al Hashimiyah.

The Samra Electric Power Company (SEPCO) plant consists of four phases:

- Phase 1 is a combined cycle facility in 2 x 1 configuration using GE 9E gas turbines,
- Phase 2 is a combined cycle facility in 2 x 1 configuration using GE 9E gas turbines,
- Phase 3 is a combined cycle facility in 2 x 1 configuration using Alstom/GE 13E2 gas turbines,
- Phase 4 is a combined cycle facility in 1 x 1 configuration using Alstom/GE 13E2 gas turbine.

All Combustion Turbines are designed and installed as dual fuel units capable of operating on light fuel oil or natural gas. Light distillate fuel unloading and 14-day storage facilities are located at the site. All gas turbines are designed to be capable of automatic changeover between the fuels.

Power generated by the Phases I and II combined cycle units is evacuated to NEPCO grid at 400kV via a 400 kV switchyard. The Phase III and Phase IV gas turbine units are connected to NEPCO grid at 132 kV.

2.2 Tender Scope

The tender is for providing a demineralized water supply system to meet the requirements of the Fogging System. The existing Phase I, II, and III demineralized water systems are interconnected. A new DM water tank with a working capacity of 2000 m³ will be installed.

The Project will be implemented on a turnkey basis and shall include all civil works, equipment, material, systems, and services to complete the new DM water tank render the system fully complete and functional for safe, reliable, and commercial operation under all conditions and respects. The selected Bidder will be responsible for cover design, engineering, supply of material, proper packing and forwarding, shipment & delivery at site, fabrication, installation, inspection, testing & commissioning, and start-up of the required new 2000 m³ Demin Water Tank and systems, as per the technical specifications and requirements.

Bidders are invited to submit a firm fixed lump sum price to the aforementioned Tender Scope and warrant for eighteenth (18) months following completion of all Work which is the subject of this Tender.

2.3 Applicable Documents

The documents listed herein, and the enclosed table of contents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect at the time of the order shall apply.

- a) Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

- b) The Owner shall be notified immediately by writing if a conflict between this document and laws, regulations or other documents cited herein occurs.

2.4 Scope of Supply and Services

The scope of supply and services includes all necessary activities and items to meet the intent of this specification to achieve highest availability and economic operation. The scope of supply and services includes design, procure, furnish, transport, construct, installation supervision, test, start-up, and commission, quality assurance, scheduling, follow-up, all design documentation, and O&M manuals.

2.4.1 Scope of Services

Table 2.1: Scope of Services Matrix

No.	Item	Bidder	Owner
1	Engineering and Design	X	
2	Detailed Engineering	X	
3	Procurement	X	
4	Manufacture and Fabrication	X	
5	Painting, coating of the Equipment	X	
6	Packing, Shipping, Delivery to Site	X	
7	Construction and Erection	X	
8	Construction and Erection Supervision	X	
9	Protection and Preservation	X	
10	Testing and Pre-Commissioning	X	
11	Commissioning and Testing	X	
12	Cathodic Protection	X	
13	NDT Inspections and Radiography	X	
14	Hydrostatic Test	X	
15	Factory Testing	X	
16	Land Cutting, Filling, Leveling and Concrete Work	X	
17	Craneage and Scaffolding	X	
18	Other Services as specified or necessary to complete Project	X	
19	18 Months Warranty	Required	

Note 1: 'X' denotes in scope.

2.4.2 Scope of Supply

- 1 One (1) Demin Water Storage Tank 2000 m³, with all necessary valves, drain equipment, inspection manholes, inlet flanges, outlet flanges, recirculating flanges, stair, handrail, vents, cathodic protection system as described in the tender technical specifications.
- 2 Civil and structural including, but not limited to:
 - Cutting, Filling and leveling.
 - Road.

- Retaining Wall.
 - Sidewalks within the site boundaries.
 - DM water tank foundation.
 - Lightning system.
- 3 Special Tools, as required.

The Contractor shall be deemed to have included in his Proposal any additional material and/ or equipment necessary to meet the design, performance, operation, and environmental criteria, but which are not specifically identified above, required to complete the required scope of works which is fit in all respects for its intended purpose and use.

2.4.3 Bidder Documentation

- Drawings – General Arrangements, P&IDs with instrument description, and any additional relevant engineering documentation,
- Erection and Commissioning Documentation,
- Equipment, Parts, systems Catalogues and datasheet.
- Quality Documentation.

3 Codes, Standards, Rules, and Regulations

3.1 Codes, Standards, Rules, and Regulations

3.1.1 General

- 1 All components, systems, and equipment shall be designed, manufactured, assembled, and tested at manufacturers' works, installed and, after installation at the Site, shall be tested and commissioned, in accordance with applicable internationally recognized Western standards, and statutory codes and regulations, including those specifically listed in this specification. If the Bidder proposes alternate codes or standards to those listed below, it must demonstrate that the alternate is of equal or superior stringency than the comparable code or standard system listed in this specification.
- 2 The most stringent requirements shall apply where addressed by more than one code, standard or regulation.
- 3 The latest edition at the Contract Agreement Date, with related revisions and addenda of the following regulations shall apply.
- 4 The design, equipment and materials forming part of the contract shall comply in all respects with applicable laws and applicable permits currently in force in Jordan.
- 5 The following list of codes, standards and regulations is not comprehensive of all potentially applicable codes and does not relieve the Bidder from complying with any other requirements and regulations applicable to this equipment. These codes and standards are a minimum requirement for the project specifications.

3.1.2 Tanks, Structural Steel, and Piping

- i) American Institute of Steel Construction (AISC)
- ii) American Welding Society (AWS)
- iii) American National Standards Institute (ANSI)
- iv) American Society for Testing and Materials (ASTM)
- v) American Society of Mechanical Engineers (ASME)
- vi) National Association of Corrosion Engineers (NACE)
- vii) British Standards (BS)
- viii) National Fire Protection Association (NFPA)
- ix) American Petroleum Institute (API)

3.1.3 Electrical Equipment

- i) Institute for Electronic Engineers (IEEE)
- ii) International Electrical Code (IEC)
- iii) National Electrical Code (NEC)
- iv) Underwriters Laboratories (UL)
- v) British Standards (BS)
- vi) National Fire Protection Association (NFPA)

3.1.4 Civil Works

- i) 1997 Uniform Building Code
- ii) American Association of Highway and Transportation Officials (AASHTO)
- iii) American Society for Testing and Materials (ASTM)
- iv) American Concrete Institute (ACI)

3.2 Language and Units

- 1 All correspondence, drawings, catalogues, illustrations, specifications, and other documentation related to the project shall be in the English Language.
- 2 Metric units shall be used on all drawings, specifications, descriptions, etc., including erection manual, operation manual, and maintenance manual and parts catalogue. Dual units (Metric and United States Customary Units (USCU)) are permitted.
- 3 The use of [mbar] and [bar] instead of [Pa] is allowed for fluid and gas pressure.

3.3 Design Data

The plant site is located 32°08'39.5"N, 36°08'36.3"E in Al Hashemiya, Jordan. The Site is easily accessible and is connected by roadways to the National Highway.

3.3.1 Site Climatic Conditions

The equipment and systems shall be designed based on the following site conditions:

- **Ambient Temperature:** -5°C to 46°C
- **Relative Humidity:** 3.5% to 98%
- **Rainfall:** 80 mm in 24 hours
- **Wind Velocity:** 36 m/ sec
- **Site Elevation:** 570 m Above Sea Level (A.S.L)
- **Seismic:** The Facility shall be designed for Zone 2B, as determined from UBC 1997.

3.3.2 Water Quality

The water quality in the Power Plant as follows:

Table 3.1: Demin Water Quality

Parameter	Value
Conductivity	< 0.2 $\mu\text{s}/\text{cm}$
Silica (SiO_2)	< 7 ppb
Sodium (Na)	< 7 ppb

3.3.3 Estimated System Parameters

Table 3.2: Estimated System Parameters/ New DM Storage Water Tank

System	Parameter	Value
New DM Storage Water Tank	Filling Rate	50 m^3/hr .
New DM Storage Water Tank	Discharge Rate	120 m^3/hr .

System	Parameter	Value
New DM Storage Water Tank and Fogging Pumps Systems	Pressure at the Fogging Pump Skids Inlet	Min 2 bar and Max 6 Bars

Important Notes:

1. The Contractor shall not use any galvanized material inside the New Demin Water Tank.
2. Forwarding pumps and its instrumentations, Power Supply, Manholes, and duct bank will be supplied and constructed by others. Accordingly, the Contractor shall not cast the Tank Foundation before the clearance from the Owner.

4 Technical Specifications

4.1 New 2000 m³ Demin Water Tank

4.1.1 General Requirements

The tank shall be designed in accordance with the requirements of the latest issues in force (including the latest published addenda, interpretations, and case rulings) at the date of the Tender submittal of the Codes and Standard API650.

4.1.2 Identification, Drawings and Specifications

1. A tabulation of field erected tank shall be furnished to the Owner and shall include tank name by function, item number, tank standards, class and reference drawing numbers. Reference drawings shall include tank location, dimensions, (including capacity), description and locations of appurtenances and fittings and a description of the foundation structure.
2. A tank specification shall be completed for the tank which shall include design conditions, mechanical data, material specifications and any special comments pertaining to the tank. The above item shall be submitted to the Owner for review before the Contractor requests the material for the tank.
3. The tank must be designed in accordance with the referenced Codes and Standards or as modified by approved Contractor drawings. Nominal diameter shall be taken as inside diameter for shell plates and must be the same for each course. The proposed diameter is 15.2 m, and the proposed height is 12 m, Alternate tank sizing may be offered if a cost saving to the owner can be demonstrated, Nominal tank capacity must be maintained. The owner must approve any alternate.
4. Design shall consider the various loads of equipment, platforms, ladders, personnel, linings, insulation, wind and earthquake loads as specified herein and shown on final construction drawings. All walking and working surfaces shall comply with applicable standards.
5. Wind pressure and earthquake loading shall be determined by the Contractor based on the site climatic condition provided in section 3.3.1. Earthquake and wind forces shall not be combined.
6. Foundation design, wind and earthquake loading calculations shall be submitted to the Owner for review and comment.

4.1.3 Detail Design Requirements

4.1.3.1 Tank Roof

The roof shall be designed as a self-supporting structure in accordance with the appropriate Codes and Standards plus live loading, the tank roof and supporting structure shall be designed to support dead load plus a uniform live load as per the codes and standards and wind load as specified. Flat heads, side plates etc. shall be adequately stiffened to support the loads as specified.

The Tank roof shall be DOME roof.

4.1.3.2 Tank Reinforcement

Tank reinforcing shall be made of carbon steel unless otherwise noted. No internal structural reinforcement for roofs and walls of any tank will be permitted except as specifically shown in final construction drawings.

4.1.3.3 Plate Thickness

Shell plate thickness shall be calculated in accordance with the appropriate Codes and Standards.

The minimum plate thickness for the shell, bottom and roof shall not be less than 7 mm for carbon steel tank.

NOTE: These thicknesses do not include corrosion allowances. Corrosion allowances shall be noted on the drawings and shall be a minimum of 1.5 mm.

4.1.3.4 Welding

All tank walls shall be butt welded with full penetration welds using the fusion arc process. Roofs may be lap welded construction, if consistent with design requirements. Bottoms of lined tank shall be butt welded. Bottoms of unlined tank may be lap welded.

The Contractor shall locate longitudinal and girth weld seams so they do not interfere with weld attachments, such as nozzles, manways, pipe supports, legs, etc Location of all weld seams shall be indicated on the fabrication drawings. Certified welding procedures, complete with qualifications and test records in accordance with ASME Boiler and Pressure Vessel Code Section IX shall be submitted to THE OWNER for review and approval.

4.1.3.5 Tank Appurtenances and Fittings

1. The Contractor shall provide tank connections and appurtenances such as shell and roof manholes, gauge hatches, roof and shell nozzles, clean-out fittings, shell connections, bolted access doors, water draw-off sumps, scaffold cable supports, threaded connections, platforms, walkways and stairs.
2. The tank shall have all connections needed for level, Temperature, and differential pressure instrumentation for reading.
3. The contractor shall design and propose the control, monitoring, and instrumentation needed to ensure reliable and safe operation for all equipment.
4. The Tanks shall be provided with Radar Level Indicators.
5. Local Indicators:
 - Two Indicators for local mounting shall have 115 mm minimum dial size. Dial scales shall be such that the normal operating range is in the middle third of the dial range.
 - Local Pressure Indicator.
6. Roof vacuum and overpressure vents for the tank shall be sized to allow a withdrawal rate of 130% of maximum withdrawal of all pumps operating and a fill filling rate of 200% of maximum filling with all pumps operating.
7. The vent to atmosphere shall be through carbon-di-oxide absorber vessel suitably mounted on the tank. CO₂ absorber tank shall be provided with the initial fill of chemicals as per the codes and standards.
8. The overflow and drain from tank shall be combined and shall be led to nearest drain (at zero level) by a seal-trough so as not to come directly in contact with atmosphere.
9. Platforms, walkways and stairs, including handrailing, shall conform to the requirements of the code and standards.

4.1.3.6 Nozzles

- One (1) roof manhole 750 mm diameter (with handling facility for cover).
- One (1) shell manhole 750 mm diameter (with handling facility for cover).
- One (1) flanged inlet connection.
- One (1) flanged outlet connection.
- One (1) flanged return connection.
- Two (2) spare flanged connection.

- One (1) overflow.
- One (1) roof vent.
- Two Wells for temperature sensor TE and TI.
- One (1) gauge hatch.
- One (1) flange drain connection.

Nozzles subject to freezing shall project into the tank by a distance sufficient to permit continued operation with an ice layer on the inside of the tank wall.

4.1.3.7 DM Water Tank Cathodic Protection

Deteriorating effects of galvanic corrosion on vital metallic structures shall be mitigated using the distributed galvanic anode system and impressed current anode system. Cathodic protection systems shall be designed to meet the protection criteria on structure and materials as required in the latest versions of National Association of Corrosion Engineers (NACE) International standards.

Galvanized material not allowed to have contact with Demin water.

4.1.3.8 Miscellaneous Requirements

The following requirements shall be adhered to:

1. No aluminum shall be used.
2. Treads and platforms must be made of grating; material of construction shall be galvanized steel.
3. Ladders and stairs shall have two (2) handrails. Ladders where used shall be provided with safety cages starting at 2.5m above grade.
4. The free width of platforms and stairs shall be 1,000 mm independent of any insulation.
5. Risers of stairs shall be 200 mm.
6. All instruments, valves and nozzles must have easy access from fixed platforms.
7. The tank shall be earthed in accordance with the provisions of the applicable code and standards. A minimum of two (2) electrical earthing pads shall be provided for the tank. The pads shall be carbon steel plates 50 x 75 x 15 mm. Each pad shall have two (2) holes drilled and tapped for M12 threads.
8. Handrails shall be provided around the perimeter of the roof and the stair platform at the roof level.

4.1.4 Materials Of Construction

1. Carbon Steel Plate material shall be new open hearth full weight grade as specified, free from laminations or other imperfections. All plates shall be flat, with no appreciable buckle or warpage. All sharp edges of sheared plates must be removed, especially on the inside of tank. The thickness gauges and weights shall be to approval but no less than listed below:

Table 4.1: Plates thickness gauges and weights

Thickness/ mm	Weight/ kg/m2
5	39
6	46.8
8	62.4
10	78

2. Shell plates, bottom plates, roof plates and structural steel shall be ASTM A-36 material or better.
3. Bottom plates shall be of the same thickness as the lower shell sections.

4. Rolled and welded plate nozzle necks, as well as tube stiffeners, shall be made of steel of the same grade as the plate onto which these fittings are connected.
5. The pipe stubs shall be made of seamless drawn tube API 5L, Grade A or B. or better.
6. All bolts shall be threaded to ISO pitch.
7. Gaskets used for seals on piping and fittings shall be made of hydrocarbon resisting compressed not including asbestos, or equivalent type, 2.0 mm thick up to 450 mm diameter and 3 mm thick above 450 mm diameter.
8. The tank shall be of suitable material to meet the Demin water quality outlined in Section 3.3.2.

4.1.5 Fabrication

4.1.5.1 Plate and Sheet

The fabrication shall be developed to obtain the finished dimensions with a minimum number of welds. Plates must be rolled and welded in place to within 1.0% of true radius. Shapes must be bent on a power brake to avoid wrinkling or excessive drawing. A generous radius of corners is desirable. Edges that must be joined by welding shall be brought accurately to line with waves or shoulders eliminated before final welding. The finished fabrication must be clean in appearance, free from discoloration, weld spatters and obvious imperfections.

4.1.5.2 Reinforcement

Unless otherwise noted on the final construction drawings, all reinforcing plates shall be flame cut with mechanical guide equipment. The extent of reinforcement will be designed in accordance with the appropriate Codes and Standards and subject to the approval of the Owner.

4.1.5.3 Welding

All welders employed in the work shall be qualified in accordance with approved applicable Standards. Qualification of welders using radiographs is not acceptable. Welder qualification must be by samples for mechanical testing in accordance with the specified Code.

4.1.5.4 Welding Carbon Steel

All welding shall conform to the requirements of approved applicable Codes and Standards, upgraded by the details on the final construction drawings. Welds shall not project in excess of 1.5 mm above the surface of the adjacent plates.

A minimum of 10% of welds shall be inspected by x-ray techniques. Any defects shall be repaired in accordance with the Code and with procedures approved by The Owner.

All sharp corners must be ground to a 3 mm radius as a minimum or to paint/lining manufacturers recommendations where applicable.

4.1.5.5 Appurtenances

1. The Contractor shall, so far as practical, and in order to reduce erection time, fabricate in the shop all manholes, nozzles and such other appurtenances which will become a permanent part of the tank. These items shall then be shop welded to the individual plates of which they will become a part.
2. The Contractor shall submit a welding procedure for approval by the Owner. Approval with changes noted (if any) shall be submitted to the Contractor in writing before fabrication is started.
3. The Contractor shall provide anchoring brackets on tank where required.
4. All nuts, bolts, gaskets and blind flanges must be furnished with the tank unless noted to be furnished from other sources.
5. Shell joints shall be double butt welds with full penetration and complete fusion.

6. Base rings shall have continuous fillet welds on both the inside and outside surfaces of the shell to base ring junction.
7. Roof joints shall be double butt welds with full penetration and complete fusion. If lap joints are used full fillet welds on each side (inside and outside) shall be employed.
8. All bolting shall conform to ASTM Standards. External bolting for manways, flanges and connections shall be stud bolts with hex nuts. Material grade for piping nozzle bolting shall not be less than ASTM-A193, grade B7 for bolts and ASTM - A193 grade 2H for nuts Material grade for manway bolting shall not be less than ASTM-A-307 grade B for bolts and nuts. Thread lubricant shall be used for all thread make-up.
9. One complete set of test gaskets shall be provided for the tank. Material and thickness to approval.

4.1.6 Erection

4.1.6.1 Setting of Bottom Tank Plates

1. The Contractor shall be responsible for the positive and complete bearing of flat bottom tank plates on the foundations. The following methods shall be followed for setting tank bottoms:
2. A level 50 mm layer of sand or better, saturated with petroleum base 120-180 Baume gravity oil, or approved equal will be installed on the foundation for bedding of plates by the Civil Works Contractor. The Contractor shall be responsible for the inspection and approval of this work and shall provide representation accordingly.
3. Where butt welding is not required for special linings, Bottom plates shall be lap joint fillet welded. The lap joints shall have a 25 mm lap as a minimum with full fillet welds. Welds shall be checked for leaks.
4. Sand shall be removed from under the bottom plates around the periphery of the tank for a distance of 450 mm. This void shall then be pressure grouted with sand-cement grout consisting of one (1) part Portland cement, 1-1/2 parts sand and water as required for grout flow. See Section 3D of these Specifications. In addition, The Tank shall be caulked to its concrete foundation with non-hardening butyl rubber type caulk.

4.1.6.2 Wind Protection

The Contractor shall protect the shell against damage by wind during its erection and prior to the complete installation of the roof.

4.1.7 Testing

4.1.7.1 General

All field inspections and field tests shall be performed in accordance with the appropriate Codes and Standards and shall be carried out in the presence of The Owner. The inspection and test results are subject to acceptance by The Owner.

Tank bottom welds shall be inspected for leakage by the vacuum box testing method.

Tank shell welds shall be inspected for leaks by the hydrostatic test method in accordance with the requirements of the Codes and Standards.

4.1.7.2 Hydrostatic Test

1. Upon completion of the steel tank fabrication and prior to the application of any interior lining or exterior coating or insulation, the tank shall be given a hydrostatic test. The Owner shall be given two (1) week advance notice thereof so that the Owner may have a representative present during the test. The Contractor shall supply all necessary flanges, gaskets, bolting parts, piping, hose, pumps and other equipment necessary to accomplish the test. In the event that leaks develop at a welded joint, the joint shall not be repaired by additional welding, but the

weld shall be completely removed in the area of the defect and replaced with new weld and examined by radiography. The tank will be retested as described above.

2. The filling rate shall not exceed 150mm per hour. After filling a load stabilizing period of at least 24 hours shall be observed. The contractor shall provide an appropriate tracer in the test water to facilitate ease of location of any leaks.
3. A tabulation of settlement data shall be provided to The Owner (twice per day minimum) for the evaluation of settlement rates. An alteration of the fill rate based upon the evaluation may be requested.
4. Any material or parts of work which are otherwise found to be defective, in the opinion of the Owner shall be replaced by new parts or materials.
5. The Tank roof and nozzle reinforcing plate shall be pneumatically tested in accordance with the appropriate Codes and Standards. It is suggested the roof be tested whilst the tank is filled with water i.e. after the hydrostatic test.
6. Upon completion of testing, the Contractor shall dispose of the water by discharging it in a controlled manner e.g. 150mm per hour, into storm sewers or ditches or any area Suggested by the Owner, to avoid damage to the Site grading. Where appropriate the Contractor shall investigate the possibility of transferring water from tank to tank to conserve water. The Contractor shall not exceed the allowable period for retaining test water inside the tank before they are required to add chemicals (anti-corrosion, anti-algae).
7. The tank shall be thoroughly cleaned and dried out by the Contractor after the test water is removed. The paint/ lining manufacturer's representative shall inspect the tank prior to application of any coating materials to satisfy himself that the tank is clean, dry and ready to accept coating.

4.1.7.3 Factory Tests

The Contractor shall submit mill certificates for the shell, roof and base plates. Mill certificates shall include, but not be limited to, chemical analysis, ultimate strength, and yield point.

4.1.8 Shop Drawings

1. The Contractor shall prepare design calculations, shop, and erection drawings of the tank for review by the Owner.
2. Fabrication and/or procurement shall not proceed prior to review of the calculations and shop drawings by The Owner. Such review shall not relieve the Contractor of responsibility for accurate detailing and fabrication.
3. The Contractor shall advise the Owner when calculations and shop drawings are ready for review. The Owner will then advise the Contractor if review can be waived prior to release for material procurement and fabrication.
4. Shop drawings shall show details of connections. Welding shall be indicated by standard welding symbols in accordance with the requirements of the appropriate Codes. Shop and erection drawings shall show the size, location, length, and type of each weld.

4.1.9 Painting

All surface preparation, base coats, intermediate coats, and finish coats including touch-up, whether shop applied, or field applied, shall be in accordance with code and standards.

Epoxy-coating shall be provided on the inside of tank in three coats (minimum) resulting in total thickness of not less than 150 microns.

4.2 Civil Works

4.2.1 General Requirements

1. The contractor shall perform a Geotechnical investigation to determine the foundation design required (Retaining wall and tank foundation), one copy shall be submitted to the Owner.
2. All roads and concrete structures shall be designed, handling and tested per the following codes (ACI, AASHTO, ASTM) and Jordanian Statutory codes and regulations.
3. Foundations shall be designed and adopt necessary earthquake design criteria suggested by UBC 1997. The seismic risk zone for this site shall be considered Zone 2B from UBC 1997.
4. The design of all pavements shall conform to the requirements of the American Association of State Highway and Transportation Officials (AASHTO), and/or local standards whichever is more stringent and to accommodate AASHTO semi-truck loading with impact added.
5. All tests required by approved codes and standards shall be borne by the Contractor including preparing, storing, and transporting test specimens to the place of testing.
6. Disposal of Unusable Materials, Work output waste and any obstacles shall be removed from the Site to disposal areas as approved by Owner.

See enclosed Site Plan and its Topographic Survey (Appendix A).

4.2.2 Cutting, Filling and Leveling

The Contractor shall carry out the Cutting, Filling, and leveling in all areas inside the new concrete retaining walls until the level (BM00 +115.90):

- All levels under +115.90 level shall be filled with approved and tested backfilling materials.
- Filling, leveling and compaction on the Site shall be carried out in layers not exceeding 250 mm thickness after compaction.
- The Contractor shall carry out all necessary quality control works including in-situ soil density tests and other laboratory testing to ensure that all materials used in the filling elsewhere are compacted in accordance with the specified requirements, The maximum dry density (MDD) for the purpose of this specification shall be determined by the 95% of Modified Proctor per ASTM D1557 or equivalent.
- Disposal of Unusable Materials and any obstacles shall be removed from the Site to disposal areas as approved by the Owner or/ and the related authority.
- Final grading to include 10 cm gravel topping to reach +116 level, Gravel to be same size as agreed with Owner.

4.2.3 Retaining Wall

The Contractor shall Design and erect concrete reinforcement retaining Wall:

- The top level of all concrete walls type A shall not be less than 230 cm above +116 level, concrete walls type B shall be minimum 30 cm above foundation of existing concrete retaining wall.
- The minimum depth of foundation shall be not less than 1 meter below natural ground level.
- The galvanized wire angle and mesh above concrete wall shall be erected same existing.
- Blinding concrete and lean mix concrete shall be not lower than $f_c' = C20$ Mpa with 10 cm Min thickness.

- Adequate drainage behind the retaining wall shall be considered in design.
- The structural concrete with compressive strength shall be not lower than $f_c' = C25$ Mpa.
- Reinforcement bars to be deformed high yield bars grade 60 according to ASTM.
- All concrete shall be ready mixed.
- All concrete shall be fair faced; Exposed edges shall be properly chamfered.
- curing for reinforced concrete shall be made.
- Compression test for concrete shall be tested by contractor.
- Expansion joint shall be considered in design.

4.2.4 DM Water Tank Foundation

The Contractor shall design and erect DM water tank Ring Foundation and shall be founded on suitable, reinforced concrete foundation with appropriate design, foundation shall have minimum plinth height of 300 mm from adjacent final ground level:

- Blinding concrete and lean mix concrete shall be not lower than $f_c' = C20$ Mpa with 10 cm Min thickness.
- The structural concrete with compressive strength shall be not lower than $f_c' = C30$ Mpa.
- Reinforcement bars to be deformed high yield bars grade 60 according to ASTM.
- All concrete shall be ready mix.
- All concrete shall be fair faced; Exposed edges shall be proper chamfered.
- Water curing for reinforced concrete shall be made for a minimum period of 7days.
- Below grade concrete shall be coated by two layers of bitumen.
- Compression test for concrete shall be tested by contractor.

4.2.5 Road

The Contractor shall design, erect new Road and it shall be connected from the existing Road inside power plant to the new tank area, it shall be 6 meters asphalt-paved lanes 7.5 cm thickness in two layers (including MC & RC layers) with concrete curbs, the concrete curbs specifications and construction (cast concrete below and behind the curbs) shall be same the existing in power plant.

- The work includes removing an eight-meter length approximately for all Hight from the existing concrete wall and the existing pedestrian walkway and any obstacles to connect the existing road to the new tank.
- Excavation, leveling, filling, backfilling by approved materials works is included.
- Asphalt mix design shall be submitted for approval.
- The contractor shall submit suggested road drawings for approval before proceeding with the work.
- The backfilling materials and asphalt pavement shall be tested by the contractor.

4.2.6 Sidewalks

The contractor shall supply and erect Sidewalks around tank foundation and new asphalt roads, the Sidewalks shall be 1.0 meters wide, 150 mm thick reinforced concrete pavement:

- Reinforced steel shall be $\phi 10/15$ cm in both directions.

- The work includes 8 cm lean concrete under the sidewalks.
- Ground layers under lean concrete shall be compacted.
- Expansion joint shall be each 10 m.

4.2.7 Lighting system

The Contractor shall supply and erect lighting units (Heavy Duty LED lighting units) around the New Demin Water Tank and on the tank's ladder.

Light fittings and accessories shall be IP 65 rated. Fitting bodies shall be constructed from die cast aluminum construction with toughened glass face. All fittings shall have high grade reflectors.

The location of the lighting and small power equipment shall be reviewed at site before installation so that satisfactory co-ordination with pipework, ductwork, power cables, and other plant can be assured.

5 Bidder Provided Documentation

The Bidder shall provide at a minimum the following documentation as part of the contract. Bidder to provide schedule of all documentation that will be provided after signature the Contract Agreement.

5.1 Project Documentation

- 1 Provide a complete turnkey project schedule from initial design to installation and test.

5.2 Engineering Documentation

1 System Descriptions

2 Calculations

The Contractor shall provide the followings for the Owner's review and approval before ordering the material, equipment, and systems:

- a) The new DM Water Tank detailed design and engineering Documents and as described in the Owner's Technical Specification.

3 Drawings

- a) General Arrangements.
- b) P&IDs.
- c) Catalog sheets indicating general assembly drawings, section drawings, dimensions, weights, and material of construction.

5.3 Construction and Commissioning Documentation

- a) Erection and Commissioning Documentation,
- b) Operation and Maintenance Documentation, and Parts Catalogue.
- c) Provide a copy of manufacturer's Quality Assurance Manual and procedures.
- d) As-Built Drawings.

6 Quality Control, Inspection and Testing

6.1 General Requirements

The Contractor shall have sole responsibility for ensuring compliance with the overall quality requirements of the Works and shall ensure that Subcontractor's implement those quality control activities that are appropriate to the extent and nature of their supply.

The Contractor shall establish and maintain a documented inspection system capable of producing objective evidence that all materials; manufactured parts and assemblies comply with the quality requirements of the Contract. The Contractor shall establish a written procedure to identify and dispose of any deviations identified during the course of manufacture, inspection and test etc.

6.2 Non-conformance

Non-conformances identified by the Owner shall be notified to the Contractor by issue of the Owner Non-Conformance Report. The Contractor shall receive and action all non-conformance reports and re-inspection shall not be notified until the completed non-conformance report, together with any applicable re-work or concession application, have been accepted by the Owner.

Where applicable, rejection of materials, equipment and/or components will be made as promptly as practicable following any inspection or test involvement by the Owner. Failure to inspect and or reject materials, equipment and/or components shall neither relieve the Contractor from responsibility for such items which may not be in accordance with the specified requirements, nor impose liability for them on the Owner.

The Owner shall have complete authority to accept or reject any equipment or part thereof considered unsatisfactory and/or not in accordance with the contract requirements. The witness of any inspection and tests by the Owner of any components or lots thereof does not relieve the Contractor of any responsibility whatever regarding defects or other failures which may be found before the end of the warranty period.

6.3 Welder Qualification

All welders shall be tested and qualified in accordance with the appropriate pressure piping code. Relevant original documentation verifying the welders' qualifications shall be available for inspection prior to the commencement of any production welding. The test welds accepted by the testing authority in qualifying each welder shall be available for inspection at any time prior to completion of the Work.

The permanent record shall be a set of drawings showing all pipework. The size, type, location, welder identification and date of welding of each welded joint shall be clearly recorded in the drawings. This record shall be maintained by the Contractor and shall be available for inspection at any time prior to the completion of the Work. The permanent record shall be handed over on completion of the Work.

7 The Proposal Price

The bidder warrants that the proposed Price to be inserted in the tables below is based on the requirements of the Tender.

The Proposal Evaluation Process will consider the Grand Total Price.

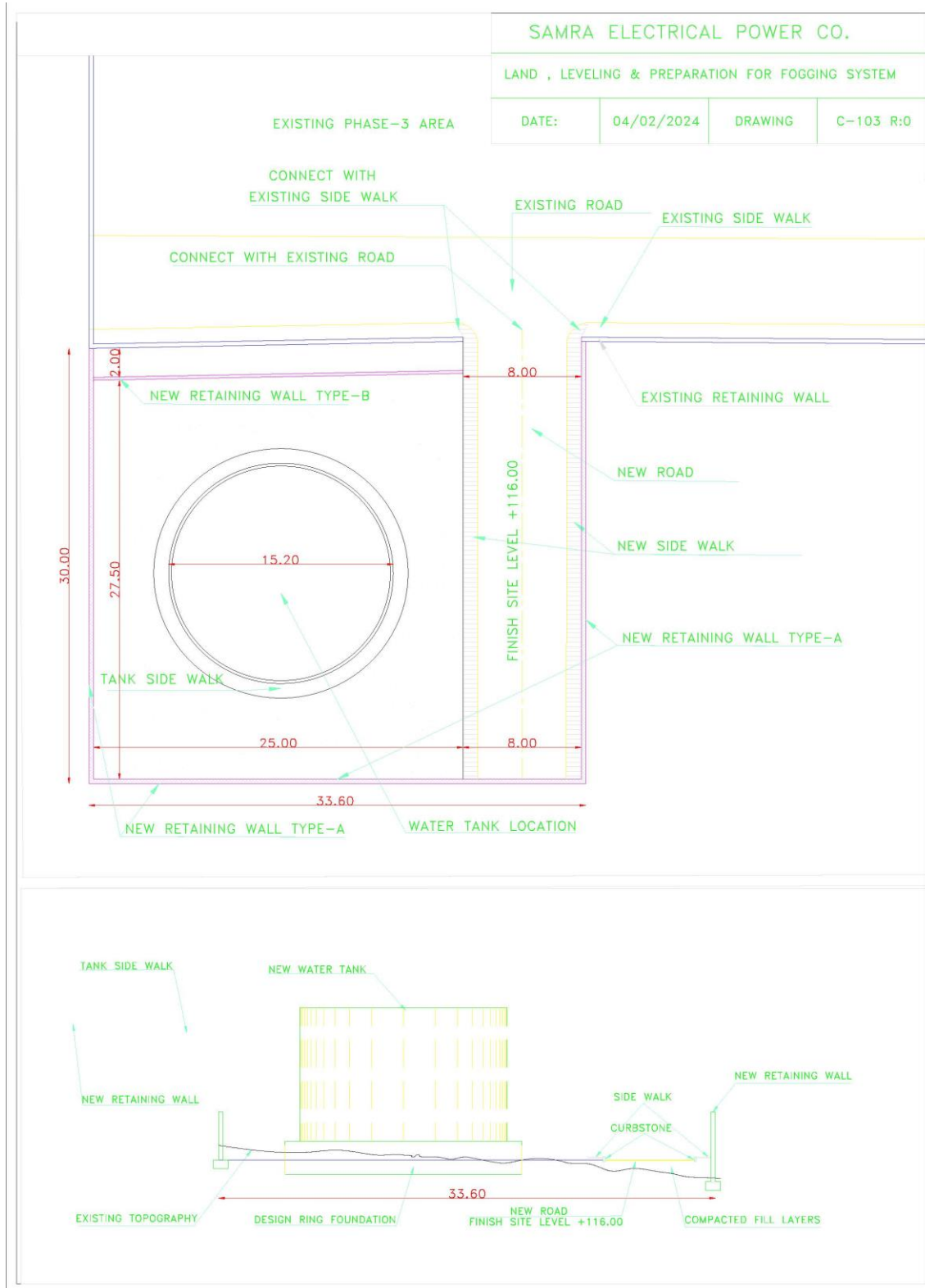
7.1 Price Grand Summary.

Table 7.1: Price Grand Summary

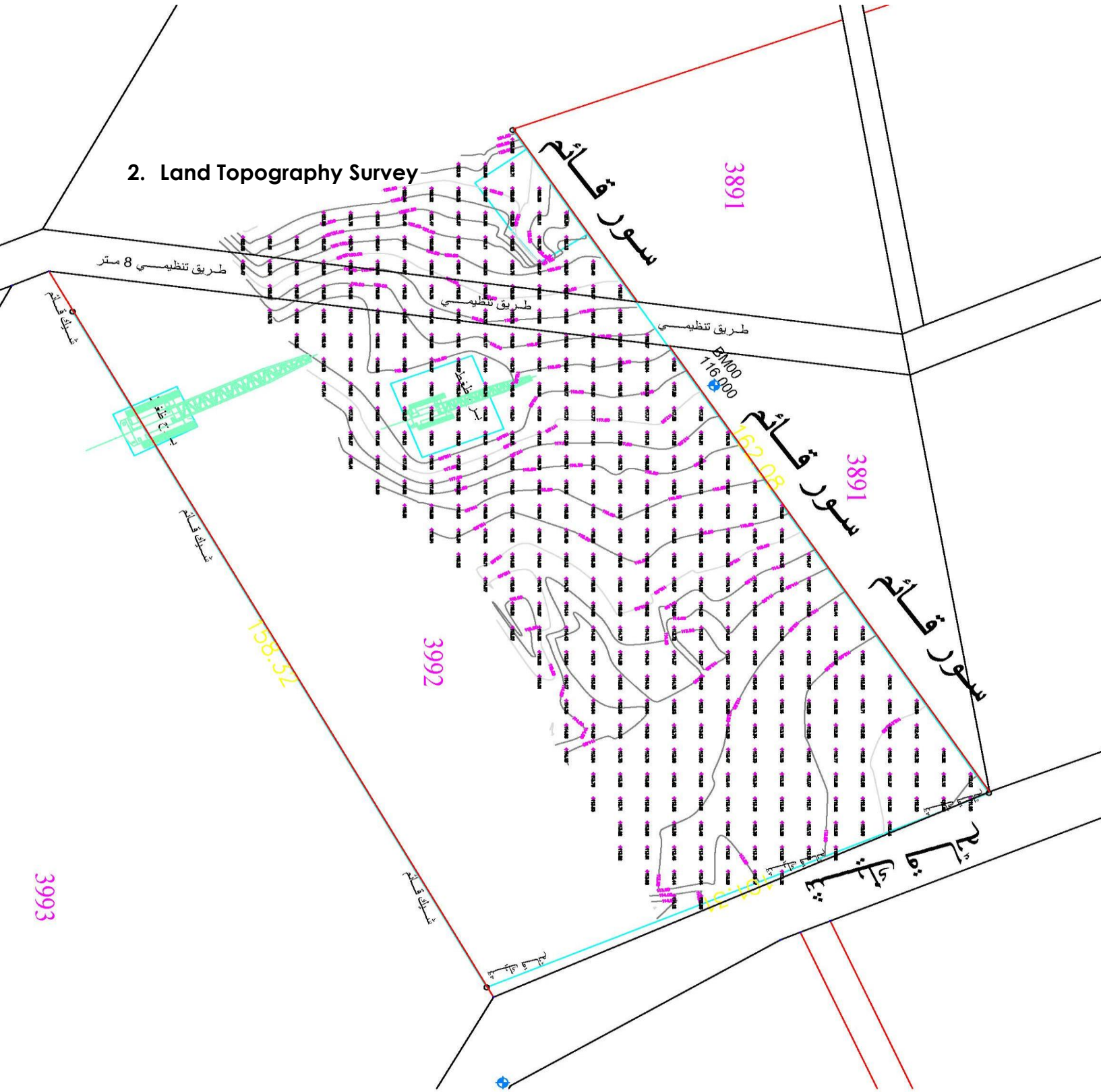
No.	Description	Total Price JOD
1	Supply One (1) Demin Water Storage Tank 2000 m3, with all necessary valves, drain equipment, inspection manholes, inlet flanges, outlet flanges, recirculating flanges, stair, handrail, vents, cathodic protection system, lighting system as described in the Owner's Technical Specifications DAP (at the Site of Samra Power Plant) Excluding Fees, Taxes.	
2	Design, Erection, Testing, and Commissioning of the New Demin Water Storage Tank to provide the required Tender's Scope of Work meeting Owners Technical Specification Requirement Including All Fees and Taxes	
3	Supply, Construction, Testing the Civil Works as described in the Owner's Technical Specifications Including All Fees and Taxes	
Price Grand Summary (Lump Sum Price)		

Appendix A: Drawings and Layouts

1. Civil Works - Site Plan



2. Land Topography Survey



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3992

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