

ITB-PAL-0000058252: Construction of Main Influent Pressure Line from Existing GRP Pipe to KY WWTP – Tender Documents



Construction of Main Influent Pressure Line from Existing GRP Pipe to Khan Younis Waste Water Treatment Plant (KY WWTP)

Tender Documents

BOQ

Executing Entity: UNDP/PAPP

Employer: UNDP/PAPP

January 2019

Preamble to the Bill of Quantities

- 1 Metric units of measurements have been adopted. All dimensions given in the item descriptions of the Bill of Quantities are in millimetres unless stated otherwise.
- 2 General instructions and detailed descriptions of work and materials are not necessarily repeated in the Bill of Quantities. Reference should be made to the Conditions of Contract, Specification and the Drawings for these information, and these documents are to be read in conjunction with the Bill of Quantities.
- 3 The Tenderer is deemed to have visited the project site and fully acquainted himself as to the location of each of the project components to be carried out and to all conditions which may affect the performance of the works, including but not limited to:
 - Access to each of the roads in which the pipes will be installed.
 - Access for the plant, equipment and materials.
 - Surface conditions.
 - Restrictions applicable to working in Gaza Strip area.
 - All safety regulations and employer site safety procedures.

The Tenderer is also deemed to have surveyed the actual conditions of the site and made his own assessment of the type and extent of the works prior to submitting his offer.

- 4 The unit prices inserted in the Bill of Quantities by the Contractor (when tendering) shall be full inclusive value of the work described under the respective items including all necessary labour, supply and installation of pipes, fittings, equipment, goods, plant, materials and temporary works, and all other costs and expenses which may be required in, and for the construction of the Works described, together with all risks, liabilities and obligations set forth or implied in the Tender Documents, except only those works for which provision is made under separate items in the Bill of Quantities.
Unless clearly stated otherwise in the Bill of Quantities, the unit prices entered against the various Bill items shall include for executing such items in all locations in accordance with the Contract Documents and shall include for all associated temporary works.
- 5 The Contractor (when tendering) shall not enter any new items in the Bill of Quantities except as where expressly provided for.
- 6 The unit prices quoted by the Contractor (when tendering) shall inter alia be deemed to cover tolerances, waste, cutting to waste, working round obstructions, overbreak and for a proportion of the works being in small quantities.
- 6.1 The unit prices shall also include for shipping, transporting, storing, packing, boxing out, fixing, building in, making good and all other associated and incidental works for the pipes, fittings and equipment supplied under the Contract.
- 6.2 The quantities shown in the Bill of Quantities are approximate only and the work will be measured strictly net to the limits indicated on the Drawings or as otherwise defined.
- 7 Where items are provided for the removal and reinstatement of specific features the unit prices shall include for the cost of removal of such features and for cleaning, storing and reinstatement on completion of the appropriate section of work.
- 8 The unit prices shall allow for the maintenance, temporary diversion, support and protection of existing services, sewers and the like and also for working in a manner such as to avoid causing them damage.

- 8.1 Where the Works may affect adjacent structures or services, the unit prices in the Bill of Quantities shall be deemed to cover any temporary works which may be necessary to prevent damage to the structures or services during the construction of the Works including any temporary diversion of services which may be necessary.
- 8.2 The unit prices in the Bill of Quantities shall also be deemed to cover any permanent measures required to support and protect such structures and services except insofar as specific provision is made in the Contract for payment for such work.
- 9 Pipeline Route Surveying
 The contractor shall be responsible for all necessary surveying and pegging out of the pipeline route before starting any excavation works. Any deviations from the proposed route shown on the drawings due to the local site conditions shall require the approval of the Engineer in writing.
- 10 All the pipes and equipment will be paid on the basis of a lump sum rate per unit for completion of the works, including design, manufacturing, shipping, transporting, storing, installation, fixing, concrete embedding if necessary, electrical connections to distribution panels for all motorized equipment, drains up to sump if required, providing water from the municipal water supply network or other water source for works and hydrostatic tests, testing, commissioning and all other contingencies to deliver and perform the work in accordance with the technical specifications, drawings and the instructions of the Engineer.
- 11 The unit prices shall include, unless otherwise specified, all necessary fittings, joints, bolts, nuts, gaskets, flanged adaptors, flanges, collars, warning tapes, etc...
- 12 The works, materials or activities listed in the following shall always be considered as auxiliary works to be included in the Unit Prices of the Bill of Quantities:
 - Any measurement for execution and payment of the works, including the provision of measuring instruments, gauges, setting out marks, marking paint and relevant tools, labor, etc., the maintenance and preservation of gauges and setting-out marks during the execution of the works.
 - Provision of small tackle tools or any other equipment required for the execution of the works.
 - Supply of consumable for the Contractor's equipment.
 - Removal of all contamination (refuse, debris, building rubbish and the like) arising from or in connection with the Contractor's work.
 - Protection of the executed works and of the items made available for execution of the works from damage, fire, inclement weather, vandalism and theft, etc., to the time of final acceptance.
 - Transportation of all pipes, fittings, materials and structural components from the storage places on site to the points of use and return transportation, if required.
 - Submitting and transporting any samples required.
 - Carrying out tests on materials and works, etc., that is required by the Engineer.
 - Fuel and lubricants for operation of Contractor's equipment.
 - All safety precautions and measures for safeguarding labor as well as securing surrounding areas.
 - Lighting of the work site.
- 13 The unit prices shall include dismantling with due care any extra GRP pipes of around 150 m length laid at the south-eastern side of Sofa road after the intersection of roads No. 24 and Sofa road and transferring them to CMWU stores in Gaza including all excavation, backfilling, materials, equipment, machinery and workmanship required to perform the work in accordance with the technical specifications and the instructions of the Engineer.

Bill of Quantities

Item	Description	Unit	Quantity	Unit Price (USD)	Total Price (USD)
	<p>General Notes:</p> <p>Before starting any work, the contractor has to prepare and provide for the Engineer's approval survey works and detailed shop drawings for the ductile iron pipe to be installed in roads No. 24 and road No. 15 in Al Fukhari area, starting from the existing DN 700 mm GRP pipe at Sofa road to the entrance of KY WWTP, including layout, profiles, natural and design levels, slopes, excavation depth, details of valves, fittings and connections to be used between the existing DN 700 GRP pipe, the existing DN 900 mm ductile iron pipe at the entrance of KY WWTP and the new DN 700 mm ductile iron pipe, chambers, and any related works. The unit prices shall include all costs required for preparing and providing these survey works and shop drawings. The unit prices shall include the supply, delivery and installation of all materials including pipes, valves, fittings, elbows, dressers, couplings, adaptors, dismantling joints, flanges, blind flanges, gaskets, bolts, nuts and all fittings and accessories necessary for complete installation as per drawings, specifications and the manufacturers and the Engineer instructions. The unit prices shall include the cost of transportation, handling, storage and all coordination necessary to deliver and access the materials to the project site.</p> <p>The Contractor shall submit for the engineers' approval a list of all materials, pipes, valves, fittings and accessories necessary for proper installation of pipes and valves as per the manufacturers' instructions prior to procurement of materials. All pipes, valves, fittings and accessories are to be suitable for waste water.</p> <p>Also, the unit prices shall include excavation of the trench to the required depth, installation, testing and commissioning of the pipelines with all necessary fittings and accessories as detailed in the tender documents and approved shop drawings and in compliance with the instructions of the pipes and valves manufacturers, pipe bedding and backfilling of trenches with clean sand and selected backfilling soil as approved by the Engineer to the design levels, warning tapes, removal of excess/unwanted soil from the site to an approved dumping locations at the x-settlements areas in the west of Khan Younis Governorate. The unit prices shall also include necessary protection, reallocation and reinstatement of all existing infrastructure and utilities with high quality and to original functional status (such as water pipes, sewer pipes, agricultural water pipes, electric and telephone cables or ducts, poles, fences, wall borders, manholes, sewage pits, farmers irrigation lagoons and any existing building, .. etc.) including repairing of any damages or shortage parts and keeping the continuity of the services .</p> <p>The unit prices shall include the cost of all labor, machinery, equipment and all necessary materials and requirements for the above described installations. The unit prices shall also include carrying out leakage and hydrostatic pressure tests for the pipeline as described in the tender documents (detailed method of statement for the pressure test to be submitted by the contractor for the Engineer's approval).</p> <p>Documentations:</p> <p>The contractor shall provide the followings for all the imported pipes, valves and fittings:</p> <ol style="list-style-type: none"> 1 - Certificate/License of authorization from the official authorities in the supplier country. 2 - Certificate of origin. 3 - bill of lading (original copy). 4 - compliance certificate from authorized "third party" agency. 				

Bill of Quantities

Item	Description	Unit	Quantity	Unit Price (USD)	Total Price (USD)
1	Pipes, Valves, Connections and Concrete Works				
1.1	Supply, install and test DN 700 mm DUCTILE IRON pipes with socket & spigot and a length of 5.7 to 6.00 meter per piece (European Conformity marking C E), (Thickness class: K9), (Minimum Pressure class: C25) in accordance with ISO 7186, EN 598, with high alumina cement mortar internal lining according to ISO 4179, and external zinc based coating according to ISO 8179-1. The unit prices shall include supplying, manufacturing, shipping, transporting, storing, handling and delivering to the work site of all pipes, all required elbows and bends (vertical and horizontal), gaskets, fittings and all accessories (including all types of elbows and bends, adaptors, short piece sockets and spigots, collars, flexible couplings, flanges, blind flanges, puddle flanges, dismantling joints...etc.), jointing materials and all required materials, all according to the specifications, drawings and the Engineer's instructions. (All pipes have to be delivered with protection caps on both ends).	L.M	1,300		
1.2	Ditto, but DN 900 mm.	L.M	48		
1.3	Ditto, but only supplying DN 700 mm ductile iron pipes for maintenance. The unit price shall include all required gaskets and the transportation to CMWU stores.	L.M	36		
1.4	Supply, install and fix on the ductile iron pipe a complete gate valve with gear box DN 28", PN 16 bar, for wastewater usage, Hakohav, AVK type or equivalent including wheel and all needed flanged couplings, adaptors, dismantling joints, short piece sockets and spigots, flanges, gaskets, stainless steel 316L bolts, nuts and washers, painting, jack support and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	2		
1.5	Supply, install and fix on the ductile iron pipe a complete stainless steel (316L) combined air release and vacuum release valve DN 6", PN16 bar, Model: D-020 ARI type or equivalent, for wastewater usage, including tees, reducers, 6" gate valve, flanged couplings, adaptors, dismantling joints, short piece sockets and spigots, flanges, gaskets, stainless steel 316L bolts, nuts and washers, drainage pipes, ventilation 6" steel pipes, painting, jack support and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.6	Supply, install and fix a complete piping connection between the existing DN 700 mm GRP pipe at Sofa road and the new DN 700 mm ductile iron pipe including all needed flanged couplings, dismantling joints, adaptors, short piece sockets and spigots, dressers and collars, flanges, gaskets, stainless steel 316L bolts, nuts and washers, painting and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.7	Supply, install and fix all socket or all flanged ductile iron tee with 45° angle branch (Y connection) 900x900x700 mm including all needed flanged couplings, adaptors, short piece sockets and spigots, flanges, gaskets, stainless steel 316L bolts, nuts and washers and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		

Bill of Quantities

Item	Description	Unit	Quantity	Unit Price (USD)	Total Price (USD)
1.8	Supply, install and fix 900/700 mm ductile iron reducer between the DN 900 mm ductile iron pipe (at the entrance of KY WWTP before the Y connection) and the new DN 700 mm ductile iron pipe including all needed flanged couplings, adaptors, short piece sockets and spigots, flanges, gaskets, stainless steel 316L bolts, nuts and washers and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.9	Ditto, but only supplying 900/700 mm ductile iron reducer for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	1		
1.10	Supply, install and fix as requested by the Engineer DN 700 mm, 22.5 degree, ductile iron elbow including gaskets and any required adaptors, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.11	Ditto, but only supplying DN 700 mm, 22.5 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		
1.12	Supply, install and fix as requested by the Engineer DN 700 mm, 45 degree, ductile iron elbow including gaskets and any required adaptors, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.13	Ditto, but only supplying DN 700 mm, 45 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		
1.14	Supply, install and fix as requested by the Engineer DN 900 mm, 22.5 degree, ductile iron elbow including gaskets and any required adaptors, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.15	Ditto, but only supplying DN 900 mm, 22.5 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		
1.16	Ditto, but only supplying DN 1000 mm, 22.5 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		
1.17	Supply, install and fix as requested by the Engineer DN 900 mm, 45 degree, ductile iron elbow including gaskets and any required adaptors, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.18	Ditto, but only supplying DN 900 mm, 45 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		
1.19	Ditto, but only supplying DN 1000 mm, 45 degree, ductile iron elbow for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	2		

Bill of Quantities

Item	Description	Unit	Quantity	Unit Price (USD)	Total Price (USD)
1.20	Supply, install and fix a complete steel flanged dresser with ears and carbon steel tie rods DN 28", with min. PN 16 bar, and to be suitable for installation on the DN 700 ductile iron pipes, including flanges, gaskets, stainless steel 316L bolts, nuts and washers, painting and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.21	Ditto, but only supplying DN 28" steel flanged dresser for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	3		
1.22	Ditto, but only supplying DN 36" steel flanged dresser for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	3		
1.23	Ditto, but only supplying DN 40" steel flanged dresser for maintenance. The unit price shall include all required gaskets, bolts and accessories and the transportation to CMWU stores.	No.	3		
1.24	Supply, install and fix ductile iron blind flange with min. PN 16 bar to close the end of ductile iron pipe DN 700 including all needed flange spigot pieces and flanged adaptors, gaskets, stainless steel 316L bolts, nuts and washers, painting and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.25	Supply and cast reinforced concrete B 300 for valves and connections chambers, manholes, etc.. including shuttering, reinforcement with 12 mm dia. steel bars, casting concrete on site, vibration, curing, protection and insulation of concrete by approved materials, 60 cm cast iron covers for each manhole with bearing capacity of 25 ton and galvanized steel ladder for each manhole, and all according to the specifications, drawings and the Engineer's instructions.	M ³	45		
1.26	Supply and cast reinforced concrete B 300 for thrust blocks including shuttering, reinforcement with 12 mm dia. steel bars, casting concrete on site, vibration, curing, protection and insulation of concrete by approved materials, and all according to the specifications, drawings and the Engineer's instructions.	M ³	15		
1.27	Dismantle the existing flanges inside the Energy Breaker located in Salah Elden street at Daharit Al-Shaikh Mohammed to open the influent pressure pipes coming from Al-Wafia and Hisbit Al-Samak pumping stations (PS No. 2&3), and close and open the existing six valves located on the outlet pressure pipes and related branches and connections of these two pumping stations in order to direct the influent to the Energy Breaker to flow to the pumping station No.8. The unit price shall include inspecting and making all necessary repairing and maintenance works for all these valve to ensure that they are functioning well including supplying, installing and fixing all needed hand wheels, stems, gland followers and packings, bonnets, wedge gates, seat rings, flanged couplings, adaptors, short piece sockets and spigots, dressers and collars, flanges, gaskets, stainless steel 316L bolts, nuts and washers, painting and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	L.S	1		

Bill of Quantities

Item	Description	Unit	Quantity	Unit Price (USD)	Total Price (USD)
1.28	Dismantle any completely damaged and unfunctional existing valve on the outlet pressure pipes as instructed by the Engineer, and supply, install and fix instead on these pressure pipes a complete gate valve DN 24", PN 16 bar, for wastewater usage, Hakohav, AVK type or equivalent including wheel and all needed flanged couplings, adaptors, dismantling joints, short piece sockets and spigots, flanges, gaskets, stainless steel 316L bolts, nuts and washers, painting, jack support and all required parts, fittings and accessories, and all according to the specifications, drawings and the Engineer's instructions.	No.	1		
1.29	Ditto, but 20"	No.	1		
1.30	Ditto, but 16"	No.	1		
Total (USD)					

**Construction of DI Main Influent Pressure Line from Existing GRP Pipe
to KY WWTP**

Grand Summary

**Construction of DI Main Influent Pressure Line
from Existing GRP Pipe to KY WWTP**

USD

Grand Total :

USD

In Words:

Name of contractor :

Signature :

Stamp :

Date :