



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TENDER CHANGE NOTE 03 (TCN – 03) DT: 22-01-2011

WITH REFERENCE TO THE NIT, PUBLISHED IN THE WEB SITES FOR PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2X520 MW HNPCL/VIZAG TPP, VISHAKHAPATNAM, AP. FOLLOWING CHANGES MAY PLEASE BE NOTED AND COMPLIED WHILE SUBMITTING THE OFFER FOR THE SUBJECT JOB.

REF: TENDER DOCUMENT NO-PSER:SCT:VIZ-C1161:10

- 1) The BOQ CUM RATE SCHEDULE has been revised and enclosed herewith as Volume-III, (Rev-02) taking into consideration various clarifications sought by the bidder. As such all the bidders are requested to note that the price schedule, Volume- III (Rev-0) and Volume-III (Rev-01) both stands cancelled and submission of Price bid on this schedules will not be considered. As such all the Bidders are requested to submit their price bid as per revised BOQ cum Rate Schedule (Volume-III, Rev-02) only.
- 2) Revised 'No deviation certificate', Annexure-Y is attached herewith. Bidder to submit the 'No deviation certificate' as per attached format only

All the bidders are requested to download the details and consider the same prior to submission of bid. **BIDDERS TO NOTE THAT ALL TCNS WILL FORM PART OF TENDER DOCUMENT.**

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

SDGM (SCT)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691 / 1684

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	PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2X520 MW HNPCL/VIZAG TPP, VISHAKHAPATNAM, AP.	
Ref	1.0	Tender no PSER:SCT:VIZ-C1161:10
	2.0	BHEL's NIT, vide reference no.PSER:SCT:VIZ-C1161:10 dated 22/12/2010
	3.0	BHEL's TCN-01, vide ref. no. Tender Change Note 01(TCN – 01) DATED 07/01/11
	4.0	BHEL's TCN-02 , vide ref. no. Tender Change Note 02(TCN – 02) DATED 19/01/11
	5.0	BHEL's TCN-03 , vide ref. no. Tender Change Note 03(TCN – 03) DATED 22/01/11
	6.0	Other references (if any).

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 along with various TCNs 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 and TCNs. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact 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)

**VOLUME-III REV-00
PRICE SCHEDULE,REV-02**

**JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND
'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPCL/ VIZAG TPP, VISHAKHAPATNAM, AP.**

TENDER NO - PSER:SCT:VIZ:C1161:10

PREAMBLE

1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in filling rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	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	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 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 escalation remains within within 30% (Thirty percent) of the awarded contract value as per LOI/WO.
6	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	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.
8	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
9	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.
10	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.

VOLUME-III PRICE SCHEDULE,REV-02 Dated 22.1.2011			
JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPCL/ VIZAG TPP, VISHAKHAPATNAM, AP.			
TENDER NO - PSER:SCT:VIZ:C1161:10			
SUMMARY OF PRICE SCHEDULE : (PART-1 + PART-2 + PART-3 +PART-4 +PART-5)			
SL.NO	DESCRIPTION OF WORK	PRICE SCHEDULE REF	TOTAL AMOUNT (In Rs.) & In Words
1.0	PILING WORKS OF AHP PACKAGE	PART-1	
2.0	PILING WORK FOR CHP PACKAGE	PART-2	
3.0	CIVIL & STRUCTURAL WORK FOR AHP PKG	PART-3	
4.0	CIVIL WORK FOR CHP PKG	PART-4	
5.0	STRUCTURAL STEEL WORK FOR CHP PKG	PART-5	
6.0	GRAND TOTAL PRICE (in Rs.)(PART-1 + PART-2 +PART-3 +PART-4 +PART-5)		
NOTES:			
a)	Bidder to note that evaluation & awarding will be done on the Grand total quoted price against SL NO 6.0 above.		
b)	Bidder to note the total all inclusive price quoted against SL NO 1.0,SL NO 2.0,SL NO 3.0,SL NO 4.0 and SL NO. 5.0 above should match with that of PRICE SCHEULE(PART-1) ,PRICE SCHEULE(PART-2),PRICE SCHEULE(PART-3),PRICE SCHEULE(PART-4) and PRICE SCHEDULE(PART-5) respectively.Any item as per scope of work if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.		
c)	For items not covered in any PART (PART-1,PART-2,PART-3,PART-4 & PART-5) of Price Schedule, quote % above or below the CPWD schedule (DSR-2007).		
	(i)Rate of complete item.		
	(ii)Rate of supply of materials at site only.		
	(iii)Rate for execution complete excluding supply of materials.		

VOLUME-III
PRICE SCHEDULE,REV-02 Dated 22.1.2011

JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPL/ VIZAG TPP, VISHAKHAPATNAM, AP.

PILING WORKS OF AHP PACKAGE (PART-1)

TENDER NO. PSER:SCT:VIZ:C1161:10

ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.) & In words
2500 PILING WORKS					
2501	Mobilisation of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	SET	2		
2502	DELETED				
2503	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M30 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/payment shall be made separately), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following.Cement will be supply by BHEL as per TCC				
b	Pile with 450 mm diameter and 23 m length below cut off level	Each	50		
c	Pile with 600 mm diameter and 23 m length below cut off level	Each	100		
d	Pile with 750 mm diameter and 23 m length below cut off level	Each	250		
2504	Extra over ST. No. 2503 for pile length more than the specified length of 23m below cut off level for the following.				
b	For 450 mm diameter pile	Rm	25		
c	For 600 mm diameter pile	Rm	116		
d	For 750 mm diameter pile	Rm	500		
2505	Rebate on ST.No.2503 for pile length less than the specified length of 23m below cut off level for the following.				
	For 450 mm diameter pile	Rm	20		
c	For 600 mm diameter pile	Rm	142		
d	For 750 mm diameter pile	Rm	450		

2506	Extra over ST.No.2503 for boring/drilling in rock, cleaning the pile hole, concreting etc all complete for the following.				
b	For 450 mm diameter pile	Rm	20		
c	For 600 mm diameter pile	Rm	325		
d	For 750 mm diameter pile	Rm	800		
2507	Conducting initial load test upto a maximum test load of 2.5 times the safe load capacity on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid seperately as per relevent items) etc all complete as per specification, drawing and as directed by engineer in-charge for the following.				
a	For vertical compression test by cyclic load method				
i	450 mm diameter pile	Each	1		
ii	600 mm diameter pile	Each	1		
iii	750 mm diameter pile	Each	1		
b	For lateral load test				
i	450 mm diameter pile	Each	1		
ii	600 mm diameter pile	Each	1		
iii	750 mm diameter pile	Each	1		
c	For tension/uplift test				
i	450 mm diameter pile	Each	1		
ii	600 mm diameter pile	Each	1		
iii	750 mm diameter pile	Each	1		
2508	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excludng the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) complete as per specification, drawing and as directed by the engineer-in-charge for the following.				
a	For vertical compression test by maintained load method				
i	450 mm diameter pile	Each	2		
ii	600 mm diameter pile	Each	3		
iii	750 mm diameter pile	Each	5		
b	For lateral load test				

i	450 mm diameter pile	Each	2		
ii	600 mm diameter pile	Each	3		
iii	750 mm diameter pile	Each	5		
c	For tension/uplift test				
i	450 mm diameter pile	Each	2		
ii	600 mm diameter pile	Each	3		
iii	750 mm diameter pile	Each	5		
2509	Carrying out pile integrity test on 450mm/500mm/600mm/750mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) all complete as per specification and as directed by the engineer-in-charge.	Each	450		
A2509	Carrying out low strain pile integrity test on 450mm/500mm/ 600mm/750mm / 900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) all complete as per specification and as directed by the engineer-in-charge.	Each	450		
SUB TOTAL					
TOTAL PRICE (PART-1)(in Rs.)					

VOLUME-III					
PRICE SCHEDULE,REV-02 Dated 22.1.2011					
JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPCL/ VIZAG TPP, VISHAKHAPATNAM, AP.					
PILING WORK FOR CHP PACKAGE (PART-2)					
TENDER NO. PSER:SCT:VIZ:C1161:10					
ST. NO.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.) & In Words
2500 PILING WORKS					
2501	Mobilisation of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	SET	7		
2502	DELETED				
2503	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M30 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/ payment shall be made separately), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following. (Cement will be supply by BHEL as per TCC).				
d	Pile with 600 mm diameter and 23 m length below cut off level	Each	1745		
2504	Extra over ST. No. 2503 for pile length more than the specified length of 23m below cut off level for the following.				
c	For 600 mm diameter pile	Rm	624		
2505	Rebate on ST.No.2503 for pile length less than the specified length of 23m below cut off level for the following.				
c	For 600 mm diameter pile	Rm	1000		
2506	Extra over ST.No.2503 for boring/drilling in rock, cleaning the pile hole, concreting etc all complete for the following.				
c	For 600 mm diameter pile	Rm	4363		
2507	Conducting initial load test upto a maximum test load of 2.5 times the safe load capacity on single pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid seperately as per relevent items) etc all complete as per specification, drawing and as directed by engineer in-charge for the following.				
a	For vertical compression test by cyclic load method				
iii	600 mm diameter pile	Each	1		
b	For lateral load test				
iii	600 mm diameter pile	Each	1		
c	For tension/uplift test				
iii	600 mm diameter pile	Each	1		

2508	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) complete as per specification, drawing and as directed by the engineer-in-charge for the following.				
a	For vertical compression test by maintained load method				
iii	600 mm diameter pile	Each	27		
b	For lateral load test				
iii	600 mm diameter pile	Each	27		
c	For tension/uplift test				
iii	600 mm diameter pile	Each	27		
2509	Carrying out pile integrity test on 450mm/500mm/ 600mm/750mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) all complete as per specification and as directed by the engineer-in-charge.	Each	1745		
A2509	Carrying out low strain pile integrity test on 450mm/500mm/ 600mm/750mm/900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) all complete as per specification and as directed by the engineer-in-charge.	Each	1745		
SUB TOTAL					
TOTAL PRICE (PART-2) (in Rs.)					

VOLUME-III PRICE SCHEDULE,REV-02 Dated 22.1.2011						
JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPCL/ VIZAG TPP, VISHAKHAPATNAM, AP.						
CIVIL & STRUCTURAL WORK FOR AHP PKG (PART-3)						
TENDER NO. PSER:SCT:VIZ:C1161:10						
SL NO	ST NO	DESCRIPTION	QUANTITY	UNIT	RATE (in Rs)	AMOUNT (in Rs) & In words
1.0	100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION & DRAWINGS				
1.1	101	Excavation at all depths below existing ground/grade level as per approved drawing including clearing away vegetation, sheet piling,shoring/strutting as required, dewatering wherever necessary by pumping/well point system, wherever necessary, leveling and ramming the foundation stratum,loading, transporting, unloading & stacking the excavated material upto a minimum lead of 1km or as directed by engineer incharge including all lead, lifts, etc complete. Depth of excavation measured from existing ground/grade level.				
1.1.1	i)	In all types of soils including expansive soil, ash, morrum, laterite up to 2m.	20000	CUM		
1.1.2	ii)	In soft rock and weathered rock which can be excavated by means of crow bar, pick axe etc. but does not require chiselling, chemical grouting and blasting up to 2m.	1000	CUM		
1.1.3	iii)	In hard rock by means of controlled blasting as per statutory requirement up to 2m	500	CUM		
1.1.4	iv)	In hard rock (blasting prohibited) by means of chiselling, wedging etc. - up to 2m	50	CUM		
1.2	102	Extra over item ST NO 101 above, for all types of soil/ rock, for additional lifts beyond the initial lift of 2 meters for the following etc all complete as per specifications, drawings and instructions of engineer (these sub-items individually shall include the cost of entire additional lift, beyond the initial lift of 2 meters, and will not be paid cumulatively).				
1.2.1	i)	In all types of soils including expansive soil, ash, morrum, laterite, In soft rock & weathered rock which can be excavated by means of crow bar, pick axe etc but does not require chiselling, chemical grouting and blasting.				
1.2.1.1	a	Beyond 2 m and upto 4 m.	5000	CUM		
1.2.1.2	b	Beyond 4 m and upto 7 m.	5000	CUM		
1.2.1.3	c	Beyond 7 m and upto 10 m.	4000	CUM		
1.2.1.4	d	Beyond 10 m and upto 15 m.	50	CUM		
1.2.2	ii)	In all types of rocks.				
1.2.2.1	a	Beyond 2 m and upto 4 m.	50	CUM		
1.2.2.2	b	Beyond 4 m and upto 7 m.	50	CUM		
1.2.2.3	c	Beyond 7 m and upto 10 m.	10	CUM		
1.2.2.4	d	Beyond 10 m and upto 15 m.	10	CUM		
1.2.2.5	e	Beyond 15 m and upto 20 m.	5	CUM		

1.3	104	Extra over item 101 above for carriage of all types of excavated materials beyond the initial lead of 1km (initial lead, loading and unloading included in item 101 above), dressing, levelling the disposal area, all complete as per specifications, drawings and instructions of engineer for following leads (the following sub items shall be paid individually and not cummulatively).				
1.3.1	i)	Carriage beyond 1.0 km and not exceeding 2.0 km.	3000	CUM		
1.3.2	ii)	Carriage beyond 2.0 km and not exceeding 3.0 km.	5000	CUM		
1.3.3	iii)	Carriage beyond 3.0 km and not exceeding 4.0 km.	6000	CUM		
1.3.4	iv)	Carriage beyond 4.0 km and not exceeding 5.0 km.	7000	CUM		
1.3.5	v)	Carriage beyond 5.0 km and not exceeding 6.0 km.	10	CUM		
1.3.6	vi)	Carriage beyond 6.0 km and not exceeding 7.0 km.	10	CUM		
1.3.7	vii)	Carriage beyond 7.0 km and not exceeding 8.0 km.	10	CUM		
1.3.8	viii)	Carriage beyond 8.0 km and not exceeding 9.0 km.	10	CUM		
1.3.9	ix)	Carriage beyond 9.0 km and not exceeding 10.0 km.	10	CUM		
1.4	105	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 & including loading from stock pile, carting, unloading, filling, watering and compacting/ ramming each layer, all complete as per specification, drawings & as directed by engineer to achieve following densities.				
1.4.1	i)	Ordinary manual compaction.	100	CUM		
1.4.2	ii)	90% Standard Proctor Density.	100	CUM		
1.4.3	iii)	95% Standard Proctor Density.	15000	CUM		
1.5	106	Filling using selected excavated materials directly from excavation area in trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc in layers not exceeding 250 mm thickness including all lifts, filling, watering & compacting/ ramming each layer, all complete as per specification, drawings and as directed by engineer to achieve the following densities.				
1.5.1	i)	Ordinary manual compaction.	1000	CUM		
1.5.2	ii)	90% Standard Proctor Density.	2000	CUM		
1.5.3	iii)	95% Standard Proctor Density.	15000	CUM		
1.6	107	Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other underground structures, pipes etc in layers not exceeding 250 mm in thickness including all lifts and including excavating, loading, unloading, carting, filling, watering and compacting/ ramming each layer, all complete as per specifications, drawings and as directed by engineer for the following works.				
1.6.1	i)	With selected soil brought from borrow areas arranged by contractor, including royalties, fees etc.for all leads and compacted to following densities.				
1.6.1.1	a	90% Standard Proctor Density.	500	CUM		
1.6.1.2	b	95% Standard Proctor Density.	2000	CUM		
1.6.2	ii)	With selected sand brought from quarries/ river bed arranged by you, and compacting to 80% relative density etc for all leads.	1000	CUM		

1.7	108	Filling in trenches, plinths, area paving and other underground structures with stone (63 mm down graded), in layers not exceeding 200 mm thickness including breaking of boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer.	1000	CUM		
1.8	109	Filling in transformer pits etc, with clean 40 mm nominal size stone aggregate including all labour, materials, royalties, equipments etc complete as per instructions of engineer.	300	CUM		
1.9	110	Bulldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	200	CUM		
1.10	111	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks & branches, removing the roots and stacking of serviceable material and disposal of material at a maximum distance 1 KM. All measurement to be recorded in the register.				
1.10.1	i)	Beyond 30 cm girth upto and including 60 cm girth	100	NO		
1.10.2	ii)	Beyond 60 cm girth upto and including 120 cm girth	50	NO		
1.10.3	iii)	Beyond 120 cm girth upto and including 240 cm girth	5	NO		
	iv)	Beyond 240 cm girth	5	NO		
2.0	200	PROVIDING & PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AS PER DRAWING & SPECIFICATIONS UNLESS SPECIFIED OTHERWISE FOR THE FOLLOWING (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
2.1	201	Concrete of grade M-7.5 as filling course at any level below finished floor level, under and around foundations/ floors, mass dumps etc with 40 mm nominal size graded aggregate.	50	CUM		
2.2	202	Concrete of grade M-10 as lean concrete, levelling course, mud mat under and around foundations/ floors etc with 40 mm nominal size graded aggregate.	75	CUM		
2.3	203	Concrete of grade M-20 in under floors, paving, pipe encasing etc complete with 20 mm nominal size graded aggregate including addition of suitable plasticizer conforming to IS 9103.	600	CUM		
2.4	204A	Concrete of grade M-15 (1 part cement, 2 part sand, 4 parts of 12.5 mm graded aggregate by volume) as under bed to floors etc complete.	110	CUM		
2.5	204B	DELETED				
2.6	205	Concrete of grade M-25 in underground structures like foundations, columns below finish floor level, plinth beams, slab-on-grade, trenches, drains etc complete with 20 mm nominal size graded aggregate including anti termite treatment as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	200	CUM		
2.7	206	Concrete of grade M-25 in superstructure from finished floor level and above for slabs, machine foundations, wall, beams, cols, complete at all heights with 20 mm nominal size graded aggregate including addition of suitable plasticizer conforming to IS 9103.	100	CUM		

2.7a	206a	Concrete of grade M-30 in underground structures like foundations, columns below finish floor level, plinth beams, slab-on-grade, trenches, drains etc complete with 20 mm nominal size graded aggregate including anti termite treatment as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	6000	CUM		
2.7b	206b	Concrete of grade M-30 in superstructure from finished floor level and above for slabs, machine foundations, wall, beams, cols, complete at all heights with 20 mm nominal size graded aggregate including addition of suitable plasticizer conforming to IS 9103.	5000	CUM		
2.8	207	Concrete of grade M-30 in machine foundations at all heights from finished floor level except TG and top deck supported over vibration isolation system including addition of suitable plasticizer conforming to IS 9103-latest to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate.	50	CUM		
2.11	210A	Screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/ 6 mm nominal size on the roof at any level or thickness, drains etc complete including addition of suitable plasticizer conforming to IS 9103.	180	CUM		
2.12	210B	Screed concrete 1:1.5:3 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/ 6 mm nominal size on the roof at any level or thickness, drains etc complete including addition of suitable plasticizer conforming to IS 9103.	20	CUM		
2.13	211	Concrete of grade M-25 in precast works like roof slabs/ trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc at all levels in all kinds of work including formwork/ moulds, curing, rendering the top exposed surface with cement sand mortar (1:3) including addition of suitable plasticizer conforming to IS 9103, handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjusant precast units with M-30 concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc complete with graded aggregate (20/ 12.5/ 10 mm).	50	CUM		
2.14	212	Concrete of grade M-25 in water retaining/ conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and subsequent reduction in cement content upto a maximum 10% complete and conforming to limits of permeability as per IS 2545 as per specification with 20 mm nominal size graded aggregate.	700	CUM		
2.15	213	Concrete of grade M-15 in plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate.	60	CUM		
2.16	214	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer.				
2.16.1	i)	Plain cement concrete of all grades.	20	CUM		

2.16.2	ii)	Reinforced cement concrete of all grades alongwith cutting of reinforcements etc complete.	20	CUM		
2.17	215	Cutting of masonry/ PCC/ RCC work of thckness 30cm for making openings/ pockets at any floors/ walls of all levels and according to shapes and sizes as per drg by using power cutting tool (DD2E of Hilti make or equivalent), disposal of waste materials upto a lead of 1 km as directed by engineer including equipment, making good broken edges/ surfaces with cement mortar (1:3) etc complete as per instructions of BHEL (measurement will be paid as per cutting surface area of masonry/ concrete & reinforcement).	5	SQM		
2.17	216	Chipping manually (wherever machine cutting is not possible) of masonry/ PCC/ RCC work for making pockets, openings at any floors/ foundations of all levels and according to shapes and sizes as per drawing, including making good broken edges/ surface with cement mortar (1:3), disposal of waste materials upto a lead of 2 km as directed by engineer (measurement shall be paid as per cutting surface area of masonry/ concrete and reinforcement).	5	SQM		
3.0	300	SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATIONS FOR ALL STRUCTURES, AS PER SPECIFICATIONS AND INCLUDING ALL LABOUR MATERIAL, SCAFFOLDINGS AND CENTEREING COMPLETE INCLUDING POCKETS ETC FOR FOLLOWING.				
3.1	301	Ordinary form work below finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	8000	SQM		
3.2	302	Fairface form work below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works.	3000	SQM		
3.3	303	Ordinary form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	7000	SQM		
3.4	304	Fairface form work above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	20000	SQM		
3.5	305	Curved form work using Slip form for Silos etc at all heights and levels (for all structure of diameter more than 6m)	5700	SQM		
3.6	306	Providing, fixing & removing formwork in block-outs/ pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer.				
3.6.1	i)	Upto 300 mm depth.	500	NO		
3.6.2	ii)	From 301 mm upto 600 mm depth.	750	NO		
3.6.3	iii)	From 601 mm upto 1000 mm depth.	300	NO		
3.7	307	Fairface plywood with filmface formwork above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	3000	SQM		

4.0	400	REINFORCEMENT				
4.1	401	Supply,transporting, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in concrete, binding wire, labour etc complete all as per specifications & drawings.(Contractor will provide reinforcement from SAIL/ TISCO/ IISCO/RINL)	2	MT		
4.2	402	Transporting, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete, binding wire, labour etc complete all as per specifications & drawings. (Reinforcement will be supplied by BHEL as per TCC free of cost)	1900	MT		
4.3	403	Supply,transporting, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcement in brickwork/ concrete encasing, binding wire, labour etc complete all as per specification & drawings. (Contractor will provide reinforcement from SAIL/ TISCO/ IISCO/RNL).	3	MT		
4.4	404	Transporting, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in brickwork/ concrete encasing, binding wire, labour etc complete all as per specifications & drawings. (Reinforcement will be supplied by BHEL as per TCC free of cost)	2	MT		
5.0	500	WATER PROOFING AS PER SPECIFICATION (YOU HAVE TO FURNISH A GUARANTEE FOR MATERIAL AND WORKMANSHIP FOR A MINIMUM PERIOD OF 20 YEARS) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
5.1	501	Providing, laying & fixing roof water proofing treatment using two successive liquid coatings of high solid content urethane pre-polymers to form elastomeric membrane having overall dry film thickness of min 1.5mm subject to min 750gm/sqm/coat application rate including primer coat consisting of polyurethane or any other equivalent material, finishing coats & surface finish complete laid over cement plaster (1:6) grading on screed concrete (cement plaster & screed paid seperately) mix all complete including all labour, material, equipment, handling, scaffolding, transporting, testing etc complete as per drg, specification & instructions of engineer.	3940	SQM		

5.2	502	Providing and laying foam concrete block insulation over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125 KCL/sqmh deg C and weight shall be from 0.3 to 0.5 gm/cucm, all complete with fillets as per specification.				
5.2.1	i)	75 mm thick.	100	SQM		
5.2.2	ii)	100 mm thick.	5	SQM		
5.3	503	Providing & laying pressed precast concrete tiles over water proofing of min size 300x300 & min thickness 22 mm conforming to IS 13801 including 15 mm thick cement mortar (1:4) bedding inclusive of provision for thermal expansion for each roofing tile filled with polysulfide joint sealant (water proofing paid elsewhere).	20	SQM		
5.4	504	Providing & mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete.	2000	KG		
6.0	600	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND.				
6.1	601	Supplying & installation of bitumin impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/ bitumin, labour, material, equipments etc all complete at all levels as per specification, drawings and instruction of engineer.				
6.1.1	i)	12mm thick joints.	15	SQM		
6.1.2	ii)	20mm thick joints.	20	SQM		
6.1.3	iii)	25mm thick joints.	150	SQM		
6.1.4	iv)	50mm thick joints.	50	SQM		
6.2	602	Supplying & filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/ injecting sealing compound in gaps in joints at all levels including application of primer, labour, material, equipments etc all complete as per spec/ drg, instruction of engineer.	200	KG		
6.3	603	Supplying and filling in position two part polysulphide sealant conforming to IS 12118 including cleaning, mixing, pouring/ injecting sealing compound in gaps in joints at all levels including labour, material, equipments etc. all complete as per specification/ drawing, instruction of engineer.	100	KG		

7.0	700	MS EMBEDMENTS				
7.1	701	Transporting from store, fabricating and fixing of embedments, MS inserts, plates, angles,channels and ISMBs of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting as per specification & drawings (ANGLE, CHANNEL,MS PLATE ,CHQD PLATES,ISMB shall be supplied by BHEL free of cost as per SCC).	20	MT		
7.2	702 A	Supply, fabrication and fixing of embedments, MS inserts, angle, channel, plates,rungs,pipe sleeves, rails, guide rails, beams, flats of various diameters/dimensions as required including cost of all labour, materials and equipment for fixing in position, scaffolding and setting in position, loading, unloading etc complete as per specifications and drawings. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	2	MT		
7.3	702 B	Fixing of embedments (supplied by BHEL), MS inserts,bolts, pipe sleeves, rails, guide rails angle pieces, plates of dimensions as required including assembly/ welding at site, cost of all labour, materials & equipment for fixing in position, scaffolding & setting in position, transportation from stores within the plant boundary to work spot, loading, unloading etc complete as per specification & drawings.	8	MT		
7.5	704	Supply, fabrication, transportation, delivery at site, erection, installation and alignment of MS foundation/ anchor bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts (IS:1363, IS:1364 & IS:3138), anchor plates, stiffner plates, protective tape etc upto and including 80 mm dia, 3000 mm long including furnishing of labour, materials, equipments, welding, cutting, grinding, threading, drilling, pipe sleeves etc all complete as per specification, drawing and instruction of engineer (Contractor to supply all materials). Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	15	MT		
8.0	800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING.				

8.1	801	Providing & grouting cement slurry mix at any elevation/ depth with pressure pump for water retaining concrete structures, including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by engineer (cement shall be supplied by BHEL free of cost as per TCC).	1000	SQM		
8.2	802	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection, and alignment if necessary, of heavy machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with Sikagrout-214 of Sika / ConbextraGPX-2 of 'Fosroc' or equivalent, all complete as per specification (cost of all material & cleaning the pocket by compressed air are in contractor's scope). (Contractor to supply all materials).	3	CUM		
8.3	803	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection, and alignment if necessary, of main structural steel work at any elevations including roughening surface, cleaning, ramming, curing, etc with Sikagrout-104 of Sika / ConbextraGP-1 or equivalent all complete as per specifications (cost of all material and cleaning the pocket by compressed air are in contractor's scope). (Contractor to supply all materials).	3	CUM		
8.4	804	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, of secondary structures, machinery and pipe supporting structures at any elevations including roughening surface, cleaning, ramming, curing, etc with 1:1:2 cement - sand - 6 mm down stonechips all complete as per specification (cost of all material and cleaning the pocket by compressed air shall be in your scope and cement shall be supplied by BHEL free of cost as per TCC).	5	CUM		
8.5	805	Providing & pressure grouting of neat cement slurry admixed with water soluble monomer based chemical in cracked or seepage locations in water retaining structures as per IS 6494 including providing of required holes, grooves, nozzles & removing of nozzles etc complete as per specification and direction of engineer. (Cement shall be supplied by BHEL free of cost as per TCC).	50	SQM		

9.0	900	DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTIONS ETC COMPLETE AT ALL ELEVATION INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION AND DRAWINGS (ALL STEEL DOORS, WINDOWS AND ROLLING SHUTTERS ETC SHALL BE BLAST CLEANED TO NEAR WHITE METAL SURFACE (SA 2 1/2), PAINTED WITH TWO COAT OF RED OXIDE ZINC PRIMER AND FINISHED WITH TWO COATS OF SYNTHETIC ENAMEL PAINT CONFIRMING TO IS2074) (ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR).				
9.5	905	Providing & fixing steel single or double door shutters. Shutters shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm c/c. Side, top, bottom edges of shutter shall be of pressed steel channels of 1.2mm thk voids to be filled with mineral wool (48 kg/cum density) including all fittings like tower bolts, handles, stoppers, aldrops etc and painting with minimum 2 coats of synthetic enamel paint on primer complete. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	50	SQM		
9.6	906	Providing & fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected & reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/ signal red color fire resistant paint & mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification, minimum ratings shall be 2 hrs. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	10	SQM		

9.7	907	Providing & fixing electro colored 15 micron anodised Al work of Indal, Hindalco or other equivalent approved make for doors, windows, ventilators, partitions, railing etc with extruded standard tubular & other sections including all fittings & fixtures & accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (min anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom & sides with required PVC/ neoprene felt for bi-mettalic protection etc including preparation of working drawings, Al cleat angle, Al snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification & instructions of engineer (glazing & panelling shall be paid seperately). Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	1000	KG		
9.8	908	Providing and fixing of over head hydraulic door closers of Yale make or equivalent make & quality as directed by engineer.	5	NO		
9.9	909	Providing and fixing floor mounted hydraulic door closer of approved make & quality as directed by engineer.	5	NO		
9.10	910	Providing and fixing pressed steel frames fabricated from 1.4 mm thk gauge MS sheet mortised, reinforced strikes, hold fasts, adjustable floor anchors, floor tiles/weather bars, painting with minimum 2 coats of synthetic enamel paint on primer etc complete as per specifications.	400	KG		
9.11	911	Providing & fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm hot rolled double dipped galvanized steel laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking including wire springs top cover, 3 coats of approved enamel paint etc, all complete as per specification- mechanically operated. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	160	SQM		

9.12	912	Providing and fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm hot rolled double dipped galvanized steel laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, 3coats of approved enamel paint etc, all complete as per specification - hand operated. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	60	SQM		
9.13	913	Providing & fixing in position rolling shutters of approved make as per IS 6248, made of 75x1.2mm hot rolled double dipped galvanized steel laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking including wire springs top cover, 3 coats of approved enamel paint etc, all complete as per specification - electrically operated. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	30	SQM		
9.14	914	Providing, fitting and fixing of glazing (including poly carbonate sheet) of superior (selected) quality, first grade class, at various elevations, where required, cleaning after fixing, gaskets, clips, hardware, with all labour and material etc complete as per specification, drawing and instructions of engineer.				
9.14.1	i)	4 mm clear sheet glass.	10	SQM		
9.14.2	ii)	4 mm clear float glass.	130	SQM		
9.14.3	iii)	6 mm clear float glass.	850	SQM		
9.14.4	iv)	6 mm wired glass.	150	SQM		
9.15	915	Providing, fitting and fixing heavy duty minimum six lever mortised lock of godrej or equivalent make with handles or knobs to single and double leaf door (wooden/ steel/ Aluminium) with duplicate set of keys and masterkeyed locks, openable from one side by the key and from the other side by the handle etc all complete as per drawing, specification and instruction of engineer.	20	NO		
9.18	918	Providing & fixing openable/ fixed steel windows & ventilators with steel sections as per IS:1361 including wire mesh, guard bars as per relevant IS, painting with min 2 coats of synthetic enamel paint on primer complete.	250	SQM		

10.0	1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR ETC COMPLETE, AS PER SPECIFICATIONS (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC FOR BRICK MASONARY WORK AND MANUFACTURING OF FLY ASH CEMENT BRICKS, WHICH WILL BE MANUFACTURED BY VENDOR INSIDE PROJECT PREMISES).				
10.1	1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc in thickness varying from 250mm to 500mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.				
10.1.1	i)	Using fly ash cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² .	150	CUM		
10.1.2	iii)	Using ordinary bricks of class designation 50 of nominal dimension.	25	CUM		
10.1.3	iv)	Using locally available first class bricks of class designation 100 of nominal dimension approved by engineer/ customer.	25	CUM		
10.2	1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc in thickness 250mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.				
10.2.1	i)	Using fly ash cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² .	1600	CUM		
10.2.2	iii)	Using ordinary bricks of class designation 50 of nominal dimension.	100	CUM		
10.2.3	iv)	Using locally available first class bricks of class designation 100 of nominal dimension approved by engineer/ customer.	100	CUM		
10.4	1004	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc in thickness 125 mm at all heights, places and position above or below plinth/ graded level including providing HB wetting at every third layer, raking out joints, curing, scaffolding etc complete using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² and clay ash bricks shall be as per IS 13757, minimum percentage of fly ash shall be 25%, excluding plastering and painting as per specification.				
10.4.1	i)	Using fly ash cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² .	250	SQM		
10.4.2	iii)	Using ordinary bricks of class designation 50 of nominal dimension.	50	SQM		

10.4.3	iv)	Using locally available first class bricks of class designation 100 of nominal dimension approved by engineer/ customer.	50	SQM		
10.5	1005	Breaking of existing brick work at all levels including plastering, removing rubbish up to a distance of 500 m including transportation, loading, unloading etc all complete as directed by engineer.	5	CUM		
10.9	1008	Making openings in existing brick wall or partition wall including making good the broken edges/ surface with cement mortar etc complete.	5	CUM		
10.10	1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc complete.	5	SQM		
10.11	1010	Providing and filling brick bats in soak pits, below plinth protection etc complete.	110	CUM		
11.0	1100	DAMP PROOF COURSE INCLUDING ALL MATERIALS LABOUR, SHUTTERING, CENTERING, CURING ETC, COMPLETE WITH THICKNESS AS SPECIFIED/ SHOWN ON DRAWINGS.				
11.1	1101	Damp proof course 40mm 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 TCC).	320	SQM		
12.0	1200	CEMENT MORTOR PLASTER INCLUDING ALL MATERIALS SCAFFOLDING, CURING ETC COMPLETE AS PER SPECIFICATION (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
12.1	1201	Providing 12 mm thick plaster in cement mortar 1:6 on walls, finished to a smooth finish as per specification.	2150	SQM		
12.2	1202	Providing 12 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification.	2120	SQM		
12.3	1203	Providing 12 mm thick plaster in cement mortar 1:6 on walls with a paste of neat cement @1kg/sqm and rubbed smooth with trowel as per specification.	750	SQM		
12.4	1204	Providing 18 mm thick plaster in two layers in cement mortar 1:6 on walls finished to a wooden float/ smooth/ rough finish as per specification.	6280	SQM		
12.5	1205	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.				
12.5.1	i)	cement sand mortar 1:4.	2300	SQM		

12.7	1207	Providing plaster of paris/ white putty (birla white) 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	4540	SQM		
12.8	1208	Providing screed/ grading plaster of average 20 mm thickness in ratio 1:6 nominal by volume including finishing smooth and even etc all complete at all levels above or below grade level.	3760	SQM		
12.10	1210	Forming groove of uniform size from 12x12 mm upto 20x15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc complete as per specification, drawing and instructions of engineer.	1000	RM		
12.11	1211	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc including scaffolding, finishing etc complete with all labour, tools and plants as per specification, drawing and instructions of engineer.	1500	RM		
13.0	1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC ALL COMPLETE (PAINTS OF REPUTED BRAND OF REPUTED MANUFACTURER LIKE ICI/ BERGER/ ASIAN PAINTS OR EQUIVALENT).				
13.1	1301	Providing & applying 2 or more coats of oil bound destemper as per IS 428 of approved brand, shade & manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline including plaster of paris punning minimum 2 mm.	4630	SQM		
13.2	1302	Providing and applying two or more coats of acrylic destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface or plaster of paris punning as per manufacturers guideline.	750	SQM		
13.3	1303A	Two or more coats of cement paint (for internal use) of approved brand and manufacture to give an even shade including priming coat complete.	9260	SQM		
13.4	1303B	Two or more coats of cement paint (for external use) of approved brand and manufacture to give an even shade including priming coat complete.	200	SQM		

13.5	1304	Providing & applying 2 or more coats of acid/ alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	200	SQM		
14.0	1400	FLOORING & SKIRTING INCLUDING ALL MATERIALS, LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC COMPLETE IN ALL RESPECTS AS PER DRAWINGS & SPECIFICATIONS (UNDERBED TO BE PAID SEPERATELY UNDER RELEVANT ITEM) (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
14.1	1401	Providing and laying 40 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles over underbed of 1 part cement, 1.5 part sand and 3 parts chips (10 mm down, well graded) by volume (only sufficient water added to give workable consistency) in flooring complete as per specification.	2500	SQM		
14.3	1403	Providing & fixing chemical resistant (acid & alkali) tiles as per IS 4457 of minimum thickness 20 mm thick in flooring/ dado. The tiles shall be abrasion resistant and durable. The potassium silicate as per IS 4832,6 mm thick mortar used for setting or for under bed shall be durable strong and chemical resistant epoxy mortar including pointing etc after laying bitumen primer as per IS 158 and 12 mm thick bitumastic complete as per IS 9510 and IS 412 and as per specification (rate is inclusive of underbed).	280	SQM		
14.6	1406	Providing & laying polished Mosaic tiles of tile size 250mm X 250mm X 25mm in flooring, staircase over underbed of 1 part lime putty, 1 part surkhi & 2 parts coarse sand by weight mixed with sufficient water to form a stiff workable mass. The stone slabs laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, making corners, granite polishing etc complete.	1200	SQM		

14.12	1412	Providing and laying 7 mm thk matt/ mirror vitrified ceramic tiles of appd make on 43 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes.				
14.12.1	i)	450x450 mm.	100	SQM		
14.12.2	ii)	600x600 mm.	400	SQM		
14.13	1413	Providing and laying ceramic tiles dust pressed of appd color and design in floors of approved size of reputed manufacturer complete as per specification including all material, labour etc.				
14.13.2	ii)	7 mm thick.	500	SQM		
14.19	1419	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer.				
14.19.1	i)	Glass strips 50 mm wide and minimum 6 mm thick.	1490	RM		
14.19.2	ii)	Aluminium strips 50 mm wide and minimum 3 mm thick.	5	RM		
14.19.3	iii)	Brass strips 20 mm wide and minimum 4 mm thick.	5	RM		
14.25	1425	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600x600x35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.	50	SQM		
15.0	1500	PROVIDING & ERECTING ROOFING/ SIDE CLADDING INCLUDING FLASHINGS (NO SEPERATE PAYMENT SHALL BE PAID FOR FLASHINGS), LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC COST OF ALL CLADDING MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/ VERTICAL) AND ANY OTHER STEEL WORK ETC COMPLETE FOR FOLLOWING (ALL HORIZONTAL, VERTICAL, WIND TIE/ RUNNER/ BRACING SHALL BE PAID VIDE STRUCTURAL ITEM 2301, STEEL FOR THESE ITEMS WILL BE ISSUED FREE AS PER TCC).				

15.1	1501	<p>Designing, providing & fixing permanently color coated galvanised MS troughed metal sheet decking plate as per IS:513 over roof purlins as per relevant IS code & specification. Thickness of deck plate shall be min 0.8mm (base metal excluding coating), with min trough depth of 44 mm, with min yeild strength of 250Mpa and shall serve as permanent shuttering to the cast-in-situ roof slab 80mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete, imposed loads & construction loads over a span of around 1800mm between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc complete as per engineers approval & specification. The sheet shall be permanently coated with silicon modified polyster paint of min 20 micron DFT on exposed surface (facing operating floor) & min 5 micron on other face over epoxy primer of nominal 5 micron applied over hot dipped galvanising as per IS:277 @ 275 gm/sqm including fixing of sheet to purlin with self tapping,</p>	300	SQM		
		<p>tapping, self drilling white zinc plated heat treated high carbon steel screws of min 5.5 mm dia @ 260mm c/c in the trough and stich screwss between two adjacent sheets and sealing with epoxy sealant (height of trough required as per design should be included in the cost). Measurement shall be of the plan area of roof covered by MS trough metal decking. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.</p>				
15.2	1502	<p>Providing & fixing self tapping self drilling shear connectors of 16mm dia and min 75 mm projected length above purlin of mild steel studs passing through metal decking as per relevant IS codes & specification.</p>	1	QUINTAL		
15.5	1505	<p>Providing and installing under deck insulation using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips, all labour, material, scaffolding, equipment etc (INCLUDING COST OF INSULATION of 50 mm thick (avg) glass wool) all compete as per specification, drawing and instructions of engineer.</p>	400	SQM		

16.0	1600	PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, WORKING LAYOUT DRAWINGS AND DETAILS, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING MAKING RECESS FOR LIGHT FIXTURES, ALUMINIUM DIFUSERS, FIRE ALARMS ETC, POLISHING/PAINTINGS, LABOUR ETC, ALL COMPLETE AS PER SPECIFICATION.				
16.1	1601	Providing and fixing gypsum plaster board false ceiling with mineral fibre tiles consisting of supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.				
16.1.1	i)	12 mm thick board with galvanised light gauge steel load bearing supporting GI frame and finished flat.	400	SQM		
17.0	1700	PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS & ACCESSORIES ETC COMPLETE AS PER SPECIFICATION.				
17.1	1701	GI down take pipes of class medium conforming to IS1239/IS3589 as per specification of following dia.				
17.1.1	i)	100 mm dia.	800	RM		
17.1.2	ii)	150 mm dia.	120	RM		
17.1.3	iii)	200 mm dia.	10	RM		
18.0	1800	MISCELLANEOUS 1				
18.1	1801	Providing and fixing PVC water stops 230 mm wide, 6 mm thick.	200	RM		
18.2	1802	Supplying and installation of 25mm thick vibration damping, resilient pads around foundation of vibrating equipment and other locations as directed by engineer including cost of all materials labour equipment etc complete as per drawing and specifications.	5	SQM		

18.6	1806	Providing, laying and fixing transformer yard rails including guide rails in concrete including joining of rails. Anchoring lugs etc complete as per specification (you shall supply all materials). Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	1	MT		
18.9	1813	Providing and fixing GI rungs in concrete/brick walls at all elevations including zinc coating of minimum 900 g/sqm all complete.	100	KG		
18.11	1816	Providing & applying min two coats of min total thickness of 1.5 mm of acrylic based polymer modified cementitious composite coating system on surface of water retaining structure/basement including providing & mixing of fine silica/ quartz sand of 0.6 mm nominal size complete as per specification & direction of engineer.	500	SQM		
19.1	2001	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm and galvanised concertina. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm including all accesories as per specification all complete.	1100	SQM		
19.3	2003	Supply, fabrication & installing in position & testing galvanised MS gates out of channels, joists, angles, flats, plates, pipes & sheets including stiffners, bracings, fabricated hinges, MS aldrops with locking arrangement, tempered steel pivot, guide track of MS tee, ball bearing arrangements, castor wheels, anti corrosive synthetic enamel painting over two coats of primer etc all complete as per drawing, specification & as directed by engineer with 600mm high GI barbed wire fencing at top all complete (all steel to be supplied by you).	2.5	MT		
20.0	2100	WATER SUPPLY				
20.1	2101	Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc complete 15mm nominal bore.	15	NO		
20.2	2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc complete as directed by engineer 15mm nominal bore.	20	NO		

20.3	2103	Providing & fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	5	NO		
20.4	2104	Providing & fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	3	NO		
20.5	2105	Providing & fixing GI pipes of class B-medium complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete (internal work) 15 mm nominal bore.	20	RM		
20.6	2106	Providing & fixing GI pipes of class B-Medium complete with GI fittings a clamps including cutting and making good the walls etc complete (internal work) 20 mm nominal bore.	50	RM		
20.7	2107	Providing & fixing GI pipes of class B-medium complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete (internal work) 25 mm nominal bore (NB).	50	RM		
20.10	2110	Providing & fixing GI pipes of class B-medium complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling anticorrosive paint etc complete (external work) 25mm nominal bore (NB).	100	RM		
20.12	2112	Providing & fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification.	10	NO		
20.13	2113	Providing & fixing 610mmx127mmx6mm thk clear glass with CP guard rails and mounted on CP brackets etc complete as per specification.	10	NO		
20.14	2114	Providing & fixing 20mm dia stainless steel pipes (600 mm long) wall mounted towel rod with stainless steel brackets etc all complete as per specification.	10	NO		
20.15	2115	Providing & fixing stainless steel soap holder mounted with CP screws etc complete as per specification.	10	NO		
20.16	2116	Providing & fixing stainless steel liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on stainless steel brackets etc complete as per specification.	10	NO		
20.17	2117	Providing & fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc complete as per specification.	10	NO		

20.18	2118	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	5	NO		
20.19	2119	Providing & fixing PVC water tank (Syntex or equivalent) in position. The work includes making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels				
20.19.1	i)	2000 litre capacity.	5	NO		
22.0	2200	SANITARY WORKS (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
21.1	2201	Supply & fixing vitreous china wash basin size 600x450 with RS or CI brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specification.	10	NO		
21.3	2203	Providing & fixing colour European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed stone water flushing cistern with valveless fittings, necessary CP connections etc complete as per specification.	5	NO		
21.5	2205	Providing & fixing wall type glazed vitreous china photovoltaic control sensors type urinals with flush pipes, sensors, lead pipes, gratings, CP bottle traps and necessary CP fittings all complete as per specifications.	5	NO		
21.7	2207	Supply, laying & jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bitumenous paint, MS holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	100	RM		
21.9	2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc as per specifications for dia.				
21.9.1	i)	300mm.	50	RM		
21.9.3	iii)	600mm.	50	RM		
21.12	2212	Providing & fixing of class AA LOADNG OF IRC CI manhole cover of size 600mmx450mm including frame from reputed manufacture all complete as per specifications.	5	NO		

21.16	2216	Providing & fixing square mouth SW gully trap grade 'A' complete with CI grating, brick masonry chamber and watertight CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 kg and frame to be not less than 2.72 kg as per drawing and specifications etc all complete size 150x150mm P or S type.	5	NO		
21.17	2217	Providing and fixing CI floor traps of standard size with CP jalli complete as per specification.	5	NO		
21.20	2220	Providing and fixing white vitreous urinal partitions all complete as per specification.	5	NO		
22.0	2300	STRUCTURAL WORK OF FABRICATION AND ERECTION OF, (MS PLATES, CHANNEL, ISMB, ANGLE, CHEQUERED PLATES, WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)				
22.1	2301	"Receipt of structural steel materials at site, unloading at site, stacking, Fabricating, transporting to site, and erecting in position by all sorts of mechanical means including suitable heavy duty crane, as required, alignment and fixing of Structural Steel members including provision of necessary bolts, nuts, washers, cleats, stiffeners, gussets, base plates, and all other fixtures including all operations like preheating, straightening, cutting, drilling, machining, grinding, welding, non destructive and other tests as per specifications & tender for welds, loading, unloading, stacking, etc. including cleaning, preparing surfaces by sand blasting to near white metal conforming to Sa21/2 finish, at all elevations to achieve an even shade with all materials and providing with shop coat primer with organic zinc Silicate primer of 75 micron DFT, etc. all complete as per specifications, approved construction / fabrication drawings and as directed by Engineer-in charge for the following. (MS PLATES, CHANNEL, ISMB, ANGLE, CHEQUERED PLATES, STAINLESS STEEL PLATE WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)				

	a	Quoted rate shall include cost of all labour, tools and plants, consumables, erection bolts, permanent bolts, scaffolding, lead, lift etc complete. All type of structural steel works for columns, beams, bracings, trusses, purlins, side girts, pipe racks and trestles, lattice girders, built-up section, chequered plates etc. (including pack / spacer plates, splice plates, connecting plates, MS square bars, Crane girders, end plates, gusset plates, etc.) at all levels with rolled steel sections like Beams, Channels, Angles, Plates etc,				
	(i)	Receipt of materials, Transportation, Fabrication, sand blasting ,primer painting and shifting to site for erection	1200	MT		
	(ii)	Erecting in position , alignment , fixing & Complete welding etc. complete in all respect as per the direction of engineer.	1200	MT		
22.2	2302	Providing and supplying, structural steel materials from SAIL stock yard or EX works, unloading at site, stacking, Fabricating, transporting to site, and erecting in position by all sorts of mechanical means including suitable heavy duty crane, as required, alignment and fixing of Structural Steel members including provision of necessary bolts, nuts, washers, cleats, stiffeners, gussets, base plates, and all other fixtures including all operations like preheating, straightening, cutting, drilling, machining, grinding, welding, non destructive and other tests as per specifications & tender for welds, loading, unloading, stacking, etc. including cleaning, preparing surfaces by sand blasting and providing with shop coat primer with Organic zinc silicate primer, etc., etc. all complete as per specifications, approved construction / fabrication drawings and as directed by Engineer-in charge for the following.				
	a	GI Hand rails as per the scope, specification and approved drawings	30	MT		
	b	Rain water down comer pipes as per the scope, specification and approved drawings	5	MT		
22.4	2303a	Painting of structural steel works with an intermediate coat of 75 Micron epoxy resin based paint pigmented with titanium dioxide/ Micaceous iron oxide (MIO) with min over primer coat.				

	b	Painting of structural steel works over intermediate coat with epoxy paint suitably pigmented of approved shade and colour with glossy finish and DFT of 70 microns as per the directions of engineer in charge.	1200	MT		
	c	Painting of structural steel works finishing coat of polyurethane of min. DFT of 30 microns over top coat.				
	2304	Supply, fabrication & erection with 20mm Square MS bar Balustrade with suitable MS flat and Aluminium handrail as per technical specification and as directed by engineer in charge.	3	MT		
22.7	2307	Supplying, fabrication , transportation, erection and alignment of factory made electroforged galvanised gratings of steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 2309 (i), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2), testing, complete as per specifications, drawings and instructions of engineer (you shall supply all materials). Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	5	MT		
22.8	2307B	Supplying, fabrication , transportation, erection and alignment of M S grating at all elevations including preparation of fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 2309 (i) & (ii), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2), testing, complete as per specifications, drawings and instructions of engineer (Contractor shall supply all materials). Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	15	MT		

22.9	2308	Finishing the fabricated grating unit with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces, as per specifications, drawings and instructions of engineer instead of painting with 2 coats of red oxide primer followed by two coats of enamel finish paint.	3	MT		
22.10	2309i	Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C` as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of engineer (Contractor shall supply all materials). Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	100	KG		
22.11	2309ii	Supply & fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C` as per IS: 1367) & conforming to IS: 3757 and high strength structural hardened & tempered nuts (of property class `8` as per IS:1367) conforming to IS:6623 with hardened & tempered washers as per IS:6649 etc up to and inclusive of 39 mm diameter & upto 300 mm long for structural steel work complete as per specification, drawings and instructions of engineer (you shall supply all materials). Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	5000	KG		
22.12	2310	Dismantling of steel structure at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, (weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of engineer.	5000	KG		

22.13	2311	Addition to, alterations in and/ or modification of "Erection Marks" either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bend, raising to the required level, painting, transportation, return of unutilised steel pieces to project store, temporarily dismantling, cutting, re-welding, supporting & restoring to correct position of all temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled & adjacent members not payable), complete as per specifications, drawings & instructions of engineer.				
22.13.1	i)	In erected position.	1	MT		
22.13.2	ii)	In fabrication yard.	3	MT		
22.14	2312	Re-erection of dismantled fabricated structural steel members requiring additions, modification, (dismantling & additions to, alterations in and/ or modification to be paid separately under ST NO 2310 & 2311 respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding & touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting & restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members & adjacent members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per spec, drawings & instructions of engineer.	5	MT		
22.19	2317	Conducting radiography test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications.	5	RM		
22.20	2318	Conducting ultrasonic test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications.	5	RM		

22.21	2319	Conducting magnetic particle test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	500	RM		
22.22	2320	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	750	RM		
22.23	2321	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials & labour as per specifications complete (over & above the work already specified in specifications).	100	SQM		
23.0	2400	ROAD WORK INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, MACHINERY ETC ALL COMPLETE AS PER SPECIFICATION, DRAWING, RELEVANT IRC & IS CODES AND AS DIRECTED BY THE ENGINEER-IN-CHARGE FOR THE FOLLOWING.				
23.1	2401	Preparation of sub grade by excavating earth to required depth for all types of soil/rock, dressing to camber and consolidating the base including making good the undulation etc. and disposal of surplus earth within plant boundary all complete as per specification.	1500	CUM		
23.2	2402	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required camber etc. complete as per specification.	3050	CUM		
23.3	2403	Providing & Laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc including cost of material labour all complete.	2000	CUM		

23.4	2404	Providing & Laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc including cost of material labour all complete.	2000	CUM		
23.5	2405	Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of binding material moorum etc including cost of material labour, all complete.	1500	CUM		
23.6	2406	Providing and applying tack coat of low viscosity liquid bitumen of a suitable approved grade conforming to IS 73, 217 or 454 as applicable @ 10 kg/10sqm for an untreated WBM surface including scraping, cleaning with compressed air etc complete.	8800	SQM		
23.8	2408	Providing, mixing and laying premix carpet (as per IRC-14) of compacted 25mm thickness in a single course composed of suitable small size aggregate premixed with a bituminous binder on a prepared base. Mixing applying rolling as per IRC specification.	10000	SQM		
23.9	2409	Providing and applying 25 mm thick premixed seal coat comprising of an application of fine aggregate premixed with bituminous binder including rolling as per specification all complete.	10000	SQM		
24.0	2500	MISCELLANEOUS 2.				
24.1	2501	Construction of below ground earthing system test pits as per drawing/sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	Deleted	NO		
24.2	2502	Construction of below ground earthing system test links as per drawing/sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items).	Deleted	NO		
24.3	2503	Construction of below ground earthing system earth electrodes as per drawing and specification (excavation and backfilling only will be paid under applicable BOQ items).	Deleted	NO		

24.4	2504	Construction of below ground earthing system - earth connection and riser pig tails as per drawing and specification (excavation and backfilling only will be paid under applicable BOQ items).	Deleted	NO		
		Extra Item				
	1	Providing and applying resin bonded granular textured decorative coating, shall consists of adhesive synthetic resins and natural crushed stone chips or pigmented synthetic granules. nominal thickness of 2.5mm using natural stone chips at all elevations for various buildings including material, labour, scaffolding, curing etc complete as per drawing and specification.	6000	sqm		
	2	Providing and applying resin bonded granular textured decorative coating, shall consists of adhesive synthetic resins and natural crushed stone chips or pigmented synthetic granules. nominal thickness of 1.2mm of pigmented granular coating at all elevations for various buildings including material, labour, scaffolding, curing etc complete as per drawing and specification.	200	sqm		
SUB TOTAL						Rs. 0
TOTAL PRICE (PART-3) (in Rs.)						Rs. 0

Note

- 1 Revised Quantities are makred in Red.**
- 2 New items are added under extra item.**

VOLUME-III					
PRICE SCHEDULE, REV-02 Dated 22.1.2011					
JOB: PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPC/ VIZAG TPP, VISHAKHAPATNAM, AP.					
CIVIL WORK FOR CHP PKG (PART-4)					
TENDER NO. PSER:SCT:VIZ:C1161:10					
SL. NO	DESCRIPTION	UNIT	QUANTITY	RATE(in Rs.)	AMOUNT(in Rs) & In words
I	GENERAL				
1	Cleaning the site, removal of debris & rubbish, and disposal of unwanted material including all lift and lead up to any distance, within or outside the plant area as directed by Engineer .	Sqm	10000		
II	EXCAVATION WORKS				
2	Excavation at all depths below existing ground/grade level as per approved drawing including clearing away vegetation, sheet piling, shoring/strutting as required, dewatering wherever necessary by pumping/well point system, wherever necessary, leveling and ramming the foundation stratum, loading, transporting, unloading & stacking the excavated material upto a minimum lead of 0.5km or as directed by engineer incharge including all lead, lifts, etc complete. Depth of excavation measured from existing ground/grade level.				
	In all types of ordinary/and hard soils and fills (including soils intermixed with boulders, weathered rock and slushy soils)				
a)	Up to 2m from NGL	cum	80000		
b)	Beyond 2 m and upto 4 m.	cum	50000		
c)	Beyond 4 m and upto 7 m.	cum	35000		
d)	Beyond 7 m and upto 10 m.	cum	21750		
e)	Beyond 10 m and upto 13 m.	cum	21750		
f)	Beyond 13m and upto 16m	cum	21750		
g)	Beyond 16m and upto 19m	cum	21750		
h)	Beyond 19m and up to 22m	cum	5000		
a1	Extra over item 2 but In soft rock by chiseling, hammering and using pneumatic breaking equipment at all depths	CUM	1500		
a2	Extra over item 2 but In hard rock by controlled blasting at all depths	CUM	500		
3	Backfilling of foundation, trenches, plinth etc. with selected excavated materials from the available stack within 5 km , etc. complete	CUM	150000		

4	Extra over Item No.2 above for disposal of surplus spoils/rocks beyond the initial lead of 0.5 KM but not exceeding 2KM all complete as per the direction of Engineer in-charge	CUM	50000		
ii)	Carriage beyond initial lead of 2Km but not exceeding 4Km	CUM	50000		
iii)	Carriage beyond initial lead of 4 Km but not exceeding 6 Km	CUM	20000		
iv)	Carriage beyond initial lead of 6 Km but not exceeding 8 Km	CUM	5000		
3A	Filling using selected excavated materials (from stock piles) in trenches, plinths, sides of foundations and other underground structures, levelling in layers not exceeding 250 mm thickness within a lead from 100M to 2.5KM and all lifts and including re-excavation, loading from stock pile ,carting, unloading, filling, watering and compacting / ramming each layer, all complete as per specifications drawings and as directed by the engineer to achieve following densities: (Earth available in stock piles from 100m to 2.5km shall be used for this items)				
i)	Ordinary manual compaction	CUM	1000		
ii)	90% Standard Proctor density	CUM	2000		
iii)	95% Standard Proctor density	CUM	5000		
3B	Filling using selected excavated materials <u>directly from excavation area</u> in trenches, plinths, sides of foundations and other underground structures, levelling etc. in layers not exceeding 250 mm thickness including lall lifts , filling , watering , compacting / ramming each layer all complete as per specifications drawings and as directed by the engineer to achieve the following densities				
i)	Ordinary manual compaction	CUM	2000		
ii)	90% Standard Proctor density	CUM	10000		
iii)	95% Standard Proctor density	CUM	5000		

3 C	Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other under ground structures, in layers not exceeding 250 mm in thickness including all lifts and including excavating, loading, unloading, carting, filling, watering, compacting / ramming each layer all complete as per specifications drawings and as directed by the engineer to the following works including cost of material (means from contractor's own borrow area) for all leads, loading, unloading, royalty and transportation. (payment for solid measure of the consolidated filling).				
i)	with selected soil brought from borow areas arranged by contractor, including royalties, fees etc. for all leads and compacted to following densities				
a)	90% Standard Proctor density	CUM	5000		
b)	95% Standard Proctor density	CUM	10		
5	Supply of good earth of approved quality for backfilling of foundations, plinths, embankment etc. (from contractor's own borrow area) including excavation, loading, transportation, unloading, royalties,	CUM	40000		
III	CONCRETE WORKS (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
6(a)	Providing and laying in position PCC of Grade 1 : 4 : 8 complete all as per drawing and direction of Engineer-in-charge	Cum	25		
(b)	Providing and laying in position PCC of Grade 1 : 3 : 6 complete all as per drawing and direction of Engineer-in-charge	Cum.	300		
c)	Providing and laying in position PCC of Grade 1 : 2 : 4 complete including addition of suitable plasticizer conforming to IS 9103 all as per drawing and direction of Engineer-in-charge	Cum	700		
d)	Providing and laying in position PCC M20 of Grade 1 : 1.5 : 3 complete including addition of suitable plasticizer conforming to IS 9103 all as per drawing and direction of Engineer-in-charge	Cum	4000		

7(a)	Providing and placing in position reinforced cement concrete RCC (M25) in substructure having MODERATE EXPOSURE for works at all locations, heights and levels above or below ground as per approved design mix including required plasticizers-cum-retarder, vibrating, curing, dewatering wherever necessary, providing construction joints excluding cost of shuttering, centering, staging & reinforcement works, complete as per specifications and approved drawings and as per direction of Engineer-in-charge	Cum.	1000		
(b)	-do- as per item 7(a) but with RCC (M20)	Cum.	1000		
(c)	-do- as per item 7(a) but with RCC (M30)	Cum.	25		
8(a)	Providing and placing in position reinforced cement concrete RCC (M25) in superstructure having SEVERE EXPOSURE condition for works at all locations, heights and levels above or below ground as per approved design mix including required plasticizers-cum-retarder, vibrating, curing, dewatering wherever necessary, providing construction joints excluding cost of shuttering, centering, staging & reinforcement works complete as per specifications and approved drawings and as per direction of Engineer-in-charge	Cum.	1500		
(b)	-do- as per item 8(a) but with RCC (M20)	Cum.	25		
(c)	-do- as per item 8(a) but with RCC (M30)	Cum.	37000		
9	Providing & laying RCC Grade Slab / Paving of Minimum 150 mm thick of grade M30 under SEVERE EXPOSURE condition (including cost of providing and fixing minimum reinforcement of 8 mm HCRM @200 c/c both ways top & bottom) over an underbed as specified herein will be provided for areas mentioned below. Underbed will consist of preparation and consolidation of sub-grade to the required level, laying of stone soling of 230 mm compacted thickness with 63 mm and down aggregate with interstices filled with selected sand followed by 75 mm thick 1:4:8 PCC (1 part cement, 4 parts sand and 8 parts stone aggregate) with 40 mm nominal size aggregate	Sqm	100		
10(a)	Providing and fixing in position Precast RCC slab (M30) at all heights and levels including shuttering, lifting arrangement etc. including addition of suitable plasticizer conforming to IS 9103 but excluding cost of reinforcement complete as per specifications and approved drawings. (Slab weight approximately around 65kg)	Cum	80		

(b)	Same as above but precast slabs with perforations as per technical specification.	Cum			
12	Providing and fixing all type of shuttering including staging, propping (cost inclusive of submitting supporting designs & drawings and approval etc. for critical supporting structures etc.) at all locations, heights and levels above or below ground complete as per specification and direction of Engineer-in-charge				
a)	Ordinary form work / steel shuttering	Sqm	4750		
b)	Densified plywood form work with suitable overlay (Film coating) and conforming to IS 35139 (Part-III) and IS 4990. Film face with min 250gm/Sqm coating.) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	Sqm	120000		
c	plywood shuttering	Sqm	15000		
b)	Taking delivery of steel from BHEL stores/store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding in position of Tor steel reinforcements (TMT) supplied by BHEL free of cost, confirming to HCR -M Grade FE - 500 including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Reinforcement steel shall be supplied by BHEL free of cost. (No payment will be made chairs and spacer bars. However approved laps will be paid for)	MT	7500		
IV	GROUTING WORKS				
15(a)	Grouting of column base with CM 1 : 1 (1 part cement : 1 part coarse sand) including all cost of materials, labour etc complete as per specifications, approved drgs and direction of Engineer-in-charge (Cement shall be supplied by BHEL free of cost as per TCC).	Cum.	1		
(b)	-do- as above but with CM 1:2 (1 part cement : 2 part coarse sand) (Cement shall be supplied by BHEL free of cost as per TCC).	Cum	1		
(c)	-do- as above but with CM 1:1:2 (1 part of cement, 1 part of coarse sand and 2 parts of coarse aggregate with 12mm or down chips) (Cement shall be supplied by BHEL free of cost as per TCC).	Cum	1		

(d)	Providing and laying non shrink flowable grout of grade M35 using 6mm down graded stone chips and approved admixture(Non shrink cum plasticizer admixture) for grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection and alignment of necessary structural steel work, machinery at any elevation including roughening surface, cleaning, ramming, curing etc complete as per specification and as directed by the Engineer. (Cement shall be supplied by BHEL free of cost as per TCC).	Cum	40		
(e)	Grouting with Conbextra GP1 of Fosroc make including all cost of materials, labour etc complete as per specs. & approved drgs.	Cum	1		
V	FLOORING WORKS (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
16(a)	Providing and laying 50mm thick heavy duty I.P.S flooring with metallic hardener pigmented topping using 12mm thick uniform graded treated iron particles in flooring including an under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded).	Sqm	8000		
(b)	Providing and laying 50mm thick heavy duty I.P.S flooring with non - metallic hardener pigmented topping including an under layer of cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded).	Sqm	5000		
© *	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300mmX300mmX25mm thick of approved shade as per IS 1237, laid in floors jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443. Overall thickness shall be 50mm including concrete underbed 1:2:4	Sqm	10		
*(d)	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300mmX300mmX25mm thick of approved shade as per IS 1237, laid in skirting and dado, jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443.	Sqm	10		

17	Providing & laying Heavy duty ceramic tiles flooring as per specification etc. complete as per the direction of Engineer in charge	Sqm	20		
18	Providing and laying vitrified ceramic tiles (10mm thick)of size 750mm X 750mm.polished variety from reputed manufacturer for skirting and dado up to specified height complete as per specification.as per specification etc. complete as per the direction of Engineer	Sqm	1300		
19	Providing and laying 230 mm thick boulder solling joints filled with river sand including necessary compaction etc. complete as per specification, approved drawing and direction of Engineer-in-charge	Cum.	3000		
20	Providing and fixing Acid / Alkali resistant vitreous tile(25/20mm thick) lining confirmingto IS:4457 in flooring/Dado and shall be laid over over bitumastic lining of minimum 12mmthick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thickPotassium Silicate bedding mortar as per IS:4441 & 4443 including preparation of surface,application of bitumen primer, curing etc all complete as per pecification and direction ofEngineer. Min. size of tiles shall be 100x200mm. (Tiles shall be 25mm for floor & 20mm fordado)	Sqm	100		
21	Providing and laying PVC tiling / sheeting using 2 mm thick tile / sheet of approved brand, quality and colour all complete as per specification, approved drawings and direction of Engineer-in-charge.	Sqm	30		
22(a)	Providing and laying granite stone slab of 20mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	Sqm	30		
(b)	Providing and laying granite stone slab of 18mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete.	Sqm	50		

23	Providing all materials, designing and installing cavity flooring at locations indicated in drawings, consisting of pedestals with level adjusting device, located at 610 mm centres in both directions, with die cast head to receive stringers, stringer connection to the pedestals being of removable type, but without screwing or bolting, floor boards with metal stoppers at bottom to fix the same on the stringers of panel size 610 mm x 610 mm made of 35 mm thick phenol bonded particle board, Novateak super or equivalent, faced with 3mm thick PVC tiles as per IS:3462, on top and edges including providing cable outlet openings, steps, ramps, etc. The floor shall be capable of withstanding a uniform distributed load of 1200 kg/sq.m. and/or a point load of 500 kg at the centre of any panel. Work shall be carried out as per the specifications and as directed by the Owner. (supply of all materials shall be by the Contractor). Contractor to prepare and submit design calculations and construction drawings for Engineer's prior approval before taking up execution at site.	Sqm	100		
VI	MASONARY AND PLASTERING WORKS (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
24(a)	Providing and laying 230 mm thick brick wall in CM 1:5 using approved quality of brick of designation 5 at all heights and levels, curing etc all complete as per specifications, approved drawings and direction of Engineer-in-charge	Cum.	1800		
(b)	Providing and laying 115 mm thick brick wall in CM 1:4 using approved quality of brick of designation 5 at all heights and levels including providing 2nos of 6mm dia MS rod at every 3rd layer, curing etc all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm	100		
25(a)	Providing 18mm thick plaster in cement mortar 1:6, the brick walls finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials.	Sqm	8000		
(b)	Providing 18mm thick plaster in cement mortar 1:6 inside the brick walls with smooth finish on the uneven side of the wall as per specification.	Sqm.	6000		
(c)	Providing 15mm thick in cement mortar 1:4 neat plaster in drains/culverts as per specification.	Sqm.	3000		
(d)	Providing 12mm thick plaster in cement mortar 1:6 inside the brick walls with smooth finish as per specification.	Sqm.	3000		

(e)	Providing 6mm thick plaster in cement mortar 1:4 on ceiling with smooth finish as per specification.	Sqm.	5000		
(f)	Providing 2 mm thick plaster of paris of approved quality at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm.	7000		
26	Providing and laying 20mm thick plaster in CM 1:6 in drains at all heights and levels finished with neat cement punning, curing etc all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm	10		
27	Providing & laying standard bricks (100 X 75 cross section) of on edge on both edges of black top of roads, as per specification and direction of engineer in charge.	Rm	6000		
VII	FINISHING WORKS				
28(a)	Providing minimum two coats of bituminous paint on concrete surfaces in contact with soil in foundations of grade 85/25 confirming to IS 702 @ 1.7 kg/sqm.ETC all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm	10000		
(b)	Providing 2 coats of white wash on walls/ceilings at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm.	450		
(c)	Providing inside painting with 2 coats of acrylic emulsion paint over 2 mm thick plaster of paris coating applied in 2 layers, finished smooth, primer of approved quality brand and colour at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge				
i)	In ceiling	Sqm	100		
ii)	In walls	Sqm	400		
29(a)	Providing inside painting with 2 coats of water bound distemper over 2 mm thick plaster of paris coating applied in 2 layers, primer of approved quality, finished smooth, brand and colour at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge				
i)	In ceiling	Sqm	0	DELETED	
ii)	In walls	Sqm	0	DELETED	
(b)	Providing 2 mm thick plaster of paris of approved quality at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm	0	DELETED	

(c)	Providing 2 or more coats of synthetic enamel paint of approved brand, make and colour over 2 coats of zinc chromate primer conforming to IS 2074 of approved quality at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge	Sqm.	2000		
30	Providing and applying Acid resistant paint over suitable primer all complete as per specifications, approved drawings and as per direction of Engineer-in-charge	Sqm	100		
VIII	WATER PROOFING (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).				
31b	Providing Roof water proofing treatment with high solid content liquid applied elastomeric water proofing membrane of thickness 1.5mm, application of polymerized mastic over the roof to achieve smooth surface and priming coat and a wearing coarse on top of the membrane with 25mm thick PCC 1:2:4 reinforced with 0.56mm dia galvanized chicken wire mesh cas in panels of minimum 1.2m X 1.2m size including sealing of joints using sealing compound/ elastomeric water proofing membrane all complete as per specification, approved drawings and direction of Engineer-in charge.	Sqm	5000		
32	Providing water proofing with chemical injection grouting including supplying and fixing GI nozzles all complete as per specifications, approved drgs, manufacturer recommendations.	Nos	12000		
IX	FITTING WORKS				
33	Providing and laying 150 mm dia medium class GI rain water down comer conforming to IS: 1239 including all fittings, holding down clamps and fixtures complete at all heights and levels as per specifications, approved drgs and direction of Engineer-in-charge	Rm	2500		
34	providing and laying of 150mm dia PVC pipe of medium class of min pressure 6Kg/sqcm as down comers of rain water, including all fittings, holding down clamps and fixtures complete at all heights and levels as per specifications, approved drawings and direction of Engineer-in- charge.	Rm	50		
35	providing and laying of 150mm dia HDPE pipe as of medium class of of minimum pressure 6Kg/sqcm down comers of rain water, including all fittings, holding down clamps and fixtures complete at all heights and levels as per specifications, approved drawings and direction of Engineer-in- charge.	Rm	50		

36	Providing and fixing in position 150 mm dia MS rain water down comer of medium class of min pressure 6Kg/sqcm including required bends, swan necks, standard fixing MS clamps, junctions shoes, etc., including all materials, labour, equipment and scaffolding etc. complete. Quoted rate shall include cost of all materials, labour etc complete.	Rm	50		
X	DOORS, WINDOWS AND VENTILATORS (ALL STEEL DOORS, WINDOWS AND ROLLING SHUTTERS ETC SHALL BE BLAST CLEANED TO NEAR WHITE METAL SURFACE (SA 2 1/2), PAINTED WITH TWO COAT OF RED OXIDE ZINC PRIMER AND FINISHED WITH TWO COATS OF SYNTHETIC ENAMEL PAINT CONFIRMING TO IS2074) (ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR).				
38	Providing and fixing 45mm thick insulated hollow metal flush type with formed hollow metal frames & shutters. The doors shall be constructed from 1.2mm steel sheets with an internally reinforced, insulated core. Frames shall be constructed with 1.6mm steel, with all joints mitered, welded and ground smooth. Scope also includes galvanizing, priming and field painting of both door & frame and also all the fittings, fixtures, approved quality of lock on interior and exterior side of the door. as per specification all complete including test certificates Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	Sqm	750		
39(a)	Providing and fixing Steel window / Ventilator confirming to IS: 1038 in buildings and Transfer points etc except conveyor galleries, including all fittings and fixtures and required clips, pins etc for fixing of glass panes all complete as per specifications, approved drawing and direction of Engineer-in-charge (Payment for glass supply & fixing will be paid under relevant item) Excluding the cost of supplying and fixing of 4mm thick float glass. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.				
(i)	Openable	Sqm	2000		
(ii)	Fixed	Sqm	700		

(b)	Providing and fixing openable steel window / Ventilator conforming to IS: 1361 in conveyor galleries with wire mesh of approved quality including all fittings and fixtures and required clips, pins etc for fixing of glass panes all complete as per specifications, approved drawing and direction of Engineer-in-charge but excluding cost of supplying and fixing of glass.	Sqm	300		
40	Extra for providing and welding MS 12 mm thick square gard bars of approved make to windows and ventilators as per the approved drawings, specifications etc complete and as per the direction of Engineer in charge.	kg	10		
41	Providing and fixing suitable anodized aluminium grill on Doors / windows / ventilators provided in the ground floor of isolated buildings including all fittings and fixtures etc complete AS PER SPECIFICATIONS	kg	500		
42	Supplying and fixing of Hydraulic door closer of approved quality and make all complete as per specifications, approved drawings and direction of Engineer-in-charge	Nos.	15		
43	Supplying and fixing of glass panes on doors / windows / ventilators at all heights and levels all complete as per specifications, approved drawings and direction of Engineer-in-charge.				
(a)	Plain float glass 6mm thick	Sqm	300		
(b)	Float glass 5.5mm thick	Sqm	300		
(c)	Wired glass 6mm thick	Sqm	300		
(d)	Ground glass 4mm thick	Sqm	200		
(e)	Plain glass 4mm thick	Sqm	400		
44	Providing and fixing anodised Aluminium windows and ventilators including both frames and shutters with hollow extruded section having minimum wall thickness of 3mm of make INDAL or equivalent, aluminium handles, clips, rubber gasket, aluminium sections with minimum anodic film thickness of 0.015 mm etc all complete as per specifications, approved drgs and direction of engineer-in-charge but excluding cost of supplying and fixing of glass (Weight of aluminium sections only will be measured for payment).	KG	1200		

45	<p>Providing and fixing in position steel based fire proof doors with 2hrs fire rating conforming to IS 3614 (Part 2) 1992, BS 476 and ISO -834 with all necessary fittings & fixtures including self closing hinges & locking arrangement. Frames to be made of 1.6mm thick galvanised steel sheet & shutters of overall thickness 43mm-46mm thick framed out of two outer skin panels of 1.25mm galvanised steel sheets having lock seam joints. Reinforcements shall also be provided at the top & bottom locking areas. The infill material shall be mineral wool blanket conforming to IS :8183/ honeycomb kraft paper to give required rigidity and effective accoustic and thermal insulation. The sheet metal used for both the frames & shutters are to be galvanised and to conform to IS 277:1992. The contractor shall obtain and furnish necessary approval from LPA for the supplied material.</p> <p>Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.</p>				
(a)	Single leaf doors	Sqm	20		
(b)	Double leaf hollow metal Sliding type of doors.	EACH	6		
(c)	Sliding doors with automatic operation.	SQM	20		
(d)	12mm thick BWP particle board door.	SQM	35		
(e)	Louvers made of extruded aluminium with polyvinylidene fluoride finish as per the technical specification.	SQM	30		
(f)	Louvers made of extruded Steel with polyvinylidene fluoride finish as per the technical specification.	SQM	30		
(g)	<p>Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Mechanically operated. The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.</p> <p>Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.</p>	SQM	200		

(h)	Supply, Fabrication, fixing of MS Gills/Guard bars (12mm Sq bar) to the window and application of two coats of red oxide, two coats of synthetic enamel of smoke grey shade. Shifting the material from the stores. Inclusive of all labours, consumables, all tools & tackles required for completing the job as per the directions of engineer in charge.	MT	2		
(i)	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Hand operated. The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	SQM	20		
(j)	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Electrically operated. The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	SQM	200		
XI	OTHERS				
46	Providing and fixing Pockets of size 0.75sqm and and depth maximum up to 1mtr in slab beam and foundation all complete as per specifications, approved drgs and direction of Engineer-in-charge.	Nos	9000		
47	Providing and laying stoneware pipe 150 mm dia including excavation, jointing of pipes, backfilling etc. complete as per specifications, approved drgs and direction of Engineer-in-charge.	Rm	10		

48(a)	Providing and fixing hot dip GI chain link fence conforming to IS:2721 of mesh size 50 mm of approved quality and brand and the diameter of steel wire for chain link fence shall be not less than 2.5mm above the toe wall with 600mm concertina at top such that total fence height of 3.00m above the toe wall is achieved, and the fence to be fixed on the fence post with required clips, nut, bolts etc complete as per specifications, approved drawing and direction of Engineer-in-charge. (Payment for supplying and fixing of fence post shall be made separately under relevant item).	Sqm	50		
(b)	-do- as above but with PVC coated GI chain link fence of minimum 4mm thickness (Including PVC coating and the diameter of the steel wire of chainlink fence shall not be less than 2.5mm) as per specification.	Sqm	300		
49(a)	Providing and fixing 150 mm square precast (M25) fence post including cost of shuttering, grouting in CC 1:2:4 all complete as per specifications, approved drgs & direction of Engineer-in-charge. (Payment for excavation,CC 1:2:4 and reinforcement if any shall be made separately under relevant item) (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	Cum	10		
(b)	-do- as above but with angle iron post	MT	5		
50	Providing peripheral brick drain around buildings, of size 300 mm wide x300mm average depth along with 750mm wide plinth protection consisting of 75mm thick PCC 1:2:4 complete as per specification and direction of Engineer in Charge. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	Rm	2000		
51	Providing and laying 1000 mm wide plinth protection consisting of 100 mm thick PCC in M20 laid over prepared sub-grade and base formed with 100 mm thick compacted sand bed with broken bricks or rubble to a thickness of 150 mm all complete including plastering, finishing etc. complete as per specification, approved drgs and direction of Engineer-in-charge.	RM	2000		

52(a)	<p>Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour and Luxalon make or approved equivalent (Type-84C, Interior i.e. 84mm wide 12.5mm deep close type plain panels) with corrosion resistant aluminium alloy (AA5050) panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels complete as per specification section D. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc . Suitable M.S. channel (minimum MC 100) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. MS channel grid shall be paid under structural item 2301 & required materials shall be supplied by BHEL free of cost.</p>	Sqm	250		
(b)	<p>Providing and Fixing 12.5mm thick Gypsum board (600mm x 600 mm) plain false ceiling tiles of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener, adjustable hangers etc (The suspension system shall consist of 6mm diameter galvanised steel rods suspended from ceiling supporting aluminium grid of 38 x 25 x 1.5 mm and cross tie of 25 x 25 x 1.5 mm and aluminium angle of 25 x 25 x 1.5mm) including one coat of primer & two or more coats of acrylic emulsion paint of approved colour to give an even shade all complete with smooth finish as per specifications, drawings and as directed by Engineer. Acrylic emulsion paint shall be paid separately</p>	Sqm	50		

54	Providing and fixing of approved make Toilet fitting and fixtures (chromium plated fancy fixtures) complete as per specific technical requirements including water and sanitary pipeline & fittings, Bib cocks, stop cocks etc.,.The fittings shall consist of one indian WC of orissa pan type of size 588x440mm with 10 litres cistern, One set WC western type as per IS2556(part 2).Set of two urinals of size 465x265x355mm with white glazed china partitions with photovoltaic control flushing system,Two set of oval shaped wash basin fixed on concrete platform with 12thick polished granite stone,two float glass mirror of size 600x450x5.5mm, two stainless steel towel rail of 600x20mm and two stainless steel liquid soap holder cum dispenser . complete for buildings all complete as per specification, approved drawings and direction of Engineer-in-charge .The quoted rate shall be for 1 toilet block including all fittings and fixtures,PVC nahni traps,GI water pipes,Soil waste pipes etc.	Lot	5		
55	Providing Sand filling in foundations / under floor with good quality of sand including compaction etc. complete as per specification, approved drawings and direction of Engineer-in-charge	Cum	5000		
56	Providing and filling good quality mooram, compacted in layers not exceeding 200mm in thickness to 95% prociot density with optimum moisture content	Cum	5000		
57	Supplying and fixing rolling shutters of approved make, made of requird size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5 cm long wire springs grade No. 2 and M.S. top cover of required thickness for rolling shuters.				
(a)	80x1.20 mm MS laths with 1.20 mm thick top cover.	Sqm	25		
58	extra for providing mechanical device chain and crank operations for operating rolling shutters both inside and outside (specifications same as item no. 57).				
(a)	exceeding 10 sqm and upto 16.8 sqm	Sqm	25		
(b)	exceeding 16.8 sqm and upto 35 sqm	Sqm	15		
59	extra for providing electrical operated rolling shutters with all mechanism, provision shall be made for emergency mechanical operations(same as item no. 57).				

(a)	exceeding 35 sqm	Sqm	50		
(b)	providing and fixing ball bearing for rolling shutters.	Nos	15		
62	Providing and placing in position approved quality 25 mm thick pre-moulded joint filler (shalitex board) as per specification conforming to IS:1838 all as shown on drawings and as directed by the Engineer	Sqm	25		
63	Providing and applying polysulphide sealant material 25mm deep and width 30mm in expansion joints including preparation of surface and any other related works as per the direction of engineer.	Rm	150		
64(a)	Supplying and laying NP3 Hume pipe 900 mm dia. Including collars etc. complete as per specifications, approved drawings and direction of Engineer-in-charge	Rm	700		
(c)	-do- but with 600 mm dia NP3 Hume pipe	Rm	800		
(d)	-do- but with 450 mm dia NP3 Hume pipe	Rm	200		
(e)	-do- but with 300 mm dia NP3 Hume pipe	Rm	200		
65	Levelling, Grading / Dressing of existing ground to required level and camber including compaction etc complete as per specifications, approved drawings and directions Filling shall be in layers to correct lines and levels as indicated in the drawings ,watering and compacting by movement of rollers as required to achieve compaction equal to 90% standard proctor density as directed by Engineer -in -charge including formation of slopes where required using selected earth from the excavated material.	Cum	50		
66(a)	Taking delivery from structural agency, transporting, placing, aligning and fixing in position to correct lines and levels fabricated Anchor bolts with or without pipe sleeves, MS bolts and nuts, MS inserts,etc as embedment in concrete foundations / floors all complete as per specifications, drawings and direction	Mt	10		
67	Providing and placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. of approved quality and manufacture including cleaning, cost of all materials and labour, all leads and lifts, including making joints by hot fusion as per manufacturer's instructions, complete as shown on construction drawings and as directed by the Engineer				
i)	Serrated with central bulb (225 mm wide,6 mm thick).	Rm	7000		

ii)	Supplying, laying and jointing in position minimum 150 mm wide PVC water stops (ribbed with central bulb and end grips of wall thickness not less than 9 mm at the ends and 11 mm at the bulb location to withstand 25 mm water-head) of approved quality and manufacture for all construction and expansion joints including cleaning, cost of all materials and labour, all leads and lifts, including making joints by hot fusion as per manufacturer's instructions, complete as shown on construction drawings and as directed by the Engineer	Rm	100		
iii)	Providing and fixing 22G Copper plate and 600mm wide unless specified otherwise in water retaining structures including galvanising as per relevant I.S. codes and as per specifications.	Sqm	300		
68	preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	Sqm	8500		
69	Supplying and laying 200mm consolidated thickness water bound macadam sub-base course laid in two layers of 100mm thick (consolidated thickness) using 40 to 90 mm size metal to the specified gradient and camber including filling the interstices with screenings, compacting by rolling etc. complete as per the instructions of the Engineer	Cum	1750		
70	Supplying and laying 100mm consolidated thickness water bound macadam base course using 40 to 63mm size metal to the specified gradient and camber including filling the interstices with screenings, compacting by rolling etc. complete as per the instructions of the Engineer	Cum	2125		
71(a)	providing and applying tack coat using hot straight run bitumen of grade 80/100 including heating the bitumen, spraying the bitumen boiler, cleaning and preparing the existing road surface as per specifications:				
a(i)	on W.B.M. @ 0.75kg/sqm	sqm	14000		

71(b)	Providing 50mm thick premixed carpet including seal coat on metalled surfaces laid in 2 layers with paving asphalt of grade 80/100 mixed with 25mm to 12mm graded chips in base course (38mm thick), 12mm to 6mm graded tap chips in wearing course (12mm thick) including rolling with power roller, etc., complete as per the instructions of the Engineer.	Sqm	27000		
71©	providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade 80/100 bitumen per cubic meter of fine aggregate and 0.6 cum of fine aggregate per 100 sqm of road surface including rolling and finishing with road roller all complete.	sqm	27000		
72	Providing pathway with 25mm thick chequered cement concrete tiles of approved quality, size and colour as per IS: 13801 all complete as per specification, over suitable thickness under bed of cement concrete (1 part cement, 2 parts sand and 4 parts stone chips by volume).The stone chips shall be 12.5 mm down well graded, complete as per specifications, approved drawings and direction of Engineer-in-charge.	Sqm	200		
73	Providing and laying 60 mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer in charge.	sqm	100		
74	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of hoints except at sharp curve shall not to more than 5 mm) including making drainage opening wherever required complete etc. as per direction of Engineer in charge (lengh of finished kerb edging shall be measured for payment).(Precast C.C kerb stone shall be approved by Engineer in charge).	cum	10		
75	Supplying and laying in position medium class GI pipes with all specials for external connection including required excavation, chipping of concrete and making good after laying of pipes all complete as per specifications, drawings and as directed by Engineer.				

a)	15mm dia NB	Rm	10		
b)	20mm dia NB	Rm	10		
c)	25mm dia NB	Rm	250		
d)	32mm dia NB	Rm	10		
e)	50mm dia NB	Rm	150		
76(a)	Supplying and fixing in position 1000 litres capacity of Polyethylene water storage tank of approved make and quality conforming to IS: 12701 at all heights and levels including all fitting and fixtures including float valve, stop cock etc complete as per specification, approved drawings and as per direction	No	10		
(b)	-do- as above but with 1500 litres capacity tank	No	0	DELETED	
(c)	-do- as above but with 2000 litres capacity tank	No	5		
77	Providing dispersion trenches as per sketch 6 of IS 2470 Part 1 to dispose the effluent from septic tank including excavation of 1000 mm wide and 1000 mm deep trenches ,provision of 250 mm crushed stone layer at the bottom and laying of 100 mm dia open jointed unglazed earthen ware pipes	Rm	25		
78	Supply ,fabricate,transport and erect in position MS gates including supply of all materials including hinges,locking arrangement,plunger bolts including all inserts and embedments for smooth operation of gates,The rate shall also include for 3 coats of synthetic enamel paint after erection over two coats of red oxide zinc chromate primer etc.(structural steel will be supplied by BHEL)	MT	2		
79	Providing 50 mm thick damp proof course in CC 1:1.5:3 with admixture of approved water proofing compound at plinth level for masonry walls all complete as per specifications, approved drawings and direction. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	Sqm	150		

81	Providing pre-constructional anti-termite treatment, de-watering if necessary, and creating a chemical barrier, under and on sides of trenches, wall footings, top surface of plinth filling, including junction of wall and floor along the perimeter of building, expansion joints, surrounding pipes/conduits with approved emulsifiable insecticides at the rates and concentrations as per IS.6313 (Part-II) as per specification directed by ENGINEER.(Treated plinth area of the building at ground floor only shall be measured)	Sqm	3000		
82	Providing and applying to internal surfaces of the underground RCC structures, 1.5 mm thick acrylic based polymer modified cementitious composite coating system as per specification and direction of engineer in charge.	Sqm	7000		
a)	Same as above but for external surface with addition of fine silica /quartz sand of 0.6 mm nominal size to the coating mix as per specification and direction of engineer in charge.	Sqm	14000		
83	Supplying and painting 85/25 industrial grade hot bitumen conforming to IS:702 at the rate of 1.7kg/sq.m over concrete surfaces as per specification, drawings and direction of engineer in charge.	Sqm	500		
84	Supplying and laying NP4 Hume pipes of various diameter. Including collars etc. complete as per specifications, approved drawings and direction of Engineer-in-charge				
a)	same as item above, for 900 mm dia NP4 pipe	Rm	50		
b)	same as item above, for 600 mm dia NP4 pipe	Rm	50		
c)	same as item above, for 450 mm dia NP4 pipe	Rm	50		
d)	same as item above, for 300 mm dia NP4 pipe	Rm	50		
85	Providing and fixing corrugated AC sheets 6 mm thick of approved manufacture as per IS 459 including AC ridge pieces,apron pieces,barge boards,Galvanised Iron -" J or hook bolts ,seam bolts,washers, nuts" - and bitumen etc complete as per specifications for cladding and roofing at all locations and levels as per the direction of engineer in charge.				
a)	For Roof	Sqm	20		
b)	For Side cladding	Sqm	20		

86	Providing and fixing aluminium nosing strips for the steps with all necessary fixing arrangement to fix the nosing strips to the stairs as per the specification and direction of engineer in charge.	Rm	50		
87	Providing and laying in position precast concrete septic tanks for 25 persons manufactured by IHP or approved equivalent with all connections ,vent pipes,earth work in excavation,backfilling etc complete as per manufacturers instructions and as per directions of Engineer	Each	4		
88	Demolishing of R.C.C. work including sacking of steel bars and disposal of unserviceable material within 50 mtrs lead.	Cum	50		
89	Dismantling of brick workwith plastering works etc. as per specification and engineer in charge	Cum	20		
90	Dismantling steel works etc. as per specification and engineer in charge	MT	10		
91	Providing & applying Nito Bond-EP (of FOSROC make) for joining of concrete as per manufactures specification & the direction of engineer in-charge.	Sqm	25		
92	Conducting UltraSonic Pulse Velocity Test to assess the quality of concrete as per IS: 13311 - Part 1 as per the instructions of Engineer in-charge. (Rutine tests as per the specifications shall bot be paid)	No	2		
93	BUNK HOUSE				
a	Portable insulated metal site office (Bunk house type) of minimum size 35M length X 5M width X 3M height with required furniture of 8 nos Godrej T9 & 12nos of godrej chairs, lighting ventilation and air conditioned for the full volume and with required doors and windows aluminium fittings etc all complete as per approved plan to be submitted by the bidder.	SQM	175		
b	Portable insulated metal / plastic (syntax or approved equivalent) toilet of size 5M length X3M width X 3M height with required sanitary fittings	SQM	15		
c	PVC (sintex or approved equivalent) water tank of minimum 3000 liters capacity)	No.	2		
96	Providing Guniting 50 mm thick in cement mortar at all heights and levels including all cost of materials including fabricated wire mesh reinforcement, labour etc complete as per specifications, approved drgs and direction of Engineer-in-charge. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	Sqm	8700		

97	Providing concrete of M30 Grade as per approved Mix design inside Pipe/Fabricated Hollow section and vibrating to achieve required compaction . Concrete shall be poured in the pipe/hallow section in erection position in secgments as per approved drawings. Erection section concrete shall be provided with required approved admixture/curing compounds etc. The rate to include the cost of scaffolding / platforms and other incidental charges. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	cum	200		
Extra Item					
1	Providing and applying resin bonded granular textured decorative coating, shall consists of adhesive synthetic resins and natural crushed stone chips or pigmented synthetic granules. nominal thickness of 2.5mm using natural stone chips at all elevations for various buildings including material, labour, scaffolding, curing etc complete as per drawing and specification.	sqm	6000		
2	Providing and applying resin bonded granular textured decorative coating, shall consists of adhesive synthetic resins and natural crushed stone chips or pigmented synthetic granules. nominal thickness of 1.2mm of pigmented granular coating at all elevations for various buildings including material, labour, scaffolding, curing etc complete as per drawing and specification.	sqm	200		
3	Two or more coats of distempering with oil bound washable distemper as per IS:428of approved brand and manufacture to give an even shade including a priming coat withdistemper primer complete over P.O.P. (P.O.P. shall be paid separately)				
i	In ceiling	sqm	2500		
ii	In walls	sqm	7000		
4	Providing and laying 10mm thick vitrified ceramic tiles of size 750mm X 750mm unpolished variety from reputed manufacturer for skirting and dado up to specified height complete as per specification	sqm	150		
5	Providing and laying 10mm thick coloured ceramic tiles of required size from reputed manufacturer for skirting and dado up to specified height complete as per specification	sqm	150		

6	Providing and laying 18 mm thick approved quality marble floor using 20 mm black marble slab of approved brand and quality over cement mortar bed of required thickness all complete as per specification, approved drawings and direction of Engineer-in-charge.	sqm	10		
SUB TOTAL					
TOTAL PRICE (PART-4) (in Rs.)					
Note: Brief Specification are mentioned in items said above. These items shall be read along with the respective detailed specification as per the tender document and rates quoted shall be considering the total specification.					

Note

- 1 Revised Quantities are makred in Red.
- 2 New items are added under extra item.

VOLUME-III
PRICE SCHEDULE,REV-02 Dated 22.1.2011

JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 520 MW HNPCL/ VIZAG TPP, VISHAKHAPATNAM, AP.

STRUCTURAL STEEL WORK FOR CHP PKG(PART-5)

TENDER NO. PSER:SCT:VIZ:C1161:10

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.) & In words
I	Preparation, submission of fabrication drawings (including design of connections) with detail bill of materials based on the design drawings submitted by Engineer / Engineer's consultant and obtaining approval from Engineer / Engineer's consultant including cost of number of hard copies & soft copies as required by the Engineer during submission, approval and execution stage for working purpose all complete including cost of all consumables etc complete. On completion of work bidder to prepare and submit required number of As-built fabrication drawings along with Hard copies and soft copies as required all complete as per the direction of Engineer-in charge.	MT	8760		
II	"Receipt of structural steel materials at site, unloading at site, stacking, Fabricating, transporting to site, and erecting in position by all sorts of mechanical means including suitable heavy duty crane, as required, alignment and fixing of Structural Steel members including provision of necessary bolts, nuts, washers, cleats, stiffeners, gussets, base plates, and all other fixtures including all operations like preheating, straightening, cutting, drilling, machining, grinding, welding, non destructive and other tests as per specifications & tender for welds, loading, unloading, stacking, etc. including cleaning, preparing surfaces by sand blasting to near white metal conforming to Sa21/2 finish, at all elevations to achieve an even shade with all materials and providing with shop coat primer with organic zinc Silicate primer of 75 micron DFT, etc. all complete as per specifications, approved construction / fabrication drawings and as directed by Engineer-in charge for the following. (MS PLATES, CHANNEL, ISMB, ANGLE, CHEQUERED PLATES, WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC) . Quoted rate shall include cost of all labour, tools and plants, consumables, erection bolts,permanent bolts, PTFE bearings, scaffolding, lead, lift etc complete(excluding high tensile bolts).				

A	All type of structural steel works for columns, beams, bracings, trusses, purlins, side girts, pipe racks and trestles, lattice girders, built-up section, chequered plates etc. (including pack / spacer plates, splice plates, connecting plates, MS bars, Crane girders, end plates, gusset plates, etc.) at all levels with rolled steel sections like Beams, Channels, Angles, Plates etc,				
(i)*	Receipt of materials, Transportation, Fabrication, sand blasting ,primer painting and shifting to site for erection	MT	7790		
(ii)	Erecting in position , alignment , fixing & Complete welding etc. complete in all respect as per the direction of engineer.	MT	7790		
B	All type of structural steel works for inserts, liner plate etc as below:				
(i)	Receipt of materials, Transportation, Fabrication of inserts, edge angles etc as per drawings , including primer painting, hot dip galvanizing as per specification and handing over to civil agency for fixing in civil works. (MS PLATES, CHANNEL, ISMB, ANGLE, CHEQUERED PLATES, WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)	MT	150		
C	Seal plate for conveyor fabricated from thin plates and fixing in position all complete.				
(i)	Receipt of materials, Transportaion, Fabrication, primer painting and shifting to site for erection	MT	60		
(ii)	Erecting in position , alignment and fixing etc,	MT	60		

III	Providing and supplying, structural steel materials from SAIL stock yard or EX works, unloading at site, stacking, Fabricating, transporting to site, and erecting in position by all sorts of mechanical means including suitable heavy duty crane, as required, alignment and fixing of Structural Steel members including provision of necessary bolts, nuts, washers, cleats, stiffeners, gussets, base plates, and all other fixtures including all operations like preheating, straightening, cutting, drilling, machining, grinding, welding, non destructive and other tests as per specifications & tender for welds, loading, unloading, stacking, etc. including cleaning, preparing surfaces by sand blasting and providing with shop coat primer with Organic zinc silicate primer, etc., etc. all complete as per specifications, approved construction / fabrication drawings and as directed by Engineer-in charge for the following. Payments terms - a) on receipt of materials at site - 65%; b) Erection & fixing - 35%;				
	Quoted rate shall include supply of steel , cost of all labour, tools and plants, consumables, erection bolts, permanent bolts, scaffolding, lead, lift etc complete.				
i)	Hopper gratings as per the scope, specification and approved drawings	MT	260		
ii)	GI Hand rails as per the scope, specification and approved drawings	MT	150		
iii)	Dust Chutes as per the scope, specification and approved drawings	MT	40		
v)	Wash water down comer pipes as per the scope, specification and approved drawings	MT	10		
vi)	Doors with fittings etc, as per the scope, specification and approved drawings	Sqm	300		
vii)	Windows, ventilators with mesh, glazing etc. with fittings etc.as per the scope, specification and approved drawings	Sqm	2000		
viii)	Louvers and similar type of works as per the scope, specification and approved drawings	Sqm	800		

IV	<p>Providing and supplying electroged grating as described below, unloading at site, stacking, erecting in position by all sorts of mechanical means including suitable heavy duty crane, as required, alignment and fixing of Structural Steel members including provision of necessary bolts, nuts, washers, cleats, stiffeners etc., all complete as per specifications, approved construction / fabrication drawings and as directed by Engineer-in charge for the following. Quoted rate shall include supply of steel, cost of all labour, tools and plants, consumables, scaffolding, lead, lift etc complete.</p> <p>Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%;</p>				
i)	<p>Gratings of pressure locked type (preferably electro-forged type) inside the buildings painted with zinc phosphate primet and finished with Chlorinated Rubber based paint of approved make and colour as per the scope and specification</p>	MT	110		
V	<p>Supply, fabrication, transportation, delivery at site and handing over to civil works executing agency, MS Foundation bolts (Grade- 1 of IS: 432 & IS: 2062) for assembly in concrete along with nuts, locknuts (IS: 1363, IS: 1364 & IS: 3138), washers, anchor plates, stiffener plates, protective tapes etc. up to & inclusive of 63mm diameter and up to 3000mm long, for columns and building structures including pipe sleeves, templates wherever necessary etc. all complete as per specifications and directed by the Engineer.(all steel to be supplied by contractor). Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%;</p>	MT	100		

VI	Design, supply & erection of permanent colour coated single skin metal cladding, standing seam or approved equivalent (external sheet) of approved color for external walls comprising of profiled sheet of 0.55 mm TCT (Total Coated Thickness) permanently color coated zincalume steel (150 gsm Zinc - aluminium alloy coating) having 300 Mpa yield strength with color coating of SMP/super polyester XRW including color coating of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on the reverse side. The sheet having 500 mm cover width, 47 mm high crests at 250 mm c/c with special male/female side laps & siphoning feature to prevent leakage including fixing of sheet by concealed clips (including sub-girts of size 50X50X50 mm manufactured out of 16G GI 'Z' shape, without penetrating external sheet) complete including flashings as per specification. Payment terms - a)Design - 5%,(b) On receipt of materials at site - 65%; b) On completion of erection & fixing - 30%..				
i)	0.55mm thick CGI on roof as per specification in tender	Sqm	14000		
ii)	0.55mm thick CGI on sides as per specification in tender	Sqm	15000		
ii)	2mm thick Translucent sheets of polycarbonate material approved make on roof & side cladding as per the specification and direction of engineer in charge	Sqm	7000		
VII	Design,Supply, unloading, stacking, fabricating, transporting to site, erecting & fixing in position permanently colour coated (on exposed face) troughed metal sheet decking of approved profile having minimum base metal thickness of 0.8mm of galvanised (with minimum rate of galvanisation of 275 gm/sq.m.) M.S. sheet or minimum 0.8mm of high tensile steel (minimum yield strength 350 MPa) coated with zinc aluminium alloy (zincalume) (coating not less than 150 gm./sq.m). Silicon modified polyester paint having DFT of minimum 20 microns shall be used for permanent coating. The sheeting shall be fixed by means of concealed fixing system or any other compatible method approved by the Engineer. Quoted rate shall include cost of all labour, transport, tools, tackles, scaffolding, lead, lift etc. complete as per the specification and direction of engineer. Payment terms - a)Design - 5%,(b) On receipt of materials at site - 65%; b) On completion of erection & fixing - 30%..	sqm	4000		

VII* 1)	Painting of structural steel works with an intermediate coat of 75 Micron epoxy resin based paint pigmented with titanium dioxide/ Micaceous iron oxide (MIO) with min over primer coat as per specification and directions of engineer-in-charge.	MT	8760		
2)*	Painting of structural steel works over intermediate coat with epoxy paint suitably pigmented of approved shade and colour with glossy finish and DFT of 70 microns as per the directions of engineer in charge.				
3)*	Painting of structural steel works finishing coat of polyurethane of min. DFT of 30 microns over top coat as per specification and directions of engineer in charge.				
IX	Supply, fabrication & erection with 20mm Square MS bar Balustrade with suitable MS flat and Aluminium handrail as per technical specification and as directed by engineer in charge.	MT	4		
X	Providing and laying 150mm dia medium class GI rain water down comer conforming to IS:1239 including all fittings and fixtures complete at all heights and levels as per specifications, approved drawings and direction of Engineer-in-charge.	RM	3000		
X1*	Conducting radiography test (Test shall be conducted in accordance with American National standard ANSI /AWS D1.1-92) on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	30		
Xii*	Conducting ultrasonic test on welds(Test shall be carried out in accordance with American National Standard ANSI/AWS D1.1-92 chapter 6:Part c) wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	RM	520		

XIII*	Dismantling of steel structure at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, (weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of engineer.	MT	5		
XIV	Addition to, alterations in and/ or modification of "Erection Marks" either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bend, raising to the required level, painting, transportation, return of unutilised steel pieces to project store, temporarily dismantling, cutting, re-welding, supporting & restoring to correct position of all temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled & adjacent members not payable), complete as per specifications, drawings & instructions of engineer.				
a*	In erected position.	MT	5		
b*	In fabrication yard.	MT	5		
XV	Re-erection of dismantled fabricated structural steel members requiring additions, modification, (dismantling & additions to, alterations in and/ or modification to be paid separately under ITEM NO XIII & XIV respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding & touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting & restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members & adjacent members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per spec, drawings & instructions of engineer.	MT	10		

XVI*	ii) Supply and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc up to and inclusive of 39mm diameter and upto 300 mm long including hot dip galvanizing at the rate of minimum 610gm/sqm to an average of 750gm/sqm for structural steel work complete as per specification, drawings and instructions of the Engineer. Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%;	MT	100		
XVII*	Supply & welding of 10mm Sq bar to the chequered plate walk way at all conveyor galleries in CHP including all consumables as per the directions of engineer in charge.	MT	10		
XVIIIa	Fabrication of steel columns in Pipe/Box section for Junction towers/ Transfer tower /Trestle coumns etc with required collars stiffness as per approved fabricatio drawings for composite sectio of concrete and structural steel and grid assembling at ground level and transporting and stacking the fabricated structural steel as per technical specification. (Supply of steel by BHEL)	MT	760		
b	Erection of steel columns in Pipe/Box section for Junction towers/ Transfer tower /Trestle coumns etc for composite sections in steel and concrete. As per technical specification, sequence of erection including the cost of fastners, erection bolts, crane charges, scaffolding and required erection facilities ..etc as per approved drawings and directions of engineer in charge.	MT	760		
XIX	Conducting magnetic particle test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications.	RM	7500		

XX	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications.	RM	5000		
TOTAL PRICE (PART-5) (in Rs.)					
Note: Brief Specification are mentioned in items said above. These items shall be read along with the respective detailed specification as per the tender document and rates quoted shall be considering the total specification.					