



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

## BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 05

Ref: PSER:SCT:LPT-A1114:TCN-05

Date: 22-09-2010

Sub	Tender change notice (TCN) 05.	
Job	Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepatkata, Assam.	
Ref	1.0	Tender no PSER:SCT:LPT-A1114:10.
	2.0	BHEL's NIT, vide reference no PSER:SCT:LPT-A1114:2310, dated 23-07-10.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:LPT-A1114:TCN-01, dated 16-08-10.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:LPT-A1114:TCN-02, dated 30-08-10.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:LPT-A1114:TCN-03, dated 08-09-10.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:LPT-A1114:TCN-04, dated 20-09-10.
	7.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Amendment/ changes/ clarifications to tender as per enclosed Annexure-A.
- 2.0 Revised Price Schedule, Volume-IIIA-R-2 enclosed, superseding previous version. Bidder shall submit offer as per the revised price schedule.
- 3.0 Inclusion of tender drawing of layout as per enclosed Annexure-B.
- 4.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 5.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HYEAVY ELECTRICALS LTD

SDGM (SCT)

Encl

- 1.0 As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

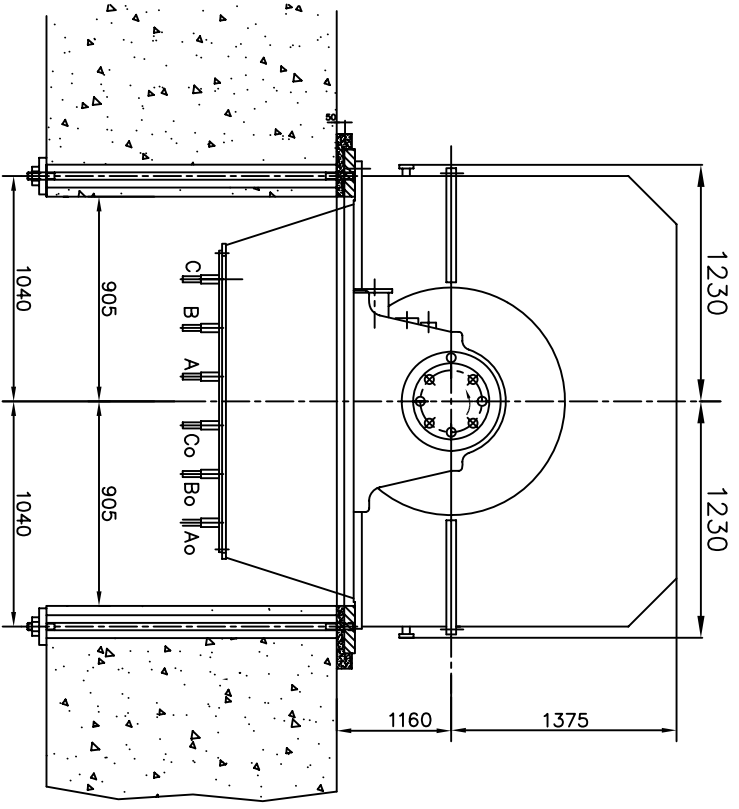
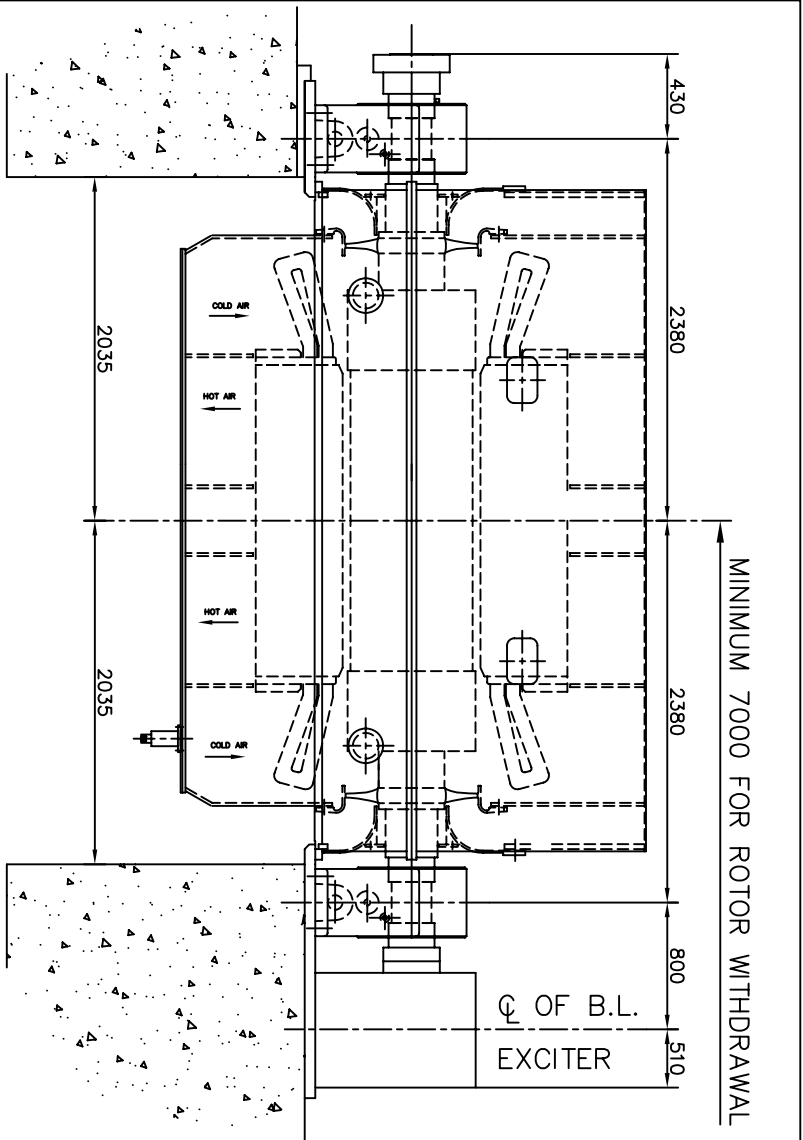
POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

<p><b>JOB</b> Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler &amp; aux, 2x80 TPH HRSG &amp; aux, 2xFr5 GTG &amp; aux, 1x13.5 MW STG &amp; aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&amp;I, supply &amp; execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam</p>
TENDER NO - PSER:SCT:LPT-A1114:10.

SL NO	AMENDMENT/ MODIFICATION	
<b>1.0</b>	<b>Volume-III A, R-1</b>	
1.1	Bidder to quote price for GTG system under SCH-5 & for STG system under SCH-6 includes integral piping but excluding external piping. Bidder shall quote separate price for external piping in the added schedule, SCH-10 of Volume-III A, R-2, enclosed along with this TCN.	
1.2	Bidder's quoted lumpsum price under SCH-5 (GTG) & SCH-6 (STG) are exclusive of electrical and C&I. Bidder shall quote price for electrical and C&I system under separate schedule, SCH-7 of Volume-III A.	
1.3	In view of changes, Volume-III A is being revised under Rev-2 and attached with this TCN. Bidder shall submit offer as per this revised format only.	
<b>2.0</b>	<b>General</b>	
2.1	Please note following details of STG (applicable per unit).	
2.1.1	TYPE OF TURBINE	EHNK 50/56-3
2.1.2	SPECIFICATION IN BRIEF	<p>Closed circuit air cooled generator (VPI) consisting of</p> <ul style="list-style-type: none"> <li>• Stator with output leads (3 phase + 3 neutral) taken out from the bottom of the m/c.</li> <li>• Rotor suitable for overhang BLE.</li> <li>• Bearings, base frame, built in RTDs, space heaters.</li> <li>• Bottom mounted air to water coolers (CACW) with (n+1) cooler elements.</li> <li>• Arrangement to limit noise level to 85 DBA at 1 m distance.</li> </ul> <p>Overhang brush-less exciter and PMG.</p> <p>Sleeved copper busbars between gen terminals and seal-off bushing at gen air duct, segregated phase busduct upto phase &amp; neutral side cubicles. Phase side cubicle accommodating drawout type PTs, LAs, SPs &amp; cable's panel and neutral side cubicle accommodating NGT with secondary loading resistor. CTs are mounted inside the segregated phase IN BRIEF busduct.</p> <p>Multifunctional microprocessor based numerical relay panel for generator protections and generator transformer protection. Data concentrator (common for 2 GTGs &amp; 1 STG). Generator control panel is part of SCAP. SCAP to be considered in ped scope as per earlier executed projects where eil is the consultant.</p> <p>CO2 fire extinguishing equipment.</p> <p>Interconnecting control cables for connection between</p>

		generator and generator control and relay panels (length considered is 100 m. Unit length applicable beyond this length).
2.1.3	RATING	1 x 19.137 MVA , 15.31 MW, 11.0 KV, 0.80 pf, 3000 rpm – MCR.
2.1.4	TOTAL TURBINE ASSEMBLY SENT IN DIS-ASSEMBLED CONDITION DUE TO TRANSPORTATION LIMITATIONS	65000, 6000 (L) x 6000 (B) x 4200 (H) MM.
2.1.5	Gear box	14000 kg, 2500 (l) x 2200 (b) x 1500 (h) mm.
2.1.6	MAXIMUM MAINTENANCE WT (TURBINE UPPER PART)	25000 kg.
2.1.7	Lube oil system (LOOSE ITEMS LIKE OIL TANK, OVER HEAD OIL TANK, PUMPS, FILTERS & PIPING)	25000 kg.
2.1.8	INTEGRAL PIPING (STEAM & DRAIN)	4500 kg.
2.2	The break-up of weight of GTG furnished is for 1 unit.	
2.3	Piping weight indicated under table E of Annexure-I are external piping and common for both units of GTG & STG.	
2.4	Bidder to quote price for GTG system under SCH-5 & for STG system under SCH-6 includes integral piping but excluding external piping. Bidder shall quote separate price for external piping in the added schedule, SCH-10 of Volume-III A, R-2, enclosed along with this TCN.	
2.5	Bidder's quoted lumpsum price under SCH-5 (GTG) & SCH-6 (STG) are exclusive of electrical and C&I. Bidder shall quote price for electrical and C&I system under separate schedule, SCH-7 of Volume-III A.	
2.6	Only assembly, erection, welding to be done for chimney with platform fabrication, erection at various elevations.	
2.7	For piping works all electrode to be arranged by contractor.	
2.8	Supply of insulations and lining are in bhel's scope.	
2.9	Total weight of bypass stack with sylenser should be read as 100 MT.	
2.10	Not withstanding anything referred in tender volumes, the base date for pvc in all volumes of tender shall be reckoned as latest due date of submission of offer as per NIT & subsequent TCNs, if any.	
2.11	Bidder shall submit offer strictly in compliance with technical specification and tender terms along with amendment/ clarifications issued till date within the due date.	
2.12	All other terms & conditions shall remain unchanged.	



**NOTE:**

THE DRAWING IS FOR TENDER PURPOSE ONLY.  
 ALL THE DIMENSIONS AND WEIGHTS ARE TENTATIVE.  
 ALL DIMENSIONS ARE IN mm.

<u>WEIGHT IN TONNE</u>	<u>TECHNICAL DATA</u>
GEN. STATOR	GEN. RATED SPEED
42	3000 RPM
GEN. ROTOR	GEN. CRITICAL SPEED
10	1550 RPM
BEARINGS	MOMENT OF INERTIA (GD <sup>2</sup> /4)
3.2	800 KG-M <sup>2</sup>
EXCITER	<u>QTY. OF COOLING AIR</u>
1.5	FOR GENERATOR
FOUNDATION ITEMS	<u>QTY. OF LUBE OIL</u>
4	GEN. BEARINGS
AIR COOLER UNIT	
7.5	
TOTAL WT.	
68	
MAX. TRANSPORT WT.	
42	

TYPE:	TARI 700-17P	STG
CUSTOMER:		
TITLE:	LAYOUT OF GENERATOR	
PREPARED:	CHECKED:	DRAWING NO.
APPROVED:	DATE:	REV.
	15.10.09	TLA-4247 00

**VOLUME-III  
PRICE SCHEDULE, REV-2**

**Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam**

**TENDER NO - PSER:SCT:LPT-A1114:10**

**PREAMBLE**

1.0	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 other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	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.
5.0	Unless specified otherwise & except for lump sum packages, 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 be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains within thirty percent ( $\pm 30\%$ ) of the contract price.
6.0	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.
7.0	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 language.
8.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
9.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
10.0	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.

**VOLUME-III  
PRICE SCHEDULE, REV-2**

**Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam**

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-2 - TOTAL PRICE**

SL NO	DESCRIPTION	AMOUNT (Rs)
1.0	TOTAL PRICE OF CIVIL, STRUCTURAL AND MISC WORK (SCH-2).	
2.0	TOTAL PRICE OF 2 NO UTILITY BOILER (SCH-3).	
3.0	TOTAL PRICE OF 2 NO HRSG (SCH-4).	
4.0	TOTAL PRICE OF 2 NO GTG & AUX (SCH-5).	
5.0	TOTAL PRICE OF 1 NO STG & AUX (SCH-6).	
6.0	TOTAL PRICE OF ELECTRICAL AND C&I WORK (SCH-7).	
7.0	TOTAL PRICE OF BOP (SCH-8).	
8.0	TOTAL PRICE OF CONSTRUCTION POWER (SCH-9).	
9.0	TOTAL PRICE OF EXTERNAL PIPING FOR GTG & STG (SCH-10).	
<b>GRAND TOTAL PRICE</b>		

**NOTE**

1.0	Bidder's quoted grand total price above shall be taken into account for evaluation. However, bidder shall furnish break-up of grand total price for various systems in the respective schedules and shall be complete in all respects as per provision of tender and technical specification.
2.0	Bidder shall furnish item-wise break-up of above grand total price in the respective schedule as per following. Total of prices of various schedules shall match with above total price.
2.1	SCH-2 - CIVIL, STRUCTURAL.
2.2	SCH-3 - UTILITY BOILER (UT).
2.3	SCH-4 - HRSG.
2.4	SCH-5 - GTG & AUX.
2.5	SCH-6 - STG & AUX.
2.6	SCH-7 - ELECTRICAL AND C&I.
2.7	SCH-8 - BOP.
2.8	SCH-9 - CONSTRUCTION POWER.
2.9	SCH-10 - EXTERNAL PIPING FOR GTG & STG.

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

**Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam**

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-2 - CIVIL, STRUCTURAL, MISC WORKS PRICE**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
<b>1.0</b>	<b>EXCAVATION</b>			
1.1	Earthwork in <b>excavation</b> in all kinds of ordinary and hard soil (including slushy soil) below ground level and stacking within a lead of 500 m, with necessary shoring, strutting, trimming and dressing of sides etc, including bailing/ pumping out of surface water/ rain water/ sub soil water, cutting minor vegetation, if any, complete as per drawings and specification.			
1.1.1	Up to a depth of 2.0 m.	22990	CUM	
1.1.2	Same as item no 1.1.1 above but from 2.0 m - 4.0 m depth.	10495	CUM	
1.1.3	Same as item no 1.1.2 above but from 4.0 m - 6.0 m depth.	3832	CUM	
1.2	Extra over item no 1.1 for every additional lead of 500 m or part there of (beyond the initial lead of 500 m as per item 1.1 and stacking within the compound wall.	500	CUM	
1.3	Extra over item no 1.2 for every additional lift of 1.0 m or part thereof.	500	CUM	
<b>2.0</b>	<b>BACKFILLING</b>			
2.1	Earthwork in backfilling & compacting by manual/ mechanical means (90% maximum laboratory dry density as per IS 2720 Part-VIII) in layers not exceeding 150 mm around foundations & trenches, below grade slabs and all other locations as per specs, drawings and as directed by the engineer.			
2.1.1	With earth obtained from stacks within a lead of 500 m.	14326	CUM	
2.1.2	Extra over 2.1.1 for every additional lead of 500 m or part there of within battery limit.	1000	CUM	
2.1.3	With selected earth (cohesive non-swelling/ murrum) obtained from borrow pits outside the battery limit within a lead of 5.0 km inclusive of necessary royalty charges.	500	CUM	
2.1.4	Extra over 2.1.3 for every additional lead of 1 km or part thereof.	500	CUM	
2.2	Earthwork in backfilling & compacting by manual/mechanical means (minimum 95% of standard proctor density as per IS 2720 Part-VIII) in layers not exceeding 150 mm around & below foundations & trenches, below grade slabs and all other locations as per specification, drawings and as directed by the engineer.			
2.2.1	With earth obtained from stacks within a lead of 500 m.	200	CUM	
2.2.2	Extra over 2.2.1 for every additional lead of 500 m or part there of within battery limit.	50	CUM	
2.2.3	With selected earth (cohesive non-swelling/ murrum) obtained from borrow pits outside the battery limit within a lead of 5.0 km inclusive of necessary royalty charges.	50	CUM	
2.2.4	Extra over 2.2.3 for every additional lead of 1 km or part thereof.	50	CUM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
2.3	Sand filling.			
2.3.1	Supplying and filling river sand (not below grading zone-III as per IS:383) in layers not exceeding 150 mm including compacting by mechanical means, flooding with water etc all complete as per specification and as directed by the engineer.	700	CUM	
2.3.2	Supplying and filling river sand inside the trenches (not below grading zone-III as per IS:383) in layers not exceeding 150 mm including compacting by mechanical means, flooding with water etc all complete as per specification and as directed by the engineer.	2500	CUM	
2.4	Surplus earth removal.			
2.4.1	Removal of surplus earth & debris beyond battery limit upto 5 Km lead including transportatin, loading and unloading, dumping, stacking, levelling and dressing etc.complete as per specifications and drawings.	21991	CUM	
2.4.2	Extra over 2.4.1 for every additional lead of 1 km or part thereof.	1000	CUM	
2.5.1	Site grading and levelling with filling excavated earth obtained from foundations areas in layers not exceeding 300 mm within the project area with all leads & lifts using mechanical/ manual means breaking clods, cutting heaps, compacting using compaction equipment in non-accessible areas and rolling with road roller in open areas to obtain 95% of proctor density for cohesive soils and 85 % for non-cohesive soils, all complete as drgs and spcifications.	2000	CUM	
2.5.2	Site grading and levelling with filling excavated earth obtained from borrow areas in layers not exceeding 300 mm with all leads & lifts using mechanical/ manual means breaking clods, cutting heaps, compacting using compaction equipment in non-accessible areas and rolling with road roller in open areas to obtain 95% of proctor density for cohesive soils and 85 % for non-cohesive soils, all complete as drgs and spcifications.	500	CUM	
2.6	Consolidating subbase below foundations by manual/ mechanical means including watering, if required, to obtain 90% standard proctor density as per IS 2720 Part-VIII including making good undulation etc all complete as per drawing and specifications.	150	CUM	
2.7	Consolidating subbase below foundations as per IS 2720 Part-VIII by manual/ mechanical means including watering, if required, to obtain 95% standard proctor density including making good undulation etc all complete as per drawing and specifications.	500	CUM	
<b>3.0</b>	<b>CONCRETE (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) with mechanised equipments like batching plant, transit mixer, concrete pump etc complete as per drawing, specifications and as per direction of engineer in charge for the following (Cement will be supplied by BHEL as per SCC free of cost)).</b>			
3.1	Supplying, laying in position, compacting and curing as per specification plain cement concrete (using OPC/ PPC-calcined based/ PPC-Fly ash based/ SRC) of the following mix with 20mm down size aggregates below GL and upto 1.0 mtr above GL, including consolidation of subgrade wherever required.			
3.1.1	1:5:10.	1500	CUM	
3.1.2	1:3:6,	20	CUM	
3.1.3	M20 (with minimum cement content of 275 kg / m3).	20	CUM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
3.1.4	M15 (with minimum cement content of 275 kg / m3).	120 CUM		
3.2	Supplying, laying in position, curing as per specifications controlled concrete (using OPC/ PPC-calcined based/ PPC-Fly ash based/ SRC) of the following grades (graded coarse aggregates of 40 mm down, 20 mm down & 12 mm down shall be used wherever applicable) including use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 and use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
3.2.1	Grade M30 in foundations, floors and pavings etc with 350 kg/m <sup>3</sup> cement for all depths below GL and upto 1.0 m above GL.	9445 CUM		
3.2.2	For all elevations 1 mtr above GL.			
3.2.2.1	Grade M30 with minimum cement content of 350 kg/m <sup>3</sup> .	5195 CUM		
3.2.2.2	Grade M30 for with minimum cement content of 350 kg/m <sup>3</sup> of concrete for GTG/ STG top deck/ columns above raft at all levels including addition of suitable plastisizers conforming to IS 9103 to achieve required strength in concrete as per manufacturers recommendations, preparation of scheme for concreting, getting it approved by engineer.	1000 CUM		
3.3	Providing and placing in position RCC of grade M30 (using OPC/ PPC-calcined based/ PPC-Fly ash based/ SRC) of 12mm & down graded chips with min cement content of 350 kg/m <sup>3</sup> for encasing of steel structures at all elevations including staging & form works, reinforcement mesh (3mm thick wire, 50x50 size mesh), expanded metal sheets if required, nuts, tie wires, weldings, surface preparation, rendering with cement mortar 1:3 to make the concrete surface smooth after deshuttering, curing etc and use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 all complete as per drawings, specifications, all complete. Wire mech will be paid under item.no 5.2.	10 CUM		
3.4	Paving.			
3.4.1	Providing and placing in position, compating, curing reinforced concrete of M30 grade for paving and grade slab with min cement content of 350 kg/m <sup>3</sup> using (OPC/ PPC-calcined based/ PPC fly ash based/ SRC) including laying in approved size panels, leaving grooves for sealing joints, cost of form work, finishing of top surface as required but excluding cost of reinforcement which will be paid under relevant items, including use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 etc all complete for floors and pavement as per EIL drawing no-6907-010-16-47-3607 and specifications.	1169 CUM		
3.4.2	Providing and placing in position, compating, curing reinforced concrete for paving of M25 grade with min cement content of 350 kg/m <sup>3</sup> (OPC/ PPC-calcined based/ PPC-Fly ash based/ SRC) including laying in approved size panels, leaving grooves for sealing joints, cost of form work, finishing of top surface as required but excluding cost of reinforcement which will be paid under relevant items, including use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 etc all complete for floors and pavement as per EIL drawing 6907-010-16-47-3607 and specifications.	500 CUM		
3.5	Supply and application of epoxy screed lining on RCC surface at all elevations including staging & form works, surface preparation, glass cloth reinforcement etc all complete as per the EIL specification no 6907-0642-PT-B09.	2500 SQM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
3.6	Water proofing compunds.			
3.5.1	Supplying and mixing 'SIKA' or approved equivalent brand of integral water proofing compound in cement concrete/ cement mortar etc all complete as per drawings and specifications, IS:2645.	1000	KG	
3.5.2	Providing and fixing in position 20 mm thick bitumen impregnated Fibre board confirming to IS:1838 in expansion joints etc as per specifications and drawings, all complete.	600	SQM	
3.5.3	Providing and fixing in position 25mm thick bitumen impregnated fibre board confirming to IS:1838 in expansion joints etc as per specifications and drawings, all complete.	200	SQM	
3.7	Sealing compunds.			
3.7.1	Supplying and laying sealing compound with premium grade silicon sealant (SILPRUF of GE silicon or approved equivalent) as per specification.			
3.7.1	25mm wide, 25 mm deep.	2000	RM	
3.7.2	Supplying and laying two part liquid polysulphide based sealing compound as per IS:12118.			
3.7.2.1	20 mm wide, 12 mm deep.	200	RM	
3.7.2.2	25 mm wide, 12 mm deep.	200	RM	
3.7.3	Supplying and laying approved quality joint sealing compound conforming to IS:1834, type-B for joints in concrete etc complete as per specifications.			
3.7.3.1	20 mm wide, 25 mm deep.	8000		
3.8	Fabricating and placing in position precast reinforced concrete trench covers of grade M30 with min cement content of 350 kg/m <sup>3</sup> (OPC/ PPC-calcined based/ PPC-fly ash based/ SRC) of varying thickness including reinforcement, shuttering, lifting lugs including use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 etc, all complete including edge angles as per drawing and specifications. Reinforcement will be paid under item 5.1.2 and edge angles will be paid for under item 6.1.4.	385		
3.9	Supplying and installing ribbed water stops in cement concrete including laps by fixing/ vulcanizing joints and folds as applicable and approved by the engineer.			
3.9.1	PVC water stops or equivalent - min 5 mm thick and 150 m wide.	1000	CUM	
3.9.2	PVC water stops or equivalent - min 5 mm thick and 230 m wide.	3000	CUM	
3.10	Grouting under equipment bases as required, curing and finishing the exposed surfaces including all materials, form work etc as per drawings and directions of the engineer.			
3.10.1	With 1:2 cement sand and 6 mm down stone chips nominal mix by volume.	10	CUM	
3.10.2	Using free flow non shring grout like conbextra GP1 or approved equivalent including cost of grout mix, form work, finishing, curing etc, all complete as per drawings and manufacturers' specifications. All materials to be supplied by contractor.	100	CUM	
3.10.3	Using free flow non shring grout like conbextra GP2 or approved equivalent including cost of grout mix etc, all complete as per drawings and manufacturers' specifications. All materials to be supplied by contractor.	30	CUM	
3.11	Providing and placing in position fire proofing with vermiculite for encasing of steel structures including cost of expended metal sheet, welded wire mesh, tie wire, nuts, cover plates etc all complete as per EIL specification no 6-68-0033. All materials to be supplied by contractor.			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
3.11.1	-do- measured in area.	5000	SQM	
3.11.2	-do- measured in volume.	100	CUM	
3.12	Supplying and fixing 3mm thk Aluminium sheet with brass screws in expansion joints including drilling in concrete etc all complete as per EIL specification no 6907-128-16-48-SP-251 to cover expansion and/ or separation joints.	10	SQM	
3.13	Providing and placing in position HDG grating including laying in approved size panels, finishing etc complete as per EIL drawing no 7-65-0272 & specifications.	1000	SQM	
3.14	Providing damp proof course 40 mm thick of PCC of grade M20 (upto 10 mm and down graded aggregate) with 2% of approved admixture of water proofing compound, and applying two layers of hot bitumen coating A90/S90 grade conforming to IS:73 @ 1.7 kg/sqm one before & one after the DPC, including sprinkling of dry sharp sand etc all complete as per specifications.	30	SQM	
3.15	Supplying, laying in position, consolidation, finish and curing as per specification cinder concrete of 1:10 mix with 12 mm & down grade cinder at all elevations as per drawing and EIL specification no 6907-128-16-48-SP-251, wherever required.	10	CUM	
<b>4.0</b>	<b>FORM WORK</b>			
4.1	Supplying, installing, dismantling and removing the following classes of <b>formwork</b> as per drawings and specifications at all levels using steel/ plywood wood shuttering.			
4.1.1	Straight in plan (including raft of STG/GTG).	44000	SQM	
4.1.2	Curved in plan.	1000	SQM	
4.1.3	Fairface formwork for columns and top deck of STG above raft.	7000	SQM	
4.2	Providing <b>pockets</b> in concrete of sectional area less than 0.1 sqm in plan by fixing and removing formwork for anchor bolts, pipe sleeves etc as per drgs including. all materials, labour etc complete as per drawings and specifications.			
4.2.1	Up to 300 mm deep.	800	NO	
4.2.2	301 mm to 600 mm deep.	100	NO	
4.2.3	601 mm to 1000 mm deep.	100	NO	
4.2.4	1001 mm to 1450 mm deep.	100	NO	
<b>5.0</b>	<b>REINFORCEMENT</b>			
5.1	Supplying, bending, binding, transporting and placing in position following types of high strength deformed (HSD) TMT bars & MS reinforcements of all diameters and at all elevations using approved quality binding wires as per specifications and drawings.			
5.1.1	MS reinforcement conforming to IS:432. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	10	MT	
5.1.2	Transport, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by engineer (Reinforcement will be supplied by BHEL as per SCC free of cost).	3110	MT	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
5.1.3	TMT reinforcement conforming to IS:1786 of minimum grade Fe 500. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	40 MT		
5.2	Supplying and fixing steel wire mesh (3 mm thick wire, 50x50 size mesh) as reinforcement for encasing steel columns, pipes at all elevations as per drawings and specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	100 SQM		
<b>6.0</b>	<b>STRUCTURAL STEEL (Structural steel works including all labour, material, equipments, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge).</b>			
6.1	Transport from store, fabricating using approved quality electrodes of 6013 or low hydrogen 7018 for plate thickness above 20 mm, pre-heating, packing and delivering at the stores or at site of the following categories of structural steelwork including cost of steel, all necessary bolts, nuts & washers etc, painted as per sl no 10.2 of EIL specification no 6907-0642-PT-L07 including surface preparation etc all complete. Contractor to supply all materials. (MS plates, channel, ISMB, angle, chequered plates will be supplied by BHEL free of cost as per SCC).			
6.1.1	Steel work consisting of portal frames, laced & plated columns, beams, roof trusses, purlins, non plated beams, bracings, sag rods, anchor cleats/ end plates and miscellaneous steel work, fabricated with standard rolled sections, plates, angles, beams etc.	1960 MT		
6.1.2	Supplying, fabricating using approved quality electrodes of 6013 or low hydrogen 7018 for plate thickness above 20 mm, pre-heating, packing and delivering at the stores or at site of the following categories of structural steelwork consisting of portal frames, laced & plated columns, beams, roof trusses, purlins, non plated beams, bracings, sag rods, anchor cleats, end plates, fabricated with standard rolled sections, plates, flats, angles pipes etc including cost of steel, all necessary bolts, nuts & washers etc painted as per sl no 10.2 of EIL specification no 6907-0642-PT-L07 including surface preparation etc all complete. Contractor to supply all materials.	30 MT		
6.2	Erection of structural steel as described in 6.1 including grouting under bases using Convextra GP1, with necessary erection bolts, nuts & washers, welding electrodes of 6013 or low Hydrogen electrodes of 7018 grade, wherever required, etc all complete as drawings and specifications. Grouting will be paid under item no 3.11.2.	1990 MT		
6.3	Supplying, fabricating and fixing in positions MS inserts like channels, angles, flats, rounds, plates, pipe sleeves and any other structural shape etc including cost of steel, necessary templates/ stagings, cutting to required lengths, bolting renetting welding etc as required all complete as per drawings and specifications. Contractor to supply all materials.	40 MT		
6.4	Supplying, fabricating and fixing in positions rails section Inserts in concrete including cost of rail sections, necessary templates/ stagings, cutting to required lengths, bolting renetting welding etc as required all complete as per drawings and specifications. Contractor to supply all materials.	5 MT		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
6.5	Taking delivery of foundation hardware supplied by BHEL and transporting to site, fixing in position foundation hardware such as anchor bolts, nuts, washers, anchor assembly etc as per drawing including fixing to proper level and alignment using contractor's own templates, protecting till handover of the foundation, all complete as per drawings and specifications.	30 MT		
6.6	Supplying, fabricating and fixing in position foundation hardware such as anchor bolts, nuts, washers, anchor assembly etc as per drawing including fixing to proper level and alignment using contractor's own templates, protecting till handover of the foundation, all complete as per drawings and specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	30 MT		
6.7	Supplying and erecting electro-forged hot dip galvanised MS floor gratings with minimum galvanizing density of 610 gms per sqm, staircase steps as per EIL standard dwg no 7-68-0561 (Type -II and Type-III grating) including all fasteners, painting with two or more coats of aluminium paint at the places of site welding etc all complete as per specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	53 MT		
6.8	Supplying, fabricating, fixing in position by welding 18 gauge MS sheets to steel columns for encasing at various elevations, all complete as per drawings and specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	1 MT		
6.9	Supplying, installing and fixing in position pre-coated profiled galvalume sheeting of minimum 0.5 mm thick for roofing & cladding of buildings with all necessary nuts, bolts, washers, roofing accessories and any other fixing material and means as required as per manufacturer specifications and EIL specification 6907-128-16-48-SP-251.Rev-0 at all elevations as per drawings and specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	7475 SQM		
6.10	Same as above but with transparent fiber glass sheets.	257 SQM		
6.11	Providing & installing the following pre-coated galvanised steel sheet specials and roofing accessories with standard laps including all drilling, cutting & grouting required to give water tight finish with all bolts, nuts, washers, hangers, spacers, drilled holes to be suitably painted before erecting & fixing etc, complete as per EIL specification 6744-94-16-48-0257. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.			
6.11.1	Ridge with close fitting adjustable ridge pieces including finish.	135 RM		
6.11.2	Eaves gutter E30 or equivalent with accessories.	268 RM		
6.11.3	Half round gutter.	268 RM		
6.11.4	S type louver with fixtures.	100 SQM		
6.11.5	Barge boards with all fixtures.	200 RM		
6.11.6	North light curves.	30 SQM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
6.12	Supplying, fabricating and fixing in positions Seismic Arrestor inserts made up of pipes, channels, angles, flats, rounds, plates of (25mm, 50mm & 100mm thk), pipe sleeves and any other structural shape etc including cost of steel, necessary templates/ stagings, cutting to required lengths, machining of top surfaces, bolting revetting welding etc as required all complete as per and specifications. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	1 MT		
6.13	MS hand rail. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.			
6.13.1	Supplying, fabricating, fixing in position galvanised 32mm dia NB (Medium) MS pipe handrail at various elevation to concrete and steel buildings/ structures as per including cost of materials, cutting concrete, consummables, labour etc all complete as per drawing EIL dwg no 7-68-0501 and specifications. Toe plate will be paid separately under item no 6.1.	1222 RM		
6.13.2	Supplying, fabricating, fixing in position galvanised 32mm dia NB (Medium) MS pipe handrail with square balusters at various elevation to concrete and steel buildings/ structures as per including cost of materials, cutting concrete, consummables, labour, painting with synthetic enamel paint over a coat of approved quality red oxide zinc chromate primer etc all complete as per drawing EIL dwg no 7-75-0036 and specifications. Toe plate will be paid separately under item no 6.1.	250 RM		
<b>7.0</b>	<b>MASONRY &amp; ALLIED WORKS (Brickwork masonry, plastering including all labour, material, equipment, transportation, handling, scaffolding etc at all levels as per specification, drawings and as directed by engineer-in-charge (Cement will be supplied by BHEL as per SCC free of cost).</b>			
7.1	Supplying and laying of coarsed rubble stone massonary in cement mortar 1:6 in foundations and basement as per specifications.	10 CUM		
7.2	Supplying and laying in position class 10.0 (as per IS:1077) brick work in foundation and upto plinth in cement sand mortar (1:6) including mixing mortar, laying bricks, raking of joints, curing etc, all complete as per drawings as spefications.	165 CUM		
7.3	Similar to 7.2 in super-structure at all elevations.	2246 CUM		
7.4	Supplying and laying in position class 10.0 (as per IS:1077) brickwork in half brick walls at various elevations in 1:4 cement sand mortar with 2 nos 6mm dia MS bars at every fourth layer properly anchored with pillars or cross walls, including mixing mortars, raking joints, curing etc all complete as per drawings and specifications.	1000 SQM		
7.5	Providing 12mm thick cement-sand plastering in 1:6 cement mortar for all plumb of the internal masonry walls & RCC Columns coming in line (flush) with this side of wall at various elevations including mixing, laying, finishing, curing, rounding corners, cutting grooves, wherever required, etc with all materials complete as per drawings and specifications.	4845 SQM		
7.6	Providing upto 15mm thick cement-sand plastering in 1:6 cement mortar for rough side of internal masonry walls, RCC columns coming in line (flush) with this side of wall at various elevations including mixing, laying, finishing, curing, rounding corners, cutting grooves, wherever required, etc with all materials complete as per drawings and specifications.	3000 SQM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
7.7.1	Providing 18mm thick cement-sand plastering in 1:6 cement mortar (mixed with approved acrylic waterproof compound @ 1 kg per 50 kg of cement) to the exterior faces of the walls & RCC columns coming in line with side of the wall at various elevations including mixing, laying, finishing,curing, rounding corners, cutting grooves, wherever required, etc with all materials complete as per drawings and specifications.	200	SQM	
7.7.2	Same as item no 7.8.1 but 15 mm thk.	180	SQM	
7.7.3	Same as item no 7.8.1 but 12 mm thk.	100	SQM	
7.8	Providing 20 mm thk sand face plaster in two layes, first layer of 13 mm in cement mortar (1:4) & second layer of 7 mm thickness in cement mortar (1:2) using approved quality sand for second layer, on RCC and brickwork including mixing, laying, finishing curing, rounding corners, cutting groves, whereever required, with all materials complete as per drgs and specifications.	6634	SQM	
7.9	Providing minimum 6 mm thick (1:4) cement sand plaster over concrete surfaces of RCC ceiling, beams etc at various elevations including mixing, laying, finishing,curing, rounding corners, cutting grooves, wherever required, etc with all materials complete as per drawings and specifications. However if undulation in ceiling is beyond 6mm thick plaster, extra thickness of plaster shall be applied without any extra cost to give a smooth and fair surface to the satisfaction of engineer-In-charge.	10255	SQM	
7.10	Drip course at various elevations to parapet, chajja, windows, door heads etc with all material complete as per drawings, spcifications and directions of the engineer.	320	RM	
7.11	Providing 20 mm wide x 10 mm deep rectangular grooves in plaster for architectural purposes, including all materials, etc all complete as per drawings.	500	RM	
7.12	Extra over plaster for providing neat cement finish.	1200	SQM	
7.13	Providing 2 mm thick plaster of paris punning to newly plastered surfaces at various elevations with all materials etc, complete as per specifications and directions of engineer.	3450	SQM	
7.14	Supplying and fixing 20 gauge chicken wire mesh stretched tight and fixed with GI type nails at junctions of brick work and concrete work before plastering at various elevations locations as shown in drawings and as directed by the engineer.	600	SQM	
7.15	Providing average 50 mm thick M20 cement screed with 6mm down stone chips, to required slope with all materials, hacking the old concrete, finishing, curing etc, as per drgs & specifications.	10	CUM	
<b>8.0</b>	<b>FLOORING (Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc at any level as per specification, drawings and as directed by engineer-in-charge (Under bed concrete will be paid seperately under relevant item). (Cement will be supplied by BHEL as per SCC free of cost)).</b>			
8.1	Supplying, laying vetrified ceramic acid resistant tiled floor/ DADO as per IS:4457 with 25mm thick tiles from approved manufacturers at various elevations including preparation of base laying underbed of 6 mm thick acid proof mortar over 3 layers of bitumen grade 85/25 (total 3 mm thick) as per IS:702 over 12mm thick CM (1:3), pointing of size 6 mm x 18 mm deep with CSNL mortar or equivalent including curing of the joints with dilute hydrochloric acid (25 %) as per manufacture's specifications, with all materials complete as per drawing and specifications.	50	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
8.2	Supplying and fixing matt finish, non slip type ceramic tiles of approved make of sizes 300 x 300 x 8 mm for flooring laid over a coating of approved neoprene based adhesive including pereparation of base laying underbed, finishing and rounding corners and junctions, curing etc complete as per drawings and EIL specification no 6907-128-16-48-SP-251.	57	SQM	
8.3	Supplying and fixing matt finish, non slip type ceramic tiles of approved make of sizes 100 x 200 x 6 or 300 x 200 x 6 for dado up to 2.1 m height laid over a coating of approved neoprene based adhesive including pereparation of base laying underbed, finishing and rounding corners and junctions, curing etc all complete as per drawings and EIL specification no 6907-128-16-48-SP-251.	95	SQM	
8.4	Laying 125 mm high, 18 mm thick cement plaster skirting (1:3) including preparation of base, laying underbed, finishing with neat cement @2.75 kg per sqm, rounding corners and junctions, cutting grooves, if required, curing etc all complete as per drawings and EIL specification no 6907-128-16-48-SP-251.	143	SQM	
8.5	Supplying laying and fixing vitrified porcelain tile for flooring & skirting laid over a coating of approved neoprene based adhesive including pereparation of base laying underbed, finishing and rounding corners and junctions, curing etc, as per drawings and EIL specification no 6907-128-16-48-SP-251.	400	SQM	
8.6.1	Supplying laying & fixing 40mm thick Kota stone flooring/ steps in staircase in various elevation comprising 25mm thick stone slabs including preparation of base, laying underbed finishing, curing, polishing etc complete as per drawings and EIL specification no 6907-128-16-48-SP-251.	200	SQM	
8.6.2	Supplying laying & fixing 40mm thick Kota stone skirting/ dado/ riser in staircase 18 mm thick stone slabs including preparation of base, laying underbed finishing, curing, polishing etc complete as per drawings and EIL specification no 6907-128-16-48-SP-251.	200	SQM	
8.7	Providing 50 mm thick heavy duty cement flooring comprising of 35 mm cement concrete base laid over sub base in panels (max 1 sqm in area) bound by 3 x 40 mm PVC strips followed by upto 15 mm thick wearing top layer of cement, hardner and stone aggregate, finishing, curing etc all complete as per EIL specification no 6907-128-16-48-SP-251.	3986	SQM	
8.8	Providing 40 mm thick cement concrete granolithic flooring comprising of 25 mm thick base course of M15 grade cement concrete laid on the sub-base in panels (max 1 sqm is area, in desired shape and pattern) bound by 3 x 30 mm PVC strip by upto 15 mm thick wearing top layer of cement mortar 1:3, finishing, curing etc all complete as per EIL specification no 6907-128-16-48-SP-251.	1961	SQM	
8.9	Providing pigmented Epoxy floor coating on flooring, skirting and dado of approved shade, made of a solvent based, two pack system with epoxy resins and amine curing agents, chosen to withstand high degrees of chemical and abrasive action as per approved manufacturer's specification, including screed and finishing coat, curing etc all complete as per EIL specification no 6907-128-16-48-SP-251.	300	SQM	
<b>9.0</b>	<b>FALSE FLOORING</b>			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
9.1	Supplying, erecting, fitting & laying <b>false flooring</b> (steel plates with cementitious infill) of approved make with laminated floor panels of size 600 mm x 600 mm and over all thickness of minimum 37 mm including necessary base plates, pedestal studs, top heads, hot dip galvanised stringers, polyurethane coating over floor below false flooring, nuts, bolts etc all complete as per EIL specification no 6907-128-16-48-SP-251. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	1440	SQM	
<b>10.0</b>	<b>FALSE CEILING</b>			
10.1	Supplying, erecting, fitting, & fixing <b>Aluminium plank/ tile false ceiling</b> of approved make with all fittings, fixtures etc all complete as per drawings & EIL specification no 6907-128-16-48-SP-251. Payment terms - a) On receipt of material at site - 65%; b) On completion of erection & fixing - 35%.	2390	SQM	
10.2	Providing Phenolic foam <b>under deck insulation</b> on the ceiling system (at soffit of the slab and beams) consisting of <b>40 mm thick</b> and approx 1000 mm x 450 mm size conforming to IS:13204 prelaminated on both side, including applying bituminous primer or zinc chromate primer on entire soffit of slab and beams, fixing,etc all complete as EIL specification no 6907-128-16-48-SP-251.	2390	SQM	
<b>11.0</b>	<b>PAINTING</b>			
11.1	Providing & applying to interior surfaces two or more coats of oil bound distemper of approved shade & make conforming to IS:428 to obtain a even finish and uniform color over a coat of primer at all elevations including cost of paint, surface preparation, scaffolding etc, all complete as per EIL specification no 6907-128-16-48-SP-251 and to the satisfaction of engineer incharge.	200	SQM	
11.2	Providing and applying two or more coats of plastic emulsion paint conforming to IS:5411 (Part-1), of approved shade, over a of coat of primer, at all elevations including cost of paint, surface preparation, scaffolding etc, all complete as per EIL specification no 6907-128-16-48-SP-251 and to the satisfaction of engineer incharge.	2750	SQM	
11.3	Providing three or more coats of white wash to give a smooth and even shade at all elevations including including cost of paint, surface preparation, scaffolding etc, all complete as per IS:6278 and EIL specification no 6907-128-16-48-SP-251 and to the satisfaction of engineer incharge.	13489	SQM	
11.4	Providing and applying waterproof cement paint as per manufacturers instruction over concrete surfaces at all elevations including cost of paint, preparation of surfaces, scaffolding, curing etc, all complete as per EIL specification no 6907-128-16-48-SP-251 and to the satisfaction of engineer incharge.	10327	SQM	
11.5	Providing and applying cold applied polymer based water proofing compound in three coats as per manufacturers instruction over a coat of primer at all elevations including cost of paint, preparation of surfaces, scaffolding, curing etc, all complete as per EIL specification no 6907-128-16-48-SOW-251 and to the satisfaction of engineer incharge.	300	SQM	
<b>12.0</b>	<b>ROOF WATER PROOFING (Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer-in-charge. Contractor has to furnish a guarantee for material and workmanship for a minimum period of 10 years. Cement will be supplied by BHEL as per SCC free of cost).</b>			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
12.1	Providing and laying Polymer modified bituminous roof water proofing at various elevations including laying underbed, finishing protective layer, fillets at junction of horizontal and vertical surfaces etc with all material complete as per EIL drawing no 7-75-0068 and EIL specification no 6907-128-16-48-SP-251 & 6907-128-16-48-SOW-251. Underbed shall be paid under item 12.2.	3555	SQM	
12.2	Preparation of grading underbed with 1:3:6 mix using 12 mm down graded coarse aggregate at various elevations including mixing, laying, curing etc in varying thickness with all materials complete as per drawings and specifications.	120	CUM	
12.3	Same as Item No-12.2 above but for flashing at junction of slab and parapet wall including preparation of surfaces, cutting grooves, caulking the end of flashing etc. complete as per drawings and specifications.	300	SQM	
12.4	Providing and making 150 x 150 mm size fillets in cement concrete 1:2:4 at junctions of roof slab and parapet wall including cutting grooves, rounding corners, finishing etc all complete as per drawings and specifications.	10	CUM	
<b>13.0</b>	<b>DOORS, WINDOWS &amp; VENTILATORS</b>			
13.1	Providing and fixing steel windows and ventilators conforming to IS:1038 and IS:7452 including handles, peg stays, stoppers, hinges, and painting with two coats of approved make synthetic enamel paint over a coat of suitable primer etc all complete as per and EIL specifications in doc no 6907-128-16-48-SP-251. Glazing shall be paid separately. Payment terms - a) On receipt materials at site - 65%; b) On completion of erection & fixing - 35%.			
13.1.1	Fixed type.	200	SQM	
13.1.2	Openable type.	243	SQM	
13.2	Supplying and erecting including assembling, fitting and fixing steel louvers with 18 gauge MS sheet bent to shape at various elevations including frames, shutters, weld mesh with bird screen net etc as required with all materials etc complete as per drawings and EIL specification no 6907-128-16-48-SOW-251 & 6907-128-16-18-SP-251 including painting of steel surfaces with two coats of synthetic enamel paint over a coat of primer paint. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	1118	SQM	
13.3	Supplying and erecting including assembling fitting and fixing best quality pressed steel doors of 18 gauge MS sheets packed inside with rigid PU foam/ phenolic foam or glass wool insulation, with 16 gauge pressed steel frames at various elevations including frames, shutters, accessories, fittings and fixtures, CP mortice lock cum handle mastic caulking, grouting the frames, painting with 2 coats of approved quality synthetic enamel paint over a coat of approved primer etc complete as per EIL drawing no 7-75-0070, 7-75-0071 and specifications in doc no 6907-128-16-48-SP-251. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
13.3.1	Single shutter.	50	SQM	
13.3.2	Double shutter.	150	SQM	
13.4	Same as item 13.3 but with 150 mm x 300 mm vision panels with 4 mm thk. Plain glass etc complete as per EIL specifications in doc no 6907-128-16-48-SP-251.			
13.4.1	Single shutter.	25	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
13.4.2	Double shutter.	25 SQM		
13.5	Same as item 13.4 but 2 mm sheeting etc all complete as per EIL specifications in doc no 6907-128-16-48-SP-251 & 6907-128-16-48-SOW-251.			
13.5.1	Single shutter.	10 SQM		
13.5.2	Double shutter.	10 SQM		
13.6	Providing and fixing in position composite, insulated type fire check doors of approved make having 2 hrs fire rating conforming to IS :3614 Part I with all necessary fittings and fixtures including self closing hinges, locking arrangement and painting with two or more coats of fire proof paint over approved primer etc complete as per EIL specification 6907-128-16-48-SP-251. Contractor to obtain and furnish TAC approval for supplies made. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
13.6.1	Single leaf.	5 SQM		
13.6.2	Double leaf.	5 SQM		
13.7	Laminated wooden flush doors.			
13.7.1	Providing and fixing laminated wooden flush doors with all fittings and fixtures, approved quality heavy duty MS butt hinges, anodised aluminium tower bolts, aldrops, door stoppers, vision panels etc as per EIL specifications in doc no 6907-128-16-48-SP-251. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	15 SQM		
13.7.2	Same as item 13.6.1 but with 150 mm x 300 mm vision panels with 4 mm thk. Plain glass etc complete as per EIL specifications in doc no 6907-128-16-48-SP-251.	5 SQM		
13.8	Hydraulic door closer.			
13.8.1	Providing and fixing approved quality heavy duty overhead hydraulically operated door closer conforming to IS:3564 as directed by the engineer.	20 NO		
13.8.2	Providing and fixing approved quality heavy duty hydraulically operated double action door closer conforming to IS:6315 as directed by the engineer.	20 NO		
13.9	Providing and fixing 2 mm thk approved quality rubber sealing strip around doors and windows for making them air tight including cost of rubber strip adhesive, clips etc all complete as per specifications in doc no 6907-128-16-48-SP-251.	150 RM		
13.10	Supplying fitting and fixing the following glazing specials at various elevations as per drg no 7-75-0014 including supplying rubber beading, (cost of putty and glazing clips for fixing to steel windows), all materials etc complete as per specifications to alluminium windows, doors & partitions/ steel windows.			
13.10.1	4mm thick plain glass.	243 SQM		
13.10.2	6.3 mm thick laminated safety glass.	300 SQM		
13.11	Supplying, fitting and fixing 12 mm thick twin laminated Gypsum board of "India Gypsum" make conforming to IS:2905, categorised as Class-I for surfaces of very low flame spread as per BS:476, at various elevations to aluminium windows, doors & partitions, including supplying rubber gaskets, cost of all materials etc complete as per drawings and specifications.	600 SQM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
13.12	Supplying and erecting including assembling fitting and fixing electrostatically powder coated aluminum windows and ventilators of Jindal or approved equivalent at various elevations including frames and shutters, transomes, mullions, fittings and fixtures, aluminium beading, but excluding glazing, complete as per EIL drawing no 7-75-0014, 7-75-0015 and EIL specifications no 6907-128-16-48-SP-251. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
13.12.1	Openable type.	50	SQM	
13.12.2	Fixed type.	123	SQM	
13.12.3	Fixed double glass windows at STG operating floor level 2.4 m high.	50	SQM	
13.13	Supplying and erecting including assembling, fitting and fixing aluminium partition frames with matching doors etc as per drawing no 3-38144-00008 with frames, shutters, double acting heavy duty floor springs, fittings and fixtures, mortise lock, aluminium beading to aluminium partitions and doors framework, 6.3 mm thk laminated safety glass and 12 mm thk twin laminated gypsum board/ MDF board etc all complete. Gypsum board/ MDF board and glazing to be paid separately. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	543	SQM	
13.14	Supplying and erecting including assembling, fitting and fixing aluminium glazed doors including shutters, springs, fittings and fixtures, 6.3 mm thk. laminated safety glass, door closer, tower bolts, beading etc all complete as per EIL drawing no 7-75-0014 & EIL specification no 6907-128-16-48-SP-251. Glazing to be paid separately.	100	SQM	
13.15	Supplying, fitting and fixing 12 mm thick twin laminated medium density fibre (MDF) boards (manufactured from agrobased lignocellulosic fibres conforming to IS:12406, exterior grade with synthetic resin conforming to IS:848, BWP type), categorised as Class-I for surfaces of very low flame spread as per BS:476 and twin laminated with 1.0 mm thick melamine of approved make and shade at various elevations to Aluminium windows, doors & partitions, including supplying rubber gaskets, cost of all materials etc complete as per drawings and specifications. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	200	SQM	
<b>14.0</b>	<b>ROLLING SHUTTERS</b>			
14.1	Supplying and erecting including assembling, fitting and fixing rolling steel shutters and accessories from approved manufacturers including all fixtures, locking arrangements electric, wiring for motor drive, wiring for drive shutters, including shop coat of approved red oxide zinc chromate primer and two or more coats of synthetic enamel paint of approved brand and shade after erection with all fittings and fixtures etc all complete as per specifications in doc no 6907-128-16-48-SP-251 and drawings. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
14.1.1	Manually operated.	5	SQM	
14.1.2	Mechanically operated, complete with all accessories for mechanical operation as per approved manufacturers design and drawings.	106	SQM	
14.1.3	Electrically operated, complete with all accessories, electrical motor, cabling, etc, as per approved manufacturers design and drawings.	100	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
<b>15.0</b>	<b>SANITATION/ PLUMBING</b>			
15.1	Supplying and erecting HDPE cylindrical and vertical water tank with closed top of SINTEX make or approved equivalent of following capacity.			
15.1.1	1450 ltr.	2	NO	
15.1.2	2450 ltr.	2	NO	
15.1.3	4500 ltr.	2	NO	
15.2	Supplying, fitting and fixing PVC drain pipes of approved make at various elevations including shoe bends junctions, sockets, adapters, brackets, hangers, supports etc jointing with appropriate adhesives etc, including all materials complete as per drawings and as per EIL specification no 6907-128-16-48-SP-251.			
15.2.1	110 mm dia pipes.	50	RM	
15.2.2	160 mm dia pipes.	419	RM	
15.3	Same as 15.2 and encasing drain pipes in M15 concrete with wire mesh etc, all complete as per specifications. Wire mesh will be paid under item no 5.2.			
15.3.1	110 mm dia pipes.	50	RM	
15.3.2	160 mm dia pipes.	850	RM	
15.4	Supplying, fitting and fixing PVC roof drain heads with high domed gratings as per drg no 7-75-0068 at various elevations, including connecting to roof drain pipes, caulking with lead supports/ fixing with adhesive for PVC pipes, hangers etc, with all materials as per drawings and specifications.			
15.4.1	110 mm pipe.	15	NO	
15.4.2	160 mm pipe.	55	NO	
15.5	Supplying, fitting fixing the following best quality sanitary fixtures of " Hindustan Sanitaryware" or approved equivalent make at various elevations including all necessary accessories, cutting and making good of concrete/ brickwork for concealing all connecting pipes and bends with all materials etc all complete as per EIL specification no 6907-128-16-48-SP-251 and drawings.			
15.5.1	European type water closet of pattern-1 conforming to IS:2556 part-II with plastic seats & cover and low level earthenware cistern (IS:774) of 10 litre discharge capacity including valveless fittings, flush bends, supply connections, syphon, integral 'S' or 'P' trap etc all complete as per EIL drg no 7-75-0062 and EIL specification no 6907-128-16-48-SP-251.	6	NO	
15.5.2	Indian pattern water closet (Orissa pan size 550 mm x 440 mm conforming to IS:2556) with integral footrest and 10 litre capacity valve less syphonic type high level glazed earthenware flushing cistern (IS:774) fittings, with all necessary fixtures, integral with 'S' or 'P' trap etc all complete as per EIL drg no 7-75-0060 and EIL specification no 6907-128-16-48-SP-251.	6	NO	
15.5.3	610 x 410 x 380 mm half stall type urinals of single piece construction with integral flushing box rim with concealed hangers and brackets, CP brass spreader for concealed piping work, CP brass waste fittings, 30 mm dia heavy duty bottle trap etc all complete as per EIL drg no 7-75-0063 and EIL specification no 6907-128-16-48-SP-251.	12	NO	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
15.5.4	Automatic high level glazed earthenware cistern with mosquito proof lid, interior painted with 2 coats of anti corrosive paint, with loose key CP brass bibcock etc all complete as per EIL specification no 6907-128-16-48-SP-251.			
15.5.4.1	Cistern capacity 5 ltrs.	12	NO	
15.5.4.2	Cistern capacity 10 ltrs.	6	NO	
15.5.4.3	Cistern capacity 15 ltrs.	6	NO	
15.5.4.4	Marble partitions of minimum 19 mm thick white Makrana marble slabs of size 1000 mm x 600 mm etc all complete as per EIL specification no 6907-128-16-48-SP-251.	12	NO	
15.5.5	550 x 400 mm white glazed stone ware flat back wash basin conforming to IS:2556 part-IV with anti splash rims on three sides and required tap holes, with supporting brackets, CP brass waste fittings, bottle trap, CP brass pillar cock, supply connection brass nuts and CP brass stop cock etc, complete as per drg no 7-75-0064 rev 03 and as per EIL specification no 6907-128-16-48-SP-251.	10	NO	
15.5.6	150 x 150 mm recessed white glazed porcelain soap tray.	10	NO	
15.5.7	Chromium plated shower set with 100/ 150 mm dia brass shower rose with rim arm,wall flange, hot/ cold water mixing valves including handle and concealed supply pipe including 600mm long CP grab bar, bibcock etc, as per specifications all complete.	6	NO	
15.5.8	550 x 400 x 5.5 mm thk round edge mirror of superier glass with 6 mm thick AC sheet backing and necessary fixtures as per specifications.	10	NO	
15.5.9	35 litre capacity hot water geyser of approved make.	6	NO	
15.5.10	600 x 120 x 4 mm thick clear glass shelves with chromium plated brackets, guard rails etc, all complete.	10	NO	
15.5.11	600 mm long, 20 mm dia and 1.25 mm thick chromium plated brass towel rail with brackets fittings, etc, complete.	10	NO	
15.5.12	All Chromium plated standard liquid soap dispenser of approved make with all fittings etc, complete.	10	NO	
15.5.13	12 mm dia CP brass ablution tap with all fittings complete.	10	NO	
15.6	Supplying, fitting and fixing 100 mm dia inlet and 80/ 100 mm dia outlet SS floor drain with trap and with screwed or hinged CP brass gratings.	20	NO	
15.7	Providing gully trap chamber including supplying and fixing square mouth gully trap, gratings, CI frame and cover, cost of materials etc all complete as per EIL drawing no 7-65-0214 & specifications.	5	NO	
15.8	Providing inspection chamber including supplying and fixing manhole cover, grouting of pipes, cost of materials etc all complete as per EIL drawing no 7-65-0215 & specifications.	5	NO	
15.9	Providing neutralisation pit including supplying and fixing chequered plate cover, grouting of pipes, acid proof tile lining, rungs, hooks, cost of materials etc all complete as per EIL drawing no 7-65-0310 & specifications.	2	NO	
15.10	Providing septic tank with capacity for 25 persons including excavation and back filling at all depths, disposal of spoils with a lead of 1 km; including dressing and levelling the same, masonry, concrete, reinforcement, shuttering, plastering, all fittings, heavy duty covers etc with all materials complete as per drawing no 3-38144-00009.	2	NO	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
15.11	Construction of circular soak pit with 450 mm square dry brick honey comb shaft, surrounded by annular shafts of brick bats and brick ballast of 40 mm to 80 mm nominal size including excavations, packing etc.all complete as per drawing no 3-38144-00003.	2	NO	
15.12	Supplying, laying, fitting, fixing, jointing concealed GI pipes "J2A" for water lines at various elevations with all fittings stop cock, valves bends, elbows, tees, reducers etc including excavation, back filling, concrete supports, hangers, straps with all materials etc, complete as per EIL specification no 6907-6-44-0005 and drawings. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
15.12.1	12 mm dia.	100	RM	
15.12.2	19mm dia.	50	RM	
15.12.3	25 mm dia.	100	RM	
15.12.4	32 mm dia.	100	RM	
15.12.5	50 mm dia.	100	RM	
15.13	Same as above but with 25 mm thk mineral wool insulation, laying on piperacks, buildings etc including clamps, screws etc all complete as per EIL specification no 6907-128-16-47-SP-01 and drawings.			
15.13.1	12 mm.	100	RM	
15.13.2	19 mm.	50	RM	
15.13.3	25 mm.	100	RM	
15.13.4	32 mm.	100	RM	
15.13.5	50 mm.	100	RM	
15.14	Supply and fixing of valves for J2A water lines as per drawings & EIL specification no 6907-6-44-0005.			
15.14.1	12 mm dia.	2	NO	
15.14.2	19 mm dia.	2	NO	
15.14.3	25 mm dia.	2	NO	
15.14.4	32 mm dia.	2	NO	
15.14.5	50 mm dia.	2	NO	
15.14.6	75 mm dia.	2	NO	
15.15	Supplying and fixing 4" dia vent pipes in OWS manholes including fixing the pipe on piperacks at various elevations, necessary clamps, screws etc all complete EIL specification no 7-65-0212 & as per specification.	200	RM	
15.16	Supplying, laying, fitting, fixing and jointing CI soil and drain pipes conforming to IS:3486/1729, underground with all fittings bends, tees, reducers etc including excavation, backfilling, supports, caulking, chases, grooves, hangers, supports, straps etc painting as specified with corrosion resistance protection all complete as per specification and drawings.			
15.16.1	100 mm.	150	RM	
15.16.2	150 mm.	150	RM	
15.17	Same as 15.11 but over ground, including vent pipes and cowls.			
15.17.1	100 mm.	150	RM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
15.17.2	150 mm.	150	RM	
15.18	Supplying fitting and fixing CI heavy duty man hole cover of 82 cm dia of approved brand as per specification.	20	NO	
<b>16.0</b>	<b>SURFACE AND UNDERGROUND DRAINS</b>			
16.1	Supplying and installing of PVC pipes of following diameter as per specifications and drawing.			
16.1.1	100 mm dia.	50	RM	
16.1.2	150 mm dia.	50	RM	
16.1.3	200 mm dia.	50	RM	
16.1.4	300 mm dia.	50	RM	
16.2	Supplying and installing of PVC pipes bends of following diameter as per specifications and drawing.			
16.2.1	100 mm dia.	10	NO	
16.2.2	150 mm dia.	10	NO	
16.2.3	200 mm dia.	10	NO	
16.2.4	300 mm dia.	10	NO	
16.3	Providing and installing underground RCC hume pipes of class P-1 as per IS:458 of following diameters with collars, at all depths including bedding, jointing, providing supports etc all complete as per drawing and EIL specification no 6-65-1042 (excavation and backfilling to be measured seperatly under relevant items).			
16.3.1	150 mm.	100	RM	
16.3.2	200 mm.	200	RM	
16.3.3	250 mm.	100	RM	
16.3.4	300 mm.	50	RM	
16.3.5	450 mm.	50	RM	
16.4	Providing and installing RCC hume pipes of class NP-3 of following diameters with collars, at all depths including bedding, following diameters with collars, at all depths including bedding, jointing, providing supports etc all complete as per drawing and EIL specification no 6-65-1042 (excavation and backfilling to be measured seperatly under relevant items).			
16.4.1	400 mm.	50	RM	
16.4.2	450 mm.	50	RM	
16.4.3	600 mm.	50	RM	
16.5	Supplying, laying, jointing, testing and commissioning of carbon steel pipe "A96A" line below GL including coating and wrapping, joint testing, cost of materials etc all complete as per EIL specification no 6907-6-44-0005, 6-79-0011 and drawings (Earthwork excavation and back filling to be measured separately). Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
16.5.1	100 mm dia.	50	RM	
16.5.2	150 mm dia.	100	RM	
16.5.3	200 .mm dia	200	RM	
16.5.4	300 mm dia.	100	RM	
16.6	Suppy and fixing of valves for A96A water lines as per drawings & EIL specification no 6907-6-44-0005.			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
16.6.1	100 mm dia.	2	NO	
16.6.2	150 mm dia.	2	NO	
16.6.3	200 mm dia.	2	NO	
16.6.4	300 mm dia.	2	NO	
16.7	Supplying, laying, jointing, testing and commissioning of carbon steel pipe "A92A" line below GL including coating and wrapping, joint testing, cost of materials etc all complete as per EIL specification no 6907-6-44-0005, 6-79-0011 and drawings (Earthwork excavation and back filling to be measured separately). Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
16.7.1	100 mm dia.	50	RM	
16.7.2	150 mm dia.	100	RM	
16.7.3	200 mm dia.	200	RM	
16.7.4	300 mm dia.	100	RM	
16.8	Supply and fixing of valves for A92A water lines as per drawings & EIL specification no 6907-6-44-0005.			
16.8.1	100 mm dia.	2	NO	
16.8.2	150 mm dia.	2	NO	
16.8.3	200 mm dia.	2	NO	
16.8.4	300 mm dia.	2	NO	
16.9	Supplying and fixing MS drain funnels of following diameter as per EIL drawing no 7-65-0266 and specifications.			
16.9.1	150 mm dia.	10	NO	
16.9.2	200 mm dia.	10	NO	
16.9.3	250 mm dia.	10	NO	
16.10	Providing and fixing weep holes in road/ drains consisting of 100 mm dia LDPE pipe sleeves along with single side covering for the pipe mouth with galvanised welded fabric of 20 mm sq opening along with 300 x 300 mm sq, 300 mm deep, 40 mm aggregate to cover fabric mesh mouth complete as directed by BHEL engineer.	100	NO	
16.11	Supplying and installing of HDPE pipes of following diameter as per specifications and drawing.			
16.11.1	100 mm dia.	10	RM	
16.11.2	150 mm dia.	10	RM	
16.11.3	200 mm dia.	10	RM	
16.11.4	300 mm dia.	10	RM	
<b>17.0</b>	<b>ROADS/PAVING</b>			
17.1	Consolidating subbase before providing stone soling/ WBM with road roller including watering, if required to obtain 95% maximum lab dry density as per IS 2720 Part-VIII including making good undulation etc all complete as per drawing and specifications .	16974	SQM	
17.2	Supplying, laying and rolling stone soling of consolidated thickness 200 mm constructed in 2 layers each of 100 mm thick including spreading binding material (sand/ morrum) watering and rolling with road roller etc all complete as per drawings and specifications.	5000	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
17.3	Supplying, spreading & filling of soil (having plasticity index less than 6) in layers not exceeding 150 mm below paving and roads, below grade slabs and all other locations and consolidation & preparation of sub base including watering and rolling & compaction with power roller 10-12 T capacity to the required density (95% of maximum lab dry density as per IS 2720 Part-VIII) as per specifications, drawings and as directed by the engineer.	5000 CUM		
17.4	WBM consolidation.			
17.4.1	Supplying and laying WBM in 100 mm consolidated thickness with grade-I aggregate in one or more layers with dry and wet rolling etc complete as per EIL drawing no 6907-010-16-47-1120 and specification no 6-65-0018.	250 SQM		
17.4.2	Supplying and laying WBM in 75 mm consolidated thickness with grade-II aggregate in one or more layers with dry and wet rolling etc complete as per EIL drawing no 6907-010-16-47-3607 & 6907-010-16-47-1120 and specification no 6-65-0018.	15500 SQM		
17.5	Providing and laying 50 mm compacted thickness of bituminous macadam finish with 20 mm thk premix carpet (using hot mix plant) with premixed seal coat over WBM surface, using bitumen of appropriate grade confirming to IS:73, preparation of surfaces, rolling etc complete as per EIL drawing no 6907-010-16-47-1120 and 6-65-0020 and as per specifications.	2750 SQM		
17.6	Supplying, laying and setting precast concrete edging blocks 300 x 250 mm and a length of 275 mm (except at curves) in 1:2:4 cement concrete including cutting of trench and packing exterior face of blocks with stone chips and murrum including pointing the joints with CM 1:4 etc all complete as per drawings and specifications.	200 RM		
17.7	Providing and placing stone pitching in road embankment slope as per specifications.	150 SQM		
<b>18.0</b>	<b>MISCELLANEOUS ITEMS</b>			
18.1	Supplying and spreading 40 mm size stone chips/ gravels in transformer yards.	120 CUM		
18.2	Supply, fabricating and fixing in position transformer gate/ fencing as per drg no:7-75-0051 & 7-75-0052 including painting with aluminium paint two or more coats over suitable primer etc complete, excavation, concreting and post etc to be measured separately. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	200 SQM		
18.3	Supplying and fixing in positions anchor fasteners of HILTI or approved equivalent of following diameters in concrete, including drilling in concrete, driving the anchor fastner, finishing the concrete etc, all complete as per drawings and specifications.			
18.3.1	8 mm.	50 NO		
18.3.2	10 mm.	50 NO		
18.3.3	12 mm.	50 NO		
18.3.4	14 mm.	50 NO		
18.3.5	16 mm.	50 NO		
18.3.6	20 mm.	50 NO		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
18.4	Supplying and fixing in positions 100 mm wide Aluminium strips of approved make in expansion joints in building/ structures with brass screws including drilling in concrete, all complete as per drawings and specifications.	100 RM		
18.5	Cutting and drilling holes of the following diametes using diamond cutter drilling machine with all material, labour etc, all complete as per drawings and specifications.			
18.5.1	100mm dia x 200 mm deep.	20 NO		
18.5.2	150mmdia x 200 mm deep.	20 NO		
18.5.3	200mm dia x 200 mm deep.	20 NO		
18.5.4	250mm dia x 200 mm deep.	20 NO		
18.6	Providing anti-termite treatment to building columns and floors of Chloropyrifos emulsifiable concentrates (1%) conforming to IS:8944 with cost of material, labour, consumables etc, all complete as per drawings and EIL specifications.	4500 SQM		
18.7	Supplying, fabricating and fixing in position GI MS rungs bent to shape/ size as indicated on drgs and specifications.	100 KG		
18.8	Supplying and fixing lock fix (FOSROC make) for extending new reinforcement from existing structures.	50 NO		
18.9	Chipping of RCC.			
18.9.1	Chipping of RCC structural elements like beams, columns, pedestals, slabs at all elevation upto 5 m height required for facilitating mechanical erection works including scaffolding etc, all complete to the satisfaction of BHEL engineer.	1 CUM		
18.9.2	Chipping of RCC structural elements like beams, columns, pedestals, slabs at all elevation from 5 m to 10 height required for facilitating mechanical erection works including scaffolding etc, all complete to the satisfaction of BHEL engineer.	1 CUM		
18.9.3	Chipping of RCC structural elements like beams, columns, pedestals, slabs at all elevation from upto 10 m to 15 m height required for facilitating mechanical erection works including scaffolding etc, all complete to the satisfaction of BHEL engineer.	1 CUM		
18.9.4	Chipping of RCC structural elements like beams, columns, pedestals, slabs at all elevation from upto 15 m to 20 m ht required for facilitating mechanical erection works including scaffolding etc, all complete to the satisfaction of BHEL engineer.	1 CUM		
18.10	Fabrication including modification of already erected steel structures by cutting of members, adding extra members etc to facilitate mechanical erection works.	10 MT		
18.11	Laying buried pipe (approx dia 34 inch supplied by BHEL) including excavation in soil, backfilling etc all complete as per EIL specifications. Payment for excavation and backfilling shall be as per item no 1.0 and 2.0 above, respectively.	50 RM		
18.12	Laying buried pipe (approx dia 20 inch supplied by BHEL) including excavation in soil, backfilling etc all complete as per EIL specifications. Payment for excavation and backfilling shall be as per item no 1.0 and 2.0 above, respectively.	50 RM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
18.13	Providing and laying bitumen sand carpet 50 mm thk in two layers of 30 mm & 20 mm for tank pads including finishing to correct slopes, light rolling etc complete as per EIL specification no 6-65-1022 & directions of the engineer.	137	SQM	
<b>19.0</b>	<b>FENCING</b>			
19.1	Supplying and fixing chain link mesh conforming to IS : 2721, both ends bent type, mesh size 50 mm, dia of mesh wire 4 mm , with 2 nos line wire 4 mm dia including tying to RCC/ STEEL posts neatly with GI wires including cost of all materials etc complete. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	50	SQM	
19.2	Supplying and fixing barbed wire fencing of approved quality, including tying to RCC/ STEEL posts neatly with GI wires including cost of all materials etc.complete. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.	100	RM	
<b>20.0</b>	<b>DISMANTLING OF STRUCTURE</b>			
20.1	Dismantling and removal before modification of the following items in the existing structures with all labour, tools, necessary scaffolding, transport etc all complete including delivering as directed by engineer.			
20.1.1	Concrete (plain).	20	CUM	
20.1.2	Concrete (reinforced).	50	CUM	
20.1.3	Brickwork.	50	CUM	
20.1.4	Doors, windows, ventilators.	50	SQM	
20.1.5	75 thick premix carpet.	200	SQM	
20.1.6	Pipe hand rail.	50	RM	
20.1.7	GI sheetings.	50	SQM	
20.1.8	Structural steel.	20	MT	
20.1.9	WBM/ soling for roads or paving.	200	SQM	
20.1.10	Dismantling of false ceiling.	50	SQM	
20.1.11	Making openings in brick work and closing subsequently after installation of ducts etc, including necessary scaffolding for approach to higher elevations.	20	SQM	
<b>21.0</b>	<b>EARTHING/ GROUNDING</b>			
21.1	Drawing earthing strips and electrodes from BHEL stores (earthing strips free supply) laying, cutting, jointing, welding, painting the joints with cold galvanising paint after welding and testing ground conductors including cost of excavation up to 1 m, backfilling, galvanising paint, labour, material etc complete as per drawing and specifications. Contractor to supply all materials. Payment terms - a) On receipt of material at site -65%; b) On completion of erection & fixing -35%.			
21.1.1	Earthing strip 75 x 10 mm.	2000	RM	
21.1.2	Earth risers of 75 x 10 mm GI strip.	1000	RM	
21.1.3	Test pit electrode as per drg no GT67997 including construction of masonry chambers with MS covers filling with sand, charcoal and salt etc all complete as per drawings and specifications.	22	NO	
21.1.4	Pipe electrode as per draing no GT57191.	15	NO	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
<b>22.0</b>	<b>PILING</b>			
22.1	Mobilization of minimum of rigs to achieve and rigs with ancillary equipment including all equipments, complete to site for instillation of 18-20 nos 450 mm diameter driven cast-in-situ RCC piles per day and demobilization from site after completion of work as per specifications.	1	LS	
22.2	Construction of 450 mm nominal dia driven cast-in-situ piles as per IS 2911 (Part 1, Sec 1) by driving a suitable MS casing pipe (removable) having detachable MS shoe (flat/ conical) at the bottom and driving using atleast 5 MT hammer for the length as specified/for the desired set criteria (to be finalised by contractor & vetted by EIL/ BHEL during contract stage) so as to achieve the safe load carrying capacity as mentioned using using cement concrete (cement not less than 400 kg/ cum) of grade M30 as per specifications including cost of plant and equipment, labour, materials (except reinforcement which will be paid for under relevant item 5.1.2), including use of corrosion inhibiting admixture as per EIL specification no 6907-121-16-48-SP10 and providing plasticizer wherever required etc complete as per the drawing and specifications. Cement will be supplied by BHEL free of cost as per SCC.			
22.2.1	Pile of length 13.5 m below cut off level having a safe load carrying capacity of 70MT in vertical compression.	27108	RM	
22.2.2	Pile of length 10 m below cut off level having a safe load carrying capacity of 40MT in vertical compression.	2670	RM	
22.3.1	Extra over item no 22.2.1 for pile length more than the specified length of 13.5 m below cut off level.	2000	RM	
22.3.2	Extra over item no 22.2.2 for pile length more than the specified length of 10 m below cut off level.	267	RM	
22.4.1	Rebate on item no 22.2.1 for pile length less than the specified length of 13.5 m below cut off level.	1000	RM	
22.4.2	Rebate on item no 22.2.2 for pile length less than the specified length of 10 m below cut off level.	133	RM	
22.5	Conducting load tests on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/ accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid separately) etc all complete as per specification, drawing and as directed by engineer-in-charge for the following.			
22.5.1	450 mm dia- initial vertical 70 tones capacity pile.	1	NO	
22.5.2	450 mm dia- initial vertical 40 tones capacity pile.	1	NO	
22.6	Same as item no 22.5 but for routine vertical load test by direct loading.			
22.6.1	450 mm dia – 70 tones capacity pile.	30	NO	
22.6.2	450 mm dia – 40 tones capacity pile.	4	NO	
22.7	Same as item no 22.5 but for initial lateral load test by direct loading.			
22.7.1	450 mm dia – 5 tones capacity pile.	1	NO	
22.7.2	450 mm dia – 4 tones capacity pile.	1	NO	
22.7.3	450 mm dia – 5 tones capacity pile.	1	NO	
22.7.4	450 mm dia – 4 tones capacity pile.	1	NO	
22.8	Same as item no 22.5 but for routine lateral load test by direct loading.			
22.8.1	450 mm dia – 5 tones capacity pile.	15	NO	
22.8.2	450 mm dia – 4 tones capacity pile.	15	NO	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
22.8.3	450 mm dia – 5 tones capacity pile.	2	NO	
22.8.4	450 mm dia – 4 tones capacity pile.	2	NO	
22.9	Same as item no 22.5 but for initial pullout test by direct loading.			
22.9.1	450 mm dia – 20 tones capacity pile.	1	NO	
22.9.2	450 mm dia – 12 tones capacity pile.	1	NO	
22.10	Same as item no 22.5 but for routine pullout test by direct loading.			
22.10.1	450 mm dia – 20 tones capacity pile.	30	NO	
22.10.2	450 mm dia – 12 tones capacity pile.	4	NO	
22.11	Empty boring 450 mm dia in ordinary soil.	3413	RM	
22.12	Carrying out low strain pile integrity test as specified in accordance with IS 14893 on 450 mm diameter pile including all arrangements for test, equipments/ accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	10	NO	
23.0	<b>BOREWELL</b>			
23.1	Ground survey & selection of points for bore well to drill by VES (vertacal electrical sounding) method to assess potentiality & quantity/ availability of water etc with all labour material etc. complete. The spread of current shall be such that assessment up to 250 depth can be made. The bidder to suggest location of bore wells accordingly.	3	NO	
23.2	Labour for boring through any type of soil,rock & boulders for sinking tubewell of required dia. With top enlargement by rig boring system (either by DTH method or by rotary method or by combination rig as required) including hire charges and labour for rig machine tools and plants, staging force pumping set, and making arrangement for water required for boring etc complete and lowering of casing pipes, strainers blind pipes etc complete for 150 mm dia upto 50 mtrs, and 100 mm dia from 50 m to 250 m & beyond from GL. Depth of boring to be decided at the time of execution.			
23.2.1	For 150 mm dia bore hole for depth range 0 - 50 mtr from GL.	150	MTR	
23.2.2	For 100 mm dia bore hole for depth range 51- 100 mtr from GL.	150	MTR	
23.2.3	For 100 mm dia for bore hole depth range 101-150 mtr from GL.	150	MTR	
23.2.4	For 100 mm dia bore hole for depth range 151 - 200 mtr from GL.	150	MTR	
23.3	Geophysical investigation of the aquifer by electrologging system with all tools anfd plants, specialist manpower, etc as may be necessary to asses water level for deciding filter position and length of pipes etc including submiossion of reports.	3	NO	
23.4	Supplying, fitting, fixing 'ORIPLAST' make or equivalent PVC casing pipes as per IS 12818-1992/ASTM -D - 1785 and the following details (Dia & length of pipe to be decided at site during execution).			
23.4.1	150 NB having wall thickness of 11 mm (Min).	150	MTR	
23.4.2	100 NB having wall thickness of 8.6 mm (Min).	450	MTR	
23.5	Supplying, fitting, fixing of 'ORIPLAST' make or equivalent PVC ribbed screen (strainer) as per IS 12818-1992. 100 NB (wall thickness 5.0 mm (Min)).	90	MTR	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
23.6	Supplying fitting & fixing reducing socket 100 x 150 mm.	3 NO		
23.7	Providing & fixing bottom plug as required upto 100 mm (internal) dia fixed with PVC pipes with necessary fittings.	3 NO		
23.8	Supplying fitting & fixing 150 mm dia MS housing clamp.	3 SET		
23.9	Providing 150 mm centre Guide for positioning casing pipes.	24 SET		
23.10	Packing the annular space in the blank bore hole at the bottom, between the outside of the tubewell pipe strainers, casing pipes, and the borehole with pea size gravel of sizes varying between 2 mm to 5 mm.	450 MTR		
23.11	Packing the annular space between the outside of the 150 mm dia casing pipe and the bore hole with puddled clay balls.	60 MTR		
23.12	Washing and developing tubewell with air compressor of 150 PSI/ 300 CFM for with necessary arrangement for testing the yield in gallons per hour with V notch, including bacteria removal treatment as necessary till the water is silt & sand free.	3 NO		
23.13	Collecting sample of water for bacteriological and chemical test from any Govt approved laboratory. Documentary evidence from Govt approved laboratory regarding the water quality certifying that the water coming out of the borewell is safe for human consumption.	3 NO		
23.14	Supplying fitting & fixing MS cap at top 150 mm dia including 150 mm dia MS pipe of 1 mtr or less to be fixed with PVC pipes above ground level.	3 NO		
23.15	Supply & delivery of 2 HP KSB make or equivalent submersible pump motor set having duty point capacity of discharging 2 LPS of clear water at a total head of 40 mtr along with 40 mm dia GI heavy duty best quality column pipes of total length 40 mtr & lockable PVC submersible cable clamps of suitable no and 6 mm dia steel wire rope of suitable length for protecting device with necessary galvanised nuts, bolts, washers for all & control panel, complete and commissioning of pump set as directed by BHEL. Payment terms - a) On receipt of pump set at site - 80% alongwith TC and all purchase documents; b) On installation of pump and commissioning - 20%.	1 NO		
23.16	Supply & delivery of 1 HP KSB make or equivalent submersible pump motor set having duty point capacity of discharging 1 LPS of clear water at a total head of 40 mtr along with 25 mm dia GI heavy duty best quality column pipes of total length 40 mtrs & lockable PVC submersible cable clamps of suitable no and 6 mm dia steel wire rope of suitable length for protecting device with necessary galvanised nuts, bolts, washers for all & control panel, complete and commissioning of pump set as directed by BHEL. Payment terms - a) On receipt of pump set at site - 80% alongwith TC and all purchase documents; b) On installation of pump and commissioning - 20%.	1 NO		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
23.17	Supply & delivery of 4 to 5 HP KSB make or equivalent submersible pump motor set having duty point capacity of discharging 3.5 to 4 LPS of clear water at a total head of 40 mtr along with 40 mm dia GI heavy duty best quality column pipes of total length 40 to 60 mtr & lockable PVC submersible cable clamps of suitable no and 6 mm dia steel wire rope of suitable length for protecting device with necessary galvanised nuts, bolts, washers for all & control panel, complete and commissioning of pump set as directed by BHEL. Payment terms - a) On receipt of pump set at site - 80% alongwith TC and all purchase documents; b) On installation of pump and commissioning - 20%.	1 NO		
23.18	Supplying & delivery of 400 volts, 30 amps, ICTPN switch with MRC fuses of make Havels or equivalent and suitable starter L&T or equivalent, MS angle frame for mounting etc complete.	3 NO		
23.19	Installation of ICTPN switch & starter on MS angle frame on wall.	3 NO		
23.20	Drawing the double run submersible cable from the tubewell to the starter through suitable dia class - B medium GI protection tubes by supplying & laying the same on underground/ under floor/ wall, including laying, termination etc all complete.	3 RM		
23.21	Supplying & laying 10 sqm 1.1 KV grade 3.5 core PVC armoured Aluminium cable on wall by means of saddles from ICTPN switch to busbars to MCCB, NCCB to starter including all end termination and interconnections etc complete.	165 RM		
23.22	Earthing of the whole installation as per IE rule by supplying of earth electronics, SWG, GI wire earth bus and all other materials etc all complete.	3 NO		
23.23	Supplying fitting and fixing GI pipes of TATA medium or equivalent make with all necessary accessories, specials viz socket, bend, tee, union, cross, short piece etc fitted with holder bat clamps, including cutting pipes, making threads, fittings, fixing etc complete in all respects, including cost of all necessary fittings as required, jointing materials in position above ground 40 mm dia medium quality.	45 RM		
23.24	Supplying fitting and fixing GI pipes of TATA medium or equivalent make with all necessary accessories, specials viz socket, bend, tee, union, cross, short piece etc fitted with holder bat clamps, including cutting pipes, making threads, fittings, fixing etc complete in all respects, including cost of all necessary fittings as required, jointing materials in position above ground 25 mm dia medium quality.	50 RM		
23.25	Supplying, fitting, fixing 40 mm dia wheel valve, gun metal of approved brand and make tested to 21 kg/ sqcm as directed by BHEL.	3 NO		
23.26	Providing manpower, consumable, T&P etc for running and maintenance without supply of major equipment for all 3 tube wells with pump set.	3 MAN-MTH		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
23.27	Providing manpower, materials for construction of brick masonry pump house (inside area around 5 sqm) with brick foundation of 1 mtr depth from existing GL and plinth level of pump house shall be 600 mm from existing GL with 40 mm thick IPS flooring, 250 thick brick wall 2500 mm height from PL with plaster finish in inside & outside (12/15 mm thick) all brick work & plaster 1 cement:6 sand, with one MS angle (50 x 50 x 6) framed door with MS sheet of 3 mm thick with locking arrangement, 120 mm thick RCC roof concrete grade M25 with one 150 ISMB fixed on the ceiling of the pump house for maintenance purpose, inside 3 coat of whitewash, outside 3 coats of water proof cement paint finish, the pump house inside to be wired for fixing a CFL lamp of 18W with a switchboard. The necessary supply for this illumination can be tapped from the ICTPN switch supplied for the pump motor set. All cement, steel and other materials, labour etc required are to be supplied by bidder.	3	SET	
23.28	Sprinkling of water by water tanker, fitted with perforated GI pipe (portable tanker of min 3000 ltr cap) for roads, laydown area & misc area within plant boundary for suppression of dust & reduction of suspended particles arising out of day-to-day work under this contract as per instruction of BHEL. Water for this purpose shall be provided by BHEL free of cost & utilisation of tanker will be in terms tank-hr put in actual use for sprinkling.	8000	TANK-HR	
<b>24.0</b>	<b>ENABLING WORKS</b>			
24.1	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION & DRAWINGS.			
24.1.1	Clearing jungle including uprooting of rank vegetation, grass, brushwood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 200 m outside the periphery of the area cleared.	10000	SQM	
24.1.2	Excavation with lift up to 2.0 mtr including providing coffer dams, shoring, strutting, sheeting, bracing, draining and pumping out water to maintain reasonably dry working condition for all activities, clearing all grass, vegetation etc including trimming of excavation bottom, staking, levelling, grading etc of excavated materials, loading and unloading etc all complete as per specifications, drawings and instructions of the engineer, including a lead upto 300 mtr.			
24.1.2.1	In all types of soils including expansive soil, ash, morrum, laterite.	2537	CUM	
24.2	Filling using selected excavated materials in trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc in layers not exceeding 250 mm thickness including lead upto 1.0 km and all lifts and including loading from stock pile, carting, unloading, filling, watering and compacting/ramming each layer, all complete as per specifications, drawings & as directed by engineer to achieve the following densities.			
24.2.1	Ordinary manual compaction.	1510	CUM	
24.3	Sand filling (river sand) in plinth in layers not exceeding 15cm as directed by BHEL and consolidating same by thorough saturation with water and ramming complete including the cost of supply of sand (Payment to be made on measurement of finished qty).	507	CUM	
24.4	Single brick flat soling of picked jhama bricks including ramming and dressing bed to the proper level and filling the joints with powder earth or local sand including all materials, labour etc complete.	1972	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.5	Concrete of grade M7.5 as filling course at any level below foundations, drain, mass dumps, floors with 20 mm nominal size graded aggregate, materials, labour etc complete (Cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).	122 CUM		
24.6	Reinforced grade 1:1.5:3 with approved stone chips 20 mm down for floor, drain, RCC sleeper, RCC shelf etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).	306 CUM		
24.7	Reinforced/ plain cement concrete 1:2:4 with approved trap stone chips 20 mm down for floor, drain, septic tank etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).	60 CUM		
24.8	Damp proof course 40 mm thk 1:1.5:3 concrete (10mm down aggregate) with 2% of approved admixture of water proofing compound. Hot bitumen @ 1.7 kg/ sqm shall be applied before & after the DPC as per specification (cement shall be supplied by BHEL free of cost as per SCC).	81 SQM		
24.9	Hire and labour charges for 25 mm thick shuttering for bldg works for concrete foundations, floor/ roof slabs, beams, lintels, columns, chajja, fins, RCC sleeper (Trapizoidal shape - size 200 x 250 mm, length 500 mm) etc including fitting, fixing and striking out carefully after completion of work for below ground and upto 6m height from finished floor lvl.			
24.9.1	Without vertical props.	2512 SQM		
24.9.2	With vertical props at all levels.	586 SQM		
24.10	Supply, transporting, straightening, cutting, bending, placing at any level, binding in position mild steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc complete all as per specifications & drawings (Contractor will provide MS round from SAIL/ TISCO/ IISCO/ SRMB/ SHRICON/ SHYAM STEEL/ ELEGANT/CONCAST etc).	5 MT		
24.11	Supply, transporting, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc complete all as per specifications & drawings. (Vendor to provide TMT bar Fe-500 quality from SAIL/ TISCO/ IISCO/ SRMB/ SHRICON/ SHYAM STEEL etc).	32 MT		
24.12	Brick work in cement mortar (1 cement :6 sand) including cost of scaffolding and other incidental work etc completed (Cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).			
24.12.1	Below ground level.	106 CUM		
24.12.2	For superstructure upto EL (+) 5.5 m above PL.	180 CUM		
24.13	Half brick thick wall in cement mortar (1 cement :6 sand) including cost of scaffolding and other incidental work etc completed (Cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.13.1	Ordinary bricks/ fly ash bricks, class designation 50, below GL.	2700	SQM	
24.13.2	Ordinary bricks/ fly ash bricks, class designation 50, for superstructure upto EL(+) 5.5m above PL.	546	SQM	
24.14	Plaster to wall floor, slab soffits, fins, sills,septic tank etc. with sand cement mortar including rounding off or chenerfering corners as directed and racking out joints or roughening of concrete surface including chipping & application of cement slury where necessary etc complete as per drawing and direction of engineer (Cement - PPC/ OPC/ PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC/ ULTRATECH/ CETURY/ BIRLA/ LAFARGE/ INDIA CEMENT etc).			
24.14.1	With 1:6 cement mortar average 12.5 mm thick plaster below GL.	1500	SQM	
24.14.2	With 1:6 cement mortar average 12.5 mm thick plaster above GL.	350	SQM	
24.14.3	Outside plaster With 1:4 cement mortar average 15 mm thick above GL.	546	SQM	
24.15	Supply, fabrication, erection and painting of structural steel work in columns, beams, wind ties, RCC sleeper (Trapizoidal shape - size 200 x 250 mm, length 500 mm) etc with simple rolled structural members connected to one with another with brackets gusset cleats, bolts and nuts or welding etc as per design & direction complete including fabrication, hoisting & erection including all materials, labour etc complete with one coat of primer and two coats of synthetic enamel painting (Vendor to provide structural steel from JINDAL/ SAIL/ TISCO/ IISCO/ SRMB/ SHRICON/ SHYAM STEEL/ RINL etc with test certificate).	13	MT	
24.16	Supply, fabrication, erection and painting of steel work with tubular sections as per IS 1161 & 1239 for roof truss, purlin etc including all materials conforming to relevant IS codes, labour etc as per drawing, specification and direction of engineer with one coat of primer and two coats of synthetic enamel painting (Vendor to provide structural steel from JINDAL/ BANSAL /TATA/SHYAM STEEL/ RINL etc).	44	MT	
24.17	Providing & fixing corrugated galvanised iron sheet (CGI) 0.5mm thick for roofing of TATA/ SAIL/ ZINDAL/ BANSAL make including galvanised J or L hook, bolts and nuts 8 mm dia with bitumen washer 25 mm dia x 3 mm thick and 1.6 mm thick limpet washer complete with all labour, tools and plants. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	2340	SQM	
24.18	Providing and fixing galvanised iron ridge 0.5 mm thick and 230 mm lappings on both sides of TATA/ SAIL/ ZINDAL/ BANSAL make including fixing necessary screws, washers etc complete with all labour and tools and plants.	250	RM	
24.19	Providing, transporting, fixing of MS foundation/ anchor bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts, 25 mm dia, 950 mm long including furnishing of labour, materials, welding, etc all complete as per specification, drawing and instruction of the engineer (Vendor to supply all material).	1075	KG	
24.20	Supply, fitting and fixing of steel windows and ventilators conforming to IS:1038 - 1975 and manufactured from rolled steel heavy type sections conforming to IS:7452 - 1974 with non friction projecting type of hinges fitted with revetts or nut bolt system alongwith providing guard bar of 10 mm dia MS round 100 mm c/c horizontally welded with frame etc complete with one coat of red oxide paint and two coats of sythetic enamel as finished coat for steel windows and guard bar.	54	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.21	Supplying, fitting and fixing openable steel windows conforming to us IS:1036-1975 and IS:7452-1974 with non friction projecting type of hinges fitted with revetts or nut bolt system as directed, glazing cleats, lugs, two nos MS anodised peg stays and fastner for each window of size 900 x 1200 mm, 4 mm thick clear glass pane (each glass max size 450 x 450 mm), including fixing in position, fixing lugs in cement concrete 1:2:4 with stone chips 12.5 mm down cutting holes & mending goods damages, 10 mm dia MS round guard bar welded horizontally 125 c/c with each window etc complete with one coat of primer and two coats of water proofing cement paint in all respect.	5 SQM		
24.22	Applying one coat of cement primer of Seacem or equivalent on old or new plastered or concrete surface (old or new) to receive water proofing cement based paint including scraping, cleaning and preparing the surface throughly complete as per direction of the engineer-in-charge. After completion of painting rooms/ areas are to be handed over with neat and clean condition (outside wall).	387 SQM		
24.23	2 coats white washing with line including cleaning and smoothening surface thoroughly to give an even shade (inside wall).	600 SQM		
24.24	Supply and providing of 5 mtr wide x 5 mtr height gate (2 leafs 2.5 mtr each) made of 0.5 mm CGI sheet supported with 50 x 50 x 6 mm angle with two posts ISMB 150 & all fittings and fixtures like hinges, hatch boalts, locking arrangements etc complete as per drawing, specification and finished with one coats of red oxide primer followed by two coats (Berger) synthetic enamel as directed by site in-charge.	100 SQM		
24.25	Providing attach/ common toilet with following facilities as directed by BHEL: (a) Inside size of toilet 1.35 mtr x 1.35 mtr, (b) 5 mm thick white colour ceramic floor tile & inside walls tile upto 1.2 mtr height from finish floor, (c) one white vitreous wash basin 550 x 400 mm (Hindustan make or equivalent) with CI bracket, 15 mm CP brass pillar taps, 32 mm PVC waste water pipe, 32 mm CP brass waste, one CP towel rail 550 mm long, one best quality 550 x 400 mm mirror etc complete, (d) one European type WC Pan with seat and lid black colour, low level 10 lts capacity white PVC flushing cistern, etc (e) all inside pipe lines shall be 15 mm/ 20 mm PVC & concealed pipes, (f) main external supply water pipe line shall be 25 mm dia PVC of 6 M, complete in all respect including testing (g) Soil pipe shall be min 75 mm dia CI for below floor if any and outside shall be 100 mm PVC of supreme or equivalent. Masonry & plastering will be paid as per respective items. Price to be quoted as lumsom for each set of toilet.	1 SET		
24.26	Consolidation of subgrade/ existing surface with 12 T power roller or vibromax including making good the undulations with earth and rerolling the subgrade for road, hard surfacing of equipment store, assembly yard etc as directed by BHEL.	36000 SQM		
24.27	Providing and laying stone for making road with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 225mm, any depths etc in one layers approximately 250mm thickness after compaction, hand packing, filling in interstices with quarry spalls/moorum and providing a layer of 25mm thickness (consolidated) of moorum over layer of soling including watering, thoroughly compacting each layer with 12 tonne power roller or vibromax with minimum 6 passes etc all as per the direction of the Engineer and as per specification.	9000 CUM		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.28	Providing and Laying water bound macadam base for hard surfacing of open equipment store, preassembly yard etc in 2 layers of 75 mm. thickness with stone aggregate 90mm to 45mm size stone screening and binding material including screening, sorting, spreading and consolidation with power road roller 12T including carriage spreading and consolidation of blinding material moorum etc Including cost of material,labour,all complete.	5400 CUM		
24.29	Providing PVC pipe and fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for drinking water .			
24.29.1	For external 32mm dia.	20 MTR		
24.29.2	For external 40mm dia.	20 MTR		
24.29.3	For external 50mm dia.	30 MTR		
24.30	Providing PVC pipe with fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for external sewer line / waste water line connection upto open drain or manhole to manhole / septic tank / soak pit, as directed by BHEL.			
24.30.1	For external 75mm dia.	25 MTR		
24.30.2	For external 100mm dia.	30 MTR		
24.31	Supply, Fitting & fixing/laying of GI pipe as per IS 1239/IS 3589 with all necessary accessories i.e socket, bends, tees, unions, cross, elbow, nipple, long screw, reducing sockets, reducing tees, short pieces etc. complete for making common ring header for construction/drinking water including cost of all necessary jointing materials labour etc. all complete (payment will be made on the center line measurement of total pipeline including all specials).			
24.31.1	25 mm medium quality.	10 RM		
24.31.2	32 mm medium quality.	10 RM		
24.31.3	50 mm medium quality.	20 RM		
24.32	Providing best quality locally available stop valve, 40 mm dia.	2 NO		
24.33.1	Providing and fixing NP3 hume pipe for road crossing 300 mm dia with all labour, transport, jointing etc complete.	15 RM		
24.33.2	Providing and fixing NP3 hume pipe for road crossing 400 mm dia with all labour, transport, jointing etc complete.	20 RM		
24.34	Providing and fixing 2000 lts capacity PVC water tank of Syntex or equivalent quality for drinking water system with 40mm dia inlet and outlet valve with all labour and materials etc. complete.	1 NO		
24.35	Providing and fixing security kiosk size approx 2Mx2M in plan, front height 3M and back side height 2.9M, made of structural angle frame 65x65x6 all verticals and two horizontals with diagonals, 3 vertical sides and roof shall be covered with CGI sheet 0.5 MM thick with one each side opening 300x300MM for viewing, floor shall be made with 40 MM thick wooden planks (second class treated wood) at an height of 400MM above ground level, one wooden plank 2.0mx450mm size to be provided for sitting arrangement inside kiosk, all angles and planks top side shall be painted with one coat of primer and two coats of synthetic enamel paint finish including all labours and materials etc complete.	3 SET		

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.36	1.2M high fencing with MS angle post of size 40X40X5 mm 1.8 M long post placed every 3M centre to centre embedded in concrete blocks(1:2:4), every 15th post, last but one end post corner post shall be strutted on both sides and post on one side only and provided with 8 horizontal lines and two diagonal sinterwoven with horizontal wires, of barbed wire 9.38 kg per 100 metres (min) between two post fitted and fixed with GI staples turn buckles, angle post shall be embedded in plain cement concrete(1:2:4)size 300x300x600mm deep below ground etc complete including excavation, backfilling, concreting, one coat of primer, two coat of synthetic enamel paint finish. Contractor will supply all materials including cement , structural steel, paint, labour etc complete.			
24.36.1	For structural angle post with two coats of bitumen based protective coating etc complete.	544	KG	
24.36.2	Supplying, fitting, fixing galvanised chain link fencing of approved quality 50mmx50mmx8 g, by means of galvanised `C` clips, with fixing of galvinised special clips etc. Contractor to supply all materials. Angle post to be paid separately as per item no 25.1. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	467	SQM	
24.36.3	For GI barbed with all fixing etc complete. Contractor to supply all materials.	375	KG	
<b>TOTAL</b>				
<b>25.0</b>	<b>GENERAL (Quote % below or at par or above the Scheduled of Rates of DSR-2007)</b>			
25.1	Rate for complete item		%	Below/ At par/ Below
25.2	Rate for supply of material		%	Below/ At par/ Below
25.3	Rate for supply of labour		%	Below/ At par/ Below

**VOLUME-III A  
PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-3 - UTILITY BOILER (2 NOS) PRICE**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Erection, testing, commissioning, trial run, handing over etc of 2 nos 80 TPH utility boiler with its associated auxiliaries, piping etc, covering trial run and PG test as detailed in specification.			
1.1	Pressure parts.	632	MT	
1.2	Non-pressure parts.	848	MT	
1.3	Chimney.	350	MT	
1.4	Piping.	200	MT	
1.5	Fuel firing syste.	65	MT	
1.6	Lining & insulation.	140	MT	
<b>TOTAL (UTILITY BOILER)</b>				

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-4 - HRSG (2 NOS) PRICE**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Erection, testing and commissioning of 2 x 80 MW utility boiler with its associated auxiliaries, piping etc, covering trial run and PG test as detailed in specification.			
1.1	Pressure parts.	584	MT	
1.2	Non-pressure parts.	854	MT	
1.3	Chimney.	340	MT	
1.4	Piping.	60	MT	
1.5	Lining and insulation.	140	MT	
<b>TOTAL (HRSG)</b>				

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-5 - GTG (2 NOS) PRICE**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Erection, testing and commissioning of 2 x 20 MW gas turbine and generator (Frame-V), with its associated auxiliaries, integral piping, but excluding external piping) etc covering trial run/ reliability run and PG test/ field performance guarantee test as detailed in specification.	2 SET		

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-6 - STG (1 NO) PRICE**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Erection, testing and commissioning of 1x13 MW steam turbine generator set with its associated auxiliaries, integral piping, but excluding external piping etc, covering trial run/ reliability run and PG test/ field performance guarantee test as detailed in specification.	1	SET	

**VOLUME-III  
PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle

Power Plant at BCPL, Lepetkata, Assam

TENDER NO - PSER:SCT:LPT-A1114:10

**SCH-7 - ELECTRICAL AND C&I PRICE**

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
1.0	HT PANEL, TRANSFORMER, BUS DUCT					
1.1	33 KV Isolating breakers (2 Panels).	1500	1300x4000x 500	2	NO	
1.2	6.6 KV switch board (Total of 35 panels).	1500	820x2650x2700	1	NO	
1.3	11/34.5 KV, 20 MVA, ONAN STG generator transformer.	62000, 18000 ltr	8500x6800x7000	1	NO	
1.4	11/34.5 KV, 31.5/35 MVA, ONAN/ONAF GTG 1 & 2 generator transformer.	72000, 21000 ltr	11000x6200x6700	1	NO	
1.5	33/6.6 KV, 15/18.55 MVA, ONAN/ONAF power transformer 1 & 2.	56000, 16000 ltr	8500x9000x6500	2	NO	
1.6	6.6/ 0.433 KV, 2.0 MVA, ONAN.	8000, 1400 ltr	3000x3500x3300	4	NO	
1.7	6.6/0.433 KV, 2.5 MVA, ONAN.	8000, 1400 ltr	3000x3500x3300	2		
1.8	6.6 KV NGR for SAT & emergency SAT.	600	1500x1000x1500	2	NO	
1.9	2000A, 6.6 KV, 50 HZ, 40 KA/ 1 SEC, CR enclosure, TP, phase segregated bus duct.	110 kg/mtr	5000x1200x800 (indoor) 5000x1200x800 (outdoor)	2		
1.10	3200 A, 415 V, 50 HZ, CR enclosure, TPN, non-phase segregated bus duct.	100 kg/mtr	5000x1200x800 (indoor), 5000x1200x800 (outdoor)	4	NO	
1.11	4000 A, 415 V, 50 HZ, CR enclosure, TPN, non phase segregated bus duct.	100 kg/mtr	5000x1200x800 (indoor), 5000x1200x800 (outdoor)	2		
1.12	415/415 V, 250 KVA lighting transformers.	800	1100x600x1500	2	BOARD	
1.13	415/415 V, 150 KVA emergency lighting transformer.	500	1000x600x1200	2	BOARD	

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
2.0	LT SWITCH GEAR					
2.1	415 V PMCC 1.	12000	14400x1754x2430	1 BOARD		
2.2	415 V PMCC 2.	13000	16000x1754x2430	1 BOARD		
2.3	415V EPMCC.	16000	20000x1754x2430	1 BOARD		
2.4	415 V BOP MCC 1 & 2.	7000	16000x1350x2430	2 BOARD		
2.5	415 V GT MCC 1 & 2.	6000	13000x1350x2430	2 BOARD		
2.6	415 V VENT MCC 1.	7000	15200x1350x2430	1 BOARD		
2.7	415 V ASB.	5500	12000x1350x2430	1 BOARD		
2.8	415 V MLDB.	4000	10000x650x2500	1 BOARD		
2.9	415 V AC ELDB.	4000	9600x650x2430	1 BOARD		
2.10	110 V STATION DCDB.	3500	8000x650x2430	2 BOARD		
2.11	110 V DC ELDB.	4800	4000x650x2430	4		
2.12	125 V GT DCDB 1 & 2.	3000	12000x650x2430	2 SET		
2.13	110 V UPS DB.	4500	7200x650x2430	1 SET		
2.14	STG MCC 1 & 2.	4500	14200x650x2430	2 SET		
2.15	AC SYSTEM MCC.	6000	7200x1350x2430	1 SET		
2.16	415 V BOILER MCC 1 & 2.	5500	7200x1350x2430	2 SET		
2.17	HRSG MCC 1 & 2.	6000	7200x1350x2430	2 SET		
3.0	HT CABLE KITS					
3.1	1C x 630 sqmm, 11 KV copper cable.	5	--	40 SET		
3.2	1C x 630 sqmm, Al cable.	3.5	--	60		
3.3	3C x 185 sqmm, 6.6 KV Al cable.	3	--	50 NO		
3.4	3C x 300 sqmm, Al 6.6 KV cable.	4	--	20 NO		
4.0	220 V station battery chargers (Total 2 panels).	2000	4500x830x2000	2 SET		
5.0	220 V station batteries (1900 AH).	217 kg per cell	11000x1250x2500	2 SET		
6.0	SCAP panels.	9600	14400x1250x2200	1 NO		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
7.0	125 V GT DC system package.	4000kg	2500x830x2000 (Charger) 4370x830x2500 (Batteries)	2 SET		
8.0	Rubber mat 2, 2.5 mm & 3 mm thick.	5	1M x 2M	500 NO		
9.0	HT POWER CABLE					
9.1	1C x 500 sqmm, 33 KV (E) armored, Cu conductor, XLPE insulated FRLS outer-sheathed cable.	--	--	3000 MTR		
9.2	1C x 630 sqmm, 11 KV (UE) armored, Cu conductor, XLPE insulated FRLS outer-sheathed cable.	--	--	2000 MTR		
9.3	3C x 300 sqmm, 6.6 KV (UE) armored, Al conductor, XLPE insulated FRLS outer-sheathed cable.	--	--	1000 MTR		
9.4	3C x 185 sqmm, 6.6 KV (UE) armored, Al conductor, XLPE insulated FRLS outer-sheathed cable.	--	--	2100 MTR		
10.0	LT POWER CABLE					
10.1	3.5C x 300 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	2000 MTR		
10.2	3.5C x 185 sqmm, 1.1 KV armored Al conductor PVC Insulated, FRLS outer sheathed.	--	--	4000 MTR		
10.3	3C x 95 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	5000 MTR		
10.4	3C x 70 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	5000 MTR		
10.5	3C x 50 sqmm, 1.1 KV armored Al conductor PVC Insulated, FRLS outer sheathed.	--	--	4000 MTR		
10.6	3.5C x 95 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	4000 MTR		
10.7	3C x 4 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	12000 MTR		
10.8	3C x 16 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	4000 MTR		
10.9	3C x 10 sqmm, 1.1 KV armored Cu conductor PVC Insulated, FRLS outer sheathed.	--	--	10000 MTR		
10.10	1C x 240 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	3000 MTR		
10.11	3C x 120 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	3000 MTR		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
10.12	1C x 10 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	3000 MTR		
10.13	3C x 35 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	5000 MTR		
10.14	4C x 16 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	10000 MTR		
10.15	1C x 150 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	2000 MTR		
10.16	1C x 35 sqmm, 1.1 KV armored Cu conductor PVC insulated, FRLS outer sheathed.	--	--	2000 MTR		
10.17	3C x 185 sqmm, 1.1 KV armored Al conductor PVC insulated, FRLS outer sheathed.	--	--	3000 MTR		
11.0	CONTROL CABLE					
11.1	3C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	30000 MTR		
11.2	5C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	20000 MTR		
11.3	7C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	5000 MTR		
11.4	10C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	45000 MTR		
11.5	12C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	3000 MTR		
11.6	16C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	4000 MTR		
11.7	19C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	16000 MTR		
11.8	24C x 2.5 sqmm, 1.1 KV PVC insulated FRLS outer sheathed.	--	--	2000 MTR		
12.0	CABLE GLANDS AND LUGS (SUPPLY & INSTALLATION)					
12.1	Cable gland: 7-9.5 mm.	--	--	450 NO		
12.2	Cable gland: 13-18 mm.	--	--	220 NO		
12.3	Cable gland: 18.5-20 mm.	--	--	150 NO		
12.4	Cable gland: 20.5-23 mm.	--	--	170 NO		
12.5	Cable gland: 23.5-26 mm.	--	--	90 NO		
12.6	Cable gland: 26.5-30 mm.	--	--	120 NO		
12.7	Cable gland: 30.5-33 mm.	--	--	50 NO		
12.8	Cable gland: 33.5-37 mm.	--	--	70 NO		
12.9	Cable gland: 41.5-46 mm.	--	--	25 NO		
12.10	Cable gland: 46.5-52 mm.	--	--	40 NO		
12.11	Cable gland: 52.5-61 mm.	--	--	20 NO		
12.12	Cable lug: 4 sqmm.	--	--	1 LOT		
12.13	Cable lug: 10 sqmm.	--	--	1 LOT		
12.14	Cable lug: 16 sqmm.	--	--	1 LOT		
12.15	Cable lug: 35 sqmm.	--	--	1 LOT		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
12.16	Cable lug: 50 sqmm.	--	--	1 LOT		
12.17	Cable lug: 70 sqmm.	--	--	1 LOT		
12.18	Cable lug: 95 sqmm.	--	--	1 LOT		
12.19	Cable lug: 120 sqmm.	--	--	1 LOT		
12.20	Cable lug: 150 sqmm.	--	--	1 LOT		
12.21	Cable lug: 185 sqmm.	--	--	1 LOT		
12.22	Cable lug: 240 sqmm.	--	--	1 LOT		
13.0	PRE FABRICATED CABLE TRAYS (GI) AND ACCESSORIES					
13.1	Ladder type cable tray, W=750 mm.	50	--	2000 NO		
13.2	Ladder type cable tray, W=600 mm.	40	--	2500 NO		
13.3	Ladder type cable tray, W=300 mm	30	--	750 NO		
13.4	Cover along with accessories for 300 mm width ladder type cable trays.	10	--	200 NO		
13.5	Cover along with accessories for 600 mm width ladder type cable trays.	13	--	800 NO		
13.6	Vertical down of 600 mm bending radius with coupler plates for ladder type cable tray, w=300 mm.	40	--	150 NO		
13.7	Vertical up of 600 mm bending radius with coupler plates for ladder type cable tray, w=300 mm.	35	--	150 NO		
13.8	Horizontal bend of 600 mm bending radius with coupler plates for ladder type cable tray, w=300 mm.	40	--	160 NO		
13.9	Horizontal tee of 1250 mm bending radius with coupler plates for Ladder Type Cable tray, w=750 mm.	60	--	150 NO		
13.10	Horizontal bend of 1250mm bending radius with coupler plates for Ladder Type Cable tray, w=750mm	50	--	80 NO		
13.11	Vertical up of 1250 mm bending radius with coupler plates for ladder type cable tray, w=750 mm.	60	--	60 NO		
13.12	Vertical down of 1250 mm bending radius with coupler plates for ladder type cable tray, w=750 mm.	--	--	60 NO		
13.13	Horizontal cross of 1250 mm bending radius with coupler plates for ladder type cable tray, w=750 mm.	--	--	60 NO		
13.14	750 mm to 600 mm right hand reducer along with CP for ladder type.	--	--	50 NO		
13.15	750 mm to 600 mm left hand reducer along with CP for ladder type.	20	--	50 NO		
13.16	Cover along with accessories for 750 mm width ladder type cable tray.	15	--	250 NO		
13.17	600 mm to 300 mm left hand reducer & with coupler plates for LDR type (channel) cable trays.	20	--	50 NO		
13.18	600 mm to 300 mm right hand reducer & with coupler plates for LDR type (channel) cable trays.	20	--	50 NO		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
13.19	HOR tee of 900 mm bending rad & coupler plates for 600 mm width LDR type (channel) cable tray.	40	--	100 NO		
13.20	HOR bend of 900 mm bending rad & coupler plate for 600 mm width LDR type (channel) cable tray.	40	--	160 NO		
13.21	VER up of 900 mm bending rad & coupler plates for 600 mm width LDR type (channel) cable tray.	50	--	150 NO		
13.22	VER down of 900 mm bending rad & coupler plates for 600 mm width LDR type (channel) cable tray2.	55	--	150 NO		
13.23	HOR cross of 900 mm bending rad & coupler plate for 600 mm width LDR type (channel) cable tray.	40	--	60 NO		
13.24	600 mm (W) perforated type cable tray.	50	--	1500 NO		
13.25	300 mm(W) perforated type cable tray.	30	--	800 NO		
13.26	150 mm (W) perforated type cable tray.	35	--	1850 NO		
13.27	50 mm(W) perforated type cable tray.	30	--	1500 NO		
13.28	Cover for perforated type cable tray, W=600 mm.	30	--	600 NO		
13.29	Cover for perforated type cable tray, W=300 mm.	25	--	800 NO		
13.30	Cover for perforated type cable tray, W=150 mm.	25	--	1850 NO		
13.31	Cover for perforated type cable tray, W=50 mm.	20	--	1500 NO		
13.32	HOR tee of 900 mm bending rad & coupler plates for 600 mm width perforated type.	40	--	50 NO		
13.33	HOR bend of 900 mm bending rad & coupler plate for 600 mm width perforated type.	35	--	80 NO		
13.34	Vertical up of 900 mm bending radius with coupler plates for perforated type cable tray, w=600 mm.	30	--	50 NO		
13.35	Vertical down of 900 mm bending radius with coupler plates for perforated type cable tray, w=600 mm.	40	--	50 NO		
13.36	600 mm to 300 mm left hand reducer & with coupler plates for perforated type.	25	--	40 NO		
13.37	600 mm to 300 mm right hand reducer & with coupler plates for perforated type.	25	--	40 NO		
13.38	HOR bend of 600 mm bending rad & coupler plate for 300 mm width perforated type.	30	--	50 NO		
13.39	Vertical up of 600 mm bending radius with coupler plates for perforated type cable tray, w=300 mm.	30	--	50 NO		
13.40	Vertical down of 600 mm bending radius with coupler plates for perforated type cable tray, w=300 mm.	40	--	50 NO		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
13.41	300 mm to 150m m right hand reducer & with coupler plates for perforated type.	25	--	50 NO		
13.42	300 mm to 150 mm left hand reducer & with coupler plates for perforated type.	25	--	50 NO		
14.0	<b>CABLE DUCTS AND ACCESSORIES</b>					
14.1	800 mm width, 300 mm height straight run duct with accessories including Joining plate-CAT 1.	--	--	225 NO		
14.2	800 mm width, 300 mm height duct equal tee (Type-A) with accessories including joining plate-CAT 1.	--	--	10 NO		
14.3	800 mm width, 300 mm height duct equal tee (Type-B) with accessories including Joining plate-CAT-1.	--	--	10 NO		
14.4	800 mm width, 300 mm height duct elbow (horizontal plane) - (Type-A) with accessories including Joining plate-CAT 1.	--	--	10 NO		
14.5	800 mm width, 300 mm height duct elbow (horizontal plane) - (Type-B) with accessories including Joining plate-CAT 1.	--	--	10 NO		
14.6	800 mm width, 300 mm height duct elbow (vertical plane) (Type-A) with accessories including Joining plate-CAT-1.	--	--	10 NO		
14.7	800 mm width, 300 mm height duct elbow (vertical plane) (Type-B) with accessories including Joining plate-CAT-1.	--	--	10 NO		
14.8	800 mm width to 400 mm width, 200mm height duct width reducer –'M' path straight (Type-A) with accessories including Joining plate-CAT 1.	--	--	10 NO		
14.9	End cover for 800 mm width, 300mm height cable duct.	--	--	10 NO		
14.10	400 mm width, 200 mm height straight run duct with accessories including Joining plate-CAT 1.	--	--	500 NO		
14.11	400 mm width, 200 mm height duct elbow (horizontal plane) (Type-A) with accessories including joining plate-CAT 1.	--	--	20 NO		
14.12	400 mm width, 200 mm height duct elbow (horizontal plane) (Type-B) with accessories including Joining plate-CAT 2.	--	--	20 NO		
14.13	400 mm width, 200 mm height duct elbow (vertical plane) (Type-A) with accessories including Joining plate-CAT-1.	--	--	20 NO		
14.14	400 mm width, 200 mm height duct elbow (vertical plane) (Type-B) with accessories including Joining plate-CAT-1.	--	--	20 NO		
14.15	End cover for 400 mm width, 200 mm height cable duct.	--	--	20 NO		
<b>TYPICAL CABLE DUCT ASSEMBLY DETAILS</b>						
CLAMP FOR FIXING DUCT COVER PROVIDED AT EVERY 1200 mm DISTANCE				NO END EXTENDER AT THIS END. THIS RESTS BELOW THE END EXTENDER OF THE ADJECENT COVER		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
15.0	STRUCTURAL STEELS					
15.1	ISMC 100 x 50 x 6 mm channels	--	--	70 MT		
15.2	ISA 65 x 65 x 6 mm runner angles.	--	--	50 MT		
15.3	ISA 50 x 50 x 6 mm runner angles.	--	--	20 MT		
16.0	PLANT EARTHING MATERIALS					
16.1	65mm dia pipe electrodes,3 M long GI .	--	--	100 NO		
16.2	75 x 10 mm GI strips.	--	--	9,000 MTR		
16.3	50 x 6 mm GI strip.	--	--	4000 MTR		
16.4	35 x 6 mm GI strips.	--	--	4000 MTR		
16.5	8 SWG GI wire, solid.	--	--	5400 MTR		
16.6	16 SWG GI wire, solid.	--	--	5000 MTR		
16.7	3/8" dia GI fine wire rope.	--	--	4000 MTR		
16.8	5/8" dia GI fine wire rope.	--	--	4000 MTR		
16.9	65 mm dia pipe electrodes,3 M long copper.	--	--	60 NO		
17.0	PLANT LIGHTNING PROTECTION					
17.1	65 mm dia pipe electrodes, 3 M long GI.	--	--	30 NO		
17.2	75 x 10 mm GI strips.	--	--	1000 MTR		
17.3	50 x 6 mm GI strip.	--	--	1000 MTR		
17.4	35 x 6 mm GI strips.	--	--	1000 MTR		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
17.5	Vertical air termination rod.	--	--	20	NO	
18.0	CONVENTIONAL FIRE PROOF SEALING MATERIALS					
18.1	Fire break coatings for HT/LT power cables.	--	--	500	SQM	
18.2	Fire proof materials for sealing of wall / floor openings and panel bottom.	--	--	1500	SQM	
18.3	Fire proof materials required for sealing of cable entry thru conduits/ trenches.	--	--	300	SQM	
19.0	MCT (MULTI CABLE TRANSIT) SYSTEM					
19.1	MCT frame.	--	--	26	NO	
19.2	MCT blocks					
19.2.1	RM 30 (10-25 sqmm outer dia cables).	--	--	6100	NO	
19.2.2	RM 40 (21.5-34.5 sqmm outer dia cables).	--	--	1050	NO	
19.2.3	RM 90 (48-71 sqmm outer dia cables).	--	--	20	NO	
20.0	ECS PACKAGE					
20.1	I/O & RTDs panels.	1000	1000x1000x2500	30	NO	
20.2	Transducer panels	1000	1000x1000x2500	4	NO	
20.3	RTUs, data concentrators, load managers & power distribution boards .	1000	1000x1000x2500	45	NO	
20.4	MMI stations, furnitures.	200	2000x1500x1500	4	NO	
20.5	Printers and furnitures.	50	2000x1500x1500	3	NO	
21.0	C&I PACKAGE					
21.1	Flow nozzles.	--	--	40	NO	
21.2	Orifice plate assemblies.	--	--	30	NO	
21.3	Mass flow meter/ vortex flow meters.	--	--	5	NO	
21.4	Differential pressure transmitters.	--	--	120	NO	
21.5	Control valve with HART positioners.	--	--	60	NO	
21.6	Level gauges.	--	--	10	NO	
21.7	PRDS and control valves.	--	--	5	NO	
21.8	Pressure gauges.	--	--	150	NO	
21.9	Diff pressure gauges.	--	--	15	NO	
21.10	Pressure safety valve & Silencers.	--	--	40	NO	
21.11	Pressure transmitters.	--	--	120	NO	
21.12	Temperature element (Thermo couple).	--	--	45	NO	
21.13	Temperature element (RTD).	--	--	40	NO	
21.14	Temperature gauges.	--	--	140	NO	
21.15	Temperature safety valves.	--	--	10	NO	
21.16	Temperature transmitters.	--	--	35	NO	
21.17	On-off control valves.	--	--	20	NO	
21.18	Hand held communicator.	--	--	5	NO	

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
21.19	Thermowells.	--	--	140 NO		
21.20	Radar level instruments/ level transmitters.	--	--	15 NO		
21.21	Annubar.	--	--	5 NO		
21.22	Rotameters.	--	--	4 NO		
21.23	Self actuated valves.	--	--	8 NO		
21.24	Instrumentation items for on skid package and their other auxiliary packages.	--	--	1 LOT		
21.25	On skid instruments for sub packages like instrument air system; gas conditioning system; various storage and drain tanks etc.	--	--	1 LOT		
21.26	Gauge boards on equipment skids.	--	--	1 LOT		
21.27	Needle valve.	--	--	200 NO		
21.28	Gate valves.	--	--	500 NO		
21.29	Globe valves.	--	--	2000 NO		
21.30	Ball valves.	--	--	1200 NO		
21.31	Tube, pipe fittings.	--	--	1 LOT		
21.32	Pipe fittings, nipples of alloy steel, carbon steel, SS.	--	--	1 LOT		
21.33	Condensing chambers and syphons.	--	--	1 LOT		
21.34	Air filter regulators.	--	--	1 LOT		
21.35	Impulse pipes & tubes for impulse connection for instrument hookup.					
21.35.1	SS tube 12.7 X 2.1 mm.	--	--	2200 MTR		
21.35.2	SS pipe 21.3 X 3.7 mm.	--	--	5000 MTR		
21.35.3	SS pipe 33.4 X 3.4 mm.	--	--	2000 MTR		
21.35.4	SS tube 6 mm.	--	--	2000 MTR		
21.35.5	CS pipe 21.3 X 4.74 mm.	--	--	2500 MTR		
21.35.6	As pipe 21.3 X 4.74 mm.	--	--	2500 MTR		
21.35.7	SS pipes 1" for instrument air.	--	--	2000 MTR		
21.36	AC UPS system consisting of battery banks, inverter & charger panels - 3 nos, distribution boards, capacity = 2 x 100 KVA approx.	--	--	1 SET		

SL NO	DESCRIPTION	UNIT WEIGHT (KG)	UNIT DIMENSION (mm)	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
21.37	Charger panel.	--	8000x1200x2200	2 SET		
21.38	Battery.	--	4000x4000x1600	4 SET		
21.39	Vibration monitoring system, located at rack room. Scope includes , E&C of operator consoles printers marshalling panels, I/O & system panels- 1 no networking cables, inter panel cables hardwired consoles etc mounting of probes in filed, furniture, cCabling from field to panel in control room & to other panels.	--	1000x800x2200	2 SET		
21.40	BOP PLC system (located at rack room & operator room). Scope includes E&C of operator consoles printers marshalling panels, I/O & system panels networking cables, inter panel cables hardwired consoles etc furniture - cabling from field to panel in control room & to other panels.	--	1000x800x2200	60 NO		
21.41	CCTV system (located at Rack room & operator room). Scope includes E&C of CCTV cameras - 6 nos CCTV consoles/ monitors printers system panels networking cables, furniture cabling from field to panel in control room & to other panels.	--	800x800x2200	1 SET		
21.42	Cables.					
21.42.1	1P x 1.5 sqmm, (Individual & overall shielded) Intrinsic safe.	--	--	8000 MTR		
21.42.2	1P x 1.5 sqmm, (Individual & overall shielded) non-intrinsic safe.	--	--	25000 MTR		
21.42.3	6P x 1.5 sqmm (Individual & overall shielded) Intrinsic safe.	--	--	10000 MTR		
21.42.4	6P x 1.5 sqmm (Individual & overall shielded) non intrinsic safe.	--	--	40000 MTR		
21.42.5	12P x 1.5 sqmm (Individual & overall shielded) intrinsic safe.	--	--	20000 MTR		
21.42.6	12P x 1.5 sqmm (Individual & overall shielded) non intrinsic safe.	--	--	60000 MTR		
21.42.7	1T x 1.5 sqmm, individual & overall shielded triad cable.	--	--	3500 MTR		
21.42.8	8T x 1.5 sqmm individual & overall shielded triad cable.	--	--	12000 MTR		
21.42.9	1P x 16 AWG Cr-Al extention cable.	--	--	2000 MTR		
21.42.10	12P x 20 AWG Cr-Al extension cable.	--	--	14000 MTR		
21.42.11	Optical fiber cables.	--	--	5000 MTR		
21.42.12	Cables for CCTV system.					
21.42.12.1	3C x 1.5 mm control cable (control & video signal).	--	--	3000 MTR		
21.42.12.2	3 C x 1.5 sqmm power cable.	--	--	4000 MTR		
21.42.12.3	6 P x 1.5 sqmm.	--	--	4000 MTR		
21.42.13	Explosion/ weather proof junction boxes.	--	--	300 NO		
21.42.14	Instruments & Junction box canopies.	--	--	400 NO		
<b>TOTAL</b>						
<b>NOTE</b>						
1.0	Unless specifically mentioned above against any item, scope of bidder is limited to erection/ installation, testing, commissioning etc of items.					

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-8 - BOP PRICE**

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
1.0	Supply and erection of air conditioning ducts for control room, insulation of AC ducts, split ACs for rooms as per PEMC-02460, Rev-01.			
1.1	18G duct Gr 120 along with all necessary support and bolting structure.	750	SQM	
1.2	20G duct Gr 120 along with all necessary support and bolting structure.	1500	SQM	
1.3	22G duct Gr 120 along with all necessary support and bolting structure.	900	SQM	
1.4	24G duct Gr 120 along with all necessary support and bolting structure.	1450	SQM	
1.5	Supply and erection of the resin bonded fibre glass of density 24 kg/ M3, thickness 50 mm along with all fixing hardwares for the thermal insulation of the AC ducts as above. The thermal insulation shall be supplied in slab/ roll form and shall be as per IS:8183.	4800	SQM	
1.6	Supply and erection of 3 TR air cooled split air conditioners along with suitable voltage stabiliser.	5	NO	
1.7	Supply and erection of 5.5 TR air cooled split air conditioners along with suitable voltage stabiliser.	2	NO	
2.0	Passenger lift for switch gear cum control building as per PEMC 02465, Rev-01.	1	SET	
<b>TOTAL</b>				
<b>NOTE</b>				
1.0	Bidder shall associate manufacturer/ agencies for aforesaid BOP systems with BHEL approved list of agencies (specified in the specification).			

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

**Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam**

**TENDER NO - PSER:SCT:LPT-A1114:10**

**SCH-9 - CONSTRUCTION POWER PRICE**

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
<b>1.0</b>	<b>SUPPLY</b>			
1.1	7/4 mm stay set with turn buckle/ bow tightener/ bow set with turn buckles: Supply of stay set complete galvanised with 19/20 mm dia x 1.8 meter long stay rod, anchor plate size 45 cm x 45 cm x 7.5 mm thick, thimble, stary clamp, turn buckle (20 mm x 60 mm)/ bow tightener, 7/4.00 mm dia GI stary wire and strain insulator, clamps, hardware etc, as required.	10	SET	
1.2	Supplying of 15 mm G.I. Pipe (Gr.B) 3 meter long for protection of earth wire.	100	MTR	
1.3	Supply of GI strip size 50 x 6 mm for earthing.	250	MTR	
1.4	Supply of GI strip size 25 x 3 mm mm for earthing.	250	MTR	
1.5	Supply of earth electrode 40 mm dia. 3 Mtr long GI pipe (grade -B).	25	NO	
1.6	Supply earth wire size 6.09 mm. Dia. GI wire.	250	MTR	
1.7	Supply of GI Earth Spike 1822 x 20 mm.	10	NO	
1.8	Supply of Overhead ACSR conductor 'Rabbit' as per specification [6/3.35 mm Al + 1/3.35 mm Steel].	2250	MTR	
1.9	Supply of CC spun pipe of 300 mm dia.	5	MTR	
1.10	Supply of GI pipe (Gr.B) 50 mm dia.	10	MTR	
1.11	Supply of GI pipe (Gr.B) 75 mm dia.	10	MTR	
1.12	Supply of HT danger notice plate of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	50	NO	
1.13	Supply of Structural steel [IS] for fabrication.	2.5	MT	
<b>2.0</b>	<b>SERVICE (ETC)</b>			
2.1	Erection of stay set complete with turn buckle, stay rod, anchor plate, thimble, stary clamp, bow tightener, stary wire and strain insulator, clamps , hardware etc. as required in cement concrete 1:3:6 (1 cement : 3 Coarse sand ; 6 Graded stone aggregate 40 mm nominal size ) in foundation including excavation in all type of soil and back filling etc. as required including supply of cement & all other civil materials.	10	SET	
2.2	Installation of 15 mm G.I. Pipe 3 meter long for protection of earth wire lead to earth electrode with suitable clamping arrangement and hardware.	60	MTR	
2.3	Installation [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] of GI strip size 50 x 6 mm for interconnecting the earth pits on sub station, transformer netrual earthing etc.	150	MTR	

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
2.4	Installation of GI strip size 25 x 3 mm [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] for earthing AB switch, DO fuse assembly etc,	150	MTR	
2.5	Supply & making the earth pit as per IS 3043 including earth/ masonry work, (size of electrode 50 mm dia. G.I. Pipe, 3 Meter long, class 'B' ). Pit shall be filled with alternative layer of charcoal & salt. GI Pipe shall be with funnel with wire mesh for watering. Masonry block C.I.cover complete as per IS. All the earth pits are to be inter connected with GI strip of size 50x6 mm including all the material arranged by the contractor.	6	NO	
2.6	Installation of earth electrode 40 mm dia. 3 metre long GI pipe directly driven into earth including earth excavation if required..	6	NO	
2.7	Installation of earthwire 6.09 mm dia including supply of clamps, cleats, etc.	150	MTR	
2.8	Erection of Earth Spike	10	NO	
2.9	Laying of 3 core x 150sqmm 1500 KVA grade XLPE HT cable which includes excavation of trench in all kind of soil , laying of cable below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	250	MTR	
2.10	1500 KVA Heat shrinkable XLPE cable Joint (Out Door):- Making cable end termination with heat shrinkable jointing	4	SET	
2.11	Laying of 3-1/2 core x 240/300 sqmm 1.1 kv grade PVC LT cable which includes excavation of trench in all kind of soil , laying below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	4000	MTR	
2.12	Termination of 3-1/2 core x 240/300 sqmm Al armoured cable including glanding, drilling the hole in gland plate & making termination with double compression cable gland and copper lugs for 3-1/2 core x240/300 sqmm aluminium armoured cable (Both the end of cable shall be treated one termination)	40	NO	
2.13	Laying below ground in excavated trench (as per specification) of CC spun pipe of 300 mm dia. Wherever cable laid through pipe for road crossing purpose.	30	MTR	
2.14	Installation of GI pipe 50 mm dia including clamps, hardware etc.	20	MTR	
2.15	Installation of GI pipe 75 mm dia including clamps, hardware etc.	20	MTR	
2.16	Fixing of HT danger notice plate on tubulat pole / DP structure of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	10	NO	
2.17	Installation, testing and commissioning of LT distribution out door kiosk with all the provision as per specification.			
2.17.1	a] Type - A (Incomer 800 Amps, Outgoing 400 Amps - 2 Nos., Outgoing 200 A - 1 No & Outgoing 100 Amps - 2 Nos.)	3	NO	
2.17.2	b] Type - B (Incomer 400 Amps, Outgoing 250 Amps - 2 Nos., Outgoing 100 A - 1 No & Outgoing 63 Amps - 2 Nos.)	2	NO	

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
2.18	Fabrication, installation of various structural members such as cross arms, top adaptors, etc for poles, straight line DP structure/ sub-station DP structure/ DP structure for Line Tap-Offs, bracings member , clamps, bracket for gaurd wire or any other fabrication if required and not specified elsewhere in the tender specification etc; including supply of required matching hardwares and painting of one coat of red oxide & two coats of aluminium paint. This also includes the fabrication of other items as required.	2	MT	
2.19	Installation of MCB distribution board with sheet metal enclosure front cover, indoor type, Incoming 100 Amps TP MCB, outgoing 6 nos. 32 Amps SP MCBs (per phase) complete with internal TPN bus bars.	5	NO	
2.20	Installation of Switchboard wooden 150x100 mm with matching cutouts and interconnections.	10	NO	
2.21	Installation of Switchboard wooden 200x300 mm with matching cutouts and interconnections.	10	NO	
2.22	Installation of Indicator lamp for Switchboard (Anchor / Pritam)	10	NO	
2.23	Installation of local make approved quality Exhaust fan with louvers - 12 " sweep.	6	NO	
2.24	Installation of local make approved quality Pedestal fan - 16" sweep.	4	NO	
2.25	Installation of 30m high lighting mast complete with accessories such as head frame,steel wire,trailing cable,double drum winch galvanized lantern carriage, luminaries and their control gear boxes (16 Nos of 2X400W)	8	NO	
2.26	Fixing from roof truss with suitable clamp arrangement, flexible wire for connection between ceiling rose & fitting and commissioning of type HPSV luminaries medium bay industrial type, model BJMBI-150SV of BAJAJ or equivalent of PHILIPS / CROMPTON.	12	NO	
<b>3.0</b>	<b>OPERATION</b>			
3.1	Operation & stabilization/ maintenance of sub-stations & associated equipment as erected and maintenance of electrical installations of BHEL like stores sheds (closed), storage yard, etc as per instruction of BHEL. Start of O&M: Upon successful installation and commissioning of the system (to be certified by Construction Manager, BHEL).	2	MTH	
<b>TOTAL</b>				

**VOLUME-III A**  
**PRICE SCHEDULE, REV-2**

Civil, structural, architectural work including piling work of main plant, BOP, enabling work etc; supply, installation, maintenance of construction power and erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSG, associated piping, associated electrical, associated C&I, supply & execution of BOP etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam

TENDER NO - PSER:SCT:LPT-A1114:10

**SCH-10 - EXTERNAL PIPING OF GTG & STG SYSTEMS PRICE**

SL NO	DESCRIPTION	QUANTITY	UNIT RATE (Rs)	AMOUNT (Rs)
1	Carbon steel piping including fittings (IBR).	350	MT	
2	Carbon steel piping including fittings (Non-IBR).	600	MT	
2	Alloy steel piping including fittings (IBR)	200	MT	
3	Stainless steel piping including fittings (Non-IBR).	75	MT	
4	Hangers & supports	50	MT	
5	Thermal Insulation	50	MT	
6	Vent silencers erection(~30 nos)	40	MT	
7	Secondary steel structurals for supports, preparation of shoe supports for various piping etc	20	MT	
<b>TOTAL</b>				

**FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

BHARAT HEAVY ELECTRICALS LIMITED,  
Power Sector - Eastern Region,  
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,  
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Civil, structural, architectural work including piling work of main plant, BOP etc; erection, testing, commissioning etc of 2x80 TPH utility boiler & aux, 2x80 TPH HRSG & aux, 2xFr5 GTG & aux, 1x13.5 MW STG & aux, 2 nos steel chimney for utility boiler, 2 nos steel chimney for HRSH, associated piping, associated electrical, associated C&I etc for 53 MW Combined Cycle Power Plant at BCPL, Lepetkata, Assam.	
Ref	1.0	Tender no PSER:SCT:LPT-A1114:10.
	2.0	BHEL's NIT, vide reference no PSER:SCT:LPT-A1114:2310, dated 23-07-10.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:LPT-A1114:TCN-01, dated 16-08-10.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:LPT-A1114:TCN-02, dated 30-08-10.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:LPT-A1114:TCN-03, dated 08-09-10.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:LPT-A1114:TCN-04, dated 20-09-10.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:LPT-A1114:TCN-05, dated 22-09-10.
	8.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized  
representative of the bidder)

<b>TENDER NO</b>	<b>PSER:SCT:LPT-A1114:10</b>	
<b>VOLUME</b>	<b>IIIA, REV-2</b>	<b>PRICE SCHEDULE (ABSOLUTE VALUE)</b>

<b>JOB</b>	<b>CIVIL, STRUCTURAL, ARCHITECTURAL WORK INCLUDING PILING WORK OF MAIN PLANT, BOP, ENABLING WORK ETC; SUPPLY, INSTALLATION, MAINTENANCE OF CONSTRUCTION POWER AND ERECTION, TESTING, COMMISSIONING ETC OF 2X80 TPH UTILITY BOILER &amp; AUX, 2X80 TPH HRSG &amp; AUX, 2XFR5 GTG &amp; AUX, 1X13.5 MW STG &amp; AUX, 2 NOS STEEL CHIMNEY FOR UTILITY BOILER, 2 NOS STEEL CHIMNEY FOR HRSG, ASSOCIATED PIPING, ASSOCIATED ELECTRICAL, ASSOCIATED C&amp;I, SUPPLY &amp; EXECUTION OF BOP ETC</b>
<b>CAPACITY</b>	<b>53 MW</b>
<b>PROJECT</b>	<b>COMBINED CYCLE POWER PLANT, BCPL, LEPETKATA, ASSAM</b>

**BHARAT HEAVY ELECTRICALS LIMITED**  
**(A Govt Of India Undertaking)**  
**POWER SECTOR – EASTERN REGION**  
**PLOT – DJ 9/1, SECTOR II, SALT LAKE**  
**KOLKATA – 700 091**