



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

## BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 04

Ref: PSER:SCT:PAL-C987:TCN-04

Date: 23-04-2009

Sub	Tender change notice (TCN) 04.	
Job	Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, switch yard civil work etc of unit # 1 & 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.	
Ref	1.0	Tender no PSER:SCT:PAL-C987:09.
	2.0	BHEL's NIT, vide reference no PSER:SCT:PAL-C987:1718, dated 23-03-09.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:PAL-C987:TCN-01, dated 08-04-09.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:PAL-C987:TCN-02, dated 15-04-09.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:PAL-C987:TCN-03, dated 18-04-09.
	6.0	All other pertinent issues till date.

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

- 1.0 Sand shall be of river/ pit sand conforming to IS-2116. Bidder shall ensure selection of source of sand & obtain approval of the same prior to commencement of work/ establishment of design-mix. Bidder shall quote their rates taking into cognizance of this.
- 2.0 Revised Price Schedule, Volume-III A, Rev-1 attached. Bidder shall quote as per this revised Volume-III A, Rev-1 only.
- 3.0 Revised 'No deviation certificate' format as per enclosed Annexure-2. Bidder shall submit 'No deviation certificate' along with offer as per enclosed format.
- 4.0 All other terms & conditions shall remain unchanged.

Based on above, offer shall be submitted by due date.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

DGM (SCT)

Encl: As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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

<b>VOLUME-III PRICE SCHEDULE, REV-1</b>	
<b>Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, enabling work, switch yard civil work of unit # 1 &amp; 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.</b>	
<b>TENDER NO - PSER:SCT:PAL-C987:09</b>	
<b>PREAMBLE</b>	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary
5.0	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains within thirty percent ( $\pm 30\%$ ) of the contract price of LOI.
6.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc including fixing of grid pillars, benchmarks etc required for commencement of site activities. No separate payment will be made towards the same.
7.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
8.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
9.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at
10.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.

<b>VOLUME-III PRICE SCHEDULE, REV-1</b>		
<b>Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, enabling work, switch yard civil work of unit # 1 &amp; 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.</b>		
<b>TENDER NO - PSER:SCT:PAL-C987:09</b>		
<b>SCH-1 - SUMMARY PRICE</b>		
<b>SL NO</b>	<b>DESCRIPTION</b>	<b>AMOUNT (Rs)</b>
1.0	CIVIL WORK OF SWITCH YARD (SCH-2).	
2.0	MAIN PLANT CIVIL (SCH-3).	
<b>3.0</b>	<b>TOTAL PRICE (1.0+2.0)</b>	
<b>NOTE</b>		
1.0	Bidder's total price at sl no 3.0 above shall be taken into account for evaluation and awarding. BHEL's decision in this regard is final & binding.	
2.0	Bidder shall furnish break-up of total price in respective schedules of this Volume-III (latest revision).	
3.0	Based on bidder's break-up of price in respective schedule, separate order may be placed for main civil (by BHEL/ PSER) & switch yard (BHEL/ TBG).	
4.0	Bidder shall submit price, complete in all respects as per provision of tender and technical specification.	

**VOLUME-III A**  
**PRICE SCHEDULE, REV-01**

**Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, enabling work, switch yard civil work of unit # 1 & 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.**

**TENDER NO - PSER:SCT:PAL-C987:09**  
**SCH-3 - SWITCH YARD CIVIL WORK**

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	Earthwork in excavation over areas (Exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed.			
1.1	All kinds of soil (Including ordinary and hard soils).	20000	CUM	
2.0	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/ sub-soil seepage water and dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m.			
2.1	All kinds of soil .(including ordinary and hard soils )	15000	CUM	
3.0	Filling available excavated earth (including rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.	16000	CUM	
4.0	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 3.0 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming,watering etc.and disposing of surplus excavated soil as directed within a lead of 100m.			
4.1	All kinds of soil (Including ordinary and hard soils).			
4.1.1	Pipes, cables etc, not exceeding 80mm dia.	100	MTR	
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	200	MTR	
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	200	MTR	
5.0	Carriage & disposal of surplus excavated earth/ rock beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc, complete as per specifications.			
5.1	Lead upto 1 km.	5000	CUM	
5.2	Lead upto 3 km.	3000	CUM	
5.3	Lead upto 5 km.	500	CUM	
6.0	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.			
6.1	1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size).	500	CUM	
6.2	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size).	500	CUM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
6.3	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size).	1400	CUM	
6.4	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40mm nominal size).	50	CUM	
7.0	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	2000	KG	
8.0	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	150	CUM	
9.0	Supplying chemical emulsion in sealed containers including delivery as specified.			
9.1	Chloropyriphos emulsifiable concentrate of 20%	125	LTR	
10.0	Diluting & injecting chemical emulsion for PRE-CONSTRUCTIONAL ANTI-TERMITE treatment and creating a continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall & floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid , surroundings of pipes and conduits, etc complete as per specifications (Plinth area of the building at ground floor only shall be measured for payment)	1500	SQM	
11.0	Providing and laying damp proof course 40mm thick cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 12.5 mm nominal size).	100	SQM	
12.0	Applying two layers of residual petroleum bitumen of penetration 85/25 of approved quality using 1.7 kg per sqm on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	50	SQM	
13.0	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retrard setting of concrete, improve workability without impairing strength and durability. - M20 grade			
13.1	All works including grade slab upto plinth level as directed.	1500	CUM	
14.0	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retrard setting of concrete, improve workability without impairing strength and durability - M25 grade.			
14.1	All works (rafts, columns,walls & plinth beams) upto plinth level.	5000	CUM	
14.2	All works from plinth level to floor V level.			
14.2.1	Walls, columns, pillars, posts and struts.	100	CUM	
14.2.2	Beams, cantilevers, suspended floors, lintels, chajjas,roofs, staircases, etc.	800	CUM	
15.0	Centering and shuttering including strutting, propping, etc., and removal of form for following.			
15.1	Foundations, footings, bases of columns, etc, for mass concrete.	17700	SQM	
15.2	Columns, pillars, piers, posts and strut.	5000	SQM	
15.3	RCC walls at all levels (any thickness).	8000	SQM	
15.4	Suspended floors, roofs, landings, balconies, chajjas and access platforms at all levels.	1500	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
15.5	Lintels, beams, plinth beams and cantilevers.	4000	SQM	
15.6	Stairs.	100	SQM	
16.0	Steel reinforcement - Cold twisted bars/ TMT.			
16.1	Including supply and bending, binding (including cost of binding wire), placing in position, etc, all labour & material, complete.	20000	KG	
16.2	Excluding supply but including bending, binding (including cost of binding wire), placing in position, etc, all labour & material, complete (See note no 1).	490000	KG	
17.0	Brickwork with FPS. bricks of class designation 75 in foundation and plinth in following.			
17.1	Cement mortar 1:6 (1 cement:6 coarse sand).	500	CUM	
18.0	Brickwork with FPS bricks of class designation 75 in superstructure above plinth level up to floor V level in all shapes and sizes in following.			
18.1	Cement mortar 1:6 (1 cement:6 coarse sand).	250	CUM	
19.0	Half brick masonry with bricks of class designation 75 in foundation and plinth in following.			
19.1	Cement mortar 1:4 (1 cement:4 coarse sand).	100	SQM	
20.0	Half brick masonry with bricks of class designation 75 in superstructure above plinth level up to floor V level.			
20.1	Cement mortar 1:4 (1 cement : 4 coarse sand).	50	SQM	
21.0	Extra for providing and placing in position 2 Nos 8mm dia bars at every third course of half brick masonry (with FPS bricks).	50	SQM	
22.0	20mm cement plaster on external face of walls in two coats with under layer 14mm thick cement plaster 1:4 (1 cement:4 coarse sand) finished with a top layer of 6mm thick 1:4 (1cement:4 fine sand).	750	SQM	
23.0	15mm cement plaster in cement plaster 1:4 (1 cement :4 coarse sand ) on uneven sides of internal walls and surfaces of roof as required.	700	SQM	
24.0	12mm cement plaster on even side of the walls in the mix.			
24.1	1:4 (1cement :4coarse sand).	1200	SQM	
25.0	12mm cement plaster on 115mm thk. walls in the mix.			
25.1	1:3 (1cement :3coarse sand).	150	SQM	
26.0	2mm thick plaster of paris punning over plastered surfaces on wall surfaces as directed by engineer-in-charge.	2000	SQM	
27.0	6mm cement plaster to ceiling of mix.			
27.1	1:3 (1 cement : 3 fine sand).	1300	SQM	
28.0	Forming groove of uniform size from 12x12mm and upto 25x15mm in plastered surface and joints of ceiling and wall as per approved pattern using wooden battens, nailed to the underlayer including removal of wooden battens, repairs to the edges of plaster panel and finishing the groove complete as per specifications and directions of the engineer-in-charge.	500.00	RM	
29.0	Add or deduct plaster drip course /groove in plastered surface or moulding to RCC projections.	500	MTR	
30.0	Applying priming coat.			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
30.1	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	100	SQM	
30.2	Applying one coat of cement primer of approved brand and manufacture on wall surface:	250	SQM	
31.0	Providing and fixing 20mm thick mirror polished, machine cut for column facia, kitchen platforms, vanity counters and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing etc. complete at all levels. (over 1sqm but upto 2sqm)			
31.1	Granite black.	20	SQM	
32.0	Providing and fixing pressed steel door frames manufactured from commercial mild steel sheet of 1.25mm thickness including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50X25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with spit end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-Charge:			
32.1	Profile C	100	RM	
33.0	Structural steelwork welded in built up sections like edge protection angles,insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	31000	KG	
34.0	Steelwork welded in built up sections/ framed work including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc, as required.			
34.1	In covering of floors/ trenches of control room building with chequered plates, stringers, treads, landings etc of staircases involving use of chequered plates, wherever required, all complete.	15000	KG	
34.2	In transformer gratings, rails, mono rails, frames, ladders, stair railings, gates (including pipe) and similar works.	25000	KG	
35.0	Providing & fixing 45mm steel door made of double sheet 18G steel suitably reinforced and filled with mineral wool, including frame, etc., all complete as per drawing and instruction of Engineer -in-Charge.	10	SQM	
36.0	Cement concrete flooring 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps, etc, complete.			
36.1	40mm thick with 20mm nominal size stone aggregate.	50	SQM	
37.0	52mm thick CC flooring with "Hardcrete" concrete hardner topping under layer 40mm thick CC 1:2:4 (1cement:2 coarse sand:4 stone aggregate 20mm nominal size) and top layer 12 mm thick Hardcrete cement hardner consisting of mix 1:2 (1 cement hardner mix:2 stone aggregate 6mm nominal size) by volume with which Hradcrete hardening compound of approved quality is mixed @ 2 liter Hardcrete per 50 kg of cement including cement slurry, but excluding the cost of nosing of steps etc, complete.	550	SQM	
38.0	Cement plaster skirting (upto 30cm height) with cement mortar 1:3 (1cement:3 coarse sand) finished with a floating coat of neat cement.			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
38.1	18mm thick	50	SQM	
39.0	Precast terrazzo tiles 22 mm thick with graded marble chips of size upto 12mm laid in floors, landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles on 20mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand).			
39.1	Light shade using white cement.	200	SQM	
40.0	Precast terrazzo tiles 22 mm thick with graded marble chips of size upto 12mm laid in skirting and risers of steps not exceeding 30 cm in height on 12mm cement plaster 1:3(1 cement :3 coarse sand),jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles of following.			
40.1	Light shade using white cement.	50	SQM	
41.0	Marble stone flooring with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20mm (average) thick base of cement mortar 1:4 (1 cement: 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with.	50	SQM	
42.0	Providing and fixing 20mm thick acid and or alkali resistant tiles of approved make and colour using acid and or alkali resisting mortar bedding and joints filled with acid and or alkali resisting cement as per IS : 4457 complete as per the direction of Engineer-in- Charge			
42.1	In flooring on a bed of min.20 mm thick mortar 1:4 (1 appropriate cement : 4 coarse sand).	150	SQM	
42.2	In dado / skirting on 12 mm thick mortar 1:4 (1 appropriate cement : 4 coarse sand).	70	SQM	
43.0	Providing and fixing 1st quality ceramic glazed tiles conforming to IS:15622 of minimum thickness 5 mm of approved make and colours in skirting,risers of steps and dados over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand ) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.	30	SQM	
44.0	Providing and laying 1st quality ceramic glazed tiles 300X300 mm conforming to IS:15622 of minimum thickness 7 mm of approved make and colours laid over 20 mm thick bed of Cement mortar 1:4 (1 Cement:4 coarse sand ) including pointing in white cement mixed with pigment of matching shade complete.	70	SQM	
45.0	Providing and laying of 7 mm minimum thick pre-polished vitrified tiles 600X600 mm of approved make and colours laid over 20 mm thick bed of Cement mortar 1:4 (1 Cement:4 coarse sand) including pointing in white cement mixed with pigment of matching shade complete as per direction of Engineer-in charge.	50	SQM	
46.0	Providing and fixing approved quality pre polished vitrified tiles minimum thickness 7 mm of approved make and colours in skirting,risers of steps and dados over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand ) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.	20	SQM	
47.0	Providing and fixing homogenous polyvinyl chloride sheet/tile in flooring and skirting in approved pattern on a smooth and damp proof base using rubber based adhesive of approved quality and manufacturer like Dunlop S-758, Fevicol SR 998 or equivalent including rolling with light wooden roller weighing about 5kg all complete as directed by Engineer-in-charge. in approved colour and shade.			
47.1	2mm thick sheet	150	SQM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
48.0	Providing and fixing ISI marked flush door shutters decorative type ,core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.			
48.1	35 mm thick including ISI marked Stainless Steel butt hinges with nessary screws.	25	SQM	
49.0	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded builtup standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, anodised transparent or dyed to required shade according to IS: 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips or with expansion fasteners including necessary filling up of gaps at junctions at top , bottom and sides with required PVC/neoprene felt, etc. Aluminium sections shall be smooth , rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, CP brass/stainless steel screws, all complete as per architectural drawings and direction of Engineer-in-charge. (Glazing and panelling to be paid for separately).			
49.1	For fixed portion	1500	KG	
49.2	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and fittings wherever required including the cost of PVC/neoprene gasket required .	2000	KG	
50.0	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions, etc., with PVC/neoprene gasket, etc., complete as per the architectural drawings and directions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item).			
50.1	With glass panes of 5.5mm thickness (weight not less than 13.75kg/sqm)	500	SQM	
49.0	Providing and fixing double action hydraulic floor spring of approved brand and manufacture (conforming to IS:6315) for aluminium door including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece MS sheet outer box with slide plate etc., complete as per the directions of Engineer-in-charge. ( SS cover plate.)	4	EACH	
50.0	Providing and fixing aluminium sliding door bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc., complete.			
50.1	300 X 16mm	15	EACH	
51.0	Providing and fixing aluminium tower bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.			
51.1	300 X 10mm	15	EACH	
52.0	Providing and fixing aluminium handles anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.			
52.1	125mm	5	EACH	
53.0	Providing and fixing IS:3564 marked aluminium die cast body tubular type universal door closer of approved quality and make with accessories and screws complete.	10	EACH	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
54.0	Supplying and fixing rolling shutters of approved make, made of required size MS 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 mechanical arrangement for operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade no. 2 and MS top cover of required thickness for rolling shutters.			
54.1	80X1.20 mm MS laths with 1.2mm thick top cover.	10.00	SQM	
55.0	Providing and fixing ball bearing for rolling shutters.	2	EACH	
56.0	Providing and fixing M.S. grills of required pattern in frames of windows etc. with MS flats, square or round bars etc. all complete.	5000	KG	
57.0	Whitewashing with lime to give an even shade			
57.1	New work (3 or more coats)	1300	SQM	
58.0	Distempering with oil bound washable distemper of approved brand and manufacture two or more coats over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	1000	SQM	
59.0	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade.			
59.1	Two or more coats on new work.	2100	SQM	
60.0	Finishing walls with water proofing cement paint " Snowcem-Plus" of M/s Snowcem India Ltd. or equivalent of required shade :			
60.1	New work : Two or more coat.	1000	SQM	
61.0	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:			
61.1	Two or more coats on new work.	300	SQM	
62.0	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade.			
62.1	Two or more coats on new work.	300	SQM	
63.0	Providing and fixing white vitreous china water closet squatting pan ( Indian type W.C. pan) with 100 mm sand cast iron P or S trap, 10 litre low level P.V.C. flushing cistern ( of approved make ) with fittings, C.I./M.S. brackets, 32 mm diameter flush pipe with fittings and clamps, overflow arrangement with specials and mosquito proof coupling of approved municipal design including painting of fittings and brackets, cutting and making good the walls and floors wherever required.			
63.1	Orissa pattern WC Pan of size 580x440 mm with integral type foot rests flush pipe and overflow arrangement.	1	EACH	
64.0	Providing and fixing white vitreous china pedestal type water closet ( European type W.C. Pan) with seat and lid, C.P. Brass hinges and rubber buffers, 10 litre low level flushing cistern with fittings & CI/MS brackets 40mm dia flush bend , overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design compete including painting of fittings and brackets, cutting and making good the walls and floors wherever required.			
64.1	W.C. pan with black solid plastic seat and lid with white vitreous china flushing cistern and CP flush bend.	1	EACH	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
65.0	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with CI/ MS brackets standard flush pipe and CP brass spreaders with brass unions and GI clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required.			
65.1	One urinal basin with 5 litre P.V.C automatic flushing cistern of approved make.	2	EACH	
66.0	Providing and fixing vitreous china under counter wash basin in oval shape of approved colour and size with 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings etc. cutting and making good the walls wherever required:	2	EACH	
67.0	Providing and fixing 100 mm sand cast iron grating for gully, floor or Nahani trap.	4	EACH	
68.0	Providing and fixing 600x450x5.5 mm bevelled edge mirror of float glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with CP Brass screws and washers complete.	2	EACH	
69.0	Providing and fixing 600x120x5 mm glass shelf with edges rounded off supported on anodised aluminium angle frame with CP Brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc complete.	2	EACH	
70.0	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP Brass screws with concealed fitting arrangement of approved quality and make.			
70.1	600 mm long towel rail with total length of 645mm,width 78mm and effective height 88mm,weing not less than 190gms.	2	EACH	
71.0	Providing and fixing PTMT liquid soap container 109mm wide,125mm high and 112mm distance from wall of standard shape with bracket of same materials with snap fittings of approved quality ,colour and make ,weighing not less than 105 gm (Pravaq or equivalent).	2	EACH	
72.0	Providing and fixing Hand drier electrically operated with photo voltaic control with all fittings etc. all complete as per direction of engineer-in-charge.	1	EACH	
73.0	Providing and fixing toilet paper holder.			
73.1	CP brass.	2	EACH	
74.0	Providing and fixing soil, waste and vent pipes:			
74.1	100 mm dia.			
74.1.1	Sand cast iron S & S pipe.	50	RM	
75.0	Providing and fixing MS holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including cost of cutting holes and making good the walls etc.			
75.1	For 100 mm dia pipe	50	EACH	
76.0	Providing lead caulked joints to SCI pipes and fittings of diameter			
76.1	100mm	10	EACH	
77.0	Providing and fixing SCI trap of self cleansing design with SCI screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:			
77.1	100mm inlet and 100mm outlet.	20	EACH	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
78.0	Providing and fixing G.I. Pipes (medium grade) complete with G.I. Fitting and clamps , including cutting and making good the walls etc. ( internal work).			
78.1	15 mm dia nominal bore.	50	RM	
78.2	20 mm dia nominal bore.	30	RM	
78.3	25 mm dia nominal bore.	20	RM	
79.0	Providing and fixing G.I. Pipes (medium grade) complete with G.I. Fitting and clamps , including trenching and refilling, etc. ( external work).			
79.1	15 mm dia nominal bore.	20	RM	
79.2	20 mm dia nominal bore.	50	RM	
79.3	40 mm dia nominal bore.	50	RM	
80.0	Making connection of GI distribution branch with GI main of following sizes by providing and fixing tee, including cutting and threading the pipe etc., complete.			
80.1	25 to 40mm nominal bore.	1	EACH	
81.0	Providing and fixing brass bib cock of approved quality			
81.1	15mm nominal bore	5	EACH	
82.0	Providing and fixing brass stop cock of approved quality			
82.1	15mm nominal bore	5	EACH	
83.0	Providing and fixing brass gate valve with CI wheel of approved quality (screwed end)			
83.1	25mm nominal bore	1	EACH	
83.2	32mm nominal bore	1	EACH	
84.0	Providing and fixing ball valve brass of approved quality complete.			
84.0	High or low pressure with plastic floats			
84.1	15mm nominal bore	2	EACH	
85.0	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:3 ( 1 cement : 3 fine sand) including testiing of joints etc. complete.			
85.1	100 mm diameter.	10	RM	
85.2	150 mm diameter.	50	RM	
85.3	200 mm diameter.	50	RM	
86.0	Providing and fixing square-mouth SW Gully trap grade 'A' complete with CI Grating brick masonry chamber with bricks of class designation 75 and water tight CI Cover with frame of 300x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as standard design.			
86.1	100 x 100 mm size P type			
86.1	With F.P.S bricks	2	EACH	
87.0	Making khurras 45X45cm with average minimum thickness of 5cm cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate of 20mm nominal size) over PVC sheet 1mX1mX400micron, finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	10	EACH	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
88.0	Providing and laying cement concrete in screed at terrace for water proofing treatment upto floor five level excluding the cost of centring,shuttering and finishing:			
88.1	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40mm nominal size)	120	CUM	
89.0	Providing and placing on terrace (at all floor levels) polyethylene water storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. The tank should be ISI marked.	1000	LTR	
90.0	Providing, laying and fixing roof water proofing treatment using polymeric membrane with suitable primer such as MULTIPLAS PRIMER or equivalent at the rate of 250g/cm <sup>2</sup> , finishing with 20mm plaster in 1:4 mortar reinforced with chicken mesh with expansion joint provided at a distance of 3m all complete as per customer's specification and instructions of the engineer.	450	SQM	
91.0	Providing and fixing on wall face unplasticised - Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes of 75mm dia.	50	MTR	
92.0	Providing & fixing in false ceiling 35mm thick fire resistant Particle board with 2mm thick vinyl P.V.C tiles having antistatic and antiskid quality, coating the under side of floor panels with two coat of fire resistant paint; floor panel of particle bonded formaldehyde all complete as per Customer's Specification required for completion of works as per direction of Engineer-in -Charge.	50	SQM	
93.0	Providing & fixing in false ceiling with gypsum board conforming to IS 2095, aluminium panel shall be square edge 84mmx15mm deep with 25mm recessed flanges, formed out of .5mm thick aluminium alloy electrically powder coated,LUXALON 84C or equivalent all complete as per Customer's Specification required for completion of works as per direction of Engineer-in -Charge.	200	SQM	
94.0	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8193 (Twiga Insul 1500/50mm or equivalent) density 24 kg/m <sup>3</sup> , 50 mm thick, wrapped in 200 G Virgin polythene bags fixed to Ceiling with metallic cleats ( 50x50x3 mm ) @ 60cm and wire mesh of 12.5 mm x 24g wire and mesh. for top most ceiling of building .	450	SQM	
95.0	Painting with chemical resistant epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat,preparation of surface etc. complete.	25	SQM	
96.0	Providing and fixing (all dia & length) foundation bolts in position with help of proper templates including supply of templates, nuts and washers all complete as per specs, drawings & directions of engineer-in-charge.	7000	KG	
97.0	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer.	7000	KG	
98.0	Fixing (all dia & length) foundation bolts in position with help of proper templates (template to be supplied by contractor) all complete as per specs, drawings & directions of engineer-in-charge. Bolts to be provided by BHEL free of cost.	2000	KG	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
99.0	Constructing brick masonry manhole with 75 class designation bricks in cement mortar 1:4 (1 cement: 4 coarse sand) RCC top slab with 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) foundation concrete 1:4:8 (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.			
99.1	Inside size 90X80cm and 45cm deep including CI cover with frame (light duty) 455X610mm internal dimensions total weight of cover and frame to be not less than 38kg (weight of cover 23kg and weight of frame 15kg)			
99.1.1	With FPS bricks	2	EACH	
100.0	Extra for depth for manholes			
100.1	Size 90X80cm			
100.1.1	With FPS bricks	10	RM	
101.0	Making soak pit 2.5m diameter 3m deep with 45x45cm dry brick honeycomb shaft with bricks of class designation 75 and SW drain pipe 100mm diameter, 1.8m long complete as per standard design and specification.			
101.1	With FPS bricks	2	EACH	
102.0	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	200.00	SQM	
103.0	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and disposal of surplus earth lead upto 50m.	6280	SQM	
104.0	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	4000	SQM	
105.0	Providing and laying compacted 150mm thick layer of moorum shoulder on both sides of road as per direction of Engineer-in -Charge.	300	SQM	
106.0	Providing and laying factory made anti skid precast interlocking cement paver blocks on the shoulder of the road as per direction of Engineer-in-Charge all inclusive. (The thickness of paver block shall be 50mm).	3300	SQM	
107.0	Providing and Laying WBM with specified size of stone aggregates, screening and moorum/ blinding materials including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete. (Payment will be made for compacted layers only ).			
107.1	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	1950	CUM	
107.2	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/ blinding material.	1275	CUM	
107.3	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.	650	CUM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
107.4	50mm thk. Bitumenous Macadam surface	350	CUM	
108.0	Providing and laying 2.5 cm thick premix carpet surfacing with 3 cum of stone chippings 10mm nominal size per 100sqm and bitumen emulsion (Min. 65% bitumen content ) of approved quality using 96 kg per cum of chippings including a tack coat of 1 kg bitumen emulsion per sqm of road surface including consolidation with road roller of 6 to 9 tonne capacity etc.. complete.	6300	SQM	
109.0	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 cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling and finishing with road roller all complete.	6300	SQM	
110.0	Providing and fixing at or near ground level or alongsides of road etc.precast cement concrete in kerb stone, edgings etc. as per approved pattern and setting in position with cement mortar 1 : 3 (1 Cement : 3 coarse sand) including the cost of required centring, shuttering and finishing smooth with 6mm thick cement plaster 1:3(1 cement:3 fine sand)on exposed surfaces complete.			
110.1	1:2:4 ( 1 Cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	150	CUM	
111.0	Providing and laying non-pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.			
111.1	100mm dia. RCC pipe	20	RM	
111.2	150mm dia. RCC pipe	50	RM	
111.3	250mm dia. RCC pipe	50	RM	
111.4	300mm dia. RCC pipe	50	RM	
111.5	450mm dia. RCC pipe	20	RM	
112.0	Providing and laying non-pressure NP3 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.			
112.1	250mm dia. RCC pipe	50	RM	
112.2	300mm dia. RCC pipe	50	RM	
112.3	450mm dia. RCC pipe	50	RM	
113.0	Providing and placing in position suitable PVC water stops conforming to IS 12200 of Deep-Jyoti or equivalent for construction/expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete.			
113.1	Serrated with central bulb(225mm wide,8-11mm thick)	1500	MTR	
114.0	Providing & fixing in position precast cement concrete trench covers or perforated covers wherever necessary at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles. etc.			
114.1	Grade of concrete shall be M30	300	CUM	

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
115.0	Providing and laying stone aggregate in switch yard areas in 100mm thick layer using 40 mm aggregates size. Before laying the stone aggregates, the yard surface shall be treated with antiweed treatment all complete as per direction of Engineer in Charge (The rate shall be inclusive of all materials, labour, loading, unloading and surface preparation etc required for aggregate laying and antiweed treatment).	70000	SQM	
116.0	Providing and fixing 3.0meter high GI chain link fencing conforming to IS2761 consisting of 10G hot dipped galvanised steel wire as per specification including all allied activities, all complete as per approved drawing and direction of Engineer-in-charge (Rates shall be inclusive of all items like angles, pipes, chainlink fence, barbed wire, toe wall, PCC, etc all complete as per approved drawing) and as per customer's specification.	1000	RM	
117.0	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with ready mixed grout or grout consisting of 2 parts by weight of sand, 1 part by weight of cement including approved plasticizer, non-shrink admixture, in the required proportion as recommended by manufacturer/Engineer, including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	20	CUM	
118.0	Filling of approved materials i/c cost of materials, labour and equipment for handling, transportation, placing and compacting as required to the required density and to the required elevations as per specification, drawings and directions of Engineer-in-Charge.			
118.1	Broken/crushed/non crushed stone of size 40 to 60mm for placing over transformer grating.	120	CUM	
119.0	Laying of underground earthmat of 40 mm dia MS rods at a depth of 600 mm to 800 mm from top of ground including flowing works. Excavation of trenches as per approved earthmat layout drawing - Layout of MS rod as per approved earthmat layout drawing - Welding of rods (as per drg no TB-4-240-316-108, sh no 16, 17 & 18, Rev-0 for welding details of rods) - Bringing out rises just below gravel level near the equipment foundations - Back filling of soil - Any other work necessary to complete the laying	250	MT	
120.0	Fabrication & laying of auxiliary mat of 40 mm dia MS rods at a depth of 300 mm from top of FGL including excavation & back filling as per drg no TB-STD-316-Auxiliary Mat, Rev-0. Any other work necessary to complete the laying of earthmat.	120	NO	
121.0	Installing of 40 mm diameter rod electrode with test pit as per drg no TB-4-240-316-108, sh no 11, Rev-0 including following work - Excavation - Installing the rod electrode - Backfilling and compaction - Casting the test pit with cast Iron covers - Any other work necessary to complete the work.	6	NO	
122.0	ENABLING WORKS			

SL NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
122.1	Execution and handing over of civil works for 20m x 10 m covered store as per specifications and drawings(Compln - 6 weeks from the date of LOI).	1 LOT		
122.2	Execution and handing over of civil works for 1000sqm open store as per specifications and drawings(Compln - 6 weeks from the date of LOI).	1 LOT		
<b>TOTAL</b>				
<b>NOTE</b>				
1.0	Reinforcement steel shall be supplied by BHEL free of cost as per norms indicated in conditions of contract. The rate quoted against item no 16.2 above shall be deemed to be inclusive of cost against all activities required including transportation of material from nearest SAIL stockyard.			
2.0	The works of sl no 122.1 includes all works related with covered store as follows.			
2.1	The rate shall include the cost of labour and material involved in all the operations including one coat of approved red oxide zinc chromate primer as per IS-2074:1979.			
2.2	The specific technical requirement for execution of work shall be latest CPWD/IS specifications.			
2.3	The store shall have a tubular truss of span 10 m at an interval of 5 m. The length of store shall be 20 m. The truss material shall be procured from reputed manufacturer conforming to IS:1161-1979 abd as approved by engineer-in-charge.			
2.4	The roof shall be made with GS corrugated sheets (24 G) fixed with polymer coated J/L hooks, bolts, nuts (8 mm dia) with bitumen and GI Limpet washer or with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheet complete. The material shall be of approved make. The roof shall be made with proper arrangement to prevent water leakage.			
2.5	Bottom of truss shall be 4.5 m above floor. The side wall shall be 250 mm thick brickwork(1:6) plastered on both sides (12 mm thick 1:4) and two coat of white wash. RCC Columns 300x450 are to be provided at 5 m interval upto bottom of truss for support of truss.			
2.6	Floor shall be 75 mm thick PCC-1:2:4 over 150 mm layer of compacted boulders.			
2.7	Adequate No. of fire extinguishers (min 4 nos CO2 and 2 Nos foam type) and sand & water buckets shall be provided.			
2.8	Proper illumination arrangement (min 6 nos tube lights) shall be done with completed wiring with PVC conduits.			
2.9	Above specification shall be read in conjunction with enclosed drawing no TBSM/COV-Store/01 Rev-00.			
3.0	The works of sl no 122.2 includes all works related with open store as follows.			
3.1	Area around the open to be surround with barbed wire fencing 1.8 meter above ground level with 8 strands of barbed wire of horizontal and two diagonal in each span. The posts shall be medium MS tubes of 50 mm dia conforming to IS 1161/ 50x50x6 mm MS angle conforming to IS:806 with one MS base plate of size 160x160x6 mm thick shall be welded with the tubular posts. All posts shall be 3.0 meter apart and shall be set in 1:2:4 PCC blocks of 0.4x0.4x0.6 m depth. 75 thk PCC 1:3:6 is to be provided below concrete block. The material shall be procured from reputed manufacturer and as approved by engineer-In-charge.			
3.2	One wide gate (5 m) for vehicles and one wicket gate for personnel to be installed. The gate be of pipe frame work with suitable stiffness with weld mesh and with locking arrangement.			
3.3	The area of the open stores shall be raised 150 mm above the surrounding ground level with brick soling/boulder soling and is to be compacted properly to prevent water logging and flow of water surrounding area in to this area. The same is to be connected with nearby road.			
3.4	The area shall be adequately illuminated for clear visibility at night (Minimum four halogens are to be provided at four corners).			

**VOLUME-III A  
PRICE SCHEDULE, REV-1**

Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, enabling work, switch yard civil work of unit # 1 & 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.

TENDER NO - PSER:SCT:PAL-C987:09

**SCH-3 - MAIN CIVIL**

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
1.0	100	<b>EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>			
1.1	101	Earth work in excavation <b>upto 2m depth</b> below ground level for foundation, trenches, pipe lines, storm water drains, etc including setting out, clearing & grubbing, removal of debris, dewatering if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 500M etc complete for <b>all types of soils</b> including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe etc but does not require chiselling or blasting.	108379	CUM	
1.2	102	Earth work in excavation <b>upto 2m depth</b> below ground level for foundation, trenches, pipe lines, storm water drains, etc including setting out, clearing & grubbing, removal of debris, dewatering if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 500M etc complete for <b>hard rock</b> requiring blasting/controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.	25805	CUM	
1.3	103	Earth work in excavation for depth <b>exceeding 2m but not exceeding 4m</b> below ground level for foundation, trenches, pipe lines, storm water drains, etc including dewatering if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 500 mtr etc complete for <b>all types of soils</b> including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	38963	CUM	
1.4	104	Earth work in excavation for depth <b>exceeding 2m but not exceeding 4m</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 500 mtr etc complete for <b>hard rock</b> requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by Engineer.	26631	CUM	

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
1.5	105	Earth work in excavation for <b>depth exceeding 4m but not exceeding 6m</b> below ground level for foundation, trenches, pipe lines, storm water drains, etc including dewatering if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 500 M etc complete for <b>all types of soils</b> including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	8440	CUM		
1.6	106	Earth work in excavation for depth <b>exceeding 4m but not exceeding 6m</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 500M etc complete for <b>hard rock</b> requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without <u>damaging the existing structures and as approved by Engineer</u> .	8755	CUM		
1.7	108	Earth work in excavation for depth <b>exceeding 6m but not exceeding 8m</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, dressing the sides, levelling to grade and stacking/ disposal of surplus excavated material within a lead of 500M etc complete for <b>hard rock</b> requiring blasting/ controlled blasting and/ or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without <u>damaging the existing structures and as approved by Engineer</u> .	3058	CUM		
1.8	110	Earth work in excavation for depth <b>exceeding 8m but not exceeding 10m</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, dressing the sides, levelling to grade and stacking/disposal of surplus excavated material within a lead of 500M etc complete for <b>hard rock</b> requiring blasting /controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without <u>damaging the existing structures and as approved by Engineer</u> .	807	CUM		
1.9	111	Cutting and uprooting of trees (including removal of roots) including transportation, stacking at storage yard and disposal of unused material as per the direction of engineer in charge for the following.				
1.9.1	i)	trees with 300mm to 600mm girth	100	EACH		
1.9.2	ii)	trees with 601mm to 900mm girth	50	EACH		
1.9.3	iii)	trees with 901mm to 2500 mm girth	30	EACH		
1.10	116	Extra over item 101 to 110 and respective excavation items of levelling and grading and raw water reservoir excavation work for <b>carriage of all types of excavated materials</b> beyond the initial lead of 500M including spreading, dressing, levelling, all complete as per specifications, drawings and <u>instructions of the engineer for the following leads.</u>				
1.10.1	a	Carriage beyond 500 m and not exceeding 1 Km	220220	CUM		
1.10.2	b	Carriage beyond 1 Km and not exceeding 2 Km	145515	CUM		
1.10.3	c	Carriage beyond 2 Km and not exceeding 3 Km	50514	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
1.10.4	d	Carriage beyond 3 Km and not exceeding 4 Km	14575	CUM		
1.10.5	e	Carriage beyond 4 Km and not exceeding 5 Km	11511	CUM		
1.11	117	Providing and injecting chemical emulsion (1 part chemicals + 20 parts water = 1% emulsion) for preconstructional anti termite/weed treatment with chemicals conforming to IS 8963 and creating a chemical barrier under and around the column pits, wall trenches, basement excavation, backfill, top surface of plinth filling, junction of the wall along external perimeter of building floor together with plinth protection, expansion joints, surrounding of pipes and conduits etc complete as per specification and as directed by Engineer-in-charge. For treating the bottom surface and sides of excavation, emulsion @ 5 liters/sqm of surface area & for treating the backfills around columns, walls etc, emulsion @ 7.5 liters/sqm of the surface shall be used and treatment shall be done in stages following the compaction of earth in layers. (plinth area of building at ground floor only shall be measured)	4040	SQM		
1.12	118	Back filling around foundation in plinths etc to proper grade & level with selected soil within a <b>lead beyond 1 Km but not exceeding 2Km from available excavated material</b> including re-excavating loose thickness, watering & ramming/ compacting in layers of 15cm thickness to atleast 90% of its max dry density by manual/ mech means, dressing etc complete including transportation.	34927	CUM		
1.13	118A	<b>Back filling</b> around foundations and plinths etc to proper grade and level <b>with selected excavated soil directly from excavation area within a lead of 500M</b> including watering and ramming/compacting in layers of 15cm thickness to atleast 90% of its maximum dry density by manual/ mechanical means, dressing etc complete including transportation.	51642	CUM		
1.14	118B	<b>Back filling</b> around foundations in plinths, trenches, drains etc to proper grade and level with <b>selected good soil from compulsorily excavated earth within a lead of 1 Km</b> free from shingle, salts, organic materials, roots, sod or any other foreign substance including re-excavating loose thickness, watering and ramming in layers of 15cm thickness compacted to 75% of relative density for non cohesive soil and 90% of its maximum dry density for cohesive soils by manual/ mechanical means, dressing etc complete including transportation.	33667	CUM		
1.15	119A	<b>Supplying and filling sand</b> of approved quality as sand blanket/filter/sand chimney in body, base and slopes of embankment including screening, under floors, in foundation and plinths including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to achieve a minimum 80% of relative density, dressing and levelling etc complete.	2130	CUM		
1.16	119C	<b>Supplying and filling</b> in trenches, plinths, area paving and other underground structures <b>with stones</b> using 63 mm-40 mm sized aggregates in layers not exceeding 225 mm thickness including breaking of boulders to required sizes, filling the interstices <b>with selected sand</b> and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer.	2485	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
1.17	119D	<b>Supplying and filling</b> in trenches, plinths, area paving and other underground structures <b>with stones</b> using 63 mm-40 mm sized aggregates in layers not exceeding 225 mm thickness including breaking of boulders to required sizes, filling the interstices <b>with coarse sand</b> and compacting to 85 % of original volume of stone stack for all lifts all complete as per instructions of engineer.	158	CUM		
1.18	125	<b>Providing &amp; laying rubble soling</b> with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from <b>63mm and down</b> , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interestices with sand including watering, thoroughly compacting the layer all complete as per specification and direction of engineer.	10652	CUM		
<b>2.0</b>	<b>200</b>	<b>PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) ETC COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).</b>				
2.1	201	<b>Plain Cement Concrete of grade M-7.5/1:4:8</b> as <b>blinding layer below foundations, trenches and under ground structures</b> etc all complete.	775	CUM		
2.2	202	<b>Plain Cement Concrete of grade M10</b> as <b>levelling course</b> , under water retaining structures, equipment foundations, under foundations/floors etc all complete.	13812	CUM		
2.3	205A	<b>Concrete of grade M-25</b> conforming to IS:456 with sand and graded hard stone aggregate 20mm nominal size <b>in foundations</b> , under floors, roads, pavements, drains, trenches, walls, etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	22740	CUM		
2.4	205B	<b>Concrete of grade M-35</b> conforming to IS:456 with sand & graded hard stone aggregate 20mm nominal size <b>in chimney foundation &amp; water retaining structures</b> , under sea, under floors etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	7917	CUM		
2.5	207	<b>Concrete of grade M-25</b> conforming to IS:456 with sand and graded hard stone aggregate 20mm nominal size <b>in superstructure</b> at all heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	13507	CUM		
2.6	208	<b>Concrete of grade M-30</b> conforming to IS:456 with sand & graded hard stone aggregate 20mm nominal size for foundation, <b>super structure of TG block</b> at all heights/ depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation etc all complete.	3750	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
2.7	209A	Conducting ultra-sonic pulse velocity (UPV) testing of TG column and TG deck / machine foundations at any levels as directed by engineer in charge and rectification (if any) of the defects in concreting observed by UPV testing by cement/epoxy grout etc.	1600	CUM		
2.8	209B	<b>Extra over item no. 205, 207 &amp; 208</b> for temperature control of fresh concrete (temperature not exceeding 23deg. C) with addition of crushed ice in mixing water etc complete.	1000	CUM		
2.9	211	<b>Concrete of grade M-25</b> conforming to IS:456 with sand and graded hard stone aggregate 20mm nominal size in <b>precast works like trench covers etc</b> including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete but excluding the cost of reinforcement.	57	CUM		
2.10	212	<b>Concrete of Grade M-20</b> conforming to IS:456 with sand and graded hard stone aggregate 20mm nominal size, plasticiser, <b>in foundation, grade slab, paving, plinth protection, underfloor, concrete roads, Drains etc complete.</b>	13367	CUM		
2.11	214	<b>Breaking concrete</b> work at any level including removing the rubbish within a lead of 1Km including transportation, loading, unloading, etc all complete.	30	CUM		
2.12	215A	<b>Breaking concrete work</b> at any level including <b>cutting reinforcements</b> , removing the rubbish within a lead of 1Km including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, all complete & as directed by engineer.	5	CUM		
2.13	215B	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).	25	SQM		
2.14	216	<b>Providing and encasing of structural steel</b> member with concrete grade <b>M25</b> , work around flanges, webs etc and filling the gap. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification and as directed by Engineer.	25	CUM		
<b>3.0</b>	<b>300</b>	<b>SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, SCAFFOLDING COMPLETE INCLUDING POCKETS ETC AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>				
3.1	301	<b>Ordinary form work below finished ground floor level</b> for foundations, footings, bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	55871	SQM		
3.2	302	<b>Fairface form work below finished ground floor level</b> for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works.	7361	SQM		
3.3	303	<b>Ordinary form work above finished ground floor level</b> for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	92023	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
3.4	304	<b>Fairface form work above finished ground floor level</b> for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	74811	SQM		
3.5	305	<b>Extra over item no.301, 302, 303, 304 for curved form work</b> for beams, walls, trenches etc as per specification.	100	SQM		
3.6	306	<b>Fairface Formwork for TG superstructure</b> (above raft top level) including necessary design & drawing for staging and scaffolding arrangement as per the approved drawing at all levels complete (staging arrangement including design & drawing to be submitted by the bidder for approval before execution for TG top deck).	2250	SQM		
3.7	307	<b>Providing and removing formwork in Pockets/block outs and openings (below 0.1 sqm contact surface area with concrete) at all elevations including cutting, formations all shapes for foundation bolts, embedments, etc all complete.</b>				
3.7.1	i)	Up to 300 mm depth	50	EACH		
3.7.2	ii)	From 301 mm to 600 mm depth	50	EACH		
3.7.3	iii)	From 601 mm to 1000 mm depth	50	EACH		
<b>4.0</b>	<b>400</b>	<b>REINFORCEMENTS</b>				
4.1	401A	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of <b>mild steel reinforcements</b> confirming to <b>grade-1</b> of IS:432 (part-I) and including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by <u>Engineer, BHEL will supply reinforcement free of cost as per SCC.</u>	6	MT		
4.2	401B	Providing, straightening cutting, bending, placing in position at any level, binding of <b>mild steel reinforcements in concrete</b> including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. <b>(Contractor will provide reinforcement from SAIL/ TISCO/ IISCO/RINL or as approved by BHEL/OTPC).</b>	4	MT		
4.3	402A	Providing, straightening, cutting, bending, placing at any level, binding in position <b>steel reinforcements of Fe-500 conforming to IS1786 in concrete</b> including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings. <b>(Contractor will provide reinforcement from SAIL/ TISCO/ IISCO/RINL or as approved by BHEL/OTPC).</b>	50	MT		
4.4	402B	Transporting, straightening, cutting, bending, placing in position at any level, binding in position of <b>steel reinforcements</b> of <b>grade Fe-500</b> confirming to <b>IS:1786</b> and including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by <u>Engineer, BHEL will supply reinforcement free of cost as per SCC.</u>	4719	MT		
<b>5.0</b>	<b>500</b>	<b>WATER PROOFING AS PER SPECIFICATIONS.</b>				
5.1	501	Providing and mixing approved <b>water proofing compound in concrete or cement mortar</b> for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete.	95058	KG		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
5.2	502	Providing and fixing roof water proofing treatment using high solid content liquid applied <b>elastomeric water proofing membrane</b> with separate wearing course as per ASTM C-898. Thickness of the membrane shall be 1.5mm. This treatment shall includes application of polymerised mottar over sloped roof to achieve a smooth surface and a primer coat.	17163	SQM		
5.3	503	Providing and <b>grading under bed</b> over roof slab, floors to achieve the specified slope with <b>1:4 cement mortar plaster</b> (by volume) of average 15mm thickness at all elevations including all labour, material, equipment, handling, preperation of surface, transportation, batching, mixing, placing, laveling, curing, testing etc. complete as per specification, drawing and instruction of engineer. (Cement will be supplied by BHEL free of cost as per SCC)	15993	SQM		
5.4	504	Providing & laying <b>protective wearing course of 25 mm thick PCC (1:2:4)</b> with 6 mm down aggregate laid in 1200mm square panels alternatively cast reinforced with 0.56 mm diameter galvanised chicken wire mesh with a gap of 6 mm between two adjacent panels, gaps shall be filled with silicon sealant for expansion and contraction all complete with labour, material, equipment and as per specification/ drawing and to the satisfaction of engineer (Cement will be supplied by BHEL free of cost as per SCC)	15005	SQM		
5.5	505	Providing & laying <b>cement concrete chequered flooring tiles 22mm thick</b> over roof as per IS:13801. Under bed shall be 40 mm thk wearing course of concrete grade M-20 cast in pannels of 1.2m x 1.2m with 6 mm down aggregate reinforced with 0.56 mm GI chicken wire mesh. Tiles shall be laid over under bed with 8 mm thick 1:3 cement mortar with fine joints including sealing of joints between wearing course and the tiles with silicon sealant all complete with labour, material, equipment, handling, scaffolding, transporting etc as per drawing and specification (Cement will be supplied by BHEL free of cost as per SCC)	14255	SQM		
5.6	508	Screed concrete 1:2:4 conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6mm nominal size <b>on the roof/floor/manhole &amp; other</b> at any level or thickness to maintain the required grade complete. (Cement will be supplied by BHEL free of cost as per SCC)	911	CUM		
5.7	509	Screed concrete 1:1.5:3 conforming to IS 456 with sand and graded hard stone aggregate 12.5mm/6mm nominal size <b>on the roof/floor/manhole &amp; other</b> at any level or thickness to maintain the required grade complete. (Cement will be supplied by BHEL free of cost as per SCC)	50	CUM		
5.8	510	Providing minimum <b>two coats of bituminous paint on concrete surfaces in contact with soil in foundations</b> of grade 85/25 confirming to IS 702 @ 1.7 kg/sqm.	53401	SQM		
6.0	600	<b>SUPPLYING &amp; INSTALLATION OF PREMOULDED JOINT FILLER IN BETWEEN EQUIPMENT FOUNDATIONS, MAT FOUNDATIONS, PILE CAPS, WALLS, BASEMENT SLABS ETC COMPLETE INCLUDING LABOUR, EQUIPMENT AND MATERIALS, SEALING OF JOINTS INCLUDING COST OF SEALING COMPOUND (POLYSULFIDE BASE SEALANT AS PER IS:12118) ETC COMPLETE AS PER SPECIFICATIONS &amp; DRAWINGS OR AS DIRECTED BY ENGINEER FOR FOLLOWING.</b>				

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
6.1	601	12mm thick joints.	75	SQM		
6.2	602	20mm thick joints.	18	SQM		
6.3	603	25mm thick joints.	33	SQM		
<b>7.0</b>	<b>700</b>	<b>MS EMBEDMENTS</b>				
7.1	701a	<b>Supplying</b> , fabricating and fixing of <b>embedments, MS inserts</b> , pipe sleeves, guide rails, angle pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer. <b>Contractor to supply all materials.</b>	15	MT		
7.2	701b	Transporting, fabricating and fixing of <b>embedments, MS inserts</b> , angle /channel/ ISMB pieces of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer. <b>BHEL will supply plates, channels, angles. ISMB as per scc free of cost.</b>	82	MT		
7.3	702	<b>Supply</b> , fabrication, transportation, delivery at site and erection, installation and alignment of <b>MS Foundation bolts</b> (Grade-1 of IS: 432 & IS: 2062) assembly in concrete along with nuts, locknuts (IS: 1363, IS:1364 & IS:3138), washers, anchor plates, stiffener plates, protective tapes etc. upto & inclusive of 50mm diameter and upto 2000mm long, for columns including pipe sleeves, templates wherever necessary etc all complete as per specifications and directed by engineer. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	26	MT		
7.4	703	<b>Transportation from stores</b> , delivery at work spot and erection, installation and alignment of <b>embedments, MS inserts</b> , pipe sleeves, foundation bolts, angle / channel / ISMB pieces, <b>foundation bolts</b> of various diameters, plates as required including cost of all labour, equipment, material, loading, unloading, assembly, welding etc. all complete as per specifications, drawings and as directed by Engineer. <b>Bhel will supply fabricated embedments in loose condition.</b>	23	MT		
<b>8.0</b>	<b>800</b>	<b>GROUTING AS PER SPECIFICATION FOR THE FOLLOWING.</b>				
8.1	802	Providing and <b>grouting of pocket holes</b> , pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with <b>mix 1:1:2</b> (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer. (Cement will be supplied by BHEL free of cost as per SCC)	2	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
8.2	803	Providing and <b>grouting of pocket holes</b> , pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with <b>mix 1:1</b> (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. (Cement will be supplied by BHEL free of cost as per SCC)	21	CUM		
8.3	804	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etc with <b>ConbextraGP-2`Fosroc`/ Pidigrout10/Pagel</b> or equivalent all complete as per specifications. (Cost of all material and clearing the pocket by compressed air shall be in the scope of the contractor).	1	CUM		
8.4	804a	Same as above but with Conbextra GP1 or equivalent.	1	CUM		
<b>9.0</b>	<b>900</b>	<b>DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>				
9.1	901	<b>Providing and fixing 40mm thick solid core wooden flush door shutters (single or double)</b> with commercial faces and hard board edges. Core of solid core doors shall be of block board or wood particle board of approved make including all fixtures, Godrej make Mortice lock with handle on both sides, shop painting/polishing as per specification all complete including test certificates.	443	SQM		
9.2	902A	<b>Providing and fixing steel windows of fixed type</b> with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. <b>Glazing shall be of 6mm thick toughened safety glass</b> panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	809	SQM		
9.3	902B	<b>Providing and fixing steel windows of fixed type</b> with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision. <b>Glazing shall be of 6mm thick wired glass</b> panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	200	SQM		
9.4	902C	Providing and fixing 12 mm sq. bar @100 c/c (M S safety bars ) with steel windows alongwith one coat of primer as shop coating follows by one coat of primer and two coat of synthetic enamel finish paint ( paint shall be of BERGER or equivalent make).	500	KG		
9.5	903	<b>Providing and fixing steel openable windows/ventilators with steel sections</b> as per IS:1038, IS:1361 & IS:7452 latest revision. <b>Glazing shall be of 4mm thick float glass</b> panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	720	SQM		
9.6	904	<b>Providing and fixing anodized extruded aluminium windows (single or double shutter)</b> including aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 2.5mm wall thickness, as per IS:733 and electro color coating of minimum 15 microns thickness. <b>Glazing shall be clear float glass of 6.0mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	1635	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
9.7	905	<b>Providing and fixing anodized extruded aluminium ventilators</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or approved equivalent having minimum 2.5mm wall thickness, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 6.0mm thickness including snap fit type beading, concealed screws, fixtures, etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required.	539	SQM		
9.8	906	<b>Providing and fixing steel single or double door shutters.</b> Shutters shall be <b>45mm thick flush design</b> comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including all fittings, Godrej make Mortice lock with handle on both sides, primer painting complete as per specification.	229	SQM		
9.9	907	<b>Providing and fixing steel single or double shutter doors.</b> Shutters shall be of <b>18 gauge M.S. sheets</b> and shall present a flush surface on the outside. The inside shall be stiffened with semitubular edge and central stiffening rail which shall convey the lock. Complete with fixtures, Godrej make Mortice lock with handle on both sides, primer painting as per specification.	85	SQM		
9.10	908	<b>Providing and fixing fire proof steel door</b> (single or double shutter) conforming to IS:3614 (part-1 & part-2) with panic device. Shutters shall be minimum 60mm thick flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers with mineral wool insulation, primer and epoxy based painting including door frame, all fittings complete as per specification. and shall be TAC approved with minimum 2 hours fire rating. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	16	SQM		
9.11	909	Providing and fixing <b>anodized extruded aluminium doors</b> (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required (Frames shall be measured and paid under separate item).	243	SQM		
9.12	910A	Providing and fixing in position anodised aluminium frame for doors, windows, ventilators having minimum 2.5 mm wall thickness as per IS:1285 and electro colour coating of minimum 15 micron thickness including holdfast, filling up of gaps at junctions, at top, bottom and sides etc all complete as per specification.	1600	KG		
9.13	910B	Providing and fixing in position <b>anodised aluminium frame</b> for doors, windows, ventilators having minimum 3mm wall thickness as per IS:1285 and electro colour coating of minimum 15 micron thickness including holdfast, filling up of gaps at junctions, at top, bottom and sides etc all complete as per specification.	250	KG		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
9.14	910C	Providing and fixing anodized <b>aluminium work in doors, windows, ventilators and partitions etc</b> with extruded standard tubular and other sections including all fittings and fixtures and accessories of aproved make confirming to IS:733 and IS:1285, anodised and alectrocolour dyed to required shape according to IS:1868 (minimum anodic coating of grade AC15), fixed with roll plucks, expansion fasteners, screws or with fixing clips including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bimetallic protection etc including preperation of working drawings, aluminium cleat angles, aluminium snap-on-beading for glazing/paneling with all fittings and fixtures (like tower bolts, handles, door stoppers with rubber shoes, "L" drops, stays, floor springs, hydrolic door closers etc), C.P. brass/ stainless steel screws, providing and fixing hinges/pivots, and making provisions for fixing of fittings where ever required including the cost of PVC/neoprene gas fits all ted by Engineer-in-charge. Cement and reinforcement steel will be supplied by BHEL free of cost as per SCC. Reinforcem	1400	KG		
9.15	911A	Providing and fixing <b>aluminium glazed partition with single glazing</b> . Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. <b>Glazing shall be clear float glass of 6.0mm thickness</b> including snap fit type beading, concealed screws, hold fast, fixtures, Godrej make Mortice lock with handle on both sides, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed <del>mechanically wherever required</del>	250	SQM		
9.16	911B	Providing and fixing <b>aluminium glazed partition with single glazing</b> . Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. <b>Glazing shall be of 6.3 mm thick laminated safety glass</b> including snap fit type beading, concealed screws, hold fast, fixtures, Godrej make Mortice lock with handle on both sides, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed <del>mechanically wherever required</del>	205	SQM		
9.17	912	Providing and fixing <b>aluminium glazed partition with double glazing</b> . Aluminium sections shall be of extruded sections of INDAL or approved equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Double glazing shall be of two clear float glass of 6.0mm thickness each sealed and separated by 12mm air-gap including colour anodised aluminium beading, concealed screws, hold fast, fixtures, PVC/neoprene gasket, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required. Minimum anodising thickness shall be 15micron	255	SQM		
9.18	913	Providing and fixing of over <b>head hydraulic door closers</b> of 'Ya' make or equivalent approved quality as directed by Engineer.	162	EACH		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
9.19	914	Providing and fixing <b>pressed steel frames fabricated using 16 gauge M.S</b> sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars etc complete as per specifications.	1580	KG		
9.20	915	Providing and fixing in position <b>rolling shutter</b> 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, details as per IS6248, all complete as per specification and of approved make - <b>Mechanically operated</b> . 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%.	211	SQM		
9.21	916	Providing and fixing in position <b>rolling shutter</b> 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, details as per IS6248, all complete as per specification and of approved make - <b>Hand operated</b> . 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%.	77	SQM		
9.22	917	Providing & fixing in position <b>rolling shutter</b> 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, details as per IS6248, all complete as per specification & of approved make - <b>Electrically operated</b> . 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%.	200	SQM		
9.23	918	Providing and fixing in position <b>PVC Door with frame 35mm thick</b> of Syntex make or approved equivalent in toilet as per specifications and as directed by Engineer.	160	SQM		
9.24	919	Timber panelled door with teak wood frame.38 mm thick solid core teak wood flush shutter conforming to IS:2191 with commercial quality teak ply and vision panelled.	150	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
10.0	1000	<b>BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR FOLLOWING (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).</b>			
10.1	1001	Providing <b>brick work in cement mortar 1:6</b> (1 part cement: 6 parts sand) in walls, chambers etc of 230mm & above in thickness at all depths, places and positions <b>below plinth</b> including raking out joints, curing, scaffolding etc. all complete excluding plastering and painting, using bricks of class designation 5 (crushing strength of 5N/sq.mm) quality of nominal dimensions as per specification.	1200	CUM	
10.2	1002	Providing <b>brick work in cement mortar 1:6</b> (1 cement : 6 sand) in walls, chambers etc at all heights, places and position <b>above plinth</b> including raking out joints, curing, scaffolding, providing 2 nos. 6mm dia. MS bars at every sixth layer including cutting, bending, placing, tying/welding of reinforcement bar etc complete but excluding plastering and painting, using bricks of class designation 5 (crushing strength of 5N/sq.mm) quality of nominal dimensions as per specification.	6724	CUM	
10.3	1003	Providing <b>115mm thick brick work</b> in cement mortar 1:4 (1 cement : 4 sand) <b>in partition walls, chambers etc</b> at all heights, places and position above or below plinth/graded level including providing 2 nos. 6mm dia. MS bars at every third layer, raking out joints, curing, scaffolding etc. all complete using bricks of class designation 5 (crushing strength of 5N/sq.mm) quality of nominal dimensions as per specification.	6550	SQM	
10.4	1005	Providing & <b>encasing of structural steel member</b> with <b>masonry work</b> around flanges, webs etc and filling the gap between steel & masonry by minimum 12mm thick mortar (1:3). Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification.	285	CUM	
10.5	1006	Making <b>openings</b> in existing finished <b>brick wall or partition wall</b> including making good broken edges/ surface with cement mortar, fixing steel/ precast concrete section as lintel (steel/ precast concrete section to be paid separately under Item ST no.701a/ 211 respectively), painting, finishing to match with existing finishing, scaffolding/ staging works, gas cutting of reinforcement/ structural work, cleaning & removing of all debris within 1Km lead etc all complete & as directed by engineer.	885	SQM	
10.6	1007	<b>Dismantling existing brick work</b> at all level including stacking and removing the debris within a lead of 1Km., including transportation, loading, unloading, etc all complete and as directed by Engineer.	45	CUM	
10.7	1008	<b>Filling existing brick wall/ partition wall opening</b> at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at any level, removal of debris etc all complete and as directed by Engineer.	10	SQM	
11.0	1100	<b>DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC COMPLETE WITH THICKNESS AS SPECIFIED/ SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>			

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
11.1	1101	<b>Damp Proof Course 50mm thick</b> 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification. (Cement will be supplied by BHEL free of cost as per SCC).	3932	SQM		
<b>12.0</b>	<b>1200</b>	<b>CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).</b>				
12.1	1201	Providing <b>20mm thick plaster</b> in two layers ( <b>with an under layer 12 mm thick in cement mortar 1:4 and top 8 mm thick layer in cement mortar 1:4</b> ) on <b>outside</b> the brick walls finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials.	18127	SQM		
12.2	1202	Providing <b>12mm thick plaster in cement mortar 1:4 inside</b> the brick walls with smooth finish as per specification.	42891	SQM		
12.3	1203	Providing <b>6mm thick plaster in cement mortar 1:3 on ceiling</b> with smooth finish as per specification.	19324	SQM		
12.4	1204	Providing <b>15mm thick neat plaster in drains/culverts</b> as per specification.	54243	SQM		
12.5	1205	Providing <b>18mm thick plaster in cement mortar 1:6</b> on walls finished to a <b>wooden float/smooth/rough finish</b> as per specification.	2429	SQM		
12.7	1207	Providing <b>Plaster of Paris</b> 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification.	34144	SQM		
<b>13.0</b>	<b>1300</b>	<b>FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC ALL COMPLETE AS PER SPECIFICATION. DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>				
13.1	1301	Two or more coats of <b>white washing with lime</b> to give an even shade on ceiling including a priming coat complete.	15689	SQM		
13.2	1301A	Two or more coats of <b>colour wash</b> as per IS 627 of approved brand and manufacture to give an even shade on walls including a priming coat as per specifications.	1440	SQM		
13.3	1302	Two or more coats of <b>water proofing cement paint</b> of approved brand and manufacture and of required shade to give an even shade on walls complete.	4844	SQM		
13.4	1303	Two or more coats of <b>distempering with oil bound washable distemper</b> as per IS:428 of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete over P.O.P.	30324	SQM		
13.5	1304	Two or more coats of <b>dry distempering</b> of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	5833	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
13.6	1304a	Providing and applying 2 or more coats of <b>exterior Granular finish (vineratex) paint</b> of approved make and colour on exterior surfaces at all heights including material, labour, scaffolding, curing etc complete <u>as per specification.</u>	12800	SQM		
13.7	1305	Providing two coats of <b>Acrylic emulsion paint</b> of approved brand and manufacture to give an even shade including 3mm thick plaster of paris punning, one coat of solvent thinnable cement primer of <u>approved shade &amp; quality of Berger make complete as per specifications.</u>	4986	SQM		
13.8	1306	Providing and applying 2 or more coats of <b>acid/alkali resistant paint</b> of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer etc all complete as per manufacturer's recommendations and as approved by engineer, at all <u>heights above or below grade level.</u>	675	SQM		
13.9	1306(A)	Providing and applying 2 or more coats of <b>chlorinated rubber based paint</b> of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying primer etc all complete as per manufacturer's recommendations and as approved by <u>engineer. at all heights above or below grade level.</u>	2470	SQM		
13.10	1309	Two or more coats of <b>synthetic enamel paint</b> of Berger make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish <u>to all interior and exterior surfaces complete.</u>	1300	SQM		
13.11	1310	Providing and applying <b>plaster of paris punning on walls</b> including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by Engineer.	320	SQM		
13.12	1311	Epoxy high build paint 300 micron (consists of solvent based two pack system with epoxy resin and amine curing agent to withstand high degree of chemical and abrasive action) for concrete structure/ floors.	200	SQM		
<b>14.0</b>	<b>1400</b>	<b>FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER SCC).</b>				
14.1	1401	Providing and laying 50mm thick <b>heavy duty I.P.S flooring</b> with <b>metallic hardener pigmented topping</b> using 12mm thick uniform graded treated iron particles <b>in flooring</b> 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).	975	SQM		
14.2	1401 (A)	Providing and laying 50mm thick <b>heavy duty I.P.S flooring</b> with <b>non - metallic hardener pigmented topping</b> 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).	13875	SQM		
14.3	1402	Providing and laying 50mm thick <b>heavy duty cement concrete</b> with <b>metallic hardener</b> pigmented topping using 12 mm thick uniform graded treated iron particles <b>in skirting and dado</b> including under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	960	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
14.4	1402 (A)	Providing and laying 50mm thick <b>heavy duty cement concrete</b> with <b>non-metallic hardener</b> pigmented topping using 12 mm thick uniform graded treated non-metallic particles <b>in skirting and dado</b> including under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) and top layer of 12mm thick metallic concrete complete.	1115	SQM		
14.5	1403	Providing & laying precast <b>polished heavy duty cement concrete tiles (Carborundum)</b> of size 300mmX300mmX25mm thick of approved shade as per IS 1237, <b>laid in floors</b> jointed with neat cement slurry with pigment to match the shade of tiles including rubbing & polishing and under bed 20mm thick PCC 1:1.5:3 with 10mm down granite stone chips etc complete laying as per IS:1443.	6250	SQM		
14.6	1404	Providing and laying precast <b>polished heavy duty cement concrete tiles (Carborundum )</b> of size 300mmX300mmX25mm thick of approved shade as per IS 1237, <b>laid in skirting and dado</b> , jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing and under bed cement sand mortar 1:3 of thickness 10/12mm etc complete laying as per IS 1443.	400	SQM		
14.7	1406A	Providing and laying 40mm thick cast-in-situ <b>Terrazo floor finish</b> in floors, landings, treads and risers including an under layer of 25mm thk cement concrete 1:1.5:3 by volume and topping of 15mm thick with marble chips of size 6mm down laid in white, grey cement or mixture or both in proportion 1:1.5 with white marble powder 3:1 in proposition mixed dry in cement including pigments rubbing/ grinding, polishing etc including 40mmX3mm aluminum strips all complete as per specification.	4825	SQM		
	1406B	Providing and laying 40mm thick precast <b>Terrazo Tiles (250X250X20MM) finish</b> in floors, landings, treads and risers including under bed 20mm thick PCC 1:1.5:3 with 10mm down granite stone chips, including pigments rubbing/grinding, polishing etc. complete as per specification.	4800	SQM		
14.8	1407	Providing and laying 25mm <b>thick Terrazo Tiles finish in skirting/dado projecting</b> out 6mm from adjacent plaster/finish as per specification all complete and topping of 12mm thk with marble chips of size 1mm to 10mm nominal size laid in white grey or mixture of both in proportion 1:1.5 with white marble powder 3:1 in proportion mixed dry in cement including pigments rubbed/grinding, polishing etc. including 40X3 mm aluminum strips all complete as per specification.	985	SQM		
14.9	1408	Providing and fixing 25mm thick <b>Acid / Alkali resistant vitreous tile</b> lining conforming to IS:4457 in <b>flooring/Dado</b> and shall be laid over over bitumastic lining of minimum 12mm thick ( to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441 & 4443 including preparation of surface, application of bitumen primer, curing etc all complete as per specification and direction of Engineer. Payment terms - a) On receipt of tile at site - 40%; b) On completion of erection & fixing - 60%	1710	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
14.10	1409	Providing and laying <b>polished Kota stone</b> 20mm thick in <b>flooring including an</b> under bed of average 30mm thick with 1 part cement : 2 part sand : 4 part stonechip by volume and brought to proper level. The kota stone slabs/ tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc complete.	1035	SQM		
14.11	1410	Providing and laying <b>polished Kota stone</b> 20mm thick in <b>skirting</b> projecting 6mm from adjacent plaster all complete .	160	SQM		
14.12	1413	Providing and laying <b>polished Granite stone</b> of approved colour and texture <b>20mm thick</b> in flooring including an under bed of average 30mm thick with 1 part cement : 2 part sand : 4 parts stonechip by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc complete.	1300	SQM		
14.13	1414	Providing and laying <b>polished Granite stone 20mm thick under bed cement sand mortar 1:3 of thickness 10/12mm</b> , in <b>skirting and dado</b> including pigments, curing, grinding, granite polishing etc complete.	80	SQM		
14.14	1415	Providing and laying <b>7mm thick vitrified ceramic tiles of polished variety</b> of size 300mmx300mm from reputed manufacturer including under bed cement sand mortar 1:3 of thickness 30/35mm, complete as per specification.	2889	SQM		
14.15	1416	Providing and laying <b>7mm thick vitrified ceramic tiles of unpolished variety</b> of size 300mmx300mm from reputed manufacturer,including under bed cement sand mortar 30/35mm of thickness 10/12mm complete as per specification.	3350	SQM		
14.16	1417	Providing and laying <b>7mm thick vitrified ceramic tiles of polished variety</b> of size 300mmx300mm from reputed manufacturer <b>for skirting and dado</b> up to specified height including under bed cement sand mortar 1:3 of thickness 10/12mm complete as per specification.	235	SQM		
14.17	1418	Providing and laying <b>7mm thick vitrified ceramic tiles of unpolished variety</b> of size 300mmx300mm from reputed manufacturer <b>for skirting and dado</b> up to specified height including under bed cement coarse sand mortar 1:3 of thickness 10/12mm complete as per specification.	360	SQM		
14.18	1419	Providing and laying <b>granite stone slab</b> of 20mm thickness single piece for wash basin slab of black or approved colour with cutting and opening complete including under bed cement coarse sand mortar 1:3 of thickness 10/12mm.	190	SQM		
14.19	1420	Providing and laying <b>Heavy Duty dust pressed Ceramic Tiles</b> of size 300mmx300mmx7mm thick of reputed manufacturer of approved finish shade and colour including under bed cement coarse sand mortar 1:3 of thickness 10/12mm.	460	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
14.20	1423	Providing and fixing <b>White glazed tiles of size 150mmx150mm and 5.5mm to 6mm thick in dado</b> , projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts coarse sand by weight, fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry, including pigments, curing etc all complete.	210	SQM		
14.21	1424	Providing and laying <b>Heavy Duty Ceramic Tiles (Matt Finish) of size 300mmx300mm and 7mm thick</b> of reputed manufacturer (Kajaria, Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm, with under layer of 20mm thick consisting of 1 part of lime putty:1 part surkhi:2 parts coarse sand by weight complete as per specification including all material, labour etc all complete.	2220	SQM		
14.22	1425	Providing and laying <b>2mm thick antistatic PVC floor</b> of approved shade including all labour, material etc all complete as per drawing and as directed by Engineer.	255	SQM		
14.23	1427	Providing Epoxy coating (3 mm thick) on operating floor as per manufacturers recommendation and specification.	1750	SQM		
<b>15.0</b>	<b>1500</b>	<b>PROVIDING AND ERECTING ROOFING/ SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC INCLUDING COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, SHEETING RUNNER, RAILS MILD STEEL WIND TIES (HORIZONTAL/ VERTICAL) AND ANY OTHER STEEL WORKS ETC AT ALL ELEVATIONS COMPLETE AS PER SPECIFICATION. DRAWING AND AS DIRECTED BY THE ENGINEER FOR THE FOLLOWING.</b>				
15.1	1501	Designing, providing and fixing permanently colour coated galvanised <b>MS troughed metal sheet decking</b> plate over roof purlins as per relevant IS code and specification. Thickness of deck plate shall be minimum <b>0.8mm with minimum trough depth of 38mm</b> and shall serve as permanent shuttering to the cast-in-situ roof slab 100mm thick measured over crest of metal decking and shall have adequate strength to support weight of green concrete and imposed loads during construction spanning between purlins(maximum span between purlins is 1750mm) as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc complete as per engineers approval and specification. (height of trough required as per design should be included in the cost) M.S. Trough decking plate shall be connected to the top surface of the purlin, top chord of truss with self tapping self drilling white zinc plated heat treated high carbon steel screws of minimum 5.6mm dtd by Engineer-in-charge. Cement and reinforcement steel will be supplied by B	8947	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
		including all material, labour, tools etc complete. In addition shear connector of 16mm diameter and minimum 75mm long mild steel studs at spacing 520mm c/c shall be fixed on top cord of purlin passing through the metal decking. (Note: Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor) Measurement shall be of the plan area of roof covered by MS trough metal decking. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.			
15.2	1502	Design, supply and erection of thermally insulated <b>sandwiched metal cladding</b> for external walls with outer sheeting having troughed zinc-aluminium alloy coated (both sides) M.S. sheet having 0.6mm minimum thickness (or high tensile steel sheet of 0.5mm minimum thickness) shall be used on external face (outer face) of cladding system. Weight of coating shall not be less than 150gm/sq.m. The outer side (exposed face) shall be permanently colour coated with <b>Polyfluro Vinyl Coating (PVF2) of Dry Film Thickness (DFT) 20 microns (minimum)</b> over primer. Inner side of external sheet shall be provided with suitable pre-coating of minimum 7 microns. Galvanised M.S. sheets of minimum 0.6mm thickness shall be used as inner liner (internal face) of cladding system. The exposed face shall be permanently colour coated with silicon modified polyester paint of DFT 20 microns (minimum) over primer. Inner face of external sheet shall be provided with suitable pre-coating of minimum 7 microns. The rate of galvanising shall noted by Engineer-in-charge. Cement and reinforcement steel will be supplied by BHEL fr requirements of IS : 14246 and shall conform to class 3 for the durability. Inner sheet shall be fixed directly to side runners and Z spacers made out of atleast 2mm thick galvanized steel sheet of grade 375 as per IS : 277. Inner sheet shall be fixed at the rate not more than 1.50 m center to center to hold the insulation and external sheeting. The insulation shall be of bonded mineral wool of minimum thickness 50 mm conforming to IS : 8183, having a density of 32 Kg/cum for glass wool & 48 Kg/cum for rock wool. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	2950	SQM	
15.3	1503	Design, supply and erection of <b>single sheet metal cladding for external walls and/or internal walls</b> , ridge, hips, flashing/trimming /closure for vertical/ horizontal joints, capping, etc with sheeting, outer sheeting having troughed zinc-aluminium alloy coated (both sides) M.S. sheet having 0.6mm minimum thickness (or high tensile steel sheet of 0.5mm minimum thickness) shall be used on external face (outer face) of cladding system. Weight of coating shall not be less than 150 gm/sqm. The outer side (exposed face) shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of Dry Film Thickness (DFT) 20 microns (minimum) over primer. The exposed face shall be permanently colour coated with silicon modified polyester paint of DFT 20 microns (minimum) over primer. Inner face of external sheet shall be provided with suitable pre-coating of minimum 7 microns. The permanent colour coated sheet shall meet the general-	1575	SQM	

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
		requirements of IS : 14246 and shall conform to class 3 for the durability. Inner sheet shall be fixed directly to side runners and Z spacers made out of atleast 2mm thick galvanized steel sheet of grade 375 as per IS : 277. Inner sheet shall be fixed at the rate not more than 1.50m center to center. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.				
<b>16.0</b>	<b>1600</b>	<b>PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING POLISHING/ PAINTINGS, LABOUR ETC ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING.</b>				
16.1	1602	Providing <b>50mm thick fibre glass under deck insulation</b> having a minimum density of 24kg/cum faced with reinforced aluminium foil (FSK) and fixing it to ceiling with anchor fasteners at interval of 600mm c/c in both directions, sealing the joint with 75mm wide aluminium foil tape/PVC adhesive tape and held in position with 22G GI cross wires and wire netting of 12.5mm x 0.71mm (22G) shall be stretched over the finished insulation and secured with anchor fasteners to prevent any sagging etc all complete as per specifications and drawings.	2140	SQM		
16.2	1603	Providing, fixing and laying <b>permanently colour coated aluminium false ceiling</b> of approved colour and <b>Luxalon</b> make or approved equivalent (Type-84C, Interior) with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc suitable M.S. channel (minimum MC 100) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. Payment terms - a) On receipt of Aluminium panels at site - 50%; b) On completion of erection & fixing - 50%.	1750	SQM		
16.3	1605	Providing and Fixing <b>12.5mm thick Gypsum board (600mm x 600 mm) plain false ceiling tiles</b> of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers,etc including two or more coats of acrylic emulsion paint of approved colour to give an even shade all complete with smooth finish as per specifications, drawings and as directed by Engineer.	1060	SQM		
<b>17.0</b>	<b>1700</b>	<b>PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC COMPLETE AS PER SPECIFICATION FOR THE FOLLOWING.</b>				
17.1	1701	<b>HCl down take</b> pipes of <b>100mm</b> diameter as per specifications.	750	RM		
17.2	1702	<b>MS down take</b> pipes of <b>100mm</b> diameter- Medium quality as per IS:1239 (part-I).	60	RM		
17.3	1703	<b>HCl down take</b> pipes of <b>150mm</b> diameter as per specifications.	260	RM		
17.4	1704	<b>MS down take</b> pipes of <b>150mm</b> diameter- Medium quality as per IS:1239 (part-I).	531	RM		
17.5	1705	<b>UPVC down take</b> pipes of <b>100mm</b> diameter- Medium quality as per IS:4985 .	2367	RM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
17.6	1706	UPVC down take pipes of 150mm diameter- Medium quality as per IS:4985.	3581	RM		
<b>18.0</b>	<b>1800</b>	<b>MISCELLANEOUS</b>				
18.1	1801	Providing and fixing <b>PVC water stops - 225mm wide</b>	245	RM		
18.2	1802	Providing and fixing in position 25mm wide and <b>25mm thick blown bitumen in expansion joints</b> as per specification.	25	RM		
18.3	1803	Supplying and installation of <b>25mm thick vibration damping resistoflex</b> or approved equivalent pads around foundation of vibrating equipment and other locations as directed by the Engineer including cost of all materials labour equipment etc complete as per drawing and specifications.	30	SQM		
18.4	1804	Providing and fixing <b>bitumen impregnated fibre joint filling board of 25mm thickness</b> , fillers along with PVC water bar etc for expansion joint in water retaining structures all complete as per specifications, drawing and as directed by Engineer.	20	RM		
18.5	1805	Supplying and laying of 40mm rounded gravels in transformer yards, switch yard floors etc as directed by Engineer.	120	CUM		
18.6	1808	Providing and fixing <b>G.I strips minimum 1.5mm thick and 150mm wide</b> unless specified otherwise in water retaining structures including galvanising as per relevant IS codes and as per specifications.	100	RM		
18.7	1809	Providing and fixing <b>aluminium strips minimum 18SWG and 300mm wide</b> unless specified otherwise with minimum lap of 50mm length all complete as per specification.	70	RM		
18.8	1811	Laying of <b>earthing mats/rods</b> including transportation from yard stores, loading, unloading, cutting to length, welding etc complete as per specification and as directed by Engineer. Earthing rods will be supplied by BHEL free of cost as per scc.	334	MT		
18.9	1812	Design, supply, fabrication, installation of truly levelled and aligned <b>400mm high cavity flooring</b> comprising of 35mm thick <b>Nova teak</b> or approved equivalent make superparticle board of size <b>610mm x 610mm floor panels</b> having 2mm thick anti-static PVC sheet on top, 2mm thick hard PVC strip lipping on edges and 26G aluminium sheet fixed with araldite on underside including cutting of panels where required for cables etc with supporting system comprising of 25mm diameter galvanised MS threaded rod and pressure die cast zinc alluminium alloy adjustable head attachment at top and welded to 100mmx100mmx8mm base plate, pedestal fixed to floor by means of expansion fasteners to existing floor at a distance of 610mm center to center bothways etc all complete as per specification and as directed by Engineer.	150	SQM		
18.10	1813	Designing, providing and fixing of <b>Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of 16mm diameter</b> and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.8MT including anchor fasteners, materials, equipment, labour, scaffolding complete as per direction of Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	28	EACH		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
18.11	1814	Designing, providing and fixing of <b>Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of 20mm diameter</b> and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 2.5MT including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	51	EACH		
18.12	1815	Designing, providing and fixing of <b>Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of 12mm diameter</b> and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1MT including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	51	EACH		
18.13	1816	Designing, providing and fixing of <b>Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of 16mm diameter</b> and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1.6MT including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	31	EACH		
18.14	1817	Providing and fixing transformer rails 52 KG/M including fixtures in concrete including jointing of rails, anchoring bolts, lugs etc complete as per specification. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	45	MT		
18.15	1819	Providing and fixing LDPE pipes in cable duct banks, openings in RCC work at all elevations of following sizes including cutting, fixing and levelling in position as per drawings, specifications all complete.				
18.16	i)	100 mm diameter	100	RM		
18.17	ii)	150 mm diameter	100	RM		
18.18	iii)	200 mm diameter	100	RM		
<b>19.0</b>	<b>2000</b>	<b>FENCING AND GATES.</b>				
19.1	2001	Supplying and fixing <b>G.I. barbed wire 12 G in fencing</b> including clips, anchor, bolts etc. as directed by the Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	3	MT		
19.2	2002	Providing and fixing <b>M.S gates</b> including welding, one shop coat protective painting etc as per specifications complete. Contractor to supply all materials.	4	MT		
19.3	2002A	Providing and fixing Chainlink fencing conforming to IS 2761 consisting of 10 G hot dipped galvanised steel wire as per specification. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	5000	SQM		
19.4	2002B	Providing and fixing MS posts mild steel posts, clips, anchors, one coat of redoxide zinc chromate primer and two coats of approved aluminium paint etc complete as per specification, drawing for fixing of fencing. Excavation, backfilling, concreting shall be paid as per respective items. <b>Contractor to supply all steel materials.</b>	5	MT		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
19.5	2003	Supplying and erecting in position 2.4m high <b>PVC coated gavanised chain linked fencing</b> of minimum 8gauge (including PVC coating) of mesh size 50mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12gauge. GI barbed wire fencing conforming 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. The rate to include the cost of line wire but to exclude the cost of posts, which will be measured and paid separately. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	2040	SQM		
19.6	2004	Supply fabrication and installing in position and testing <b>galvanized MS gate</b> out of channels, joists, angles, flats, plates, pipes and sheets including stiffeners bracing, fabricated hinges, MS Aldrop with locking arrangements, tempered steel pivot, guid. Contractor to supply all steel materials. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	11	MT		
<b>20.0</b>	<b>2100</b>	<b>WATER SUPPLY</b>				
20.1	2101	Providing and fixing in position tested heavy duty <b>chromium</b> plated brass long neck <b>bib cocks</b> including sockets, union, nut etc complete - <b>15mm</b> nominal bore.	164	EACH		
20.2	2102	Providing and fixing in position heavy duty <b>brass stop cock</b> of approved quality including all specials etc complete as directed by Engineer - <b>15mm</b> nominal bore.	136	EACH		
20.3	2103	Providing and fixing in position heavy duty <b>brass full way valve</b> with wheel of approved quality <b>25mm</b> nominal bore.	119	EACH		
20.4	2104	Providing and fixing in position heavy duty <b>brass full way valve</b> with wheel of approved quality <b>50mm</b> nominal bore.	32	EACH		
20.5	2105	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>15mm</b> nominal bore.	850	RM		
20.6	2106	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>20mm</b> nominal bore.	475	RM		
20.7	2107	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>25mm</b> nominal bore.	1017	RM		
20.8	2108	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 15mm</b> nominal bore.	552	RM		
20.9	2109	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 20mm</b> nominal bore.	1200	RM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
20.10	2110	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 25mm nominal bore.</b>	952	RM		
20.11	2111	Providing and fixing <b>GI pipes ( medium grade, IS 1239 part-I and GI fittings as per IS 1239 Part-II) complete</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 50mm nominal bore.</b>	1002	RM		
20.12	2112	Providing and fixing <b>610mmx453mmx6mm thick mirror</b> from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification.	112	EACH		
20.13	2113	Providing and fixing 610mmx127mmx6mm thick clear glass with <b>CP Guard rails</b> and mounted on CP brackets etc complete as per specification.	52	EACH		
20.14	2114	Providing and fixing 20mm diameter chromium plated M.S. pipes wall mounted <b>towel rod</b> with C.P. Brackets etc all complete as per specification.	89	EACH		
20.15	2115	Providing and fixing <b>C.P. soap holder</b> mounted with C.P. screws etc complete as per specification.	107	EACH		
20.16	2116	Providing and fixing <b>C.P. liquid soap dispenser.</b> Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc complete as per specification.	131	EACH		
20.17	2117	Providing & fixing <b>P.V.C. water tank of 1000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification and at all heights and levels.	38	EACH		
20.18	2118	Providing & fixing <b>P.V.C. water tank of 2000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	41	EACH		
20.19	2118A	Providing & fixing <b>P.V.C. water tank of 5000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	42	EACH		
<b>21.0</b>	<b>2200</b>	<b>SANITARY WORKS</b>				
21.1	2201	Supply and fixing <b>vitreous china Wash Basin size 600mmx450mm</b> with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass waste of standard pattern, 32mm diameter chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specifications.	115	EACH		
21.2	2202	Providing and fixing approved vitreous china <b>acid/alkali resistant laboratory sink of size 600mmx450mmx200mm</b> with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	8	EACH		

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
21.3	2203	Providing and fixing colour <b>glazed vitreous china</b> European type <b>water closet</b> with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed vitreous china flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer.	79	EACH	
21.4	2204	Providing and fixing <b>glazed vitreous china pan</b> with foot rests and high level 12.5 litre CI flushing cistern with valveless fittings, necessary CP connections, foot rests shall be made of white glazed vitreous china with chequered surface all complete with cistern painting, CI brackets etc as per specification.	56	EACH	
21.5	2205	Providing and fixing <b>wall type glazed vitreous china urinals</b> with photovoltaic control, automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings all complete as per specifications.	174	EACH	
21.6	2206	Supply, laying and jointing <b>75mm diameter heavy duty cast iron pipes</b> including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete as per specifications.	1845	RM	
21.7	2207	Supply, laying and jointing <b>100mm diameter heavy duty cast iron pipes</b> including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete as per specifications.	570	RM	
21.8	2208	Supply, laying and jointing <b>150mm diameter heavy duty cast iron pipes</b> including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete as per specifications.	1200	RM	
21.9	2209	Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - <b>200mm diameter</b> as per specification.	3645	RM	
21.10	2210	Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - <b>300mm diameter</b> as per specification.	2600	RM	
21.11	2211	Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - <b>450mm diameter</b> as per specification.	175	RM	
21.12	2212	Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - <b>600mm diameter</b> as per specification.	225	RM	
21.13	2213	Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - <b>800mm diameter</b> as per specification.	175	RM	
21.14	2214	Providing and fixing <b>C.I Manhole cover of size 600mmx450mm</b> including frame from reputed manufacture all complete as per specifications.	42	EACH	

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
21.15	2215	Providing and fixing <b>circular heavy duty C.I. manhole cover of 600mm diameter</b> with frame all complete as per specification.	250	EACH		
21.16	2216	Providing and fixing <b>square mouth S.W Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300mmx300mm (inside), the weight of cover to be not less than 4.53Kg and frame to be not less than 2.72Kg as per drawing and specifications etc all complete size - <b>100mmx100mm P or S Type.</b>	81	EACH		
21.17	2217	Providing and fixing <b>square mouth S.W Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside), the weight of cover to be not less than 4.53Kg and frame to be not less than 2.72Kg as per drawing and specifications etc all complete size - <b>150mmx100mm P or S Type.</b>	56	EACH		
21.18	2218	Providing and fixing <b>square mouth S.W Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300mmx300mm (inside), the weight of cover to be not less than 4.53Kg and frame to be not less than 2.72Kg as per drawing and specifications etc all complete size - <b>150mmx150mm P or S Type.</b>	45	EACH		
21.19	2219	Construction of <b>road/ yard gullies in 250mm thick brickwork - 750mm deep</b> with cement concrete M-20 grade foundation, including reinforcement, 12mm cement mortar (1:3) plastering both inside & outside, MS rungs @ 250mm c/c including CI Grating along with frames as per IS standard including necessary earthwork in excavation, backfilling etc complete as per drawing/ specifications.	9	EACH		
21.20	2220	Providing and fixing <b>C.I. floor traps with C.P jalli</b> complete as per specification.	122	EACH		
21.21	2221	Providing and installing approved brand single tap <b>water cooler</b> of <b>80 L</b> cooling capacity complete in all respect.	8	EACH		
21.22	2222	Providing and installing approved brand single tap <b>water cooler</b> of <b>150 L</b> cooling capacity complete in all respect.	24	EACH		
21.23	2223	Construction of RCC manholes with cement concrete M-20 grade circular upto dia 1200 mm or square of size upto 1000x1000 mm and upto 3000 mm deep with rcc raft 350mm thick and wall thickness maximum 200mm including necessary earthwork in excavation , backfilling, lean concrete M 7.5 ( excluding manhole precast covers which are to be paid seperately under seperate item ) with MS rungs @ 250 c/c all complete as per drawing and specification (excluding reinforcement which will be paid as per item 402B).	210	NO		
<b>22.0</b>	<b>2300</b>	<b>STRUCTURAL STEEL WORKS ALL ITEMS FOR FABRICATION SHOULD INCLUDE SUPPLY, FABRICATION DRAWINGS AS PER SPECIFICATIONS INCLUDING PAINTING WITH A COAT OF PRIMER AND ALSO INCLUSIVE OF ALL NECESSARY QUALITY TEST TO THE SATISFACTION OF ENGINEER/ CUSTOMER FOR THE FOLLOWING.</b>				

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
22.1	2301A	<p><b>Fabrication, erection,</b> alignment, welding, primer painting (primer coat shall consist of one coat of high duild chlorinated rubber zinc phosphate primer each 30 microns thick. One coat applied at shop and the other after erection) of <b>structural steel</b> made from mild steel conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, <b>chequered plate conforming</b> to IS: 3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, ted by Engineer-in-cha</p> <p>posts,louvers, lacings, gusset plates, etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts &amp; nuts (weight erection bolts &amp; nuts not payable, Supply of permanent bolt of grade C mild steel bolts &amp; nuts to be paid separately under ST NO. 2310 (i)), assembly, edge preparation, preheating(&amp; use of low hydrogen/ radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with ated b</p> <p>labour, material,electrodes and other consumables, equipment, testing (mechanical and non-destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc including appointment of a seperate agencies, approved by BHEL, for review and approval of fabrication drawings, in consultation with BHEL as per specification, drawings and instructions of the Engineer.. Approval of fabrication drawings does not relieve the bidder from the responsibility of its correctness and accuracy.<b>BHEL will supply plates, channels, angles, ISMB as per SCC free of cost.</b></p> <p>Pavments terms - a). Fabrication - 65%; b) Erection - 25%; c) Alianment - 10%.</p>	7474	MT		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
22.2	2301B	<p><b>Supply , fabrication, erection,</b> alignment, welding, primer painting (primer coat shall consist of one coat of high duild chlorinated rubber zinc phosphate primer each 30 microns thick. One coat to be applied at shop and the other after erection) of <b>structural steel</b> made from mild steel conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, <b>chequered plate conforming to IS: 3052</b> and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, laddersted by Engineer-in-charge.</p> <p>Cement and reinforcement posts,louvers, lacings, gusset plates, etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts &amp; nuts (weight erection bolts &amp; nuts not payable, Supply of permanent bolt of grade C mild steel bolts &amp; nuts to be paid separately under ST NO. 2310 (i)), assembly, edge preparation, preheating(&amp; use of low hydrogen/ radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with ated b</p> <p>labour, material,electrodes and other consumables, equipment, testing (mechanical and non-destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc including appointment of a seperate agencies, approved by BHEL, for review and approval of fabrication drawings, in consultation with BHEL as per specification, drawings and instructions of the Engineer. Approval of fabrication drawings does not relieve the bidder from the responsibility of its correctness and accuracy. <b>Contractor will supply all materials.</b></p> <p>Payments terms - a). Fabrication - 65%; b) Erection - 25%; c) Alignment - 10%.</p>	50	MT		
22.3	2302	DELETED				
22.4	2302A	Extra over ST NO.2301A and 2301B for shot blast cleaning of steel structures to near white metal surface (Sa 2 1/2) for applying primer paint etc.complete as per specification.	7274	MT		
22.5	2302B	DELETED				

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
22.6	2303	Extra over ST NO.2301A & 2301B for providing and application of two coats of Primer consisting of chemical resistant epoxy resin and hardener(Minimum 1 Kg of primer mix shall be consumed for priming of 4 to 5 m2 area of surface) instead of primer coat of red oxide zinc-chromate,including touch up painting as per specification and instruction of the Engineer.	100	MT		
22.7	2304	<b>Providing and application of finishing coat of acrylic polyurethane paint of each 30 microns over top coat of epoxy paint suitably pigmented of approved shade and colour with glossy finish and DFT of 75 microns over intermediate coat of epoxy resin based paint pigmented with titanium dioxide with min. DFT of 100 microns</b> over steel sections already having primer coats (as per ST NO. 2301) at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer. (Note: Intermediate, top and finishing coat paints shall be from same manufacturer and the paints shall have compatibility with one another).	100	MT		
22.8	2304A	Providing and application of two final coats of chlorinated rubber paint each 40 microns thick over steel sections already having primer coats (as per ST NO. 2301A and 2301B) at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer. (Note: Intermediate, top and finishing coat paints shall be from same manufacturer and the paints shall have compatibility with one another).	7274	MT		
22.9	2307	Supplying, fabrication, transportation, erection and alignment of factory made <b>electroforged gratings</b> with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade 'C' mild steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2.5) followed by primer coat consisting of 2 coats of 35microns each coat of zinc-phosphate in phenolic alkyd medium .  One coat to be applied at shop and the other after erection and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	144	MT		
22.10	2308	<b>Extra over above ST NO. 2307, for finishing the fabricated grating</b> unit with hot dipped galvanisation @ 610gm/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.	100	MT		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
22.11	2309	Supplying and fixing in position of permanent <b>mild steel bolts (class 4.6 as per IS:1367 and grade `C' as per IS:1363)</b> and nuts, washers etc up to and inclusive of 39mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the engineer. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	9	QTL		
22.12	2309A	Supply and fixing in positing of <b>high strength structural bolts</b> (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 for structural steel work complete as per specification, drawings and instructions of the Engineer. Payment terms - a) On receipt of materials at site - 70%. b) On completion of erection & fixing - 30%.	9	QTL		
22.13	2310	<b>Dismantling of steel structure</b> at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop or return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, (weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc complete as per specification, drawings and instructions of the Engineer.	1	MT		
22.14	2310A	<b>Dismantling of GI Sheet in cladding</b> at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop or return to projects storage including scaffolding , stagging , tools & tackles gas cutting , welding, consumables etc complete as per specification, drawings and instructions of the Engineer.	50	SQM		
22.15	2311	Addition to alterations in and/or modification of " <b>Erection Marks</b> " either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members, (weight of such temporarily dismantled and adjacent members not payable) all complete as per specifications, drawings and instructions of the Engineer. BHEL will supply plates, channels, angles, ISMB as per SCC free of cost.				
22.16	2311A	In erected position	7	MT		
22.17	2311B	In fabrication yard	7	MT		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
22.18	2312	<b>Re-erection of dismantled fabricated structural steel members</b> requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2310 and 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 and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members and adjacent members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	1	MT		
22.19	2313	Design, supply, fabrication, erection of <b>stoplog gates in CW Pump house</b> and other as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fasteners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings.  The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose). Payment terms - a) On approval of drawing by BHEL - 4%; b) on receipt of materials at site - 55%; c) On completion of erection & fixing - 30%; d) on completion of testing -11%.	90	MT		
22.20	2314	Supplying, fabricating, erecting in position and testing/ examining bolted and/ or welded structural steel work at all levels for <b>stationary screens</b> made out of rolled sections and/ or plates including cutting, straightening if required, edge preparation, bolting/ welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gm/sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, complete as per drawing & directed. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	90	MT		
22.21	2315	Supply, fabrication and fixing M S handrailing with primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate as per IS:2074 & IS:1477 (Parts I & II). One coat to be applied at shop and the other after erection) as per drawing & specification etc complete. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	2	MT		
22.22	2316	Supply, fabrication and fixing galvanised handrailing (having minimum galvanisation of 610 g/sqm) as per drawing and specification etc complete. Contractor to supply all materials. Payment terms - a) On receipt of materials at site - 70%; b) On completion of erection & fixing - 30%.	2	MT		

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
22.23	2317	Providing and fixing in position of <b>PTFE type sliding bearings</b> of reputed make, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of +/- 50mm including all taxes, duties, transportations, installation, drilling, bolting, erecting, aligning etc., complete as per specification, drawings and instructions of the Engineer for the following: (Vertical load carrying capacity of individual bearing shall vary from 10MT to 60MT as specified in the construction drawings).			
22.23.1	a)	10MT vertical load Capacity	10	EACH	
22.23.2	b)	20MT vertical load Capacity	2	EACH	
22.23.3	c)	40MT vertical load Capacity	2	EACH	
22.23.4	d)	60MT vertical load Capacity	2	EACH	
22.24	2319	Conducting <b>radiography test</b> on welds (over and above requirement of FQP as decided by BHEL) 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	
22.25	2320	Conducting <b>ultrasonic test on welds</b> (over and above requirement of FQP as decided by BHEL) 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).	52	RM	
22.26	2321	Conducting <b>magnetic particle test on welds (over and above requirement of FQP as decided by BHEL)</b> 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).	52	RM	
22.27	2322	Conducting <b>dye penetration test on welds (over and above requirement of FQP as decided by BHEL)</b> including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete as per instruction for engineer incharge (over and above the work already specified in the specifications).	30	RM	
<b>23.0</b>	<b>2400</b>	<b>ROAD WORK</b>			
23.1	2401	<b>Preparation of sub grade</b> by excavating earth to required depth for all types of soil, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within plant boundary in accordance with IS:2720 all complete as per specification.	101320	CUM	
23.2	2402	<b>Supplying and filling with selected good earth</b> of approved quality under pavement and shoulders etc in compacted layers of maximum depth 200mm including watering, rolling/consolidating and dressing etc to required camber including transportation, royalties complete.	53260	CUM	
23.3	2403	Providing, stacking and laying <b>granular morrum</b> for shoulder including watering, compaction with road roller to required level etc complete as per specification.	4260	CUM	

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
23.4	2404	Providing & laying <b>water bound macadam base/sub base course</b> in layers of required thickness with stone aggregate <b>90mm to 40mm size</b> , stone screening & binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading & consolidation of <b>blinding material moorum etc Including cost of material, labour, all complete.</b>	16380	CUM		
23.5	2405	Providing & laying <b>water bound macadam base / sub base course</b> in layers of required thickness with stone aggregate <b>63mm to 40mm size</b> , stone screening & blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc Including cost of material labour etc all complete as per specification.	12740	CUM		
23.6	2406	Providing and laying <b>water bound macadam base course</b> with stone aggregate <b>50mm to 20mm size</b> stone screening and binding material including screening, sorting, spreading to template and consolidation with road roller including carriage spreading and consolidation of blinding material moorum etc Including cost of material labour etc. all complete as per specification.	5460	CUM		
23.7	2407	Providing and applying <b>Tack coat</b> 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 <b>scraping, cleaning with compressed air etc complete.</b>	72800	SQM		
23.8	2408	Providing, mixing and laying of compacted 75 thick <b>Bituminous Macadam Course</b> . Bitumen shall be of a suitable grade complying with IS 73 and aggregates, binder material as specified in specification including hot mixing, hot laying, rolling all complete.	72800	SQM		
23.9	2409	Providing and laying <b>25mm thick premix carpet surfacing</b> with 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg. and 56 kg. per cum of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1.00 kg. per sqm of road surface including consolidation with road roller etc all complete with bitumen heated and then mixed with solvent at the rate of 70gms per kg of bitumen including cost of all material, labour all complete as per specification, drawings and instructions of the Engineer.	145600	SQM		
23.10	2410	Providing and applying <b>liquid seal coat</b> comprising of an application of a layer of bituminous binder at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling as per specification all complete.	145600	SQM		
23.11	2411	Providing and laying <b>edge protection on both edges of black topping using brick on edge (bricks with crushing strength of 75kg/Sqcm) with full brick width (230mm)</b> etc all complete as per drawings and specifications.	5000	RM		
23.12	2412	Supply and laying (400mm x 150mm X 350mm deep) <b>precast concrete kerb stone</b> of shape as per detailed drawing including fixing in 13mm thick cement mortar 1:2 in joints, finishing of joints with neat cement paste, making drainage opening where required etc complete as per specifications.	3000	RM		
23.13	2413	Supply and laying <b>150mm diameter R.C.C NP-2 type Hume pipe</b> in raised shoulders as rain water drains as per detailed drawing including fixing in 13mm thick cement mortar, finishing of joints with neat cement paste complete as per specifications.	1000	RM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
23.14	2415	Providing <b>25mm thick premix carpet on existing/damaged road surfaces</b> by spreading of 2.25cum and 1.12 cum of stone chippings of size 12.5mm and 10mm respectively per 100 sqm with hot bitumen @ 52 kg and 56 kg per cum of 12.5mm & 10mm size stone chippings respectively including a tack coat with hot bitumen @ 1kg/sqm of road surface including consolidation with road roller etc all complete with bitumen heated and then mixed with solvent at the rate of 70 gm/kg of bitumen including cost of all material, labour, cleaning, repairing damaged carpet, WBM, sub grade/sub base, to the required thickness wherever required, consolidation with road roller etc all complete as per specification and as directed by Engineer	2100	SQM		
23.15	2416	M20 concrete in roads. Cement will be supplied by BHEL free of cost as per SCC.	106	CUM		
<b>24.0</b>	<b>2500</b>	<b>PILING WORK</b>				
24.1	2501	Installation of bored RCC cast in situ vertical pile as per IS 2911 (Part 1, Section 2) with diameter and length as specified below (length to be measured from pile cut-off level to bottom of pile) using cement concrete M30 grade conforming to IS 456 with 20 mm nominal size stone aggregates with a minimum cement content of 420 Kg per cum of concrete including materials, empty boring, boring/drilling in all type of strata from ground level to termination depth of pile including providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc all complete as per specification, drawings and as directed by the engineer-in-charge. <b>Cement and reinforcement steel will be supplied by BHEL free of cost</b> as per SCC. Reinforcement work will be paid as per Item 401A/402B.				
24.1.1	a)	600 mm diameter and 20 m long below cut of level pile - 140 metric tonne safe capacity	2250	EACH		
24.1.2	b)	450 mm diameter and 20 m long below cut off level pile- 70 metric tonne safe capacity	400	EACH		
24.2	2502	Extra over following item for pile length more than specified length of 20 m				
24.2.1	a)	Item no 2501 a	300	MTR		
24.2.2	b)	Item no 2501 b	50	MTR		
24.3	2503	Rebate to rate for following item for pile length less than the specified length of 20 m				
24.3.1	a)	Item no 2501 a	150	MTR		
24.3.2	b)	Item no 2501 b	25	MTR		

SL NO	ST NO	DESCRIPTION	QUANTITY	RATE (Rs)	AMOUNT (Rs)
24.4	2504	Conducting initial load test upto three times the safe load capacity on single pile in accordance with IS 2911 Part-4 including installation of bored RCC cast in situ vertical pile as per IS 2911 (part-1, section-2) to required depth using cement concrete M30 grade conforming to IS 456 with 20 mm nominal size stone aggregates with a minimum cement content of 420 Kg per cum of concrete including materials, boring/drilling in all types of strata from ground level to termination depth of pile including providing bentonite slurry and/or casing for stabilisation of pile bore , flushing of pile bore , cleaning , providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for constructing test pile cap including materials, excavation, all arrangements of loading, unloading, equipments, jacks, recording of results, labour, dismantling the pile cap after test, submission of test report etc complete for the following as per specification, drawing and as directed by Engineer-in-charge. <b>Cement and reinforcement steel will be supplied by BHEL free of cost as per SCC. Reinforcement work will be paid as per Item 401A/402B.</b>			
24.4.1	A)	For lateral load:			
24.4.1.1	(i)	600 mm dia piles - 7 MT safe load capacity	6	EACH	
24.4.1.2	(ii)	450 mm dia piles- 5 MT safe load capacity	6	EACH	
24.4.2	B)	For vertical (compression) load:			
24.4.2.1	(i)	600 mm dia piles -140 MT safe load capacity	6	EACH	
24.4.2.2	(ii)	450 mm dia piles - 70 MT safe load capacity	6	EACH	
24.4.3	C)	For uplift:			
24.4.3.1	(i)	600 mm dia piles - 28 MT safe load capacity	6	EACH	
24.4.3.2	(ii)	450 mm dia piles - 14 MT safe load capacity	6	EACH	
24.5	2505	Conducting routine load test on job pile in accordance with IS 2911 (Part-4) including necessary excavation, all arrangements of loading, unloading, test equipments, jacks, recording of results, all materials, labour, submission of test report etc <b>but excluding the cost of installation of job pile</b> complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
24.5.1	A	<b>For lateral load:</b>			
24.5.1.1	(i)	600 mm dia piles - 7 MT safe load capacity	23	EACH	
24.5.1.2	(iii)	450 mm dia piles - 5 MT safe load capacity	4	EACH	
24.5.2	B	<b>For vertical compression load:</b>			
24.5.2.1	(i)	600 mm dia piles - 140 MT safe load capacity	23	EACH	
24.5.2.2	(iii)	450 mm dia piles - 70 MT safe load capacity	4	EACH	
24.6	2506A	Providing & fixing one no 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) inside bore pile to facilitate conducting of Cross hole Ultrasonic testing of piles through pipe as per drawing, specifications and as directed by BHEL Engineer including cost of labour, installation, materials etc. complete.	58300	RM	

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
24.7	2506B	Carrying out pile integrity test on job pile including all arrangements for test, equipments, materials, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification and as directed by the engineer-in-charge.	2650	EACH		
24.8	2507	Deployment of required sets of Bore piling rigs to achieve construction of 20 nos pile per day and ancillary equipments/pipes as per drawing and specifications. (Payments : a) 50% to be released on deployment of required rig and achieved construction of 10 nos pile per day, b) balance 50% on completion of balance deployment of rigs and achieved construction of balance pile per day.	1	LS		
24.9	2508	Construction of below ground earthing system test pits as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (Excavation, backfilling & masonry work will be paid under applicable BOQ items). Cement will be supplied by BHEL free of cost as per SCC.	8	NO		
24.10	2509	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (Excavation, backfilling & masonry work will be paid under applicable BOQ items). Cement will be supplied by BHEL free of cost as per SCC.	6	NO		
24.11	2510	Construction of below ground earthing system earth electrodes as per drawing and specification (excavation and backfilling only will be paid under applicable BOQ items).	25	NO		
24.12	2511	Construction of below ground earthing system - earth connection and riser pig tails as per drawing and specification (excavation and backfilling only will be paid under applicable BOQ items).	300	NO		
24.13	2512	Providing service of draftsman (with 2 yrs experience of AUTOCAD ) exclusively to work in BHEL-PEM, Noida.	60	MAN-MTH		
24.14	2513	Sprinkling of water by water tanker fitted with perforated GI Pipe (portable tanker min 3000 litre capacity) for roads & misc area within plant boundary, for dust suppression & reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of tank-hour put in actual use for water sprinkling).	6720	TANK-HR		
24.15	2514	Providing services of crane operator for operation of BHEL crane.	50	MAN-MTH		
<b>25.0</b>	<b>2700</b>	<b>RAW WATER RESERVOIR</b>				
25.1	2701	Earthwork in excavation in all type of soil to any level inside reservoir area and for foundation of embankment including site clearance, setting out, dewatering if required, shuttering and shoring if required, dressing of sides, levelling to grade and ramming/compacting the bottom, stacking/disposal of surplus excavated materials within a lead of 1.5km etc complete for all types of soils etc.	55400	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
25.2	2702	Earthwork in embankment filling using selected approved quality of soil from compulsory excavated soil from reservoir area including setting out, sorting, breaking clods, handling, transportation, spreading, watering, compaction in layers to minimum 95% of maximum dry density (Standard Proctor Test) as per IS:2720, part 7, levelling, dressing, finishing to required slopes and grades, dewatering if necessary including all lifts and leads etc all complete as per specification and as directed by the engineer-in-charge.	28625	CUM		
25.3	2703	DELETED				
25.4	2704	Supplying, stacking and laying <b>sand</b> of approved quality as sand blanket/cushion over base/bed and on slopes of embankment including screening, washing, watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	5700	CUM		
25.5	2705	Supplying, stacking & laying sand filter of approved quality inside body/ outside slope of embankment (for chimney filter upto toe of embankment/above rock toe on down stream of embankment) including screening, washing, watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	5680	CUM		
25.6	2706	Supplying, stacking and laying 150mm thick gravel filter of approved quality above rock-toe in slopes outside the embankment including screening, washing, watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the Engineer-in-Charge.	569	CUM		
25.7	2707	Providing and placing approved quality of 250 micron thick heavy duty Low density polyethylene liner (LDPE) films confirming IS:2508 manufactured from polyethylene resin over sand blanket in the base of reservoir as well as on side slopes of embankment to prevent seepage including joining with approved method, fixing at the edges in plain cement concrete by providing 300mm wide and 200mm thick plain cement concrete 1:2:4 (The rate of 300 mm wide and 200 mm thick plain cement concrete 1:2:4 shall be excluded and shall be payable separately under Item No.2721) as shown in the drawing etc all complete as per specification and as directed by the engineer-in-charge. Minimum width of LDPE liner shall be 6m	75916	SQM		
25.8	2708	Providing and placing 300mmx300mm size and 50mm thick precast concrete tiles of grade M-15 over 25mm thick cement sand mortar of 1:5 on LDPE liner at the bed of reservoir and on side slopes of embankment, joints to be filled with cement sand mortar 1:3 etc all complete as per specification and as directed by the engineer-in-charge. The rate shall be inclusive of cement sand mortar as well. Cement will be supplied by BHEL free of cost as per SCC.	75916	SQM		
25.9	2709	Supplying, stacking and laying hand placed rock toe at the down stream end of embankment with approved quality of rock fragments including materials and necessary excavations if any etc all complete as per specification, drawing and as directed by the Engineer-in-Charge.	1750	CUM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
25.10	2710	Supplying, stacking and laying 300mm thick rip rap on the slopes of embankment with approved quality of rock fragments including materials and necessary excavations if any etc all complete as per drawing, specification and as directed by the Engineer-in-Charge.	700	CUM		
25.11	2711	Providing and placing turfing with approved quality of grass on the outer slopes of the embankment including cost of all labour, materials, transportation and watering etc all complete as per specification and as directed by the Engineer-in-Charge.	2331	SQM		
25.12	2712	Providing and laying of 450 mm diameter R.C.C hume pipes of class NP3 conforming to IS:458 with collars, jointing with cement mortar 1:1 and testing of joints etc all complete as per specification and as directed by the Engineer-in-charge.	300	RM		
25.13	2713	Providing and fixing of 150mm square and 900mm long guard stones over the top of embankment (cost of PCC grade M10 for encasement will be paid seperately) etc all complete as per drawing, specification and as directed by the Engineer-in-Charge. Cement will be supplied by BHEL free of cost as per SCC.	200	EACH		
25.14	2714	Providing and laying Water Bound Macadam(WBM)using crushed or broken stone aggregates of 63mm to 40 mm(to be laid in three courses) including necessary excavation,packing with screenings,binding materials,watering and compaction with road rollers to make required line, slope and levels etc all complete as per drawing, specification and as directed by the Engineer-in-Charge.	1527	CUM		
25.15	2715	Supplying and providing compacted 50mm thick moorum over WBM base course including watering and compaction with road rollers to make required line, slope and levels etc all complete as per drawing, specification and as directed by the Engineer-in-Charge.	255	CUM		
25.16	2721	Concrete of grade 1:2:4 as levelling course, pipe encasement and anchoring of LDPE liner etc at all levels complete. Cement will be supplied by BHEL free of cost as per SCC.	250	CUM		
25.17	2724	Providing brick work in cement sand mortar 1:6 ( 1 part cement : 6 part sand) in walls, chambers etc at all depths, places and positions below plinth including crest drains, slope drains, toe drains, connecting drains etc on embankment at all levels including raking out joints, curing, scaffolding etc all complete excluding plastering and painting using bricks of class designation 7.5 of nominal dimensions as per specification. <b>Cement will be supplied by BHEL free of cost as per SCC.</b>	1000	CUM		
25.18	2725	Providing 12mm thick plaster in cement mortar 1:6 on walls including drains etc finished to a smooth finish as per specification. Cement will be supplied by BHEL free of cost as per SCC.	4100	SQM		
25.19	2726	Supplying and laying 900mm diameter MS pipe with 10mm wall thickness including necessary excavation, welding, testing, backfilling etc all complete as per specification and as directed by Engineer-in-charge.	80	RM		
<b>26.0</b>	<b>2800</b>	<b>GRADING &amp; LEVELLING</b>				
26.1	2801	Earth work in <b>stripping</b> of top soil upto a minimum depth of 0.30m below natural ground level so as to exclude all debris, <b>trees</b> , grass, vegetation etc. and disposal within a lead of 1km etc ....	213690	SQM		

SL NO	ST NO	DESCRIPTION	QUANTITY		RATE (Rs)	AMOUNT (Rs)
26.2	2802	Earth work in excavation upto any depth in alltypes of soil including as laterite , moorum etc which can be excavated by means of crobar, pickaxe etc but does not require chiselling or blasting for for levelling and grading including dressing the sides levelling to grade ramming or compacting the graded surface stacking / disposal of surplus excavated meterials within a lead upto 500M etc as directed by the Engineer-in-Charge.	705000	CUM		
26.3	2803	Earth work in filling for levelling and grading using approved quality of soil with compulsarily excavated earth available within a lead of 1KM on prepared surface obtained by compacting with mechanical means including setting out, filling in horizontal layers not exceeding 250mm loose thickness, spreading, sorting, breaking clods, watering, re-excavation if required, compaction with proper moisture content to achieve a minimum 95% of maximum dry density as per IS2720 part VII (standard Proctor density), dewatering (if required), testing, appraches, finishing to required lines, grades & slopes, levelling etc complete as per specification, drawing and as directed by engineer.	622205	CUM		
26.4	2805	Providing, stacking & laying 300mm thick <b>boulder pitching with caulking and pointing with cement sand mortar (1:4)</b> on the slopes of earth fill/ cut with approved quality of rock fragments including materials, testing, necessary excavation if any, compaction etc complete as per specification, drawing & as directed by engineer (Cement will be supplied by BHEL free of cost as per SCC).	12130	CUM		
<b>27.0</b>	<b>TOTAL</b>					
<b>28.0</b>	<b>2900</b>	Quote % above or % below or at par for items not covered as above of this schedule. The rate shall be derived from Delhi Schedule of Rate (DSR) 2007 (This shall be applicable for all schedules, ie entire work under this tender).				
28.1	2900A	Rate of complete item .		___ %		
28.2	2900B	Rate of supply of material at site only.		___ %		
28.3	2900C	Rate for execution complete excluding supply of materials.		___ %		

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

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

Sub	No Deviation Certificate.	
Job	Civil, structural, architectural work including foundations/ superstructure of various plant equipments/ systems/ facilities, non-plant buildings/ facilities, misc civil work, switch yard civil work etc of unit # 1 & 2 of 726.6 MW Gas based CCPP at Palatana, Udaipur, Tripura.	
Ref	1.0	Tender no PSER:SCT:PAL-C987:09.
	2.0	BHEL's NIT, vide reference no PSER:SCT:PAL-C987:1718, dated 23-03-09.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:PAL-C987:TCN-01, dated 08-04-09.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:PAL-C987:TCN-02, dated 15-04-09.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:PAL-C987:TCN-03, dated 18-04-09.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:PAL-C987:TCN-04, dated __-04-09.
	7.0	All other pertinent issues till date.

Dear Sirs,

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

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and convey our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, compliance to Integrity Pact and acceptance to reverse auctioning process. We also confirm that we have submitted the Integrity Pact duly signed by the authorized signatory along with techno commercial bid.

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

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

Thanking you,

Yours faithfully,

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

<b>TENDER NO</b>	<b>PSER:SCT:PAL-C987:09</b>	
<b>VOLUME</b>	<b>IIIA, REV-1</b>	<b>PRICE SCHEDULE, (ABSOLUTE VALUE)</b>

<b>JOB</b>	<b>CIVIL, STRUCTURAL, ARCHITECTURAL WORK INCLUDING FOUNDATION/ SUPERSTRUCTURE OF VARIOUS PLANT EQUIPMENTS/ SYSTEMS/ FACILITIES, NON-PLANT BUILDINGS/ FACILITIES, MISC CIVIL WORK, SWITCH YARD CIVIL WORK ETC</b>
<b>CAPACITY</b>	<b>UNIT # 1 &amp; 2 OF 726.6 MW GAS BASED CCPP.</b>
<b>PROJECT</b>	<b>PALATANA, UDAIPUR, TRIPURA.</b>

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