

# TENDER SPECIFICATION

NO: BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 & 3)/ 1452

**Package A:** All Civil and Architectural works from C Row of TG BUILDING up to ROAD beside RCC CHIMNEY including final micro level grading, backfilling up to required level and handing over of all foundations/buildings/structures to mechanical/electrical agencies for Unit #01 and Unit# 03 AT 4 X 270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana

## PRICE BID SPECIFICATION- 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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**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 Specification**

**T. S. No: BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 & 3)/ 1452**

### **Part A: Instructions to the Bidders**

1. **Bidders shall quote One Total Lump sum 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.
7. Modality of award shall be as per clause no 6 of Annexure-4 of Notice Inviting Tender (NIT) of Vol-I-Technical Bid Specification

Date  
Seal and Signature

**Vol-II-Price Bid Specification**  
**BHEL PSWR**  
**Package-A: T.S. No: BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 3)/ 1452**

**Package - A (Unit # 1 & 3) :** All Civil and Architectural works from C Row of TG BUILDING up to ROAD beside RCC CHIMNEY including final micro level grading, backfilling up to required level and handing over of all foundations/buildings/structures to mechanical/electrical agencies for Unit #01 and Unit# 03 AT 4 X 270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana

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

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
<b>100 EARTH WORK</b>				
<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.</b>				
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	43200	1.485597
b	Depth exceeding 2 m but not exceeding 4 m	CUM	29160	1.363778
c	Depth exceeding 4 m but not exceeding 6 m	CUM	9504	0.578491
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1080	0.096563
103	<b>Earth work in excavation in soft rock</b> (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), 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.			
b	Depth exceeding 2 m but not exceeding 4 m	CUM	3240	0.258493
c	Depth exceeding 4 m but not exceeding 6 m	CUM	14256	1.353081
d	Depth exceeding 6 m but not exceeding 8 m	CUM	3240	0.349858
107	Back filling 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 from compulsorily excavated soil / from Stock Pile of other sources 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.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	24218	0.691247
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	12476	0.356099
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.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	6055	0.166579
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	3119	0.085806
109	<b>Extra over ST No. 101, 103 &amp; 107</b> for carriage of excavated earth/selected materials beyond an initial lead of 500m.	CUM		
a	Carriage beyond initial lead of 500m or part thereof but not exceeding 2 km	CUM	17344	0.214713
b	Carriage beyond 2 km or part thereof but not exceeding 3 km	CUM	17344	0.429426
c	Carriage beyond 3 km or part thereof but not exceeding 4 km	CUM	5781	0.214713
d	Carriage beyond 4 km or part thereof but not exceeding 5 km	CUM	2891	0.143142
e	Carriage beyond 5 km or part thereof but not exceeding 6 km	CUM	2891	0.178927
f	Carriage beyond 6 km or part thereof but not exceeding 7 km	CUM	2891	0.214713
g	Carriage beyond 7 km or part thereof but not exceeding 8 km	CUM	2891	0.250498
h	Carriage beyond 8 km or part thereof but not exceeding 9 km	CUM	2891	0.286284
i	Carriage beyond 9 km or part thereof but not exceeding 10 km	CUM	2891	0.322070
110	<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 <b>using/with approved borrowed soil</b> (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	9174	0.880159
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	4587	0.443234

**Vol-II-Price Bid Specification**  
**BHEL PSWR**  
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**PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% 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	1529	0.313366
<b>200 CONCRETE WORKS</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.				
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc.	CUM	103	0.070472
202	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	3000	2.495191
203	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	180	0.182082
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.			
b	M20 Grade	CUM	1100	1.131601
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	30000	35.731327
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	2500	3.160729
A207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade M-30 Grade in machine foundations for TG, Gas Turbine, ID/FD/PA fans,GR fan, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system including addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing.	CUM	5688	7.930594
208	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations supported on vibration isolation system (excluding supply and installation of vibration system) and top deck of TG foundation at all levels including addition of suitable plastisizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, leveling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc, but excluding formwork, staging, reinforcement, embedments and temperature control of concrete. Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.			
a	M30 grade (with 20mm nominal size graded stone aggregate)	CUM	670	0.963190
209	Extra over St. No. 205 to 208 for controlling of temperature of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	792	0.096959

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
210	Extra over ST Nos. 205 to 207 for <b>conducting UPV test</b> for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	793	0.289338
211	Providing and <b>encasing</b> of structural steel member with <b>concrete</b> 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)			
a	M20 grade	CUM	250	0.242137
212	<b>Screed concrete</b> 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	250	0.310923
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in precast works</b> like roof slabs/trench covers, fins, lintels, chajjas, 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, transpoting, 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	150	0.314320
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in water retaining/conveying structures</b> including addition of suitable plastisizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades.			
a	M 25 grade	CUM	258	0.317758
b	M 30 grade	CUM	200	0.292884
215	<b>Dismantling concrete</b> 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	20	0.012448
b	Reinforced cement concrete of all grades	CUM	10	0.008786
216	<b>Chipping of concrete</b> 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 .	CUDM	5	0.000159
217	Extra over and above St No 216 for <b>cutting of reinforcement</b> , 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	5	0.000182
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	5	0.000166
219	Providing and applying <b>curing compound</b> of approved make where ever required as per manufacturer's specification.	SQM	2200	0.032531
<b>300 FORM WORKS</b>				
<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 required 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.	SQM	30000	3.198160
302	<b>Fairface form work</b> with good quality water proof ply wood of required 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.	SQM	15000	2.027221
304	<b>Providing, fixing and removing 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.			
a	<b>Upto 150 mm depth</b>	Each	25	0.003180

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	25	0.003301
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	25	0.005252
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	20	0.005832
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	10	0.004288
305	Fairface plywood with filmface/laminated formwork 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	50	0.008408
<b>400 REINFORCEMENT</b>				
401	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding 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. all complete as per specifications & drawings.	MT	11	0.025013
402	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500/Fe-500D 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.	MT	3500	7.958983
406	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening cutting, bending, placing in position at any level, binding of mild steel reinforcements in brickwork including cost of binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	3	0.006821
407	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding in position high yield strength steel reinforcements in brickwork including cost of binding wire, labour, scaffolding etc. complete all as per specifications & drawings.	MT	9	0.021476
<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>				
A501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	2700	0.027411
502	Providing and laying in-situ light weight foam concrete insulation as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:5 (1 cement: 5 coarse sand) after the curing period of laid foam concrete and providing of expansion joint at intervals as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.125 Kcal/sqm-hr deg C. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.			
a	Average 50 mm thickness	SQM	3000	0.378620
b	Average 75 mm thickness	SQM	100	0.013686
c	Average 100 mm thickness	SQM	100	0.017916
A506	Providing and applying PU based water proofing treatment with elastomeric, seamless waterproof membrane applied in 2 coats to a DFT of 1.2 mm thick having a elongation capacity of over 600% and average tensile strength of 1 MPa, tear resistance as per GBT 19250-2003 >20N/m. The material shall comply with – ASTM C 836 National Std. of Canada 37.58 – M86 by CGSB. All complete as per specifications and directions of engineer in charge.	SQM	3000	0.757995
B506	Providing and applying a separation layer of non-woven polypropylene geo-textile membrane of 120 gsm for water proofing as per technical specification.	SQM	3000	0.136647
C506	Providing and applying 4 mm thick APP modified Bituminous Polyester membrane for waterproofing manufactured from a rich mixture of bitumen and selected polymers blended together to obtain excellent heat resistant, flexibility, UV resistance etc. Modified bitumen then coated onto a dimensionally stable carrier to obtain excellent tensile strength, tear and puncture resistance etc complete as per technical specification.	SQM	3000	0.326324

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
A508	Providing and laying pressed precast concrete tiles of 20 mm thickness and size 600x600 mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)	SQM	3000	0.564320
509	Providing and applying two coats of bitumen grade 85/25 as per IS 702 ( @ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	9476	0.482285
512	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.	SQM	500	0.013411
<b>600 JOINTS AND FILLERS</b>				
<b>Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>				
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	100	0.033941
b	20 mm wide joints.	SQM	100	0.044980
c	25 mm wide joints	SQM	100	0.054987
d	50 mm wide joints	SQM	100	0.070840
602	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			
a	12mmX25mm	RM	400	0.019670
b	20mmX25mm	RM	400	0.030812
c	25mmX25mm	RM	250	0.034044
d	50mmX25mm	RM	250	0.068089
603	Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mmX40mm	RM	400	0.001650
b	12mmX25mm	RM	400	0.001237
c	20mmX25mm	RM	250	0.001289
604	Supplying and filling in position hot applied bitumin sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mmX40mm	RM	400	0.001375
b	12mmX25mm	RM	400	0.001100
c	20mmX25mm	RM	250	0.001117
606	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:			
a	150 mm wide and 8 mm thick	RM	100	0.010316
b	230 mm wide and 8 mm thick	RM	150	0.021303
c	150 mm wide and 6 mm thick	RM	200	0.016231
d	230 mm wide and 6 mm thick	RM	200	0.049588
<b>700 MS EMBEDMENTS</b>				
<b>Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>				
701	Supply, 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	20	0.475026
702	Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT	10	0.074709
703	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.	MT	45	0.225485
704	Transportation from BHEL 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, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete as per specification.	MT	40	0.180195

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

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
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	20	0.059754
b	PVC pipes / conduits of all diameters	Quintal	20	0.121110
c	UPVC pipes / conduits of all diameters	Quintal	20	0.131386
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity including SS Clamps wherever required as specified below for brick work with/without expansion sleeve of A6 polyamide:			
i	Upto 250 kg	Each	20	0.002606
ii	Beyond 250 Kg and upto 500 kg	Each	20	0.003644
iii	Beyond 500 Kg and upto 750 kg	Each	20	0.005433
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	20	0.002221
ii	Beyond 250 Kg and upto 500 kg	Each	20	0.003383
iii	Beyond 500 Kg and upto 750 kg	Each	20	0.005316
A705	Anchor fasteners (Chemical type, galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work.:			
i	Upto 250 kg	Each	20	0.003701
ii	Beyond 250 Kg and upto 500 kg	Each	23	0.005481
iii	Beyond 500 Kg and upto 750 kg	Each	20	0.005895
706	Placing, locking and releasing of Vibration Isolation spring modules over the foundation at all elevations including providing all assistance under the supervision of the supplier, transportation from BHEL store, necessary staging, platforms, leveling, alignment etc. all complete.	Each	120	0.049850
<b>800 GROUTING</b>				
<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.</b>				
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump 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.	SQM	10	0.001599
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand ) using non shrink admixture etc. all Complete.	CUM	14	0.095625
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 mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	5	0.020301
804	Providing & grouting 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 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	20	0.365009
805	Providing & grouting 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 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	15	0.303995
A805	Providing & grouting 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 GPX-2 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	12	0.243196
<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>				

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
901	<b>Providing and fixing 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	1	0.035918
A901	<b>Providing and fixing wooden frame conforming to IS 4021</b> made of best quality <b>seasoned hardwood</b> 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	1	0.011229
902	<b>Providing and fixing teakwood frame panel door shutter</b> as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked 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	5	0.006234
B902	<b>Providing and fixing teakwood frame panel door shutter with PVC lamination on both sides</b> as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked 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	20	0.025035
903	Providing, fitting and fixing <b>solid core flush door shutter</b> as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partical board 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	15	0.019668
A903	Providing, fitting and fixing <b>solid core wooden flush door shutter with PVC lamination on both sides</b> as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partical board 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	20	0.026341
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	20	0.039749
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	12	0.022411

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907	<b>Providing and fixing fire proof steel doors</b> (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	5	0.025140
A907	<b>Providing and fixing fire proof steel doors</b> (single or double shutter) with panic devices and vision panel shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, 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, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	25	0.125704
908	Providing and fixing <b>steel windows/ventilator</b> with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision.including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)			
a	<b>openable type</b>	SQM	100	0.095394
b	<b>fixed type</b>	SQM	63	0.057585
A908	Providing and fixing <b>windows/ventilator</b> with M.S. grills as per approved design for security purpose made of 25 mm X 6mm M.S. Flats / 12mm – 20mm M.S. square bar of approved design shall be provided to suit security requirements.	Kg	30	0.000833
A909	<b>Providing and fixing anodised aluminium work</b> of Jindal, Hindalco or other equivalent approved make for door/window frames, door/window shutters, ventilators, partitions, railing, grills etc 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-metallc protection etc.including preparation 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 separately).Weight of aluminium section only shall be measure.	Kg	1700	0.264243
910	<b>Providing and fixing of aluminium composite panel (ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade, color etc all complete as per specification.</b>			
a	<b>3mm</b>	SQM	50	0.053956
b	<b>4mm</b>	SQM	50	0.113827
A910	<b>Providing and fixing of aluminium composite panel (ACP) 3mm thick fixed in aluminium frame including sealant with minimum 0.2mm topping of precoated aluminium foil on both side of approved manufacturer &amp; approved shade, all complete as per specification.</b>	SQM	100	0.107912
911	<b>Providing and fixing of door closers</b> as per IS 3564 ,of approved make & quality all complete of following type :			
a	<b>Over head hydraulic door closures</b>	Each	30	0.015763
b	<b>Floor mounted Hydraulic door closers</b>	Each	30	0.026833
912	Providing and fixing <b>pressed steel frames</b> fabricated from <b>16 gauge M.S sheet</b> mortised, 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	500	0.018913
913	Providing and fixing <b>in position rolling shutter of hot rolled double dipped galvanised steel lath section of 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 and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per 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).			
a	<b>Hand Operated</b>	SQM	10	0.010696
b	<b>Mechanically Operated</b>	SQM	20	0.026407

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c	Electrically operated	SQM	5	0.011225
914	Providing and fixing PVC doors (25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10	0.009116
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10	0.020213
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			
b	4 mm thick clear float glass	SQM	200	0.036314
c	5.5 mm thick clear float glass	SQM	50	0.012723
d	6 mm thick wired glass	SQM	150	0.038223
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	50	0.035987
f	4 mm thick ground glass	SQM	5	0.000966
g	6 mm thick tinted heat reflecting type float glass	SQM	10	0.004449
h	6 mm thick clear toughened safety glass	SQM	12	0.007056
A915m	6 mm thick clear float glass with itching	SQM	35	0.006587
A915n	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick toughened float glass hermetically sealed and separated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	30	0.010106
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	30	0.002352
917	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	30	0.018373
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	30	0.030970
919	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	20	0.038178
A921	Supplying, installing and commissioning of self sliding mechanism for aluminum door (double shutter) including photo operated sensors, fittings, motors, mechanical systems, electrical systems, warranty all inclusive in working condition as per specifications (aluminum and glazing to be paid seperately)	NOS	2	0.050533
B921	Providing and fixing M.S. grills of approved pattern made out of 25mm X 6mm M.S. flats and 12-20mm M.S. square bars on window frames including painting as per specification.	KG	10	0.000339
<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.</b>				
A1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.			
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	85	0.104752
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
b	Using clay ash bricks as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%	CUM	20	0.023077
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	50	0.062474
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm2	CUM	720	0.862240

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A1003	<b>Providing brick work</b> in cement mortar 1:4 (1 cement 4 coarse sand) in <b>partition walls</b> , chambers etc. in thickness 115mm 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.			
a	<b>Using fly ash lime/cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup>	CUM	150	0.235491
A1004	<b>Providing 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>			
a	<b>Using fly ash lime/cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm <sup>2</sup>	CUM	25	0.031583
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	10	0.002950
1007	<b>Providing and 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	10	0.021820
1008	<b>Providing and laying 75 mm thick bed of 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	5	0.000278
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	0.001977
1010	<b>Supply and placing in position mild steel wire fabric</b> of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	20	0.001726
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	25	0.005717
1012	<b>Providing and filling brick bats in soak pits</b> all complete.	CUM	5	0.001843
<b>1100 DAMP PROOF COURSE</b>				
<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.</b>				
1101	<b>Providing Damp Proof Course 40mm thick 1:1.5:3 concrete</b> (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	140	0.015029
<b>1200 CEMENT MORTAR PLASTER</b>				
<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.</b>				
A1201	<b>Providing 20mm thick plaster</b> in two layers <b>outside</b> of the building wall in <b>cement mortar 1:6</b> on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	3750	0.503986
1202	<b>Providing 12mm thick plaster inside</b> the building/boundary wall in <b>cement mortar 1:6</b> on walls finished to a smooth finish as per specification all complete.	SQM	3750	0.128332
1203	<b>Providing 12mm thick plaster</b> in <b>cement mortar 1:6</b> on walls with rough finish all complete.	SQM	500	0.443399
1204	<b>Providing 6mm thick plaster on ceiling</b> in <b>cement mortar 1:4</b> finished to a smooth all complete.	SQM	1000	0.016250
A1204	<b>Providing 6mm thick plaster on ceiling</b> in <b>cement mortar 1:3</b> finished to a smooth all complete.	SQM	500	0.067483
1205	<b>Providing 12mm thick plaster in walls, drains/culverts</b> with a paste of <b>neat cement</b> @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	110	0.003442
1206	<b>Providing and making decorative plaster</b> of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	25	0.001711
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	125	0.001375
1208	<b>Providing drip course</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	2000	0.016506

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**Package-A: T.S. No: BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 3)/ 1452**

**Package - A (Unit # 1 & 3) :** All Civil and Architectural works from C Row of TG BUILDING up to ROAD beside RCC CHIMNEY including final micro level grading, backfilling up to required level and handing over of all foundations/buildings/structures to mechanical/electrical agencies for Unit #01 and Unit# 03 AT 4 X 270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana

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

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
1209	<b>Providing and laying encasement to box type steel beams</b> at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of enginner in charge (chicken wire mesh to be paid separately)	SQM	100	0.035227
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	50	0.001142
<b>1300 FINISHES TO CONCRETE / PLASTERED SURFACES</b>				
<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.</b>				
1301	<b>Two or more coats of white wash/ colour wash</b> as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	240	0.001320
1302	<b>Two or more coats of Exterior masonry paint</b> (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and suitable pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidlines. The final finished coating shall be fungus resistant, UV resistant, water repellent, alkali resistant and extremely durable with color fastness as per specification.	SQM	240	0.008913
1303	<b>Providing and applying two or more coats of oil bound distemper</b> as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	250	0.006447
1304	<b>Two or more coats of acrylic distemper</b> of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete as per spec.	SQM	1100	0.028370
1305	<b>Providing and applying two or more coats of 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	1500	0.061384
A1305	<b>Providing and applying two or more coats of external quality 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	1500	0.061384
1309	<b>Two or more coats of 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	1100	0.034044
1310	<b>Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.</b>	SQM	200	0.003920
A1312	<b>Providing and applying 3 mm thick white cement putty punning on walls</b> (Birla White/ JK White or Similar approved) including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	500	0.025209
1315	<b>Providing and applying two or more coats of 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	100	0.004436
<b>1400 FLOORING AND SKIRTING</b>				
<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.</b>				
1401	<b>Providing and laying 50 mm thick 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	4500	0.583377
1402	<b>Providing and laying 25 mm thick 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 skirting and dado complete as per specification.	SQM	250	0.030288

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ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
1406	<b>Providing and laying polished Kota stone 18mm to 20mm thk in flooring.</b> Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	200	0.069146
1408	<b>Providing polished Kota stone 18mm to 20mm thk in skirting</b> projecting 6mm from adjacent plaster including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	40	0.013444
1418	<b>Providing and laying 10 mm thk non-skid fully 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			
a	<b>400X400 mm</b>	SQM	50	0.023272
b	<b>600X600 mm</b>	SQM	1180	0.538266
1427	<b>Providing and fixing glazed ceramic tiles of approved color and design of size 200x300mm / 300x300mm in dado of approved size,</b> projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry including pigments, curing etc all complete for following thicknesses:			
a	<b>5mm thick</b>	SQM	75	0.017937
A1428	<b>Providing and laying flexible electric insulated PVC synthetic sheet as per IS 15652-2006</b> of Suntex Insulatic Pvt. Ltd. Or similar all complete as per specification.	SQM	300	0.075799
<b>1500 ROOFING / SIDE CLADDING</b>				
<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.</b>				
A1501	<b>Designing, providing 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	<b>Span Upto 1800mm</b>	SQM	4752	2.086818
1502	<b>Providing and fixing 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	10	0.024385
A1503	<b>Designing, providing and fixing external sheet of Permanent colour coated metal cladding with troughed M.S. sheets</b> manufactured out of 0.55 mm TCT (Total coated thickness) permanently colour coated zincalume sheet (150 gsm zinc-aluminium alloy coating total of both sides as per AS 1397:1993) having 300 Mpa yield strength. The colour coating shall be comprise of SMP.The colour coating shall comprise of 20 microns finish coat over a 5-micron primer coat on the exposed side and a back coat of 5 microns over a primer coat of 5 micron on the reverse side.The metal cladding shall have 500 mm cover width,47 mm high crests at 250 mm centers with special male/female side laps and anti siphoning feature to prevent leakage .The sheet shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc cotted self drilling fastner/screws 4.2X25 mm long on to the sub-girts.The clips shall be concealed and no fastner are to be penetrate the external sheeting all complete as per specification.	SQM	3864	1.139018

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A1505	<b>Designing, providing and fixing inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets</b> manufactured out of 0.5 mm TCT (Total coated thickness) permanently colour coated zinkalume sheet (150 gsm zinc-aluminium alloy coating total of both sides as per AS 1397:1993) having 550 Mpa yield strength . The colour coating shall be comprise of SMP.The colour coating shall comprise of 20 microns finish coat over a 5-micron primer coat on the exposed side and a back coat of 5 microns over a primer coat of 5 micron on the reverse side.The inner sheet shall have 980 mm cover width,28 mm high crests at 195 mm centers with special male/female side laps and anti siphoning feature to prevent leakage as per spec.	SQM	1050	0.338995
B1505	<b>Designing, providing and fixing inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets</b> manufactured out of 0.6 mm TCT (Total coated thickness) permanently colour coated zinkalume sheet (180 gsm zinc-aluminium alloy coating total of both sides as per AS 1397:1993) having 240 Mpa yield strength. The colour coating shall be comprise of SMP.The colour coating shall comprise of 20 microns finish coat over a 5-micron primer coat on the exposed side and a back coat of 5 microns over a primer coat of 5 micron on the reverse side.The inner sheet shall have 980 mm cover width,28 mm high crests at 195 mm centers with special male/female side laps and anti siphoning feature to prevent leakage as per spec.	SQM	1050	0.324253
A1506	Providing and fixing <b>insulation of polystyrene block</b> of 50 mm nominal thickness for <b>under deck</b> insulation including application of glue and tying with lacing wire as per manufacturer's recommendations.	SQM	150	0.047860
1507	Providing and fixing <b>insulation of resin bonded mineral wool</b> of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.	SQM	150	0.027545
1508	Providing and installing <b>under deck insulation</b> using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	475	0.071382
A1511	Providing and installing <b>under deck insulation</b> using Closed Cell Elastomeric Nitrile Rubber of density 40 to 60 kg/cum fixed at various elevations with rawl plugs including clips etc as per specification.	SQM	150	0.023161
<b>1600 FALSE CEILING</b>				
<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.</b>				
1603	Providing and fixing <b>permanently colour coated aluminium false ceiling</b> of approved colour and <b>Luxalon 84 C</b> or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to 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 all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. ( Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)	SQM	230	0.185950
A1604	Providing, fixing and laying <b>Acoustic permanently colour coated aluminium false ceiling</b> of approved colour with stove enamel finish of approved make of either lineal panel system or aluminium tile/plank system 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	170	0.214766
A1606	Providing and Fixing <b>CALCIUM Silicate Board/Tiles</b> in false ceiling of HILUX or AEROLITE or equivalent consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.	SQM	120	0.072259
<b>1700 RAIN WATER DOWN TAKE PIPES</b>				

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<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>				
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
a	100 mm Dia	RM	200	0.072216
b	150 mm Dia	RM	200	0.104198
c	200 mm Dia	RM	50	0.039495
A1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of <b>heavy duty</b> all complete for following diameters.			
a	100 mm Dia	RM	200	0.080058
b	150 mm Dia	RM	800	0.422336
c	200 mm Dia	RM	50	0.037708
1708	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			
a	110 mm Dia	RM	30	0.003590
b	160 mm Dia	RM	30	0.005065
c	200 mm Dia	RM	30	0.006757
<b>1800 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>				
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. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	6320	2.884066
1803	Anti termite chemical treatment of soil with <b>Chlorpyrifos/Lindane E.C. 20% with 1% concentration</b> conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment)	SQM	200	0.005089
1804	Supply and installation of approved <b>25mm thick vibration damping resilient pads</b> on/around foundation of vibrating equipment and at other locations all complete.	SQM	10	0.056308
1805	Providing 50mm thick <b>premix carpet surfacing</b> laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	90	0.011265
1806	Providing 50mm thick <b>anti corrosive layer</b> laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	80	0.013645
1807	Providing and fixing <b>G.I strips</b> minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	5	0.000436
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	5	0.000797
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	10	0.152366
1811	Providing and fixing <b>weep holes</b> in Drains consisting of <b>100 mm dia HDPE pipe sleeves</b> with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening covered with 40 mm downgraded aggregates in 300 X 300 mm sq. and 300 mm deep size all complete.	EACH	20	0.005357
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 mats/rods shall be supplied by BHEL free of cost)	MT	50	0.209892
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	20	0.069905
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	EACH	2	0.003252
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	25	0.000876
1817	Providing and fixing <b>HDPE pipes</b> in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.			
b	100 mm dia	RM	40	0.004539

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c	150 mm dia	RM	40	0.007427
d	200 mm dia	RM	40	0.011981
1818	Providing and laying dry <b>stone pitching</b> of <b>230 mm</b> thickness for slope protection in <b>cement mortar 1:6</b> including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	50	0.020474
1822	Cutting of <b>groove</b> of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	50	0.000567
1823	Fire proofing of steel structures with <b>VERMICULITE</b> cementitious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh), nuts, tie wires, weldings, surface preparation, curing, staging, compatible paintings etc. all complete.	CUM	1	0.025266
1824	Supply & fixing <b>expanded metal steel sheet</b> conforming to IS:412. Size of mesh shall be 10mmX40mm with strands of 2.5mm width and 1mm thickness to the structural steel for facilitating fireproofing works.	SQM	4	0.000495
1825	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	4	0.001745
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 upto 1km all complete.	CUM	5	0.001366
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	0.008126
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	2	0.006736
1831	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust suppression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	750	0.056999
1832	Providing & filling <b>Bentonite Powder (Sodium base) mixed with water in electronic earthing pit</b> as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	1	0.003322
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	4	0.001195
<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</b> high <b>PVC coated gavanised chain linked fencing</b> of minimum <b>8 gauge</b> (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>12 gauge</b> . <b>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 3 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	0.059286
A2003	Supplying and erecting in position <b>2.4 m</b> high <b>PVC coated gavanised chain linked fencing</b> of minimum <b>4 mm</b> (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 2.5 mm. <b>Concertina of height of 600 mm</b> at top of chain link fencing shall be provided with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be separately under ST No. 2007)	RM	100	0.060902
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m <sup>2</sup> on steel posts.	MT	5	0.164302
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, castor wheels, paintings etc. all complete.	MT	3	0.099711
<b>2100 WATER SUPPLY</b>				
<b>Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>				

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

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
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	2	0.000521
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	2	0.000449
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	5	0.002013
b	50mm nominal bore.	EACH	5	0.005005
A2104	Providing and fixing <b>Galvanised MS pipes class B medium class</b> conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, <b>complete for internal works</b> with MS 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	20	0.001762
b	20 mm nominal bore.	RM	20	0.002078
c	25 mm nominal bore.	RM	20	0.002608
2105	Providing and fixing <b>GI pipes class B 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	20	0.002002
b	20 mm nominal bore.	RM	20	0.002229
c	25 mm nominal bore.	RM	20	0.002793
d	50 mm nominal bore.	RM	20	0.004451
A2106	Providing and fixing <b>450X 750 mm high square edge 6 mm thick float glass mirror</b> of adequate width to match toilet lay-out and interior decor and as per spec.	EACH	4	0.001291
2108	Providing and fixing 25 mm diameter <b>stainless steel towel rails</b> (600mm X 25mm) all complete.	EACH	2	0.000636
2109	Providing and fixing 20mm dia <b>chromium plated M.S. pipes</b> wall mounted <b>towel rod</b> with C.P. Brackets etc all complete.	EACH	2	0.000426
2110	Providing and fixing <b>C.P. soap holder</b> mounted with C.P. screws etc all complete.	EACH	2	0.000277
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	2	0.000424
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	2	0.000387
2113	Providing and fixing <b>chromium plated brass shower</b> rose with 15 or 20 mm inlet all complete.	EACH	2	0.000614
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	1000 litres capacity	EACH	1	0.002752
b	2000 litres capacity	EACH	1	0.005401
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 as per spec.	EACH	2	0.003234
<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>				
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.			
a	White	EACH	2	0.003202
2202	Providing and fixing approved vitreous china <b>laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5)</b> with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	2	0.003960
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.			
a	Floor mounted	EACH	2	0.003995

**Vol-II-Price Bid Specification**  
**BHEL PSWR**  
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**PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
b	Wall mounted	EACH	2	0.004350
2205	Providing and fixing <b>colour glazed vitreous indian type Orissa pattern</b> (580x440mm) <b>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.	EACH	2	0.003627
2206	Providing and fixing white <b>flat back glazed vitreous china urinals</b> of size 440x265x355 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	0.012473
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 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.			
b	110mm dia pipes	RM	10	0.004649
c	160mm dia pipes	RM	10	0.007035
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	15	0.004038
b	300mm dia	RM	15	0.006261
c	450mm dia	RM	15	0.012147
b	600mm dia	RM	15	0.014340
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	10	0.002044
b	250mm dia	RM	10	0.002455
c	300mm dia	RM	10	0.003371
d	500mm dia	RM	10	0.005027
2211	Providing and fixing <b>C.I Manhole heavy duty cover of size 600mmx450mm</b> including frame from reputed manufacture etc. all complete.	EACH	4	0.007584
2212	Providing and fixing <b>circular heavy duty C.I. manhole cover of 600 mm dia</b> with frame etc. all complete.	EACH	4	0.014474
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	5	0.003345
b	150x100mm P or S Type.	EACH	5	0.003641
c	150x150mm P or S Type.	EACH	5	0.003896
2215	Providing and fixing <b>C.I. floor traps with C.P jalli</b> all complete.	EACH	2	0.000502
2217	Providing and installing approved brand single tap <b>water cooler</b> of <b>80 L</b> cooling capacity all complete.	EACH	1	0.009736
2218	Providing and installing approved brand single tap <b>water cooler</b> of <b>150 L</b> cooling capacity all complete.	EACH	1	0.015932
2219	Providing and fixing white vitreous <b>urinal partitions</b> of size 675x325x85mm all complete.	EACH	3	0.001866
A2221	<b>Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works</b> with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
a	75mm dia pipes	RM	10	0.005221
b	100mm dia pipes	RM	15	0.009789
c	150mm dia pipes	RM	15	0.012878
d	200mm dia pipes	RM	10	0.010587
e	250mm dia pipes	RM	5	0.006352

**Vol-II-Price Bid Specification**  
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**PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total quoted price**

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	% WEIGHTAGE (NEAREST TO THE 6 DECIMAL POINTS) W.R.T. THE TOTAL AMOUNT
A2301	Supply, fabrication and erection of structural steel with mild steel rolled section / built up section / combination of both 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 2 coats of zinc-phosphate 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 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o 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 seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.	MT	10	0.051936
A2302	Extra over ST NO. 2301 for surface preparation by sand blasting in accordance with IS 1477 (part I & II) and applying 2 or more coats of primer of epoxy resin based zinc rich primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete..	MT	10	0.012974
2304	Providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	10	0.005553
<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	8100	0.408396
2402	Supplying and filling with <b>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 as per IS-2720 (Part-VII) including royalty, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	2400	0.175320
2402X	<b>Supplying and filling</b> upto any depth below ground level for grading to proper grade and level in layers <b>not exceeding 300 mm loose thickness</b> with <b>Granular Morrur</b> (Granular Morrur to be arranged by the bidder) and compacted as specified including royalty, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, <b>all lead and lifts</b> etc all complete as per specification, drawing and as directed by the engineer for the following.	CUM	2100	0.268021
2403	Providing, stacking & laying <b>granular morrum</b> for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	300	0.060674
2404	Providing & laying <b>water bound macadam sub base course</b> of <b>total thickness 150mm, should be laid in two layers of 75mm thick each</b> , 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	975	0.355837
2405	Providing & laying <b>water bound macadam base course</b> of <b>total thickness 150mm, should be laid in two layers of 75mm thick each</b> , with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	975	0.410581

Volume II Price Bid Specification

T. S. No: BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 & 3)/ 1452

Part C: Format to quote total Lump-sum Price

<b>Job: Package A:</b> All Civil and Architectural works from C Row of TG BUILDING up to ROAD beside RCC CHIMNEY including final micro level grading, backfilling up to required level and handing over of all foundations/buildings/structures to mechanical/electrical agencies for Unit #01 and Unit# 03 AT 4 X 270 MW Thermal Power Stations, Manuguru, Distt-Khammam, Telangana.		
<b>SI No 1</b>	<b>Lump-sum Total Price for entire Scope of Work as detailed in <b>Package-A</b> of T.S.No BHE/PW/PUR/MANUT-CVL Boiler Pkg-A (Unit 1 &amp; 3)/ 1452</b>	In figures:
		In Words:
<b>Note:</b> Bidders to quote Total Lump-sum 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

Seal and Signature