

## TENDER SPECIFICATION

# NO: BHE/PW/PUR/WNT2-CVL Boiler /1433

All Civil and Architectural work of BOILER TO BUNKER from **C Row of POWER HOUSE**, ESP, CHIMNEY AREA:- Boiler Fdns., Auxiliary Boiler Fdns., Bunker & Mill fdns., Feeder & Tripper floor, Bunker Roof slab, side cladding, Misc. fdns., ID, PA, SA & FD fans & its deck, ESP & Duct fdns, ESP Control room, Aux. Transformer fdns., MCC Room, below ground earthing, earth pits, cable trenches, internal RCC drains with RCC covers, RCC Box culverts, RCC duct banks housing PVC pipes, septic tanks and soak pits, Misc. fdns. & rigid RCC pavements, RCC Roads, Paving, Pipe & cable rack of Main plant, Harvesting, including piling, excavation, piles breaking, PCC, all tests on piles, rebuilding of piles (in case of failure), pile caps & all pedestals with bolts, Retaining wall , backfilling up to required level, and handing over of all fdns/buildings/structures to mech./electrical agency.

AT

1 X800 MW WANAKBORI, DISTRICT-KHEDA, GUJARAT

## PRICE BID - VOLUME- II

TENDER SPECIFICATIONS CONSISTS OF:

- Notice Inviting Tender
- Volume 1 A - Technical Conditions of Contract,
- Volume 1 B - Special conditions of Contract,
- Volume 1 C - General conditions of Contract
- Volume 1 D - Forms & Procedures



**Bharat Heavy Electricals Limited**  
(A Government of India Undertaking)  
Power Sector - Western Region  
345-Kingsway, Nagpur-440001

Date

Seal and Signature

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**NO: BHE/PW/PUR/WNT2-CVL Boiler /1433**

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AT

**1 X800 MW WANAKBORI, DISTRICT-KHEDA, GUJARAT**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR Refer Notice Inviting Tender  
TENDER SUBMISSION .

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s. ....

.....

PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

ADD. GENERAL MANAGER (Purchase)

Place: Nagpur

Date :

Date

Seal and Signature

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Date

Seal and Signature

**Volume II Price Bid**

**T.S.No BHE/PW/PUR/WNT2-CVL Boiler/1433**

**Part A: Instructions to the Bidders**

1. **Bidders shall quote One Total Lumpsum Price for the entire scope of work in the format given in PART C in the price bid.** Any other entry elsewhere in the price bid shall be treated as Null and Void.
2. BHEL has fixed the % weightages for the amount of individual items of Schedule of Quantity w.r.t the total quoted price in PART B of Price Bid.
3. Based on the pre-fixed % weightages, amount of individual items shall be derived by BHEL. This amount shall not be rounded off.
4. Based on the quantities of individual item and the amount arrived in SI No 3 above, item rate of individual items shall be derived by BHEL. This item rate shall be rounded off to two decimal places.
5. The item rates thus derived as in SI No 4 above, shall be multiplied with respective quantities to arrive at the amount and grand total amount which shall be considered for award of work.
6. For the convenience of bidders, BHEL has issued an excel sheet with all requisite formulae as detailed above. However this excel sheet shall not form part of contract document.

Date

Seal and Signature

**BHEL PSWR**  
**Vol-II-Price Bid Specifications:**  
**T.S. NO: BHE/PW/PUR/WNT2-CVL Boiler /1433**

**PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price**

All Civil and Architechural work of BOILER TO BUNKER,ESP,CHIMNEY AREA:- Boiler Fdns., Auxiliary Boiler Fdns., Bunker & Mill fdns., Feeder, Tripper & Roof slab, side cladding, misc.fdns., ID, PA,SA & FD fans & its deck, ESP & Duct fdns, ESP Control room, Aux. Transformer fdns., MCC Room, below ground earthing, earth pits, cable trenches, internal RCC drains with RCC covers, RCC Box culverts, RCC duct banks housing PVC pipes,septic tanks and soak pits, misc. fdns. & rigid pavements, **RCC Roads**,Paving, Pipe & cable rack of Main plant, Harvesting, including piling, excavation, **Retaining wall**, piles breaking, PCC, all tests on piles, rebuilding of piles (in case of failure), pile caps & all pedestals with bolts, backfilling upto required level, and handing over of all fdns/buildings/structures to mech./electrical agency.

**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>100 EARTH WORK</b>						
Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.						
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, spreading/levelling of disposed materials etc all complete for following depths below ground level.					
a	Depth from ground level but not exceeding 2 m	CUM	62064			1.3194763
b	Depth exceeding 2 m but not exceeding 4 m	CUM	54306			1.5701768
c	Depth exceeding 4 m but not exceeding 6 m	CUM	38790			1.4596706
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1552			0.0857659
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1000			0.0557010
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1000			0.0665435
107	<b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with <b>selected materials from compulsorily excavated soil</b> available within a lead upto 500m and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.					
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	115344			2.0353304
108	<b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials <b>directly from excavation</b> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.					
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	12816			0.2179738
109	Extra over ST No. 101 and 107 for <b>carriage of all types of excavated earth/selected materials</b> beyond the initial lead of 500 m (initial lead, loading and unloading included in item 101 and 107) all complete as per specifications, drawings and instructions of the engineer for the following leads					
a	Carriage beyond initial lead of 500 m but not exceeding 1 Km	CUM	10112			0.0773929
b	Carriage beyond 1 Km and not exceeding 2 Km	CUM	4450			0.0681168
c	Carriage beyond 2 Km and not exceeding 3 Km	CUM	5500			0.1262839
d	Carriage beyond 3 Km and not exceeding 4 Km	CUM	8000			0.2449143
111	<b>Supplying and filling sand</b> upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 85% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	1000			0.1267091
<b>200 CONCRETE WORKS</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) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.(Cement will be supplied by BHEL free of cost as per TCC):</b>					
202	Concrete of <b>grade M10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	5821			2.6070029

**BHEL PSWR**  
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SERVICE PART

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
204	Concrete under floors, paving, plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.					0.0000000
b	M20 Grade	CUM	7175			3.3644832
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, 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 as per specification & drawing for the following.					
a	M25 Grade	CUM	19221			10.4042279
206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at any level above 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 as per specification & drawing for the following.					
a	M25 Grade	CUM	3542			2.0776609
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)					0.0000000
a	M20 grade	CUM	1040			0.4489811
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.					
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	1320			0.7909867
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajias, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.					
a	M 25 grade	CUM	55			0.0605237
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.					
a	Plain cement concrete of all grades	CUM	15			0.0057720
b	Reinforced cement concrete of all grades	CUM	25			0.0135797
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .					0.0001977
217	Extra over and above St No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	50			0.0011267
218	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	10			0.0002062
219	Providing and applying curing compound of approved make where ever required as per manufacturer's specification.	SQM	20			0.0001828
220	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25%plums of maximum size 150 mm.	CUM	150			0.0685505
<b>300 FORM WORKS</b>						

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SERVICE PART

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
	<b>Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>					
301	<b>Fairface form work</b> with good quality water proof ply wood of minimum 12 mm thickness and smooth surface <b>below finished ground floor level</b> for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc .including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	47320			3.1186616
302	<b>Fairface form work</b> with good quality water proof ply wood of minimum 12 mm thickness and smooth surface <b>above finished ground floor level</b> for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	30949			2.5858361
304	Providing, fixing and removing <b>formwork in block-outs/pockets</b> and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.					0.0000000
a	Upto 150 mm depth	Each	10			0.0007866
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	30			0.0024491
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	37			0.0048062
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	25			0.0045071
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	3			0.0007953
305	<b>Fairface plywood with filmface/laminated formwork</b> above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights where ever specifically mentioned in the drawing.	SQM	110			0.0114357
<b>400 REINFORCEMENT</b>						
401	Transportation, straightening, cutting, bending, placing in position at any level, binding of of <b>mild steel reinforcements</b> conforming to grade 1 of IS:432 part 1 in concrete including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement shall be provided by M/S BHEL Free of cost)</b>	MT	36			0.0606010
402	Transportation, straightening, cutting, bending, placing in position at any level, binding of at any level, binding in position of <b>steel reinforcements of TMT steel of grade Fe-500/500D/ 500EQR</b> confirming to <b>IS:1786</b> including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement shall be provided by M/S BHEL Free of cost)</b>	MT	4565			6.1472471
407	Transportation, straightening, cutting, bending, placing in position at any level, binding of at any level, binding in position <b>high yield strength steel reinforcements in brickwork</b> including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(Reinforcement shall be provided by M/S BHEL Free of cost)</b>	MT	4			0.0067334
<b>500 WATER PROOFING WORKS</b>						
<b>Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>						
501	Providing and laying <b>underbed grading plaster with cement mortar 1:4</b> (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.(Cement will be supplied by BHEL free of cost as per TCC):	SQM	225			0.0046237
A502	Providing and laying rigid insulation (Expanded polystyrene blocks) with tounge & groove arrangement for easy application as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) and providing of expansion joint at intervals and filling with sealant in both directions as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.026 Kcal m/m deg C or as per specification. The block shall be strong enough to withstand without deformation the workload and standard loads expected on the roof and water absorption capacity of the board should be low (appx. 0.05-0.07%) per relevant IS/ASTM standard. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.					
b	50 mm thickness of rigid insulation (expanded polystyrene blocks)	SQM	2393			0.4019126



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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>700 MS EMBEDMENTS</b>						
Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.						
701	Fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	5			0.0220253
702	Transport from store, fabricating and fixing of mild steel embedments, inserts, angle,channel, ISMBs, pieces, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete. BHEL will supply plates, angles, channel & ISMB etc. free of cost as per TCC	MT	5			0.0230935
703	Assembly,welding, Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete. Fabricated material will be supplied by BHEL free of cost as per TCC.	MT	5			0.0154889
704	Transportation from store and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, etc. all complete with protective coating as per specification.	MT	40			0.1820700
704 A	Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	11			0.0600831
705	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.					
a	MS pipes of all diameters	Quintal	3			0.0055411
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:					
i	Upto 250 kg	Each	15			0.0008705
ii	Beyond 250 Kg and upto 500 kg	Each	5			0.0004507
iii	Beyond 500 Kg and upto 750 kg	Each	5			0.0007270
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:					
i	Upto 250 kg	Each	5			0.0003433
ii	Beyond 250 Kg and upto 500 kg	Each	5			0.0005229
iii	Beyond 500 Kg and upto 750 kg	Each	5			0.0008216
<b>800 GROUTING</b>						
Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.						
801	Providing & grouting with <b>cement slurry mix</b> of approved ratio using <b>pressure pump</b> for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at minimum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.(Cement will be supplied by BHEL free of cost as per TCC):	SQM	20			0.0018555
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with <b>mix 1:1 (1 cement :1 sand )</b> using non shrink admixture etc. all Complete.(Cement will be supplied by BHEL free of cost as per TCC):	CUM	25			0.0978785
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with <b>mix 1:1:2</b> (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). (Cement will be supplied by BHEL free of cost as per TCC):	CUM	18			0.0467751

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
804	Providing & grouting(Non shrink precision) of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 / MasterFlow 718 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor)..	CUM	8			0.0902628
805	Providing & grouting (Non shrink precision) of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 / MasterFlow 928 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	25			0.3132278
<b>900 DOORS, WINDOWS, VENTILATORS, LOUVERS</b>						
<b>Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>						
901	Providing and fixing <b>wooden frame conforming to IS 4021</b> made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	4			0.0888231
902	Providing and fixing <b>teakwood frame panel door</b> shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked <b>marine</b> panels of teakwood with proper wood joinery including beading, preparation of working drawings,godrej or equivalent make mortice lock with handels on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt ,knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	7			0.0053961
A903	Providing, fitting and fixing <b>solid core flush door shutter</b> as per IS 2202 part II, 35mm thick homogenous <b>ply board</b> bonded with <b>BWP</b> type phenolformaldehyde synthetic resin, <b>ply board</b> core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	21			0.0170234
904	Providing and fixing <b>single or double steel door shutters with 45mm thk flush design shutter</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 void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	31			0.0381001
906	Providing and fixing <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	SQM	10			0.0115462
907	Providing and fixing automatically closing <b>fire proof steel door</b> satisfying LPA regulations (single or double shutter) with panic devices shall be minimum 44mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm cntres to centers including all fittings, vision glass, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, LPA requirements and as per specification. Minimum ratings shall be 2 Hrs. All hardware fittings shall be fire rated. Payment terms - a) On receipt of materials at site - 65%; b) On completion of erection & fixing - 35%.	SQM	15			0.0466325

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
909	Providing and fixing <b>anodised aluminium work</b> of Jindal, Hindalco or other equivalent approved make for <b>door frames, windows, ventilators, partitions, railing etc</b> with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.	Kg	798			0.0766837
912	Providing and fixing <b>pressed steel frames</b> fabricated from <b>16 gauge M.S sheet</b> mortised, filled with concrete/cement sand mortar 1:6, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications.	Kg	772			0.0180539
913	Providing and fixing in <b>position rolling shutter of hot rolled double dipped galvanised steel</b> lath section of <b>18 SWG tested mild steel strips</b> 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 of 75mm wide and 3mm thick (min.) and arrangements for inside and outside locking with push and pull operation including wire springs, single top/hood cover 0.9 mm thick (min.), primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).					
b	<b>Mechanically Operated</b>	SQM	17			0.0138820
914	Providing and fixing <b>PVC frame with PVC doors(25 thk double skin)</b> of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10			0.0056360
915	Providing, fixing and fitting of <b>glazing of first grade class</b> in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.					0.0000000
d	6 mm thick wired glass	SQM	132			0.0207947
e	6mm thick Polycarbonate sheet multi (twin) wall/cell fire retardant and ultra violet resistant with sealed open edges.	SQM	144			0.0640757
f	4 mm thick ground glass	SQM	6			0.0007168
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 10 mm(min.) thick air gap for thermal insulation (only single elevation area to be measured)	SQM	84			0.0515927
K	One outer 6mm thick tinted heat-reflecting type toughened float glass and one inner 6mm thick toughened clear float glass hermetically sealed and seperated by 10 mm(min.) thick gap for thermal insulation (only single elevation area to be measured).	SQM	25			0.0144886
n	6 mm thick clear float glass	SQM	48			0.0082383
922	Providing and fixing MS grills of approved pattern made out of 25 mm x 6 mm MS flats and 12-20 mm MS square bars for window,ventilator,openings at all heights including painting as per specification.	Kg	426			0.0093420
	<b>1000 BRICKWORK</b>					
	<b>Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.(Cement will be supplied by BHEL free of cost as per TCC):</b>					
1001	Providing <b>brick work</b> in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from <b>230mm to 460mm</b> at all depths, places and positions <b>below plinth</b> including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
e	Using <b>fly ash lime bricks</b> confirming to IS 12894-2002 with minimum crushing strength of 50 kg/cm2	CUM	131			0.0700858
1002	Providing <b>brick work</b> in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position <b>above plinth</b> including raking out joints, curing, scaffolding etc complete excluding plastering and painting.					0.0000000
e	Using <b>fly ash lime bricks</b> confirming to IS 12894 with minimum crushing strength of 50 kg/cm2	CUM	533			0.3809098
1003	Providing <b>brick work</b> in cement mortar 1:4 (1 cement 4 coarse sand) in <b>partition walls</b> , chambers etc. in <b>thickness 115mm</b> at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.					0.0000000
e	Using <b>fly ash lime bricks</b> confirming to IS 12894 with minimum crushing strength of 50 kg/cm2	SQM	48			0.0048078

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SERVICE PART						
ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
1004	Providing <b>brick soling</b> including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). <b>Using brick on edge.</b>					0.0000000
e	Using <b>fly ash lime bricks</b> confirming to IS 12894 with minimum crushing strength of 50 kg/cm2	SQM	17			0.0010589
1005	Providing <b>brick soling</b> including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item).- <b>Using flat bricks.</b>					0.0000000
e	Using <b>fly ash lime bricks</b> confirming to IS 12894 with minimum crushing strength of 50 kg/cm2	SQM	14			0.0007470
1006	<b>Breaking</b> of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	5			0.0009120
1007	Providing and <b>encasing</b> of structural steel member with <b>masonry work</b> around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification.	CUM	6			0.0040589
1008	Providing and laying 75 mm thick bed of <b>dry brick aggregate</b> including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	20			0.0006888
1009	<b>Making openings</b> in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	5			0.0012224
1011	<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 upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	6			0.0008482
1012	Providing and filling <b>brick bats in soak pits</b> all complete.	CUM	32			0.0072930
<b>1100 DAMP PROOF COURSE</b>						
Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.(Cement will be supplied by BHEL free of cost as per TCC):						
A1101	<b>Providing 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 all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.	SQM	50			0.0039589
<b>1200 CEMENT MORTAR PLASTER</b>						
Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.(Cement will be supplied by BHEL free of cost as per TCC):						
B1201	Providing <b>20mm thick plaster</b> in two layers(bottom layer 12mm thick with 1:3 cement sand mortar and top layer 8mm thick with 1:1 cement sand mortar with fine sand) <b>outside</b> the building/boundary walls etc., finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	2502			0.0639373
1202	Providing <b>12mm thick plaster inside</b> the building/boundary wall etc. in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	1251			0.0251089
A1203	Providing <b>15mm thick plaster</b> inside building/boundary wall in cement mortar 1:6 on walls with rough finish all complete.	SQM	1251			0.0266265
A1204	Providing <b>10 mm thick plaster on ceiling</b> in cement mortar 1:4 finished to a smooth all complete.	SQM	1854			0.0606961
1206	Providing and making <b>decorative plaster</b> of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	18			0.0007291
1207	<b>Forming groove</b> of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	150			0.0010204
1208	Providing <b>drip course, moldings, cornices</b> on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	190			0.0008077

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
1210	<b>Ruled pointing</b> in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	<b>300</b>			0.0039116
<b>1300 FINISHES TO CONCRETE / PLASTERED SURFACES</b>						
Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.						
1304	Two or more coats of <b>acrylic washable distemper</b> of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	<b>1854</b>			0.0295619
1305	Providing and applying two or more coats of <b>acrylic emulsion paint</b> as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	<b>2502</b>			0.0632988
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 bitumen primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	<b>50</b>			0.0033484
1307	Two or more coats of <b>fire resistant transparent paint</b> as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications.	SQM	<b>40</b>			0.0033675
1309	Two or more coats of <b>synthetic enamel paint</b> of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	<b>50</b>			0.0009566
A1312	Providing and applying 1.5 mm thick <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.	SQM	<b>1550</b>			0.0168059
A1313	Providing and applying ready made <b>Epoxy Paint</b> over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of <b>250 micron</b> thickness over epoxy primer.	SQM	<b>100</b>			0.0122598
B1313	Providing and applying ready made <b>Epoxy oil resistant Paint</b> over areas with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of <b>250 micron</b> thickness over epoxy primer.	SQM	<b>100</b>			0.0122598
1315	Providing and applying two or more coats of <b>Acrylic based weather coat paint</b> of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellent and extremely durable with color fastness as per specification.	SQM	<b>2835</b>			0.0777507
<b>1400 FLOORING AND SKIRTING</b>						
Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.(Cement will be supplied by BHEL free of cost as per TCC):						
1401	Providing and laying 50 mm thick <b>heavy duty cement concrete in flooring with metallic hardener pigmented topping</b> 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	<b>2365</b>			0.1329617
A 1401	Providing and laying 50 mm thick <b>heavy duty cement concrete in flooring with nonmetallic hardener as per sepcification</b> . Hadener shall of hard granules of mineral origin. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick nonmetallic concrete of mix 1:2 (1 cement hardner mix with approved quality nonmetallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing suitable aluminium dividing strips):	SQM	<b>1243</b>			0.0672396
1402	Providing and laying 25 mm thick <b>heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates )</b> flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in <b>skirting and dado</b> complete as per specification.	SQM	<b>237</b>			0.0170186
A1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates ) in skirting and dado complete as per specification.	SQM	<b>124</b>			0.0086406

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
1412	Providing and laying 18-20mm thick <b>Mirror polished Granite stone</b> of approved color and texture in flooring in large slab with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregate 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. all complete.	SQM	77			0.0550536
1414	Providing and laying <b>Mirror polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster</b> including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	12			0.0051608
1416	Providing and laying <b>vitrified ceramic tiles of polished variety</b> of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following					
b	10mm thick tiles In flooring	SQM	334			0.1023277
d	10mm thick tiles In skirting and dado upto specific height	SQM	14			0.0049519
A1417	Providing and laying <b>vitrified ceramic tiles of matt finish variety</b> from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following					
a	7.2 mm thick tiles of size 300x300 In flooring	SQM	292			0.0670523
c	8 mm thick coloured glazed tiles of size 300x450x 8mm thick In skirting and dado upto specific height	SQM	55			0.0125361
1418	Providing and laying 10 mm thk non-skid fully <b>vitrified tiles</b> of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in <b>flooring and skirting</b> over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes					
b	600X600 mm	SQM	50			0.0134091
1419	Providing and laying <b>granite stone slab</b> of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting,making corners,moulding and opening etc. all complete.	SQM	10			0.0074674
1422	Providing & fixing <b>Acid / Alkali resistant (Chemical resistant) tiles</b> conforming to IS:4457 in <b>flooring/Dado</b> and shall be laid over bitumastic lining of min 12mm thick ( to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding epoxy mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.					
a	20mm thick	SQM	200			0.1043437
1430	Providing and fixing <b>dividing strips</b> in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.					
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	50			0.0003826
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	135			0.0025256
<b>1500 ROOFING / SIDE CLADDING</b>						
Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.						
A1501	<b>Transport and fixing permanently color coated galvanised MS troughed metal sheet decking plate</b> of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum <b>0.8mm with minimum trough depth of 44 mm</b> having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.					
a	Span Upto 1800mm	SQM	1936			0.1051206
1502	Providing and fixing self drilling <b>shear connectors</b> of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	4			0.0060301

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
A1504	Transport and fixing <b>External sheet of Permanent colour coated metal cladding with high strength tensile steel sheet 0.6 mm total coated thickness(TCT)</b> having minimum yield strength 550 MPa and zinc-aluminium alloy (Zn:43%,Al:55%,Si:1.5%) organic coating not less than <b>150 gm/sqm</b> total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) or SMP of minimum dry film thickness (DFT) 20 microns over suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	<b>3416</b>			0.2006006
A1506	Providing under deck <b>insulation of resin bonded mineral wool</b> of 50 mm nominal thickness as per HVAC requirement conforming to IS 8183(maximum value shall be 1.0W/sq.m/deg.C) having a density of 32 kg/cum glass wool for thermal and acoustic insulation including application of glue and tying with lacing wire, for glass wool as per manufacturer's recommendations(fixing shall be paid in item no. 1508).	SQM	<b>350</b>			0.0360887
B1506	Providing and fixing <b>polysterene blocks of 50 mm</b> nominal thickness high density of 30 kg/cum as per HVAC requirement for <b>underdeck</b> insulation as per manufacturer's recommendations.	SQM	<b>25</b>			0.0031889
1508	Installing <b>under deck insulation</b> using minimum 0.05 mm thick aluminium foil on exposed surface followed by <b>0.56 mm dia and 25 mm mesh GI wire netting</b> , fixed at various elevations with rawl plugs including clips (but excluding cost of insulation.)	SQM	<b>350</b>			0.0325170
<b>1600 FALSE CEILING</b>						
False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.						
1604	Transport and fixing and laying <b>permanently colour coated aluminium false ceiling</b> of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	<b>1854</b>			0.1323192
1606	Providing and Fixing <b>12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm)</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 with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movement platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	<b>143</b>			0.0315265
<b>1700 RAIN WATER DOWN TAKE PIPES</b>						
Rain water down take pipes including all labour, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per						
1704	<b>Fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.</b>	RM	<b>700</b>			0.0417438
A1705	<b>Fixing heavy duty PVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.</b>	RM	<b>100</b>			0.0018846
A1706	<b>Fixing heavy duty PVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.</b>	RM	<b>304</b>			0.0080755
<b>1800 MISCELLANEOUS WORKS</b>						
Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.						
1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete as per the direction of the Engineer and as per specification. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	<b>9584</b>			2.7038311

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
1808	Providing and fixing <b>aluminium strips</b> minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	100			0.0098646
1809	Providing Chemical epoxy injection grouting with pressure pump for <b>water retaining concrete structures</b> conforming to IS:6494, including fixing nozzles, cost of approved cement, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical	Kg	500			0.1143784
1810	Providing, laying and fixing <b>rails and guide rails in concrete</b> for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	11			0.1931630
1812	Laying of <b>earthing mats/rods</b> including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing	MT	15			0.0024842
1813	Providing <b>Earthing pit</b> as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.	EACH	15			0.0389279
1815	Providing and fixing <b>GI rungs</b> in concrete/brick walls having zinc coating of <b>minimum 900 g/sqm</b> etc. all complete.	Kg	100			0.0021685
1817	Providing and fixing <b>HDPE pipes in</b> concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.					
c	150 mm dia	RM	25			0.0028700
d	200 mm dia	RM	100			0.0185173
1826	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	20			0.0076110
1828	Dismantling old existing reinforced/non-reinforced brickwork/blockwork/stone masonry work in mud/lime/ cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto1km all complete.	CUM	10			0.0016901
1829	Dismantling old existing plain/re-inforced concrete work at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.	CUM	10			0.0050237
1830	Dismantling old existing structural steel work at any level including plates, bolts, cutting rivets, welding, dismembering and stacking the dismantled materials within a lead upto 1km etc all complete.	MT	3			0.0062465
1833	Supply & fixing <b>FRP (fibre reinforced plastic) sheets</b> 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm .	SQM	25			0.0046187
1836	Providing and laying cinder filling in the toilets/sunken slab complete as directed by engineer in charge.	CUM	5			0.0011395
A1837	Providing and laying foam concrete blocks in the toilets/sunken slab complete as directed by engineer in charge	CUM	5			0.0035925
A1837	Providing and fixing sliding layer of bitumen/craft/LDP paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc all complete.	Sqm	283			0.0045124
<b>2000 FENCING AND GATES</b>						
<b>Fencing and gates including all labour, material, equipment etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>						
A2001	Supplying and erecting in position <b>2.4 m high PVC coated gavanised chain linked fencing</b> of minimum 8 gauge (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than <b>11 gauge. GI barbed wire fencing of height of 600 mm</b> conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under item 2007)	RM	100			0.0366521
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	1			0.0203151
2009	Supply, fabrication and installing in position and testing <b>galvanised MS Gates</b> out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, Gun metal shoe ,castor wheels, paintings etc. all complete.	MT	5			0.1027396
<b>2100 WATER SUPPLY</b>						

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>						
2101	Providing and fixing in position tested heavy duty type <b>chromium plated (CP) brass long neck bib cocks</b> including sockets, union, nuts etc all complete - <b>15mm</b> nominal bore.	EACH	22			0.0035453
2102	Providing and fixing in position heavy duty <b>brass stop cock</b> of approved quality including all specials etc all complete - <b>15mm</b> nominal bore.	EACH	27			0.0037483
2103	Providing and fixing in position heavy duty <b>brass full way valve</b> with wheel of approved quality including all specials etc all complete for following sizes:					
a	25mm nominal bore.	EACH	7			0.0017426
b	50mm nominal bore.	EACH	7			0.0043321
A2104	Providing and fixing <b>MS pipe of heavy duty class</b> conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, <b>complete for internal works</b> with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:					
a	15 mm nominal bore.	RM	26			0.0014371
b	20 mm nominal bore.	RM	30			0.0019516
c	25 mm nominal bore.	RM	26			0.0021170
2105	Providing and fixing <b>GI pipes class B/medium complete for external work</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:					
a	15 mm nominal bore.	RM	32			0.0020069
b	20 mm nominal bore.	RM	35			0.0024406
c	25 mm nominal bore.	RM	35			0.0030507
d	50 mm nominal bore.	RM	28			0.0038752
2106	Providing and fixing <b>610mmx453mmx6mm thk mirror</b> from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	25			0.0049907
A2106	Providing and fixing <b>6mm thk mirror</b> from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	SQM	10			0.0019963
A2108	Providing and fixing 20 mm diameter <b>stainless steel towel rails</b> (600mm X 20mm) all complete.	EACH	6			0.0011812
2109	Providing and fixing 20mm dia <b>chromium plated</b> M.S. pipes wall mounted <b>towel rod</b> with C.P. Brackets etc all complete.	EACH	6			0.0007908
2110	Providing and fixing <b>C.P. soap holder</b> mounted with C.P. screws etc all complete.	EACH	12			0.0010306
2111	Providing and fixing stainless steel / C.P. <b>liquid soap dispenser</b> . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	EACH	12			0.0015740
2112	Providing and fixing glazed vitreous wall mounted <b>paper holder</b> with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	12			0.0014388
A2113	Providing and fixing <b>chromium plated wall mixture</b> with provision of shower all complete.	EACH	2			0.0003797
B2113	Providing and fixing <b>chromium plated wall mounted sink mixture</b> all complete.	EACH	2			0.0003797
2114	Providing & fixing in position <b>P.V.C. water tank</b> of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.					
a	500 litres capacity	EACH	3			0.0025527
b	1000 litres capacity	EACH	4			0.0068074
c	2000 litres capacity	EACH	2			0.0067164
2115	Providing and fixing approved <b>stainless steel sink with integrated drainboard</b> as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	6			0.0059991
<b>2200 SANITARY WORKS</b>						
<b>Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>						

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**SERVICE PART**

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2201	Supply and fixing <b>glazed vitreous china Wash Basin</b> conforming to IS:2556 part 4 of oval shape 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 bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete. <b>(Cement will be supplied by BHEL free of cost as per TCC):</b>					
a	White	EACH	8			0.0079043
b	Colored	EACH	2			0.0022664
2203	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	2			0.0017509
2204	Providing and fixing <b>colour glazed vitreous china European type water closet conforming to IS:2556</b> with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete. <b>(Cement will be supplied by BHEL free of cost as per TCC):</b>					
a	Floor mounted	EACH	10			0.0122890
2205	Providing and fixing <b>colour glazed vitreous indian type Orissa pattern (580x440mm) water closet</b> conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete. <b>(Cement will be supplied by BHEL free of cost as per TCC):</b>	EACH	6			0.0066910
A2206	Providing and fixing white <b>flat back glazed vitreous china urinals</b> of size 590x400x380 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	4			0.0076992
A2207	Supply, laying and jointing <b>HDPE pipes</b> including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.					
c	160mm dia pipes	RM	100			0.0434978
d	200mm dia pipes	RM	200			0.0889515
2208	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 all complete for following.					
a	200mm dia	RM	35			0.0058358
b	300mm dia	RM	35			0.0090279
c	450mm dia	RM	105			0.0525288
d	600mm dia	RM	105			0.0620096
e	900mm dia	RM	70			0.0789145
f	1800 mm dia	RM	750			1.8585226
2209	Providing, laying light duty non pressure <b>NP2 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.					
a	150mm dia	RM	30			0.0037857
b	250mm dia	RM	30			0.0045465
c	300mm dia	RM	45			0.0093632
d	500mm dia	RM	45			0.0139498
2211	Providing and fixing <b>C.I Manhole heavy duty cover of size 600mmx450mm</b> including frame from reputed manufacture etc. all complete.	EACH	10			0.0117227
2212	Providing and fixing <b>circular heavy duty C.I. manhole cover of 600 mm dia</b> with frame etc. all complete.	EACH	10			0.0223718
2213	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 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:					
a	100x100mm P or S Type.	EACH	3			0.0012417
b	150x100mm P or S Type.	EACH	6			0.0027029
c	150x150mm P or S Type.	EACH	10			0.0048196
2215	Providing and fixing <b>C.I. floor traps with C.P jalli</b> all complete.	EACH	10			0.0015519

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**SERVICE PART**

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2216	Providing and fixing heavy duty UPVC floor traps with C.P jalli all complete.	EACH	10			0.0009864
A2217	Providing and installing approved brand single tap water cooler of 50 L cooling capacity all complete with two year free maintenance and guarntee.	EACH	3			0.0180579
A2218	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete with two year free maintenance and guarntee.	EACH	1			0.0098499
2219	Providing and fixing white viterous urinal partitions of size 675x325x85mm all complete.	EACH	8			0.0030767
2220	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	1			0.0081559
A2221	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.					
c	150mm dia pipes	RM	30			0.0114676
d	200mm dia pipes	RM	45			0.0229352
e	250mm dia pipes	RM	45			0.0286690

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SERVICE PART

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>2300 STRUCTURAL STEEL</b>						
<b>Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>						
2301	Fabrication and erection of <b>structural steel with mild steel rolled section / built up section / combination of both</b> conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, 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, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including SHOT Blast cleaning to near white metal surface (Sa 2 1/2) and 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20° C for welding over 20 mm and upto 40 mm & 66° C for welding over 40 mm and upto 63 mm & 110° C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), 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, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	25			0.1275595
A2302	Extra over ST NO. 2301 for applying epoxy based zinc phosphate primer in coats of minimum 50 micron (DFT) at shop and 50 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	25			0.0095669
A2305	Providing and applying two coats of <b>epoxy resin based paint over primer coat with inermediate coat pigmented with titanium dioxide of 100 micron</b> dry film thickness (DFT) and top coat of approved colour and shade with glossy finish of 75 micron DFT with finish coat of polyurethane of 25 micron dry film thickness (DFT) to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 300 microns including protection and cleaning, scaffolding etc. all complete.	MT	25			0.0174490
2307	Supplying, fabrication, erection and alignment of factory made <b>electroforged galvanised grating units</b> with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	4			0.0950505
2308	Supplying, fabrication, erection and alignment of factory made <b>galvanised welded grating units</b> with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	4			0.0706884
2310	Providing and fixing in position of <b>permanent 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 39 mm diameter and upto 300mm long for structural steel work etc all complete.	Quintal	1			0.0019871
2311	<b>Providing and fixing in positing of 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 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	Quintal	1			0.0047469
2312	<b>Dismantling of steel structure</b> , lowering of material and carriage of the dismantled material up to field fabrication shop / 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), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	2			0.0034232

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
2313	Addition to, alterations in and/or modification of " <b>Erection Marks</b> " including cutting of parts, gauging 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) etc all complete for the following:					0.0000000
a	In erected position	MT	2			0.0046440
b	In fabrication yard	MT	2			0.0043480
2314	<b>Re-erection of dismantled fabricated structural steel</b> members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required posiiion, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismnatled members, re-alignment of adjacent connected members(weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	1			0.0017673
2319	Supply, fabrication and fixing of <b>stainless steel pipe hand railing</b> of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..	MT	3			0.1087445
A2320	Supply, fabrication and fixing of Galvanised (610 gms/sqm as per IS 4736) <b>MS pipe medium class conforming to IS: 277 hand railing (1000 mm high)</b> of 40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..	MT	3			0.0547785
<b>2400 ROAD WORKS</b>						
<b>Providing Road Work including necessary material, labour, machinery, transportation etc as per specification, drawing, relevant IRC &amp; IS codes and as directed by the Engineer-in-charge for the following.</b>						
2401	<b>Preparation of sub grade</b> by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	7553			0.1181038
2402	Supplying and <b>filling with selected good earth</b> of approved quality in layers not exceeding <b>300 mm loose thickness</b> using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density (modified proctor), as per IS-2720 (Part-VIII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	2509			0.1488218
2403	Providing, stacking & laying <b>granular morrum</b> for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	1131			0.1553546
2404	Providing & laying <b>water bound macadam sub base course</b> in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	1957			0.5519663
2412	Supplying and laying 400mmx150mmx350mm deep <b>precast concrete kerb stone</b> of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	3809			0.2174591

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
A2414	Supply and laying 200mm dia R.C.C NP-2 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.(Cement will be supplied by BHEL free of cost as per TCC):	RM	943			0.1594983
2415	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	250			0.0960472
	<b>Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating, shuttering, formwork and curing (excluding cost of reinforcement), with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specification and as per direction of engineer in charge for the following.(Cement will be supplied by BHEL free of cost as per TCC):</b>					
2418	Providing and laying cement concrete of grade M30 using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)	CUM	2696			1.7774790
2419	Providing & laying dry lean cement concrete of grade M15 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	1079			0.4917303
<b>REINFORCEMENT</b>						
2420	Transportation, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Reinforcement shall be provided by M/S BHEL Free of cost)	MT	26			0.0437673
2421	Transportation, straightening, cutting, bending, placing in position at any level, binding of at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500/500D/ 500EQR confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Reinforcement shall be provided by M/S BHEL Free of cost)	MT	195			0.2625877
2422	Transportation, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	1			0.0021883
2422A	Providing and Fixing Coupler for joining of all dia reinforcement bar 16mm and above including threading of joint ,pressing all complete as per specification inclusive of all T&P,Labour,one thread protection cap per bar and all accessories cost.	EACH	500			0.0212599
<b>MISCELLANEOUS WORKS</b>						
	<b>Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>					
2423	Providing & installation of bitumen impregnated fibre board of specified thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	RM	364			0.0478246
2424	Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	364			0.0011607
2425	Providing and laying debonding strip/tape of specified thickness before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM	364			0.0023215
A2426	Providing & laying 80 mm thick precast interlocking concrete pavers of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	6568			0.9129725
2427	Providing and laying 50mm thick sand layer below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	6568			0.0416087
<b>2500 PILING WORKS</b>						

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
2501	<b>Mobilisation of hydraulic rotary piling rigs</b> and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	Each	6			0.6594894
2503	Installation of <b>Bored cast-in-situ RCC vertical pile</b> as per IS 2911 (Part 1 Sec 2) with diameter and length as specified ( <b>length to be measured from pile cut-off level to the bottom of pile</b> ) using cement concrete grade <b>M25</b> conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials ( <b>but excluding reinforcement steel for which measurement/payment shall be made separately</b> ), boring/drilling in all types of <b>soil/ash etc.</b> , providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the					
a	Pile with 450 mm diameter and 13 m length below cut off level	Each	NA			
b	Pile with 500 mm diameter and 20 m length below cut off level	Each	NA			
d	Pile with 600 mm diameter and 23 m length below cut off level	Each	630			8.9450444
e	Pile with 760 mm diameter and 23 m length below cut off level	Each	1510			32.7149424
f	Pile with 900 mm diameter and 20 m length below cut off level	Each	NA			
B2504	Extra over ST. No. 2503 for pile length more than the specified length of 23m below cut off level for the following.					0.0000000
a	For 600 mm diameter pile	Rm	630	0.03 TIME OF ITEM NO - 2503 (d)		0.0000000
b	For 760 mm diameter pile	Rm	1510	0.03TIME OF ITEM NO - 2503 (e)		0.0000000
A2505	Rebate on ST.No.2503 for pile length less than the specified length of 13m below cut off level for the following.					-
a	For 450 mm diameter pile	Rm	NA			
B2505	Rebate on ST.No.2503 for pile length less than the specified length of 23m below cut off level for the following.					-
a	For 600 mm diameter pile	Rm	630	0.02TIME OF ITEM NO - 2503 (d)		0.0000000
b	For 760 mm diameter pile	Rm	1510	0.02TIME OF ITEM NO - 2503 (e)		0.0000000
2508	Conducting <b>routine load test</b> on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but <b>excludng the cost of installation of job pile</b> complete as per specification, drawing and as directed by the engineer-in-charge for the following.					
a	<b>For vertical compression test by maintained load method</b>					
i	<b>450 mm diameter pile</b>	Each	NA			
ii	500 mm diameter pile	Each	NA			
iii	<b>600 mm diameter pile</b>	Each	7			0.1696482
iv	<b>760 mm diameter pile</b>	Each	16			0.6893319
v	900 mm diameter pile	Each	NA			

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**SERVICE PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
b	For lateral load test					
i	450 mm diameter pile	Each	NA			
ii	500 mm diameter pile	Each	NA			
iii	600 mm diameter pile	Each	7			0.0585813
iv	760 mm diameter pile	Each	16			0.1251716
v	900 mm diameter pile	Each	NA			
A2509	Carrying out low strain pile integrity test on 450mm/600mm/760mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	Each	2140			0.5614237
	<b>GRAND TOTAL Weightage ( SERVICE PART )</b>				<b>0.000000</b>	<b>100.000000</b>

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**SUPPLY PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>700 MS EMBEDMENTS</b>						
701	Supply, of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. etc. all complete.	MT	5			2.06003930
704	Supply of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. all complete.	MT	11			5.61958530
<b>1500 ROOFING / SIDE CLADDING</b>						
A1501	<b>Designing, supply of permanently color coated galvanised MS troughed metal sheet decking plate</b> of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum <b>0.8mm with minimum trough depth of 44 mm</b> having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyster paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.					-
a	Span Upto 1800mm	SQM	1936			16.85478140

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**SUPPLY PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
A1504	Designing, supply of <b>External sheet of Permanent colour coated metal cladding with high strength tensile steel sheet 0.6 mm total coated thickness(TCT)</b> having minimum yield strength 550 MPa and zinc-aluminium alloy (Zn:43%,Al:55%,Si:1.5%) organic coating not less than <b>150 gm/sqm</b> total on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) or SMP of minimum dry film thickness (DFT) 80 micrometers with minimum dry film thickness of the sheet to be provided.	SQM	<b>3416</b>	-	-	32.16153800
				-	-	-

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**SUPPLY PART**

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE	AMOUNT	% weightage w.r.t. the total amount
<b>1600 FALSE CEILING</b>						
						-
1604	Providing, <b>permanently colour coated aluminium false ceiling</b> of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	<b>1854</b>			31.55973910
						-
<b>1700 RAIN WATER DOWN TAKE PIPES</b>						
						-
						-
	<b>Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>					-
1704	<b>Providing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.</b>	RM	<b>700</b>			9.48190190
A1705	<b>Providing heavy duty PVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.</b>	RM	<b>100</b>			0.42809800
A1706	<b>Providing heavy duty PVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.</b>	RM	<b>304</b>			1.83431700
	<b>GRAND TOTAL Weightage ( SUPPLY PART )</b>					<b>100.0000000</b>
SL NO	DESCRIPTION				AMOUNT (Rs.)	Weightage in %
1.0	Weightage OF SERVICE PART					97.5660
2.0	Weightage OF SUPPLY PART					2.4340
<b>3.0</b>	<b>GRAND TOTAL Weightage ( SERVICE PART &amp; SUPPLY PART )</b>					<b>100.00</b>

Volume II Price Bid

**T.S.No BHE/PW/PUR/WNT2-CVL Boiler/1433**

Part C: Format to quote total Lumpsum Price

<b>Job:</b> All Civil and Architectural work of BOILER TO BUNKER from <b>C Row of POWER HOUSE</b> , ESP, CHIMNEY AREA:- Boiler Fdns., Auxiliary Boiler Fdns., Bunker & Mill fdns., Feeder & Tripper floor, Bunker Roof slab, side cladding, Misc. fdns., ID, PA, SA & FD fans & its deck, ESP & Duct fdns, ESP Control room, Aux. Transformer fdns., MCC Room, below ground earthing, earth pits, cable trenches, internal RCC drains with RCC covers, RCC Box culverts, RCC duct banks housing PVC pipes, septic tanks and soak pits, Misc. fdns. & rigid RCC pavements, RCC Roads, Paving, Pipe & cable rack of Main plant, Harvesting, including piling, excavation, piles breaking, PCC, all tests on piles, rebuilding of piles (in case of failure), pile caps & all pedestals with bolts, Retaining wall, backfilling up to required level, and handing over of all fdns/buildings/structures to mech./electrical agency AT 1 X800 MW WANAKBORI, DISTRICT-KHEDA, GUJARAT.		
Sl No 1	<b>Lumpsum Total Price for entire Scope of Work as detailed in T.S.No BHE/PW/PUR/WNT2-CVL Boiler/1433</b>	In figures:
		In Words
<b>Note:</b> Bidders to quote Total Lumpsum Price in this format above which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.		

Date

Signature

Seal and Signature  
Seal and