



In Association With





Agreement EF/S-88 Supervision on contract SE-158

Contract No: SE-158 TO: Gulf Consultant CC: Ministry of public works ATTN: Eng. Demetrios CC: Eng. Faleh Noman				Project: Construction, Operation and Maintenance of TSE network and Reservoirs for Project Area D1				
					ios TRANS NO. MOCEC CO 459 MDS 0043			Rev: 1
FRON	I: KCCEC Contracting C	Co.			DATE: 27-Mar	rch-202		Civil
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	Drawings/Sketch		Review & Comments		S	2	B - Approved as noted	
	Report		As F	Requested			C - Approved with comment	s,
	Variation		Info	rmation / Record	ds Only		Revise & Resubmit	
	Test Certificate		For	Necessary Action	on		D - Not Approved	
	Test Results		Other:				E - Information Required, Revise & Resubmit	
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Item No.	Draws, Spec or BOQ Ref.		Iten Seq No.		Description of Submittal or Document Title			Copies
1	1 Sec 02321-2.04		- Material: Marking Tap		: Marking Tape (Bui	(Buried)		3+CD
				Use: In	Use: In T.S.E- D.I Pipeline			
				Source :	: M.E.T.C, Kuwait			
				Attached.	: Company profile ,Ma	terial TD	S, Sample	CALLER MANAGEMENT AND ADDRESS OF THE STREET
Subcon	stractor Name:			l N	Main Contractor:	K	CCEC Contracting Co.	1
	ntractor Name: Manager Name:				Main Contractor: Project Manager Nan		CCEC Contracting Co.	2021
Project	Manager Name:			F			CCEC Contracting Co.	201
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DEPARTMENT OF SUPERVISION

Agreement No. EF/S/8	within Area"			ication and Greenery
TRANSMITTAL NO: KCCE	EC-GC-158-MDS-175	REV.1	DATE: 27.03.2021	
CONTRACT NO:	Construction, Operationand Reserviors for Proj		tenance of TSE netwrok	
CONTRACTOR:	KCCEC			
SAMPLE DESCRIPTION:	,	Warning Ta	oe	TO BE FILLED IN BY CONTRACTOR
SPECIFICATION REFEREN				
CONTRACTOR'S SIGNATI	URE:	27	3	
	A- APPROVE B- APPROVEC C- NOT APPR D- FOR INFO	O AS NOTED OVED RMATION		TO BE FILLED IN BY R.E
RESIDENT ENGIN	NEER SIGNA	ATURE	DATE 28/3/2021	

- D. The Contractor shall provide to the Engineer a certificate stating the name of manufacturer, product name, style number, chemical composition of filaments or yarns and other pertinent information to describe fully the geotextile.
- E. Geotextile shall be subject to sampling and testing, to verify conformance with the specification.
 - 1. The frequency of the testing shall be as directed by the Engineer.

- All samples shall be collected and tested in the presence of the Engineer in a laboratory approved by the Engineer.
- F. Each lot of geotextile delivered to the site shall contain a certificate that the material is in accordance with manufactures certification.
- G. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight and contaminants.
 - 1. The wrapping shall be maintained during shipment and storage.
- H. Geotextiles shall be transported and stored in accordance with the manufacturers recommendations.

TABLE 1 Geotextiles for Granular Pine surround

Criteria	Standard	Limits	Units
Tensile strength (strip test)	EN ISO 10319 or ASTM D5035	Min 6	KN/m
Puncture resistance	EN ISO 12236	Min 1000	N
Pore size	EN ISO 12956	Max 120	Microns
Water permeability 10cm water column	EN ISO 60500-4	50 to 125	litres/m²/Sec
Weight	EN 965	Min 130	G/m²

2.04 MARKING TAPE (BURIED)

- A. Polyethylene plastic tape with metallic trace wire or metallic strip for electronic detection meeting the following criteria:
 - 1. Colour: Yellow or as directed by the Engineer
 - 2. Nominal width: 150mm
 - 3. Nominal thickness: 100 microns
 - 4. Minimum longitudinal tensile strength: 100kg/sq.cm
 - 5. Minimum longitudinal elongation (at break): 300%
 - "Sewage", "Stormwater" or "Treated Effluent", as appropriate, in permanent black lettering (30mm height) and 2.0 meter spacing to be imprinted on the tape in Arabic and English.

2.05 SERVICE PROTECTION DUCTS

- A. Protection ducts shall be unplasticised polyvinyl chloride (uPVC) pipe, minimum 150mm diameter.
 - 1. All pipes and fittings shall be new and unused.
 - Pipe shall be free from visible cracks, holes, foreign materials, blisters, deleterious materials, wrinkles and dents.
 - Plastic pipe shall be delivered to the site in unbroken bundles or rolls, packaged in such a
 manner as to provide adequate protection to pipe and pipe ends, either threaded or plain, from
 damage or exposure to sunlight.
 - 4. All plastic pipe fittings to be installed shall be moulded fittings, manufactured from the same material as the pipe, and shall be push fit type with neoprene rubber gasket.
 - 5. No site made bends will be permitted.

3.20 EXISTING SERVICES, FACILITIES AND STRUCTURES

- A. The Contractor shall be responsible for ascertaining from his own inspection of the Site and coordination with respective utility authorities and other public bodies, the position of all mains, pipes and cables whether underground or overhead, within or near the Site or existing structures.
- B. Where trench excavation is carried out close to or across existing pipes, cables or other services, the Contractor shall provide suitable temporary supports or shoring, to the Engineer's approval.
 - If for any reason, any portion or portions of the existing facilities or structures give way, the Contractor shall carry out at his expense, all necessary remedial work to the satisfaction of the Engineer.
- C. Where specified on the Drawings or by the relevant Utility Authority, split ducts shall be provided as specified herein.
- D. Where, in the opinion of the Engineer, construction of the pipeline cannot reasonably be carried out unless the pipe, cable or other service is permanently severed, permanently diverted or permanently supported by concrete, he shall instruct the Contractor to undertake such work.
 The Contractor shall be reimbursed for all such work at the appropriate rates in the Bills of Quantities. If no applicable rates exist, the Engineer shall establish the amount to be paid to the Contractor.
- E. Any relocation of existing services shall be done in accordance with the requirements of the responsible authorities.

3.21 FENCES AND WALLS

- A. Where trench excavation crosses barriers such as fences and walls, the Contractor shall obtain written approval of the Engineer before breaching the barrier.
- B. The Contractor shall provide temporary fencing for any parts of such barriers as have had to be removed.
- C. After trench excavation has been reinstated, the Contractor shall carry out such work as the Engineer may order, for permanent restoration of such barriers.

3.22 CROSSING WATERCOURSES

A. Contractor shall be deemed to have allowed for all the additional measures necessary for the proper construction of the pipeline where it crosses under or over streams, culverts, pipes and other watercourses, including maintaining the full flow of water.

3.23 BURIED MARKING TAPE

A. Buried marking tape shall be placed in the trenches above all pipes.
 I. Depth shall be 0.50m below finished grade.

3.24 PIPELINE MARKER POSTS

- A. Marker posts, in accordance with Section 05500 "Metal fabrications", shall be placed over pumping or pressure mains at locations indicated on the drawings.
- B. All labelling and lettering shall be complete before installation.
- C. Marker posts shall be set in concrete as shown on the drawings.
- D. Extreme care shall be taken to avoid damage to reflective sheeting and/or leftering

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E. Any posts with damaged sheeting or lettering shall be replaced at the Contractor's e



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