

**CONSULTANCY SERVICES FOR  
DETAILED ARCHITECTURAL / STRUCTURAL DRAWINGS AND DESIGN AND TOP SUPERVISION OF  
CIVIL WORKS COMPONENT OF PROJECT " ESTABLISHMENT OF UNIVERSITY CAMPUS FOR  
WOMEN AT BANNU  
AND  
CONSULTANCY SERVICES FOR  
PROVISION OF ACCESS ROAD & STRENGTHENING OF UNIVERSITY OF SCIENCE & TECHNOLOGY,  
BANNU  
GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
A.	<b>FIELD INVESTIGATIONS</b>				
A1	Mobilization and demobilization of at least two (2) set of hand auger / light percussion boring equipment at site including setting-up and shifting from one investigation point to another. The equipment should be sufficient to meet the time schedule. The boring equipment should be capable to execute borehole of at least 5 inch diameter.	L.S.	Job		
A2	<u><b>Establishment of University Campus for Women at Bannu</b></u> Execution of: <i>i) Two (02) boreholes up to a depth of 15 m &amp; Two (02) boreholes up to a depth of 12 m at Female Hostel Block,</i> <i>ii) Two (02) boreholes up to a depth of 15 m and Two (02) boreholes up to a depth of 12 m at Academic Block,</i> <i>iii) One (01) borehole up to a depth of 15 m at Overhead Water Tank in overburden soils below NSL by hand auger / light percussion boring method including backfilling of boreholes to their original position by cement:sand:bentonite mix.</i>	L.M.	123		
A3	<u><b>Provision of Access Road &amp; Strengthening of University of Science &amp; Technology, Bannu</b></u> Execution of: <i>i) Two (02) boreholes up to a depth of 15 m at Academic Block,</i> <i>ii) One (01) borehole up to a depth of 15 m at Overhead Water Tank in overburden soils below NSL by hand auger / light percussion boring method including backfilling of boreholes to their original position by cement:sand:bentonite mix.</i>	L.M.	45		
A4	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m depth interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	153		
A5	Collection of undisturbed soil samples from boreholes through Shelby samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	15		
A6	Excavation of Ten (10) testpits up to a maximum depth of 1.5 m below top of ground including backfilling of pits to original condition.	L.M.	15		
A7	Performance of field density tests by sand replacement method in testpits generally @ 1 test/pit at selected horizons, including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture tins for moisture content determination in laboratory by oven drying method as well as labelling, packing, storage & transportation to an approved testing laboratory.	No.	10		
A8	Collection of bulk soil samples (60 kg for sandy/clayey soils & 120 kg for gravelly soils) from testpits including their labeling, packing, storage & transportation to an approved testing laboratory.	No.	8		
A9	Collection of water samples (if encountered) from boreholes including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	5		
	<b>Sub-Total A</b>	<b>Rs.</b>			
<p>Establishment of coordinates and ground elevations of all the boreholes &amp; testpits using <b>TOTAL STATION</b> are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.</p> <p>All soil / water samples shall be stored and transported as per ASTM requirements. The area and clearance ratios of the sampling tubes should be as per ASTM standard.</p> <p>Contractor will be responsible for arrangement of Personnel Protective Equipments (PPEs) such as safety helmets and jackets for NESPAK site supervisory / visiting staff.</p> <p><b>Boreholes should preferably be executed using hand auger boring method. Percussion boring will be required for gravels / hard strata.</b></p>					

**CONSULTANCY SERVICES FOR  
DETAILED ARCHITECTURAL / STRUCTURAL DRAWINGS AND DESIGN AND TOP  
SUPERVISION OF CIVIL WORKS COMPONENT OF PROJECT " ESTABLISHMENT OF  
UNIVERSITY CAMPUS FOR WOMEN AT BANNU**

*AND*

**CONSULTANCY SERVICES FOR  
PROVISION OF ACCESS ROAD & STRENGTHENING OF UNIVERSITY OF SCIENCE &  
TECHNOLOGY, BANNU  
GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate	Amount
<b>B.</b>	<b>LABORATORY TESTING</b>			(Rs.)	(Rs.)
B1	Sieve analysis	No.	40		
B2	Hydrometer analysis	No.	12		
B3	Liquid limit & plastic limit	No.	15		
B4	Bulk density & dry density	No.	15		
B5	Consolidation with Swell Potential Measurements	No.	6		
B6	Direct Shear	No.	8		
B7	Unconfined Compression (Soil Sample)	No.	10		
B8	Swell Pressure Measurements	No.	6		
B9	Modified AASHTO Compaction	No.	7		
B10	3-Point Soaked CBR	No.	7		
B11	Sulphate content of soil	No.	5		
B12	Chloride content of soil	No.	5		
B13	Organic matter content of soil	No.	5		
B14	Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH	No.	5		
<b>Sub- Total B</b>				<b>Rs.</b>	

Name of Laboratory:

Total (A+B)=

Rs.	
-----	--