



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 01

Ref: PSER:SCT:NKP-C1974:TCN-01

Date: 02-07-2019

Sub	Tender Change Notice (TCN) - 01.	
Job	<i>Civil and Architectural works including Leveling & Grading, underground facilities like drainage, sewerage, trenches, earthing mat / grounding etc. associated with complete Flue Gas Desulphurisation System (FGD) , Lime Stone (LSS) & Gypsum Handling (GSS) System pkg for 3 x 660 MW North Karanpura STPP, Jharkhand.</i>	
Ref	1.0	Tender no PSER:SCT:NKP-C1974:19.
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-C1974:7609 Date: 28-06-2019
	3.0	Other References, if any.

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

- 1) Revised BOQ cum Price Schedule, **VOLUME-III-PRICE SCHEDULE, REV-01** is attached superseding **VOLUME-III-PRICE SCHEDULE, REV-00** issued earlier along with NIT. **Bidders shall quote as per this revised Volume-III, Rev-01 only.** Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid as per **REVISED Price Schedule** format.
- 2) Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 3) All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

Mgr. (SCT)

Encl: As Above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : (033) 2339-8000

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

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

Sub	No Deviation Certificate.	
Job	<i>Civil and Architectural works including Leveling & Grading, underground facilities like drainage, sewerage, trenches, earthing mat / grounding etc. associated with complete Flue Gas Desulphurisation System (FGD) , Lime Stone (LSS) & Gypsum Handling (GSS) System pkg for 3 x 660 MW North Karanpura STPP, Jharkhand</i>	
Ref	1.0	Tender no PSER:SCT:NKP-C1974:19
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-C1974:7609 Date: 28-06-2019
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:NKP-C1974:TCN-01 Date: 02-07-19
	4.0	All other pertinent issues till date.

Dear Sirs,

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

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

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

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : (033) 23398000

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

**JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP,
JHARKHAND.**

TENDER NO. PSER:SCT:NKP-C 1974:19

PREAMBLE

SL NO	DESCRIPTION
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned anywhere in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within plus minus fifteen percent ($\pm 15\%$) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution, an approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing, clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.

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

**JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP,
JHARKHAND.**

TENDER NO. PSER:SCT:NKP-C 1974:19

PREAMBLE

SL NO	DESCRIPTION
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/ altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil &/Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1."
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump-sum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight charges against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

VOLUME-III
PRICE SCHEDULE, REV-01

JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP, JHARKHAND.

TENDER NO. PSER:SCT:NKP-C1974:19

SCH-1 : TOTAL PRICE

SL NO	DESCRIPTION	PRICE SCHEDULE REF	TOTAL PRICE (IN INR)
1.0	TOTAL PRICE FOR CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP, JHARKHAND. AS PER TENDER SPECIFICATION.	SCH 2 - PRICE BREAK UP	IN FIGURES:- IN WORDS:-
2.0	NON-SCHEDULE ITEM For items not covered in Price Schedule , quote % above or below or at par the CPWD Schedule of rates 2018		
a)	Rate of complete item		% above / % below/ at par of CPWD Rate Schedule 2018
b)	Rate of supply of material at site only		% above / % below/ at par of CPWD Rate Schedule 2018
c)	Rate for execution complete excluding supply of materials.		% above / % below/ at par of CPWD Rate Schedule 2018

NOTE

1.0	Bidder shall quote total price at Sl No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.
2.0	Bidder to note that total price at Sl No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.
3.0	Bidder's quoted total price of SCH-1 at Sl. No 1 above, shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts(Refer SCH-2, SCH-3, SCH-4, SCH-5 of VOL-III). As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.
4.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 2 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.
5.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per Sl No.3 above.
6.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.
7.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.
8.0	The quoted price shall be excluding GST including freight on FOR site basis.
9.0	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.
10.0	For payment of non schedule items, the rate shall be derived from CPWD Schedule - 2018.

VOLUME-III
PRICE SCHEDULE, REV-01

JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP, JHARKHAND.

TENDER NO. PSER:SCT:NKP-C1974:19

SCH-2- TOTAL PRICE BREAK UP

SL NO	DESCRIPTION	WEIGHTAGE
1.0	TOTAL PRICE OF SERVICE (SCH-3).	0.97469093
2.0	TOTAL PRICE OF SUPPLY (SCH-4).	0.00263480
3.0	TOTAL PRICE OF LEVELLING GRADING (SCH-5).	0.02267427
4.0	GRAND TOTAL	1.00000000

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
100	Earth work: Earth work in excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer-in-charge for the following:			
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special types 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 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.[Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 22]			
a	Depth from ground level but not exceeding 2 m	CUM	92719	0.02453108
b	Depth exceeding 2 m but not exceeding 4 m	CUM	53378	0.01742106
c	Depth exceeding 4 m but not exceeding 6 m	CUM	12351	0.00543486
d	Depth exceeding 6 m but not exceeding 8 m	CUM	4550	0.00264025
e	Depth exceeding 8 m but not exceeding 10 m	CUM	4000	0.00290471
f	Depth exceeding 10 m but not exceeding 15 m	CUM	2000	0.00181367
g	Depth exceeding 15 m but not exceeding 20 m	CUM	2000	0.00217206
103	Earth work in excavation in soft rock (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 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 22]			
a	Depth from ground level but not exceeding 2 m	CUM	31027	0.00973347
b	Depth exceeding 2 m but not exceeding 4 m	CUM	62215	0.02306918
c	Depth exceeding 4 m but not exceeding 6 m	CUM	47874	0.02295893
d	Depth exceeding 6 m but not exceeding 8 m	CUM	5867	0.00356409
e	Depth exceeding 8 m but not exceeding 10 m	CUM	2050	0.00149413
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1000	0.00087052
g	Depth exceeding 15 m but not exceeding 20 m	CUM	1000	0.00100601
104	Earth work in excavation upto any depth below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 22]			
c	Depth exceeding 4 m but not exceeding 6 m	CUM	100	0.00007998
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	0.00010137
105	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge for following depths below ground level. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 22]			
b	Depth exceeding 2 m but not exceeding 4 m	CUM	500	0.00031644
c	Depth exceeding 4 m but not exceeding 6 m	CUM	2851	0.00233367
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1050	0.00108812
e	Depth exceeding 8 m but not exceeding 10 m	CUM	200	0.00024864
f	Depth exceeding 10 m but not exceeding 15 m	CUM	200	0.00029684
g	Depth exceeding 15 m but not exceeding 20 m	CUM	200	0.00034292
106	Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1 km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge for following depths below ground level. [Measurement of excavation shall be paid as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 sheet 20 Of 22]			
c	Depth exceeding 4 m but not exceeding 6 m	CUM	200	0.00042559
d	Depth exceeding 6 m but not exceeding 8 m	CUM	200	0.00053905
e	Depth exceeding 8 m but not exceeding 10 m	CUM	100	0.00032332
f	Depth exceeding 10 m but not exceeding 15 m	CUM	100	0.00038625
g	Depth exceeding 15 m but not exceeding 20 m	CUM	200	0.00089288
A107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following. [Measurement of Backfilling shall be paid as per IS-2720 (Part-VII)]			
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	89086	0.02095742
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	86576	0.02030894
Ad	Each layer compacted so as to achieve at least 80% relative density as per IS-2720 part XIV in case of sandy soils.	CUM	1000	0.00024693
A108	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete etc.]			
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	17125	0.00137895
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	3955	0.00033649
Ad	Each layer compacted so as to achieve at least 80% relative density as per IS-2720 part XIV in case of sandy soils.	CUM	500	0.00004478

VOLUME-III
PRICE SCHEDULE - REV.01

JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP, JHARKHAND.

TENDER NO. PSER-SCT:NKP-C 1974:19
SCH-3 - SERVICE PART

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A109	Extra over ST No. 101 and 103 to A108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM	39810	0.00040283
a	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	60000	0.00060712
A110	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty/signorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete etc.]	CUM	6000	0.00433911
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VI)	CUM	50236	0.03560332
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VI)	CUM	5447	0.0061982
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths, paving, passages, etc. in layers not exceeding 300 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	800	0.00091033
B111	Supplying and filling clean and well graded sand (conforming to IS 383 with grading zone I to III) upto any depth under floors, around foundations, plinths, paving, tank foundations, etc. in layers not exceeding 300 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	25200	0.00168932
A112	Earth work in stripping of top soil upto a maximum depth of 0.30 m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm including roots and organic materials etc for levelling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	200	0.00018207
A114	Supplying and filling moorum upto any depth under floors, around foundations, plinths, paving, passages, etc. in layers not exceeding 300 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	4026	0.01773624
200	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following: (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)	CUM	629	0.00277101
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/floors, at any depth below finished floor level etc.	CUM	72	0.00031719
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	60	0.00024654
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	115	0.00046684
204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	34025	0.15468543
A204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 12 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	575	0.00262767
205	Providing and laying Design Mix 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, culverts, under floors etc at all 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.	CUM	10	0.00004596
a	M 25 Grade	CUM	6085	0.02774599
b	M 30 Grade	CUM	536	0.00245758
c	M 35 Grade	CUM	10	0.00004612
206	Providing and laying Design Mix concrete of grade 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 all 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.	CUM	6085	0.02774599
a	M25 Grade	CUM	536	0.00245758
b	M 30 Grade	CUM	10	0.00004612
c	M 35 Grade	CUM	6500	0.03138944
A207	Providing and laying Design Mix cement concrete conforming to IS-456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FP/PA fans, BFP, Coal mills, Booster fans, Ball mills, etc. at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system but including TG foundation columns with 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	10	0.00004829
a	M 30 Grade	CUM	150	0.00072836
b	M 35 Grade	CUM	700	0.00107043
A209	Extra over St. No. 205 to B207 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	700	0.00228872
A210	Extra over ST Nos. 205 to B207 for conducting UPV test 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	51	0.00022468
211	Providing and encasing structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)	CUM	200	0.00088108
Aa	M20 grade	CUM	243	0.00107184
a	M25 grade	CUM		
b	M30 grade	CUM		
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.	CUM		

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	600	0.00264325
b	1:1:2 (1 part cement, 1 part sand, 2 parts of aggregate by volume)	CUM	25	0.00011014
A213	Providing and laying Design Mix concrete as per IS-456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajias, beams, columns, wall panels, fencing posts, facias etc. at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transporting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.			
Aa	M 20 grade	CUM	10	0.00006958
a	M 25 grade	CUM	108	0.00075145
b	M 30 grade	CUM	160	0.00111731
214	Providing and laying Design Mix concrete as per IS-456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plasticizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.			
a	M 25 grade	CUM	490	0.00308026
b	M 30 grade	CUM	9290	0.05700085
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.			
a	Plain cement concrete of all grades			
b	Reinforced cement concrete of all grades	CUM	35	0.00004144
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement.	CUM	35	0.00000591
217	Extra over and above St No 216 for cutting of reinforcement , all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	CUDM	120	0.00000607
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.	SQCM	35	0.00000022
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	CUDM	35	0.0000077
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following:	SQM	100	0.00001075
301	Faceform work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches, drains, culverts etc. including chamfering of edges as per drawing, specification and instruction of engineer in charge.	SQM	88163	0.05062634
302	Faceform work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing for all heights as per specification, drawing and instruction of engineer in charge.	SQM	21495	0.01430071
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.			
a	Upto 150 mm depth	EACH	210	0.00006508
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	275	0.00015444
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	300	0.00031722
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	260	0.00044429
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	65	0.00016344
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	10	0.00003335
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.			
a	Extra for Curve Shuttering for Item No. 301	SQM	3000	0.0003453
b	Extra for Curve Shuttering for Item No. 302	SQM	500	0.0000664
400	REINFORCEMENT WORK: Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
401	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS-432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	3	0.00023938
A402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of high yield strength deformed (HYSD) TMT steel bars of grade Fe-500 having minimum elongation of 14.5 % or Fe-500D conforming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (REINFORCEMENT STEEL WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
A405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. A402			
a	12mm Reinforcement bar	MT	6000	0.06547805
500	Roof Treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)	Nos.	5	0.00000221

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A502	Providing and laying topping plaster with cement mortar 1:4 (1 cement : 4 sand) and thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	6200	0.00057246
A506	Providing and applying PU based water proofing treatment with one coat of polymerised mastic over the RCC roof to achieve smooth surface as primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards (ASTM C 836 and ASTM C 898), to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gms/sq.m coat application rate. Item includes surface preparation, polysicrim, cloth fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge.	SQM	7600	0.0130349
507	Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon elastomeric compound etc all complete.	SQM	6900	0.00733099
510	Providing and laying cement chequered flooring tiles of size 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere) (including cost of cement for tiles making).	SQM	950	0.0008291
511	Providing and applying two coats of bitumen grade 65/25 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	35691	0.00839665
A511	Providing and applying two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT on concrete surfaces of water retaining structures. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of epoxy phenolic coating (solid by volume minimum 63%) of minimum 400 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique etc. all complete.	SQM	480	0.00014116
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	1150	0.000144
A519	Providing and applying water proofing treatment with minimum 400 micron food grade epoxy coating complying to FDA title 21, Part 175.300 for the internal concrete surfaces of water retaining structure including surface preparation etc. all complete as per specification.	SQM	30	0.00002451
A520	Providing and fixing lining on internal surfaces of sumps with replaceable chlorobutyl/bromobutyl rubber lining of minimum 5 mm thickness or with vinyl ester based flake glass lining of minimum 3 mm thickness etc. all complete as per specification.	SQM	10	0.00004047
A521	Providing and applying to surfaces of liquid carrying/retaining structures, minimum 2 coats acrylic based polymer modified cementitious composite coating system etc. all complete as per specification. The total nominal thickness of such coating shall be minimum 1.5mm.	SQM	330	0.00022464
B521	Providing and applying to external surfaces in contact with earth of liquid carrying/retaining structures, minimum 2 coats acrylic based polymer modified cementitious composite coating system mixed with fine silica/ quartz sand of 0.6mm nominal size etc. all complete as per specification. The total nominal thickness of such coating shall be minimum 1.5mm.	SQM	150	0.00010211
A522	Providing and fixing water proofing treatment to be provided on sunken portion of all vertical and horizontal surfaces of depressed portions of false floor, toilets, W.C., kitchen, Pantry and the like consisting of : (i) 1st course of applying cement slurry @ 4.4 kg/sq.m mixed with water proofing compound conforming to IS. 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) 1/2nd course of 20 mm cement plaster 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) 1/3rd course of applying blown or residual bitumen applied hot at 1.7 kg. per sq.m of area. (iv) 1/4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sq.m) etc. all complete.	SQM	90	0.00005685
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
601	Supplying & installation of bitumen impregnated fibre board conforming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.	SQM	55	0.00003736
a	12 mm wide joints.	SQM	55	0.00004724
b	20 mm wide joints.	SQM	254	0.00033264
c	25 mm wide joints	SQM	208	0.00055091
d	50 mm wide joints	SQM	1	0.00000069
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.	SQM		
a	12 mm wide joints.	SQM		
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			
a	25mmX25mm	RM	584	0.00043433
b	50mmX25mm	RM	170	0.0002447
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	144	0.00001038
b	12mm X 25mm	RM	274	0.00001684
c	20mmX25mm	RM	594	0.00004959
A605	Supplying and installation of 100 mm thick polystyrene board of type-1 conforming to IS: 4671 with density 20 Kg/cum from reliable manufacturers as approved by the Engineer, sandwiched between the vertical face of block foundation and brick wall including nailing, installation as per manufacturer's recommendation etc. all complete.	SQM	2000	0.00355007
606	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint, and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanised as needed.	RM	15	0.00000429
607	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer's recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc all complete.	RM		
608	Supplying and filling in position hot applied bitumin sealing compound (Grade B) conforming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	SQM	10	0.00000325

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
a	10mm X 40mm	RM	50	0.0000036
b	12mm X 25mm	RM	100	0.0000067
c	20mmX25mm	RM	50	0.00000417
609	Providing and sealing of joints with premium grade silicon sealant (Sliprnf of GE silicon or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove:			
a	25mmX25mm	RM	10	0.00000422
b	50mmX25mm	RM	10	0.00000796
610	Providing and fixing PVC water stops in joints conforming to IS:12200 & IS:15058 all complete for the following: (Bulb or Kicker type)			
d	230 mm wide and 6 mm thick	RM	2100	0.00064545
612	Providing and applying approved fire retardant sealant in joints/openings including cleaning of joints/openings, raking out groove, application of primer, scaffolding etc. all complete.			
a	25mmX25mm	RM	10	0.00002074
b	50mmX25mm	RM	10	0.00004099
613	Providing and fixing G.I strips minimum 1.5mm. thk and 150mm wide including fixing accessories etc. all complete.			
614	Providing and fixing aluminium strips 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.			
615	Providing and fixing 300 mm wide Stainless steel strips over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.			
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
701	Transporting, 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	0.00054019
A701	Transporting, 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, manual Cleaning and providing with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of Minimum 50 Micron Dry Film Thickness (DFT). etc. all complete.	MT	25	0.00076721
702	Transportation from site store, erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, drilling etc. all complete.	MT	35	0.00111292
A703	Same as above items 701, A701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.			
a	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	17	0.00025884
Aa	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, manual Cleaning and providing with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of Minimum 50 Micron Dry Film Thickness (DFT). etc. all complete.	MT	25	0.00047262
b	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc.	MT	7	0.00011862
704	Transporting, 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	Kg	410	0.00004719
b	PVC pipes / conduits of all diameters	Kg	200	0.00006704
c	UPVC pipes / conduits of all diameters	Kg	200	0.00011206
d	Expansion anchor fasteners (galvanised) of HIL TI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	8mm Dia	EACH	4	0.00000012
ii	10mm Dia	EACH	4	0.00000016
iii	12mm Dia	EACH	14	0.00000067
iv	14mm Dia	EACH	4	0.00000031
e	Expansion fasteners (mechanical galvanised) of HIL TI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	HST M8	EACH	4	0.00000063
ii	HST M10	EACH	4	0.00000093
iii	HST M12	EACH	4	0.00000133
iv	HST M16	EACH	24	0.0000156
v	HST M20	EACH	4	0.00000507
vi	HST M24	EACH	4	0.00001024
f	Chemical Expansion fasteners (galvanised)of HIL TI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod,nuts,washers,chemicals all complete etc:			
i	HAS-E5.8 M8	EACH	5	0.00000124
ii	HAS-E5.8 M10	EACH	5	0.00000151
iii	HAS-E5.8 M12	EACH	5	0.00000185
iv	HAS-E5.8 M16	EACH	5	0.000003
v	HAS-E5.8 M20	EACH	3	0.00000541
vi	HAS-E5.8 M24	EACH	6	0.00001572
706	Transporting, and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	MT	13	0.00191365
707	Providing, laying and fixing rails(52kg/m) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.			
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge for the following: (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
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 maximum 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	30	0.000001666
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	10	0.00017709

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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 as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	25	0.00044946
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 as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	30	0.00149356
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 as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	27	0.00152622
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete. Payment shall be made as per the consumption of chemical grout.	Kg	5	0.00000506
808	Providing Chemical Injection Grouting with Minimum, 12 mm dia (NB) threaded nozzle of suitable length over the surface and along the construction joint line in a grid pattern at a spacing not exceeding 1.5m c/c before concreting operation. After the nozzles are fully set, neat cement slurry admixed with water soluble non-shrink polymer / monomer based chemical shall be injected through the net - work of nozzles with low pressure grout pumps at a pressure of about 2.0 Kg/Sqcm. Cement slurry shall be prepared by mixing cement with non-shrink polymer/monomer @ 500 gm/50 kg bag of cement and water, ensuring that Water: Cement ratio does not exceed 2 (by weight). Wetter the structure, lesser should be the water cement ratio. The property of the polymer/monomer should be such that when it is mixed with water @ 0.5% by weight of water, the viscosity of the resultant solution (water and polymer/monomer) should not be more than 1.2 centipoises. Plasticizing agent shall be added wherever required. The grouting shall be started at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting operation, the nozzles shall be sealed properly to the satisfaction of the Engineer	SQM	7630	0.00659096
809	Providing and applying to internal surfaces of the underground RCC structures, 1.5 mm thick acrylic based polymer modified cementitious composite coating system (2 layers) as per specification and direction of engineer in charge.	Sqm	7000	0.01031837
810	Same as above but for external surface with addition of fine silica (quartz sand of 0.6 mm nominal size to the coating mix as per specification and direction of engineer in charge.	Sqm	7000	0.01052474
811	Providing and fixing 22G Copper water stop and 600mm wide unless specified otherwise in water retaining structures as per relevant I.S. codes / specifications, and direction of engineer in charge.	Sqm	600	0.00138379
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial 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 lower bolts, 16x300mm long aldrops , 125mm long handles on both sides etc. but 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	2	0.00001855
A903	Providing, fitting and fixing factory made pre-laminated solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial 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 lower bolts, 16x300mm long aldrops , 125mm long handles on both sides etc. but 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	0.00015302
A904	Providing and fixing single or double steel door shutters with 45mm thick flush design shutter 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. Side , top and bottom edges of shutters shall be reinforced by continuous pressed steel channel with minimum 18G.	SQM	165	0.00241988
A906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL/JINDAL or equivalent make having minimum 2mm 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 raw 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. Glazing shall be clear float/ toughened glass of 6mm thickness 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, mitted & jointed mechanically wherever required. (Glazing shall be paid separately)	Kg	800	0.0006051
907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected 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	17	0.0002061

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
908	Providing and fixing steel windows/ventilator 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	Operable type	SQM	206	0.00076994
b	fixed type	SQM	106	0.00026654
A909	Providing and fixing anodised aluminium work of INDAL, Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections(of minimum 2mm wall thickness) 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 AC-15), fixed with raw plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/Neoprene felt for bi-metallic protection etc. including 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 hsiarated at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting op	Kg	8247	0.00754169
A910	Providing and fixing of aluminium composite panel(ACP) of following thickness for internal encasement at all heights and elevations consisting of 3mm thick II B fire rated LDPE core mixed with mineral fibre sandwiched between 2 skins of 0.5mm thick aluminium alloy sheet making a total panel thickness of 4mm. The surface shall be finished with PVDF based coating of minimum 30 micron on the top & sides and polymer paint on reverse side. Coating shall conform to ECCA or AAMA,the surface shall be protected with self adhesive peel of masking foil. The system shall be designed to withstand a wind pressure of 200kg/Sqm and shall be fixed to the Masonry/RCC walls with necessary clamps, brackets and anchor fasteners. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any otheringes/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 measured.			
a	4mm	SQM	50	0.00028223
911	Providing and fixing of door closers as per specification of approved make & quality all complete of following type :			
a	Over head hydraulic door closures as per IS 3564	EACH	22	0.00004177
b	Floor mounted Hydraulic door closers as per IS 6315	EACH	22	0.00011186
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and lapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,panellings etc all complete as per specifications.	Kg	1240	0.00023369
913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per 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	Hand Operated	SQM	30	0.00011391
b	Mechanically Operated	SQM	130	0.00166221
c	Electrically operated	SQM	55	0.00078011
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.			
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.			
a	4 mm thick clear sheet glass	SQM	10	0.00001479
b	6 mm thick clear float glass	SQM	20	0.00004275
c	5.5 mm thick clear float glass	SQM	10	0.00001719
Ad	6 mm thick laminated glass	SQM	10	0.00001981
Ae	3mm thick Polycarbonate sheet fire retardant and ultra violet resistant of approved make	SQM	20	0.00013476
Ah	6 mm thick clear toughened glass	SQM	60	0.00010364
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	765	0.00243255
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.			
		RM	80	0.00038319
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	0.00006629

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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	37	0.00015233
A923	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. Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS:1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	SQM	37	0.00019871
A924	Supply, fabrication and erection of caged mild steel ladder, min. 600mm wide, including post, rung, cage hoops, fixing brackets, nuts and bolts, other accessories etc. as per drawing supplied by bidder and approved by BHEL/NTPC and specification all complete. The cage ladder will be used to climb from ground to platform/RCC roof at min. 6 m height. The ladder, rungs, posts, hoops etc. shall be galvanised at a rate of 610 gms / SqM. as per IS : 4736. The top of the ladder shall extend at least 1 M above the end of the ladder to provide protection at the top rung. Bottom of the cage shall start at a distance of at least 2 M from ground. ALL MATERIALS TO BE SUPPLIED BY CONTRACTOR.(all steel to be supplied by contractor).	Kg	500	0.00045724
A925	Providing and fixing steel windows/ventilator, with steel sections with necessary framework for crusher house , galleries and Junction louvers as per approved drawings. The window shutters shall be provided with M.S Louvers and as per IS:1038, IS:1361 & IS:7452 latest	Kg	600	0.00008718
a.	Fixed	SQM	50	0.00026163
b.	Open	SQM	500	0.00178015
A926	Extra over item A925 Providing and fixing 1.6mm thick wire as per IS 4948 and 12MM X30MM mesh for windows size including all fittings, fixtures etc all complete as per the directions of the Engineer in charge	SQM	400	0.00006635
A927	Supply, Erection & Painting of MS Monorail door (Shop fabricated) (Shutters, frame and fittings) as per drawings and specification.	SQM	200	0.00111664
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOB/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge for the following: (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
1001	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.			
Aa	Using table moulded/machine made fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	170	0.00137163
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	10	0.00009942
Ac	Using table moulded/machine made burnt clay bricks of class designation 7.5 of nominal dimension	CUM	5	0.00005965
Ae	Using table moulded/machine made burnt clay fly ash bricks conforming to IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%.	CUM	150	0.00186405
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.			
Aa	Using table moulded/machine made fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	780	0.00705202
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	10	0.00010859
Ac	Using table moulded/machine made burnt clay bricks of class designation 7.5 of nominal dimension	CUM	100	0.00130303
Ae	Using table moulded/machine made burnt clay fly ash bricks conforming to IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%.	CUM	750	0.01017996
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 345mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
Aa	Using table moulded/machine made fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	140	0.00126575
Ac	Using table moulded/machine made burnt clay bricks of class designation 7.5 of nominal dimension	CUM	10	0.00010859
b	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 50 kg/cm2	CUM	10	0.00013003
Ae	Using table moulded/machine made burnt clay fly ash bricks conforming to IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	CUM	80	0.00108566
1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, 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.			
Aa	Using table moulded/machine made fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25% (including cost of cement for brick making)	SQM	170	0.00018513
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	SQM	230	0.00029906
Ae	Using table moulded/machine made burnt clay fly ash bricks conforming to IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%.	SQM	150	0.0002438
1005	Breaking 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.			
1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to be paid separately)			
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm2 (including cost of cement for brick making)	CUM	15	0.00012116
b	Using burnt clay bricks of class designation 7.5 kg/cm2 of nominal dimension	CUM	1	0.00001014
1007	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	15	0.00000495
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	SQM	8	0.00001242
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	12	0.00000291
1010	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	7	0.00000091

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1011	Providing and filling brick bats in soak pits all complete.	CUM	10	0.00001909
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:(CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
A1101	Providing Damp Proof Course of following thickness with M20 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg/sqm shall be applied one before & one after the DPC.			
b	50mm thick	SQM	523	0.00023351
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:(CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
A1201	Providing 18mm thick plaster in two layers outside the building/providing first (base) layer of 12 mm thick plaster in cement sand mortar (1:6) and second (finishing) layer of 6 mm thick plaster in cement sand mortar (1:4) on walls. Finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	7145	0.00148211
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	6715	0.00056824
A1203	Providing 12mm thick plaster on external/internal RCC surfaces including RCC parapet walls in cement mortar 1:4 finished to a smooth finish as per specification all complete.	SQM	2600	0.0003749
B1202	Providing 12mm thick plaster on exposed RCC walls of structures in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	500	0.0000721
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	6490	0.00092759
1205	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	100	0.00001214
1207	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	50	0.00000152
A1207	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	1000	0.00003036
1208	Providing and laying encasement to box type steel beams 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 engineer in charge (chicken wire mesh to be paid separately)	SQM	10	0.00000411
A1210	Providing drip course in cement mortar (1:3) in parapet, chajias, window/door heads, architectural facias, fins etc. all complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	400	0.00003536
B1210	Providing drip course in cement mortar (1:4) in parapet, chajias, window/door heads, architectural facias, fins etc. all complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	500	0.00004199
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	1541	0.00004697
1303	Providing and applying two or more coats of oil bound distemper 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	636	0.00005768
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	11422	0.00105752
1305	Providing and applying two or more coats of acrylic emulsion paint 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	2200	0.00030219
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	455	0.0001913
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	310	0.00011638
1308	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, inclusive of intermediate coat of Titanium dioxide / micaaceous iron oxide complete as per specifications.	SQM	150	0.00003679
1309	Two or more coats of fire resistant transparent paint (@3.5 litre per sqm per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made separately.	SQM	60	0.00003321
1310	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	87	0.00000875
A1312	Providing and applying 2 or more 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.	SQM	1100	0.00010769
A1313	Providing and applying resin/polymer bonded granular textured finish (Two or more coats), for external applications consisting of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives together in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	950	0.00150584
1314	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives together in a single pack mix, applied on cured and dried plaster surface with a dry film nominal thickness of 2.5 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	100	0.00017681
A1314	Providing and applying resin/polymer bonded granular textured finish, for external applications, consisting of crushed stone/quartz chips of 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives together in a single pack mix, applied on cured and dried plaster surface. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	4800	0.00848695
A1317	Providing and applying 2 mm thick polymer based water resistant putty on walls including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	1200	0.00015937
1319	Providing and applying two or more coats of Acrylic based weather coat paint of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using cor 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	50	0.00000706

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A1319	Providing and applying two or more coats of Acrylic smooth exterior paint of approved brand and manufacturer 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	600	0.00008469
1320	Providing and applying acid alkali and oil resistant high build, solvent free, self smoothing, seamless epoxy based amine cured floor finish. 150 microns over primer on C.C. flooring.	SQM	15	0.00000567
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:(CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement : 4 stone aggregates 12.5 mm 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	0.00249868
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick M20 grade cement concrete mix (with stone chips of size 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	9543	0.00529888
B1401	Providing and laying 50 mm thick heavy duty IPS flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of min 38mm thick M20 grade cement concrete mix (with stone chips of size 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	3900	0.00216553
A1402	Providing and laying 25 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in skirting & dado. Under layer of 13mm thick M20 grade cement concrete mix (with stone chips of size 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	400	0.00016645
A1404	Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 50mm thick including 2-4mm gap sand filling as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing).	SQM	70	0.00007889
A1406	Providing and laying polished Kota stone 18mm thk in flooring. Under bed shall average 32mm thk of M20 concrete and brought to proper level. The kota stone slabs/files laid over under bed, pressed and lapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	420	0.00073947
1408	Providing polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	300	0.00051909
A1416	Providing and laying vitrified ceramic tiles of mirror polished variety of size 600x600 from reputed / approved manufacturer (Kajaria, Johnson, Orient or equivalent), complete including underbed of 22 mm thk M20 PCC (for flooring) and cement mortar 1:4 minimum 18mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3kg/sqm, 3 mm groove joint pointed neatly with 3x4mm stainless epoxy grout SP-100 of latexite or approved equivalent etc. all complete for following			
Ab	minimum 9.5mm thick tiles in flooring	SQM	2203	0.0033075
Ad	minimum 9.5mm thick tiles in skirting and dado upto specific height	SQM	155	0.00024036
B1416	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 300x300 mm conforming to IS 13801, complete including underbed of 20 mm thk M20 PCC (for flooring) and cement mortar 1:4 minimum 8mm thick underbed for flooring in walkway or entire area jointed with neat cement slurry @4.4kg/sqm, materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing all complete. (including cost of cement for tiles making)			
a	Laid on Floors	SQM	47	0.000067
b	Laid in Skirting	SQM	5	0.00000893
A1419	Providing and laying granite stone slab of 18mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting, making corners, moulding and opening etc. all complete.	SQM	47	0.00020908
A1421	Providing and laying Heavy Duty dust pressed (grade-5) Ceramic Tiles of size 300x300mm(approved size) and 7mm thick of reputed / approved manufacturer (Kajaria, Orient, Johnson or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm. with Under bed shall average 43mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level including cement mortar with neat cement slurry @3.3kg/sqm all complete.	SQM	200	0.00038223
1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
a	20mm thick	SQM	100	0.00027864
b	38mm thick	SQM	100	0.00032165
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing, 6 mm thick pointing of joints of tiles with acid/alkali resistant epoxy/furane mortar up to a depth of 20 mm etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
Aa	12mm thick	SQM	30	0.00007105

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
a	20mm thick	SQM	185	0.00051549
b	38mm thick	SQM	40	0.00012866
B1422	Providing and laying Heavy Duty dust pressed (grade-5) Ceramic Tiles (Matt Finish) of size 300x300mm(approved size) and 7mm thick of reputed / approved manufacturer (Kajaria,Johnson,Spartek or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm.with Under bed shall average 43mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level including cement mortar with neat cement slurry.@3.3kg/sqm all complete.	SQM	25	0.00004061
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado bedded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
Aa	12mm thick	SQM	20	0.00010209
a	20mm thick	SQM	20	0.00012011
b	38mm thick	SQM	20	0.0001425
1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm thick) conforming to IS:4860 in the floor of neutralization pit and wall of alum solution preparation tank. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	25	0.0000979
A1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) conforming to IS:4860 in the wall of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	25	0.00015664
B1424 a	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm) conforming to IS:4860 in the floor/wall of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	25	0.00008811
B1424 b	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) conforming to IS:4860 in the floor/wall of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	25	0.00014097
1427	Providing and fixing glazed ceramic tiles of approved color and design of size 200x300mm / 300x300mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1 part cement and 3 parts sand by weight, fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete for following thicknesses:			
b	7mm thick	SQM	110	0.0001248
A1427	Providing and fixing designer ceramic tiles(matt finish) of approved color and design of size 200x300mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1 part cement and 3 parts sand by weight, fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete for following thicknesses:			
b	7mm thick	SQM	65	0.00007743
A1428	Providing and laying 2mm thick anti-static PVC flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete.	SQM	100	0.00011179
1429	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.	SQM	140	0.00109044
1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.			
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	50	0.00000392
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	150	0.00002447
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A1602	Providing, fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification including 50mm thick mineral wool insulation (density48kg/cum) as per IS:8183 backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements. 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 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm. Required MS channel shall be measured & paid extra under respective item unit rate.	SQM	500	0.00082973
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C 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 backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements. 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 A2301)	SQM	228	0.00099878
A1604	Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm 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. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)	SQM	150	0.00070141

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A1605	Providing, fixing and laying anodised natural colour matt finished aluminium false ceiling of Jindal/Hindalco make with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool (density 48kg/cum insulation (as per IS:8183) backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements.. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm 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. (Structural steel works for platform for movement is separately payable under relevant items of BOQ)	SQM	122	0.00053052
A1607	Providing and Fixing 12mm thick Calcium silicate board of HILUX or equivalent in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete as per architectural design and detail. Metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per IS :2777) and nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated. Suspension system shall be as per manufacturer's specification. The size of tiles shall be 600 X 600 mm or seamless as per detail design and drawing. Movement platform of structural steel shall be provided if required for the movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Structural steel works for platform for movement is separately payable under relevant items of BOQ).	SQM	60	0.00011472
1700	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc. as per specification, drawings and as directed by engineer - in - charge for the following:			
1703	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-1) / IS:3589 all complete.	RM	10	0.00001232
A1704	Providing and fixing galvanised MS down take pipes conforming to IS: 1239/IS: 3589 of 150 mm dia- Medium quality as per IS:1239(part-1) all complete as per specification. (Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 400 gms/sq.m. as per IS:6745. The zinc coating shall be smooth and shall be subjected to testing as per IS: 2633, for uniformity of coating. The zinc coating shall be free from all defects as per IS: 2629. All rain water down comers shall be provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anticorrosive painting over a coat or primer. Downcomers shall be provided with 45 x 45 cm size Khurra having minimum thickness of 30 mm with M-15 concrete over PVC sheet of 1mmx400micron and finished with 12 mm thick cement sand plaster 1:3. The rainwater down comers shall be provided with suitable C.I. grating at inlet point.)	RM	2461	0.00511738
A1711	Providing and fixing C.I.grills in catch pits including frame etc. all complete as per specification.	Each	45	0.00001649
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge for the following:			
A1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm(complying IRC specification) in layers, 200 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand/ moorum/non-expansive soil 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	2802	0.00671602
B1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm(complying IRC specification) in layers, 400 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum/non-expansive soil 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	1000	0.00215718
1802	Supply and laying approved quality Stone aggregate -40mm size in transformer yards.	CUM	40	0.0001494
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	170	0.00056379
1804	Providing and fixing weep holes in Retaining wall, drains, etc consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening all complete.	EACH	20	0.00000402
1807	Anti termite chemical treatment of soil with Chlorpyrifos/Lindane E.C. 20% with 1% concentration 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	700	0.00018682
1808	Laying of earthing mats/rods 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	5	0.00005471
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	EACH	5	0.00005385
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items.)	EACH	5	0.00004024
1811	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items)	EACH	5	0.0000028
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	EACH	5	0.00000203
1813	Providing Earthing pit 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	5	0.00018709
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	5	0.00014708
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	150	0.00002144
1818	Fire proofing of steel structures with VERMICULITE 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	51	0.00537669
1819	Supply & fixing expanded metal steel sheet 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	5	0.00000283
1821	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	5	0.00000399
1822	Providing & filling Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	2	0.00004031
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	2	0.00000373
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.	CUM	7	0.00000429
a	Steel scrap / metal scrap	MT	7	0.00000429
b	Debris & Other waste materials.	CUM	10	0.00000115
1832	Providing and fixing sliding layer of bitumen paper or craft paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc all complete.	SQM	10	0.00000028

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A1849	Providing 50mm thick premix carpet surfacing 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 as per specification.	SQM	669	0.00037067
A1850	Providing 50mm thick anti corrosive layer 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 as per specification.	SQM	669	0.00062103
A1852	Providing 75mm thk. bitumen-aggregate mix. mix shall consist of compact crushed stone screenings, fine gravel, clean coarse sand mixed in 80/100 hot bitumen (8 to 10% by volume) and rolled or compacted all complete as per specification.	SQM	650	0.00054021
A1852	Providing underground facilities survey using Ground Penetration Radar (GPR) etc. all complete as per specification and direction of Engineer-in-Charge.			
a	Mobilization and demobilization of equipments, manpower etc. for conducting survey work various time as per requirement of site under permission/approval of BHEL Construction Manager.	Each Time	3	0.0000664
b	Conducting survey for conduit, cable line in length wise including submission of details report to BHEL etc.	RM	500	0.0000664
c	Conducting any spot survey within a small area including submission of details report to BHEL etc.	RM	90	0.00000558
A1853	Providing Guniting 50 mm thick in cement mortar conforming IS : 9012 at all heights and levels including all cost of materials including fabricated wire mesh, 3mm diameter spaced 50mm both ways conforming IS : 1566; Anchoring the mesh to hopper surface/beam etc, labour, tools etc complete as per specifications, approved drgs and direction of Engineer-in-charge. (CEMENT SHALL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC).	SQM	4000	0.00195451
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
2001	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing of height of 600 mm conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be paid separately under item 2007)	RM	300	0.00095052
A2001	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. 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. (Post shall be paid separately)	RM	920	0.000291494
2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. Concentina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concentrical 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. 2007/2008)	RM	50	0.00016873
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	2	0.00019732
2008	Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.	MT	20	0.0018717
2009	Supply, fabrication and installing in position and testing galvanised MS Gates 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	6	0.00071234
2010	Supply, fabrication and installing in position and testing MS Gates 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	5	0.00056688
A2011	Two or more coats of chlorinated rubber paint (as per IS: 13487) over a suitable primer of approved quality colour and shade to give an even shade on surface with all in complete.	SQM	30	0.00000736
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	6	0.00000897
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	6	0.00000637
2103	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:			
a	25mm nominal bore.	EACH	27	0.0000446
b	50mm nominal bore.	EACH	27	0.00010723
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	85	0.00004687
b	20 mm nominal bore.	RM	45	0.0002755
c	25 mm nominal bore.	RM	47	0.00003359
d	50 mm nominal bore.	RM	7	0.00000735
2105	Providing and fixing GI pipes class B complete for external work 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	30	0.00001423
b	20 mm nominal bore.	RM	50	0.00002675
c	25 mm nominal bore.	RM	70	0.00004462
d	50 mm nominal bore.	RM	41	0.00003988
A2106	Providing and fixing wall to wall mirror of height 450mm & 6 mm thk float glass from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	15	0.00001932
A2108	Providing and fixing 20 mm diameter stainless steel towel rails (600mm X 20mm) all complete.	EACH	15	0.0000127

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	EACH	5	0.00000414
A2111	Providing and fixing stainless steel liquid soap holder cum dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	EACH	11	0.00000875
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. all complete.	EACH	12	0.00001003
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	EACH	6	0.00000802
A2114	Providing & fixing in position High density polyethylene (cylindrical/vertical) molded seamless type tank of Synlex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
a	500 litres capacity	EACH	14	0.00011956
b	1000 litres capacity	EACH	10	0.00017079
c	2000 litres capacity	EACH	7	0.00023912
2115	Providing and fixing approved stainless steel sink with integrated drainboard as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	2	0.00002222
A2115	Providing and fixing approved stainless steel Pantry sink as per IS: 13983 of size 610x510mm, bowl depth 200mm with drain board of at least 450 length with trap, heavy duty CP and cold mixer, including CI brackets, stainless steel chain with rubber plug, 40mm dia CP brass waste trap, with necessary union complete with painting of fittings, cutting and making good the wall where required including required notching in counter grating slab etc. complete.	EACH	2	0.00001525
2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	2	0.00000225
2118	Providing Minimum 600 mm long porcelain trav etc all complete.	EACH	5	0.00000365
2119	Providing and fixing Recessed porcelain soap tray in shower area etc all complete.	EACH	5	0.00000057
2120	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	4	0.00001158
A2121	Providing and fixing Electric operated hand dryer with photo voltaic control including fittings, cutting and making good the wall where required etc. all complete.	EACH	5	0.00001987
2200	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A2201	Supply and fixing glazed vitreous china Wash Basin of approved make (with photovoltaic control) 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	6	0.00011128
b	Colored	EACH	8	0.00014837
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 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	3	0.00003014
2203	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	2	0.000002341
2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
b	Wall mounted	EACH	11	0.00008589
A2206	Providing and fixing coloured glazed vitreous china flat back lipped urinals of size 440x265x355 mm with photo voltaic controlled automatic flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings with provision of squatting urinal for ladies toilet etc. all complete.	EACH	12	0.00038437
2207	Supply, laying and joining 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.			
a	75mm dia pipes	RM	70	0.00003781
b	110mm dia pipes	RM	75	0.00005521
c	160mm dia pipes	RM	115	0.0001472
d	200mm dia pipes	RM	15	0.00002216
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
a	200mm dia	RM	450	0.00035175
b	300mm dia	RM	100	0.00015823
c	450mm dia	RM	140	0.00039258
d	600mm dia	RM	100	0.00035782
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.			
a	150mm dia	RM	61	0.00004622
b	250mm dia	RM	31	0.000032
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.			
a	450mm dia	RM	2	0.00000541
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	1	0.00001981
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	21	0.000041749
2213	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber (Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2.4 Cement Concrete) 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	7	0.00003303
b	150x100mm P or S Type.	EACH	7	0.00003108
c	150x150mm P or S Type.	EACH	7	0.00003184
2214	Providing and fixing C.I. floor traps size 100 mm Inlet and 100 mm Outlet Sand Cast Iron S&S as per IS: 1729 with C.P Jalli all complete.	EACH	12	0.00002717
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P Jalli all complete.	EACH	12	0.00002292
2216	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	7	0.00059596
2217	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	4	0.00058515
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	8	0.0003056
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	3	0.00003056

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A2220	Providing and fixing sand cast iron pipes conforming to IS: 1729 for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
a	80mm dia pipes	RM	50	0.00008354
b	100mm dia pipes	RM	30	0.0000647
c	150mm dia pipes	RM	40	0.00013478
2221	Providing, laying, spun CI pipes with conforming to IS: 1536 complete for following. (Excavation, backfilling, concrete to be paid separately)			
c	150mm dia	RM	150	0.00057771
d	200mm dia	RM	50	0.00027864
f	300mm dia	RM	15	0.00013907
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
2328	Supply, fixing lightning arrester and air terminal over roof of power house building, pump house and other structures including all materials, labour, electrodes etc complete (all materials to be supplied by the contractor).	EACH	1	0.00000059
2334	Providing and fixing 20mm square MS bar balustrade with suitable MS flat with suitable anti corrosive paint, and MS pipe handrails etc all complete. (MS pipe shall be paid separately)	RM	75	0.00010495
A2335	Design, Supply, fabrication and fixing of Hopper gratings made of min 200mm X 28mm thick flats in Main direction and min 100 mm X 20 mm thick flats in secondary direction including application 2 coats of Red oxide primer all complete as per specification and approved drawing	MT	120	0.01722312
2400	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation etc. as per specification drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following: (CEMENT WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)			
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	6000	0.00050846
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness 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-VI) including royalty/seigniorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing etc all complete.	CUM	3000	0.00154437
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete	CUM	350	0.0003847
A2404	Providing & laying granular sub base (GSB) course in layers of required thickness with crushed stone aggregates (GR-1 complying MORTH specification for road and bridge works), stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material, morrum/stone dust etc all complete.	CUM	1560	0.00563925
A2405	Providing & laying granular base course (WBM GRADE -III, 53-22.4MM) in layers of required thickness with stone aggregate (MORTH specification for road and bridge works), stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material, morrum etc all complete.	CUM	4000	0.01652888
2413	Supplying and laying 400mmx150mmx350mm deep precast concrete kerb stone of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	300	0.00010933
A2413	Supplying and laying 450mmx250mmx500mm deep precast concrete kerb stone of grade M-25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	500	0.00054646
B2413	Supplying and laying 300mmx250mmx150mm deep precast concrete kerb stone of grade M-25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	500	0.00018113
2414	Providing & laying edge protection on edges of black topping using brick on edge (bricks with crushing strength of 7.5 kg/cm2) with full brick width (230 mm) etc all complete. Bricks to be placed longitudinally.	RM	200	0.00003138
A2415	Supply and laying 200mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	700	0.00068061
2416	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadam course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	400	0.00005202
2418	Providing and placing concrete work in road including cost of labour, materials (unless otherwise specified in BOQ/contract specification) 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:			
2418	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	1400	0.00619061
A2418	Providing and laying of plain cement concrete of grade M15 using 40 mm graded stone aggregate including providing and fixing formwork, compaction etc. all complete	CUM	425	0.00187231
B2418	Providing and laying of plain cement concrete of grade M20 using 40 mm graded stone aggregate including providing and fixing formwork, compaction etc. all complete	CUM	425	0.00194219
A2419	Providing and laying cement concrete of grade M35 using 20 mm nominal size stone aggregate with approved admixture (if required), in road pavement using fully mechanized paver fitted with electronic sensors, provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)	CUM	5250	0.02901254
2420	Supplying and filling sand for preparation of read sub-base/ sub-grade 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	200	0.000023071
2421	Providing & laying dry lean cement concrete of grade M15 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	1700	0.00748922
A2421	Providing & laying dry lean cement concrete of grade M10 (in pavement/shoulders) with 20 mm nominal size graded stone aggregate with mechanical paver over granular sub-base including compaction by vibratory roller, finishing, curing etc all complete.	CUM	2400	0.01057302
A2422	Providing and fixing in position MS dowel bar reinforcement including surface painted with bitumen and greasing, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	7	0.00067734
B2422	Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of mild steel reinforcements including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.	MT	14	0.0010517
A2423	Providing & laying polythene sheet of specified thickness (min. 125 micron), above dry lean concrete sub base, before laying of concrete slab pavement.	SQM	13000	0.00105481
A2424	Providing & installation of 25 mm thk. bitumen impregnated fibre board confirming to IS 1838 at all levels as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	SQM	700	0.00041289

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A2425	Providing and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	5000	0.00030356
A2426	Providing and laying debonding strip/tape, 25 mm wide & 5 mm thk. before applying sealant including cleaning etc all complete as per specification, drawing and as directed by Engineer.	RM	5000	0.00041532
A2427	Providing & laying 75 mm thick precast interlocking designer concrete blocks (of M35 grade concrete) of approved colour and pattern as per specification and recommendation of manufacturer.	SQM	5800	0.00448409
A2428	Providing and laying 20mm thick sand layer below and average 3 mm thick sand filler in between two concrete blocks concrete blocks including compaction etc all complete as per specification, drawing and as directed by Engineer.	SQM	3300	0.00006666
M	Miscellaneous Works-2: (Miscellaneous works including labour, material, equipment etc. all complete at any level unless otherwise specified as per specification, drawings and as directed by engineer)			
M1	Pumping out water using de-watering pumps from water logged areas as an when required for execution and to facilitate erection & commissioning including provision of delivery pipe up to 150 m etc. all complete as per site condition and instruction of engineer	KL	700	0.00012273
M2	Supply & engagement of manpower for cleaning and house keeping with all equipments, T&P etc. from various floor of power house and other buildings, boiler, ESP, mill area, etc. and stacking at designated place at 0.0 m with a lead of 100 m. as per instruction of engineer.			
M2.1	Unskilled manpower	MAN-DAY	500	0.00037313
M2.2	Semi-skilled	MAN-DAY	100	0.00008753
M3	Removal and disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other waste materials, slush, etc. from project site to a designated place within 5 km range, with all manpower, T&P, etc. including collection, loading and unloading as directed by BHEL engineer.			
M3.1	Steel materials	MT	5	0.00000306
M3.2	Wood/cable scrap materials	CUM	25	0.00002288
M3.3	Debris & other waste materials	CUM	50	0.00000576
M3.4	Slush removal	CUM	100	0.00001151
	TOTAL			0.97469093

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

**JOB: CIVIL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP,
JHARKHAND.**

TENDER NO. PSER:SCT:NKP-C1974:19

SCH-4-SUPPLY PART

ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
702S	Supply, Fabrication, transportation, delivery at site mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	35	0.00263480
	TOTAL			0.00263480

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JHARKHAND.

TENDER NO. PSER:SCT:NKP-C1974:19

SCH-5 -LEVELING GRADING

ST. NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	WEIGHTAGE
1	Earth work in stripping of top soil upto a maximum depth of 0.30m below natural ground level so as to exclude all debris, grass, vegetation including uprooting of plants and disposal within a lead of 1km etc.	SQM	17,000	0.00113962
2	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km in all types of soil including ash, laterite, moorum etc all complete as per drawing, specification and as directed by the Engineer-in-Charge.	CUM	50,000	0.01062463
3	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km in soft rock (rock without any recovery of excavated materials in 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 as approved by engineer.	CUM	5,000	0.00125978
3A	Earth work in excavation upto any depth for levelling and grading and disposal within a lead of 1km in hard rock including blasting/controlled blasting and/or chiselling, wedging, line drilling, pre shearing or any other means including supply, storage, handling of blasting materials etc without damaging the existing structures and as approved by engineer.	CUM	500	0.00020996
4	Extra over ST No.1 and 103 to 3A for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.			
a	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	70,000	0.00070831
5	Earth work in filling for levelling & grading using selected excavated earth (obtained from compulsory excavation inside the project site) on prepared surface obtained by compacting with mechanical means including setting out, filling in horizontal layers not exceeding 300mm compacted thickness, spreading, sorting, breaking clods, watering, compaction with proper moisture content to achieve a minimum 95% of maximum dry density (standard Proctor density), dewatering (if required), testing, approaches, finishing to required lines, grades and slopes, levelling etc complete as per specification, drawing and as directed by the engineer.	CUM	13,000	0.00317347

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

**JOB: CIVIL, STRUCTURAL AND ARCHITECTURAL WORKS ETC. OF FGD SYSTEM PKG FOR 3X660 MW NORTH KARANPURA STPP,
JHARKHAND.**

TENDER NO. PSER:SCT:NKP-C1974:19

SCH-5 -LEVELING GRADING

ST. NO	DESCRIPTION OF ITEM	UNIT	QUANTITY	WEIGHTAGE
6	Earth work in filling for levelling & grading using borrowed good earth (borrowed good earth to be arranged by the contractor at his own cost) on prepared surface obtained by compacting with mechanical means including setting out, filling in horizontal layers not exceeding 300mm compacted thickness, spreading, sorting, breaking clods, watering, compaction with proper moisture content to achieve a minimum 95% of maximum dry density (standard Proctor density), dewatering (if required), testing, approaches, finishing to required lines, grades and slopes, levelling etc complete as per specification, drawing and as directed by the engineer.	CUM	1,500	0.00090309
7	Providing, stacking and laying 300mm thick boulder pitching with caulking and pointing with cement sand mortar (1:4) on the slopes of earth fill/cut with approved quality of rock fragments.	CUM	500	0.001511
8	Providing, stacking and laying 300mm thick hand placed rip-rap (with average weight of stone=25kg) on the slopes of earth fill/cut with approved quality of rock fragments.	CUM	500	0.00146474
9	Providing, stacking and laying 150mm thick layer of graded course aggregate in slope, which shall act like filter as per specification, drawing and instructions of engineer in charge with approved quality of rock fragments.	CUM	250	0.00098045
10	Providing, stacking and laying 150mm thick layer of graded sand in slope including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any, which shall act like filter and including all leads and lifts etc all complete as per specification, drawing and instructions of engineer in charge with approved quality and gradation of sand.	CUM	250	0.00028448
11	Providing random rubble (RR) stone masonry in foundation, super structure, boundary wall, retaining wall and embankment with cement mortar 1:6 at all elevations including all labour, material, equipment, handling, scaffolding etc. all complete. [MSR ST No. 1831]	CUM	100	0.00041474
TOTAL				0.022674270