

INFRASTRUCTURE DEVELOPMENT WORKS IN SECTORS F-14 AND F-15, ISLAMABAD

**GEOTECHNICAL INVESTIGATIONS
BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
A1	Mobilization and demobilization of at least two (2) straight rotary /percussion drilling rigs and handauger/light percussion at site including shifting from one investigation point to another. The equipment should be sufficient to meet the time schedule.	L.S.	Job		
A2	Execution of Eight (08) boreholes up to a maximum depth of 20 m and Two (02) boreholes up to a maximum depth of 10 m at structure location in overburden soils or upto rock strike level, which ever is met earlier below NSL by straight rotary / percussion drilling method including backfilling of augerholes to their original position.	L.M.	140		
A3	Execution of Six (6) boreholes up to a maximum depth of 6 m in overburden soils or upto rock strike level, which ever is met earlier below NSL by hand auger/light percussion method including backfilling of augerholes to their original position.	L.M.	36		
A4	Continuous core drilling (NX size in general) in bedrock up to a maximum depth of 5 m below rock strike level, including preservation of core samples in core boxes, waxing of core samples, photography of rock cores and transportation of core samples to the laboratory.	L.M.	40		
A5	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	156		
A6	Collection of undisturbed soil samples from boreholes through Shelby/Denison/Pitcher samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	20		
A7	Excavation of Twelve (12) testpits up to a maximum depth of 1.5 m and Four (04) testpits up to a maximum depth of 3.0 m at road location below top of ground including backfilling of pits to original condition.	L.M.	30		
A8	Collection of undisturbed block samples (30cm*30cm*30cm) from testpits including their waxing, labelling, packing, storage & transportation to an approved Laboratory.	No.	4		
A9	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.	16		
A10	Collection of composite bulk soil samples from testpits including their labelling, packing, storage & transportation to an approved laboratory.	No.	12		
A11	Collection of composite bulk soil samples from borrow areas including their labelling, packing, storage & transportation to an approved laboratory.	No.	4		
A12	Collection of water samples (if encountered) from boreholes including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	4		
	Sub-Total A	Rs.			
<p>Establishment of coordinates and ground elevations of all the boreholes & testpits using TOTAL STATION are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.</p> <p>All the undisturbed soil samples shall be stored and transported as per ASTM standards. The area and clearance ratios of the sampling tubes should be as per ASTM Standards.</p> <p>The preferred method of drilling is straight rotary drilling. Percussion boring will be allowed only in case of presence of rock/grevals/hard strata.</p>					

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Sr. No.	Description	Unit	Qty.	Rate	Amount
B.	LABORATORY TESTING			(Rs.)	(Rs.)
B1	Sieve analysis	No.	60		
B2	Hydrometer analysis	No.	15		
B3	Liquid and plastic limits	No.	25		
B4	Bulk density & dry density	No.	20		
B5	Consolidation with Swell Potential Measurements	No.	5		
B6	Direct Shear	No.	20		
B7	Unconfined Compression (Soil/Rock Sample)	No.	20		
B8	Modified AASHTO Compaction	No.	16		
B9	3-Point Soaked CBR	No.	16		
B10	Sulphate content of soil	No.	5		
B11	Chloride content of soil	No.	5		
B12	Organic matter content of soil	No.	5		
B13	Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH	No.	5		
Sub- Total B				Rs.	-

Total (A+B)=

Rs.	
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