

**VOLUME-III**  
**PRICE SCHEDULE,REV-04 Dated 08.11.2011**

**JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 250 MW BSEB BARAUNI TPS, DIST. BEGUSARAI , BIHAR.**

**SUMMARY OF PRICE SCHEDULE : (PART-1 + PART-2 + PART-3 +PART-4 +PART-5+PART-6)**

SL.NO	DESCRIPTION OF WORK	PRICE SCHEDULE REF	TOTAL AMOUNT (In Rs.)	TOTAL AMOUNT IN WORDS (In Rs)
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	DESIGN & ENGINEERING FOR CHP PACKAGE	PART-6		
7.0	<b>GRAND TOTAL PRICE (PART-1 + PART-2 + PART-3 + PART-4 + PART-5 + PART-6) (inclusive of WCT but exclusive of Service Tax) - For arriving at 'L1' status</b>			
<b>Rate of service tax considered : .....%</b>				
<b>NOTES:</b>				
a)	Bidder to note that evaluation & awarding will be done on the Grand total quoted price against SL NO 7.0 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, SL NO. 5.0 and SL NO 6.0 above should match with that of PRICE SCHEULE(PART-1) ,PRICE SCHEULE(PART-2),PRICE SCHEULE(PART-3),PRICE SCHEULE(PART-4), PRICE SCHEDULE(PART-5) and PRICE SCHEDULE(PART-6) 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 & PART-6) of Price Schedule, quote % above or below the CPWD schedule (DSR-2007).			
			<b>PERCENTAGE (In Figures)</b>	<b>PERCENTAGE (In Words)</b>
	(i)Rate of complete item.			
	(ii)Rate of supply of materials at site only.			
(iii)Rate for execution complete excluding supply of materials.				

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PILING WORKS OF AHP PACKAGE (PART-1)					
S. No.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.)
1	Mobilization of DRIVEN cast in situ RCC piling rigs accessories capable of installing 550 mm diameter piles in all types of soil to project site and demobilization of the same after the completion of piling works etc all complete	NOS	5		
2	Installation of driven cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 1) by driving a suitable MS casing pipe in all types of soil (removable having detachable MS Shoe (flat/ conical), at the bottom and driving using atleast 5MT hammer for the length as specified (length to be measured from pile cut off level to the bottom of pile )/for the desired set criteria (to be finalized during detailed engineering stage ) so as to achieve the safe load carrying capacity as mentioned using cement concrete grade of M30 conforming to IS 456 with 20mm nominal size stone aggregates with a minimum cement content of 400 kg/cum of concrete including providing all materials (but excluding the reinforcement for which measurement shall be made separately ), <b>without any plasticizer</b> , breaking pile head to cutoff level and exposing pile reinforcement for embedment in pile cap, empty driving etc including approved MS shoe ( design and drawing of MS shoe shall be submitted for approval without any extra cost to BHEL/owner) etc all complete as per the specification, drawing as directed by engineer in charge for the following. Excavation for Pile chipping is paid separately as per item no 1.0 of Part-3				
a	piling of 550mm diameter and upto 22m length below cut off	RM	26400		
b	piling of 550mm diameter and 22 to 30 length below cut off level	RM	1100		
3	Conducting initial load test upto maximum test load of <b>three times the safe load capacity</b> on single 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 pile ( installation of pile shall be paid separately) etc. all complete as per the specification, drawing and as directed by the engineer in charge for the following				
3.1	for vertical compression test by cyclic load method ( Initial Load Test)				
	550mm diameter pile -	NOS	8		
3.2	For lateral load test				
	550mm diameter pile -	NOS	8		
3.3	For tension/uplift test				
	550mm diameter pile -	NOS	8		
4	conducting routine load test on single job pile upto maximum test load of one and a half times the safe load capacity as specified in accordance with IS 2911 (part-4) including the 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 job pile complete as per the specification, drawing and as directed in charge for the following				
4.1	For vertical compression test by maintained load method				
	550mm diameter pile -	NOS	29		
4.2	For lateral load test				
	550mm diameter pile -	NOS	29		
4.3	For tension/uplift test				
	550mm diameter pile -	NOS	29		
5	Carrying out low strain pile integrity test on 450mm/500mm/ 550mm/ 600mm/750mm / 900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc <b>but excluding the cost of installation of job pile (installation of pile shall be paid separately as per relevant items )</b> all complete as per specification and as directed by the engineer-in-charge.	NOS	1320		
6	Taking delivery of steel from BHEL stores/store yard or directly from trailer, straightening, cutting, bending, placing and binding in position at any level, of steel reinforcements of TMT steel of grade Fe 500/415 conforming to IS 1786 including the cost of binding wire 16 gauge size, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer - For piling works. Reinforcement steel will be supplied by BHEL on free issue basis upto the extent as per theoretical requirement with allowable wastages as specified elsewhere in the tender ( Ref SCC)	MT	968		
7	Driving 550 mm diameter empty MS casing with bottom closed with approved detachable MS shoe down to a maximum depth of 22m below ground level using atleast 5MT weigh drop hammer and furnishing the set of calculation including providing detachable MS shoe etc all complete	NOS	10		

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PILING WORKS OF AHP PACKAGE (PART-1)					
S. No.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.)
<b>GROUND IMPROVEMENT BY COMPACTION STONE COLUMN</b>					
8	Providing and installing 550 diameter and 12m long driven cast insitu compaction stone column <b>as per IS: 383</b> by driving of suitable MS casing pipe (removable) having a detachable M.S. Shoe (flat/conical) at the bottom and filling inside the casing pipe in layers of 1m using 1(sand) :2(gravel shall be of 50mm & down) and each layer shall be compacted by dynamic compaction method (before compaction , lift the casing for about 800mm from the bottom and then backfill shall be thoroughly compacted . This procedure shall be repeatedly for every layer till the ground level is reached ) for ground improvement of pond ash deposit at desired location including all materials, equipment etc complete as per the specification, drawings and as directed by engineer in-charge	NOS	4620		
9	Extra over item no. 8 for increase in depth of driven cast-in-situ compaction stone column over the specified length of 12m	RM	1320		
10	Rebate on item no. 8 for decrease/reduction in length of driven cast-in-situ compaction stone column on the specified length of 12m	RM	1100		
11	Conducting plate load test at specified depth using 600mm x600mm x 25mm mild steel plate as per IS -188 and submission of approved test report etc as per the specification . ( earth work in excavation and back filling shall be paid extra as per relevant applicable item)	NOS	11		
12	Conducting Dynamic cone penetration test at specified location as per the IS 4968, part-1 for a maximum depth upto 15m below ground level or upto refusal (150 blows for 300mm or less penetration ) and submission of approved test report etc as per specification	NOS	32		
<b>TOTAL PRICE (PART-1)</b>					
1	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work				
2	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified				
3	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %				

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PILING WORKS OF CHP PACKAGE (PART-2)					
S. No.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.)
1	Mobilization of DRIVEN cast in situ RCC piling rigs accessories capable of installing 550 mm diameter piles in all types of soil to project site and demobilization of the same after the completion of piling works etc all complete	NOS	6		
2	Installation of driven cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 1) by driving a suitable MS casing pipe <b>in all types of soil</b> (removable having detachable MS Shoe ( flat/ conical) at the bottom and driving using atleast 5MT hammer for the length as specified (length to be measured from pile cut off level to the bottom of pile )/for the desired set criteria (to be finalized during detailed engineering stage ) so as to achieve the safe load carrying capacity as mentioned using cement concrete grade of M30 conforming to IS 456 with 20mm nominal size stone aggregates with a minimum cement content of 400 kg/cum of concrete including providing all materials (but excluding the reinforcement for which measurement shall be made separately ), <b>without any plasticizer</b> , breaking pile head to cutoff level and exposing pile reinforcement for embedment in pile cap, empty driving etc including approved MS shoe ( design and drawing of MS shoe shall be submitted for approval without any extra cost to BHEL/owner) etc all complete as per the specification, drawing as directed by engineer in charge for the following. Excavation for Pile chipping is paid separately as per item no 2.0 of Part-4				
a	piling of 550mm diameter and upto 22m length below cut off	RM	32430		
b	piling of 550mm diameter and 22 to 30 length below cut off level	RM	1100		
3	Conducting pile load test upto maximum test load of <b>three times the safe load capacity</b> on single pile as specified in accordance with IS 2911 part-4 including preparation of pile head for testing, necessary excavation, provide 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 pile ( installation of pile shall be paid separately) etc. all complete as per the specification, drawing and as directed by the engineer in charge for the following				
3.1	for vertical compression test by cyclic load method ( Initial Load Test)				
a	550mm diameter pile -	NOS	10		
3.2	For lateral load test				
a	550mm diameter pile -	NOS	10		
3.3	For tension/uplift test				
a	550mm diameter pile -	NOS	10		
4	conduct routine load test on single job pile upto maximum test load of one and a half times the safe load capacity as specified in accordance with IS 2911 (part-4) including the 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 job pile complete as per the specification, drawing and as directed in charge for the following				
4.1	For vertical compression test by maintained load method				
a	550mm diameter pile -	NOS	36		
4.2	For lateral load test				
a	550mm diameter pile -	NOS	36		
4.3	For tension/uplift test				
a	550mm diameter pile -	NOS	36		
5	Carrying out low strain pile integrity test on 450mm/500mm/550mm / 600mm/750mm / 900mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc <b>but excluding the cost of installation of job pile (installation of pile shall be paid separately as per relevant items )</b> all complete as per specification and as directed by the engineer-in-charge.	NOS	1650		
6	Taking delivery of steel from BHEL stores/store yard or directly from trailer, straightening, cutting, bending, placing and binding in position at any level, binding in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe 500/415 conform to IS 1786 including the cost of binding wire 16 gauge size, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer - For piling works. Reinforcement steel will be supplied by BHEL on free issue basis upto the extent as per theoretical requirement with allowable wastages as specified elsewhere in the tender ( Ref SCC)	MT	1210		
7	Driving 550 mm diameter empty MS casing with bottom closed with approved detachable MS shoe down to a maximum depth of 22m below ground level using atleast 5MT weigh drop hammer and furnishing the set of calculation including providing detachable MS shoe etc all complete	NOS	10		
<b>GROUND IMPROVEMENT BY COMPACTION STONE COLUMN</b>					

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PILING WORKS OF CHP PACKAGE (PART-2)					
S. No.	DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE (in Rs.)	AMOUNT (in Rs.)
8	Providing and installing 550 diameter and 12m long driven cast insitu compaction stone column <b>as per IS: 383</b> by driving of suitable MS casing pipe (removable) having a detachable M.S. Shoe (flat/conical) at the bottom and filling inside the casing pipe in layers of 1m using 1(sand) :2(gravel shall be of 50mm & down) and each layer shall be compacted by dynamic compaction method (before compaction , lift the casing for about 800mm from the bottom and then backfill shall be thoroughly compacted . This procedure shall be repeatedly for every layer till the ground level is reached ) for ground improvement of pond ash deposit at desired location including all materials, equipment etc complete as per the specification, drawings and as directed by engineer-in-charge	NOS	4950		
9	Extra over item no. 8 for increase in depth of driven cast-in-situ compaction stone column over the specified length of 12m	RM	1320		
10	Rebate on item no. 8 for decrease/reduction in length of driven cast-in-situ compaction stone column on the specified length of 12m	RM	1100		
11	Conducting plate load test at specified depth using 600mm x600mm x 25mm mild steel plate as per IS -188 and submission of approved test report etc as per the specification . ( earth work in excavation and back filling shall be paid extra as per relevant applicable item)	NOS	11		
12	Conducting Dynamic cone penetration test at specified location as per the IS 4968, part-1 for a maximum depth upto 15m below ground level or upto refusal (150 blows for 300mm or less penetration ) and submission of approved test report etc as per specification	NOS	35		
<b>TOTAL PRICE (PART-2)</b>					
1	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work				
2	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified				
3	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
1.0	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION & DRAWINGS				
1.1	Excavation at all depths below existing ground/grade level as per approved drawing including clearing away vegetation, 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 as directed by engineer incharge including all lead, lifts, etc complete. Depth of excavation measured from existing ground/ grade level.				
1.1.1	In all types of soils including expansive soil, ash, morrum, laterite up to 2m.	10289	CUM		
1.1.2	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.	1100	CUM		
1.1.3	In hard rock by means of controlled blasting as per statutory requirement up to 2m	55	CUM		
1.1.4	In hard rock (blasting prohibited) by means of chiselling, wedging etc. - up to 2m	55	CUM		
1.2	Extra over item ST no 1.1 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	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	Beyond 2 m and upto 4 m.	10289	CUM		
1.2.1.2	Beyond 4 m and upto 7 m.	8820	CUM		
1.2.1.3	Beyond 7 m and upto 10 m.	550	CUM		
1.2.1.4	Beyond 10 m and upto 15 m.	55	CUM		
1.2.2	In all types of rocks.				
1.2.2.1	Beyond 2 m and upto 4 m.	11	CUM		
1.2.2.2	Beyond 4 m and upto 7 m.	11	CUM		
1.2.2.3	Beyond 7 m and upto 10 m.	11	CUM		
1.2.2.4	Beyond 10 m and upto 15 m.	11	CUM		
1.2.2.5	Beyond 15 m and upto 20 m.	11	CUM		
1.3	Extra over item 1.1 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 cumulatively).				
1.3.1	Carriage beyond 1.0 km and not exceeding 2.0 km.	3150	CUM		
1.3.2	Carriage beyond 2.0 km and not exceeding 3.0 km.	3150	CUM		
1.3.3	Carriage beyond 3.0 km and not exceeding 4.0 km.	3150	CUM		
1.3.4	Carriage beyond 4.0 km and not exceeding 5.0 km.	3150	CUM		
1.3.5	Carriage beyond 5.0 km and not exceeding 6.0 km.	11	CUM		
1.3.6	Carriage beyond 6.0 km and not exceeding 7.0 km.	11	CUM		
1.3.7	Carriage beyond 7.0 km and not exceeding 8.0 km.	11	CUM		
1.3.8	Carriage beyond 8.0 km and not exceeding 9.0 km.	11	CUM		
1.3.9	Carriage beyond 9.0 km and not exceeding 10.0 km.	11	CUM		
1.4	Providing and driving sheet piling upto all depths in various types of soils including cost of sheet, tools and plants, anchoring arrangement, labour etc all complete including removing the sheet piles on completion of respective Civil Works (The item shall be executed on specific approval by the Engineer-in-charge on a case-to-case basis depending on space constraints).	3850	SQM		
1.5	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.				
1.5.1	Ordinary manual compaction.	55	CUM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
1.5.2	90% Standard Proctor Density.	8825	CUM		
1.5.3	95% Standard Proctor Density.	8825	CUM		
1.6	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.				
1.6.1	Ordinary manual compaction.	550	CUM		
1.6.2	90% Standard Proctor Density.	8825	CUM		
1.6.3	95% Standard Proctor Density.	8825	CUM		
1.7	Filling using selected materials in trenches, plinths, sides of foundations, in the space below the grade level slab and other under ground 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.				
1.7.1	With selected soil brought from borrow areas arranged by contractor, including royalties, fees etc.for all leads and compacted to following densities.				
1.7.1.1	90% Standard Proctor Density.	275	CUM		
1.7.1.2	95% Standard Proctor Density.	1100	CUM		
1.7.2	With selected sand brought from quarries/ river bed arranged by you, and compacting to 80% relative density etc for all leads.	550	CUM		
1.8	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.	1010	CUM		
1.9	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.	110	CUM		
1.10	Bulldozing earth for grading of ground including removable of vegetation complete including disposal of debris upto 5 kms.	110	CUM		
1.11	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 seviceable material and disposal of material at a maximum distance 1 KM. All measurement to be recorded in the register.				
1.11.1	Beyond 30 cm girth upto and including 60 cm girth	11	NOS		
1.11.2	Beyond 60 cm girth upto and including 120 cm girth	11	NOS		
1.11.3	Beyond 120 cm girth upto and including 240 cm girth	11	NOS		
1.11.4	Beyond 240 cm girth	11	NOS		
2.0	PROVIDING & PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS (INCLUDING CEMENT) 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				
2.1	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.	87	CUM		
2.2	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.	543	CUM		
2.3	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.	355	CUM		
2.4	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.	355	CUM		
2.5	Deleted				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
2.6a	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 as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	1695	CUM		
2.6b	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.	4204	CUM		
2.7a	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 as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	2278	CUM		
2.7b	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.	120	CUM		
2.8	Concrete of grade M-25 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.	6	CUM		
2.9	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.	6	CUM		
2.10	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.	160	CUM		
2.11	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.	6	CUM		
2.12	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 adjuasant 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).	29	CUM		
2.13	Concrete of grade M-25 in water retaining/ conveying structures including addition of suitable plasticizer cum waterproofing cement additives conforming 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.	880	CUM		
2.14	Concrete of grade M-15 in plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate.	6	CUM		
2.15	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.				
2.15.1	Plain cement concrete of all grades.	8	CUM		
2.15.2	Reinforced cement concrete of all grades alongwith cutting of reinforcements etc complete.	8	CUM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
2.16	Cutting of masonry/ PCC/ RCC work of thickness 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).	6	SQM		
2.17	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).	6	SQM		
3.0	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	Ordinary form work below & above finished ground floor level for foundations, footings, bases of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	7366	SQM		
3.2	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.	4910	SQM		
3.3	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.	12276	SQM		
3.4	Curved form work using Slip form for Silos etc at all heights and levels (for all structure of diameter more than 6m)	4414	SQM		
4.0	REINFORCEMENT				
4.1	Supply,transporting, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in concrete, including cost of reinforcement steel, binding wire, labour etc complete all as per specifications & drawings.(Contractor will provide reinforcement from SAIL/ TISCO/ IISCO/RINL)	1	MT		
4.2	Taking delivery of steel from BHEL stores/store yard or directly from trailer, straightening,de-coiling, cutting, bending, placing in position at any level for all works binding in position of Tor steel reinforcements (TMT) supplied by BHEL free of cost, confirming to HCR -M Grade FE - 500/415 including cost of labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Reinforcement steel will be supplied by BHEL onfree issue basis upto the extent as per theoretical requirement with allowable wastages as specified elsewhere in the tender ( Ref SCC) (no payment will be made for chairs and spacer bars. However approved laps will be paid for)	1185	MT		
4.3	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).	1	MT		
4.4	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 SCC free of cost)	1	MT		
5.0	WATER PROOFING AS PER SPECIFICATION (YOU HAVE TO FURNISH A GUARANTEE FOR MATERIAL AND WORKMANSHIP FOR A MINIMUM PERIOD OF 20 YEARS).				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
5.1	Providing and laying roof water treatment with high solid content liquid applied elastomeric water proofing membrane with separate wearing course as per ASTM C-898 . Thickness of membrane shall be min 1.5 mm. Treatment shall include application of polymerized mortar over roof achieving a smooth surface and a primer coat. Wearing course on the top of membrane shall consist of 40 mm thick PCC (1:2:4) cast in panels of maximum size 1.2 X 1.2 m and reinforced with 0.56 mm dia galvanised chicken wire mesh and sealing of joints using sealing compound complete as per specifications and as directed by engineer in charge.	3182	SQM		
5.2	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	75 mm thick.	6	SQM		
5.2.2	100 mm thick.	2	SQM		
5.3	Providing & laying pressed precast CHEQUERED concrete tiles over water proofing of min size 300x300 & min thickness 20 mm conforming to IS 13801 including 15 mm thick cement mortar (1:4) bedding inclusive of provision for thermal expansion for each roofing tile filled with polysulfide joint sealant (water proofing paid elsewhere).	22	SQM		
5.4	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.	2200	Litres		
5.5	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.	110	SQM		
6.0	SUPPLYING & INSTALLATION OF JOINT FILLER AND SEALING COMPOUND.				
6.1	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	12mm thick joints.	11	SQM		
6.1.2	20mm thick joints.	11	SQM		
6.1.3	25mm thick joints.	110	SQM		
6.1.4	50mm thick joints.	11	SQM		
6.2	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.	55	Kg		
6.3	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.	11	Kg		
7.0	MS EMBEDMENTS				
7.1	Taking delivery of steel from BHEL stores/store yard or directly from trailer, 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).	22	MT		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
7.2	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	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.	2	MT		
7.4	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, stiffener 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%.	11	MT		
8.0	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING.				
8.1	Deleted				
8.2	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/Conbextra GPX-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	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	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).	1	CUM		
8.5	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1( 1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer.	1	CUM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
8.6	Providing and grouting of column base with CM 1:1:2 (1 part cement : 1 part sand : 2 parts coarse aggregates with 12.5 mm or down chips ) including all cost of labour,etc. complete as per drawing,specification and direction of engineer-in-charge.	1	CUM		
8.7	Providing & water proofing with chemical injection grouting including supplying and fixing GI nozzles all complete as per drawings, specifications and direction of engineer.	743	SQM		
9.0	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).				
9.1	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%.	87	SQM		
9.2	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%.	2	SQM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
9.3	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-metallc 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%.	550	Kg		
9.4	Providing and fixing of over head hydraulic door closers of Yale make or equivalent make & quality as directed by engineer.	3	NOS		
9.5	Providing and fixing floor mounted hydraulic door closer of approved make & quality as directed by engineer.	3	NOS		
9.6	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%.	6	SQM		
9.7	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%.	13	SQM		
9.8	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%.	92	SQM		
9.9	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.				
9.9.1	4 mm clear sheet glass.	6	SQM		
9.9.2	4 mm clear float glass.	72	SQM		
9.9.3	6 mm clear float glass.	440	SQM		
9.9.4	6 mm wired glass.	55	SQM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
9.10	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.	23	NOS		
9.11	Providing & fixing 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.				
(a)	openable	449	SQM		
(b)	fixed				
10.0	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL (INCLUDING CEMENT) , COST OF LABOUR ETC COMPLETE, AS PER SPECIFICATIONS (MANUFACTURING OF FLY ASH CEMENT BRICKS, WHICH WILL BE MANUFACTURED BY VENDOR INSIDE PROJECT PREMISES).				
10.1	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	Using fly ash cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2.	2	CUM		
10.1.2	Using ordinary bricks of class designation 50 of nominal dimension.	28	CUM		
10.1.3	Using locally available first class bricks of class designation 100 of nominal dimension approved by engineer/ customer.	2	CUM		
10.2	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	Using fly ash cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2.	2	CUM		
10.2.2	Using ordinary bricks of class designation 50 of nominal dimension.	770	CUM		
10.2.3	Using locally available first class bricks of class designation 100 of nominal dimension approved by engineer/ customer.	2	CUM		
10.3	Deleted				
10.4	Providing and laying 115 mm thick brick wall of 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	1	CUM		
10.5	Providing & laying brick on edge on both edges of black top of roads, as per specification and direction of engineer-in-charge.	1	RM		
10.6	Providing & laying Random Rubble masonry with hard stone in all levels including leveling up with cement concrete 1 :6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size at plinth level with cement mortar 1 :6 ( 1 cement : 6 coarse sand)	2	CUM		
10.7	Making openings in existing brick wall or partition wall including making good the broken edges/ surface with cement mortar etc complete.	1	SQM		
10.8	Providing & filling brick bats in soak pits, below plinth protection etc complete.	1	CUM		
10.9	Dismantling brick work with plastering works etc. as per specification and direction of engineer in charge.	1	CUM		
11.0	DAMP PROOF COURSE INCLUDING ALL MATERIALS (INCLUDING CEMENT), LABOUR, SHUTTERING, CENTERING, CURING ETC, COMPLETE WITH THICKNESS AS SPECIFIED/ SHOWN ON DRAWINGS.				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
11.1	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	220	SQM		
12.0	CEMENT MORTOR PLASTER INCLUDING ALL MATERIALS (INCLUDING CEMENT), SCAFFOLDING, CURING ETC COMPLETE AS PER SPECIFICATION				
12.1	Providing 12 mm thick plaster in cement mortar 1:6 on walls, finished to a smooth finish as per specification.	3520	SQM		
12.2	Providing 12 mm thick plaster in cement mortar 1:6 on walls, with a rough finish as per specification.	1	SQM		
12.3	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.	1	SQM		
12.4	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.	3854	SQM		
12.5	Providing 6mm thick plaster in cement mortar 1:4 on ceilings finished to a smooth finish as per specification.				
12.5.1	cement sand mortar 1:4.	3300	SQM		
12.6	Providing plaster of paris/ white putty (birla white) 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	6600	SQM		
12.7	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.	550	SQM		
12.8	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.	1100	RM		
12.9	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.	1100	RM		
12.10	Deleted				
12.11	Providing and laying total 20mm thick cement plaster in two layers, first layer with 14mm in CM 1:6 (1 cement: 6 Course sand) and second layer of 6mm thick in CM 1:4 (1 cement: 4 Course sand) with approved water proofing compound for external face of walls at all heights and levels curing etc all complete as per specifications, approved drawings and direction of Engineer in charge.	1	CUM		
13.0	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	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.	2200	SQM		
13.2	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.	550	SQM		
13.3	Two or more coats of cement paint (for internal use) of approved brand and manufacture to give an even shade including priming coat complete.	4950	SQM		
13.4	Two or more coats of cement paint (for external use) of approved brand and manufacture to give an even shade including priming coat complete.	110	SQM		
13.5	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.	110	SQM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
14.0	FLOORING & SKIRTING INCLUDING ALL MATERIALS(including cement), LABOUR, CURING, POLISHING, FINISHING, EXPANSION JOINTS, GROOVES, ETC COMPLETE IN ALL RESPECTS AS PER DRAWINGS & SPECIFICATIONS (UNDERBED TO BE PAID SEPERATELY UNDER RELEVANT ITEM)				
14.1	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.	<b>3087</b>	SQM		
14.2	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).	<b>110</b>	SQM		
14.3	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.	<b>1</b>	SQM		
14.4	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.				
14.4.1	450x450 mm.	<b>110</b>	SQM		
14.4.2	600x600 mm.	<b>165</b>	SQM		
14.5	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.				
14.5.1	7 mm thick.	<b>550</b>	SQM		
14.6	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.				
14.6.1	Glass strips 50 mm wide and minimum 6 mm thick.	<b>110</b>	RM		
14.6.2	Aluminium strips 50 mm wide and minimum 3 mm thick.	<b>6</b>	RM		
14.6.3	Brass strips 20 mm wide and minimum 4 mm thick.	<b>6</b>	RM		
14.7	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.	<b>55</b>	SQM		
14.8	Providing and laying PVC tiling / sheeting using 2 mm thick tile / sheet as per IS:5318 of approved brand, quality and colour all complete as per specification, approved drawings and direction of Engineer-in-charge.	<b>1</b>	SQM		
14.9	Providing & laying granite stone slab of 20 mm thickness single piece for wash basin slab/ canteen etc, for wall of approved colour with making corners, cutting and opening complete.	<b>1</b>	SQM		
14.10	Providing and laying 40 mm thick precast terrazzo tile flooring using 20 mm thick precast terrazzo tile of approved quality, texture, grains and color over cement mortar base of required thickness all complete as per specifications, approved drgs and directions of Engineer-in-charge.	<b>55</b>	SQM		
14.11	Providing 30 mm thick precast terrazzo tiles skirting using 20 mm thick precast terrazzo tile of approved quality, texture, grains and colour over cement mortar base of required thickness all complete as per specifications, approved drgs and directions of Engineer-in-charge.	<b>55</b>	SQM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
14.12	Providing and laying 50 mm thick granolithic flooring (cement concrete flooring in 1:1:2) with non metallic hardener pigmented topping of 12 mm thick in flooring complete as per specification.	55	SQM		
14.13	Providing and laying 25 mm thick granolithic flooring (cement concrete flooring in 1:1:2) with non metallic hardener pigmented topping of 10 mm thick in skirting and dado complete as per specification.	55	SQM		
14.14	Providing and laying cement concrete flooring in M25 of thickness 50 mm without non metallic hardener topping with finishing, curing etc. complete as per specification, approved drawings and direction of engineer-in charge.	55	SQM		
14.15	Providing & laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles including non-skid self leveling 150 microns epoxy in flooring complete as per specification.	142	SQM		
14.16	Deleted				
14.17	Providing & fixing chemical resistant (Acid & Alkali) Tiles as per IS 4457 of minimum thickness 25 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.	1	SQM		
14.18	Providing & fixing chemical resistant (Acid & Alkali) ceramic unglazed vitreous tiles as per IS 4457 of min thickness 20 mm in flooring/ dado. The tiles shall be abrasion resistant and durable. The bedding shall comprise of potassium silicate mortar conforming to IS: 4832 (Part I) and resin based mortar like epoxy for jointing.	1	SQM		
14.19	Providing & laying 10 mm thk matt/ mirror vitrified ceramic tiles of appd make on 40 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.				
14.19.1	600X600 mm.	1	SQM		
14.20	Providing and laying 5mm thick decorative coloured ceramic tiles as per specifications, drawings and direction of engineer-in-charge.	11	SQM		
14.21	Providing dadoing with white glazed tile of approved brand, quality, colour and size including 12 mm thick bedding of cement mortar 1:3 all complete as per specification, approved drawings and direction of Engineer-in-charge	11	SQM		
14.22	Deleted				
14.23	Providing polished stone 20 mm thk in skirting projecting 6mm from adjacent plaster all complete.	1	SQM		
14.24	Providing & laying stone pitching in cement mortar 1:6 (1 cement: 6 coarse sand) in slopes and similar type of works by using hard stone in all levels etc. complete as per specification, approved drawing and direction of Engineer-in-charge	55	CUM		
14.25	Providing and laying of 22mm thk 200x200 mm conc chequered tiles in pathways all inclusive.	1	SQM		
14.26	Providing & laying 60 mm thick anti skid precast interlocking concrete pavers of minimum M-30 grade of approved shape as per the approval of engineer and specifications complete including minimum 40 mm thk sand underbed (rate is inclusive of underbed).	1	SQM		
14.27	Providing & laying polished granite stone 20 thk in skirting, facia and dado including pigments, curing, grinding, granite polishing etc complete.	1	SQM		
14.28	Providing and laying 40 mm thick Kota stone floor on stair / dado using 20 mm thick kota stone of approved brand, quality and colour over cement mortar bed of required thickness all complete as per specification, approved drgs and direction of Engineer-in-charge	22	SQM		
14.29	Deleted				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
15.0	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 SCC).				
15.1	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,	1407	SQM		
	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%.				
15.2	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.	1	QUINTAL		
15.3	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.	110	SQM		
16	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	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 preperation 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	12 mm thick board with galvanised light gauge steel load bearing supporting GI frame and finished flat.	110	SQM		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
16.2	Providing and fixing cement bonded particle board false ceiling system consisting of 600X 600X12 mm board with one coat of primer and two coats of acrylic emulsion paint with suspension system consisting of 6mm dia galvanised steel rods suspended from ceiling supporting aluminium grid of 38X 25X 1.5 mm and cross-tie of 25X25X 1.5 mm and aluminium angle of 25x25x1.5 mm suspended from RCC slab / Structural Steel or catwalkway grid above with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding cost of cat walkway grid) all complete as per drawings, specifications, and instructions of the engineer.	1	SQM		
16.3	providing and fixing aluminium false ceiling system comprising of 84 mm wide and 12.5 mm deep closed type plain panels of approved colour, roll formed out of 0.5 mm thk corrosion resistant aluminium alloy AA5050 fixed on roll formed carriers, suspended from RCC slab / structural steel or catwalkway steel channel grid above with 4 mm (min) 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 cost of catwalkway grid) all complete as per drawings, specifications, and instructions of the engineer.	1	SQM		
17.0	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	GI down take pipes of class medium conforming to IS1239/IS3589 as per specification of following dia.				
17.1.1	100 mm dia.	220	RM		
17.1.2	150 mm dia.	220	RM		
17.1.3	200 mm dia.	6	RM		
18.0	WATER SUPPLY				
18.1	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.	3	NOS		
18.2	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.	3	NOS		
18.3	Providing & fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore.	3	NOS		
18.4	Providing & fixing in position heavy duty brass full way valve with wheel of approved quality 50mm nominal bore.	1	NOS		
18.5	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.	6	RM		
18.6	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.	11	RM		
18.7	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).	11	RM		
18.8	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).	33	RM		
18.9	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.	3	NOS		
18.10	Providing & fixing 610mmx127mmx6mm thk clear glass with CP guard rails and mounted on CP brackets etc complete as per specification.	3	NOS		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
18.11	Providing & fixing 20mm dia stainless steel pipes (600 mm long) wall mounted towel rod with stainless steel brackets etc all complete as per specification.	3	NOS		
18.12	Providing & fixing stainless steel soap holder mounted with CP screws etc complete as per specification.	3	NOS		
18.13	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.	3	NOS		
18.14	Providing & fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc complete as per specification.	3	NOS		
18.15	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	3	NOS		
18.16	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				
18.16.1	2000 litre capacity.	2	NOS		
19.0	<b>SANITARY WORKS (CEMENT ALSO SHALL BE INCLUDED)</b>				
19.1	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.	3	NOS		
19.2	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.	3	NOS		
19.3	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.	6	NOS		
19.4	Supply, laying & jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, MS holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	33	RM		
19.5	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.				
19.5.1	150mm.	1	RM		
19.5.2	200mm.	1	RM		
19.5.3	250mm.	1	RM		
19.5.4	300mm.	17	RM		
19.5.5	500mm.	17	RM		
19.5.6	600mm.	17	RM		
19.5.7	900mm.	17	RM		
19.6	Providing & fixing of class AA LOADNG OF IRC CI manhole cover of size 600mmx450mm including frame from reputed manufacture all completeas per specifications.	2	NOS		
19.7	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.	2	NOS		
19.8	Providing and fixing CI floor traps of standard size with CP jalli complete as per specification.	2	NOS		
19.9	Providing and fixing white viterous urinal partitions all complete as per specification.	2	NOS		
20.0	STRUCTURAL WORK OF FABRICATION AND ERECTION OF, ( MS PLATES, CHANNEL, ISMB, ANGLE, CHEQUERED PLATES, WILL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC)				

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
	"Taking delivery of steel from BHEL stores/store yard or directly from trailer, 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, transportation to & from stores etc 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 SCC) Quoted rate shall include cost of all labour, tools and plants, consumables, erection bolts,permanent bolts,scaffolding, lead, lift etc complete.				
20.3	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,				
20.3 a	Receipt of materials, Transportation, Fabrication, sand blasting ,primer painting and shifting to site for erection	<b>800</b>	MT		
20.3 b	Erecting in position , alignment , fixing & Complete welding etc. complete in all respect as per the direction of engineer.	<b>800</b>	MT		
20.4	Providing and supplying, structural steel materials from stock yard or EX works of approved vendor, 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.				
20.4.1	GI Hand rails as per the scope, specification and approved drawings	<b>30</b>	MT		
20.4.2	Rain water down comer pipes as per the scope, specification and approved drawings				
(a)	150 mm dia.				
(b)	100 mm dia.	5	MT		
20.5	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.				
20.6	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.	800	MT		
20.7	Painting of structural steel works finishing coat of polyurethane of min. DFT of 30 microns over top coat.				
20.8	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.	<b>3</b>	MT		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
20.9	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%.	1	MT		
20.10	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%.	1	MT		
20.11	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.	1	MT		
20.12	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%.	50	Kg		
20.13	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.	1000	Kg		
20.14	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.				
20.14.1	In erected position.	1	MT		
20.14.2	In fabrication yard.	1	MT		

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
20.15	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.	1	MT		
20.16	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).	1	RM		
20.17	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).	1	RM		
20.18	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).	100	RM		
20.19	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).	350	RM		
20.20	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).	1	SQM		
21.0	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.				
21.1	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.	1650	CUM		
21.2	Providing, stacking and laying granular morrum for shoulder including watering, compaction with road roller to required camber etc. complete as per specification.	1650	CUM		
21.3	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 morrum etc including cost of material labour all complete.	550	CUM		
21.4	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 morrum etc including cost of material labour all complete.	550	CUM		

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**JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 250 MW BSEB BARAUNI TPS, DIST. BEGUSARAI , BIHAR.**

**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
21.5	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.	550	CUM		
21.6	Providing and applying tack coat of low viscosity liquid bitumen of a suitable approved grade confirming to IS 73, 217 or 454 as applicable @ 10 kg/10SQM for an untreated WBM surface including scraping, cleaning with compressed air etc complete.	1650	SQM		
21.7	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.	1650	SQM		
21.8	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.	11000	SQM		
22.0	MISCELLANEOUS 1				
22.1	Providing and fixing PVC water stops 230 mm wide, 6 mm thick.	6	RM		
22.2	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		
22.3	Providing and fixing GI rungs in concrete/brick walls at all elevations including zinc coating of minimum 900 g/SQM all complete.	110	Kg		
22.4	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.	110	SQM		
22.5	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.	275	SQM		
22.6	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).	1	MT		
22.7	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.	1	SQM		
22.8	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.	1	SQM		
<b>TOTAL PRICE (PART-3)</b>					

**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.**

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**CIVIL & STRUCTURAL WORK FOR AHP Pkg (PART-3)**

SL no	DESCRIPTION	Quantity	UNIT	Rate	AMOUNT (in Rs)
1	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work				
2	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified				
3	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %				

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
I	<b>GENERAL</b>				
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	1100		
II	<b>EXCAVATION WORKS</b>				
2	Excavation at all depths below existing ground/grade level as per approved drawing including clearing away vegetation,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.				
A	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	49260		
b)	Beyond 2 m and upto 4 m.	CUM	31785		
c)	Beyond 4 m and upto 7 m.	CUM	16408		
d)	Beyond 7 m and upto 10 m.	CUM	10462		
e)	Beyond 10 m and upto 13 m.	CUM	10462		
f)	Beyond 13m and upto 16m	CUM	10465		
g)	Beyond 16m and upto 19m	CUM	110		
h)	Beyond 19m and up to 22m	CUM	110		
B	Extra over item 2 but In soft rock by chiseling, hammering and using pneumatic breaking equipment at all depths	CUM	110		
C	Extra over item 2 but In hard rock by controlled blasting at all depths	CUM	110		
3	Providing and driving sheet piling upto all depths in various types of soils including cost of sheet, tools and plants, anchoring arrangement , labour etc all complete including removing the sheet piles on completion of respective Civil Works ( The item shall be executed on specific approval by the Engineer-in-charge on a case-to-case basis depending on space constraints).	SQM	5500		
4	Backfilling of foundation, trenches, plinth etc. with selected excavated materials from the available stock within 5 km , etc. complete	CUM	53084		
4A	<b>Filling using selected excavated materials (from stock piles)</b> 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)	<b>Ordinary manual compaction</b>	CUM	110		
ii)	<b>90% Standard Proctor density</b>	CUM	110		
iii)	<b>95% Standard Proctor density</b>	CUM	110		
4B	<b>Filling using selected excavated materials directly from excavation area</b> in trenches, plinths, sides of foundations and other underground structures, levelling etc. in layers not exceeding 250 mm thickness including all 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	2276		
ii)	90% Standard Proctor density	CUM	11375		
iii)	95% Standard Proctor density	CUM	9100		
4C	<b>Filling using selected materials</b> 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 <b>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).</b>				

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
<b>SL. NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>Quantity</b>	<b>RATE(in Rs.)</b>	<b>AMOUNT(in Rs)</b>
i)	with <b>selected soil</b> brought from borrow areas arranged by contractor, including royalties, fees etc. for all leads and compacted to following densities				
a)	90% Standard Proctor density	CUM	<b>3792</b>		
b)	95% Standard Proctor density	CUM	<b>11</b>		
5	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	<b>34079</b>		
i)	Carriage beyond initial lead of 2Km but not exceeding 4Km	CUM	<b>37871</b>		
ii)	Carriage beyond initial lead of 4 Km but not exceeding 6 Km	CUM	<b>11359</b>		
iii)	Carriage beyond initial lead of 6 Km but not exceeding 8 Km	CUM	<b>3786</b>		
6	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	<b>7583</b>		
III	<b>CONCRETE WORKS</b>				
7	PROVIDING & PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS (INCLUDING CEMENT) 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				
7.1	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.	CUM	<b>3011</b>		
7.2	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.	CUM	<b>3011</b>		
7.3	Concrete of grade M-20 in under floors, plinth protection, paving, pipe encasing etc complete with 20 mm nominal size graded aggregate including addition of suitable plasticizer conforming to IS 9103.	CUM	<b>352</b>		
7.4	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.	CUM	<b>55</b>		
7.5	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 as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	CUM	<b>110</b>		
7.6	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.	CUM	<b>12503</b>		
7.7	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 as per IS 6313 and addition of suitable plasticizer conforming to IS 9103.	CUM	<b>9687</b>		
7.8	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.	CUM	<b>11</b>		
7.9	Concrete of grade M-25 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.	CUM	<b>11</b>		
7.10	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.	CUM	<b>11</b>		

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
7.11	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.	CUM	66		
7.12	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.	CUM	66		
7.13	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, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjuvant 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).	CUM	88		
7.14	Concrete of grade M-25 in water retaining/ conveying structures including addition of suitable plasticizer cum waterproofing cement additives conforming 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.	CUM	323		
7.15	Concrete of grade M-15 in plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate.	CUM	352		
8a	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 drgs. (Slab weight approximately around 65kg)	CUM	11		
(b)	Same as above but precast slabs with perforations as per technical specification.	CUM	11		
<b>III</b>	<b>FORMWORKS</b>				
9	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 below ground level	SQM	36938		
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	12313		
(c)	Plywood Shuttering below ground level	SQM	12313		
10	Taking delivery of steel from BHEL stores/store yard or directly from trailer, straightening, de-coiling, cutting, bending, placing in position at any level for all works including piles and pilecaps works, binding in position of Tor steel reinforcements (TMT) supplied by BHEL free of cost, conforming to HCR -M Grade FE - 500/415 including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Reinforcement steel will be supplied by BHEL on free issue basis upto the extent as per theoretical requirement with allowable wastages as specified elsewhere in the tender ( Ref SCC). (No payment will be made for chairs and spacer bars. However approved laps will be paid for)	MT	2716		
<b>IV</b>	<b>GROUTING WORKS</b>				
11.1	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/Conbextra GPX-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).	NOS	11		

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
11.2	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).	NOS	11		
11.3	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).	NOS	1		
11.4	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1( 1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer.	NOS	1		
11.5	Providing and grouting of column base with CM 1:1:2 (1 part cement : 1 part sand : 2 parts coarse aggregates with 12.5 mm or down chips ) including all cost of labour,etc. complete as per drawing,specification and direction of engineer-in-charge.	NOS	1		
11.6	Providing & water proofing with chemical injection grouting including supplying and fixing GI nozzles all complete as per drawings, specifications and direction of engineer.	SQM	8994		
<b>V</b>	<b>FLOORING WORKS</b> <b>(CEMENT cost shall also be included in the price).</b>				
12a	Providing and laying 40mm 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	8543		
b)	Providing and laying 40mm thick heavy duty I.P.S flooring with non - metallic hardenerpigmented 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	1		
c	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	1		
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	1		
13	Providing & laying Heavy duty ceramic tiles flooring as per specification etc. complete as per the direction of Engineer in charge	SQM	1		
14	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	506		
15	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	9702		
16	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	67		

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
17	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	22		
18a	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	22		
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	1		
19	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	73		
<b>VI</b>	<b>MASONARY AND PLASTERING WORKS (CEMENT cost shall also be included in the price).</b>				
20a	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	880		
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	73		
21(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	5784		
(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.	4627		
( c)	Providing 15mm thick in cement mortar 1:4 neat plaster in drains/culverts as per specification.	SQM.	1		
(d)	Providing 12mm thick plaster in cement mortar 1:6 inside the brick walls with smooth finish as per specification.	SQM.	1100		
(e)	Providing 6mm thick plaster in cement mortar 1:4 on ceiling with smooth finish as per specification.	SQM.	1650		
(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.	5082		
22	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	6		
23	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	4356		
<b>VII</b>	<b>FINISHING WORKS</b>				
24a	Providing minimum two coats of bituminous paint on concrete surfaces in contact with soil in foundations of grade 85/25 conforming to IS 702 @ 1.7 kg/SQM.ETC all complete as per specifications, approved drawings and direction of Engineer-in-charge	SQM	7554		
(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.	242		

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
(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	242		
ii)	In walls	SQM	488		
25a	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	1		
ii)	In walls	SQM	1		
(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	1		
(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.	1452		
26	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	73		
<b>VIII</b>	<b>WATER PROOFING (CEMENT cost shall also be included in the price).</b>				
27	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	2637		
28	Deleted				
<b>IX</b>	<b>FITTING WORKS</b>				
29	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	317		
30	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	36		
31	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	36		
32	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	36		
<b>X</b>	<b>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).</b>				

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
33	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	69		
34a	Providing and fixing Steel window / Ventilator conforming 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	756		
(ii)	Fixed	SQM	121		
(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	218		
35	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	8		
36	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	330		
37	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	11		
38	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	284		
(b)	Float glass 5.5mm thick	SQM	284		
(c)	Wired glass 6mm thick	SQM	284		
(d)	Ground glass 4mm thick	SQM	189		
(e)	Plain glass 4mm thick	SQM	378		
39	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	550		
40	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. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.				
(a)	Single leaf doors	SQM	15		

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
(b)	Double leaf hollow metal Sliding type of doors.	NOS	4		
(c)	Sliding doors with automatic operation.	SQM	15		
(d)	12mm thick BWP particle board door.	SQM	26		
(e)	Louvers made of extruded aluminium with polyvinylidene fluoride finish as per the technical specification.	SQM	22		
(f)	Louvers made of extruded Steel with polyvinylidene fluoride finish as per the technical specification.	SQM	22		
(g)	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		
41a	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - Mechanically operated. The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	SQM	110		
(b)	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	14		
(c)	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	110		
<b>XI</b>	<b>OTHERS</b>				
42	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	3267		
43	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	8		
44a	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	36		

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
(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	218		
45a	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)	CUM	8		
(b)	-do- as above but with angle iron post	MT	4		
46	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.	rm	1		
47	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	1452		
48a	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.	SQM	182		
(b)	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 x1.5 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	SQM	36		
49	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 nahn traps,GI water pipes,Soil waste pipes etc.	Lot	4		
50	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	2904		
51	Providing and filling good quality mooram, compacted in layers not exceeding 200mm in thickness to 95% proctod density with optimum moisture content	CUM	2904		

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
52	Supplying and fixing rolling shutters of approved make, made of required 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 <b>push and pull operation</b> 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 shutters.				
(a)	80x1.20 mm MS laths with 1.20 mm thick top cover.	SQM	19		
53	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	19		
(b)	exceeding 16.8 SQM and upto 35 SQM	SQM	11		
54	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	36		
(b)	providing and fixing ball bearing for rolling shutters.	NOS	11		
55	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	19		
56	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	109		
57a	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	508		
(b)	-do- but with 600 mm dia NP3 Hume pipe	rm	233		
(c)	-do- but with 450 mm dia NP3 Hume pipe	rm	58		
(d)	-do- but with 300 mm dia NP3 Hume pipe	rm	58		
58	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	36		
59	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 embeddment in concrete foundations / floors all complete as per specifications, drawings and direction	Mt	8		
60	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	3164		
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	73		
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	109		
61	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	2468		

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<b>CIVIL WORK FOR CHP PKG (PART-4)</b>					
<b>SL. NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>Quantity</b>	<b>RATE(in Rs.)</b>	<b>AMOUNT(in Rs)</b>
62	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	440		
63	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	440		
64a	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:				
(b)	on W.B.M. @ 0.75kg/SQM	SQM	5082		
65	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	5082		
66	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	5082		
67	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	145		
68	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	22		
69	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 joints except at sharp curve shall not be more than 5 mm) including making drainage opening wherever required complete etc. as per direction of Engineer in charge (length of finished kerb edging shall be measured for payment).(Precast C.C kerb stone shall be approved by Engineer in charge).	CUM	8		
70	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	8		
b)	20mm dia NB	RM	8		
c)	25mm dia NB	RM	182		
d)	32mm dia NB	RM	8		
e)	50mm dia NB	RM	109		
71a	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	8		
(b)	-do- as above but with 1500 litres capacity tank	No	1		
(c)	-do- as above but with 2000 litres capacity tank	No	4		
72	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	19		

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CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
73	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		
74	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. ( cost of cement also shall be included)	SQM	109		
75	Providing pre-constructural 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	2178		
76	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	2541		
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	2541		
77	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	36		
b)	same as item above, for 600 mm dia NP4 pipe	RM	36		
c)	same as item above, for 450 mm dia NP4 pipe	RM	36		
d)	same as item above, for 300 mm dia NP4 pipe	RM	36		
78	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	11		
b)	For Side clading	SQM	11		
79	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 dtection of engineer in charge.	RM	22		
80	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	NOS	1		
81	Demolishing of R.C.C. work including sacking of steel bars and disposal of unservicable material within 50 mtrs lead.	CUM	1		
82	Dismantling of brick workwith plastering works etc. as per specification and engineer in charge	CUM	1		
83	Dismantling steel works etc. as per specification and engineer in charge	MT	1		
84	Providing & applying Nito Bond-EP (of FOSROC make) for joining of concrete as per manufactures specification & the direcion of engineer in-charge.	SQM	1		
85	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. (Rotine tests as per the specifications shall bot be paid)	No	1		
<b>SITE OFFICE</b>					

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PRICE SCHEDULE,REV-04 Dated 08.11.2011					
JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 250 MW BSEB BARAUNI TPS, DIST. BEGUSARAI , BIHAR.					
CIVIL WORK FOR CHP PKG (PART-4)					
SL. NO	DESCRIPTION	UNIT	Quantity	RATE(in Rs.)	AMOUNT(in Rs)
86	Main Structure and wall: the structural wals shall be made out of 25 mm thick Sintex Plastocrete, concrete filled. Polymeric section filled with high- density cellular concrete. The fixture will be joined together by tongue and groove method to ensure 100 % leak proof . the outer framing structure shall be fabricated with IS MC 75 X 40 X 3 mm MS T-welded for securing plastocrete panel with span of 1m centre to centre. The above columns will be grouted to the existing PCC flooring by mens of expansion fasteners. Outer doors shall be of moulded FRP with necessary hinges, handle and padlocks. The aluminium windows with grills shall be of sliding type, covered with float glass of 4 mm thickness. The entrance will be provided with 2 Nos of portico. should have an aethetic look of size min 4x 3 m .the outer framing clumn will be covered with polymeric sleeve for protecting from weather and inner columns end will be covered with similar polymeric sleeve matching with the interior complete.	SQM	275		
87	Roof: Roof truss should be made of anti-corrosive painted 40 mm square tubular section designed to suit at roof structures with 0.47 mm thick GI color coated roof sheet fixed with fasteners including gutters , rain water sprouts etc all complete	SQM	132		
88	False ceiling: Frame works made out of anti-corrosive painted GI grid work with 250X 6 mm thick polymeric panels and these panels are joined together by tongues and groove using self tapping screws. Cutouts should be made wherever necessary for electrical fittings	SQM	110		
89	partition: Double side partition made up of anti-corrosive painted 25x 50 mm MS and double side panelling with polymeric section of minimum 250X 6 mm thick with an air gap of min 4 mm. these panels are joined together by tongue and groove using self tapping screws	SQM	28		
90	Electrical and works: electrical works reqd for modular office like computer and telephone pointswith reqd wiring, providing air conditioners (app 8 nos) etc all complete as per specification and approved drawing	LS	1		
91	Toilet: 1 No of toilet for site-in--charge room , 1 No of toilet for conference hall, Toilet block all complete as per technical Specification and Approved drawing	LS	1		
	<b>Extra Item</b>				
92	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	1742		
93	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	58		
94	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	1815		
ii	In walls	SQM	1		
95	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	55		
96	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	1		
97	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	1		
	<b>TOTAL PRICE (PART-4)</b>				

**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.**

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**JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 250 MW BSEB BARAUNI TPS, DIST. BEGUSARAI , BIHAR.**

**CIVIL WORK FOR CHP PKG (PART-4)**

<b>SL. NO</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>Quantity</b>	<b>RATE(in Rs.)</b>	<b>AMOUNT(in Rs)</b>
<b>1</b>	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work				
<b>2</b>	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified				
<b>3</b>	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %				

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**JOB:PILING, CIVIL, STRUCTURAL AND ARCHITECTURAL WORK ETC. OF 'COAL HANDLING PLANT' PACKAGE AND 'ASH HANDLING PLANT' PACKAGE FOR 2 X 250 MW BSEB BARAUNI TPS, DIST. BEGUSARAI , BIHAR.**

**STRUCTURAL STEEL WORK FOR CHP PKG (PART-5)**

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.)
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	3000		
II	"Taking delivery of steel from BHEL stores/store yard or directly from trailer, 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, transportation to & from stores etc 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	2925		
(ii)	Erecting in position , alignment , fixing & Complete welding etc. complete in all respect as per the direction of engineer.	MT	2925		
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	120		
C	<b>Seal plate for conveyor fabricated from thin plates</b> and fixing in position all complete.				
(i)	Receipt of materials, Transportaion, Fabrication, primer painting and shifting to site for erection	MT	20		
(ii)	Erecting in position , alignment and fixing etc,	MT	20		

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**STRUCTURAL STEEL WORK FOR CHP PKG (PART-5)**

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.)
III	Providing and supplying, structural steel materials from stock yard or EX works of approved vendor, 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	30		
ii)	G.I Hand rails as per the scope, specification and approved drawings	MT	85		
iii)	Dust Chutes as per the scope, specification and approved drawings	MT	15		
iv)	Wash water down comer pipes as per the scope, specification and approved drawings	MT	7		
v)	Doors with fittings etc, as per the scope, specification and approved drawings	SQM	250		
vi)	Windows, ventilators with mesh, glazing etc. with fittings etc.as per the scope, specification and approved drawings	SQM	1000		
vii)	Louvers and similar type of works as per the scope, specification and approved drawings	SQM	250		
IV	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. Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%;				
i)	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	MT	45		
V	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%;	MT	50		

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**STRUCTURAL STEEL WORK FOR CHP PKG (PART-5)**

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.)
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 zinalume 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	5800		
ii)	0.55mm thick CGI on sides as per specification in tender	SQM	11600		
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	1200		
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 (zinalume) (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	2756		
VIII 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.				
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.	MT	2000		
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	2		
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	600		

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**STRUCTURAL STEEL WORK FOR CHP PKG (PART-5)**

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.)
XI	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	10		
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	10		
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	3		
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	3		
b	In fabrication yard.	MT	3		
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	3		

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**STRUCTURAL STEEL WORK FOR CHP PKG (PART-5)**

SL NO	CHP- STRUCTURAL STEEL WORKS	UNIT	QUANTITY	RATE (in Rs.)	Amount (in Rs.)
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	10		
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	5		
XVIIIa	Fabrication of steel columns in Pipe/Box section for Junction towers/ Transfer tower /Trestle coumns etc with required collars stiffness as per approved fabrication 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	10		
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	10		
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.	RM	1000		
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	RM	1000		
<b>TOTAL PRICE (PART-5)</b>					

**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.**

1	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work
2	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified
3	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %

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**DESIGN & ENGINEERING FOR CHP PACKAGE (PART-6)**

<u>S. No.</u>	<u>DESCRIPTION</u>	<u>DETAILS</u>	<u>40 % Towards Submission</u>	<u>40% Towards Approval</u>	<u>10 % Towards Erection</u>	<u>10 % Towards Submission of As-Built Drawings</u>	<u>Total Amount (Rs)</u>
1	WAGON TIPPLER (2nos)	SUB STR ENGG					
		SUPER STR. ENGG/REVIEW					
		ARCH. ENGG					
2	WT TUNNEL 1A/B WT TO TP1	SUB STR ENGG					
3	WT TUNNEL 2A/B TP1 TO PENTHOUSE	SUB STR ENGG					
4	BCN 2A/B TO 7A/B WITH TRESTLES AND GTUs ( Approx. length is 1.2 km)	SUB STR ENGG					
		SUPER STR. ENGG					
		ARCH. ENGG					
5	ERH,TUNNEL FOR CONV 5 TO PENTHOUSE	SUB STR ENGG					
6	WT PENT HOUSE AND ERH PENT HOUSE	SUBSTRUCTURE ENGG					
		SUPER STR. ENGG					
		ARCH. ENGG.					
7	INTER CONNECTION ROADS, DRAINS-CULVERTS, SEWAGE SYSTEM UP TO DISCHARGE POINT	LAYOUT ENGG.					
		SUB STR ENGG.					
8	JUNCTION TOWER / TP 2	SUB STR. ENGG. R.C.C FLOOR & ROOF					
		SUPER STR ENGG					
		ARCH. ENGG.					
9	JUNCTION TOWER / TP 3	SUB STR. ENGG.					
		R.C.C FLOOR & ROOF					
		SUPER STR ENGG					
10	UNDER GROUND TP1 FOR WT	ARCH. ENGG.					
		SUB STR. ENGG.					
		SUPER STR ENGG					
11	STACKER RECLAIMER FOUNDATION & ANCHOR BLOCKS	ARCH. ENGG.					
		SUB STR. ENGG.					
		SUPER STR ENGG					
12	STOCK PILE WITH LIGHTING MAST FOUNDATION	SUB STR. ENGG.					
13	COAL SETTLING BASIN & DRAIN WORKS	SUB & SUPER STR.ENGG					
14	D.S., D.E.,DW and SW PUMP HOUSES AND TANKS ETC	SUB STR.ENGG					
		SUPER STR. ENGG					
		ARCH. ENGG.					

15	EMERGENCY RECLAIM HOPPER WITH TP	ARCHITECTURAL WORKS					
		STRUCTURAL WORKS					
		CIVIL WORKS					
16	CRUSHER HOUSE	SUB STR. ENGG. R.C.C FLOOR & ROOF					
		SUPER STR ENGG					
		ARCH. ENGG					
17	MCC CUM CONTROL ROOMS 1. MCC 1 (NEAR CH) 2. MCC 2 (NEAR WT) 3. MCC 3 (NEAR TP)	SUB STR. ENGG.					
		SUPER STR ENGG					
		ARCH. ENGG.					
18	DRIVE HOUSE	SUB STR. ENGG.					
		SUPER STR ENGG					
		ARCH. ENGG.					
19	INMOTION WEIGH BRIDGES	SUB STR. ENGG					
20	CABLE RACKS	SUB STR. ENGG.					
		SUPER STR ENGG.					
21	FOUNDATION FOR VENTILATION SYSTEM EQUIPMENT BUILDING	SUB STR. ENGG.					
22	GROUND IMPROVEMENT DRAWING	LAYOUT DRAWING					
23	LANDSCAPING	LAYOUT ENGG.					
		ARCH. ENGG.					
24	ALL BALANCE MISCELLANEOUS ITEMS IN CIVIL / STRUCTURAL AND DESIGN DOCUMENTS.	SUB STR. ENGG.					
		SUPER STR ENGG.					
		ARCH. ENGG.					
25	PREPARATION OF CLADDINGS DRAWINGS OF GALLERY, JT/TP, CRH, WT, ERH, ETC	ARCH. ENGG					
<b>TOTAL PRICE (PART-6)</b>							
<b>Notes:</b>							
1	Quoted rates by the bidder shall include cost of all preparation, submission of BBS, and Protocols as reqd per design drawings issued for Civil and structural Work						
2	Contractor shall include all cost of material items, lead, lift, transport, wastages, etc complete unless otherwise specified						
3	Quantities mentioned above are indicative/approximate. Quoted unit rates shall be valid for item wise variations in quantity to any extent within total variation in value of work (+/-) 30 %						