

**Management Development Institute, Gurgaon  
invite Tender for**

**“Conducting GPR survey, of Land at MDI campus  
(approx..35 acre)**

**For the Proposed Construction work of Academic  
block, PGPM Hostel and other allied buildings at  
MDI campus, Gurgaon.**



**MDI**  
GURGAON

Management  
Development  
Institute

**Management Development Institute Gurgaon**

**Mehrauli Road, Sukhrali, Gurgaon-122007**

**Ph:- +91-124-4560000, Fax:- +91-124-4560005, [www.mdi.ac.in](http://www.mdi.ac.in)**



**NOTICE INVITING TENDER**

1. Sealed tenders are invited for the work for GPR survey of land measuring approx. 35 acres located land at Management Development Institute (MDI), Mehrauli Road, Sukhrali, Gurugram – 122007, Haryana
2. The quotations should be submitted in a sealed cover addressed to: -

**The C.E, Estate  
Management Development Institute  
Mehrauli Road, Sukhrali,  
Gurugram – 122007, Haryana**

3. The quotations should reach on or before 03.00 PM on 06<sup>th</sup> June 2022. The rates of items being quoted will include the cost of material, wastage, labour etc. The cost of item being quoted in the BOQ will be exclusive of GST. Brief specification & make and schedule of quantities are enclosed at Annexure-'A'.

**4. TERMS AND CONDITIONS**

- (a) The tenderers shall quote for all the items as mentioned in the Schedule of Quantities attached. The quantities indicated are approximate and are liable to be varied to any extent. The rates quoted shall be applicable for all such variations.
- (b) The rates quoted shall be firm and shall not be subject to any variation on account of any variation in the scope of work or any contingent expenses or on any other account whatsoever.

**(c) EARNEST MONEY DEPOSIT**

Not applicable.

**(d) TAX/DUTIES**

All sales tax/duties or any other taxes or levies including Sales Tax on works contract, Service tax payable to any authorities whatsoever shall be borne by the Contractor, and MDI (Gurugram) accepts no responsibility or liability whatsoever on any account.

**(e) INCOME TAX**

Income Tax shall be deducted from the payments to the Contractor at the prevalent applicable rates.

- (f) MDI (Gurugram) reserves the right to reject any or all quotations.

**(g) SITE VISIT**

The Bidders shall visit the site and acquaint themselves with all the site conditions and all aspects affecting the execution of the work. MDI (Gurugram) shall not entertain any



claim or liability on account of the Contractors ignorance or negligence of this or on any other account whatsoever.

As soon as the field work is started, the Contractor shall inform the Estate deptt MDI (Gurugram) and MDI (Gurugram) reserves the right to depute their representative for checking the work of the Contractor whenever considered necessary.

**(h) TIME SCHEDULE**

The time allowed for completion is 14 days from date of issue of Letter of intent. The time is the essence of the contract.

**(i) COMPENSATION FOR DELAY**

For any delay in the completion of the work the Contractor/Agency to whom the work is awarded will be liable to pay compensation at the rate of 2% of the total Contract Value for each day of delay subject to a maximum of 10%. However, MDI reserve to right to waive off the clause on valid ground

**(j) WATCH AND WARD & RESPONSIBILITY**

The Security, watch and ward and supply of men, materials, instruments and all other equipments required for the work as also all the messing and lodging arrangements, staying and transport arrangements of the Contractor's men, materials and equipment etc. to the site shall be the sole responsibility of the Contractor himself at his own cost in all respects. MDI (Gurugram) shall not entertain any liability and/or responsibility on any such account.

**(k) WATER AND ELECTRICITY**

The Contractor shall make his own arrangement for the water and electricity required for the execution of the work.

**(l) PRICE**

This is an item rate tender. The tenderers to submit his item rates for the works as specified in the bill of quantities.

**(m) TERMS OF PAYMENT**

- (i) 50% on submission of preliminary report .
- (iii) Balance 50% after the satisfactory submission of all documents/drawings etc. as stipulated in the specification, scope of work and bill of quantities of the work .

**(n) OWNER**

Management Development Institute (MDI)  
Mehrauli Road, Sukhrali  
Gurugram 122007



(o) **INFORMATION**

Any particulars of information regarding the proposed work can be obtained from the office of the Estate deptt MDI, Gurgaon.

(p) **VALIDITY**

Validity of quotation should remain open for acceptance of 90 days from the date of opening.

Thanking you,

Yours faithfully,



(D S Rawat)  
C.E, Estate

Encl:

1. Annexure-A & B





## JOB SPECIFICATION FOR SURVEY FOR UNDERGROUND SERVICES USING GPR

### Abbreviations:

2-D	:	Two Dimensional
3-D	:	Three Dimensional
BM	:	Bench Mark
C/C	:	Center to Center
GPR	:	Ground Penetration Radar
GPS	:	Global Positioning System
U/G	:	Underground

### SCOPE OF WORK

#### 1.0 SCOPE

The intent of this specification is to cover the basic requirements for conducting the survey works for locating and tracing underground services at the location/ area identified in tender document or identified by the CLIENT to generate requisite information for the design and field engineering activities.

#### 1.1 This specification covers the following works.

- a) Establishment of base line for defining the co-ordinates of the various areas.
- b) Mapping of location, elevation, properties, and size of underground pipeline, cables and other utilities (metallic and non-metallic) including, locating the change in direction of the facility using **Ground Penetration Radar (GPR)**.
- c) Preparation of underground utility maps.
- d) Two dimensional (2-D)/ three dimensional (3-D) AutoCAD file for the underground services as per project requirement/ schedule of rates.

#### 1.2 The survey maps shall show all U/G pipes, cables, other utilities (metallic and non-metallic) etc.

#### 2.0 DEFINITIONS

**GPS (Global Positioning System)** - Describes the survey procedure conforming to the U.S. Federal Geographic Data Committee standards as outlined in their publication FGDC-STD-007.4-2002 for using GPS relative positioning techniques.



**WGS (World Geodetic System)** - It is a standard for use in cartography, geodesy, and satellite navigation including GPS. It comprises a standard coordinate system for the Earth, a standard spheroidal reference surface (the datum or reference ellipsoid) for raw altitude data, and a gravitational equipotential surface (the geoid) that defines the nominal sea level.

**UTM (Universal Transverse Mercator) coordinate system** - The co-ordinates for the entire section shall be with reference to single grid in metric system and WGS datum on UTM projection system.

### **3.0 DELIVERABLES BY SURVEYORS**

SURVEYOR shall produce the following:

#### **3.1 Drawings**

The final drawing shall be prepared and submitted in latest version of AUTOCAD. In addition to the above, 2 sets of coloured print of all the drawing shall also be submitted.

#### **3.2 Electronic Media**

Electronic media on which topographic features and three dimensional surface data is delivered shall be provided in \*.dwg format.

#### **3.3 Property of Maps**

Maps prepared by the contractor based on survey work carried out under this agreement shall be the sole property of Client. The contractor shall have no right to use, reproduce or pass on to the third party without prior written permission of Client.

#### **3.4 Maps & Drawings**

The survey maps shall be based on the survey work executed and shall show all relevant information pertaining to underground services; permanent bench mark etc.

### **4.0 PERFORMANCE REQUIREMENTS**

**4.1** The work shall be carried out by using Ground Penetration Radar (GPR) by qualified and competent surveyors under the direct supervision of qualified geophysicist.

**4.2** The survey shall be carried out with reference to the existing permanent benchmarks.

**4.3** The contractor shall be able to locate and map electrical and signal cables up to a depth of 2 Meters and Pipes (metallic and non-metallic) of sizes up to a depth of 6 Meters from ground level.

**4.4** All measurements shall be in metric units.

**4.5** The corrections arising from the standard errors shall be incorporated suitably.

**4.6** For surveying & under-ground scanning work, the contractor shall use Total Station, GPR instrument etc. all equipment of reputed make only, not more than 7 years old on the date of award of contract.

## **5.0 METHODOLOGY OF SURVEY WORKS**

### **5.1 Map Contents**

#### **5.2.1 Limits of Mapping**

The mapped area shall include the entire area of the property identified in the contract documents.

#### **5.2.2 Details**

##### **i. General**

- a. Show accurately all underground features within the limits of mapping including, but not limited to, the following:
- b. Underground pipe lines (Steel, RCC, Plastic and any other metallic/ non-metallic): Obtain location, elevation, properties, and size of underground pipelines, valves, accessories and utilities at 10-meter intervals and at the change in direction of the pipelines.
- c. Underground electrical and instrumentation Cables.
- d. Any other Underground utilities and structures encountered.

##### **ii. Coordinate Grid System**

Compile the map based on the plant grid system. Indicate on the drawing the permanent reference points to which the fieldwork is tied for horizontal control.

##### **iii. Drawing Scale**

Survey contractor shall prepare drawings at a scale of 1:500.

### **5.2 Field Survey Requirements**

#### **5.3.1 General**

The SURVEYOR shall perform survey work required to establish horizontal and vertical control sufficient to achieve the specified map accuracy. Perform sufficient supplementary field survey work to ascertain the true horizontal and vertical location of existing underground features.

Specification /Details along-with resolution of the GPR or equipment, to be used by contractor, shall be provided to Client/ MDI for approval/information to ensure the competency of the GPR or equipment for application.

#### **5.3.2 Accuracy**

Perform field survey work with sufficient precision to ensure that the required accuracy of the finished drawing is achieved. The computed coordinate position of each horizontal control point used in compiling the drawing shall be correct within the limits of second order accuracy.

The accuracy level of pipe sizes shall be in the order of  $\pm 10\%$ .

The accuracy level of depth of services shall be in the order of  $\pm 100\text{mm}$ .



### **5.3 Computer Graphics Data**

#### **5.4.1 General Data Requirements**

Furnish data on magnetic media suitable for use on Intergraph Systems as described below.

- a. An electronic design file shall be provided for each of the final maps. A composite of the total mapped area shall be produced in electronic \*.dwg design file in addition to the individual maps. Additional survey data required by the contract document shall be incorporated into final electronic \*.dwg design file and provided in \*.ASC file format as follows:

Point Number, Northing, Easting, Elevation, Description P,\_N,\_E,\_Z,\_DESC).

#### **5.4.2 3-D Data**

All 3-D elements shall be at the actual Z value.

#### **5.4.3 3-D Model**

Contractor shall provide 3-D model of the underground utilities after survey.

#### **5.4.4 Scale**

Record scale-dependent data (such as text, cells, symbols) at a scale factor suitable for display at the specified map scale.

#### **5.4.5 Text**

Text shall be a minimum of 2.5 mm in height when plotted.

#### **5.4.6 Working Units**

Set up data files on the basis of the following working

units: (MU) Master Units = 1 meter

(SU) Subunits = 1000 mm

#### **5.4.7 Global Origin**

Global origin of all design files shall be at the center of the AutoCAD design cube.

#### **5.4.8 Symbols and Patterns**

Symbols and patterns incorporated into the map shall be of appropriate cells available to the SURVEYOR either of his own creation or as supplied by other software packages. All symbols and patterns used shall be clearly identified as such in the map legend on each drawing delivered.





**BOQ for GPR survey and submission of Report.**

S. No	Item Description	Unit	Qty	Rate	Amount
1	Underground utility detection in entire campus. GROUND PENETRATING RADAR (GPR) SYSTEM"	Sq. m	30,000		
2	Drawing preparation and submission of Report.	L.S	1		
	<b>Total</b>				
	<b>GST</b>				
	<b>Grand Total (Inclusive GST)</b>				

