



## **SUPPLY AND INSTALLATION OF IRRIGATION SYSTEM**

### **QUOTATION NO: SC985/2010**

**INVITATION TO BID**  
**THE FOLLOWING PARTICULARS MUST BE FURNISHED**  
**(FAILURE TO DO SO MAY RESULT IN YOUR BID BEING DISQUALIFIED)**

NAME OF BIDDER .....

POSTAL ADDRESS .....

STREET ADDRESS .....

TELEPHONE NUMBER CODE..... NUMBER.....

CELLPHONE NUMBER .....

FACSIMILE NUMBER CODE ..... NUMBER.....

VAT REGISTRATION NUMBER .....

HAS AN ORIGINAL TAX CLEARANCE CERTIFICATE BEEN ATTACHED (MBD 2)? YES/NO

SIGNATURE OF BIDDER .....

DATE .....

CAPACITY UNDER WHICH THIS BID IS SIGNED .....

**TOTAL BID PRICE: R\_\_\_\_\_ (transferred from summary in pricing schedule)**  
**VAT included.**

Municipality / Municipal Entity: OVERSTRAND MUNICIPALITY	
<b>ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE MAY BE DIRECTED TO:</b> Contact Person: P Peters  <b>Tel:</b> 028 313 8956	<b>ANY ENQUIRIES REGARDING TECHNICAL INFORMATION MAY BE DIRECTED TO:</b>  <b>Contact Person:</b> Lauren Rainbird <b>Tel:</b> 028 313 8923 <b>Fax:</b> 028 313 8931

Name of Tenderer: \_\_\_\_\_

Signature of Tenderer: \_\_\_\_\_

Date: \_\_\_\_\_



**QUOTATION NO: SC985/2010**

**THE SUPPLY AND INSTALLATION OF AN IRRIGATION SYSTEM: MUNICIPAL OFFICES, MAGNOLIA AVENUE, HERMANUS**

Documents, in English, are obtainable at the offices of Overstrand Municipality at Hermanus Administration – Magnolia Ave, Hermanus, Tel. 028 – 313 8923 between 08h00 and 15h30. *Alternatively the documents can be downloaded from our website: [www.overstrand.gov.za](http://www.overstrand.gov.za).*

Sealed quotations, with “THE SUPPLY AND INSTALLATION OF AN IRRIGATION SYSTEM AT THE MUNICIPAL OFFICES, MAGNOLIA AVENUE, HERMANUS” clearly endorsed on the envelope, must be deposited in Tender Box No.4 at the offices of the Overstrand Municipality, Magnolia Avenue, Hermanus.

The closing date and time is on 19 November 2010 at 12h00 and will be opened in public immediately thereafter in the Committee Room, Hermanus Administration.

Tenderers should have a CIDB contractor grading 1SH or 1CE or higher. Quotations must be valid for EIGHT (8) weeks after the closing date

The Overstrand Municipality does not bind itself to accept the lowest or any quotation and reserves the right to accept any quotation, as it may deem expedient. Quotations are subject to the Standard Conditions of Tender, the Preferential Procurement Regulations of 2001 and the Supply Chain Management Policy of the Overstrand Municipality.

A compulsory site meeting will be held at the municipal offices (parking area adjoining Magnolia Avenue) Hermanus on 16 November 2010 at 10h00.

Please contact Lauren Rainbird at the following number (028 – 313 8923) for any technical information required.

HORTICULTURIST: LAUREN RAINBIRD  
DIRECTORATE: COMMUNITY SERVICES  
HERMANUS

Name of Tenderer: \_\_\_\_\_

Signature of Tenderer: \_\_\_\_\_

Date: \_\_\_\_\_



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**THE SUPPLY AND INSTALLATION OF AN IRRIGATION SYSTEM: MUNICIPAL OFFICES,  
MAGNOLIA AVENUE, HERMANUS**

**GENERAL MINIMUM STANDARDS**

**1. MINIMUM PERFORMANCE INFORMATION TO BE PROVIDED WITH THE SPECIFICATION**

- a) Required application, per week or other period (in mm), having due regard to plant type, size and density.
- b) Equipment selection, e.g. type sprinkler or sub irrigation.
- c) Equipment spacing (in meters) and configuration, e.g. rectangular, triangular or inline.
- d) Equipment flow rates (in liters / minute or m<sup>3</sup> / hour)
- e) Equipment operating pressure (in bars)
- f) Actual equipment precipitation rate (in mm / hour)
- g) Equipment running time, by area or group, to achieve the required application and total system running time in any 24 hour period (in minutes or hours)
- h) Total maximum water usage per day (in m<sup>3</sup>), with reference to (a) above.
- i) Sizes and pressure rating of pipes utilized, with system design maximum static and operating pressures (in bars).

**2. PIPEWORK**

- a) Only piping from approved manufacturers with guaranteed pressure rating shall be used
- b) All piping shall be installed according to manufacturers specification
- c) Pipes must be of adequate size to ensure that water velocities are kept preferably below 1.53m/s but in all cases below 2.14m/s
- d) All piping directly coupled to Municipal Mains should be of a type that is approved by the local authority. The pressure rating should also be as approved by local authority.
- e) Irrigation sub mains (sprinkler lines below ground level) shall be Class 6 (LDPE, HDPE or PVC)
- f) Fittings to be used:
  - LDPE – Nylon Insert with Clamps
  - HDPE – Compression
  - PVC – Moulded PVC or Fabricated
- g) Microjet piping can be Class 3
- h) Spray line pipe sizing shall not exceed 20% pressure variance between the first and last sprinklers on the line.

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### **3. TRENCHES**

- a) In general lawn areas where pop up sprinklers are mounted directly on piping – pipework shall be installed such that they have a minimum cover of 300mm below the finished grade.
- b) In lawn areas where swing arms are specified the pipework shall be installed such that they have a minimum cover of 500mm below the finished grade.
- c) In shrub areas pipework shall be installed to such that they have a minimum cover of 400mm below the finished grade
- d) Trenches shall be backfilled and compacted to prevent subsidence. Backfilled trenches must be compacted to the same density as surrounding undisturbed material.

### **4. SPRINKLERS**

- a) Sprinklers can be spaced in different configurations
  - (i) Triangular
  - (ii) Rectangular
  - (iii) Square
  - (iv) In-line
- b) The sprinklers shall be selected to operate only with the manufacturers pressure range
- c) Only sprinklers having a compatible rate of precipitation shall be used on the same sprayline
- d) Pop-up sprinklers shall be installed direct on lateral lines in lawn areas except in public parks, sports fields and large commercial areas where mechanical equipment such as tractors mowers etc. are used. In these instances sprinklers shall be installed on swing joint risers or flexible risers, so as to allow adjustment to cope with turf build up
- e) Shrub sprinklers shall be mounted on rigid risers of either PVC or galvanized iron.
- f) Shrub sprinklers shall be positioned such, as not to create a hazard or be prone to damage. In particular risers shall not be used on kerb edges where they are liable to be damaged by parked car overhangs. (Hi pop sprinklers should be used in these instances)
- g) Sprinklers that are not provided with low head drainage valves shall be surrounded with adequate drainage material to allow the sprinklers to drain freely and to circumvent the effects of low head drainage

### **5. SPRINKLER AND SPACING**

- (i) In the case of square, rectangular and in-line spacing of sprinklers the distance between sprinklers shall not exceed 50% of the diameter of coverage. In triangular pattern the spacing shall not exceed 55%. These figures are given as a general norm and may be superseded by the manufacturers recommended spacing.
- (ii) Spacing should be positioned according to persistent wind conditions
- (iii) In the case of triangular spacing the aim is to achieve an equilateral triangle and not a triangle with apex height equal to base length. The apex height would be 0,866 times the base length.

### **6. VALVES**

- a) No solenoid valve or valve in head sprinkler shall be used for a pressure or capacity in excess of the manufacturer's recommendation. In the interest of energy efficiency the pressure loss across a

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- solenoid valve shall not exceed 15% of the sprinkler operating pressure unless it is designed as a pressure-reducing valve and in such case it shall be stated
- b) Pressure reducing valves shall be installed where excessive line pressures occur
  - c) All systems connected to a portable system shall be fitted with an easily accessible isolating valve.
  - d) Sufficient isolating valves should be fitted so as to permit maintenance of the system without having to drain down the whole system. Mainlines generally shall have one isolation valve for each 500m and laterals at all connection points to be mainline. All solenoid valves or groups of valves should have an adjacent isolating valve fitted immediately upstream
  - e) Air release valves shall be fitted to all systems where air accumulation should occur
  - f) Valves installed underground shall be housed in valve boxes
  - g) Velocities should not exceed 2.4m/s through valves
  - h) Anti Vacuum valves shall be installed where the design necessitates these

## **7. WIRING**

- a) Allow low voltage cable (less than 50V) control cables should be installed to a depth of not less than 400mm and preferably laid along the same line as the pipe work so as only to present a single ground digging hazard.
- b) All cable joints shall be waterproof
- c) Cable selection shall ensure that the voltage available at a solenoid shall not be less than 90% of the solenoid rating
- d) All wiring should be installed in conduit 9PVC or HDPE
- e) Jointing should take place in valve boxes or cable joint boxes

## **8. CONTROLLERS**

- a) Controllers should be installed in accordance with manufacturer's recommendations. All electrical connections should be in accordance with national codes of practice. Special consideration must be given to the protection of electronic systems against lightning and power surges.

## **9. PUMPS AND MOTORS**

- a) Pumps shall be selected to provide a capacity of 10% in excess of the design flow and be able to cope with the additional friction and pressure involved in this increase
- b) Motors shall be protected with an approved starter with over loads set to trip at full load
- c) Unions or break joints shall be fitted on both suction and delivery pipes so as to be able to remove the pumping unit for servicing without having to cut piping.
- d) An isolating valve shall be fitted on a pump suction and / or delivery piping where flood can occur
- e) All pumps set above a water source shall have a foot valve installed on the suction line and be fitted with a priming device
- f) All positive displacement pumps shall be fitted with a pressure relief valve, of adequate size, between the pump and the delivery isolating valve
- g) All borehole pump installations are to conform with the specifications as laid down by the Borehole Water Association
- h) All pumps must be fitted with adequate protection devices to prevent running dry

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## **10. WATER SUPPLY**

- a) It is the responsibility of the designer and / or contractor to establish if the required water capacity and quality is suitable for the system
- b) If water is to be stored, to make up required capacity, the storage shall be adequate for the flow period
- c) Under no circumstances shall Municipal water and water from sources such as dams, rivers or boreholes be mixed in the same system

## **11. WATER STRAINING**

- a) A strainer shall be fitted to all suction intakes, and sized to prevent blocking of pump components
- b) Where fine nozzles are being used and water condition warrants, a cleanable filter of adequate size, shall be installed on the mainline inlet of a system. The recommended grade of the filter may be selected from the following:
  - (i) Sprinklers 30% of the smallest nozzle area
  - (ii) Micro-Sprayers 20% of the smallest nozzle area
  - (iii) Drippers 10% of the dripper path area

## **12. HANDOVER MANUAL**

The client shall be provided with a handover manual containing:

- a) 'AS BUILT PLAN' showing pipe and cable routes, valve positions and station layout
- b) Specification details of all equipment used
- c) System operating instructions
- d) Recommended maintenance procedures

## **13. GUARANTEE**

- a) The terms and conditions of the warranty or guarantee shall be clearly stated and shall not be for less than 12 months from the date of the hand over of the completed plant – or in the case of large systems, for each section, from the date of hand over of the section
- b) Warranties and / or guarantees on materials of irrigation equipment from suppliers shall be passed on to the client and shall be clearly stated
- c) It is recommended that, for the clients safety, adequate safeguards in the form of insurance in respect of public liability, product liability and all forms of indemnity be taken out, these all being commensurate with the magnitude of the involved contractor

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<b><u>Overstrand Civic Centre - Hermanus</u></b>					
<b><u>Landscape Development</u></b>					
<b><u>Tender Schedule of Quantities</u></b>					
<b><u>All rates are exclusive of VAT</u></b>					
	Rate include all cost of labour, machinery and material to execute the work as set out in the General Specifications				
<b><u>Item</u></b>	<b><u>Description</u></b>	<b><u>Unit</u></b>	<b><u>Rate</u></b>	<b><u>Quantities</u></b>	<b><u>Amount</u></b>
<b>1</b>	<b><u>Irrigation</u></b>				
	Rate includes all cost of labour, fittings, piping and trenching.				
1.1	Piping HDPE, Class 6				
	- 25 Ø	m		500	
1.2	Trenching	m		250	
1.3	Stations and controller already exist and has to be used. Position of valve manifold is on northern corner of loading bay entrance behind the auditorium. 5 existing stations to be disconnected off system and new stations to be connected	sum			
1.4	Supply and install on 600 mm standpipes - Signature Shrub Adaptors complete with MP 3000 rotators (5/station).	no		35	
1.5	Upgrading of existing system	PC			R 6,000.00
	<b>Carry forward to summary</b>				
	<b><u>Tender summary</u></b>				
				Irrigation	R
				<b>Total (excl VAT)</b>	R
				10% Contingency	R
				<b>Total Tender Amount (Excl VAT)</b>	R
				14% VAT	R
				<b>Tender Amount (Incl. VAT @ 14%)</b>	R

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