

**Construction of New Air traffic Control Tower (ATCT), Fire Station and Allied
Facilities at Skardu International Airport, Skardu**

Bill of Quantities

Bill No. 2 - Civil Works (Substructure & Superstructure): Summary

S.No.	Description	Amount (PKR)
a	Part A - Pile Work	
b	Part B - Building Structure Work	
c	Part C - Steel Work in Space Frame Structure & Metal Deck Structure	
d	Part D - Utility Block Structure Work	
	Total Amount (Rs)	0.00

Construction of New Air traffic Control Tower (ATCT), Fire Station and Allied Facilities at Skardu International Airport, Skardu

Bill of Quantities

Bill No. 2 - Civil Works (Substructure & Superstructure): Part A - Pile Work

Abstract of Cost

Item No	Description	Quantity	Unit	Rate (USD)	Rate (Rs)	Amount (Rs)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = [(5)*280]+(6)]*(3)
CP-1	Providing and casting in situ bored reinforced concrete piles using Ordinary portland cement / Sulphate resisting cement or as may be required, including screening, washing of aggregates, mixing of constituents using batching plant, Transportation by Transit Mixer, Pouring in the required proportion to achieve a nominal cylindrical strength in the field as per ACI-214, with the specified consistency. i/c the cost of labour, boring, equipment / machinery, platform (except the cost of steel reinforcement, its labour for bending and laying in position and boat platform etc. which will be paid separately) including the cost of concrete pump and admixture, as approved and directed by the Engineer Incharge. 3000 PSI (Dia as mentioned in drawing) REF: Technical Specifications Section - 0190, Section - 0150, Section - 0145, Section - 0140	7,410.00	Rft	Not Applicable		
CP-2	Fabrication of mild steel reinforcement deformed bar cage of specified yield strength for R.C.C bored piles including cutting bending, lowering of cage with crane in position, welding and fastening, including the cost of binding wire, Crane Machine (also includes removal of rust from the bars) as approved and directed by the Engineer Incharge. REF: Technical Specifications Section - 0190, Section - 0150, Section - 0145, Section - 0140 Grade - 60.	122,283.80	Kg	Not Applicable		
CP-3	Initial (ultimate) vertical compression load test on sacrificial Ø1000 mm bored cast-in-situ pile to 378 tons (3.0 x working load of 126 tons), by anchor-pile reaction frame, in two loading cycles, instrumented for shaft friction and end bearing, in accordance with ASTM D1143 and Section 0190 Clause 3.12. Rate to include provision of the sacrificial test pile, reaction piles, reaction frame, instrumentation, loading, monitoring, standing time and submission of test report in triplicate.	1.00	No.			
CP-4	Ditto Item 1, but test load 228 tons (3.0 x working load of 76 tons), covering pile types ATCT-F2, ATCT-F3, ATCT-F4, FS-F1 and FS-F2.	1.00	No.			
CP-5	Routine (proof) vertical compression load test on working Ø1000 mm bored cast-in-situ pile of Foundation Type ATCT-F1 to 189 tons (1.5 x working load), in accordance with ASTM D1143. Rate to include reaction arrangement, instrumentation, loading, monitoring, standing time and test report.	1.00	No.			
CP-6	Ditto Item 3, but test load 114 tons (1.5 x working load), on Foundation Types ATCT-F2, ATCT-F3, ATCT-F4, FS-F1 and FS-F2 - one test per foundation type.	5.00	No.			
CP-7	Lateral load test on working Ø1000 mm bored pile of ATCT at 10% of working load, applied cyclically, in accordance with ASTM D3966. Rate to include reaction pile, instrumentation and test report.	1.00	No.			
CP-8	Tension (uplift) load test on working Ø1000 mm bored pile of ATCT to 1.5 x design uplift load, in accordance with ASTM D3689. Rate to include reaction arrangement, instrumentation and test report. To be executed only where net uplift is confirmed in writing by the Engineer.	1.00	No.			
CP-9	Low-strain pile integrity test (PIT) on Ø1000 mm bored piles in accordance with ASTM D5882 and Section 0190 Clause 3.19, including pile head preparation, testing, interpretation and report. (100% of working piles.)	142.00	No.			
CP-10	Crosshole sonic logging (CSL) of Ø1000 mm bored piles in accordance with ASTM D6760, including supply and installation of four nos. 50 mm dia. steel access tubes per pile to full pile length, capping, water filling, testing, interpretation and report. (10% of working piles plus both initial test piles.)	17.00	No.			

CP-11	High-strain dynamic pile test (PDA) with CAPWAP analysis on Ø1000 mm bored pile in accordance with ASTM D4945 and Section 0190 Clause 3.20, complete in all respects including wave equation analysis and test report.	4.00	No.			
CP-12	Extra over the pile installation items for provision of 2 nos. sacrificial initial test piles, Ø1000 mm bored cast-in-situ, of the same length, reinforcement and installation method as the working piles, installed at positions selected by the Engineer and forming no part of the permanent works.	2.00	No.			
		Total Amount (Rs)				0.00

Construction of New Air traffic Control Tower (ATCT), Fire Station and Allied Facilities at Skardu International Airport, Skardu

Bill of Quantities

Bill No. 2 - Civil Works (Substructure & Superstructure): Part B - Building Structure Work

Abstract of Cost

Item No	Description	Quantity	Unit	Rate (USD)	Rate (Rs)	Amount (Rs)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = [(5)*280]+(6)]*(3)
CB-1	Excavation in all kind of soils at any level/height including clearing & grubbing, trimming/dressing out, disposal of surplus/unsuitable material at area designated by the Engineer within or outside work site, and i/c all lead & lift, marking alignment for layout by providing permanent benchmarks and alignment pillars including levels and grid lines etc. and necessary protection/ shoring/ stability to excavated areas/sides, dewatering and keeping the area to dry, all operations & arrangements in connection with earth works to complete conforming to the requirements of drawings, specifications and instructions by the Engineer In Charge. REF: Technical Specifications Section - 0100, Section - 0050, Section - 0060	46,989.00	Cft	Not Applicable		
CB-2	Spraying termite proofing using liquid FMC/ Biflex/Terminix Exin/ Ms Hextar or eq @ spd suspension concentrate (SC), Mixing ability-HEXTAR with Ratio (1:250) = 540 Sq Ft or equivalent liquid applying with shower and certificate will be provided by the contractor for 10-years compere in complete in all respect as approved by the Engineer Incharge. REF: Technical Specifications Section - 0130	41,337.00	Sft	Not Applicable		
CB-3	Providing, laying Engineering Fill shall be well graded and a mixture of non-toxic soil, filling shall be placed in layers not exceeding 6" in compacted thickness, filling shall be compacted to a drey density not less than 95% of maximum dry density (ASTM D-1557), i/c lead and transportation to site, as shown in drawings complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0100	133,346.00	Cft	Not Applicable		
CB-4	Providing & Laying in position, True to line, level, grade, at any height. aggregate (as approved) including screening and washing of aggregate & Sand (as approved), finishing smooth, curing, lifting if required, complete in all respect, drawing specifications and as directed by the Engineer. Ratio 1:4:8 Under footing. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	3,666.31	Cft	Not Applicable		
CB-5	Providing & Laying in position light-weight concrete, as approved, finishing smooth, curing, lifting if required, complete in all respect, drawing specifications and as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0140	8,509.69	Cft	Not Applicable		
CB-6	Providing, laying, compacting and curing sand, under floor and compaction, complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0120, Section - 0100	12,062.50	Cft	Not Applicable		
CB-7	Providing, laying, dry rammed brick or stone ballast 1 1/2" to 2" gauge, complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0120, Section - 0100	6,031.25	Cft	Not Applicable		
CB-8	Providing & Laying in position, True to line, level, Reinforced Cement Concrete cylinder strength of 3000 PSI at 28 days Using 3/4" down gauge graded crushed stone aggregate (as approved), Sand (as approved), SR Cement (where required), as per dimensions and design, as shown on the drawing, mixing with approved mechanical means, finishing smooth, curing, lifting, vibrating, making arrangements for any scaffolding work & fittings using steel plate (Dent free), or wooden ply (laminated) & building paper for form work complete in all respect, as per drawings, specifications as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0200					
CB-8-1	RCC in Footing. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	24,783.56	Cft	Not Applicable		

CB-8-2	RCC in Slab. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	20,193.95	Cft	Not Applicable		
CB-8-3	RCC in Stairs. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	735.00	Cft	Not Applicable		
CB-9	Providing & Laying in position, True to line, level, Reinforced Cement Concrete cylinder strength of 4500 PSI at 28 days Using 3/4" down gauge graded crushed stone aggregate (as approved), Sand (as approved), SR Cement (where required), as per dimensions and design, as shown on the drawing, mixing with approved mechanical means, finishing smooth, curing, lifting, vibrating, making arrangements for any scaffolding work & fittings using steel plate (Dent free), or wooden ply (laminated) & building paper for form work complete in all respect, as per drawings, specifications as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0200					
CB-9-1	RCC in Beams. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	17,262.68	Cft			
CB-9-2	RCC In Lift & Shear Wall. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	4,170.00	Cft	Not Applicable		
CB-9-3	Columns. REF: Technical Specifications Section - 0150, Section - 0145	8,848.70	Cft	Not Applicable		
CB-10	Providing, fabrication, straightening, cutting, bending, placing, binding with annealed wire, including removal of rust from bars with sand blasting, PCC Spacer block, wastage, etc. complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0145	342,864.70	Kg	Not Applicable		
CB-11	Providing and applying torch-on plain waterproofing bituminous membrane of specified thickness duly lapped/connected by heating with Torch over ps-6 primer i/c preparation/smoothen the surface complete in all respect as approved and directed by the Engineer Incharge. REF: Technical Specifications Section - 0150	18,541.00	Sft	Not Applicable		
CB-12	Providing and embedding 10" (250mm) wide PVC water stopper in expansion joints of RCC structures (Retaining walls, water tanks, Slabs) complete in all respect. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	461.00	Rft	Not Applicable		
CB-13	Providing and laying concrete block masonry having 1800 psi compressive cube strength at 28 days for Internal/External walls as in specified thickness & laid in specified cement sand mortar, placed at any height/level masonry to be laid in courses true to line, level and plumb, protected and properly cured including scaffolding, wastage, deep joints to receive rendering, chiseling including all dowels/ steel bars /anchoring/GI wall ties/strip etc., to be installed horizontally/vertically as specified in general notes/details drawing typical, curing, placing of all embedded items in position i.e. conduits/ sleeves/ anchors/ all other fittings/ accessories etc., as necessary related to MEP provisions. Complete in all respects and conforming to the requirements of drawings, specifications and instructions by the Engineer In charge. REF: Technical Specifications Section - 0200, Section - 0260					
CB-13-1	4" thick 1800 PSI. REF: Technical Specifications Section - 0200	2,390.00	Cft	Not Applicable		
CB-13-2	8" thick. REF: Technical Specifications Section - 0200		Cft	Not Applicable		
CB-13-3	Upto Plinth Level. REF: Technical Specifications Section - 0260	1,800.00	Cft	Not Applicable		
CB-13-4	Above Plinth. REF: Technical Specifications Section - 0260	34,320.00	Cft	Not Applicable		
CB-14	Providing and applying Cement Sand Plaster 1/2" Thick 1:4 Cement Sand Plaster on inner surface using sand (as approved) at any height / depth including making edges, corners, mesh where required at abuts of the concrete and brick faces, cleaning, preparation of surface, complete in all respect as per drawing specification and as directed by the Engineer. REF: Technical Specifications Section - 0260	36,528.00	Sft	Not Applicable		

CB-15	Providing and applying Cement Sand Plaster 3/4" Thick 1:4 Cement Sand Plaster on external surface sand (as approved) at any height / depth including making edges, groove drip course, corners, mesh where required at abuts of the concrete and brick faces, cleaning, preparation of surface, complete in all respect as per drawing specification and as directed by the Engineer. REF: Technical Specifications Section - 0260	15,572.00	Sft	Not Applicable		
CB-16	Providing all civil, structural, waterproofing, and mechanical works for underground fire fighting water storage tank including excavation in all types of soils; dewatering, shoring, disposal of surplus excavated material, and site preparation; plain cement concrete (PCC); reinforced cement concrete (RCC) of specified grades for raft foundation, walls, roof slab, beams, and other structural components including formwork, curing, and reinforcement steel (Grade 60) complete with cutting, bending, placing, and binding; internal and external cement plaster; complete waterproofing system including membranes and PVC water stops at construction and expansion joints; supply and installation of manholes with heavy-duty covers, cast iron step irons, access openings, vents, overflow, washout arrangements; complete mild steel piping system including inlet, outlet/suction headers, fire-fighting connections, overflow, drain/washout, spare connections, valves, fittings, supports, fabrication, protective coating, testing, flushing, commissioning, and all incidental works required for a complete and functional fire-fighting water storage tank, in accordance with the drawings, technical specifications, and the instructions of the Engineer-in-Charge. Reference: Technical Specifications Sections 0100, 0050, 0060, 0140, 0145, 0150, and 0260.	1.00	Job	Not Applicable		
CB-17	Providing all civil, structural, waterproofing, and mechanical works for Underground Water Storage Tank including excavation in all types of soils, dewatering, shoring, disposal of surplus excavated material, and site preparation; plain cement concrete (PCC); reinforced cement concrete (RCC) of specified grades for raft foundation, walls, roof slab, beams, and all associated structural components including formwork and curing; reinforcement steel (Grade 60) including cutting, bending, placing, and binding; internal and external cement plaster; complete waterproofing system including waterproofing membranes and PVC water stops at construction and expansion joints; provision and installation of access manholes with heavy-duty covers and cast iron step irons; complete mild steel piping system including inlet, outlet/suction headers, overflow, washout, vent, and spare connections with all fittings, valves, supports, fabrication, installation, protective coating, testing, and commissioning; including all incidental works necessary for a complete and fully functional underground water storage tank, in accordance with the drawings, technical specifications, and the instructions of the Engineer-in-Charge. Reference: Technical Specifications Sections 0100, 0050, 0060, 0140, 0145, 0150, and 0260.	1.00	Job	Not Applicable		
CB-18	Providing all civil, structural, waterproofing, and mechanical works for the construction of an overhead water storage tank, including reinforced cement concrete (RCC) of specified grades for base slab, walls, roof slab, beams, and all associated structural components complete with formwork and curing; reinforcement steel (Grade 60) including cutting, bending, placing, and binding; internal and external cement plaster; complete waterproofing system including waterproofing membranes and PVC water stops at construction and expansion joints; provision and installation of access manholes with heavy-duty covers and cast iron step irons; complete mild steel piping system including inlet, outlet/suction headers, overflow, washout, vent, and spare connections with all fittings, valves, supports, fabrication, installation, protective coating, testing, and commissioning; including all ancillary works required for a complete and operational overhead water storage tank, in accordance with the drawings, technical specifications, and the instructions of the Engineer-in-Charge. Reference: Technical Specifications Sections 0140, 0145, 0150, and 0260.	1.00	Job	Not Applicable		

CB-19	Providing all civil, structural, waterproofing, and mechanical works for the construction of an underground rainwater harvesting storage tank, including excavation in all types of soils, dewatering, shoring, disposal of surplus excavated material, and site preparation; plain cement concrete (PCC); reinforced cement concrete (RCC) of specified grades for raft foundation, walls, roof slab, and all associated structural components complete with formwork and curing; reinforcement steel (Grade 60) including cutting, bending, placing, and binding; internal and external cement plaster; complete waterproofing system including waterproofing membranes and PVC water stops at construction and expansion joints; provision and installation of access manholes with heavy-duty covers and cast iron step irons; complete mild steel piping system including inlet, outlet/suction headers, overflow, washout, vent, and spare connections with all fittings, valves, supports, fabrication, installation, protective coating, testing, and commissioning; including all ancillary works necessary for a complete and operational rainwater harvesting storage tank, in accordance with the drawings, technical specifications, and the instructions of the Engineer-in-Charge. Reference: Technical Specifications Sections 0050, 0060, 0100, 0140, 0145, 0150, and 0260.	1.00	Job	Not Applicable		
CB-20	Providing all civil, structural, waterproofing, and plumbing works for the construction of a Septic tank, including reinforced cement concrete (RCC) of specified grades for raft foundation, walls, partition walls, roof slab, and all associated structural components complete with formwork and curing; reinforcement steel (Grade 60) including cutting, bending, placing, and binding; internal and external cement plaster; complete waterproofing system including waterproofing membranes and PVC water stops at construction and expansion joints; provision and installation of access manholes with heavy-duty covers and cast iron step irons; complete uPVC piping system including inlet, outlet, vent, and interconnecting pipework with all fittings, jointing, supports, testing, and commissioning; including all ancillary works necessary for a complete and operational septic tank, in accordance with the drawings, technical specifications, and the instructions of the Engineer-in-Charge. Reference: Technical Specifications Sections 0140, 0145, 0150, and 0260.	1.00	Job	Not Applicable		
CB-21	Construction of Circular Soakage Well, including all excavation, masonry, structural slabs, and internal filter media, executed in strict accordance with the approved architectural/structural drawings, technical specifications, and instructions of the Engineer-in-Charge. REF: Technical Specifications Section - 0100, Section - 0050, Section - 0060, Section - 0150, Section - 0145, Section - 0140	1.00	Job	Not Applicable		
CB-22	Providing and constructing manhole of the specified size and depth, including excavation in all types of soil to the required depth, disposal of surplus excavated material, plain cement concrete (PCC) bedding, cement concrete block masonry in cement mortar, internal and external cement sand plaster, benching and channeling as required, supplying and fixing heavy-duty cast iron (CI) manhole frame and cover, backfilling with approved material, compaction, curing, and all necessary materials, labor, tools, equipment, transportation, testing, and incidental works, complete in all respects, in accordance with the drawings, specifications, and Engineer's instructions. REF: Technical Specifications Section - 0100, Section - 0050, Section - 0060, Section - 0150, Section - 0140, Section - 0200, Section - 0260, Section - 0145	45.00	No	Not Applicable		
CB-23	All civil, structural, waterproofing, and mechanical works, comprising reinforced cement concrete of specified grades for raft, walls, and stair including formwork and curing; reinforcement steel (Grade-60) including cutting, bending, placing and binding; internal and external plaster; waterproofing membrane system; PVC water stops in construction/expansion joints; provision and fixing of floor drain; and epoxy floor, wall tiles complete in all respects as per drawings, specifications, and instructions of the Engineer-in-Charge. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0260	1.00	Job	Not Applicable		

CB-24	Providing and constructing catch pit complete with excavation in all types of soil, disposal of surplus excavated material, plain cement concrete (PCC) bedding, cement concrete block masonry, internal and external cement plaster, anchoring of cast iron (CI) grating frame, fixing heavy-duty CI grating, backfilling, compaction, curing, and all necessary materials, labor, tools, equipment, testing, and incidental works, complete in all respects, as per drawings, specifications, and Engineer's instructions. REF: Technical Specifications Section - 0100, Section - 0050, Section - 0060, Section - 0150, Section - 0140, Section - 0200, Section - 0260, Section - 0145	36.00	No	Not Applicable		
CB-25	Supply, Installation, Testing, and Commissioning of an Underground Mild Steel (M.S.) Diesel Fuel Storage System, complete in all respects, executed turnkey in strict accordance with approved engineering drawings, technical specifications, and standards of the industry, under the direction of the Engineer-in-Charge. REF: Technical Specifications Section - 0680, 0150 - 0145 - 0140	1.00	Job	Not Applicable		
CB-26	Providing, drilling, constructing, developing, testing and commissioning of deep bore well complete in all respects for combined domestic and ARFF water supply system, minimum 250 ft / 75 m depth or up to approved aquifer, whichever is greater, complete with 12 inch bore, 8 inch casing, screen, gravel pack, sanitary seal, submersible pump, controls, valves, pipework, testing, chlorination and connection to domestic and ARFF/fire water tanks. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0350	2.00	Job	Not Applicable		
		Total Amount (Rs)				0.00

Construction of New Air traffic Control Tower (ATCT), Fire Station and Allied Facilities at Skardu International Airport, Skardu

Bill of Quantities

Bill No. 2 - Civil Works (Substructure & Superstructure): Part C - Steel Work in Space Frame Structure & Metal Deck Structure

Abstract of Cost

Item No	Description	Quantity	Unit	Rate (USD)	Rate (Rs)	Amount (Rs)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = [(5)*280]+(6)]*(3)
CS-1	Design, supply, fabrication, and installation of structural steel columns using HSS sections (RHS / CHS) conforming to ASTM A36 / equivalent, including base plates, top plates, stiffeners, stubs, stool pipes, anchor bolts, angle irons, cleats, and all connection accessories. The scope includes sizing, cutting, drilling, welding, grinding, surface preparation, shop fabrication, transportation, loading/unloading, erection and alignment, complete in all respects in accordance with approved drawings, design requirements, specifications, and Engineer's instructions. REF: Technical Specifications Section - 0160	27,800.00	Kg	Not Applicable		
CS-2	Design, supply, fabrication, and installation of double layer steel space frame roof structure for the ATC Tower building at the required level, consisting of mild steel CHS tubular members of various diameters and thicknesses used as top chord, bottom chord, and diagonal members forming a 3D space frame system. The structure shall include forged steel cones, sleeves, high-strength bolts, and solid forged MERO type node joint system, complete with fabrication, welding, tacking, CNC machining, precise node drilling, surface treatment, and powder coating of approved color. The scope further includes secondary GI purlins fixed to top nodes, handling, transportation, erection, bolting, alignment, and completion of works as per approved drawings, specifications, and Engineer's instructions. (Note: The quantity for payment shall be measured based on the actual developed surface area of the completed roof structure measured along the roof profile along the edges as shown on the approved construction drawings.) REF: Technical Specifications Section - 0160, Section - 0180	25,550.00	Sft	Not Applicable		
CS-3	Supply and installation of standing seam lock roofing system using 0.70 mm thick PPGL Aluzinc sheets (AZ 150 coating), roll-formed to required lengths, including seam lock clips with thermal movement provision, ridge and eave galvanized flashing strips, ridge trays, seam fasteners, foam closures, sealants, and all necessary accessories. The work also includes 0.50 mm thick PPGL liner sheets fixed beneath roof purlins, with 100 mm thick rockwool insulation blanket of 80 kg/m ³ density placed between roofing and liner sheets for thermal and acoustic insulation. The item further includes all required flashings, sealants, and water test complete in all respects as per drawings, specifications, and Engineer's instructions. REF: Technical Specifications Section - 0160	25,550.00	Sft	Not Applicable		

CS-4	Providing complete structural engineering services for ATC Watch Tower Steel Structure, including structural analysis, design, modelling, preparation of calculations and production of detailed construction/shop drawings based on applicable American Codes and Standards including AISC, ASTM, ASCE and relevant seismic/wind load code. The scope shall include determination and application of all design loads including dead loads, live loads, wind loads, seismic loads and equipment loads applicable to project location, complete 3D structural modelling and analysis, design reports and calculation sheets using SAP2000 and/or STAAD Pro, connection design and details in Tekla for approval. The scope also includes obtaining review/vetting and approval of the structural design and drawings from the Project Consultant/Engineer, including incorporation of all review comments, necessary revisions, resubmissions, preparation of final approved construction documents, and providing all design clarifications, technical support, and coordination required during fabrication and erection of the ATC Watch Tower Steel Structure until successful completion of the works, complete in all respects as per approved drawings, specifications, applicable codes, and Engineer's instructions. REF: Technical Specifications Section - 0160, Section - 0010	1.00	Job	Not Applicable		
CS-5	Providing, fabricating, supplying and installing MS hot-dip galvanised anchor bolts conforming to ASTM A307 Grade C / equivalent Grade 4.6 complete with heavy hex nuts, washers, anchor plates, templates and all necessary accessories for fixing of structural steel columns of ATC Watch Tower, including cutting, threading, bending, welding, galvanizing, positioning, alignment, leveling and embedding in reinforced concrete foundations as per approved shop drawings, specifications and Engineer's instructions. The rate shall include all labour, transportation, handling, consumables and complete installation in all respects. REF: Technical Specifications Section - 0160, Section - 0010	943.00	Kg	Not Applicable		
CS-6	MAIN STRUCTURE: Providing, fabricating, supplying, erecting and fixing of structural steel works for construction of ATC Watch Tower comprising steel columns, beams, rafters, stringers, bracings, trusses, platforms and all related structural members fabricated from MS hollow sections, built-up sections, hot rolled H sections, I-sections, channels (C-sections), angle irons and other required structural profiles, including cutting, straightening, drilling, welding, grinding, edge preparation, stiffeners, base plates, cleat plates, connection plates, galvanized connection bolts 10.8 grade, nuts, washers, temporary supports, lifting, alignment and complete erection as per approved shop Hot rolled structural steel sections shall conform to ASTM A36, while built-up welded structural members shall conform to ASTM A572 Grade 50. The item shall include surface preparation by sand blasting /shot blasting SA2.5 profile ,and application one coat of anti rust red oxide paint, all consumables, machinery, labour, transportation and complete installation in all respects. drawings and Engineer's instructions. REF: Technical Specifications Section - 0160	52,647.00	Kg	Not Applicable		

CS-7	Composite Deck Slab on Steel Structure Providing, supplying and installing composite deck slab system over steel structure comprising 0.90 mm thick galvanized profiled steel deck sheet, fixed to structural steel framework with approved fasteners and accessories, including welding/fixing of shear studs to steel beams, edge trims, closures and all necessary accessories complete as per approved drawings and specifications. The item includes casting of 100 mm thick concrete slab having minimum compressive strength of 4000 PSI (28 MPa) over metal deck, including batching, placing, vibrating, finishing and curing complete in all respects. NOTE: Steel reinforcement bars/mesh shall be measured and paid separately under relevant BOQ item Supporting structural steel framework/beams shall also be measured and paid separately. (for steel structure refer item # 6 of this head, & for reinforcement refer item # 17 of building structure) REF: Technical Specifications Section - 0160, Section - 0150, Section - 0145	4,116.00	Sft	Not Applicable		
CS-8	Mild Steel Spiral Staircase: Providing, fabricating, supplying and erecting complete Mild Steel Spiral Stair Structure for ATC Tower, comprising central support pipe/column, stringers, treads, landing frames, base plates, stiffeners, connections, MS handrails and MS railing system, fabricated from MS plates, pipes, hollow sections, channels, angles and other required structural sections, including cutting, bending, rolling, welding, grinding, drilling, anchoring, alignment and complete installation as per approved architectural and structural drawings. Steel material for hot rolled sections shall conform to ASTM A36. REF: Technical Specifications Section - 0180	7,500.00	Kg	Not Applicable		
		Total Amount (Rs)				0.00

Construction of New Air traffic Control Tower (ATCT), Fire Station and Allied Facilities at Skardu International Airport, Skardu

Bill of Quantities

Bill No. 2 - Civil Works (Substructure & Superstructure): Part D - Utility Block Structure Work

Abstract of Cost

Item No	Description	Quantity	Unit	Rate (USD)	Rate (Rs)	Amount (Rs)
(1)	(2)	(3)	(4)	(5)	(6)	(7) = [(5)*280]+(6)]*(3)
CU-1	Excavation in all kind of soils at any level/height including clearing & grubbing, trimming/dressing out, disposal of surplus/unsuitable material at area designated by the Engineer within or outside work site, and i/c all lead & lift, marking alignment for layout by providing permanent benchmarks and alignment pillars including levels and grid lines etc. and necessary protection/ shoring/ stability to excavated areas/sides, dewatering and keeping the area to dry, all operations & arrangements in connection with earth works to complete conforming to the requirements of drawings, specifications and instructions by the Engineer In Charge. REF: Technical Specifications Section - 0100, Section - 0050, Section - 0060.0075,-0730	2,551.98	Cft	Not Applicable		
CU-2	Spraying termite proofing using liquid FMC/ Biflex/Terminix Exin/ Ms Hextar or eq @ spd suspension concentrate (SC), Mixing ability-HEXTAR with Ratio (1:250) = 540 Sq Ft or equivalent liquid applying with shower and certificate will be provided by the contractor for 10-years compere in complete in all respect as approved by the Engineer Incharge. REF: Technical Specifications Section - 0130	2,250.42	Sft	Not Applicable		
CU-3	Providing, laying Engineering Fill shall be well graded and a mixture of non-toxic soil, filling shall be placed in layers not exceeding 6" in compacted thickness, filling shall be compacted to a drey density not less than 95% of maximum dry density (ASTM D-1557), i/c lead and transportation to site, as shown in drawings complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0100	9,833.40	Cft	Not Applicable		
CU-4	Providing & Laying in position, True to line, level, grade, at any height. aggregate (as approved) including screening and washing of aggregate & Sand (as approved), finishing smooth, curing, lifting if required, complete in all respect, drawing specifications and as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140					
	Ratio 1:4:8 Under footing.	967.98	Cft	Not Applicable		
CU-5	Providing & Laying in position light-weight concrete, as approved, finishing smooth, curing, lifting if required, complete in all respect, drawing specifications and as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0140	557.23	Cft	Not Applicable		
CU-6	Providing & Laying in position, True to line, level, Reinforced Cement Concrete cylinder strength of 3000 PSI at 28 days Using 3/4" down gauge graded crushed stone aggregate (as approved), Sand (as approved), SR Cement (where required), as per dimensions and design, as shown on the drawing, mixing with approved mechanical means, finishing smooth, curing, lifting, vibrating, making arrangements for any scaffolding work & fittings using steel plate (Dent free), or wooden ply (laminated) & building paper for form work complete in all respect, as per drawings, specifications as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0200					
CU-6-1	RCC in Footing. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	437.50	Cft	Not Applicable		

CU-6-2	RCC Pads. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	2,214.00	Cft	Not Applicable		
CU-6-3	RCC in Slab. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	2,245.31	Cft	Not Applicable		
CU-7	Providing & Laying in position, True to line, level, Reinforced Cement Concrete cylinder strength of 4500 PSI at 28 days Using 3/4" down gauge graded crushed stone aggregate (as approved), Sand (as approved), SR Cement (where required), as per dimensions and design, as shown on the drawing, mixing with approved mechanical means, finishing smooth, curing, lifting, vibrating, making arrangements for any scaffolding work & fittings using steel plate (Dent free), or wooden ply (laminated) & building paper for form work complete in all respect, as per drawings, specifications as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140, Section - 0200					
CU-7-1	RCC in Beams. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	586.59	Cft	Not Applicable		
CU-7-2	RCC Plinth Beams. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	616.50	Cft	Not Applicable		
CU-7-3	Columns. REF: Technical Specifications Section - 0150, Section - 0145	720.00	Cft	Not Applicable		
CU-8	Providing, fabrication, straightening, cutting, bending, placing, binding with annealed wire, including removal of rust from bars with sand blasting, PCC Spacer block, wastage, etc. complete in all respect, as per drawings, specifications and as directed by the Engineer. REF: Technical Specifications Section - 0150, Section - 0140 - 0145			Not Applicable		
	Grade - 60. REF: Technical Specifications Section - 0145	22,363.59	Kg	Not Applicable		
CU-9	Providing and laying concrete block masonry having 1800 psi compressive cube strength at 28 days for Internal/External walls as in specified thickness & laid in specified cement sand mortar, placed at any height/level masonry to be laid in courses true to line, level and plumb, protected and properly cured including scaffolding, wastage, deep joints to receive rendering, chiseling including all dowels/ steel bars /anchoring/GI wall ties/strip etc., to be installed horizontally/ vertically as specified in general notes/details drawing typical, curing, placing of all embedded items in position i.e. conduits/ sleeves/ anchors/ all other fittings/ accessories etc., as necessary related to MEP provisions. Complete in all respects and conforming to the requirements of drawings, specifications and instructions by the Engineer In charge. REF: Technical Specifications Section - 0200, Section - 0260					
CU-9-1	8" thick. REF: Technical Specifications Section - 0200			Not Applicable		
CU-9-2	Upto Plinth Level. REF: Technical Specifications Section - 0260	779.88	Cft	Not Applicable		
CU-9-3	Above Plinth. REF: Technical Specifications Section - 0260	3,304.44	Cft	Not Applicable		
CU-10	Providing and applying Cement Sand Plaster 1/2" Thick 1:4 Cement Sand Plaster on inner surface using sand (as approved) at any height / depth including making edges, corners, mesh where required at abuts of the concrete and brick faces, cleaning, preparation of surface, complete in all respect as per drawing specification and as directed by the Engineer. REF: Technical Specifications Section - 0260	7,083.00	Sft	Not Applicable		
CU-11	Providing and applying Cement Sand Plaster 3/4" Thick 1:4 Cement Sand Plaster on external surface sand (as approved) at any height / depth including making edges, groove drip course, corners, mesh where required at abuts of the concrete and brick faces, cleaning, preparation of surface, complete in all respect as per drawing specification and as directed by the Engineer. REF: Technical Specifications Section - 0260	6,984.00	Sft	Not Applicable		

CU-12	Providing and laying 1/2" thick terrazzo flooring over 2" thick RCC screed (1:2:4) reinforced with #3 bars @ 12" c/c, laid over 2" thick isolation sheet (Diamond/Jumbolon), one layer of 500-gauge polythene sheet, and waterproofing treatment (Aqua Seal/Sika or approved equivalent), including all materials, labor, tools, curing, finishing, cutting, joints, and all ancillary works, complete in accordance with the drawings, specifications, and Engineer's instructions, complete in all respects. REF: Technical Specifications Section - 0150, Section - 0145, Section - 0140	4,490.63	Sft	Not Applicable		
		Total Amount (Rs)				0.00