

**Split "Schedule of Quantities(SOQ)" (Package-1 and package-2): Piling and foundation works at "IOCL Paradip-Standby SRU (525TPD) Train project", Odisha.  
BHEL Enquiry No.T0AUX00004 dated:12.01.2021**

Item no.	ST.No.	Item Description in brief	UOM	Qty Package-1	Qty Package-2	Total Qty
1	100	<b>EARTH WORK:</b> Earth work In excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following				
2	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), 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.				
3	a	Depth from ground level but not exceeding 2 m	CUM	5383.98	2307.42	7691.40
4	b	Depth exceeding 2 m but not exceeding 4 m	CUM	3010	1290.00	4300
5	c	Depth exceeding 4 m but not exceeding 6 m	CUM	1045.33	448.00	1493.33
6	108	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 250 mm thickness using/with selected materials directly from excavation within a lead upto 1Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following.				
7	a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	5479.22	2348.24	7827.46
8	109	Extra over ST No. 101 & 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km				
9	a	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	70	30.00	100.00
10	200	<b>CONCRETE WORK:</b> 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.				
11	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	199.5	85.50	285
12	202	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 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	77	33.00	110
13	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	10.5	4.50	15
14	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.				

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15	c	M 35 Grade	CUM	1214.25	520.39	1734.64
16	400	<b>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.</b>				
17	403-A	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) (16-gauge black soft annealed SWG wire shall be used for binding of reinforcement bars)	MT	489.35	209.72	699.07
18	300	<b>FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centereing etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>				
19	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	4812.15	2062.35	6874.5
20	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.				
21	a	Upto 150 mm depth	Each	35	15	50
22	b	Pockets of depths more than 150mm and upto 300 mm depth	Each	21	9	30
23	c	Pockets of depths more than 300mm and upto 600 mm depth	Each	14	6	20
24	d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	3	2	5
25	e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	1	1	2
26	500	<b>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.</b>				
27	511-A	Providing and applying two coats of hot bitumen paint of grade 20/30 with quantity of bitumen at least 1.2 kg/m2 per coat over all underground structures etc including top surface of foundations etc. all complete as directed by engineer - in - charge.	SQM	3238.48	1387.92	4626.4
28	700	<b>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.</b>				
29	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	5.41	2.32	7.73

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Item no.	ST.No.	Item Description in brief	UOM	Qty Package-1	Qty Package-2	Total Qty
30	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, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	39.2	16.80	56
31	703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.				
32	A	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as	MT	3.5	1.50	5
33	B	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, stiffner plates, protective tape, pipe sleeves,	MT	7	3.00	10
34	1800	<b>MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>				
35	1805	Providing and mixing approved Bipolar Concrete penetrating Corrosion inhibiting admixture phenolic base (krishna conchem or equivalent) in concrete as per detail specification of manufacturer etc. all complete. Payment shall be made per cum of concrete.	CUM	4984.28	2136.12	7120.39
36	2500	<b>PILING WORK:</b> Piling 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.				
37	2501	Mobilisation of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/ash etc., installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	NOS	2	1	3
38	2504-A	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified <b>(length to be measured from pile cut-off level to the bottom of pile)</b> using cement concrete grade <b>M35</b> conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials <b>(but excluding reinforcement steel for which measurement/payment shall be made separately)</b> , boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following. Note: 1) No compansation shall be made towards additional qty. of cement beyond 400kg/Cum. for concrete mix design.				
39	a	Pile with 500 mm diameter and 22 m length below cut off level	Each	547	234.00	781
40	b	Pile with 500 mm diameter and 12 m length below cut off level	Each	104	44.00	148
41	2505-A	Extra over ST. No. 2504-A for pile length more than the specified length below cut off level for the following.				
42	a	Pile with 500 mm diameter and 22 m length below cut off level	Rm	70	30.00	100

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43	b	Pile with 500 mm diameter and 12 m length below cut off level	Rm	18	7.00	25
44	2506-A	Rebate on ST.No.2504-A, 2505, 2506 for providing M-30 grade concrete instead of M-35				
45	a	Pile with 500 mm diameter and 22 m length below cut off level	Rm	70	30.00	100
46	b	Pile with 500 mm diameter and 12 m length below cut off level	Rm	18	7.00	25
47	2511	Conducting initial load test upto a maximum test load of 2.5 times the safe load capacity on single pile as specified in accordance with IS 2911 Part-4 including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/ accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile ( installation of pile shall be paid separately) etc. all complete as per specification, drawing and as directed by engineer in - charge for the following:				
48	a	For vertical compression test by cyclic load method				
49	ii	500 mm diameter pile	Each	2	0.00	2
50	b	For lateral load test				
51	ii	500 mm diameter pile	Each	2	0.00	2
52	c	For tension/uplift test				
53	ii	500 mm diameter pile	Each	2	0.00	2
54	2512	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.				
55	a	For vertical compression test by maintained load method	Each			
56	ii	500 mm diameter pile	Each	4	0.00	4
57	b	For lateral load test	Each			
58	ii	500 mm diameter pile	Each	4	0.00	4
59	c	For tension/uplift test	Each			
60	ii	500 mm diameter pile	Each	4	0.00	4
61	2513	Carrying out pile integrity test on 450mm/500mm/550mm/600mm /760mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	per test	70	30.00	100
62	2517-A	Rebate on ST.No.205-C, 2504-B, 2505, 2506 for providing M-30 grade concrete instead of M-35	CUM	4984.28	2136.12	7120.39
		<b>Total (Excluding GST)</b>				
	Note:					
	1	<b>Lumsum Price quoted by bidder in (excel sheet) price bid format shall be cosidered as the total price of this tender BOQ. Rate and amount against each line item shall be derived from the corresponding weightage assigned against each line item of the BOQ seperately for both Package - 1 &amp; Package-2.</b>				