



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TENDER CHANGE NOTICE 04(TCN – 04) DT:24-09-2007

WITH REFERENCE TO THE NIT, PUBLISHED IN THE WEB SITES FOR COMPLETE CIVIL, STRUCTURAL & ARCHITECTURAL WORK COVERING POWER HOUSE, TRANSFORMER YARD, MILL BAY, VARIOUS AUX BUILDINGS, CW POWER HOUSE, CW DUCT, PAVING, PIPE RACK/CABLE RACK, ROADS, DRAINS ETC FOR 1X250 MW UNIT 6 AT SANTALDIH TPS, WB.FOLLOWING CHANGES BASED ON THE REQUEST OF THE BIDDER MAY PLEASE BE NOTED AND COMPLIED WHILE SUBMITTING THE OFFER FOR THE SUBJECT JOB.

REF: TENDER DOCUMENT NO- PSER:SCT:SND-C782:07

- 1.0 The clarification sought by the bidder has been clarified and enclosed herewith.
- 2.0 Based on the various clarifications and review, the tendered BOQ has been modified and enclosed herewith as REV-02 both for Volume-III A (absolute values) and Volume-III B (In Percent Values with respect to the GRAND TOTAL). All the bidders are requested to quote as per this revised (02) BILL OF QUANTITIES CUM RATE SCHEDULE ONLY. Earlier Price schedules like (REV-0) and REV-01 stands deleted.
- 3.0 The due date of submission is extended up to 02/10/2007.

BIDDERS TO NOTE THAT All TCNS WILL FORM PART OF TECHNICAL SPECIFICATION & SPECIAL CONDITION OF CONTRACT OF TENDER DOCUMENT.

ALL OTHER TERMS & CONDITIONS OF THE TENDER SHALL REMAIN UNCHANGED.

BIDDERS ARE REQUESTED TO SUBMIT OFFER BY ABOVE DUE DATE.

DGM (SCT)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

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CLARIFICATION OF M/S GDCL QUARRIES

- (i) Item nos. 118A, 118B & 118 C – BOQ shows break-up of quantities in three types of compaction besides showing total quantities against each item. Please clarify which items are to be quoted – whether average rate to be quoted against total quantity of each item or rates to be quoted for all splitted-up quantities separately.
Clarification: Rates to be quoted for all split-up quantities separately, as per modified BOQ (REV-02).
- (ii) Item nos. 601, 602 & 603 – BOQ stipulates bitumen impregnated fibre board with bitumastic sealant whereas description in item 600 stipulates sealing compound as polysulphide sealant – please clarify.
Clarification: This item is being modified. Rates to be quoted as per revised BOQ item(R-02).
- (iii) Item nos. 701B) & 703 seem to be same and therefore, one item needs to be deleted -- Please clarify.
Clarification: These items are modified.Rates to be quoted as per revised BOQ item(R-02).
- (iv) **Item no. 2001** – Please note that unless the height of fencing, spacing and specification of barbed wire (thickness & size), section of mild steel post with spacing of posts (even if mild steel post is free issue) are mentioned, this item cannot be quoted in ‘Sqm’. Also please note that unless concrete block sizes for foundation are not mentioned, excavation, backfilling, concreting etc., which are to be included while quoting the rate for this item, cannot be assessed – hence, please specify the same too – Please clarify.
Clarification: This item is modified. Rates to be quoted as per revised BOQ item(R-02).
- (v) Item no. 2003 – Please note that unless section of mild steel post with spacing of posts (even if mild steel post is free issue) and concrete block sizes for foundation are not mentioned, labour charges for erection of post, excavation, backfilling, concreting etc., which are to be included while quoting the rate for this item, cannot be assessed – hence, please specify the same – Please clarify.
Clarification: ITEM modified. Rates to be quoted as per BOQ item (Rev-02) .
- (vi) In clause no. 26.4 of Volume-ID (Special Conditions of Contract (Services)), your stipulation on T & Ps seem to be quite high for few equipments as mentioned below –
(a) **100 T Crawler Crane**, (b) **75 T Crawler Crane**, (c) **35/40 T Tyre/Crawler Crane**, (d) **18 T Crawler Crane**, (e) Batching Plant, (f) Welding Rectifier, (g) Concrete Placer, (h) Hydra & (i) Radioset VHF/UHF.
In this regard, please note that we envisage even peak requirement of abovementioned machinery should not be more than as mentioned below –
(a) 100 T Crawler Crane -- nil, (b) **75 T Crawler Crane** -- 1, (c) 35/40 T Tyre/Crawler Crane -- Nil, (d) 18 T Crawler Crane – 1, (e) Batching Plant (30 cum/hr) -- 1, (f) Welding Rectifier -- 25, (g) Concrete Placer – nil, (h) Hydra – 3 & (i) Radioset VHF/UHF -- Nil.

Clarification: The Stipulation of T&P remains unchanged.

VOLUME-III A (REV-02)
PRICE SCHEDULE


Total Civil, structural and architectural works of main plant civil package for 1x250 MW unit # 6 at Santaldih TPS, West Bengal.

TENDER NO - PSER:SCT:SND-C782:07


PREAMBLE (TCN-04)

01	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.
02	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with this specification are only preliminary for giving idea of the work involved.
03	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
04	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc equipment, strengthening of roads/culverts/bridges etc including arranging all clearances etc required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
05	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc including fixing of grid pillars, benchmarks etc required for commencement of site activities. No separate payment will be made towards the same.
06	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English.
07	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
08	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/ volumes of the contract.
09	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or to be deleted altogether. The quoted/ accepted rates shall remain firm and valid as long as variation in total value of work executed under this contract including extra items, but excluding any price escalation, remains within +/- 30% (thirty percent) of the contract price given in the LOI/WO.
10	All works itemwise shall be measured upon completion and paid for at the rates quoted and accepted.


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

BOQ CUM RATE SCHEDULE						
VOLUME-III (REV-02) - ABSOLUTE VALUES						
		1X250 MW SANTALDIH TPS UNIT # 6				
ST. NO	DESCRIPTION		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY						
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04						
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
101	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.		CUM	76885		
102	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting/controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.					
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.		CUM	1958		
b	By means of controlled blasting excluding provision of sensor.		CUM	9000		
c	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.		CUM	9000		
103	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.		CUM	45730		
104	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.					
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.		CUM	3730		
b	By means of controlled blasting excluding provision of sensor.		CUM	10000		
c	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.		CUM	10000		
105	Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.		CUM	7935		
106	Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.					
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.		CUM	1005		
b	By means of controlled blasting excluding provision of sensor.		CUM	2400		
c	In hard rock (blasting prohibited) by means of chiselling, wedging etc.		CUM	2500		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
107	Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	2850		
108	Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.	CUM	4550		
109	Earth work in excavation for depth exceeding 8.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	4000		
110	Earth work in excavation for depth exceeding 8.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.				
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	800		
b	By means of controlled blasting excluding provision of sensor.	CUM	1800		
c	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	CUM	1200		
116	Extra over item above respectively for carriage of all types of excavated materials beyond the initial lead of 1.0 km dumping and levelling the dumped soil/ materials and levelling the area from where the material is transported, complete with all lifts as specified and directed by Engineer for the following leads.				
i)	Carriage beyond 1.0 km and not exceeding 2.0 km.	CUM	12000		
ii)	Carriage beyond 2.0 km and not exceeding 3.0 km.	CUM	11000		
iii)	Carriage beyond 3.0 km and not exceeding 4.0 km.	CUM	7040		
iv)	Carriage beyond 4.0 km and not exceeding 5.0 km.	CUM	3000		
v)	Carriage beyond 5.0 km and not exceeding 6.0 km.	CUM	200		
vi)	Carriage beyond 6.0 km and not exceeding 7.0 km.	CUM	100		
vii)	Carriage beyond 7.0 km and not exceeding 8.0 km.	CUM	100		
viii)	Carriage beyond 8.0 km and not exceeding 9.0 km.	CUM	50		
ix)	Carriage beyond 9.0 km and not exceeding 10.0 km.	CUM	50		
118 A)	Back filling around foundations in plinths etc.to proper grade and level with selected materials within a lead beyond 1 Km but not exceeding 5 Kms. from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. thickness by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including transportation.				
i)	ordinary manual compaction	CUM	5000		
ii)	compaction to 90% proctor density	CUM	60091		
iii)	compaction to 95% proctor density	CUM	7000		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
118 B)	Back filling around foundations and plinths to proper grade and level with selected excavated soil including watering and ramming in layers of 15 cm. thickness by manual/ mechanical means in saturated condition, dressing etc. complete including transportation				
	i) ordinary manual compaction	CUM	2000		
	ii) compaction to 90% proctor density	CUM	20186		
	iii) compaction to 95% proctor density	CUM	5000		
118 C)	Back filling around foundations in plinths, trenches, drains etc.to proper grade and level with selected good soil free from shingle, salts, organic materials, roots, sod or any other foreign substance including re-excavating loose thickness, watering and ramming in layers of 20 cm. thickness for non cohesive soil by manual/ mechanical means, dressing etc. complete as directed by the engineer in charge including cost of material for all leads, loading, unloading, royalty and transportation. (payment for solid measure of the consolidated filling)				
	i) ordinary manual compaction	CUM	3314		
	ii) compaction to 90% proctor density	CUM	25000		
	iii) compaction to 95% proctor density	CUM	4000		
119	Supply and filling sand under floors, in foundation and plinths including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25 cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to minimum 80% of relative density, dressing and levelling etc complete.	CUM	855		
119a	75 thk. Gravel/Clean Coarse sand mixed with 8 to 10% by vol. of hot bitumen of grade 80/100.	SQM	100		
119b	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 200 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	100		
119c	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm - 40 mm down graded), in layers not exceeding 225 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	140		
119d	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm - 40 mm down graded), in layers not exceeding 250 mm thickness including breaking of boulders to required sizes, filling the interstices with coarse sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	105		
119e	50 thk. Crushed stone fill (12 mm & down) mixed with 8 to 10 % by vol. of hot bitumen of grade 80/100	SQM	80		
119f	50 thk. Premix carpet in two layers of 30mm & 20mm with 12 mm down broken respectively stone chips mixed with bitumen of grade 80/100	SQM	80		
120	Providing and laying rubble soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 230mm , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one or more layers each of approximately 230mm thickness, hand packing, filling in interstices with quarry spalls and providing a layer of 50mm. thickness (consolidated) of moorum over each layer of soling including watering, thoroughly compacting each layer with 10 tonne power roller with minimum 6 passes (or with vibrating plate of approved capacity at places not approachable by power roller) all as per the direction of the Engineer and as per specification.	CUM	2000		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
121	Providing and laying rubble soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 63mm and down , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interstices with sand including watering, thoroughly compacting the layer all complete as per specification and the direction of the Engineer .	CUM	8780		
122	Filling in transformer pits etc. , with clean 40 mm nominal size stone aggregate including all labour, materials, royalties, equipments etc. complete as per instructions of engineer in charge.	CUM	60		
123	Buldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	SQM	5,200		
124	Cutting of trees , including transportation, stacking at storage yard and disposal of unused material as per the direction of engineer in charge.				
	I) 300 mm upto 600 mm girth	Nos.	2		
	II) 601 mm upto 900 mm girth	Nos.	3		
200	PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING: (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).				
202	Plain Cement Concrete of grade M10 as levelling course , under water retaining structures, equipment foundations, under foundations/floors etc all complete.	CUM	5881		
203	Plain Cement Concrete of grade 1:2:4 as filling course , under water retaining structures, equipment foundations etc all complete.	CUM	688		
204	Concrete of grade M-30 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size for all major equipment foundations at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	220		
205	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundations , under floors etc at any 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.	CUM	21769		
206	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure/water retaining structure (below ground) at all heights/depths from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.(THIS ITEM IS FOR WATER RETAINING STRUCTURES ONLY)	CUM	7445		
207	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure at all heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	11299		
208	Concrete of grade M-30 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size for foundation, super structure of T.G. Block , Machine foundations, other foundations at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation etc. all complete.				


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
208A	M30 (with 20mm nominal size graded stone aggregate) including Ultrasonic Pulse Velocity testing (Ultrasonic Pulse Velocity testing to be conducted through reputed agency/ institution as per approval of engineer), rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc. Payment terms - a) After casting 80%; b) After receipt of ultrasonic test report - 20%.	CUM	400		
208 B	M30 (with 20mm nominal size graded stone aggregate)	CUM	100		
209	Extra over item no. 204, 208 for temperature control of fresh concrete (temperature not exceeding 25deg. C) with addition of crushed ice in mixing water etc complete.	CUM	100		
210	Concrete of grade M-20 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like roof slabs etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete excluding the cost of reinforcement .	CUM	30		
211	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like trench covers etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete excluding the cost of reinforcement .	CUM	72		
212	Concrete of Grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundation,grade slab, etc complete.	CUM	4880		
213	Concrete of Grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in paving,plinth protection, underfloor, etc complete.	CUM	630		
214	Breaking existing concrete work at any level including reinforced concrete, removing the rubbish within a lead of 1Km., including transportation, loading, unloading, etc all complete	CUM	50		
215 A	Breaking existing concrete work at any level including cutting reinforcements, removing the rubbish within a lead of 1Km., including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, all complete and as directed by Engineer.	CUM	50		
215 B	Cutting of masonry/ PCC/ RCC work for making openings/ pockets at any floors/ walls of all levels and according to shapes and sizes as per drawing by using power cutting tool (DD2E of Hilti make or equivalent), disposal of waste materials upto a lead of 1 km as directed by engineer including equipment, making good broken edges/ surfaces with cement mortar (1:3) etc complete as per instructions of BHEL. (measurement shall be paid as per cutting surface area of masonry/ concrete and reinforcement).	SQM	20		
216	Providing and encasing of structural steel member with concrete (M25) work around flanges, webs etc and filling the gap. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification and as directed by Engineer	CUM	25		
300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, SCAFFOLDING COMPLETE INCLUDING POCKETS ETC. AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:				
301	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	SQM	28960		
302	Fairface form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works.	SQM	5670		

BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
303	Ordinary form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	SQM	5455		
304	Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	SQM	50115		
305	Fairface form work above finished ground floor level of approved quality BWP type, compreg (densified) plywood with suitable overlay (film faced) and conforming to IS:3513 Part-III, for exposed surfaces of columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. at all heights.	SQM	8000		
306	Fairface Formwork for TG superstructure. (above raft top level)	SQM	2800		
307	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm contact surface area with concrete) 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.				
	Upto 300 mm depth	Nos.	40		
	From 301 mm upto 600 mm depth	Nos.	45		
	From 601 mm upto 1000 mm depth	Nos.	25		
400	REINFORCEMENTS (REINFORCEMENT STEEL SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)				
401	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of mild steel reinforcements confirming to grade-1 of IS:432 (part-I) including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	63		
402	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements confirming of grade Fe-415/ Fe 500 confirming to IS:1786 including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	4309		
403	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	2		
404	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	15		
500	WATER PROOFING AS PER SPECIFICATIONS (CONTRACTOR HAS TO FURNISH A GUARANTEE FOR MATERIAL AND WORKMANSHIP FOR A MINIMUM PERIOD OF 20 YEARS) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).				
501	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete.	KG	2000		
502	Providing and fixing roof water proofing treatment using high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ATM C836 & C-898. Thickness of the membrane shall be 1.5mm. This treatment shall include application of polymerized mastic over the roof to achieve smooth surface and primer coat. (WEARING COURSE TO BE PROVIDED AS PER ITEM NO 504)	SQM	10445		
503	Providing and grading under bed over roof slab, floors to achieve the specified slope with 1:4 cement mortar plaster (by volume) of average 15 mm thickness at all elevations including all labour, material, equipment, handling, preparation of surface, transportation, batching, mixing, placing, leveling, curing, testing etc. complete as per specification, drawing and instruction of engineer.	SQM	10445		

BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
504	Providing and laying protective wearing course of 25 mm thick PCC (1:2:4) with 6 mm down aggregate laid in 1200 square mm panels alternatively cast reinforced with 0.56 mm dia galvanised chicken wire mesh with a gap of 6 mm between two adjacent panels gaps shall be filled with silicon sealant for expansion and contraction all complete with labour, material, equipment and as per specification/drawing and to the satisfaction of engineer in charge.	SQM	10395		
505	Providing and laying cement concrete chequered flooring tiles 22 mm thick over roof as per IS 13801. Under bed shall be 20 mm thk wearing course PCC 1:2:4 with 6 mm down aggregate reinforced with 0.56 mm GI chicken wire mesh. Tiles shall be laid over under bed with 8 mm thick 1:3 cement mortar with fine joints including sealing of joints between wearing course and the tiles with silicon sealant all complete with labour, material, equipment, handling, scaffolding, transporting etc. as per drawing and specification.	SQM	10120		
508	Screed concrete 1:2:4 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 to maintain the required grade complete.	CUM	235		
509	Screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size in manholes .	CUM	30		
510	3 COATS OF BITUMEN COATING IN FOUNDATION	SQM	7640		
511	ANTI-TERMITE COATING	SQM	1100		
512	Providing and laying foam concrete block insulation over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125 KCL/Sqmh degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets as per specification. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)				
I)	75 thick	SQM	3,100		
II)	100 thick	SQM	7,300		
513	Providing and laying pressed precast concrete tiles over water proofing of minimum size 600 X 600 and minimum thickness 20 mm conforming to IS 13801 including 15 mm thick cement mortar (1:4) bedding inclusive of provision for thermal expansion for each roofing tile filled with polysulfide joint sealant. (water proofing paid else where) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)	SQM	10,400		
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:				
601	Supplying & installation of bitumin impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin, labour, material, equipments etc all complete at all levels as per specification, drawings and instruction of engineer in charge:				
i)	12mm thick joints	SQM	25		
ii)	20mm thick joints	SQM	25		
iii)	25mm thick joints	SQM	90		
iv)	50mm thick joints	SQM	600		
602	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints at all levels including application of primer, labour, material, equipments etc. all complete as per specification/drawing, instruction of engineer in charge.	Kg	1,050		
603	SIL FLEX (CAPCELL HD 100)				
603 a	12mm thick joints.	SQM	15		


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1X250 MW SANTALDIH TPS UNIT # 6

ST. NO	DESCRIPTION	UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
603b	25mm thick joints.	SQM	15		
603 c	30mm thick joints.	SQM	20		
700	M.S. EMBEDMENTS				
701A	Fixing of embedments, MS inserts, pipe sleeves, guide rails, angle pieces, foundation bolts, anchor bolts, rungs of various diameters, plates of dimensions including welding of inserts/embedments for fixing, cost of all labour, materials and equipment, transportation, loading, unloading, handling, cutting, drilling, scaffolding as per specifications and drawings. (Fabricated materials/ embedments shall be supplied by BHEL free of cost).	MT	51		
701B	Supply, fabrication and fixing of embedments, MS inserts, angle, channel, plates, Tee, beams of various diameters, plates of dimensions as required including cost of all labour, materials and equipment for fixing in position, scaffolding and setting in position, transportation from stores within the plant boundary to work spot, loading, unloading etc complete as per specifications and drawings. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	10		
702	Supply , fabrication, transportation, delivery at site and erection, installation and alignment of MS Foundation bolts (Grade- 1 of IS: 432 & IS: 2062) assembly in concrete along with nuts, locknuts (IS: 1363, IS: 1364 & IS: 3138), washers, anchor plates, stiffener plates, protective tapes etc. upto & inclusive of 80mm diameter and upto 3000mm long , for columns including pipe sleeves, templates wherever necessary etc. all complete as per specifications and directed by the Engineer. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	28		
703	Supply , delivery at work spot, fixing and embed in concrete at all elevations miscellaneous steel, pipes, guide rails etc for all kinds of work as required including cost of all labour, equipment, material, loading, unloading, setting material in concrete, layout, scaffolding, handling at site, cutting, grinding, drilling, bolting, welding, jointing, testing etc. all complete as per specifications, drawings and as directed by Engineer. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.				
A	MS pipe sleeves, guide rails of all sections,	Quinta I	51		
B	PVC conduits of all size	Quinta I	19		
C	Expansion fasteners (galvanised) of HILTI make or equivalent of safe tension capacity as specified below:				
i)	250 kg	Each	1650		
ii)	500 kg	Each	1350		
iii)	750 kg	Each	900		
704	Transport the material from store, Fabricating and fixing of embedments, MS inserts , made of angle/channel/beam/plates/pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, bolting, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer. (structural steel shall be supplied by BHEL free of cost as per SCC).	MT	13		
705	Placing, fixing, locking and releasing of vibration isolation spring modules over foundations at all elevations including transportation from stores, leveling, alignment all complete under supervision of supplier as per drawing and instructions of engineer in charge. (VIS will be supplied by BHEL)	NOS.	78		
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:				


BOQ CUM RATE SCHEDULE
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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
801	Providing & grouting cement slurry mix at any elevation/depth with pressure pump for water retaining concrete structures, including fixing nozzles, admixture, curing, etc all complete as per specification and as directed by the Engineer. (cement shall be supplied by BHEL free of cost as per SCC)	SQM	5		
802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.(cost of all material and cleaning the pocket by compressed air shall be contractor's scope and cement shall be supplied by BHEL free of cost as per SCC).	CUM	10		
803	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1(1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer. (cost of all material and cleaning the pocket by compressed air shall be contractor's scope and cement shall be supplied by BHEL free of cost as per SCC).	CUM	10		
804 a	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with Conbextra GP-1, 'Fosroc' or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	30		
804b	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with Conbextra GP-2 'Fosroc' or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	10		
900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC. COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (ALL MATERIALS TO BE SUPPLIED BY VENDOR).				
901	Providing and fixing 40mm thick solid core flush door shutters (single or double) with commercial faces and hard board edges. Core of solid core doors shall be of block board or wood particle board of approved make including all fixtures, Godrej make Mortice lock with handle on both sides, shop painting/polishing as per specification all complete including test certificates.	SQM	120		
902	Providing and fixing steel windows of fixed type with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. Glazing shall be of 6.0mm thk. toughened safety glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	940		
903	Providing and fixing steel openable windows/ventilators with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. Glazing shall be of 4.0mm thick float glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	955		
904	Providing and fixing anodized extruded aluminium windows (single or double shutter) including aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 1.5mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.0mm thickness including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	SQM	350		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
905	Providing and fixing anodized extruded aluminium ventilators conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 1.5mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.0mm thickness including snap fit type beading, concealed screws, fixtures, etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	SQM	200		
906	Providing and fixing steel single or double door shutters. Shutters shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including all fittings, Godrej make Mortice lock with handle on both sides, primer painting complete as per specification.	SQM	110		
907	Providing and fixing steel single or double shutter doors. Shutters shall be of 18 gauge M.S. sheets and shall present a flush surface on the outside. The inside shall be stiffened with semitubular edge and central stiffening rail which shall convey the lock. Complete with fixtures, Godrej make Mortice lock with handle on both sides, primer painting as per specification.	SQM	252.5		
908	Providing and fixing fire proof steel door shutters (single or double shutter) conforming to IS:3614(part-1 & part-2). Shutters shall be minimum 60mm thick flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres with mineral wool insulation, primer and epoxy based painting including door frame, all fittings complete as per specification. and shall be TAC approved with minimum 2 hrs. fire rating.	SQM	35		
909	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 6.0mm thickness including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Frames shall be measured and paid under separate item).	SQM	110		
910	Providing and fixing in position anodised aluminium frame for doors, windows, ventilators having minimum 3mm wall thickness as per IS:1285 and electro colour coating of minimum 15 micron thickness including holdfast, fillingup of gapes at junctions, at top, bottom and sides etc all complete as per specification.	Kg	800		
910 A	Providing and fixing anodized aluminium work in doors, windows, ventilators and partitions etc with extruded standard tubular and other sections including all fittings and fixtures and accessories of approved make conforming to IS 733 and IS 1285, anodised and electrocoloyr dyed to required shade according to IS 1868 (min. anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, screws or with fixing clips including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bimetallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/paneling with all fittings and fixtures (like tower bolts, handles, door stoppers with rubber shoes, "L" drops, stays etc), C.P. brass/ stainless steel screws, providing and fixing hinges/pivots, and making provisions for fixing of fittings where ever required including the cost of PVC/neoprene gas fits all complete as per drawings, specifications and instruction of engineer (glazing and paneling to be measured else where)	Kg	45		
911	Providing and fixing aluminium glazed partition. Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.5mm thickness including snap fit type beading, concealed screws, hold fast, fixtures, Godrej make Mortice lock with handle on both sides, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required.	SQM	700		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

BOQ CUM RATE SCHEDULE						
VOLUME-III (REV-02) - ABSOLUTE VALUES						
		1X250 MW SANTALDIH TPS UNIT # 6				
ST. NO	DESCRIPTION		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY						
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04						
912	Providing and fixing aluminium glazed partition with double glazing . Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Double glazing shall be of two clear float glass of 5.5mm thickness sealed and separated by 12mm air-gap including colour anodised aluminium beading, concealed screws, hold fast, fixtures, PVC/neoprene gasket, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required. Minimum anodising thickness shall be 15micron.		SQM	180		
913A	Providing and fixing conceaed heavy duty floor spring of reputed/approved make all complete as per drawings, specificaations and instruction of engineer in charge.		NOS	20		
913B	Providing and fixing of over head hydraulic door closers of "Yale" make or approved equivalent & quality as directed by Engineer.		NOS	30		
914	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars etc complete as per specifications.		KG	60		
915	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Mechanically operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.		SQM	15		
916	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Hand operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.		SQM	60		
917	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Electrically operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.		SQM	300		
918	Providing and fixing in position PVC Door of Syntex make or approved equivalent in toilet as per specifications and as directed by Engineer.		SQM	30		
919	Providing, fitting and fixing of glazing (including poly carbonate sheet) of superior (selected) quality, first grade class, at various elevations, where required, cleaning after fixing, gaskets, clips, hardware, with all labour and material etc. complete as per specification, drawing and instructions of engineer in charge.					
I)	4 mm clear sheet glass		SQM	82		
II)	4 mm clear float glass		SQM	493		
III)	6 mm clear float glass		SQM	501		
IV)	6 mm wired glass		SQM	705		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
V)	6 mm thick polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	65		
VI)	4 mm ground glass	SQM	80		
VII)	Two nos. 6 mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	98		
VIII)	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	95		
IX)	6 mm thick toughened float glass	SQM	130		
X)	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	520		
XI)	6 mm thick laminated glass	SQM	450		
920	Providing, fitting and fixing heavy duty minimum six lever mortised lock of godrej or equivalent make with handles or knobs to single and double leaf door (wooden/steel/aluminium) with duplicate set of keys and masterkeyed locks, openable from one side by the key and from the other side by the handle etc. all complete as per drawing, specification and instruction of engineer in charge.	Each	50		
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).				
1001	Providing brick work in cement mortar 1:6 (1 part cement: 6 parts coarse sand) in walls, chambers etc. of 254mm & above in thickness at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. all complete excluding plastering and painting, using bricks of class designation 7.5 or best locally available quality of nominal dimensions as per specification.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	295		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	CUM	20		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	20		
1002	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.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	3695		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	CUM	350		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	350		
1003	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	40		
1004	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 H.B. wetting at every third layer, raking out joints, curing, scaffolding etc complete using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and clay ash bricks shall be as per IS 13757, minimum percentage of fly ash shall be 25%, excluding plastering and painting as per specification.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	1025		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	35		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	35		
1005	Providing brick soling spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20		
1006	Providing brick soling including spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item.)- Using flat bricks.				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20		
1007	Providing brick soling including 12mm thick cushion of sand excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects.- Using bricks on edge. (Excavation, if any, shall be measured and paid separately as per relevant item)				
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105		
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20		
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20		
1008	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	10		
1009	Breaking of existing brick partition wall at all levels including plastering, cutting of reinforcement, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	10		
1010	Providing and encasing of structural steel member with masonry work with cement mortar (1:3) around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification.(Bricks class designation 7.5 of nominal dimension)	CUM	210		
1011	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.(Excavation and backfilling will be measured and paid as per relevant item)	SQM	55		
1012	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	10		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
1013	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	105		
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED / SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-				
1101	Damp Proof Course 50mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification. (cement shall be supplied by BHEL free of cost as per SCC).	SQM	160		
1200	CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)				
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials	SQM	17315		
1202	Providing 12mm thick plaster in two layers inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification.	SQM	3075		
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with ROUGH finish as per specification.	SQM	10000		
1204	Providing 12mm thick plaster in cement mortar 1:6 on walls with SMOOTH finish as per specification.	SQM	12000		
1205	Providing 12 mm thick plaster in cement mortar 1:6 on walls with a paste of neat cement @1kg/sqm and rubbed smooth with trowel as per specification.	SQM	1,189		
1206	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth as per specification.	SQM	16870		
1207	Providing 15mm thick neat plaster(1:4 MORTAR) in drains/culverts as per specification.	SQM	1150		
1208	Providing 18mm thick plaster in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification.	SQM	680		
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (REPUTED MANUFACTURER LIKE ICI/ BURGER/ ASIAN PAINTS OR EQUIVALENT).				
1301	Two or more coats of white washing with lime to give an even shade on ceiling including a priming coat complete.	SQM	15330		
	Two or more coats of colour wash as per IS 627 of approved brand and manufacture to give an even shade on walls including a priming coat as per specifications.	SQM	150		
1302	Two or more coats of water proofing cement paint of approved brand and manufacture & of required shade to give an even shade on walls complete.	SQM	17210		
1303	Two or more coats of distemping with oil bound washable distemper as per IS:428 of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete over P.O.P.	SQM	9740		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
1304	Two or more coats of dry distempering of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete	SQM	1350		
1304a	Snowcem cement paint or equivalent	SQM	2000		
1305	Providing two coats of Acrylic emulsion paint of approved brand and manufacture to give one coat of solvent thinnable cement primer of approved shade & quality of Berger make or equivalent complete as per specifications.	SQM	26925		
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer etc all complete as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level.	SQM	270		
1307	Two or more coats of fire resistant paint to withstand 2 hrs of fire as per approved grade and manufacture to give an even shade complete.	SQM	150		
1308	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	100		
1309	Two or more coats of synthetic enamel paint of Berger make or equivalent made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	110		
1310	Providing and applying plaster of paris punning on walls (Birla white or equivalent) 2 mm thick including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	10690		
	Providing and applying plaster of white putty punning on walls (birla white or equivalent) 2 mm thick including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	8200		
1311	Providing and applying ready made Epoxy Paint over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer.	SQM	50		
1312	Providing and making decorative plaster over existing plastered surface of all types and design on walls, ceilings, arcs, columns with various thickness upto 20 mm including finishing all complete.	SQM	627		
1313	Providing screed/grading plaster of average 20 mm thickness in ratio 1:6 nominal by volume including finishing smooth and even etc. all complete at all levels above or below grade level.	SQM	10,380		
1314	Providing and making decorative interior plaster of heritage finish over existing plastered surface of all types and design on walls, ceilings, arcs, columns including finishing all complete.	SQM	195		
1315	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, 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	130		
1316	Providing drip course 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	477		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6						UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION								
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY									
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04									
1317	Providing and laying encasement to box type steel beams at all levels with cement plaster 50 mm nominal thickness with cement plaster (1:4) over galvanised hexagonal chicken wire of 0.9 mm wire diameter and 19 mm mesh size as per IS3150 including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (rate shall include the cost of GI chicken wire mesh)					SQM	2,139		
1318	Providing and applying two or more coats of acrylic distemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface or plaster of paris punning as per manufacturers guideline.					SQM	16,121		
1319	Providing and applying resin bonded granular textured finish, for external applications shall consist of granular textured paint/ Synthetic plaster composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.					SQM	3,745		
1320	Providing and applying 2 or more coats of weather paint of Asian make or approved equivalent make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.					SQM	2,185		
1400	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (Cement shall be supplied by BHEL as per SCC free of cost).								
1401	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded).					SQM	21895		
1402	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.					SQM	2000		
1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300X300X25 thick of approved shade as per IS 1237, laid in floors jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.					SQM	400		
1404	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300X300X25 thick of approved shade as per IS 1237, laid in skirting and dado , jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.					SQM	20		
1405	Providing and laying interlocking M30 concrete blocks of thickness 60 mm as paving (for covered parking area) of approved colour and pattern and should be laid on the subbase and bedding as per specifications and recommendations of manufacturer.					SQM	100		
1406	Providing and laying polished Kota stone 20 mm thk in flooring . Under bed shall average 30mm thk of 1 part cement, 2 part sand : 4 parts stonechip by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.					SQM	260		
1407	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .					SQM	50		
1408	Marble stone border (with kota stone)					SQM	10		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
1409	Marble flooring	SQM	355		
1410	Providing and laying polished Granite stone of approved color and texture 20 mm thk in flooring. Under bed shall average 30mm thk of 1 part cement,2 part sand : 4 parts stonechip by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete .	SQM	200		
1411	Providing and laying polished Granite stone 20 thk in skirting and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	10		
1412	Providing and laying 10 mm thk vitrified ceramic tiles of polished variety of size 450x450 from reputed manufacturer, complete as per specification.	SQM	5950		
1413	Providing and laying 10 mm thk vitrified ceramic tiles of unpolished variety of size 450x450 from reputed manufacturer, complete as per specification.	SQM	85		
1414	Providing and laying 10 mm thk vitrified ceramic tiles of polished variety of size 450x450 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	80		
1415	Providing and laying 10 mm thk vitrified ceramic tiles of unpolished variety of size 450x450 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	20		
1416	Providing and laying granite stone slab of 20mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	SQM	30		
1417	Providing and laying Heavy Duty dust pressed Ceramic Tiles of size 300x300x7mm thick on 20 mm thick cement plaster 1:3 bed mortar, of reputed manufacturer of approved finish shade and colour.	SQM	30		
1418	Providing and laying non-woven type carpet (unitex or equivalent) which shall be laid as manufacturers recommendations in matching grains including anti fungus and anti termite treatment complete.	SQM	30		
1419	Providing & fixing 20mm thick Acid / Alkali resistant vitreous tile lining confirming to IS:4457 in flooring/Dado and shall be laid over over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441 & 4443 including preparation of surface, application of bitumen primer, curing etc. all complete as per specification and direction of Engineer.	SQM	170		
1420	Providing and laying marble dado of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed mortar, labour, material, scaffolding, etc as per specification.	SQM	10		
1421	Providing and fixing White glazed tiles of size 150x150mm, 5.5mm to 6mm thk in dado , projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts coarse sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry, including pigments, curing etc all complete.	SQM	175		
1422	Providing and laying Heavy Duty Ceramic Tiles (Matt Finish) of size 300x300mm, 7mm thick of reputed manufacturer (Kajaria, Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm,with under layer of 20mm thick 1:2:4 concrete as per specification. including all material, labour, etc all complete.	SQM	30		
1423	Providing and laying 2mm thick antistatic PVC floor of approved shade including all labour, material etc all complete as per drawing and as directed by Engineer	SQM	100		


BOQ CUM RATE SCHEDULE
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 1X250 MW SANTALDIH TPS UNIT # 6						UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION								
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04									
1424	Providing and laying screed concrete 1:1.5:3 by volume laid in slope (with 6 to 10mm nominal size stone chips) including all labour, materials, scaffolding etc. complete for all lifts, all leads and of following average thickness:-								
a)	40mm (Average)					SQM	100		
b)	30mm (Average)					SQM	100		
1425	Providing & fixing chemical resistant (Acid & Alkali) bricks (75 mm thk) as per IS 4860 in the floor of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.					SQM	15		
1426	Providing & fixing chemical resistant (Acid & Alkali) bricks (115 mm thk) as per IS 4860 in the walls of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.					SQM	100		
1427	Providing epoxy coating 150 micron over epoxy primer over MS Grating/Chequered plate/any other steel structure complete as per engineer in charge.					SQM	2		
1428	Providing and laying polished Kota stone 16 mm thk in flooring laid in pattern with white marble strip 16 mm thick as per approved floor design over minimum 20 mm thick cement mortar (1 cement :3 sand) as underbedded coarse . The kota stone/marble slabs laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.					SQM	3,834		
1429	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes								
I)	400X400 mm					SQM	655		
II)	600X600 mm					SQM	3,946		
1430	Providing and laying glazed ceramic tiles of approved color and design in dado of approved size of reputed manufacturer topped with 50 mm wide matching ceramic trims, complete as per specification including all material, labour etc.								
I)	5 mm thick					SQM	305		
II)	7 mm thick					SQM	318		
1431	Providing and laying 12 mm thick cast in situ terrazo finish consisting of marble chips of size 1 mm to 12 mm nominal size laid in white/grey cement or mixture of both in proportion 1:1.5 (1 part cement, 1.5 parts chips) with marble powder 3:1 (3 parts cement, 1 part marble powder) in proportion mix dry in cement including pigments, rubbing, grinding, polishing etc in floors, skirtings, treads, risers and landings complete.					SQM	20		
1432	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.								
I)	Glass strips 40 mm wide and minimum 6 mm thick.					RM	3,660		
II)	Aluminium strips 40 mm wide and minimum 3 mm thick					RM	2,386		
III)	Brass strips 20 mm wide and minimum 4 mm thick.					RM	45		
1433	Providing and laying 50 mm thick anti skid precast interlocking concrete pavers of approved shape as per the approval of engineer in charge and specifications complete including minimum 40 mm thick sand underbed.					SQM	500		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
1434	Providing and laying polished Marble slabs (Aranga white) 20/25 mm thk of size 1500X600 mm in flooring over minimum 20 mm thick underbed of 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	488		
1435	Providing polished marble 20 mm thk in skirting projecting 6 mm from adjacent plaster all complete .	SQM	16		
1436	Providing and laying polished Marble slabs (Aranga white) 20 mm thk in staircase landing/skirting and corridors over minimum 20 mm thick underbed of 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	65		
1437	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.				
	1) UPTO 600 MM HIGH	SQM	20		
	2) FROM 601 MM TO 800 MM HIGH	SQM	20		
	3) FROM 801 MM TO 1000 MM HIGH	SQM	84		
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. AT ALL ELEVATIONS COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY THE ENGINEER FOR THE FOLLOWING:				
1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm and shall serve as permanent shuttering to the cast-in-situ roof slab 80mm thick measured over crest of metal decking & shall have adequate strength to support weight of greenconcrete and imposed loads during construction over a span of 1650mm between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc.complete as per engineers approval and specification.(height of trough required as per design should be included in the cost). MS troughed metal decking plate shall consist of permanently colour coated galvanized metal sheet with modified polyester paint as permanent coating with minimum rate of galvanisation 275gm/Sqm. M.S. Trough decking plate shall be connected to the top surface of the purlin, top chord of truss with self tapping self drilling white zinc plated heat treated high carbon steel screws of min 5.6mm diameter at spacing of 390mm C/c in the trough and sealing it with epoxy sealant including all material, labour, tools, etc complete. In addition shear connector of 16mm dia and min 75mm long mild steel studs at spacing 520mm C/c shall be fixed on top cord of purlin passing through the metal decking. (Note:-Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor). Measurement shall be of the plan area of roof covered by MS trough metal decking. DFT of permanent colour coating shall be minimum 20microns and shall be provided on primer. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	3350		
1502 A	Providing and fixing self tapping self drilling shear connectors of 16mm dia and minimum 75 mm projected length above purlin of mild steel studs passing through metal decking as per relevant IS codes and specification.	Quintals	16		
1600	PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING POLISHING/ PAINTINGS, LABOUR ETC., ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-				


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
1602	Providing 50 mm thick fibre glass under deck insulation having min. density 24kg/cum faced with reinforced aluminium foil (FSK) and fixing to ceiling with anchor fasteners at interval of 600mm c/c in both directions, sealing the joint with 75mm wide aluminium foil tape / PVC adhesive tape and held in position with 22 G GI cross wires and wire netting of 12.5mm x 0.71mm (22 G) shall be stretched over the finished insulation and secured with anchor fasteners to prevent any sagging etc. all complete as per specifications and drawings.	SQM	720		
1603	Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour and Luxalon make or approved equivalent (Type-84C, Interior) with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc suitable M.S. channel (minimum MC 75) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (materials for structural paltform grid made up of MS channels/ beams/ angles shall be supplied by BHEL and shall be paid under ST NO 2301). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	770		
1604	Supply and installation of special purpose partition manufactured by Anutone Acoustic Ltd or equivalent having rigid framework consisting of GI studs of adequate size @600mm c/c and floor ceiling and intermediate channels to provide a wall system capable of supporting wall hung C.C.T.V. at different locations.The framing system shall be integrated with independent floor supported structural framework of digital display board. The front side of the frame shall have Excelsior Accoustcal Panels-Elega finish-2400/1200X600X19 mm thick FABRICO Sound Soak- Plane Texture of approved colour. The rear side of the partition shall have Excelsior Acoustical Panels-Elega finish-specially Sound Smart-Burl of size 2400/1200 X600X19 mm thick smooth finished with gypsum plaster and finished with acrylic paint. The entire wall to have Class I fire rating as per BS code. The entire partition wall to have concealed framing system and to have monolithic fabric finish of approved colour or composition of two different colour as per approved design to entire exposed surface including door panels on control room side. The work to be com	SQM	96		
1605	Providing and Fixing 12.5mm thick Gypsum board plain false celing tiles of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers,etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade all complete with smooth finish as per specifications, drawings and as directed by Engineer.	SQM	200		
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.				
1701	HCl down take pipes (heavy) of 100 mm dia as per specifications	RM	60		
1702	MS down take pipes(heavy) of 100 mm dia- Medium quality as per IS:1239(part-I)	RM	600		
1703	HCl down take pipes(heavy) of 150mm dia as per specifications	RM	30		
1704	MS down take pipes(heavy) of 150 mm dia- Medium quality as per IS:1239(part-I)	RM	50		
1800	MISCELLANEOUS				
1801	Providing and fixing PVC water stops - 225mm wide	RM	125		
1802	Providing and fixing in position 25mm wide and 25mm thick blown bitumen in expansion joints as per specification.	RM	125		
1803	Supplying and installation of 25mm thick vibration damping resistoflex or approved equivalent pads around foundation of vibrating equipment and other locations as directed by the Engineer including cost of all materials labour equipment etc complete as per drawing and specifications.	SQM	20		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
1804	Providing and fixing bitumen impregnated fibre joint filling board of 25 mm thickness , fillers along with PVC water bar etc for expansion joint in water retaining structures all complete as per specifications, drawing and as directed by Engineer.	RM	125		
1805	Supplying and laying of rounded gravels 40mm nominal size in transformer yards, switch yard floors etc, as directed by Engineer.	CUM	490		
1806	Providing 50mm thick anticorrosive layer laid to slope consisting of compacted crushed stone screenings, fine gravel, clean sand or similar material as directed by the Engineer, mixed in hot asphalt 10% by volume and rolled or compacted complete as per drawings and specifications, below fuel oil tanks and at such other places as per specifications and as directed by the Engineer.	SQM.	50		
1807	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction and cost of all material, labour all complete as per specification and as directed by the Engineer.	SQM.	50		
1808	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide unless specified otherwise in water retaining structure. Galvanising as per relevant I.S. codes and as per specifications.	RM	50		
1809	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide unless specified otherwise with minimum lap of 50mm length all complete as per specification	RM	55		
1810	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails, anchoring lugs etc complete as per specification and as directed by Engineer. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	45		
1811	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc complete as per specification and as directed by Engineer. (Earthing MS Round shall be supplied by BHEL free of cost as per SCC)	MT	104		
1812	Design, supply, fabrication, installation of truly levelled and aligned 400mm high cavity flooring comprising of 35mm thick Nova teak or approved equivalent make superparticle board of size 610mm x 610mm floor panels having 2mm thick anti-static PVC sheet on top, 2mm thick hard PVC strip lipping on edges and 26 G aluminium sheet fixed with araldite on underside including cutting of panels where required for cables etc with supporting system comprising of 25mm dia galvanised MS threaded rod and pressure die cast zinc alluminium alloy adjustable head attachment at top and welded to 100x100x8mm base plate, pedestal fixed to floor by means of expansion fasteners to existing floor at a distance of 610mm center to center bothways etc all complete as per specification and as directed by Engineer.	SQM	100		
1813	Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.8Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20		
1814	Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 20mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 2.5Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20		
1815	Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 12mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.0Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
1816	Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.6Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20		
1817	Providing & laying Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	80		
1818	Providing and fixing weep holes in Drains consisting of 100 mm dia LDPE pipe sleeves along with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening along with 300 X 300 mm sq., 300 mm deep, 40 mm aggregates to cover fabric mesh mouth complete as directed by engineer in charge.	Nos.	200		
1819	Providing and fixing GI rungs in concrete/brick walls at all elevations including zinc coating of minimum 900 g/sqm all complete.	KG	366		
1820	Providing and fixing LDPE pipes in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.				
	i) 100 mm dia	RM	120		
	ii) 150 mm dia	RM	90		
	iii) 200 mm dia	RM	90		
2000	FENCING AND GATES.				
2001	Supplying and fixing G.I. barbed wire in fencing including G.I clips etc. complete as per specification (angle post shall be supplied by Bhel and to be paid as per item 2301, other items like excavation, backfilling, concreting etc shall be paid as per respective items). Payment terms - a) On receipt of materials at site - 70%, b) On completion of erection & fixing - 30%	MT	5		
2002	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes & sheets including stiffners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, ball bearing arrangements, castor wheels, etc. all complete as per drawing, specification and as directed by Engineer-in-charge with 600mm high GI barbed wire fencing at top all complete. (Excavation, concreting, backfilling shall be paid as per respective items). Vendor to supply all materials.	MT	6		
2003	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accesories as per specification all complete. (angle post shall be supplied by Bhel and to be paid as per item 2301, other items like excavation, backfilling, concreting etc shall be paid as per respective items). Payment terms - a) On receipt of materials at site - 70%, b) On completion of erection & fixing - 30%	SQM	1500		
2100	WATER SUPPLY				
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc complete - 15mm nominal bore.	NO.	60		
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc complete as directed by Engineer - 15mm nominal bore.	NO.	20		
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	NO.	20		
2104	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	NO.	20		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
2105	Providing and fixing GI pipes complete class B-Medium with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 15 mm nominal bore.	RM	400		
2106	Providing and fixing GI pipes complete class B-Medium with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 20 mm nominal bore.	RM	80		
2107	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 25 mm nominal bore.	RM	40		
2108	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 15mm nominal bore (N.B).	RM	80		
2109	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 20mm nominal bore (N.B).	RM	40		
2110	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 25mm nominal bore (N.B).	RM	160		
2111	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 50mm nominal bore (N.B).	RM	40		
2112	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification.	NO.	20		
2113	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc complete as per specification.	NO.	20		
2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete as per specification.	NO.	20		
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc complete as per specification.	NO.	20		
2116	Providing and fixing C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc complete as per specification.	NO.	20		
2117	Providing & fixing P.V.C. water tank of 1000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification and at all heights and levels.	NO.	10		
2118	Providing & fixing P.V.C. water tank of 2000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	NO.	5		
2118A	Providing & fixing P.V.C. water tank of 5000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	NO.	2		
2200	SANITARY WORKS				


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
2201	Supply and fixing vitreous china Wash Basin white or light coloured size 600x450 with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specifications	NO.	20		
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink of size 600x450x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	NO.	5		
2203	Providing and fixing colour glazed vitreous china European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed vitreous china flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer.	NO.	20		
2205	Providing and fixing wall type glazed vitreous china urinals white or light coloured , with C.I. automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings all complete as per specifications.	NO.	30		
2206	Supply, laying and jointing 75mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	120		
2207	Supply, laying and jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	120		
2208	Supply, laying and jointing 150mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	80		
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 200mm dia , as per specification.	RM	260		
2210	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 300mm dia , as per specification.	RM	340		
2211	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 450mm dia , as per specification.	RM	320		
2212	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 600mm dia , as per specification.	RM	320		
2213	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 800mm dia , as per specification.	RM	20		
2214	Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	50		


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 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
2215	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame all complete as per specification.	NO.	40		
2216	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 100x100mm P or S Type.	NO.	40		
2217	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x100mm P or S Type.	NO.	20		
2218	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x150mm P or S Type.	NO.	20		
2219	Construction of road /yard gullies in 250TH brickwork - 750mm deep with cement concrete M-20 grade foundation, including reinforcement, 12mm cement mortar (1:3) plastering both inside and outside, M.S. rungs @ 250 c/c, C.I. Grating along with frames as per IS standards including necessary earthwork in excavation, backfilling etc complete as per drawings/specifications.	NO	10		
2220	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	40		
2221	Providing and installing approved brand single tap water cooler of 80 L cooling capacity complete in all respect.	NO	2		
2222	Providing and installing approved brand single tap water cooler of 150 L cooling capacity complete in all respect.	NO	2		
2300	STRUCTURAL STEEL WORKS All items for fabrication should include supply, fabrication drawings as per specifications including painting with a coat of primer and also inclusive of all necessary quality test to the satisfaction of engineer/customer for the following. (STRUCTURAL STEEL, GI/MS PIPES for HAND RAIL, CHEQUERED PLATES, STAIN LESS STEEL LINER SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)				
2301	<p>Fabrication, erection, alignment, welding, primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate as per IS:2074 & IS:1477 (Parts I & II). One coat to be applied at shop and the other after erection) of structural steel made from mild steel conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, gratings, portals, laced purlins, space frames, shear connectors, 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, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails (G.I. & M.S.),</p> <p>toeplates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts & nuts (weight erection bolts & nuts not payable, Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately under ST NO. 2309 , assembly, edge preparation, preheating(minimum preheat and interpass temperature of 66 degrees centigrade for welding over 40 mm and upto 63 mm & 110 degrees centigrade for thickness over 63 mm) & use of low hydrogen/ radiogenic electrodes as per specification, 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,</p>	MT	9179		


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ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
	protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non- destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drawings, in consultation with BHEL, prepared by the bidder and all other activities required for completion of the work including return of surplus/ waste steel materials to store etc. as per specification, drawings and instructions of the Engineer. Approval of fabrication drawings does not relieve the bidder from the responsibility of its correctness and accuracy.(STEEL AS PER SCC WILL BE SUPPLIED BY BHEL FREE OF COST) PAYMENT TERMS: A) FABRICATION:65%,B)ERECTION:25%,C)ALIGNMENT:10%				
2304	Providing & application of synthetic enamel paint of Berger make and colour in coats of minimum 50 micron over steel sections(DFT) already having primer coats (as per ST NO. 2301) at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer. (Total thickness (DFT) including primer shall not be less than 110 micron).	MT	9065		
2307	Supplying, fabrication , transportation, erection and alignment of factory made electroforged gratings with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) followed by two coats of red oxide zinc-chromate primer and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer.	MT	140		
2308	Extra over above ST NO. 2307, for finshing the fabricated grating unit with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, as per specifications, drawings and instructions of Engineer instead of painting with 2 coats of red oxide primer followed by two coats of enamel finish paint.	MT	110		
2309	i) Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	Quinta I	55		
	ii) Supply and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	Quinta I	830		
2310	Dismantling of steel structure at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, (weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	MT	25		


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ST. NO	DESCRIPTION				
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY					
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
2310A	Dismantling of G.I. sheet in cladding at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	SQM	105		
2311	Addition to, alterations in and/or modification of "Erection Marks" either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members, (weight of such temporarily dismantled and adjacent members not payable), complete as per specifications, drawings and instructions of the Engineer.				
	i) In erected position	MT	45		
	ii) In fabrication yard	MT	65		
2312	Re-erection of dismantled fabricatied structural steel members requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2312 and 2313 respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required posion, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismnatled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members and adjacent membersnot payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	MT	25		
2313	Design, supply, fabrication, erection of stoplog gates in CW Pumps as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose). (Vendor to supply all materials) Payment terms - a) Design & engg - 4%;	MT	30		
	b) On fab, inspection & receipt of materials at site - 60%; c) On completion of ern & fixing - 26%; d) On testing - 10%.				
2314	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work at all levels for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, complete as per drawing and directed. Payment terms - a) On fab, inspection & receipt of materials at site - 64%; b) On completion of ern & fixing - 36%.	MT	35		
2315	Providing and fixing HRC net for fire sump screen of pump house having maximum gap between wires 10mm etc all complete including labour, materials	SQM	200		
2317	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of (+or -) 50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc complete as per specification, drawing and instruction of the engineer				
i)	Vertical Load of 20 Tons	Nos	13		
ii)	Vertical Load of 25 Tons	Nos	10		
iii)	Vertical Load of 40 Tons	Nos	5		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
iv)	Vertical Load of 50 Tons	Nos	3		
v)	Vertical Load of 60 Tons	Nos	4		
2318	Supply, fabrication and erection of 3.15mm thick stainless steel liner of grade AISI-304; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers as directed by the Engineer including fixing with stainless steel studs, bolting (including countersunk), welding etc. complete as per specifications and IS standards. Electrode classification shall be E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel etc. complete as per specifications, drawings and instructions of the Engineer. (stainless steel liner plate shall be supplied by BHEL free of cost as per SCC).	MT	24		
2319	Conducting radiography test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50		
2320	Conducting ultrasonic test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50		
2321	Conducting magnetic particle test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50		
2302	Providing, Erecting & Fixing of Stainless Steel Hand Rails 40 NB 3 mm thickness with complete fixing arrangement, manpower. T&P, etc. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	5		
2400	ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPEC, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER-IN-CHARGE FOR FOLLOWING.				
2401	Preparation of sub grade by excavating earth to required depth for all types of soil, dressing to camber and consolidating the base including making good the undulation etc. and disposal of surplus earth within plant boundary in accordance with IS:2720 all complete as per specification.	CUM.	1800		
2402	Supplying and filling with selected good earth of approved quality under pavement and shoulders etc. in compacted layers of maximum depth 200 mm including watering, rolling/consolidating and dressing etc. to required camber including transportation, royalties complete.	CUM.	1260		
2403	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required level etc. complete as per specification.	CUM.	90		
2404	Providing and Laying water bound macadam base/sub base course in layers of required thickness with stone aggregate 90mm to 40mm size stone screening and binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading and consolidation of blinding material moorum etc Including cost of material.labour.all complete.	CUM.	240		
2405	Providing &Laying water bound macadam base / sub base course in layers of required thickness with stone aggregate 63mm to 40mm size , stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc Including cost of material labour etc. all complete as per specification.	CUM.	210		

BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES

BOQ CUM RATE SCHEDULE								
VOLUME-III (REV-02) - ABSOLUTE VALUES								
	1X250 MW SANTALDIH TPS UNIT # 6				UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY								
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04								
2406	Laying water bound macadam wearing course with stone aggregate 50mm to 20mm size stone screening and binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading and consolidation of blinding material moorum etc Including cost of material labour etc. all complete as per specification.				CUM.	90		
2407	Providing and applying Tack coat of low viscosity liquid bitumen of a suitable approved grade confirming to IS 73, 217 or 454 as applicable @ 10 kg/10sqm for an untreated WBM surface including scraping, cleaning with compressed air etc. complete.				SQM	1200		
2408	Providing, mixing and laying of compacted 75 thk. Bituminous Macadam Course . Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling all complete				SQM	1200		
2409	Providing & laying 25mm thick premix carpet surfacing with 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg. and 56 kg. per cu.m. of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1.00 kg. per sq.m. of road surface including consolidation with road roller etc,all complete, with bitumen heated and then mixed with solvent at the rate of 70 gms. per kg. of bitumen including cost of all material, labour all complete as per specification, drawings and instructions of the Engineer.				SQM.	2400		
2410	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling as per specification all complete				SQM.	2400		
2411	Providing & laying edge protection on both edges of black topping using brick on edge (bricks with crushing strength of 75 kg/cm2) with full brick width (230 mm) etc all complete as per drawings and specifications.				R.M	300		
2412	Supply and laying (400mm x 150mm X 350mm deep) precast concrete kerb stone of shape as per detailed drawing including fixing in 13mm thk. cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc. complete as per spec.				RM	50		
2413	Supply and laying 150mm dia R.C.C NP-2 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing in 13mm thk. cement mortar, finishing of joints with neat cement paste complete as per spec.				RM	50		
2414	Dismantling of existing road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 Km etc. complete and as directed by Engineer.				SQM	20		
2415	Providing 25mm thick premix carpet on existing/damaged road surfaces by spreading of 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg. and 56 kg. per cu.m. of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1.00 kg. per sq.m. of road surface including consolidation with road roller etc,all complete, with bitumen heated and then mixed with solvent at the rate of 70 gms. per kg. of bitumen including cost of all material, labour, cleaning, repairing damaged carpet, WBM, sub grade/sub base,to the required thickness wherever required,consolidation with road roller etc all complete as per specification and as directed by Engineer.				SQM	100		
ADDITIONAL ITEMS								
919-A	Providing and fixing 25mm thick prelaminated particle board door shutters (single or double) hard wood edge lippings including all fixtures, handle on both sides, shop painting/polishing as per specification all complete including test certificates.				SQM	20		
920-A	Providing and fixing prelaminated particle board partition over hard wood frame of section 50mm X50mm including all fittings for electrical, communications, wiring, cabling inbetween frame, shop painting/polishing, fire retardant paint as per specificatio				SQM	20		


BOQ CUM RATE SCHEDULE
VOLUME-III (REV-02) - ABSOLUTE VALUES


 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	UNT RATE (IN RS/UNIT)	TOTAL AMOUNT (IN RUPEES & IN FIGURES)
ST. NO	DESCRIPTION				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04					
921-A	Providing and laying polished granite slab of minimum 20mm thickness over floor or dado all complete including underbed mortar, labour, material, scaffolding, etc as per specification	SQM	10		
1008-A	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris etc. all complete and as directed by Engineer.	SQM	50		
2700	MISCELLANEOUS				
2701	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	NO	50		
2702	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items).	NO	12		
2703	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items.)	NO	175		
2704	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items.)	NO	650		
2705	Sprinkling of water by water tanker fitted with perforated GI Pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust supression and reduction of suspended material at site for day to day work, as directed by BHEL Site Engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling.	Tank-Hour	4000		
GRAND TOTAL					
For item not covered above, quote % above or below the CPWD schedule (DSR-2002).					
2706A	Rate for complete.		%		
2706B	Rate for supply only.		%		
2706C	Rate for item excluding supply of materials.		%		


VOLUME-IIIB(REV-02)**PRICE SCHEDULE****Total Civil, structural and architectural works of main plant civil package for 1x250 MW unit # 6 at Santaldih TPS, West Bengal.****TENDER NO - PSER:SCT:SND-C782:07****PREAMBLE (TCN-04)**


01	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.
02	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with this specification are only preliminary for giving idea of the work involved.
03	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
04	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc equipment, strengthening of roads/culverts/bridges etc including arranging all clearances etc required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
05	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc including fixing of grid pillars, benchmarks etc required for commencement of site activities. No separate payment will be made towards the same.
06	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English.
07	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
08	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/ volumes of the contract.
09	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or to be deleted altogether. The quoted/ accepted rates shall remain firm and valid as long as variation in total value of work executed under this contract including extra items, but excluding any price escalation, remains within +/- 30% (thirty percent) of the contract price given in the LOI/WO.
10	All works itemwise shall be measured upon completion and paid for at the rates quoted and accepted.


BOQ CUM RATE SCHEDULE			
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL			
ST. NO	DESCRIPTION	UNIT	QTY
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)			
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-		
101	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	76885
102	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting/controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.		
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	1958
b	By means of controlled blasting excluding provision of sensor.	CUM	9000
c	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	CUM	9000
103	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	45730
104	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.		
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	3730
b	By means of controlled blasting excluding provision of sensor.	CUM	10000
c	In hard rock (blasting Prohibited) by means of chiselling, wedging etc.	CUM	10000
105	Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	7935
106	Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.		
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	1005
b	By means of controlled blasting excluding provision of sensor.	CUM	2400
c	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	CUM	2500


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
107	Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	2850	
108	Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.	CUM	4550	
109	Earth work in excavation for depth exceeding 8.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	4000	
110	Earth work in excavation for depth exceeding 8.0m but not exceeding 10.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for hard rock requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.			
a	By means of controlled blasting including provision of sensor to assess the impact of blast on the adjacent structures.	CUM	800	
b	By means of controlled blasting excluding provision of sensor.	CUM	1800	
c	In hard rock (blasting prohibited) by means of chiselling, wedging etc.	CUM	1200	
116	Extra over item above respectively for carriage of all types of excavated materials beyond the initial lead of 1.0 km dumping and levelling the dumped soil/ materials and levelling the area from where the material is transported, complete with all lifts as specified and directed by Engineer for the following leads.			
i)	Carriage beyond 1.0 km and not exceeding 2.0 km.	CUM	12000	
ii)	Carriage beyond 2.0 km and not exceeding 3.0 km.	CUM	11000	
iii)	Carriage beyond 3.0 km and not exceeding 4.0 km.	CUM	7040	
iv)	Carriage beyond 4.0 km and not exceeding 5.0 km.	CUM	3000	
v)	Carriage beyond 5.0 km and not exceeding 6.0 km.	CUM	200	
vi)	Carriage beyond 6.0 km and not exceeding 7.0 km.	CUM	100	
vii)	Carriage beyond 7.0 km and not exceeding 8.0 km.	CUM	100	
viii)	Carriage beyond 8.0 km and not exceeding 9.0 km.	CUM	50	
ix)	Carriage beyond 9.0 km and not exceeding 10.0 km.	CUM	50	
118 A)	Back filling around foundations in plinths etc.to proper grade and level with selected materials within a lead beyond 1 Km but not exceeding 5 Kms. from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. thickness by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including transportation.			
i)	ordinary manual compaction	CUM	5000	
ii)	compaction to 90% proctor density	CUM	60091	
iii)	compaction to 95% proctor density	CUM	7000	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
118 B)	Back filling around foundations and plinths to proper grade and level with selected excavated soil including watering and ramming in layers of 15 cm. thickness by manual/mechanical means in saturated condition, dressing etc. complete including transportation			
	i) ordinary manual compaction	CUM	2000	
	ii) compaction to 90% proctor density	CUM	20186	
	iii) compaction to 95% proctor density	CUM	5000	
118 C)	Back filling around foundations in plinths, trenches, drains etc.to proper grade and level with selected good soil free from shingle, salts, organic materials, roots, sod or any other foreign substance including re-excavating loose thickness, watering and ramming in layers of 20 cm. thickness for non cohesive soil by manual/ mechanical means, dressing etc. complete as directed by the engineer in charge including cost of material for all leads, loading, unloading, royalty and transportation. (payment for solid measure of the consolidated filling)			
	i) ordinary manual compaction	CUM	3314	
	ii) compaction to 90% proctor density	CUM	25000	
	iii) compaction to 95% proctor density	CUM	4000	
119	Supply and filling sand under floors, in foundation and plinths including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25 cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to minimum 80% of relative density, dressing and levelling etc complete.	CUM	855	
119a	75 thk. Gravel/Clean Coarse sand mixed with 8 to 10% by vol. of hot bitumen of grade 80/100.	SQM	100	
119b	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 200 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	100	
119c	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm - 40 mm down graded), in layers not exceeding 225 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	140	
119d	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm - 40 mm down graded), in layers not exceeding 250 mm thickness including breaking of boulders to required sizes, filling the interstices with coarse sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer-in-charge.	CUM	105	
119e	50 thk. Crushed stone fill (12 mm & down) mixed with 8 to 10 % by vol. of hot bitumen of grade 80/100	SQM	80	
119f	50 thk. Premix carpet in two layers of 30mm & 20mm with 12 mm down broken respectively stone chips mixed with bitumen of grade 80/100	SQM	80	
120	Providing and laying rubble soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 230mm , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one or more layers each of approximately 230mm thickness, hand packing, filling in interstices with quarry spalls and providing a layer of 50mm. thickness (consolidated) of moorum over each layer of soling including watering, thoroughly compacting each layer with 10 tonne power roller with minimum 6 passes (or with vibrating plate of approved capacity at places not approachable by power roller) all as per the direction of the Engineer and as per specification.	CUM	2000	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
121	Providing and laying rubble soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 63mm and down , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interstices with sand including watering, thoroughly compacting the layer all complete as per specification and the direction of the Engineer .	CUM	8780	
122	Filling in transformer pits etc. , with clean 40 mm nominal size stone aggregate including all labour, materials, royalties, equipments etc. complete as per instructions of engineer in charge.	CUM	60	
123	Buldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	SQM	5,200	
124	Cutting of trees , including transportation, stacking at storage yard and disposal of unused material as per the direction of engineer in charge.			
I)	300 mm upto 600 mm girth	Nos.	2	
II)	601 mm upto 900 mm girth	Nos.	3	
200	PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING: (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).			
202	Plain Cement Concrete of grade M10 as levelling course , under water retaining structures, equipment foundations, under foundations/floors etc all complete.	CUM	5881	
203	Plain Cement Concrete of grade 1:2:4 as filling course , under water retaining structures, equipment foundations etc all complete.	CUM	688	
204	Concrete of grade M-30 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size for all major equipment foundations at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	220	
205	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundations , under floors etc at any 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.	CUM	21769	
206	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure/water retaining structure (below ground) at all heights/depths from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.(THIS ITEM IS FOR WATER RETAINING STRUCTURES ONLY)	CUM	7445	
207	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure at all heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	11299	
208	Concrete of grade M-30 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size for foundation, super structure of T.G. Block , Machine foundations, other foundations at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation etc. all complete.			


BOQ CUM RATE SCHEDULE				
VOLUME-IIIB (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
208A	M30 (with 20mm nominal size graded stone aggregate) including Ultrasonic Pulse Velocity testing (Ultrasonic Pulse Velocity testing to be conducted through reputed agency/ institution as per approval of engineer), rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc. Payment terms - a) After casting 80%; b) After receipt of ultrasonic test report - 20%.	CUM	400	
208 B	M30 (with 20mm nominal size graded stone aggregate)	CUM	100	
209	Extra over item no. 204, 208 for temperature control of fresh concrete (temperature not exceeding 25deg. C) with addition of crushed ice in mixing water etc complete.	CUM	100	
210	Concrete of grade M-20 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like roof slabs etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete excluding the cost of reinforcement .	CUM	30	
211	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like trench covers etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete excluding the cost of reinforcement .	CUM	72	
212	Concrete of Grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundation,grade slab, etc complete.	CUM	4880	
213	Concrete of Grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in paving,plinth protection, underfloor, etc complete.	CUM	630	
214	Breaking existing concrete work at any level including reinforced concrete, removing the rubbish within a lead of 1Km., including transportation, loading, unloading, etc all complete	CUM	50	
215 A	Breaking existing concrete work at any level including cutting reinforcements, removing the rubbish within a lead of 1Km., including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, all complete and as directed by Engineer.	CUM	50	
215 B	Cutting of masonry/ PCC/ RCC work for making openings/ pockets at any floors/ walls of all levels and according to shapes and sizes as per drawing by using power cutting tool (DD2E of Hilti make or equivalent), disposal of waste materials upto a lead of 1 km as directed by engineer including equipment, making good broken edges/ surfaces with cement mortar (1:3) etc complete as per instructions of BHEL. (measurement shall be paid as per cutting surface area of masonry/ concrete and reinforcement).	SQM	20	
216	Providing and encasing of structural steel member with concrete (M25) work around flanges, webs etc and filling the gap. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification and as directed by Engineer	CUM	25	
300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, SCAFFOLDING COMPLETE INCLUDING POCKETS ETC. AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:			
301	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	SQM	28960	
302	Fairface form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works.	SQM	5670	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
303	Ordinary form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	SQM	5455	
304	Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	SQM	50115	
305	Fairface form work above finished ground floor level of approved quality BWP type, compreg (densified) plywood with suitable overlay (film faced) and conforming to IS:3513 Part-III, for exposed surfaces of columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc. at all heights.	SQM	8000	
306	Fairface Formwork for TG superstructure. (above raft top level)	SQM	2800	
307	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm contact surface area with concrete) 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.			
	Upto 300 mm depth	Nos.	40	
	From 301 mm upto 600 mm depth	Nos.	45	
	From 601 mm upto 1000 mm depth	Nos.	25	
400	REINFORCEMENTS (REINFORCEMENT STEEL SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)			
401	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of mild steel reinforcements confirming to grade-1 of IS:432 (part-I) including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	63	
402	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements confirming of grade Fe-415/ Fe 500 confirming to IS:1786 including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	4309	
403	Providing, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	2	
404	Providing, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.	MT	15	
500	WATER PROOFING AS PER SPECIFICATIONS (CONTRACTOR HAS TO FURNISH A GUARANTEE FOR MATERIAL AND WORKMANSHIP FOR A MINIMUM PERIOD OF 20 YEARS) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).			
501	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete.	KG	2000	
502	Providing and fixing roof water proofing treatment using high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ATM C836 & C-898. Thickness of the membrane shall be 1.5mm. This treatment shall include application of polymerized mastic over the roof to achieve smooth surface and primer coat. (WEARING COURSE TO BE PROVIDED AS PER ITEM NO 504)	SQM	10445	
503	Providing and grading under bed over roof slab, floors to achieve the specified slope with 1:4 cement mortar plaster (by volume) of average 15 mm thickness at all elevations including all labour, material, equipment, handling, preparation of surface, transportation, batching, mixing, placing, leveling, curing, testing etc. complete as per specification, drawing and instruction of engineer.	SQM	10445	


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
504	Providing and laying protective wearing course of 25 mm thick PCC (1:2:4) with 6 mm down aggregate laid in 1200 square mm panels alternatively cast reinforced with 0.56 mm dia galvanised chicken wire mesh with a gap of 6 mm between two adjacent panels gaps shall be filled with silicon sealant for expansion and contraction all complete with labour, material, equipment and as per specification/drawing and to the satisfaction of engineer in charge.	SQM	10395	
505	Providing and laying cement concrete chequered flooring tiles 22 mm thick over roof as per IS 13801. Under bed shall be 20 mm thk wearing course PCC 1:2:4 with 6 mm down aggregate reinforced with 0.56 mm GI chicken wire mesh. Tiles shall be laid over under bed with 8 mm thick 1:3 cement mortar with fine joints including sealing of joints between wearing course and the tiles with silicon sealant all complete with labour, material, equipment, handling, scaffolding, transporting etc. as per drawing and specification.	SQM	10120	
508	Screed concrete 1:2:4 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 to maintain the required grade complete.	CUM	235	
509	Screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size in manholes.	CUM	30	
510	3 COATS OF BITUMEN COATING IN FOUNDATION	SQM	7640	
511	ANTI-TERMITE COATING	SQM	1100	
512	Providing and laying foam concrete block insulation over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125 KCL/Sqm degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets as per specification. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)			
I)	75 thick	SQM	3,100	
II)	100 thick	SQM	7,300	
513	Providing and laying pressed precast concrete tiles over water proofing of minimum size 600 X 600 and minimum thickness 20 mm conforming to IS 13801 including 15 mm thick cement mortar (1:4) bedding inclusive of provision for thermal expansion for each roofing tile filled with polysulfide joint sealant. (water proofing paid else where) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)	SQM	10,400	
600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND:			
601	Supplying & installation of bitumin impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin, labour, material, equipments etc all complete at all levels as per specification, drawings and instruction of engineer in charge:			
i)	12mm thick joints	SQM	25	
ii)	20mm thick joints	SQM	25	
iii)	25mm thick joints	SQM	90	
iv)	50mm thick joints	SQM	600	
602	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints at all levels including application of primer, labour, material, equipments etc. all complete as per specification/drawing, instruction of engineer in charge.	Kg	1,050	
603	SIL FLEX (CAPCELL HD 100)			
603 a	12mm thick joints.	SQM	15	


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
603b	25mm thick joints.	SQM	15	
603 c	30mm thick joints.	SQM	20	
700	M.S. EMBEDMENTS			
701A	Fixing of embedments, MS inserts, pipe sleeves, guide rails, angle pieces, foundation bolts, anchor bolts, rungs of various diameters, plates of dimensions including welding of inserts/embedments for fixing, cost of all labour, materials and equipment, transportation, loading, unloading, handling, cutting, drilling, scaffolding as per specifications and drawings. (Fabricated materials/ embedments shall be supplied by BHEL free of cost).	MT	51	
701B	Supply, fabrication and fixing of embedments, MS inserts, angle, channel, plates, Tee, beams of various diameters, plates of dimensions as required including cost of all labour, materials and equipment for fixing in position, scaffolding and setting in position, transportation from stores within the plant boundary to work spot, loading, unloading etc complete as per specifications and drawings. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	10	
702	Supply, fabrication, transportation, delivery at site and erection, installation and alignment of MS Foundation bolts (Grade- 1 of IS: 432 & IS: 2062) assembly in concrete along with nuts, locknuts (IS: 1363, IS: 1364 & IS: 3138), washers, anchor plates, stiffener plates, protective tapes etc. upto & inclusive of 80mm diameter and upto 3000mm long, for columns including pipe sleeves, templates wherever necessary etc. all complete as per specifications and directed by the Engineer. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	28	
703	Supply, delivery at work spot, fixing and embed in concrete at all elevations miscellaneous steel, pipes, guide rails etc for all kinds of work as required including cost of all labour, equipment, material, loading, unloading, setting material in concrete, layout, scaffolding, handling at site, cutting, grinding, drilling, bolting, welding, jointing, testing etc. all complete as per specifications, drawings and as directed by Engineer. (vendor to supply all material). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.			
A	MS pipe sleeves, guide rails of all sections,	Quinta I	51	
B	PVC conduits of all size	Quinta I	19	
C	Expansion fasteners (galvanised) of HILTI make or equivalent of safe tension capacity as specified below:			
i)	250 kg	Each	1650	
ii)	500 kg	Each	1350	
iii)	750 kg	Each	900	
704	Transport the material from store, Fabricating and fixing of embedments, MS inserts, made of angle/channel/beam/plates/pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, bolting, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer. (structural steel shall be supplied by BHEL free of cost as per SCC).	MT	13	
705	Placing, fixing, locking and releasing of vibration isolation spring modules over foundations at all elevations including transportation from stores, leveling, alignment all complete under supervision of supplier as per drawing and instructions of engineer in charge. (VIS will be supplied by BHEL)	NOS.	78	
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:			


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
801	Providing & grouting cement slurry mix at any elevation/depth with pressure pump for water retaining concrete structures, including fixing nozzles, admixture, curing, etc all complete as per specification and as directed by the Engineer. (cement shall be supplied by BHEL free of cost as per SCC)	SQM	5	
802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etccomplete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.(cost of all material and cleaning the pocket by compressed air shall be contractor's scope and cement shall be supplied by BHEL free of cost as per SCC).	CUM	10	
803	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1(1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer. (cost of all material and cleaning the pocket by compressed air shall be contractor's scope and cement shall be supplied by BHEL free of cost as per SCC).	CUM	10	
804 a	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etcwith Conbextra GP-1, ' Fosroc' or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	30	
804b	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etcwith ConbextraGP-2' Fosroc' or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	10	
900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC. COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (ALL MATERIALS TO BE SUPPLIED BY VENDOR).			
901	Providing and fixing 40mm thick solid core flush door shutters (single or double) with commercial faces and hard board edges. Core of solid core doors shall be of block board or wood particle board of approved make including all fixtures, Godrej make Mortice lock with handle on both sides, shop painting/polishing as per specification all complete including test certificates.	SQM	120	
902	Providing and fixing steel windows of fixed type with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. Glazing shall be of 6.0mm thk. toughened safety glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	940	
903	Providing and fixing steel openable windows/ventilators with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. Glazing shall be of 4.0mm thick float glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	955	
904	Providing and fixing anodized extruded aluminium windows (single or double shutter) including aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 1.5mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.0mm thickness including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	SQM	350	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
905	Providing and fixing anodized extruded aluminium ventilators conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 1.5mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.0mm thickness including snap fit type beading, concealed screws, fixtures, etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	SQM	200	
906	Providing and fixing steel single or double door shutters. Shutters shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including all fittings, Godrej make Mortice lock with handle on both sides, primer painting complete as per specification.	SQM	110	
907	Providing and fixing steel single or double shutter doors. Shutters shall be of 18 gauge M.S. sheets and shall present a flush surface on the outside. The inside shall be stiffened with semitubular edge and central stiffening rail which shall convey the lock. Complete with fixtures, Godrej make Mortice lock with handle on both sides, primer painting as per specification.	SQM	252.5	
908	Providing and fixing fire proof steel door shutters (single or double shutter) conforming to IS:3614(part-1 & part-2). Shutters shall be minimum 60mm thick flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers with mineral wool insulation, primer and epoxy based painting including door frame, all fittings complete as per specification. and shall be TAC approved with minimum 2 hrs. fire rating.	SQM	35	
909	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 6.0mm thickness including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Frames shall be measured and paid under separate item).	SQM	110	
910	Providing and fixing in position anodised aluminium frame for doors, windows, ventilators having minimum 3mm wall thickness as per IS:1285 and elctro colour coating of minimum 15 micron thickness including holdfast, fillingup of gapes at junctions, at top, bottom and sides etc all complete as per specification.	Kg	800	
910 A	Providing and fixing anodized aluminium work in doors, windows, ventilators and partitions etc with extruded standard tubular and other sections including all fittings and fixtures and accessories of aproved make confirming to IS 733 and IS 1285, anodised and alectrocoloyr dyed to required shade according to IS 1868 (min. anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, screws or with fixing clips including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bimetallic protection etc. including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/paneling with all fittings and fixtures (like tower bolts, handles, door stoppers with rubber shoes, "L" drops, stays etc), C.P. brass/ stainless steel screws, providing and fixing hinges/pivots, and making provisions for fixing of fittings where ever required including the cost of PVC/neoprene gas fits all complete as per drawings, specifications and instruction of engineer (glazing and paneling to be measured else where)	Kg	45	
911	Providing and fixing aluminium glazed partition. Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 5.5mm thickness including snap fit type beading, concealed screws, hold fast, fixtures, Godrej make Mortice lock with handle on both sides, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required.	SQM	700	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
912	Providing and fixing aluminium glazed partition with double glazing . Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Double glazing shall be of two clear float glass of 5.5mm thickness sealed and separated by 12mm air-gap including colour anodised aluminium beading, concealed screws, hold fast, fixtures, PVC/neoprene gasket, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required. Minimum anodising thickness shall be 15micron.	SQM	180	
913A	Providing and fixing concealed heavy duty floor spring of reputed/approved make all complete as per drawings, specifications and instruction of engineer in charge.	NOS	20	
913B	Providing and fixing of over head hydraulic door closers of "Yale" make or approved equivalent & quality as directed by Engineer.	NOS	30	
914	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars etc complete as per specifications.	KG	60	
915	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Mechanically operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	15	
916	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Hand operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	60	
917	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Electrically operated . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	300	
918	Providing and fixing in position PVC Door of Syntex make or approved equivalent in toilet as per specifications and as directed by Engineer.	SQM	30	
919	Providing, fitting and fixing of glazing (including poly carbonate sheet) of superior (selected) quality, first grade class, at various elevations, where required, cleaning after fixing, gaskets, clips, hardware, with all labour and material etc. complete as per specification, drawing and instructions of engineer in charge.			
I)	4 mm clear sheet glass	SQM	82	
II)	4 mm clear float glass	SQM	493	
III)	6 mm clear float glass	SQM	501	
IV)	6 mm wired glass	SQM	705	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
V)	6 mm thick polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	65	
VI)	4 mm ground glass	SQM	80	
VII)	Two nos. 6 mm thick clear toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	98	
VIII)	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	95	
IX)	6 mm thick toughened float glass	SQM	130	
X)	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	520	
XI)	6 mm thick laminated glass	SQM	450	
920	Providing, fitting and fixing heavy duty minimum six lever mortised lock of godrej or equivalent make with handles or knobs to single and double leaf door (wooden/steel/aluminium) with duplicate set of keys and masterkeyed locks, openable from one side by the key and from the other side by the handle etc. all complete as per drawing, specification and instruction of engineer in charge.	Each	50	
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).			
1001	Providing brick work in cement mortar 1:6 (1 part cement: 6 parts coarse sand) in walls, chambers etc. of 254mm & above in thickness at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. all complete excluding plastering and painting, using bricks of class designation 7.5 or best locally available quality of nominal dimensions as per specification.			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	295	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	CUM	20	
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	20	
1002	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.			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	3695	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	CUM	350	
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	CUM	350	
1003	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	40	
1004	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 H.B. wetting at every third layer, raking out joints, curing, scaffolding etc complete using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2 and clay ash bricks shall be as per IS 13757, minimum percentage of fly ash shall be 25%, excluding plastering and painting as per specification.			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	1025	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	35	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	35	
1005	Providing brick soling spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20	
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20	
1006	Providing brick soling including spreading of earth, ramming, watering including 12mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item.)- Using flat bricks.			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20	
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20	
1007	Providing brick soling including 12mm thick cushion of sand excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects.- Using bricks on edge.(Excavation, if any, shall be measured and paid separately as per relevant item)			
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	SQM	105	
ii)	Using clay ash bricks shall be as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash shall be 25%	SQM	20	
iii)	Using ordinary bricks of class designation 7.5 of nominal dimension	SQM	20	
1008	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	10	
1009	Breaking of existing brick partition wall at all levels including plastering, cutting of reinforcement, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	10	
1010	Providing and encasing of structural steel member with masonry work with cement mortar (1:3) around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification.(Bricks class designation 7.5 of nominal dimension)	CUM	210	
1011	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.(Excavation and backfilling will be measured and paid as per relevant item)	SQM	55	
1012	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	10	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1013	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	105	
1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED / SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-			
1101	Damp Proof Course 50mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification. (cement shall be supplied by BHEL free of cost as per SCC).	SQM	160	
1200	CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)			
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials	SQM	17315	
1202	Providing 12mm thick plaster in two layers inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification.	SQM	3075	
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with ROUGH finish as per specification.	SQM	10000	
1204	Providing 12mm thick plaster in cement mortar 1:6 on walls with SMOOTH finish as per specification.	SQM	12000	
1205	Providing 12 mm thick plaster in cement mortar 1:6 on walls with a paste of neat cement @1kg/sqm and rubbed smooth with trowel as per specification.	SQM	1,189	
1206	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth as per specification.	SQM	16870	
1207	Providing 15mm thick neat plaster(1:4 MORTAR) in drains/culverts as per specification.	SQM	1150	
1208	Providing 18mm thick plaster in cement mortar 1:6 on walls finished to a wooden float/smooth/rough finish as per specification.	SQM	680	
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (REPUTED MANUFACTURER LIKE ICI/ BURGER/ ASIAN PAINTS OR EQUIVALENT).			
1301	Two or more coats of white washing with lime to give an even shade on ceiling including a priming coat complete.	SQM	15330	
	Two or more coats of colour wash as per IS 627 of approved brand and manufacture to give an even shade on walls including a priming coat as per specifications.	SQM	150	
1302	Two or more coats of water proofing cement paint of approved brand and manufacture & of required shade to give an even shade on walls complete.	SQM	17210	
1303	Two or more coats of distemping with oil bound washable distemper as per IS:428 of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete over P.O.P.	SQM	9740	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1304	Two or more coats of dry distempering of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete	SQM	1350	
1304a	Snowcem cement paint or equivalent	SQM	2000	
1305	Providing two coats of Acrylic emulsion paint of approved brand and manufacture to give one coat of solvent thinnable cement primer of approved shade & quality of Berger make or equivalent complete as per specifications.	SQM	26925	
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer etc all complete as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level.	SQM	270	
1307	Two or more coats of fire resistant paint to withstand 2 hrs of fire as per approved grade and manufacture to give an even shade complete.	SQM	150	
1308	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	100	
1309	Two or more coats of synthetic enamel paint of Berger make or equivalent made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	110	
1310	Providing and applying plaster of paris punning on walls (Birla white or equivalent) 2 mm thick including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	10690	
	Providing and applying plaster of white putty punning on walls (birla white or equivalent) 2 mm thick including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	8200	
1311	Providing and applying ready made Epoxy Paint over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer.	SQM	50	
1312	Providing and making decorative plaster over existing plastered surface of all types and design on walls, ceilings, arcs, columns with various thickness upto 20 mm including finishing all complete.	SQM	627	
1313	Providing screed/grading plaster of average 20 mm thickness in ratio 1:6 nominal by volume including finishing smooth and even etc. all complete at all levels above or below grade level.	SQM	10,380	
1314	Providing and making decorative interior plaster of heritage finish over existing plastered surface of all types and design on walls, ceilings, arcs, columns including finishing all complete.	SQM	195	
1315	Forming groove of uniform size from 12X12 mm upto 20X15 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	130	
1316	Providing drip course 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	477	


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1317	Providing and laying encasement to box type steel beams at all levels with cement plaster 50 mm nominal thickness with cement plaster (1:4) over galvanised hexagonal chicken wire of 0.9 mm wire diameter and 19 mm mesh size as per IS3150 including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (rate shall include the cost of GI chicken wire mesh)	SQM	2,139	
1318	Providing and applying two or more coats of acrylic distemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface or plaster of paris punning as per manufacturers guideline.	SQM	16,121	
1319	Providing and applying resin bonded granular textured finish, for external applications shall consist of granular textured paint/ Synthetic plaster composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	3,745	
1320	Providing and applying 2 or more coats of weather paint of Asian make or approved equivalent make and color on exterior surface at all heights including material, labour, scaffolding, curing etc complete as per specification.	SQM	2,185	
1400	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- (Cement shall be supplied by BHEL as per SCC free of cost).			
1401	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded).	SQM	21895	
1402	Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in skirting and dado . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	SQM	2000	
1403	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300X300X25 thick of approved shade as per IS 1237, laid in floors jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.	SQM	400	
1404	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300X300X25 thick of approved shade as per IS 1237, laid in skirting and dado , jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.	SQM	20	
1405	Providing and laying interlocking M30 concrete blocks of thickness 60 mm as paving (for covered parking area)of approved colour and pattern and should be laid on the subbase and bedding as per specifications and recommendations of manufacturer.	SQM	100	
1406	Providing and laying polished Kota stone 20 mm thk in flooring . Under bed shall average 30mm thk of 1 part cement,2 part sand : 4 parts stonechip by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	260	
1407	Providing polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete .	SQM	50	
1408	Marble stone border (with kota stone)	SQM	10	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1409	Marble flooring	SQM	355	
1410	Providing and laying polished Granite stone of approved color and texture 20 mm thk in flooring. Under bed shall average 30mm thk of 1 part cement,2 part sand : 4 parts stonechip by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete .	SQM	200	
1411	Providing and laying polished Granite stone 20 thk in skirting and dado including pigments, curing, grinding, granite polishing etc. complete.	SQM	10	
1412	Providing and laying 10 mm thk vitrified ceramic tiles of polished variety of size 450x450 from reputed manufacturer, complete as per specification.	SQM	5950	
1413	Providing and laying 10 mm thk vitrified ceramic tiles of unpolished variety of size 450x450 from reputed manufacturer, complete as per specification.	SQM	85	
1414	Providing and laying 10 mm thk vitrified ceramic tiles of polished variety of size 450x450 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	80	
1415	Providing and laying 10 mm thk vitrified ceramic tiles of unpolished variety of size 450x450 from reputed manufacturer, for skirting and dado up to specified height complete as per specification.	SQM	20	
1416	Providing and laying granite stone slab of 20mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	SQM	30	
1417	Providing and laying Heavy Duty dust pressed Ceramic Tiles of size 300x300x7mm thick on 20 mm thick cement plaster 1:3 bed mortar, of reputed manufacturer of approved finish shade and colour.	SQM	30	
1418	Providing and laying non-woven type carpet (unitex or equivalent) which shall be laid as manufacturers recommendations in matching grains including anti fungus and anti termite treatment complete.	SQM	30	
1419	Providing & fixing 20mm thick Acid / Alkali resistant vitreous tile lining confirming to IS:4457 in flooring/Dado and shall be laid over over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441 & 4443 including preparation of surface, application of bitumen primer, curing etc. all complete as per specification and direction of Engineer.	SQM	170	
1420	Providing and laying marble dado of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed mortar, labour, material, scaffolding, etc as per specification.	SQM	10	
1421	Providing and fixing White glazed tiles of size 150x150mm, 5.5mm to 6mm thk in dado , projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts coarse sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry, including pigments, curing etc all complete.	SQM	175	
1422	Providing and laying Heavy Duty Ceramic Tiles (Matt Finish) of size 300x300mm, 7mm thick of reputed manufacturer (Kajaria, Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm,with under layer of 20mm thick 1:2:4 concrete as per specification. including all material, labour, etc all complete.	SQM	30	
1423	Providing and laying 2mm thick antistatic PVC floor of approved shade including all labour, material etc all complete as per drawing and as directed by Engineer	SQM	100	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1424	Providing and laying screed concrete 1:1.5:3 by volume laid in slope (with 6 to 10mm nominal size stone chips) including all labour, materials, scaffolding etc. complete for all lifts, all leads and of following average thickness:-			
a)	40mm (Average)	SQM	100	
b)	30mm (Average)	SQM	100	
1425	Providing & fixing chemical resistant (Acid & Alkali) bricks (75 mm thk) as per IS 4860 in the floor of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	15	
1426	Providing & fixing chemical resistant (Acid & Alkali) bricks (115 mm thk) as per IS 4860 in the walls of neutralization pit. Surface on which lining has to be applied shall be prepared in accordance with IS 2395. Bitumen primer as per IS 158 followed by 18 mm thk Bituminastic followed by 6 mm thk potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar confirming to IS 4832, Part II. Seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End ceiling shall be done with bitumastic. A.R. bricks shall be laid with 6 mm wide and 20 mm deep pointing (epoxy/furane/CNSL) and acid curing shall be done complete as per specification.	SQM	100	
1427	Providing epoxy coating 150 micron over epoxy primer over MS Grating/Chequered plate/any other steel structure complete as per engineer in charge.	SQM	2	
1428	Providing and laying polished Kota stone 16 mm thk in flooring laid in pattern with white marble strip 16 mm thick as per approved floor design over minimum 20 mm thick cement mortar (1 cement :3 sand) as underbedded coarse . The kota stone/marble slabs laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	3,834	
1429	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes			
I)	400X400 mm	SQM	655	
II)	600X600 mm	SQM	3,946	
1430	Providing and laying glazed ceramic tiles of approved color and design in dado of approved size of reputed manufacturer topped with 50 mm wide matching ceramic trims, complete as per specification including all material, labour etc.			
I)	5 mm thick	SQM	305	
II)	7 mm thick	SQM	318	
1431	Providing and laying 12 mm thick cast in situ terrazo finish consisting of marble chips of size 1 mm to 12 mm nominal size laid in white/grey cement or mixture of both in proportion 1:1.5 (1 part cement, 1.5 parts chips) with marble powder 3:1 (3 parts cement, 1 part marble powder) in proportion mix dry in cement including pigments, rubbing, grinding, polishing etc in floors, skirtings, treads, risers and landings complete.	SQM	20	
1432	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.			
I)	Glass strips 40 mm wide and minimum 6 mm thick.	RM	3,660	
II)	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	2,386	
III)	Brass strips 20 mm wide and minimum 4 mm thick.	RM	45	
1433	Providing and laying 50 mm thick anti skid precast interlocking concrete pavers of approved shape as per the approval of engineer in charge and specifications complete including minimum 40 mm thick sand underbed.	SQM	500	


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
1434	Providing and laying polished Marble slabs (Aranga white) 20/25 mm thk of size 1500X600 mm in flooring over minimum 20 mm thick underbed of 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete.	SQM	488	
1435	Providing polished marble 20 mm thk in skirting projecting 6 mm from adjacent plaster all complete .	SQM	16	
1436	Providing and laying polished Marble slabs (Aranga white) 20 mm thk in staircase landing/skirting and corridors over minimum 20 mm thick underbed of 1 part lime putty, 1 part surkhi and 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	65	
1437	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.			
	1) UPTO 600 MM HIGH	SQM	20	
	2) FROM 601 MM TO 800 MM HIGH	SQM	20	
	3) FROM 801 MM TO 1000 MM HIGH	SQM	84	
1500	PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. AT ALL ELEVATIONS COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY THE ENGINEER FOR THE FOLLOWING:-			
1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm and shall serve as permanent shuttering to the cast-in-situ roof slab 80mm thick measured over crest of metal decking & shall have adequate strength to support weight of greenconcrete and imposed loads during construction over a span of 1650mm between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc.complete as per engineers approval and specification.(height of trough required as per design should be included in the cost). MS troughed metal decking plate shall consist of permanently colour coated galvanized metal sheet with modified polyester paint as permanent coating with minimum rate of galvanisation 275gm/Sqm. M.S. Trough decking plate shall be connected to the top surface of the purlin, top chord of truss with self tapping self drilling white zinc plated heat treated high carbon steel screws of min 5.6mm diameter at spacing of 390mm C/c in the trough and sealing it with epoxy sealant including all material, labour, tools, etc complete. In addition shear connector of 16mm dia and min 75mm long mild steel studs at spacing 520mm C/c shall be fixed on top cord of purlin passing through the metal decking. (Note:-Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor). Measurement shall be of the plan area of roof covered by MS trough metal decking. DFT of permanent colour coating shall be minimum 20microns and shall be provided on primer. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	3350	
1502 A	Providing and fixing self tapping self drilling shear connectors of 16mm dia and minimum 75 mm projected length above purlin of mild steel studs passing through metal decking as per relevant IS codes and specification.	Quintals	16	
1600	PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING POLISHING/ PAINTINGS, LABOUR ETC., ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-			


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1602	Providing 50 mm thick fibre glass under deck insulation having min. density 24kg/cum faced with reinforced aluminium foil (FSK) and fixing to ceiling with anchor fasteners at interval of 600mm c/c in both directions, sealing the joint with 75mm wide aluminium foil tape / PVC adhesive tape and held in position with 22 G GI cross wires and wire netting of 12.5mm x 0.71mm (22 G) shall be stretched over the finished insulation and secured with anchor fasteners to prevent any sagging etc. all complete as per specifications and drawings.	SQM	720	
1603	Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour and Luxalon make or approved equivalent (Type-84C, Interior) with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc suitable M.S. channel (minimum MC 75) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (materials for structural paltform grid made up of MS channels/ beams/ angles shall be supplied by BHEL and shall be paid under ST NO 2301). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	SQM	770	
1604	Supply and installation of special purpose partition manufactured by Anutone Acoustic Ltd or equivalent having rigid framework consisting of GI studs of adequate size @600mm c/c and floor ceiling and intermediate channels to provide a wall system capable of supporting wall hung C.C.T.V. at different locations.The framing system shall be integrated with independent floor supported structural framework of digital display board. The front side of the frame shall have Excelsior Accoustcal Panels-Elega finish-2400/1200X600X19 mm thick FABRICO Sound Soak- Plane Texture of approved colour. The rear side of the partition shall have Excelsior Acoustical Panels-Elega finish-specially Sound Smart-Burl of size 2400/1200 X600X19 mm thick smooth finished with gypsum plaster and finished with acrylic paint. The entire wall to have Class I fire rating as per BS code. The entire partition wall to have concealed framing system and to have monolithic fabric finish of approved colour or composition of two different colour as per approved design to entire exposed surface including door panels on control room side. The work to be com	SQM	96	
1605	Providing and Fixing 12.5mm thick Gypsum board plain false celing tiles of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers,etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade all complete with smooth finish as per specifications, drawings and as directed by Engineer.	SQM	200	
1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.			
1701	HCl down take pipes (heavy) of 100 mm dia as per specifications	RM	60	
1702	MS down take pipes(heavy) of 100 mm dia- Medium quality as per IS:1239(part-I)	RM	600	
1703	HCl down take pipes(heavy) of 150mm dia as per specifications	RM	30	
1704	MS down take pipes(heavy) of 150 mm dia- Medium quality as per IS:1239(part-I)	RM	50	
1800	MISCELLANEOUS			
1801	Providing and fixing PVC water stops - 225mm wide	RM	125	
1802	Providing and fixing in position 25mm wide and 25mm thick blown bitumen in expansion joints as per specification.	RM	125	
1803	Supplying and installation of 25mm thick vibration damping resistoflex or approved equivalent pads around foundation of vibrating equipment and other locations as directed by the Engineer including cost of all materials labour equipment etc complete as per drawing and specifications.	SQM	20	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1804	Providing and fixing bitumen impregnated fibre joint filling board of 25 mm thickness , fillers along with PVC water bar etc for expansion joint in water retaining structures all complete as per specifications, drawing and as directed by Engineer.	RM	125	
1805	Supplying and laying of rounded gravels 40mm nominal size in transformer yards, switch yard floors etc, as directed by Engineer.	CUM	490	
1806	Providing 50mm thick anticorrosive layer laid to slope consisting of compacted crushed stone screenings, fine gravel, clean sand or similar material as directed by the Engineer, mixed in hot asphalt 10% by volume and rolled or compacted complete as per drawings and specifications, below fuel oil tanks and at such other places as per specifications and as directed by the Engineer.	SQM.	50	
1807	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction and cost of all material, labour all complete as per specification and as directed by the Engineer.	SQM.	50	
1808	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide unless specified otherwise in water retaining structure. Galvanising as per relevant I.S. codes and as per specifications.	RM	50	
1809	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide unless specified otherwise with minimum lap of 50mm length all complete as per specification	RM	55	
1810	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails, anchoring lugs etc complete as per specification and as directed by Engineer. Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	45	
1811	Laying of earthing mats/rods including transportation from yard stores, loading, unloading, cutting to length, welding etc complete as per specification and as directed by Engineer. (Earthing MS Round shall be supplied by BHEL free of cost as per SCC)	MT	104	
1812	Design, supply, fabrication, installation of truly levelled and aligned 400mm high cavity flooring comprising of 35mm thick Nova teak or approved equivalent make superparticle board of size 610mm x 610mm floor panels having 2mm thick anti-static PVC sheet on top, 2mm thick hard PVC strip lipping on edges and 26 G aluminium sheet fixed with araldite on underside including cutting of panels where required for cables etc with supporting system comprising of 25mm dia galvanised MS threaded rod and pressure die cast zinc alluminium alloy adjustable head attachment at top and welded to 100x100x8mm base plate, pedestal fixed to floor by means of expansion fasteners to existing floor at a distance of 610mm center to center bothways etc all complete as per specification and as directed by Engineer.	SQM	100	
1813	Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.8Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20	
1814	Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 20mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 2.5Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20	
1815	Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 12mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.0Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20	


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
1816	Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.6Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	20	
1817	Providing & laying Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	80	
1818	Providing and fixing weep holes in Drains consisting of 100 mm dia LDPE pipe sleeves along with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening along with 300 X 300 mm sq., 300 mm deep, 40 mm aggregates to cover fabric mesh mouth complete as directed by engineer in charge.	Nos.	200	
1819	Providing and fixing GI rungs in concrete/brick walls at all elevations including zinc coating of minimum 900 g/sqm all complete.	KG	366	
1820	Providing and fixing LDPE pipes in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.			
	i) 100 mm dia	RM	120	
	ii) 150 mm dia	RM	90	
	iii) 200 mm dia	RM	90	
2000	FENCING AND GATES.			
2001	Supplying and fixing G.I. barbed wire in fencing including G.I clips etc. complete as per specification (angle post shall be supplied by Bhel and to be paid as per item 2301, other items like excavation, backfilling, concreting etc shall be paid as per respective items). Payment terms - a) On receipt of materials at site - 70%, b) On completion of erection & fixing - 30%	MT	5	
2002	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, ball bearing arrangements, castor wheels, etc. all complete as per drawing, specification and as directed by Engineer-in-charge with 600mm high GI barbed wire fencing at top all complete. (Excavation, concreting, backfilling shall be paid as per respective items). Vendor to supply all materials.	MT	6	
2003	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accesories as per specification all complete. (angle post shall be supplied by Bhel and to be paid as per item 2301, other items like excavation, backfilling, concreting etc shall be paid as per respective items). Payment terms - a) On receipt of materials at site - 70%, b) On completion of erection & fixing - 30%	SQM	1500	
2100	WATER SUPPLY			
2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc complete - 15mm nominal bore.	NO.	60	
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc complete as directed by Engineer - 15mm nominal bore.	NO.	20	
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	NO.	20	
2104	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	NO.	20	


BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
2105	Providing and fixing GI pipes complete class B-Medium with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 15 mm nominal bore.	RM	400	
2106	Providing and fixing GI pipes complete class B-Medium with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 20 mm nominal bore.	RM	80	
2107	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 25 mm nominal bore.	RM	40	
2108	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 15mm nominal bore (N.B).	RM	80	
2109	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 20mm nominal bore (N.B).	RM	40	
2110	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 25mm nominal bore (N.B).	RM	160	
2111	Providing and fixing GI pipes of class B-Medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 50mm nominal bore (N.B).	RM	40	
2112	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification.	NO.	20	
2113	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc complete as per specification.	NO.	20	
2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete as per specification.	NO.	20	
2115	Providing and fixing C.P. soap holder mounted with C.P. screws etc complete as per specification.	NO.	20	
2116	Providing and fixing C.P. liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc complete as per specification.	NO.	20	
2117	Providing & fixing P.V.C. water tank of 1000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification and at all heights and levels.	NO.	10	
2118	Providing & fixing P.V.C. water tank of 2000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	NO.	5	
2118A	Providing & fixing P.V.C. water tank of 5000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	NO.	2	
2200	SANITARY WORKS			


BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS EXCLUDING BOILER & ESP FOUNDATION, CHIMNEY				
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
2201	Supply and fixing vitreous china Wash Basin white or light coloured size 600x450 with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specifications	NO.	20	
2202	Providing and fixing approved vitreous china acid/alkali resistant laboratory sink of size 600x450x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	NO.	5	
2203	Providing and fixing colour glazed vitreous china European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed vitreous china flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer.	NO.	20	
2205	Providing and fixing wall type glazed vitreous china urinals white or light coloured, with C.I. automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings all complete as per specifications.	NO.	30	
2206	Supply, laying and jointing 75mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	120	
2207	Supply, laying and jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	120	
2208	Supply, laying and jointing 150mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	80	
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 200mm dia, as per specification.	RM	260	
2210	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 300mm dia, as per specification.	RM	340	
2211	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 450mm dia, as per specification.	RM	320	
2212	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 600mm dia, as per specification.	RM	320	
2213	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 800mm dia, as per specification.	RM	20	
2214	Providing and fixing C.I Manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	NO.	50	


BOQ CUM RATE SCHEDULE				
VOLUME-III(B (REV-02))-PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
2215	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame all complete as per specification.	NO.	40	
2216	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 100x100mm P or S Type.	NO.	40	
2217	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x100mm P or S Type.	NO.	20	
2218	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x150mm P or S Type.	NO.	20	
2219	Construction of road /yard gullies in 250TH brickwork - 750mm deep with cement concrete M-20 grade foundation, including reinforcement, 12mm cement mortar (1:3) plastering both inside and outside, M.S. rungs @ 250 c/c, C.I. Grating along with frames as per IS standards including necessary earthwork in excavation, backfilling etc complete as per drawings/specifications.	NO	10	
2220	Providing and fixing C.I. floor traps with C.P jalli complete as per specification.	NO	40	
2221	Providing and installing approved brand single tap water cooler of 80 L cooling capacity complete in all respect.	NO	2	
2222	Providing and installing approved brand single tap water cooler of 150 L cooling capacity complete in all respect.	NO	2	
2300	STRUCTURAL STEEL WORKS All items for fabrication should include supply, fabrication drawings as per specifications including painting with a coat of primer and also inclusive of all necessary quality test to the satisfaction of engineer/customer for the following. (STRUCTURAL STEEL, GI/MS PIPES for HAND RAIL, CHEQUERED PLATES, STAIN LESS STEEL LINER SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)			
2301	<p>Fabrication, erection, alignment, welding, primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate as per IS:2074 & IS:1477 (Parts I & II). One coat to be applied at shop and the other after erection) of structural steel made from mild steel conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, gratings, portals, laced purlins, space frames, shear connectors, 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, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails (G.I. & M.S.),</p> <p>toeplates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts & nuts (weight erection bolts & nuts not payable, Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately under ST NO. 2309 , assembly, edge preparation, preheating(minimum preheat and interpass temperature of 66 degrees centigrade for welding over 40 mm and upto 63 mm & 110 degrees centigrade for thickness over 63 mm) & use of low hydrogen/ radiogenic electrodes as per specification, 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,</p>	MT	9179	

BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
	<p>protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non- destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drawings, in consultation with BHEL,</p> <p>prepared by the bidder and all other activities required for completion of the work including return of surplus/waste steel materials to store etc. as per specification, drawings and instructions of the Engineer. Approval of fabrication drawings does not relieve the bidder from the responsibility of its correctness and accuracy.(STEEL AS PER SCC WILL BE SUPPLIED BY BHEL FREE OF COST) PAYMENT TERMS: A) FABRICATION:65%,B)ERECTION:25%,C)ALIGNMENT:10%</p>			
2304	<p>Providing & application of synthetic enamel paint of Berger make and colour in coats of minimum 50 micron over steel sections(DFT) already having primer coats (as per ST NO. 2301) at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer. (Total thickness (DFT) including primer shall not be less than 110 micron).</p>	MT	9065	
2307	<p>Supplying, fabrication , transportation, erection and alignment of factory made electroforged gratings with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) followed by two coats of red oxide zinc-chromate primer and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer.</p>	MT	140	
2308	<p>Extra over above ST NO. 2307, for finshing the fabricated grating unit with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, as per specifications, drawings and instructions of Engineer instead of painting with 2 coats of red oxide primer followed by two coats of enamel finish paint.</p>	MT	110	
2309	<p>i) Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.</p>	Quinta I	55	
	<p>ii) Supply and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.</p>	Quinta I	830	
2310	<p>Dismantling of steel structure at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, (weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.</p>	MT	25	

BOQ CUM RATE SCHEDULE				
VOLUME-III (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
2310A	Dismantling of G.I. sheet in cladding at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	SQM	105	
2311	Addition to, alterations in and/or modification of " Erection Marks " either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members, (weight of such temporarily dismantled and adjacent members not payable), complete as per specifications, drawings and instructions of the Engineer.			
	i) In erected position	MT	45	
	ii) In fabrication yard	MT	65	
2312	Re-erection of dismantled fabricated structural steel members requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2312 and 2313 respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members and adjacent members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	MT	25	
2313	Design, supply, fabrication, erection of stoplog gates in CW Pumps as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose). (Vendor to supply all materials) Payment terms - a) Design & engg - 4%;	MT	30	
	b) On fab, inspection & receipt of materials at site - 60%; c) On completion of ern & fixing - 26%; d) On testing - 10%.			
2314	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work at all levels for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, complete as per drawing and directed. Payment terms - a) On fab, inspection & receipt of materials at site - 64%; b) On completion of ern & fixing - 36%.	MT	35	
2315	Providing and fixing HRC net for fire sump screen of pump house having maximum gap between wires 10mm etc all complete including labour, materials	SQM	200	
2317	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of (+or -) 50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc complete as per specification, drawing and instruction of the engineer			
i)	Vertical Load of 20 Tons	Nos	13	
ii)	Vertical Load of 25 Tons	Nos	10	
iii)	Vertical Load of 40 Tons	Nos	5	

BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
iv)	Vertical Load of 50 Tons	Nos	3	
v)	Vertical Load of 60 Tons	Nos	4	
2318	Supply, fabrication and erection of 3.15mm thick stainless steel liner of grade AISI-304; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers as directed by the Engineer including fixing with stainless steel studs, bolting (including countersunk), welding etc. complete as per specifications and IS standards. Electrode classification shall be E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel etc. complete as per specifications, drawings and instructions of the Engineer. (stainless steel liner plate shall be supplied by BHEL free of cost as per SCC).	MT	24	
2319	Conducting radiography test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50	
2320	Conducting ultrasonic test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50	
2321	Conducting magnetic particle test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	50	
2302	Providing, Erecting & Fixing of Stainless Steel Hand Rails 40 NB 3 mm thickness with complete fixing arrangement, manpower. T&P, etc. (Vendor to supply all materials). Payment terms - a. On receipt of materials at site - 70%; b. On completion of erection & fixing - 30%.	MT	5	
2400	ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPEC, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER-IN-CHARGE FOR FOLLOWING.			
2401	Preparation of sub grade by excavating earth to required depth for all types of soil, dressing to camber and consolidating the base including making good the undulation etc. and disposal of surplus earth within plant boundary in accordance with IS:2720 all complete as per specification.	CUM.	1800	
2402	Supplying and filling with selected good earth of approved quality under pavement and shoulders etc. in compacted layers of maximum depth 200 mm including watering, rolling/consolidating and dressing etc. to required camber including transportation, royalties complete.	CUM.	1260	
2403	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required level etc. complete as per specification.	CUM.	90	
2404	Providing and Laying water bound macadam base/sub base course in layers of required thickness with stone aggregate 90mm to 40mm size stone screening and binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading and consolidation of blinding material moorum etc Including cost of material.labour.all complete.	CUM.	240	
2405	Providing &Laying water bound macadam base / sub base course in layers of required thickness with stone aggregate 63mm to 40mm size , stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc Including cost of material labour etc. all complete as per specification.	CUM.	210	

BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
ST. NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
	 1X250 MW SANTALDIH TPS UNIT # 6			
	REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04			
2406	Laying water bound macadam wearing course with stone aggregate 50mm to 20mm size stone screening and binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading and consolidation of blinding material moorum etc Including cost of material labour etc. all complete as per specification.	CUM.	90	
2407	Providing and applying Tack coat of low viscosity liquid bitumen of a suitable approved grade conforming to IS 73, 217 or 454 as applicable @ 10 kg/10sqm for an untreated WBM surface including scraping, cleaning with compressed air etc. complete.	SQM	1200	
2408	Providing, mixing and laying of compacted 75 thk. Bituminous Macadam Course . Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling all complete	SQM	1200	
2409	Providing & laying 25mm thick premix carpet surfacing with 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg. and 56 kg. per cu.m. of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1.00 kg. per sq.m. of road surface including consolidation with road roller etc,all complete, with bitumen heated and then mixed with solvent at the rate of 70 gms. per kg. of bitumen including cost of all material, labour all complete as per specification, drawings and instructions of the Engineer.	SQM.	2400	
2410	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling as per specification all complete	SQM.	2400	
2411	Providing & laying edge protection on both edges of black topping using brick on edge (bricks with crushing strength of 75 kg/cm2) with full brick width (230 mm) etc all complete as per drawings and specifications.	R.M	300	
2412	Supply and laying (400mm x 150mm X 350mm deep) precast concrete kerb stone of shape as per detailed drawing including fixing in 13mm thk. cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc. complete as per spec.	RM	50	
2413	Supply and laying 150mm dia R.C.C NP-2 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing in 13mm thk. cement mortar, finishing of joints with neat cement paste complete as per spec.	RM	50	
2414	Dismantling of existing road consisting of premix carpet, curb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 Km etc. complete and as directed by Engineer.	SQM	20	
2415	Providing 25mm thick premix carpet on existing/damaged road surfaces by spreading of 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg. and 56 kg. per cu.m. of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1.00 kg. per sq.m. of road surface including consolidation with road roller etc,all complete, with bitumen heated and then mixed with solvent at the rate of 70 gms. per kg. of bitumen including cost of all material, labour, cleaning, repairing damaged carpet, WBM, sub grade/sub base,to the required thickness wherever required,consolidation with road roller etc all complete as per specification and as directed by Engineer.	SQM	100	
	ADDITIONAL ITEMS			
919-A	Providing and fixing 25mm thick prelaminated particle board door shutters (single or double) hard wood edge lippings including all fixtures, handle on both sides, shop painting/polishing as per specification all complete including test certificates.	SQM	20	
920-A	Providing and fixing prelaminated particle board partition over hard wood frame of section 50mm X50mm including all fittings for electrical, communications, wiring, cabling inbetween frame, shop painting/polishing, fire retardant paint as per specificatio	SQM	20	

BOQ CUM RATE SCHEDULE				
VOLUME-III B (REV-02) -PERCENT VALUES WITH RESPECT TO GRAND TOTAL				
 1X250 MW SANTALDIH TPS UNIT # 6		UNIT	QTY	TOTAL AMOUNT (IN PERCENT VALUES w.r.t GRAND TOTAL)
ST. NO	DESCRIPTION			
REV:02 (TENDER NO- PSER:SCT:SND-C782:07)- TCN-04				
921-A	Providing and laying polished granite slab of minimum 20mm thickness over floor or dado all complete including underbed mortar, labour, material, scaffolding, etc as per specification	SQM	10	
1008-A	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris etc. all complete and as directed by Engineer.	SQM	50	
2700	MISCELLANEOUS			
2701	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	NO	50	
2702	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items).	NO	12	
2703	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items.)	NO	175	
2704	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items.)	NO	650	
2705	Sprinkling of water by water tanker fitted with perforated GI Pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust suppression and reduction of suspended material at site for day to day work, as directed by BHEL Site Engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling.	Tank-Hour	4000	
GRAND TOTAL				100%
For item not covered above, quote % above or below the CPWD schedule (DSR-2002).				
2706A	Rate for complete.		%	
2706B	Rate for supply only.		%	
2706C	Rate for item excluding supply of materials.		%	