SEA-SHORE-ROSEN LTD.

COASTAL, HARBOUR & MARINE ENGINEERING

PLANNING, CONSULTING, SUPERVISION

ים-חוף-רוזן בע"מ

הנדסת חופים, נמלים וימית

תכנון, יעוץ, פיקוח

ASHKELON DESALINATION PLANT
100Mm^3/year desalinated water volume

MARINE INTAKE SYSTEM

TURN-KEY PROJECT

DESIGN AND CONSTRUCTION TENDER

TECHNICAL SPECIFICATIONS AND DRAWINGS

November 2002

(Version 2002-11-17)

ON BEHALF OF

IDE technologies ltd.

O.T.I.D DESALINATION PARTNERSHIP

OTV

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O.T.I.D DESALINATION PARTNERSHIP

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APPENDIX E
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LIST OF ANNEXES

1 INTRODUCTION

1.1 General

1.1.1. The O.T.I.D. Desalination Partnership (hereinafter the "OTID") wishes to procure planning, design and engineering consulting services for the design, supply of material and construction of several structures, as part of the Ashkelon Desalination Plant with a capacity of 100 million cubic meters per annum, desalinated water, all in accordance with the provisions of this Turn-Key Tender and all Annexes and Appendices thereof (hereinafter the "Tender").

1.1.2. OTID is a statutory entity entrusted with the set-up of the Ashkelon Desalination Plant.

1.1.3. These specifications refer to the design, supply of material and construction of several structures, as part of the Ashkelon Desalination Plant with a capacity of 100 million cubic meters per annum, desalinated water. The marine installation will handle on a routine operation a discharge of 35,000 m3/hour of seawater via 3 identical pipelines, and 80% of that discharge during short maintenance periods via 2 of the 3 pipelines.

1.1.4. The Marine Intake System structures and works for the Ashkelon Desalination Plant be designed, supplied and built as described in detail in Section 3 of this Tender are summarized below:

1.1.4.1. Three marine intake structures at a water depth of circa –16.0 m below ILSD (Israel Land Survey Datum), top level below -7.0m, serving three HDPE pipelines OD 1600 mm.

1.1.4.2. Three intakes HDPE or alternative pipelines OD 1600 mm from the intake structures to the flanges of the sump basin of the pump house (sump basin and pumping house not included in the tender); overall length circa 3300 meters (about 1100 meters each). Pipe thickness to be proposed by CONTRACTOR and approved by OTID. Pipes to be buried under the sea bottom such that a coverage of the top of the pipes to the original pre-dredged sea bottom elevation will be at least 1.5m. Burial depth and

21.8 Jelly fish protection system

The jelly fish protection system shall be measured for payment as lump sum (LS).

The unit price shall be deemed to include all costs for design, fabrication, transportation, installation, equipment, labor, materials, etc. required for the successful completion of the jelly fish protection system, in full compliance with the requirements of these specifications and to the full satisfaction of OTID.

21.9 Navigation warning buoys system

The unit price shall be deemed to include all costs for design, fabrication, transportation, installation, equipment, labor, materials, etc. required for the successful completion of the navigation warning buoys system, in full compliance with the requirements of the Israel Shipping and Ports Administration and of the specifications in this Tender and to the full satisfaction of OTID.

21.10 Oil pollution warning system

The unit price shall be deemed to include all costs for design, fabrication, transportation, installation, equipment, labor, materials, etc. required for the successful completion of the oil pollution warning system, in full compliance with the requirements of the specifications in this Tender and to the full satisfaction of OTID.

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Table 1 - ASHKELON DESALINATION PLANT - CIVIL AND MARINE WORKS

BILL OF QUANTITIES

Item No.	Description	Unit	Quantity	Unit Price ($)	Total Price ($)
21.1	Intake structure suction head	LS	3		
21.2	Intake HDPE pipelines 1600 mm OD, including concrete anchor blocks, temporary works of all kind, dredging and excavating, backfilling, removal and rebuilding of existing breakwater structure, scouring protection, etc. The pipelines are to be buried from Pump House Sump Basin connection to the intake structures.	1m	1100 m each x 3		
21.3	Short pipelines sections with same internal diameter as that of the HDPE pipe 1600 mm OD, with flanges for embedding in the western Sump Basin wall.	LS	3		
21.4	3" pipelines HDPE to be installed together with the intake pipelines described in 21.2	LS	6		
21.5	Armored electric cable including laying in the trench of the intake pipelines or inside 3" sleeve or in 3" HDPE air pipe	m	Min 1,100		
21.6	Area development.	LS	1		
21.7	3 intake pipelines pigging system with 1 pig.	LS	1		
21.8	Jelly fish protection system	LS	1 or 3		
21.9	Navigation warning buoys complete with lights, radar reflectors, moorings and anchoring.	LS	Min 4		
21.10	Oil pollution warning systems complete with lights, radar reflectors, moorings and anchoring.	LS	4		
	Optional oil pollution floating skirt booms complete with moorings and anchoring.	LS	3		
	Extra dredging or filling requested by OTID.	m^3 of profile	-		
	Extra marine concrete casting of structures if requested by OTID.	m^3	-		
	Extra gratings set for one intake structure.	set	-		
	Extra pig.	set	-		
	Optional redesign of breakwater for reduced overtopping	LS	-		
	Extra breakwater construction including material supply.	m of breakwat-er crest	-		
	Total				