

Bharat Heavy Electricals Limited
Power Sector - Southern Region
Project - 5x800 MW Yadadri TPS

Enquiry No.YTPS: SCT: 202406- 195
Un Price BID for Civil works of Fire Protection System (FPS) Misc Pedestals and duct bank

Ref. No.	Description	UOM	55% Quantity Package A	45% Quantity Package B	Factor for Package A	Factor for Package B
100	EARTHWORK: Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), sheet piling (for excavation below 6m from FGL, if required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.	--				
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), sheet piling (for excavation below 6m from FGL, if required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.	--				
a	Depth from ground level but not exceeding 2 m	CUM	4772.868	3905.074	0.0101685	0.0101685
b	Depth exceeding 2 m but not exceeding 4 m	CUM	126.500	103.500	0.0003366	0.0003366
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), sheet piling (for excavation below 6m from FGL, if required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.	--				
a	Depth from ground level but not exceeding 2 m	CUM	2636.504	2157.139	0.0065406	0.0065406
b	Depth exceeding 2 m but not exceeding 4 m	CUM	218.326	178.630	0.0006455	0.0006455
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), sheet piling (for excavation below 6m from FGL, if required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	--				
a	Depth from ground level but not exceeding 2 m	CUM	3346.035	2737.665	0.0150959	0.0150959
b	Depth exceeding 2 m but not exceeding 4 m	CUM	459.129	375.651	0.0024874	0.0024874
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5.500	4.500	0.0000357	0.0000357
106	Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), sheet piling (for excavation below 6m from FGL, if required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.	--				
a	Depth from ground level but not exceeding 2 m	CUM	1633.843	1336.781	0.0425268	0.0425268
b	Depth exceeding 2 m but not exceeding 4 m	CUM	302.978	247.891	0.0094828	0.0094828
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5.500	4.500	0.0002064	0.0002064
109	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	--				
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	8222.500	6727.500	0.0013736	0.0013736
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	62648.508	51257.871	0.0104655	0.0104655

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A107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc. to proper grade and level in layers not exceeding 250mm loose thickness using/ with selected materials from stacked earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, breaking of oversized rocks, sorting & segregation of rock pieces of size less than 150mm through mechanical means, watering, ramming/compaction by manual/mechanical means, dressing etc. all complete for the following.	--				
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	8036.600	6575.400	0.0134599	0.0134599
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths,surrounding pipe and in pipe beds etc. in layers not exceeding 300 mm thickness and compacted so as to achieve at least 75% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	27.500	22.500	0.0009950	0.0009950
B111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 200 mm thickness and compacted so as to achieve at least 85% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.Sand for filling shall be clean and well graded conforming to IS 383 with grading not inferior than Zone III.	CUM	27.500	22.500	0.0010993	0.0010993
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following: (Cement supply by BHEL free of cost)	--				
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/ floors, at any depth below finished floor level etc.	CUM	5.500	4.500	0.0003171	0.0003171
A203	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 20 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	638.081	522.066	0.0360247	0.0360247
204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	11.000	9.000	0.0006343	0.0006343
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--				
a	M 25 Grade	CUM	1889.215	1545.721	0.1195642	0.1195642
Ad	M 20 Grade	CUM	307.813	251.847	0.0189696	0.0189696
206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--				
a	M 25 Grade	CUM	556.574	455.379	0.0348713	0.0348713
b	M 30 Grade	CUM	5.500	4.500	0.0003464	0.0003464
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)	--				

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a	M20	CUM	11.000	9.000	0.0006343	0.0006343
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.	--				
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	44.550	36.450	0.0025690	0.0025690
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajjas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent pre-cast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.	--				
b	M 30	CUM	55.000	45.000	0.0044432	0.0044432
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.	--				
b	M 30	CUM	5.941	4.861	0.0004902	0.0004902
215	Dismantling concrete work for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.	--				
a	Plain cement concrete of all grades	CUM	2.750	2.250	0.0000510	0.0000510
b	Reinforced cement concrete of all grades	CUM	2.750	2.250	0.0000723	0.0000723
A215	Rebate over ST No. 215b for taking into account the deemed cost of all serviceable material including reinforcement steel which bidder will be getting out of it by taking them outside plant for bidder's purpose instead of stacking to a lead of 500m inside plant.	--				
b	Reinforced cement concrete of all grades	CUM	2.750	2.250	0.0000033	0.0000033
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	2563.000	2097.000	0.0024384	0.0024384
217	Extra over and above ST No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	6.050	4.950	0.0000004	0.0000004
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	55.000	45.000	0.0001768	0.0001768
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	5.500	4.500	0.0000106	0.0000106
220	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.	CUM	5.500	4.500	0.0003149	0.0003149
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following:	--				

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Ref. No.	Description	UOM	55% Quantity Package A	45% Quantity Package B	Factor for Package A	Factor for Package B
301	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	12837.971	10503.794	0.1156329	0.1156329
302	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.	SQM	5042.476	4125.662	0.0541628	0.0541628
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.	--				
a	Upto 150 mm depth	EACH	0.550	0.450	0.0000020	0.0000020
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	0.550	0.450	0.0000034	0.0000034
400	REINFORCEMENT WORK: Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.	--				
401	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	2.750	2.250	0.0023290	0.0023290
S402	Supply including delivery at site, steel reinforcements of TMT steel of grade Fe-500, Fe 500D or 500EQR as applicable conforming to IS:1786 complete all as per specifications, drawings and as directed by Engineer. Note - This item shall be operated if required, at the discretion of BHEL.	MT	2.750	2.250	0.0019435	0.0019435
403	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(BHEL to supply steel free of cost)	MT	174.889	143.091	0.0399931	0.0399931
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non-destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 404 as applicable.	--				
a	12mm Reinforcement bar	EACH	1.100	0.900	0.0000049	0.0000049
b	16mm Reinforcement bar	EACH	1.100	0.900	0.0000078	0.0000078
A407	Welding of lap joints of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 (Latest) including cost of welding electrodes, labour, tools and plants etc. complete as permitted and directed by Engineer. Measurement shall be done for the number of joints welded comprising of weld deposition of 2.5d length each on both side of lap joint (i.e total 5d length of weld deposition). Here, d is the diameter of reinforcement bar.	--				
a	For d=16 mm	Each	1.100	0.900	0.0000002	0.0000002
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge. Cement will be supplied by BHEL free of cost.	--				

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Ref. No.	Description	UOM	55% Quantity Package A	45% Quantity Package B	Factor for Package A	Factor for Package B
502	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	27.500	22.500	0.0000457	0.0000457
511	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	6389.147	5227.484	0.0128266	0.0128266
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	5.500	4.500	0.0000078	0.0000078
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.	--				
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumen etc. all complete.	--				
a	12 mm wide joints.	SQM	5.500	4.500	0.0000401	0.0000401
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.	--				
a	12 mm wide joints.	SQM	5.500	4.500	0.0000488	0.0000488
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:	--				
a	25mmX25mm	RM	3.850	3.150	0.0000356	0.0000356
604	Supplying and filling in position hot applied bitumen sealing compund (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	--				
a	10mm X 40mm	RM	2.750	2.250	0.0000019	0.0000019
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)					
b	230 mm wide and 8 mm thick	RM	3.850	3.150	0.0000279	0.0000279
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--				
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	17.899	14.645	0.0228620	0.0228620
702	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	2.750	2.250	0.0043234	0.0043234
703	Same as above items 701 with BHEL supplied material (scrap) free of cost including Fabrication,loading, transportation, unloading and Erection etc. all complete from BHEL store to plant site.	--				
a	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	0.275	0.225	0.0001037	0.0001037
A703	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	4.268	3.492	0.0012888	0.0012888
704	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.	--				
a	MS pipes of all diameters	Kg	55.000	45.000	0.0000601	0.0000601
b	PVC pipes / conduits of all diameters	Kg	15060.301	12322.064	0.0815873	0.0815873
c	UPVC pipes / conduits of all diameters	Kg	33.000	27.000	0.0001872	0.0001872

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Ae	Mechanical expansion fasteners, cold formed stud type having 3 way expansion sleeve of SS 316 grade approved for use in cracked concrete and seismic design with ETA C1/C2 approval or equivalent of safe tensile capacity as specified below for concrete work.	--				
i	HST3 M8	EACH	0.550	0.450	0.0000012	0.0000012
ii	HST3 M10	EACH	0.550	0.450	0.0000017	0.0000017
iii	HST3 M12	EACH	0.550	0.450	0.0000027	0.0000027
iv	HST3 M16	EACH	0.550	0.450	0.0000048	0.0000048
Af	Adhesive type Chemical anchor fastener consisting of slow curing epoxy chemical adhesive and threaded rod of carbon steel (minimum grade of 5.8) including nut and washer usable in diamond core drilled holes and in wet/ water submerged holes dispensed through mechanical dispenser HIT RE 500 V3 or equivalent of safe tensile capacity as specified below for concrete work.	--				
i	HIT-V M8	EACH	0.550	0.450	0.0000025	0.0000025
ii	HIT-V M10	EACH	0.550	0.450	0.0000029	0.0000029
iii	HIT-V M12	EACH	0.550	0.450	0.0000038	0.0000038
iv	HIT-V M16	EACH	0.550	0.450	0.0000067	0.0000067
Ag	Designing, supplying and fixing rebars in already cast concrete, including drilling, cleaning hole with air blow-out & wire-brush and injecting ETA certified epoxy based chemical HIT RE 500 V3 or equivalent for rebar fixing in dry, water saturated condition/submerged holes conditions for 8mm-32mm dia. with the help of dispenser into a hole diameter and depth as per manufacture specification. Chemical should be made of two components consisting of resin and hardener in the ratio 5:1 in a foil pack of 330/500ml.	--				
i	8mm Dia	EACH	0.550	0.450	0.0000039	0.0000039
ii	10mm Dia	EACH	0.550	0.450	0.0000049	0.0000049
iii	12mm Dia	EACH	0.550	0.450	0.0000055	0.0000055
iv	16mm Dia	EACH	0.550	0.450	0.0000062	0.0000062
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge.	--				
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing. Cement will be supplied by BHEL free of cost.	SQM	8.250	6.750	0.0000893	0.0000893
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). Cement will be supplied by BHEL free of cost.	CUM	0.550	0.450	0.0001705	0.0001705
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--				
A904	Providing and fixing single or double leaf steel door shutters. Door leaf should be 46 mm thick fully flush double skin door with or without vision lite. Door leaf shall be manufactured from 0.8mm (22 gauge) minimum thick galvanised steel sheet rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, aldrop, tower bolt, shop and final painting etc all complete.	SQM	38.500	31.500	0.0060986	0.0060986

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908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)	--				
a	Openable type	SQM	3.300	2.700	0.0000946	0.0000946
b	fixed type	SQM	3.300	2.700	0.0000610	0.0000610
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door/window frames, door/window shutters, ventilators, partitions, railing etc. with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallc protection etc.including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc. as applicable), CP brass/stainless steel screws, providing and fixing hinges and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20 degree C for welding over 20 mm and upto 40 mm & 66 degree C for welding over 40 mm and upto 63 mm & 110 degree C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes	Kg	16.500	13.500	0.0001460	0.0001460
911	Providing and fixing of door closers as per specification,of approved make & quality all complete of following type:	--				
a	Over head hydraulic door closures as per IS 3564	EACH	1.650	1.350	0.0000357	0.0000357
A912	Providing and fixing pressed steel door frames. Door frame shall be Single rebate profile of size 100 x 57 mm made out of 1.20 mm thick galvanised steel sheet (18 gauge) reinforced, drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars, paintings etc all complete as per specifications.	Kg	4.400	3.600	0.0000121	0.0000121
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.	--				
d	6 mm thick wired glass	SQM	3.300	2.700	0.0000772	0.0000772
g	6 mm thick tinted heat reflecting type float glass	SQM	9.900	8.100	0.0002661	0.0002661
1000. 0	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer in - charge. (Cement supply by BHEL free of cost)	--				
1001. 0	Providing brick work in cement mortar 1:6 (1 part cement : 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.	--				
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	1182.651	967.624	0.1127077	0.1127077
1002. 0	Providing brick work in cement mortar 1:6 (1 cement : 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.	--				
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	968.550	792.450	0.1116697	0.1116697
1003. 0	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.	--				
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making) 29	SQM	5.500	4.500	0.0000777	0.0000777
1101. 0	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.	--				
a	40mm thick	SQM	5.500	4.500	0.0000233	0.0000233

<p align="center">Enquiry No.YTPS: SCT: 202406- 195</p> <p align="center">Un Price BID for Civil works of Fire Protection System (FPS) Misc Pedestals and duct bank</p>						
Ref. No.	Description	UOM	55% Quantity Package A	45% Quantity Package B	Factor for Package A	Factor for Package B
1200. 0	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement supply by BHEL free of cost)	--				
A1201	Providing 20mm thick plaster in two layers outside the building/rough surface of internal wall in cement mortar 1:4 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.The two layer include 1:4 cement sand mortar 12mm thick first layer and 1:3 cement sand mortar with 8mm.	SQM	4211.089	3445.436	0.0298193	0.0298193
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	4211.089	3445.436	0.0119882	0.0119882
1204. 0	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	2728.688	2232.563	0.0075067	0.0075067
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	5.500	4.500	0.0000151	0.0000151
1205. 0	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	44.000	36.000	0.0001127	0.0001127
1207. 0	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	19.250	15.750	0.0000101	0.0000101
A1210	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	19.250	15.750	0.0000362	0.0000362
1300. 0	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--				
A1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer and 3 mm thick white cement putty punning on walls and ceiling (Birla White/ JK White or Similar approved) including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer	SQM	2728.688	2232.563	0.0099549	0.0099549
1305. 0	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturer's guideline.(Cost of primer is included in this item and wall putty is payable under separate item).	SQM	4211.089	3445.436	0.0072533	0.0072533
1312	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	445.500	364.500	0.0003798	0.0003798
A1319	Providing and applying two or more coats of waterproof external quality acrylic based emulsion paint of approved brand and manufacturer as per approved shade, over one or more coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturer's guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.	SQM	4211.089	3445.436	0.0167229	0.0167229
A2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars or male and female jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.	--				
a	200mm dia	RM	27.500	22.500	0.0002075	0.0002075
b	300mm dia	RM	110.000	90.000	0.0010868	0.0010868
c	450mm dia	RM	44.000	36.000	0.0012543	0.0012543

Enquiry No.YTPS: SCT: 202406- 195 Un Price BID for Civil works of Fire Protection System (FPS) Misc Pedestals and duct bank						
Ref. No.	Description	UOM	55% Quantity Package A	45% Quantity Package B	Factor for Package A	Factor for Package B
2300. 0	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.					
A2301	Fabrication, erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames,hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc, connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20 degree C for welding over 20 mm and upto 40 mm & 66 degree C for welding over 40 mm and upto 63 mm & 110 degree C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Rate shall be exclusive of surface preparation) (Structural steel for the above shall be supplied by BHEL free of cost as per the terms and conditions specified elsewhere in the contract)					
a	For Built up sections composed of Structural plates only (Grade E250) including stiffeners e.g. plated columns, girders, etc. (other than coal bunker)	MT	2.475	2.025	0.0009538	0.0009538
b	For built up section composed of rolled sections (Grade E250) or rolled sections (Grade E250) and plates (Grade E250) including stiffeners (other than coal bunker)	MT	2.475	2.025	0.0009537	0.0009537
d	For all other items (Grade E250) not covered above e.g. rolled sections, pipes, chequered plate etc	MT	2.750	2.250	0.0010598	0.0010598
S2301	Supply including delivery at site, structural steel with mild steel rolled sections, conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, etc. complete all as per specifications, drawings and as directed by Engineer. Note - This item shall be operated if required, at the discretion of BHEL.	MT	2.750	2.250	0.0021375	0.0021375
A2302	Extra over ST No. A2301 for surface preparation by blast cleaning of steel structures as per IS:1477 (Part 1 and 2) and applying epoxy resin based zinc rich primer as per IS:14589 in 2 coats, one at shop and second coat after erection, including touch-up painting etc all complete.	MT	8.250	6.750	0.0005716	0.0005716
B2302	Extra over ST No A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coating of inorganic zinc silicate primer in one coat @ 65-75 micron DFT /coat at shop immediately after blast cleaning, including touch-up painting etc all complete.	MT	8.250	6.750	0.0005532	0.0005532
B2305	Providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 115 microns including protection and cleaning, scaffolding etc. all complete.	MT	8.250	6.750	0.0002842	0.0002842
2600. 0	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge. Cement will be supplied by BHEL free of cost.					
A2602	Earth work in stripping of top soil upto a maximum depth of 0.15m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	550.000	450.000	0.0004807	0.0004807

Enquiry No.YTPS: SCT: 202406- 195 Un Price BID for Civil works of Fire Protection System (FPS) Misc Pedestals and duct bank						
Ref. No.	Description	UOM	55% Quantity Pakage A	45% Quantity Pakage B	Factor for Package A	Factor for Package B
A2608	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250mm loose thickness so as to achieve at least 95% maximum dry density (modified proctor) as per IS-2720 (Part-VIII) with selected approved soil/soft rock directly from excavation within a lead upto 1km and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer.	CUM	891.000	729.000	0.0003522	0.0003522
C2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250mm loose thickness so as to achieve at least 95% maximum dry density (modified proctor) as per IS-2720 (Part-VIII) with selected approved soil/soft rock from compulsorily excavated earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer.	CUM	110.000	90.000	0.0002054	0.0002054
A2609	Earthwork in filling upto any depth below ground level for grading to proper grade and level in layers of thickness and procedure as decided at site by Engineer-in-charge but not exceeding 500mm loose thickness of each layer so as to achieve required compaction with available hard rock boulders and fine material (i.e soil, soft rock or mix of both) from available stacked excavated material within a lead upto 2Km and compacted as specified including re-excavation of stacked material, watering, ramming/compaction by manual/mechanical means, dressing etc all complete in following manner. Filling with hard rock boulder pieces having size less than 150mm and interstices filled with available stacked soil, soft rock (or both soil & soft rock mix) as fine material and shall be compacted to minimum of 85% of original stack of material after filling the interstices. The item includes for breaking of oversized rock into pieces less than 150mm size by manual or mechanical means including manual picking. (Compacted fillles and welds not payable), assembly, edge	CUM	66.000	54.000	0.0001461	0.0001461
	Note: (1) The above Quoted Price shall be excluding of GST, GST shall be paid at actual. (2) Bidders to quote their most competitive price in Blue Colour Cell.(overall price in Total Price) (3) Kindly submit this price bid with signature and sealed of authorized signatory preferebly in pdf format. (4) Evaluation shall be done on overall L1 basis, Itemwise rate shall be back calculated as per the weightage provided.					
	Mode of Award: (1)L1 Bidder will be awarded the Contract for Package-A. For offering Package-B for next lowest bidders, the value of Package-B will be derived based on the awarded value of Package-A and ratio of Package-A and Package-B. (2)If the total amount of Package-A is considered as 1, then the total amount of package-B shall be considered as 1X(45/55). Package-B shall be offered to the next lowest Bidder in the order of competitiveness, i.e., L2, L3, and so on till H1 in that order, for matching the derived Package-B value. In the above process, the Bidder who is matching the Package-B derived value will be awarded the However, BHEL reserves the right, not to award Package-B as per above, at its sole discretion, without assigning any reason to the Bidders contract for Package-B.					