

AVIATION COMPLEX AT BLUE AREA, ISLAMABAD

BILL NO. 1.A: TEMPORARY DEEP EXCAVATION SUPPORT SYSTEM
(RCC PILES WITH PRE-STRESSED GROUND ANCHORS)

BILL OF QUANTITIES

Item No.	Item Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
(i)	(ii)	(iii)	(iv)	(v)	(vi)
GENERAL NOTE SCOPE : <i>(Applicable to all sections)</i> The quoted rates shall be inclusive of Contractors's mobilization of all equipment/tools/machines for execution of complete temporary deep excavation support system works, including piling works and pre-stressed ground anchors system at the site and their demobilization upon completion of the work. The price quoted shall include cost of moving the equipment at the site, raising and lowering them and of providing any staging to support them, necessary site preparation/levelling works, etc. It shall also include all transport, damage, depreciation and sundry costs and charges. The contractor shall submit detailed design (calculations and drawings) and construction methodology of temporary deep excavation support system for review and approval of the Engineer before commencement of the works. Construction/Installation of temporary deep excavation support system works shall be carried out as per guidelines provided in relevant American Manuals/Standards. Destressing of ground anchors system shall be carried out only after construction of floor diaphragms (concrete mat/slab/ramp) to prevent movement of the piles.					
RT-01	Design of temporary deep excavation support system, including secant piles, capping/waler beams, and prestressed ground anchors system, movement monitoring system, etc.	L.S	1		
RT-02	Boring through all types of soils for 30 to 35 m long secant piles bored cast-in place un-reinforced / reinforced concrete piles of nominal diameter 900 mm. Piling including cost of normal weight plant mixed concrete of 21 / 28 Mpa minimum design compressive cylinder strength at 28 days using Ordinary Portland cement. The rate shall also include all works/supplies involved in preparing boring, cage lowering and concreting complete in all respects (except the cost of steel reinforcement and its labour for bending and laying in position, etc.). Drilled soil to be removed from site by the excavation Contractor / Client.				
	(i) Un-reinforced Piles= Concrete for 910 mm dia pile (36" dia pile) - 21 Mpa	Rft	22,000		
	(ii) Reinforced Piles= Concrete for 910 mm dia pile (36" dia pile) - 28 Mpa	Rft	22,000		
RT-03	Providing, cutting, fabricating, fixing and tie in position etc., deformed steel bars of grade 60 in cages for piles conforming to ASTM A-615 (Fy = 420 MPa (60 ksi)), including cost of binding wire, chairs, wastages, pre-cast c.c. spacers, unspecified laps, etc., complete in all respects as shown on drawings, described in specification and as directed by the Engineer.	Metric Ton	1,190		

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(i)	(ii)	(iii)	(iv)	(v)	(vi)
RT-04	Providing, mixing, handling and pouring concrete in Cap Beams using Ordinary Portland cement with minimum 28 days cylinder compressive strength, $f_c = 28$ MPa, including formwork, compacting through vibrator, curing and removing of formwork, etc. complete in all respect.	Cft	10,500		
RT-05	Providing, cutting, bending, placing and tie in position etc., deformed steel bars of grade 60 in Cap Beams conforming to ASTM A-615 ($F_y = 420$ MPa (60 ksi)), including cost of binding wire, chairs, wastages, pre-cast c.c. spacers, unspecified laps, etc., complete in all respects as shown on drawings, described in specification and as directed by the Engineer.	Metric Ton	22		
RT-06	Pre-Stressed Ground Anchors , Anchor Holds / Waler Beams, including all Material, Equipment and labor. Providing, installing, testing of ground anchors of various dia as given below including drilling and all accessories, strands, grout tubes, centralizers, grout including admixture if any, grout breaking and re-grouting, stressing etc. including iterations to set the grouted length for specified locking load as per drawings and satisfaction of Engineer incharge. Providing and installing Anchor Holds / Waler beam (Pre-cast Concrete, in-Situ concrete) or Structural Steel) as per drawing. (Steel Anchor Block / Waler Beam after use at site shall remain Contractor's property.) De-stressing of all the Ground Anchors within a period of one year				
(i)	4" dia	No.	204		
(ii)	8" dia	No.	153		
(ii)	12" dia	No.	51		
RT-07	Installation of settlement pins/markers to monitor displacement of the piles, deformation of the ground and displacement of neighbouring structures at and during each construction stage. Preparation of movement monitoring report and its submittal to the Engineer on daily basis until completion of basements construction. A movement monitoring program and method statement should be submitted to the Engineer for review and approval.	L.S	1		
RT-08	Preparation of PCC Guide Beam/Wall including shuttering, and concreteing complete in all respect and dismantling of the Guide Wall up to required depth complete in all respect.	Rft	1,122		
				Total Amount Rs. =	