



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN – 03**

Ref: PSER:SCT: RKL-C1755:TCN-03

Date: 25-07-2016

| Sub | <b>Tender Change Notice (TCN) - 03</b>   |   |
|-----|--|---|
| Job | Main Plant Civil & Structural work including Misc Building. Road work, Levelling & Grading, Fire Fighting, Cooling Tower (IDCT), AHP, Boundary wall and Misc Foundations/ Structures at 1x250 MW Rourkela PP-II Expansion, Odisha. |   |
| Ref | 1.0  | TENDER NO. PSER:SCT: RKL-C1755:16.  |
|     | 2.0  | BHEL's NIT, vide reference no PSER:SCT: RKL-C1755:5080, Dated 18-06-2016.     |
|     | 3.0  | BHEL's TCN-01, vide reference no PSER:SCT: RKL-C1755:TCN-01, Dated 30-06-2016 |
|     | 4.0  | BHEL's TCN-02, vide reference no PSER:SCT: RKL-C1755:TCN-02, Dated 05-07-2016 |
|     | 5.0  | All other pertinent issues till date.   |

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

1. Pre –Bid Clarification is attached vide **Annexure-A to TCN-03**.
2. Revision/ Modification to TCC clauses is attached vide **Annexure-B to TCN-03**.
3. Due date of offer submission is extended from 26-07-2016 to **02-08-2016** (15=00 Hrs). Bidders are requested to submit their offer by extended due date positively.
4. Technical Specification for "CIVIL, STRUCTURAL, ARCHITECTURAL & INSULATION & REFRACTORY"- **Section-VI** is attached.
5. Revised BOQ cum price schedule, **VOLUME-III-PRICE SCHEDULE, REV-02** is attached **superseding VOLUME-III PRICE SCHEDULE, REV-01** issued earlier. Bidder shall quote as per this revised Volume-III, Rev-02 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 (**VOLUME-III- PRICE SCHEDULE, REV-02**).  
**Any other document uploaded in the price section other than Price schedule issued alongwith Tender/TCN shall not be taken into cognizance.**  
(For uploading Revised/Latest price schedule format in E-procurement Portal, contact Mjunction.)
6. Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
7. All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

SR.ENGR (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/ 2339 8236

**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 | Main Plant Civil & Structural work including Misc Building. Road work, Levelling & Grading, Fire Fighting, Cooling Tower (IDCT), AHP, Boundary wall and Misc Foundations/ Structures at 1x250 MW Rourkela PP-II Expansion, Odisha. |   |
| Ref | 1.0  | Tender no PSER:SCT:RKL-C1755:16.  |
|     | 2.0  | BHEL's NIT, vide reference no PSER:SCT:RKL-C1755:5080 Date:18-06-2016         |
|     | 3.0  | BHEL's TCN-01, vide reference no PSER:SCT: RKL-C1755:TCN-01, Dated 30-06-2016 |
|     | 4.0  | BHEL's TCN-02, vide reference no PSER:SCT: RKL-C1755:TCN-02, Dated 05-07-2016 |
|     | 5.0  | BHEL's TCN-03, vide reference no PSER:SCT: RKL-C1755:TCN-03, Dated 25-07-2016 |
|     | 6.0  | 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 : 2339-8000/ 2339-8236

| ANNEXURE-A TO TCN-03   |  |  |   |  |
|--|--|--|---|--|
| JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA. |  |  |   |  |
| TENDER NO. PSER:SCT: RKL-C1755:16.   |  |  |   |  |
| CLARIFICATION OF BIDDERS' PRE-BID QUERIES  |  |  |   |  |
| SL NO  | REFERENCE CLAUSE OF TENDER DOCUMENT            | EXISTING PROVISION   | BIDDER'S QUERY  | BHEL'S CLARIFICATION   |
| 1  | ST-100   | Earthwork  | Soil Investigation report alongwith Bore Log Data for the area of BTG, BOP, AHP & IDCT may please be provided to know the sub-soil strata alongwith ground water table. Please confirm.   | A soil investigation report(conducted by customer) is being attached for reference purpose only.   |
| 2  | ST-A101  | Pipe encasing  | Please clarify "the CT area" as mentioned in the description.   | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 3  | ST-A101, 103, 104, 105 & 106                   | Earthwork in Excavation  | a) These items shall be excluding the cost of special type of dewatering i.e. will point method etc. Please confirm.<br>b) Sheet piling (if required) will be paid extra in the relevant items of BOQ. Please confirm.                                  | ST A101 item deleted.<br>No separate payment shall be made against Item 103,104,105 & 106 for any type of dewatering and sheet piling.   |
| 4  | ST-204(a) & (b)                                | Concrete under Floors  | Cost of Plasticizer/super-Plasticizer to be included in item. Please confirm.   | Item 204a deleted.<br>Cost of Plasticizer/super-Plasticizer are included in item no 204(b).  |
| 5  | ST-214   | RCC in Water retaining/conveying structures.   | a) Any grouting work for water tightness, if required, will be paid separately. Please confirm.<br>b) Please specify whether any circular overhead reservoir supported on column-beam structure system is in the scope of work or not. Please confirm.  | a) No separate payment will be made if any grouting will be required in water retaining/conveying structure for water tightness..<br>b) Circular overhead reservoir supported on column -beam structure is not in the scope of work against this tender. |
| 6  | ST-208   | RCC in top deck  | UPV Testing for concrete will be paid separately in the relevant item. Please confirm.  | No separate payment will be made for UPV testing.  |
| 7  | ST-221   | Concrete in Canal lining   | Necessary shuttering & reinforcement will be paid in the relevant items of BOQ. - Please confirm.   | Yes . Shuttering and reinforcement will be paid in the relevant items of the BOQ.  |
| 8  | ST-305   | Form work in circular surfaces   | Slip-form arrangements not included in this item. Please confirm.   | Shall be as description of the item.   |
| 9  | ST-A305  | Slip Form for Silos  | Please provide the height of Silo to be constructed.  | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 10   | ST-B501  | Screed Concrete  | Please provide the maximum thickness of concrete at highest point.  | Shall be as per design requirement of the building/structure.  |
| 11   | ST-508 & A-508                                 | Concrete Flooring Tiles  | * Cement for bed mortar will be free supply by BHEL. Please confirm.<br><br>* Please specify whether cost of filling joints of tiles with silicon / elastomeric sealant to be included or not.  | Cement will be supplied by BHEL as per TCC.<br><br>Cost of filling of Joint in between tiles with silicon/elastomeric sealant is included with this item. No separate payment will be made for the above work.   |
| 12   | ST-605   | Silicon Sealant 25x25 mm / 50x25 mm  | Please specify the location of work where it will be applied. Quantity of items also appear high.   | It is required to fill the expansion joint of the structures.  |
| 13   | ST-801, 802, 803, 804                          | Grouting   | Cement will be free supply by BHEL .Please confirm.   | BHEL will supply cement free of cost as per TCC for the items 801, 802 & 803   |
| 14   | ST-914   | PVC Door   | Please specify whether PVC Door frame is included in the item or not.   | PVC door frame is included in the item.  |
| 15   | ST-A914  | FRP-doors  | Quantity appears in Service & Supply Part of BOQ are not matching. - Please clarify.  | Refer revised Price Schedule (Rev-02)  |
| 16   | ST-920   | Sky light structure  | Necessary structure will be paid separately. - Please confirm.  | Necessary main steel structure will be paid separately as per relevant item of BOQ.  |
| 17   | ST-1205 & 1206                                 | Plaster  | Please provide the ratio of Cement sand mortar.   | Item no 1205- Cement mortar 1:6 is to be provided.<br>Item No. 1206 has been deleted.  |
| 18   | ST-1303, 1304, 1305, A-1305 & B-1305           | Different Types of Painting  | Cost of Plaster of Paris/Wall Putty, if required, is not included for these items. Please confirm.  | Plaster of Paris is a separate item no.1312 for main POP job. However, for any rectification is required with POP during completion of job ,no separate payment shall be made for POP work.  |
| 19   | ST-A1318 & A-1319                              | Coating with Bitumen   | Please provide the grade of Bitumen to be used and nos of layer are required with consumption of Bitumen per Sq. M.   | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 20   | ST-1401, 1402, A-1437, A-1438, A-1439 & A-1440 | H.D Cement Concrete Flooring   | Please specify whether cost of Glass Joint Strips are included in items or not.   | Glass strip is included for the item no. 1401 .<br>Aluminium strip is included for the item no. A1401 .<br>Item Nos. A1437,A1438,A1439 & A1440 deleted from price schedule. Refer revised Price Schedule (Rev-02)  |
| 21   | ST-1429  | Removable type flooring system   | Please specify the Height of flooring system.   | Height of the floor is generally 600mm but it may be vary based of detailed engineering finalised during execution   |
| 22   | ST-1431  | Wooden Panel Flooring  | Please provide us the detailed description of this item.  | It will be provided during execution/ detail engineering.  |
| 23   | ST-A-1435 & A-1436                             | Pre-cast terrazzo tiles  | Please provide the ratio of Cement mortar base.   | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 24   | ST-1443  | Stone Pitching   | Please provide the thickness of stone pitching.   | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 25   | ST-1601(b)                                     | GRG-board  | Please specify who will supply the materials for this item as this item are not mentioned in supply part of BOQ.  | supply of material against this item is in bidder's scope. Refer revised Price Schedule (Rev-02)   |
| 26   | ST-1603  | Aluminium false Ceiling  | It is found that "Supplying and fixing" are appearing in both Service & Supply Part of BOQ. - Please clarify.   | Refer revised Price Schedule (Rev-02)  |
| 27   | ST-1606  | Gypsum board   | Fixing' is mentioned in item description of supply part. - Please clarify.  | Refer revised Price Schedule (Rev-02)  |
| 28   | ST-1813 & 1814                                 | Earthing pit   | Schematic drawings for earthing pit etc. may please be provided.  | It will be provided during execution/ detail engineering.  |
| 29   | ST-1826  | Pebbles/Gravels of 40 mm size  | 40 mm size stones aggregate will be used in this item in stead of pebbles/Gravels. Please confirm.<br>Otherwise, this item may be deleted as there is same type of item no ST-1825 in the price schedule.   | ST 1825 & 1826 are not same items. However, it may be used in transformer yard.  |
| 30   | ST-1850  | Shuttering/ Sheet Piling   | Please provide the necessary drawing as the unit of measurement is L.S.   | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 31   | ST-2406  | WBM Base Course  | Please specify who will supply the material for this item.  | Material shall be supplied by the bidder.<br>Bidders are requested to quote accordingly.   |
| 32   | ST-2418 & A-2418                               | Cement Concrete  | These items will be operated in concrete Road/ Pavement in panel. - Please confirm.   | Yes.   |
| 33   | ST-2423  | Bitumen impregnated fibre board  | Please provide the thickness and width / depth of Bitumen impregnated fibre board.  | Thickness of bitumen impregnated fibre board shall be 25mm and measuring unit shall be SQM (square metre) instead of RM (Running metre).   |
| 34   | ST-2426  | Paver Block  | Please provide the grade of concrete of paver block.  | Provided in the latest BOQ as Item A2426   |
| 35   | ST-2430  | Form Work  | Please specify where this item will be operated.  | Item A2430 deleted. Refer revised Price Schedule (Rev-02)  |
| 36   | ST-A-2601                                      | Grading of Ground  | a) Please mention the average thickness of earth to be graded.<br>b) Area of disposal of debris will be within plant premises.  | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 37   | ST-2610  | Carriage   | ST no. mentioned in item description are not matching with BOQ. Please confirm.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 38   | Cl.No. 06 of TCC                               | Land for Batching Plant, Cement Godown, Material Stock Yard, Site Office, Labour Colony etc. | Adequate levelled land for Batching Plant, Cement Godown, Material Stock Yard, Site Office, Labour Colony etc. shall be provided within Plant premises of NSPCL by BHEL free of cost. - Please confirm.   | Shall be as per TCC.   |
| 39   | Cl.No.-30.0 of TCC                             | Mobilisation Advance/Interest Bearing Recoverable Advance.                                   | Interest Bearing Mobilisation Advance @ 5% (five percent) of the awarded contract value may please be allowed against submission of Bank Guarantee (110%). Please confirm.  | Shall be as per tender provision.  |
| 40   | CL.No.37 of TCC                                | Price Verification Clause (PVC)  | Beyond contractual completion period (i.e. 26 months), if the work is being executed in extended time period (for reasons not attributable to contractor), then PVC clause will be applicable for both Sch-2 & Sch-3 of Price Schedule. Please confirm. | PVC will be applicable only for sch-2 of Price Scheule beyond contractual completion period (i.e. 26 months), provided the reasons for the delay is not attributable to the vendor.  |
| 41   | Sl.No.22 of Preamble of Price Schedule         | Freight charges  | In Price Schedule format there is no space to quote/indicate the price towards freight charges. Please clarify.   | All inclusive price including freight is to be quoted by the bidder .  |

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|-------|---|--|---|--|
| 42    |   | General                                | It is observed during site visit that huge quantity of medium / big trees are found in the proposed construction site. Necessary approval from the competent authority will be obtained by BHEL for cutting the trees. - Please confirm.  | Necessary approval for cutting of those trees will be provided by BHEL/Customer.   |
| 43    | General   | Price Schedule                         | Soft copy of Price Schedule in Excel Format may please be provided.   | Price Schedule in Excel Format is available in E-Procurement site,   |
| 44    | General   | Site Layout Plan                       | Please provide the site Layout Plan drawings alongwith BHEL's recommended Logistic Plan for site infrastructural/site mobilization work shown on it.  | Plot Plan drawing attached for reference purpose only.   |
| 45    | General   | Submission of Bid                      | Since the tender comprises of multidisciplinary works involving various bought-out items, detail site investigation and market survey on present condition etc., we need some more time for preparation of our competitive offer. Moreover, we need reasonable time after getting all clarifications from your end towards our queries for incorporation of the same in our offer.<br><br>In view of above, we request you to kindly extend the date of submission upto 21-07-2016. | Due date of offer submission is extended upto <b>02-08-2016</b> .  |
| 46    | NIT- cis. No.1.v                                    | Due Date & Time                        | We would request to extend the tender submission date upto 25.07.2016   | Due date of offer submission is extended upto <b>02-08-2016</b> .  |
| 47    | NIT- Cis, No.1A-vi to xii                           | Submission of Tender                   | Are we required to submit signed and again scanned copy of Total Tender document again or a statement mentioning all these can be included?   | Digitally signed and stamped tender documents acceptable, however signed and stamped scanned copy of credentials is to be uploaded by the bidder with their offer. |
| 48    | NIT- ANNEX-1  | Pre-qualification criteria - Note      | Please confirm whether "Notarized copy of Financial statement given by Certified Chartered Accountant giving all the particulars" will be acceptable or we have to submit Balance sheet f1f for 3 years. There may be a space problem for online submission.  | Balance sheets & profit & loss account sheets of three (3) financial years shall be submitted by the bidder as per tender provision.                               |
| 49    | SCC - cis. No.1.7.5                                 | Repair and Rectification               | It should be limited to the faulty workmanship of Contractor.   | Shall be as per tender provision   |
| 50    | SCC-cis. No.1.7.6 & cis. No.6.2.2                   | Preservation , Reconservation.         | All consumable like oil, lubricant, paint, to be supplied by BHEL free of cost.   | Shall be as per tender provision   |
| 51    | SCC-Cis. No.4.2.2.17.d                              | Construction Lift/ Elevator            | We would request you to provide weight of Lift/Elevator and Foundation requirement so that we can build up the erection cost in our quoted price. Supply of Lift/Elevator will be provided by BHEL free of cost.  | Shall be as per tender provision   |
| 52    | SCC-Cis. No.5.8                                     | ESI                                    | Since the project will come up in a separate area with new boundary wall we presume this will be deemed to be a green field project , hence ESI Act will not be applicable.   | Shall be as per tender provision   |
| 53    | sec - cis no.8.3.3                                  | Qualification test of Welders          | BHEL shall supply all the required test pieces of similar material ( pipe/ tube/ plate) for carrying out welders' test at site.   | Shall be as per tender provision   |
| 54    | SCC-Cis. No.8.3.4                                   | Inspection of Boiler Inspectorate      | Arranging of visit and payment of visit to Boiler Inspectorate are to be done by BHEL as principal contractor, however Contractor will assist during the Inspection and also for certification of work by Boiler Inspector. However, certification of health of the supplied equipment/ component prior to Erection is totally excluded from the scope of Contractor.   | Shall be as per tender provision   |
| 55    | sec- Cis. No.10.5                                   | Payment of Running Bills               | We would request you to consider payment 60% of running bills for all the category of the job within 15 days of submission as you have considered for Civil work.   | Shall be as per tender provision   |
| 56    | TC cis No. 7.3                                      | Drinking water at Labour colony        | We would request you to provide drinking water to our labour colony on chargeable basis.  | Shall be as per tender provision   |
| 57    | TC cis no. 13.21,13.22                              | Payment towards Accidental injury etc. | This will be provided as per settlement of Workmen Compensation Policy of Insurance.  | Shall be as per tender provision   |
| 58    | TC cis. No. 20.4 & 20.6                             | Wastage excl invisible wastage         | We request you to consider :Wastage for Reinforcement steel - 4% Structural Steel - 5%  | Shall be as per tender provision   |
| 59    | TC Cis No. 27                                       | Mobilisation Period                    | Mobilisation period (for constn of Office, Store, civil laboratory and Labour Hutment) shall be 45 days to start the work. Mobilisation of Eqpt will be as per the dates given in the tender  | Shall be as per tender provision   |
| 60    | TC - cis No. 30                                     | Mobilisation Advance                   | We would request you to pay 10% of Total Value as Recoverable interest bearing Mobilisation Advance against submission of Bank Guarantee of Equivalent amount . Bank Guarantee will be valid till completion period.  | Shall be as per tender provision   |
| 61    | TC Cis No. 35.7                                     | Service Tax on Free issue material     | For computing Service Tax on Free issue materials BHEL to indicate value of FIM consignments wise. Service Tax on FIM also to be on BHEL account.   | Yes  |
| 62    | TC cis. no. 35.8                                    | Entry Tax -last para                   | Karanpura appearing in the clause shall be replaced by Rourkela.  | Refer Annexure-B -Revision / modification to TCC clauses   |
| 63    | TC- Cis No. 36.1                                    | Interim Payment against supply         | We would request you to make the first 95% payment as follows:<br>i) 65% against procurement of material against documentary evidence<br>ii) 30% against fabrication and dispatch to site.  | Shall be as per tender provision   |
| 64    | TC cis no. 38                                       | Over-run charges                       | ORC as per cis. no. 3 of Ammendment to GCC -Annexure A shall be applicable  | Shall be as per tender provision   |
| 65    | TC- Cis. No. 37.1.1 and 37.2                        | Price Variation clause                 | Since this is Contract for 26 months , we would request you to consider Price Variation clause against supply and services from after 12 months of LOI and to allow to give a Star price against cost of steel to be procured by Contractor beyond which it will be escalable as per SAIL Price.  | Shall be as per tender provision   |
| 66    | TC- cis 43.1  | Structural steel work                  | Bolt nut as required for erection will be supplied by BHEL , from the stock of items supplied under supply category   | Shall be as per tender provision   |
| 67    | TCC   | List of Approved Supplier              | Contractor should be allowed to submit and get approval from BHEL/Owner for other Supplier also.  | Contractor should be allowed to submit and get approval from BHEL/Owner for all the supply item.   |
| 68    | Preamble of Schedule of Rates - SI. No.8            |  | Since the percentage have been derived by you and we are not allowed to give individual percentage of each item. After finalization of Total Price, it is further divided between Supply and Service portion based on cash outflow. Hence question of acceptance of your clause of minimum rate of individual items does not arise.   | SI no 8 of Preamble is not applicable for this tender  |
| 69    | Preamble of Schedule of Rates - SI. No. 10, 15 & 22 |  | These clauses are not applicable for this tender.   | SI no 15 & 22 of Preamble are not applicable for this tender. However si no 10 shall be applicable.  |
| 70    | Supply items item No. 2301 of SCH-3                 |  | Bunker and Silo are to be fabricated at site from free issue material as per item No.2301 of SCH-2 hence fabrication of Bunker & Silo are to be deleted from SCH-3.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 71    | BOQ A206, A207,8207                                 | Vibration isolator system              | It is presumed that VIS will be supplied by BHEL free of cost against supply item no.1804   | VIS will be supplied by BHEL free of cost as per TCC   |
| 72    | BOQ A221  | Pavement work                          | It is presumed that Reinforcement steel will be supplied by BHEL free of cost at site.  | Reinforcement steel will be supplied by BHEL free of cost as per TCC   |
| 73    | BOQ item B1002a                                     | Brickwork with 2 Hr fire rating        | Please confirm whether Fire Brick required for this item or Fly Ash Lime Brick to be used.  | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 74    | BOQ ST 1003   | 115 mm thick brickwork                 | It is presumed that 6 mm dia MS bar will be issued by BHEL on free issue basis.   | Payment will be made separately for Supply and fixing of MS bar as per relevant items of BOQ.  |

| SL NO | REFERENCE CLAUSE OF TENDER DOCUMENT  | EXISTING PROVISION  | BIDDER'S QUERY  | BHEL'S CLARIFICATION   |
|-------|--|---|---|--|
| 75    | BOQ item A1851   | Supplying 3 Tier Racking system in store  | Tech spec section -VI, Vol-11 F Bid Doc No. CC&M-C-347-211, Civil-Section 1 (Tech Spec) Page 103 of 117 not given with the tender. Without detail specification and drawing it is not possible to quote a lumpsum price.  | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 76    | BOQ item No. 1850  | Supplying special arrangement in form of shuttering and sheet piling  | Detail specification with drawing required for submitting a lumpsum price.  | Item deleted. Refer revised Price Schedule (Rev-02)  |
| 77    | NIT -Cis no. 18  | Reverse Auction   | Since this tender to be submitted online in your e-procurement platform, please confirm whether reverse auction bidding will be conducted as we have not come across reverse auction bidding in any government tender which are submitted through on line e-procurement bidding. Purpose of submitting a tender through e-procurement portal is not required to go through reverse bidding auction.   | Shall be as per tender provision   |
| 78    | BOQ – SERVICE A2320  | GI Hand rail  | Please confirm the following:<br>a) Material supply by whom , if it is by Contractor then the rates to be checked at your end.<br>b) Whether painting is required, if so what is the painting specification or if further galvanization is required.  | a) Shall be as per revised Rate Schedule.<br>b) No painting is required. Galvanization shall be as per BOQ & specification.                |
| 79    | BOQ – SERVICE A2319<br>Supply 2319   | SS Hand rail  | What is the grade of Stainless steel required.  | Stainless steel grade shall be item no 304. For detail specification refer Page no 29 of 37, Technical specification section-VI, Vol-II F. |
| 80    | BOQ – SERVICE A2315<br>Supply A2315  | SS Liner  | As per Tech specification cls. No. 17.1 it is free issue. But in Supply section it is to be supplied by Contractor. Please confirm  | SS shall be supplied by BHEL free of cost. Refer revised price schedule Rev-02.  |
| 81    | BOQ – SERVICE A2308<br>Supply A2308  | Cheqd Plate/ Welded grating   | In supply portion it is mentioned as Galvanised welded grating unit but in Service part it is mentioned as Factory made chequered plate with 2 coats of primer – please confirm which one is correct. Rates also to be incorporated accordingly.  | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 82    | BOQ – SERVICE A2302  | Primer painting   | You have mentioned Extra over ST No 2301- but there is no painting against item no. st2301. The rates considered by you also seems to be by deduction from st2301.  | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 83    | BOQ – SERVICE A2301  | Fabrication and Erection of Coal Bunker   | No primer painting included. Please indicate the Plate thickness of Bunker.   | Primer painting included in item No. 2302/A2302. Refer Revised Price schedule Rev-02 for bunker plate thickness.                           |
| 84    | BOQ – SERVICE A1511<br>Supply A1511  | Prefabricated sandwiched Panel  | Rates for both supply and services are to be checked at your end.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 85    | BOQ – SERVICE A1509  | Supply and fixing of PVC sheet similar to ONDEX roofing   | Please mention thickness of the sheet. Please also check whether supply cost is included in this item as there is no supply item.   | Thickness shall be 5.0mm. Supply cost included in this item  |
| 86    | BOQ – SERVICE & SUPPLY ST 1603   | Supplying and fixing permanently colour coated aluminium false ceiling.....   | Item nomenclature of both SCH2 (Service) & SCH 3 (Supply) are same. Please clarify.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 87    | BOQ – SERVICE & SUPPLY ST A1607  | Supplying and fixing cement bonded particle board false ceiling .....   | Item nomenclature of both SCH2 (Service) & SCH 3 (Supply) are same. Please clarify.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 88    | BOQ – SERVICE & SUPPLY ST 1708   | Supplying and fixing HDPE down take pipes   | Item nomenclature of both SCH2 (Service) & SCH 3 (Supply) are same. Please clarify.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 89    | BOQ – SERVICE ST A106  | Supplying and driving sheet piling upto all depths.....   | Kindly specify the depth of sheet piling.   | Price schedule has been revised. Refer revised Price Schedule (Rev-02).  |
| 90    | TCC Cl. No. 17   | BHEL free issue material (Structural steel)   | Kindly clarify the scope of supply of material for BOQ item no. 2301(Supply) Total firm price for procurement of required .....   | Supply of material (Structural steel etc.) is included in this item  |
| 91    | TCC Cl. No. 17   | BHEL free issue Material for SS liners  | Kindly clarify the scope of supply of material for BOQ item no. A2315 (Supply) Supplying of minimum 6mm thick stainless steel liner of grade SS:304   | Supply is by BHEL. Item deleted.   |
| 92    | TCC Cl. No. 8  | Construction power  | It is requested to provide construction power at 2 points free of cost.   | Construction power shall be provided at two points by BHEL free of cost within the project premises.                                       |
| 93    | TCC Cl. No. 7  | Construction water  | It is requested to provide construction water at 2 points free of cost.   | Construction water shall be provided at one point by BHEL free of cost within the project premises. Please refer Annexure-B on this.       |
| 94    | TCC Cl. No.6   | Open space for labour colony  | It is requested to provide land for labour colony free of cost.   | BHEL will not provided hard surfacing land for bidder's office, canteen etc.   |
| 95    | TCC Cl. No.17.12   | Land for storage and fabrication yard   | It is requested to provide hard surfacing land for storage of material, office building, canteen  | Due date of offer submission is extended upto 02-08-2016.  |
| 96    | General  | Date of submission  | It is requested to extend the bid submission date up to 23/7/2016.  | DDS of bid extended up to <b>02.08.2016</b>  |
| 97    | TCC Cl. No.37  | Price Variation   | It is requested to allow price variation throughout the contract period and extended period for, labour, HSDO and other material for both supply & services   | shall be as per tender provision.  |
| 98    | TCC Cl. No.30  | Advance for Mobilization  | It is requested to release Mobilization advance 5 % on acceptance of LOI fee of cost  | shall be as per tender provision.  |
| 99    | General  | Tender Drawings   | It is requested to provide the tender drawings.   | Required tender drawings are attached with this clarification  |
| 100   | General  | BOQ Weightage   | It has been observed that the percentage weightage of items are unbalanced which makes the rate of items either high or low therefore it is requested to withdraw the percentage weightage or review on the basis of market rate evaluation.  | It has been prepared as per our estimate. There is no question of change this format of price schedule.                                    |
| 101   | TCC Cl. No.27  | Time schedule   | Taking into account the scope of work for this package, it is requested to consider minimum 32 months as completion period.   | shall be as per tender provision.  |
| 102   | -  | -   | We are a company incorporated in the Sultanate of Oman. Kindly let us know whether Foreign Company like us can participate in this Tender.  | Bidders complying all the PQ criteria can participate in this tender..   |
| 103   | Pre-Qualification Criteria-Annexure I – S.L. No 1, 2.1, 2.2, 2.2.1, 2.2.3. | Please refer your document.   | WJ Towel Group comprises of several companies catering to different disciplines in Engineering & Construction industries. UNISCO is handling Fabrication works & TIPCO is handling Civil works. UNISCO's credentials alone are sufficient to meet the Prequalification Criteria Sl. No 1, 2.1, 2.2, 2.2.3 & TIPCO credentials are meeting Sl. No 2.2.1. Since we operate under the same umbrella company, kindly let us know whether BHEL will consider us as a single entity and thus a Single Prime Bidder for this tender. Please clarify. | BHEL shall evaluate the credentials of the bidder who submits the quotation for the tendered work.   |
| 104   | Pre-Qualification Criteria-Annexure I – In Sl. No 2.2.2                    | Completion & Hand over of STG Deck of One unit of atleast 100 MW or above for mechanical erection.  | UNISCO has enough mechanical erection experience to take mentioned scope of work. Enclosed our experience for your review. We hope attached experience list can meet your criteria. Besides, our group company TESCO has experience in O&M work of GTG and overhauling of GTG plant. For your comments please.  | BHEL is unable to comment before review of the bid/credentials submitted with the offer.   |
| 105   | Pre-Qualification Criteria-Annexure I – In Sl. No 2.2.4                    | Completion of fabrication & erection of mill bunker structure including fabrication of bunker shell of atleast one unit of 100 MW or above. | We have fabricated and erected heavy structures to different plants. For your kind reference, we have supplied more than 1.5 lac MT Structural components and erected more than 50,000 MT of components like Pressure Vessels, Tanks, Hoppers, Pipe Spools, Chimney, stacks, Hoppers, Silos etc. Enclosed our experience for view. We hope attached our experience list can meet your criteria. For your comments please.   | BHEL is unable to comment before review of the bid/credentials submitted with the offer.   |
| 106   | -  | -   | Whether subletting is allowed for this contract. If allowed, whether we need to declare subcontractors name during our offer submission. For your kind information, we want to utilize our Indian operations - TEIL for this job.   | Shall be as per tender   |

| SL NO | REFERENCE CLAUSE OF TENDER DOCUMENT   | EXISTING PROVISION   | BIDDER'S QUERY   | BHEL'S CLARIFICATION   |
|-------|---|--|--|--|
| 107   | PSER:SCT:RKL-C1755:5080. – Point No: 1.0. Salient Features of NIT – Sl. No VIII | Cost of tender: 10,000   | In BHEL website, document value is not mentioned. But in indicated document, tender value is mentioned. Please clarify whether cost of tender is applicable for this tender. Please clarify. | Tender Cost applicable as per NIT  |
| 108   | PSER:SCT:RKL-C1755:5080. – Point No: 1.0. Salient Features of NIT – Sl. No v    | Due date and Time of offer submission: Date: 09-07-2016 time: 15.00 hrs. | Considering the quantum of work to prepare our tender document, we request you to kindly extend the tender submission due date by 3 weeks.   | Due date of offer submission is extended upto 02-08-2016.  |
| 109   | --  | Start date of the tender   | --   | Start Date of tender shall be read as 18-06-2016.  |
| 110   | NIT dated 18-06-2016  | Assessment of Capacity of Bidders  | --   | "Performance evaluation in CL 9" written in Point f) of IV –Explanatory note under Clause no. 8.0- Assessment of Capacity of Bidders of NIT shall be read as "Performance evaluation in CL 8". Bidders are also requested to note that Assessment of Capacity of Bidder referring Clause No 9 anywhere in tender shall be read as Clause No 8. |

**ANNEXURE-B TO TCN-03**

**JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING. ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO. PSER:SCT: RKL-C1755:16.**

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| <b>Sl. No.</b> | <b>Clause ref. No. &amp; Page</b> | <b>Existing clause</b>   | <b>Revised clause</b>  |                                   |
|----------------|-----------------------------------|--|--|-----------------------------------|
| 1              | 7.1                               | Till such time, Construction water facility is not ready, the contractor has to make his own arrangement for construction water.   | BHEL will provide construction as well as drinking water at one point each, within 1000 m from given work premises, free of cost to the contractor.  |                                   |
| 2              | 13                                | <b>WORK &amp; SAFETY REGULATIONS</b>   | <b>HEALTH, SAFETY &amp; ENVIRONMENT</b>  |                                   |
| 3              | 13.1                              | The contractor shall ensure the safety of all workmen, materials and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by the owner/ BHEL at site without exception. | <b>REFER DOCUMENT NUMBER ; HSEP:14: DATED:11.03.2016 AND ADDENDUM 1 DATED 08.07.2016</b>   |                                   |
| 4              | 13.2                              | Non-conformity of safety rules and safety appliances will be viewed seriously and BHEL has right to impose fines on the contractor on each incident/ each non-conformity as per details given below.                               | It is imperative on the part of the contractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc. |                                   |
|                |                                   | <b>Safety Measure</b>  |  | <b>Fine ( Rs.)</b>                |
|                |                                   | Not wearing safety helmet.   |  | 25/workmen                        |
|                |                                   | Not wearing safety Shoe  |  | 25/workmen                        |
|                |                                   | Not wearing safety belt.   |  | 50/workmen                        |
|                |                                   | Grinding without goggles.  |  | 50/workmen                        |
|                |                                   | Gas cutting without goggles  |  | 50/workmen                        |
|                |                                   | Not using 24V supply for internal work.  |  | 500/case                          |
|                |                                   | Electrical plugs not used for hand machines.   |  | 100/case                          |
|                |                                   | Welding cables, electrical wires using insulated with proper/ standard.  |  | 500/point                         |
|                |                                   | Not removing scrap from platform   |  | Actual cost for removal plus 30 % |
|                |                                   | Gas cutting without taking proper precaution/ not using sheet below per incidence.   |  | 100/case                          |
|                |                                   | Electrical winches having no guards earthed properly etc.  |  | 500/case                          |
|                |                                   | Improper earthing of electrical T&P. 200/equipment Not protecting/ locating the gas cylinder to avoid catching of fire.  |  | 100/cylinder                      |
|                |                                   | Not providing earth leakage circuit breaker as per direction of BHEL.  | 1000/point   |                                   |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| Sl. No. | Clause ref. No. & Page | Existing clause   | Revised clause   |
|---------|------------------------|---|--|
| 5       | 13.3                   | BHEL engineer on the above will be final and binding on the contractor. The amount will be deducted from running bills of the contractor. The amount collected on the above will be dispatch for giving award to the employee who could avoid accidents by following safety rules. Also, the amount will be spent for improving the safety at site.   | Round the clock experienced paramedical personnel with first aid facility & one ambulance including driver, fuel etc. at site to be arranged by you, at your own cost within 30 days of LOI or start of construction activity, whichever is earlier.<br>The above facilities will be shared by various other BHEL-agencies (contractors) working at site on chargeable basis (actual cost distributed among the BHEL E&C/BOP vendors, present at site, except chimney vendor, on pro rate basis i.e. proportionate to their contract value). The subject facility will have to be strengthened as per the requirement during peak work progress at site.<br>Cost to be shared will be variable with time based on the no. of vendors sharing the above facility at any period.<br>No medical facility within / near the site shall be provided by BHEL. However, BHEL/NSPCL may provide one room/Bunk house (without furniture) for use as first aid centre. |
| 6       | 13.4                   | Where it is necessary to provide and/ or store petroleum products or petroleum mixtures and explosives, the contractor shall be responsible for carrying-out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of BHEL/ NSPCL. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the contractor shall be responsible for obtaining the same. | No staff quarter shall be provided by BHEL.  |
| 7       | 13.5                   | All equipment used in construction by contractor shall meet Indian/ International Standards and where such standards do not exist, the contractor shall ensure these to be absolutely safe. All equipments shall be strictly operated and maintained in accordance with manufacturer's operation manual and safety instructions and as per guidelines/ rules of NSPCL in this regard.   | No borrow area for earth shall be arranged / provided by BHEL.   |
| 8       | 13.6                   | Periodical examinations and all tests for all lifting/ hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws/ Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as & when desired by BHEL/ NSPCL or by the person authorized by them.  | Common road shall be provided by BHEL free of cost, however, temporary approaches for erection/work spots under the scope of work, as required for movement of cranes, trailers, trucks, transit mixers, dumpers, etc. shall be arranged by the contractor at his own cost.  |
| 9       | 13.7                   | The contractor shall be fully responsible for the safe storage of his and BHEL subcontractor's radioactive sources in accordance with BARC/ DAE (Bhabha Atomic Research Center/ Department of Atomic Energy, Govt of India) Rules and other applicable provisions. All precautionary measures stipulated by BARC/ DAE in connection with use, contractor would take storage and handling of such material.  | The contractor shall solely be responsible for the safety, quality, & quantity of material after it is handed over and issued to contractor by the BHEL.   |
| 10      | 13.8                   | The contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by BHEL/ NSPCL who will also have right to examine these safety equip-ments to determine their suitability, reliability, acceptability and adaptability.   | DELETED  |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| <b>Sl. No.</b> | <b>Clause ref. No. &amp; Page</b> | <b>Existing clause</b>   | <b>Revised clause</b> |
|----------------|-----------------------------------|--|-----------------------|
| 11             | 13.9                              | The contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffold-ings etc. The scaffoldings shall be erected under the control & supervision of an experienced and compe-tent person. For construction, the contractor only shall use good and standard quality of material.  | DELETED               |
| 12             | 13.10                             | The contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to BHEL/ NSPCL or other contractors under any circum-stances, whatsoever, unless expressly permitted in writing by NSPCL to handle such fuses, wiring or elec-trical equipment.  | DELETED               |
| 13             | 13.11                             | Before the contractor connects any electrical appli-ances to any plug or socket belonging to the other contactor or BHEL/ NSPCL, he shall comply with following.   | DELETED               |
|                | 13.11.1                           | Satisfy the BHEL/ NSPCL that the appliance is in good working condition.   | DELETED               |
|                | 13.11.2                           | Inform the BHEL/ NSPCL of the maximum current rating, voltage and phases of the appliances.  | DELETED               |
|                | 13.11.3                           | Obtain permission of the BHEL/ NSPCL detailing the sockets to which the appliances may be connected.   | DELETED               |
| 14             | 13.12                             | BHEL/ NSPCL will not grant permission to connect until he is satisfied with following.   | DELETED               |
|                | 13.12.1                           | The appliance is in good condition and is fitted with suitable plug;   | DELETED               |
|                | 13.12.2                           | The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.  | DELETED               |
| 15             | 13.13                             | No electric cable in use by the contractor/ BHEL/ NSPCL will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.  | DELETED               |
| 16             | 13.13                             | I be submitted in requisite number of copies to BHEL/Owner /Contractor involved during the commissioning activities.Reports shallNo repair work shall be carried out on any live equip-ment. BHEL/NSPCL must declare the equipment safe and a permit to work shall be issued by the BHEL/NSPCL before the contractor carries out any repair work. While working on electric lines/equipments whether live or dead, suitable type and sufficient quantity of tools will have to be provided by contractor to electricians/workmen/officers. | DELETED               |
| 17             | 13.15                             | The contractors shall employ necessary number of quali-fied, full time Electricians/ Electrical Supervisors to maintain his temporary electrical installations.  | DELETED               |
| 18             | 13.16                             | In case any accident occurs during the construction or other associated activities undertaken by the contractor thereby causing any minor or major or fatal injury to his employees due to any reason, what-soever, it shall be the responsibility of the contractor to promptly inform the same to BHEL/ NSPCL in prescribed form and also to all the authorities envis-aged under the applicable laws.   | DELETED               |
| 19             | 13.17                             | BHEL/ NSPCL shall have the right at his sole discre-tion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipments. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury/ accident and he shall comply to remove shortcomings promptly.  | DELETED               |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| Sl. No. | Clause ref. No. & Page | Existing clause   | Revised clause |
|---------|------------------------|---|----------------|
| 20      | 13.18                  | The contractor shall not be entitled for any damages/ compensation for stoppage of work due to safety reasons above and the period of such stoppage of work will not be taken as an extension of time for completion of the facilities and will not be the ground for waiver of levy of penalty.  | DELETED        |
| 21      | 13.19                  | The contractor shall follow and comply with all Safety Rules of BHEL/ NSPCL, relevant provisions of applicable laws pertaining to the safety of workmen, employees plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any inconformity between statutory require-ment and NSPCL's Safety Rules of BHEL/ NSPCL referred above, the later shall be binding on contractor unless statutory provisions are more stringent.   | DELETED        |
| 22      | 13.20                  | If the contractor fails in providing safe working environment as per the NSPCL's Safety Rules or continues the work even after being instructed to stop work by BHEL/ NSPCL as provided above, the contractor shall promptly pay to BHEL/ NSPCL, on demand by the BHEL/ NSPCL compensation at the rate of Rs 5,000.00 per day or part thereof till the instructions are complied with and so certified by BHEL/ NSPCL. However, in case of acci-dent taking place-causing injury, to any individual, the provisions contained in relevant paragraph shall also apply in addition to compensation mentioned in this paragraph. | DELETED        |
| 23      | 13.21                  | If the contractor does not take all safety precautions and/or fails to comply with the Safety Rules as pre-scribed by NSPCL or under the applicable law for the safety of the equipment & plant and for the safety of personnel and the contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors, or the  | DELETED        |
|         | 13.21.1                | Fatal injury or accident causing death – Rs 2,00,000/ person.   | DELETED        |
|         | 13.21.2                | Major injuries or accident causing 25% or more permanent disablement to workmen or employees – Rs 50,000/ person.   | DELETED        |
| 24      | 13.22                  | Permanent disablement shall have same meaning as indi-cated in Workmen's Compensation Act. The compensation mentioned above shall be in addition to the compensa-tion payable to the workmen/employees under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the BHEL/ NSPCL is made to pay such Compensation then the contractor is liable to reimburse BHEL/ NSPCL such amount in addition to the  | DELETED        |
| 25      | 13.23                  | These insurance covers have to be taken prior to start of his work at the subject project and he shall make available the Policy to BHEL Construction Manager for necessary verification before commencement of work. However, irrespective of such verification/ acceptance, the sole responsibility to maintain adequate insurance cover for his workmen, T&P, assets etc. at all times during the period of contract shall lie with the contractor. Regarding the aforesaid insurance cover, the contractor shall directly deal with the Insurance Company for all matters   | DELETED        |
|         | 13.23a                 | In case of any recovery is made by customer NSPCL due to lapses on the part of the contractor during execution, the same shall be recovered on back to back basis from the contractor without prejudice to any other rights of the BHEL.  | DELETED        |
| 26      | 13.24                  | All other HSE practices mentioned in the GCC must be strictly abided by.  | DELETED        |
| 27      | 13.25                  | <b>SALIENT FEATURES &amp; DESIGN CONCEPT OF LABOUR COLONY</b>   |                |
|         |                        | <b>13.25.1 Labour Colony shall comprises of:</b>  |                |
|         |                        | <ul style="list-style-type: none"> <li>• Labour Sheds for male labourers.</li> <li>• Cubicles for labourers staying with families.</li> </ul>   |                |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| Sl. No. | Clause ref. No. & Page | Existing clause   | Revised clause |
|---------|------------------------|---|----------------|
| 27      |                        | <ul style="list-style-type: none"> <li>· Land for Labour Colony is required to be leveled to avoid water logging.</li> <li>· Provision of electricity (including ELCB of 30 milli amp. for safety), lighting fixtures and fans. Provision of DG set for back up power, to ensure power in the evening hours.</li> <li>· Community kitchen and common toilets/ bath rooms.</li> <li>· Provision of Primary Health Centre, Canteen and shops for essential commodities</li> <li>· Bore well for potable water, WBM roads / Brick on edge pathways and sewage system preferably with septic tank and soak pit.</li> <li>· General area lighting</li> <li>· Provision for common open space for children's play/community/recreational activities.</li> <li>· Fencing for safety and security.</li> </ul> <p><b>13.25.2</b> Brief description of the above mentioned Labour sheds for male labourers is furnished herein:-</p> <p><b>a) Labour Shed for Male labourers</b></p> <p>This building shall be Load Bearing structure having 230 thick brick wall with CC floors and Precoated G.I sheet roofing. For the Labour hutment modules, floor height shall be as per Each module of this labour sheds shall be Single storeyed and shall be provided within 57Mx</p>  |                |
|         | 13.25                  | <p>MS window with grill / CC jail shall be provided for windows and ventilator. 35 mm thick flush Doors of non-decorative type shall be provided with commercial veneered painted with Synthetic enamel paint. (Specifications shall be as per DSR item no 9.21)</p> <p>Road network, Proper drainage and sewerage network with septic tank, soak pit and potable water supply shall be provided within labour colony. Walls shall be plastered with 12mm / 15 mm thick cement plaster. Internal wall shall be finished with Dry Distemper. Doors/ windows and other steel item shall be finished with synthetic enamel paint over suitable primer.</p> <p>External finishing shall be of Acrylic smooth exterior paint. (Drawing for Labour shed is attached herewith for reference)</p> <p>b) Cubicles for labourers staying with families, Primary Health Centre, Canteen and shops for essential commodities shall be designed and Executed by the Contractor in association with the drawings attached for labour sheds for male labourersS.</p> <p>c) All buildings and structures shall be architecturally treated in such a way so as to be in complete harmony with the main power house area buildings, surrounding structures and environment. Due considerations shall be given to landscape design, and interior design. For In addition to the above said facilities Contractor has to provide following for labours:-</p> <ul style="list-style-type: none"> <li>a) Proper sanitation in labour colony.</li> <li>b) Clean and safe drinking water facilities both at colony and work place.</li> <li>c) Proper lighting facilities.</li> <li>d) Construction of rest rooms at work place.</li> <li>e) Construction of Child care rooms for female labours.</li> <li>f) Proper canteen facilities as work place.</li> <li>g) Ambulance and minimum first aid facility at work place.</li> <li>h) Construction of toilets for Gents and Ladies at work place.</li> <li>i) Recreation facilities for labourers in Colony.</li> </ul> <p>Successful bidder of this package shall submit drawing for labour colony in compliance with above requirements, for approval of BHEL/NSPCL.</p> | DELETED        |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| <b>Sl. No.</b> | <b>Clause ref. No. &amp; Page</b> | <b>Existing clause</b>   | <b>Revised clause</b>  |
|----------------|-----------------------------------|--|--|
| 28             | 16.1                              | BHEL will provide following crane free of cost on sharing basis –<br>Mid Range (Crawler crane of capacity class 250 T and above) for structural work of power house and Mill Bay including Bunker area, which can not be done using 150T Crane, free of cost on sharing basis. BHEL decision in this regard will prevail.<br>The above crane to be provided by BHEL shall be shared by various other contractors and the contractor shall plan his activities accordingly in co-ordination with BHEL site engineers. | BHEL will provide following crane free of cost on sharing basis –<br>Mid Range (Crawler crane of capacity class 250 T or above) for structural work of Power House and Mill Bay including Bunker area, which can not be done using 150T Crane, free of cost on sharing basis. 1 no. Crawler crane of capacity class 120T or above for Misc. structural work , free of cost on sharing basis<br>The high capacity 1 No. 250T or above and 1 No 120T capacity crane shall be provided by BHEL for this project and same shall be shared by various other contractors and the contractor shall plan his activities accordingly in co-ordination with BHEL site engineers. |
| 29             | 16.4                              | BHEL shall provide crane operator for this crane free of cost. However, the contractor shall bear only overtime charges, if any, for the operator provided by BHEL for services provided beyond the prescribed working hours of cranes (i.e. normal duty period of 8 Hours). Such OT deployment shall be with prior intimation and consent of BHEL.  | BHEL shall provide crane operator for this crane free of cost. However, the contractor shall bear only overtime charges, if any, for the operator provided by BHEL for services provided beyond the prescribed working hours of cranes (i.e. 8 Hours). Such OT deployment shall be with prior intimation and consent of BHEL.  |
| 30             | 17.0                              | MATERIAL HANDLING (BHEL ISSUED MATERIAL)<br>Note : Following Clauses for free issue of cement and steel hereunder shall not be applicable for factory manufactured items .   | MATERIAL HANDLING (BHEL ISSUED MATERIAL)<br>Note : Following Clauses for free issue of cement and steel hereunder shall not be applicable for factory manufactured items (not done at site).   |
| 31             | 25                                | CIVIL LABORATORY<br>Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required.  | CIVIL LABORATORY<br>Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required. Instruments used in Labshall have valid calibration certificate from NABL accredited agency.   |
| 32             | 30                                | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE<br>Not applicable for this tender.  | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE   |
| 33             | 30.1                              |  | Interest bearing recoverable advance of 5 (five) % of the contract price in stages is admissible in the following manner. Rate of interest shall be 2% (two) above PLR of State Bank of India applicable at the time of drawing the advance (compound interest at the rate of SBI PLR plus 2% (two) shall be calculated as per monthly rest).  |
| 34             | 30.2                              |  | One and a half (1.5) % to be released on submission of following.  |
|                | 30.2.1                            |  | Unqualified acceptance to LOI.   |
|                | 30.2.2                            |  | Requisite security deposit.  |
|                | 30.2.3                            |  | Bank guarantee (BG) equivalent to 1.2 times the advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.   |
|                | 30.2.4                            |  | Detailed L-3 network submission & approval by BHEL.  |
| 35             | 30.3                              |  | One and a half (1.5) % to be released on following.  |
|                | 30.3.1                            |  | Submission of bank guarantee (BG) equivalent to 1.2 times the advance amount valid for   |
|                | 30.3.2                            |  | Opening of site office, construction of cement store, deployment of minimum 1 no 35 cum/   |
| 36             | 30.4                              |  | Two (2) % to be released as per following.   |
|                | 30.4.1                            |  | Submission of bank guarantee (BG) equivalent to 1.2 times advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.   |
|                | 30.4.2                            |  | Commissioning of minimum 1 no 30 cum/ hr capacity automatic concrete batching plant with printing facility at site and deployment of minimum tools & plants as per stipulation of detailed bar chart indicated above.  |
|                | 30.4.3                            |  | Recovery of mobilization advance along with interest shall be made at the rate of 10% from 1st applicable RA bill (gross), till the entire amount is recovered.  |
| 37             | 30.5                              |  | The bank guarantee shall be kept valid till the entire advance amount is recovered.  |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| <b>Sl. No.</b> | <b>Clause ref. No. &amp; Page</b> | <b>Existing clause</b>   | <b>Revised clause</b>  |
|----------------|-----------------------------------|--|--|
| 38             | 30.6                              |  | Invoice for advance against individual stage as per above to be raised immediately & prior to accomplishment of activities/ event, associated with subsequent stage advance.   |
| 39             | 30.7                              |  | All other terms and conditions of IBRA not mentioned above shall be governed by the pertinent provisions of GCC of tender.   |
| 40             | 33.1                              | If the contractor fails to maintain the required progress of work which results in delay in the completion of the following works as per the contractual completion period indicated for individual areas indicated below, BHEL shall have the right to impose Liquidated Damage/Penalty at the rate of 0.25% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary/Additional Items and PVC.   | If the contractor fails to maintain the required progress of work which results in delay in the completion of the following works as per the contractual completion period indicated for individual areas indicated below, BHEL shall have the right to impose Liquidated Damage/Penalty at the rate of 0.50% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary/Additional Items and PVC.   |
| 41             | 35.1                              | TDS under Income Tax, VAT etc, shall be deducted at prevailing rates on Gross Invoice Value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished.   | TDS under Income Tax, VAT etc, shall be deducted at prevailing rates on Gross Invoice Value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished.<br>DEDUCTION OF ORISSA VAT:<br>The Bidder should obtain Non-Deduction certificate from Prescribed Authority U/s 54(5)(a) of the Orissa Value Added Tax Act,2004 in order to enable BHEL, PSER not to deduct any VAT/ Works Contract Tax at source. As otherwise, we will be compelled to deduct VAT TDS at the applicable rate of 4% from your Gross Bill Value as per Sec. 54(1) of the Orissa Value Added Tax Act, 2004.  |
| 42             | 35.2                              | All Taxes (excluding Service Tax , Educational Cess and other Cess on service tax) , Works Contract Tax under state VAT Act, charges royalties, duties, Entry Tax , Cess, B.O.C.W Cess , any State or Central levy and other taxes for materials obtained for the work and for the execution of the contract shall be borne by the contractor and shall not be payable extra.<br>Any increase of the same at any stage during execution of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements after taking the Input Credit, if any, as per provisions of the State VAT Act. The contractor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as & when required by BHEL. Submission of Tax Invoice is a must after Grossing up the Bills as the price is inclusive of VAT<br>The Bidder must note that Bidder is required to provide us Tax Invoice (Copy enclosed for ready reference) wherein VAT TAX on Materials used / consumed must appear with applicable Tax rate. In other words, Tax Invoice would clearly show vivisection of Materials and Services value separately. | All Taxes ( <u>excluding Service Tax</u> , Swachh Bharat Cess , KRISHI KALYAN Cess on <u>service tax</u> ) , Works Contract Tax under state VAT Act, charges royalties, duties, Entry Tax , Cess, B.O.C.W Cess , any State or Central levy and other taxes for materials obtained for the work and for the execution of the contract shall be borne by the contractor and shall not be payable extra.<br>Any increase of the same at any stage during execution of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements after taking the Input Credit, if any, as per provisions of the State VAT Act. The contractor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as & when required by BHEL. Submission of Tax Invoice is a must after Grossing up the Bills as the price is inclusive of VAT<br>The Bidder must note that Bidder is required to provide us Tax –Invoice (Copy enclosed for ready reference) wherein VAT TAX on Materials used / consumed must appear with applicable Tax rate. In other words, Tax Invoice would clearly show vivisection of Materials and Services value separately.<br>If vivisection is not possible , the bidder may follow RULE 6 –APPENDIX of Orissa Value Added Tax Rules, 2005 – towards expenses on account of labour and service – i.e % of labour , service and like charges of the total value of the works – 30 % |
| 43             | 35.3                              | Bidder must be a registered dealer with the ODISHA Value Added Tax Act, 2003, if not registered yet and a copy of the said registration certificate ( JVAT FORM NO: 101 ) along with TIN Number must be provided to Site R.A.O.  | Bidder must be a registered dealer with the ODISHA Value Added Tax Act, 2003, if not registered yet and a copy of the said registration certificate ( JVAT FORM NO: 101 ) along with TIN Number must be provided to Site R.A.O.  |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| Sl. No. | Clause ref. No. & Page | Existing clause  | Revised clause  |
|---------|------------------------|--|---|
| 44      | 35.4                   | Vendor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL.   | Vendor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL.  |
| 45      | 35.5                   | Way Bill: No way Bill will be provided by BHEL for bringing materials from outside State to ODISHA State.<br>The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with State VAT Act Authorities, for bringing their materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose. The contractor must be a Registered Dealer with the Sate VAT Act, if not registered yet and a copy of the said Registration Certificate along with TIN number must be provided to site RAO/ BHEL. | <u>Way Bill</u> : No way Bill will be provided by BHEL for bringing materials from outside State to ODISHA State.<br>The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with State VAT Act Authorities, for bringing their materials, plants & machinery at site for execution of the works under this contract, Road Permit / Way Bill, if equired, shall be arranged by the contractor and BHEL will not supply any Road Permit / Way Bill for this purpose.The contractor must be a Registered Dealer with the Sate VAT Act, if not registered yet and a copy of the said Registration Certificate along with TIN number must be provided to site RAO / BHEL  |
| 46      | 35.8                   | Under Building and Other Construction Workers (Regulation of employment and conditions of service) (BOCW) Rule 2009 dated 30-04-2009; the contractor shall do necessary registration before commencement of work. The required forms may be collected from office of Dy. Labour Commissioner, ROURKELA/ Local Area.  | B.O.C.W Cess: Under Building and Other Construction Workers (Regulation of employment and conditions of service) (BOCW) Rule 2009 dated 30-04-2009; the contractor shall do necessary registration before commencement of work. Vide Section 46 of the BOCW Act. The required forms may be collected from office of Dy. Labour Commissioner, ROURKELA / Local Area.<br>Vide Section 3(1) of this Act of the BOCW Welfare Cess Act, 1996. "There Shall be levied and collected a cess for the purposes of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, at such rate not exceeding two percent, but not less than one per cent, of the cost of construction incurred by an employer, as the Central Government may, by notification in the Official Gazette, from time to time specify.<br>Vide notification no. SO 2899 dt. 26.09.96, 'employer' is required to pay cess on the cost of construction @ 1% of the cost of construction. Hence discharge of B.O.C.W Cess, payment proof (Challan) is must and must be accompanied with each and every R.A Bills including Final Bills.<br>If subsequently Cess is being deposited by the Owner of the Project for any reasons, BHEL will reduce the Contract Price by 1 % or may recover the same from the Bills. |
| 47      | 35.9                   | Entry Tax: Presently no Entry Tax is applicable in ODISHA as the applicability of Entry Tax has been quashed by Honable ODISHA HIGH COURT.<br>Entry Tax: If however, on a later date, Entry Tax is applicable, Contractor has to get Entry Tax Registration Certificate from Local Sales Tax Authority and has to pay Entry Tax of their own for bringing scheduled goods to local area Karanpura for use, sale & consumption for this Project / Work Order. Entry Tax paid Challan / Invoice Copy shall be made available to BHEL-Site Finance along with Tax Invoice as mentioned aforesaid.   | Entry Tax: Contractor has to get Entry Tax Registration Certificate from Local Sales Tax Authority and has to pay Entry Tax on the Import Value for bringing scheduled goods to local area of ROURKELA for use, sale & consumption for this Project / Purchase Order. Entry Tax paid Challan / Invoice Copy shall be made available to BHEL-Site Finance on a monthly basis.  |

**Corrigenda / Addenda for TCC for Main Plant Pkg of Rourkela**

| <b>Sl. No.</b> | <b>Clause ref. No. &amp; Page</b> | <b>Existing clause</b>  | <b>Revised clause</b>   |
|----------------|-----------------------------------|---|---|
| 48             | 35.10                             |   | New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period ( including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties  |
| 49             | 36.1                              | For all items of works, as per the the Price schedule, Vol-III, billing shall be on item rate basis. However, Interim Payment shall be limited to 95% of gross bill amount.   | DELETED   |
| 50             | 36.2                              |   | Renamed as 36.1   |
| 51             | 36.3                              |   | Renamed as 36.2   |
| 52             | 36.4                              |   | Renamed as 36.3   |
| 53             | 36.4.1                            |   | Renamed as 36.3.1   |
|                | 36.4.2                            |   | Renamed as 36.3.2   |
|                | 36.4.3                            |   | Renamed as 36.3.3   |
|                | 36.4.4                            |   | Renamed as 36.3.4   |
|                | 36.5                              |   | Renamed as 36.4   |
| 54             | 36.6                              |   | Renamed as 36.5   |
| 55             | 36.7                              |   | Renamed as 36.6   |
| 56             | 36.8                              |   | Renamed as 36.7   |
| 57             | 43.1                              | <p>in certain cases, bidder will have to carry out both fabrication and erection on case to case basis, as decided by engineer in charge.</p> <p>Primarily, all structural steel shall have bolted connections i.e. for Power House, Mill bunker structure etc. Thus, Major scope of erection (items as per BOQ) shall consist of erection of bolted structures supplied by BHEL in pre-fabricated condition.</p> <p>However, site fabrication will be applicable for bunker shell structures and few other bare minimum items which otherwise calls for fabrication at site.</p> <p>It may be noted by the bidder that quality plan for erection of bolted structures will be highly stringent. Quality plan for structural works will be issued during execution stage upon approval of customer (NSPCL).</p> | <p>Structures fabricated at shop shall be supplied by BHEL/bidder for erection at site. However, in certain cases, bidder will have to carry out both fabrication and erection on case to case basis, as decided by engineer in charge.</p> <p>Primarily, all structural steel shall have bolted connections i.e. for Power House, Mill bunker structure etc. Thus, Major scope of erection (items as per BOQ) shall consist of erection of bolted structures supplied by BHEL in pre-fabricated condition.</p> <p>However, site fabrication will be applicable for bunker shell structures and few other bare minimum items which otherwise calls for fabrication at site.</p> <p>It may be noted by the bidder that quality plan for erection of bolted structures will be highly stringent. Quality plan for structural works will be issued during execution stage upon approval of customer (NSPCL).</p> |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING. ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| Sl. No.   | Clause No. of TCC-VOL-IF          | Existing clause  | Revised clause  |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
|---|-----------------------------------|--|---|-------------|----------------------------|------------|-------------------------|------------|--------------------------|------------|---------------------------|------------|-----------------------------|------------|---|----------|--|----------|---|-----------|----------------------------------|-----------------------------------|--|----------|---|----------|---|--------------|---|------------|---|
| 1   | 7.1                               | Till such time, Construction water facility is not ready, the contractor has to make his own arrangement for construction water.<br><br>On readiness of the Construction water system (expected within 3 months from start of work), BHEL will provide construction water at one point each, within 500 m from given work premises, free of cost to the contractor.  | BHEL will provide construction as well as drinking water at one point each, within 1000 m from given work premises, free of cost to the contractor. |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| 2   | 13                                | <b>WORK &amp; SAFETY REGULATIONS</b>   | <b>HEALTH, SAFETY &amp; ENVIRONMENT</b>   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| 3   | 13.1                              | The contractor shall ensure the safety of all workmen, materials and equipment either belonging to him or to others working at site. He shall observe safety rules and codes applied by the owner/ BHEL at site without exception.   | <b>REFER DOCUMENT NUMBER ; HSEP:14 DATED:12.08.2014.</b>  |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| 4   | 13.2                              | Non-conformity of safety rules and safety appliances will be viewed seriously and BHEL has right to impose fines on the contractor on each incident/ each non-conformity as per details given below.<br><table border="1" data-bbox="233 737 1087 1261"> <thead> <tr> <th>Safety Measure</th> <th>Fine ( Rs.)</th> </tr> </thead> <tbody> <tr> <td>Not wearing safety helmet.</td> <td>25/workmen</td> </tr> <tr> <td>Not wearing safety Shoe</td> <td>25/workmen</td> </tr> <tr> <td>Not wearing safety belt.</td> <td>50/workmen</td> </tr> <tr> <td>Grinding without goggles.</td> <td>50/workmen</td> </tr> <tr> <td>Gas cutting without goggles</td> <td>50/workmen</td> </tr> <tr> <td>Not using 24V supply for internal work.</td> <td>500/case</td> </tr> <tr> <td>Electrical plugs not used for hand machines.</td> <td>100/case</td> </tr> <tr> <td>Welding cables, electrical wires using insulated with proper/ standard.</td> <td>500/point</td> </tr> <tr> <td>Not removing scrap from platform</td> <td>Actual cost for removal plus 30 %</td> </tr> <tr> <td>Gas cutting without taking proper precaution/ not using sheet below per incidence.</td> <td>100/case</td> </tr> <tr> <td>Electrical winches having no guards earthed properly etc.</td> <td>500/case</td> </tr> <tr> <td>Improper earthing of electrical T&amp;P. 200/equipment Not protecting/ locating the gas cylinder to avoid catching of fire.</td> <td>100/cylinder</td> </tr> <tr> <td>Not providing earth leakage circuit breaker as per direction of BHEL.</td> <td>1000/point</td> </tr> </tbody> </table> | Safety Measure  | Fine ( Rs.) | Not wearing safety helmet. | 25/workmen | Not wearing safety Shoe | 25/workmen | Not wearing safety belt. | 50/workmen | Grinding without goggles. | 50/workmen | Gas cutting without goggles | 50/workmen | Not using 24V supply for internal work. | 500/case | Electrical plugs not used for hand machines. | 100/case | Welding cables, electrical wires using insulated with proper/ standard. | 500/point | Not removing scrap from platform | Actual cost for removal plus 30 % | Gas cutting without taking proper precaution/ not using sheet below per incidence. | 100/case | Electrical winches having no guards earthed properly etc. | 500/case | Improper earthing of electrical T&P. 200/equipment Not protecting/ locating the gas cylinder to avoid catching of fire. | 100/cylinder | Not providing earth leakage circuit breaker as per direction of BHEL. | 1000/point | It is imperative on the part of the contractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social up-liftment, conversion of packing woods to school furniture, keeping good relation with local populace etc. |
| Safety Measure  | Fine ( Rs.)                       |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not wearing safety helmet.  | 25/workmen                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not wearing safety Shoe   | 25/workmen                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not wearing safety belt.  | 50/workmen                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Grinding without goggles.   | 50/workmen                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Gas cutting without goggles   | 50/workmen                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not using 24V supply for internal work.   | 500/case                          |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Electrical plugs not used for hand machines.  | 100/case                          |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Welding cables, electrical wires using insulated with proper/ standard.   | 500/point                         |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not removing scrap from platform  | Actual cost for removal plus 30 % |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Gas cutting without taking proper precaution/ not using sheet below per incidence.                                      | 100/case                          |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Electrical winches having no guards earthed properly etc.   | 500/case                          |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Improper earthing of electrical T&P. 200/equipment Not protecting/ locating the gas cylinder to avoid catching of fire. | 100/cylinder                      |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |
| Not providing earth leakage circuit breaker as per direction of BHEL.   | 1000/point                        |  |   |             |                            |            |                         |            |                          |            |                           |            |                             |            |   |          |  |          |   |           |                                  |                                   |  |          |   |          |   |              |   |            |   |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| Sl. No. | Clause No. of TCC-VOL-IF | Existing clause   | Revised clause   |
|---------|--------------------------|---|--|
| 5       | 13.3                     | Any other nonconformity noticed not listed above will also be fined. The decision of BHEL engineer on the above will be final and binding on the contractor. The amount will be deducted from running bills of the contractor. The amount collected on the above will be dispatch for giving award to the employee who could avoid accidents by following safety rules. Also, the amount will be spent for improving the safety at site.  | Round the clock experienced paramedical personnel with first aid facility & one ambulance including driver, fuel etc. at site to be arranged by you, at your own cost within 30 days of LOI or start of construction activity, whichever is earlier.<br>The above facilities will be shared by various other BHEL-agencies (contractors) working at site on chargeable basis (actual cost distributed among the BHEL E&C/BOP vendors, present at site, except chimney vendor, on pro rate basis i.e. proportionate to their contract value). The subject facility will have to be strengthened as per the requirement during peak work progress at site.<br>Cost to be shared will be variable with time based on the no. of vendors sharing the above facility at any period.<br>No medical facility within / near the site shall be provided by BHEL. However, BHEI/NSPCL may provide one room/Bunk house (without furniture) for use as first aid centre. |
| 6       | 13.4                     | Where it is necessary to provide and/ or store petroleum products or petroleum mixtures and explosives, the contractor shall be responsible for carrying-out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948, and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of BHEL/ NSPCL. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the contractor shall be responsible for obtaining the same. | No staff quarter shall be provided by BHEL.  |
| 7       | 13.5                     | All equipment used in construction by contractor shall meet Indian/ International Standards and where such standards do not exist, the contractor shall ensure these to be absolutely safe. All equipments shall be strictly operated and maintained in accordance with manufacturer's operation manual and safety instructions and as per guidelines/ rules of NSPCL in this regard.   | No borrow area for earth shall be arranged / provided by BHEL.   |
| 8       | 13.6                     | Periodical examinations and all tests for all lifting/ hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws/ Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as & when desired by BHEL/ NSPCL or by the person authorized by them.  | Common road shall be provided by BHEL free of cost, however, temporary approaches for erection/work spots under the scope of work, as required for movement of cranes, trailers, trucks, transit mixers, dumpers, etc. shall be arranged by the contractor at his own cost.  |
| 9       | 13.7                     | The contractor shall be fully responsible for the safe storage of his and BHEL subcontractor's radioactive sources in accordance with BARC/ DAE (Bhabha Atomic Research Center/ Department of Atomic Energy, Govt of India) Rules and other applicable provisions. All precautionary measures stipulated by BARC/ DAE in connection with use, contractor would take storage and handling of such material.  | The contractor shall solely be responsible for the safety, quality, & quantity of material after it is handed over and issued to contractor by the BHEL.   |
| 10      | 13.8                     | The contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by BHEL/ NSPCL who will also have right to examine these safety equipments to determine their suitability, reliability, acceptability and adaptability.  | DELETED  |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| Sl. No. | Clause No. of TCC-VOL-IF | Existing clause  | Revised clause |
|---------|--------------------------|--|----------------|
| 11      | 13.9                     | The contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffold-ings etc. The scaffoldings shall be erected under the control & supervision of an experienced and compe- tent person. For construction, the contractor only shall use good and standard quality of material.   | DELETED        |
| 12      | 13.10                    | The contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to BHEL/ NSPCL or other contractors under any circum- stances, whatsoever, unless expressly permitted in writing by NSPCL to handle such fuses, wiring or elec- trical equipment.  | DELETED        |
| 13      | 13.11                    | Before the contractor connects any electrical appli- ances to any plug or socket belonging to the other contactor or BHEL/ NSPCL, he shall comply with following.  | DELETED        |
|         | 13.11.1                  | Satisfy the BHEL/ NSPCL that the appliance is in good working condition.   | DELETED        |
|         | 13.11.2                  | Inform the BHEL/ NSPCL of the maximum current rating, voltage and phases of the appliances.  | DELETED        |
|         | 13.11.3                  | Obtain permission of the BHEL/ NSPCL detailing the sockets to which the appliances may be connected.   | DELETED        |
| 14      | 13.12                    | BHEL/ NSPCL will not grant permission to connect until he is satisfied with following.   | DELETED        |
|         | 13.12.1                  | The appliance is in good condition and is fitted with suitable plug;   | DELETED        |
|         | 13.12.2                  | The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.  | DELETED        |
| 15      | 13.13                    | No electric cable in use by the contractor/ BHEL/ NSPCL will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.  | DELETED        |
| 16      | 13.13                    | No repair work shall be carried out on any live equip- ment. BHEL/NSPCL must declare the equipment safe and a permit to work shall be issued by the BHEL/NSPCL before the contractor carries out any repair work. While working on electric lines/equipments whether live or dead, suitable type and sufficient quantity of tools will have to be provided by contractor to electricians/workmen/officers.                 | DELETED        |
| 17      | 13.15                    | The contractors shall employ necessary number of quali- fied, full time Electricians/ Electrical Supervisors to maintain his temporary electrical installations.   | DELETED        |
| 18      | 13.16                    | In case any accident occurs during the construction or other associated activities undertaken by the contractor thereby causing any minor or major or fatal injury to his employees due to any reason, what- soever, it shall be the responsibility of the contractor to promptly inform the same to BHEL/ NSPCL in prescribed form and also to all the authorities envis- aged under the applicable laws.                 | DELETED        |
| 19      | 13.17                    | BHEL/ NSPCL shall have the right at his sole discre- tion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipments. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury/ accident and he shall comply to remove shortcomings promptly. | DELETED        |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING. ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| SI. No. | Clause No. of TCC-VOL-IF | Existing clause   | Revised clause   |
|---------|--------------------------|---|--|
| 20      | 13.18                    | The contractor shall not be entitled for any damages/ compensation for stoppage of work due to safety reasons above and the period of such stoppage of work will not be taken as an extension of time for completion of the facilities and will not be the ground for waiver of levy of penalty.  | DELETED  |
| 21      | 13.19                    | The contractor shall follow and comply with all Safety Rules of BHEL/ NSPCL, relevant provisions of applicable laws pertaining to the safety of workmen, employees plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any inconformity between statutory require-ment and NSPCL's Safety Rules of BHEL/ NSPCL referred above, the later shall be binding on contractor unless statutory provisions are more stringent.   | DELETED  |
| 22      | 13.20                    | If the contractor fails in providing safe working environment as per the NSPCL's Safety Rules or continues the work even after being instructed to stop work by BHEL/ NSPCL as provided above, the contractor shall promptly pay to BHEL/ NSPCL, on demand by the BHEL/ NSPCL compensation at the rate of Rs 5,000.00 per day or part thereof till the instructions are complied with and so certified by BHEL/ NSPCL. However, in case of acci-dent taking place-causing injury, to any individual, the provisions contained in relevant paragraph shall also apply in addition to compensation mentioned in this paragraph. | DELETED  |
| 23      | 13.21                    | If the contractor does not take all safety precautions and/or fails to comply with the Safety Rules as pre-scribed by NSPCL or under the applicable law for the safety of the equipment & plant and for the safety of personnel and the contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors, or  | DELETED  |
|         | 13.21.1                  | Fatal injury or accident causing death – Rs 2,00,000/ person.   | DELETED  |
|         | 13.21.2                  | Major injuries or accident causing 25% or more permanent disablement to workmen or employees – Rs 50,000/ person.   | DELETED  |
| 24      | 13.22                    | Permanent disablement shall have same meaning as indi-cated in Workmen's Compensation Act. The compensation mentioned above shall be in addition to the compensa-tion payable to the workmen/employees under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the BHEL/ NSPCL is made to pay such Compensation then the contractor is liable to reimburse BHEL/ NSPCL such amount in  | DELETED  |
| 25      | 13.23                    | These insurance covers have to be taken prior to start of his work at the subject project and he shall make available the Policy to BHEL Construction Manager for necessary verification before commencement of work. However, irrespective of such verification/ acceptance, the sole responsibility to maintain adequate insurance cover for his workmen, T&P, assets etc. at all times during the period of contract shall lie with the contractor. Regarding the aforesaid insurance cover, the contractor shall directly deal with the   | DELETED  |
| 26      | 13.24                    | All other HSE practices mentioned in the GCC must be strictly abided by.  | All other HSE practices mentioned in the GCC & Vol-1D must be strictly abided by and .In case of conflict in provision of GCC,Vol-1D and HSEP:14 DATED:12.08.2014 the provision indicated in HSEP:14 DATED:12.08.2014 shall prevail. |
| 27      | 13.25                    | <b>SALIENT FEATURES &amp; DESIGN CONCEPT OF LABOUR COLONY</b>   | DELETED  |
|         |                          | <b>13.25.1 Labour Colony shall comprises of:</b>  |  |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING. ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| SI. No. | Clause No. of TCC-VOL-1F | Existing clause   | Revised clause |
|---------|--------------------------|---|----------------|
|         |                          | <ul style="list-style-type: none"> <li>- Labour Sheds for male labourers.</li> <li>- Cubicles for labourers staying with families.</li> <li>- Land for Labour Colony is required to be leveled to avoid water logging.</li> <li>- Provision of electricity (including ELCB of 30 milli amp. for safety), lighting fixtures and fans. Provision of DG set for back up power, to ensure power in the evening hours.</li> <li>- Community kitchen and common toilets/ bath rooms.</li> <li>- Provision of Primary Health Centre, Canteen and shops for essential commodities</li> <li>- Bore well for potable water, WBM roads / Brick on edge pathways and sewage system preferably with septic tank and soak pit.</li> <li>- General area lighting</li> <li>- Provision for common open space for children's play/community/recreational activities.</li> <li>- Fencing for safety and security.</li> </ul> <p><b>13.25.2</b> Brief description of the above mentioned Labour sheds for male labourers is furnished herein:-</p> <p><b>a) Labour Shed for Male labourers</b></p> <p>This building shall be Load Bearing structure having 230 thick brick wall with CC floors and Precoated G.I sheet roofing. For the Labour hutment modules, floor height shall be as per Each module of this labour sheds shall be Single storeyed and shall be provided within</p>  |                |
| 27      | 13.25                    | <p>MS window with grill / CC jail shall be provided for windows and ventilator. 35 mm thick flush Doors of non-decorative type shall be provided with commercial veneered painted with Synthetic enamel paint. (Specifications shall be as per DSR item no 9.21)</p> <p>Road network, Proper drainage and sewerage network with septic tank, soak pit and potable water supply shall be provided within labour colony. Walls shall be plastered with 12mm / 15 mm thick cement plaster. Internal wall shall be finished with Dry Distemper. Doors/ windows and other steel item shall be finished with synthetic enamel paint over suitable primer.</p> <p>External finishing shall be of Acrylic smooth exterior paint. (Drawing for Labour shed is attached herewith for reference)</p> <p>b) Cubicles for labourers staying with families, Primary Health Centre, Canteen and shops for essential commodities shall be designed and Executed by the Contractor in association with the drawings attached for labour sheds for male labourerS.</p> <p>c) All buildings and structures shall be architecturally treated in such a way so as to be in complete harmony with the main power house area buildings, surrounding structures and environment. Due considerations shall be given to landscape design, and interior design.</p> <p>In addition to the above said facilities Contractor has to provide following for labours:-</p> <ul style="list-style-type: none"> <li>a) Proper sanitation in labour colony.</li> <li>b) Clean and safe drinking water facilities both at colony and work place.</li> <li>c) Proper lighting facilities.</li> <li>d) Construction of rest rooms at work place.</li> <li>e) Construction of Child care rooms for female labours.</li> <li>f) Proper canteen facilities as work place.</li> <li>g) Ambulance and minimum first aid facility at work place.</li> <li>h) Construction of toilets for Gents and Ladies at work place.</li> </ul> | DELETED        |

**ANNEXURE-B TO TCN-03**

**JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO. PSER:SCT: RKL-C1755:16.**

**Revision of clauses of TCC/Vol-1F**

| <b>Sl. No.</b> | <b>Clause No. of TCC-VOL-1F</b> | <b>Existing clause</b>  | <b>Revised clause</b>  |
|----------------|---------------------------------|---|--|
|                |                                 | i) Recreation facilities for labourers in Colony.<br>Successful bidder of this package shall submit drawing for labour colony in compliance with above requirements, for approval of BHEL/NSPCL.  |  |
| 28             | 16.1                            | BHEL will provide following crane free of cost on sharing basis –<br>●Mid Range (Crawler crane of capacity class 250 T and above) for structural work of power house and Mill Bay including Bunker area, which can not be done using 150T Crane, free of cost on sharing basis. BHEL decision in this regard will prevail.<br>The above crane to be provided by BHEL shall be shared by various other contractors and the contractor shall plan his activities accordingly in co-ordination with BHEL site engineers. | BHEL will provide following crane free of cost on sharing basis –<br>Mid Range (Crawler crane of capacity class 250 T or above) for structural work of Power House and Mill Bay including Bunker area, which can not be done using 150T Crane, free of cost on sharing basis. 1 no. Crawler crane of capacity class 120T or above for Misc. structural work , free of cost on sharing basis<br>The high capacity 1 No. 250T or above and 1 No 120T capacity crane shall be provided by BHEL for this project and same shall be shared by various other contractors and the contractor shall plan his activities accordingly in co-ordination with BHEL site engineers. |
| 29             | 16.4                            | BHEL shall provide crane operator for this crane free of cost. However, the contractor shall bear only overtime charges, if any, for the operator provided by BHEL for services provided beyond the prescribed working hours of cranes (i.e. normal duty period of 8 Hours). Such OT deployment shall be with prior intimation and consent of BHEL.   | BHEL shall provide crane operator for this crane free of cost. However, the contractor shall bear only overtime charges, if any, for the operator provided by BHEL for services provided beyond the prescribed working hours of cranes (i.e. 8 Hours). Such OT deployment shall be with prior intimation and consent of BHEL.  |
| 30             | 17.0                            | MATERIAL HANDLING (BHEL ISSUED MATERIAL)<br>Note : Following Clauses for free issue of cement and steel hereunder shall not be applicable for factory manufactured items .  | MATERIAL HANDLING (BHEL ISSUED MATERIAL)<br>Note : Following Clauses for free issue of cement and steel hereunder shall not be applicable for factory manufactured items (not done at site).   |
| 31             | 25                              | CIVIL LABORATORY<br>Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required.   | CIVIL LABORATORY<br>Contractor shall establish and maintain civil laboratory with necessary equipment (as per Annexure-A) for conducting relevant tests at site, as required. Instruments used in Lab shall have valid calibration certificate from NABL accredited agency.  |
| 32             | 30                              | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE<br>Not applicable for this tender.   | MOBILIZATION ADVANCE/ INTEREST BEARING RECOVERABLE ADVANCE   |
| 33             | 30.1                            |   | Interest bearing recoverable advance of 5 (five) % of the contract price in stages is admissible in the following manner. Rate of interest shall be 2% (two) above PLR of State Bank of India applicable at the time of drawing the advance (compound interest at the rate of SBI PLR plus 2% (two) shall be calculated as per monthly rest).  |
| 34             | 30.2                            |   | One and a half (1.5) % to be released on submission of following.  |
|                | 30.2.1                          |   | Unqualified acceptance to LOI.   |
|                | 30.2.2                          |   | Requisite security deposit.  |
|                | 30.2.3                          |   | Bank guarantee (BG) equivalent to 1.2 times the advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.   |
|                | 30.2.4                          |   | Detailed L-3 network submission & approval by BHEL.  |
| 35             | 30.3                            |   | One and a half (1.5) % to be released on following.  |
|                | 30.3.1                          |   | Submission of bank guarantee (BG) equivalent to 1.2 times the advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.   |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| Sl. No. | Clause No. of TCC-VOL-IF | Existing clause  | Revised clause   |
|---------|--------------------------|--|--|
|         | 30.3.2                   |  | Opening of site office, construction of cement store, deployment of minimum 1 no 35 cum/ hr capacity automatic concrete batching plant with printing facility at site and on certification of the same by BHEL site.   |
| 36      | 30.4                     |  | Two (2) % to be released as per following.   |
|         | 30.4.1                   |  | Submission of bank guarantee (BG) equivalent to 1.2 times advance amount valid for a period initially for one year subsequently to be extended till the advance is adjusted.   |
|         | 30.4.2                   |  | Commissioning of minimum 1 no 30 cum/ hr capacity automatic concrete batching plant with printing facility at site and deployment of minimum tools & plants as per stipulation of detailed bar chart indicated above.  |
|         | 30.4.3                   |  | Recovery of mobilization advance along with interest shall be made at the rate of 10% from 1st applicable RA bill (gross), till the entire amount is recovered.  |
| 37      | 30.5                     |  | The bank guarantee shall be kept valid till the entire advance amount is recovered.  |
| 38      | 30.6                     |  | Invoice for advance against individual stage as per above to be raised immediately & prior to accomplishment of activities/ event, associated with subsequent stage advance.   |
| 39      | 30.7                     |  | All other terms and conditions of IBRA not mentioned above shall be governed by the pertinent provisions of GCC of tender.   |
| 40      | 33.1                     | If the contractor fails to maintain the required progress of work which results in delay in the completion of the following works as per the contractual completion period indicated for individual areas indicated below, BHEL shall have the right to impose Liquidated Damage/Penalty at the rate of 0.25% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary/Additional Items and PVC. | If the contractor fails to maintain the required progress of work which results in delay in the completion of the following works as per the contractual completion period indicated for individual areas indicated below, BHEL shall have the right to impose Liquidated Damage/Penalty at the rate of 0.50% of the contract value, per week of delay or part thereof subject to a maximum of ceiling specified below. For this purpose, the period of delay shall be the delay attributable to the Contractor for the completion of work as per contract. Contract Value for this purpose, shall be the final executed value exclusive of ORC, Extra Works executed, Supplementary/Additional Items and PVC. |
| 41      | 35.1                     | TDS under Income Tax, VAT etc, shall be deducted at prevailing rates on Gross Invoice Value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished.   | TDS under Income Tax, VAT etc, shall be deducted at prevailing rates on Gross Invoice Value from the bills unless Exemption Certificate from the appropriate authority/ authorities is/ are furnished.<br>DEDUCTION OF ORISSA VAT:<br>The Bidder should obtain Non-Deduction certificate from Prescribed Authority U/s 54(5)(a) of the Orissa Value Added Tax Act,2004 in order to enable BHEL, PSER not to deduct any VAT/ Works Contract Tax at source. As otherwise, we will be compelled to deduct VAT TDS at the applicable rate of 4% from your Gross Bill Value as per Sec. 54(1) of the Orissa Value Added Tax Act, 2004.  |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| Sl. No. | Clause No. of TCC-VOL-1F | Existing clause   | Revised clause   |
|---------|--------------------------|---|--|
| 42      | 35.2                     | <p>All Taxes (excluding Service Tax , Educational Cess and other Cess on service tax) , Works Contract Tax under state VAT Act, charges royalties, duties, Entry Tax , Cess, B.O.C.W Cess , any State or Central levy and other taxes for materials obtained for the work and for the execution of the contract shall be borne by the contractor and shall not be payable extra.</p> <p>Any increase of the same at any stage during execution of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements after taking the Input Credit, if any, as per provisions of the State VAT Act. The contractor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as &amp; when required by BHEL. Submission of Tax Invoice is a must after Grossing up the Bills as the price is inclusive of VAT</p> <p>The Bidder must note that Bidder is required to provide us Tax Invoice (Copy enclosed for ready reference) wherein VAT TAX on Materials used / consumed must appear with applicable Tax rate. In other words, Tax Invoice would clearly show vivisection of Materials and Services value separately.</p> | <p>All Taxes (<u>excluding Service Tax</u> , Swach Bharat <u>Cess</u> , <u>KRISHI KALYAN Cess on service tax</u> ) , Works Contract Tax under state VAT Act, charges royalties, duties, Entry Tax , Cess, B.O.C.W Cess , any State or Central levy and other taxes for materials obtained for the work and for the execution of the contract shall be borne by the contractor and shall not be payable extra.</p> <p>Any increase of the same at any stage during execution of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements after taking the Input Credit, if any, as per provisions of the State VAT Act. The contractor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as &amp; when required by BHEL. Submission of Tax Invoice is a must after Grossing up the Bills as the price is inclusive of VAT</p> <p>The Bidder must note that Bidder is required to provide us Tax –Invoice (Copy enclosed for ready reference) wherein VAT TAX on Materials used / consumed must appear with applicable Tax rate. In other words, Tax Invoice would clearly show vivisection of Materials and Services value separately.</p> <p>If vivisection is not possible , the bidder may follow RULE 6 –APPENDIX of Orissa Value Added Tax Rules, 2005 – towards expenses on account of labour and service – i.e % of labour , service and like charges of the total value of the works – 30 %</p> |
| 43      | 35.3                     | Bidder must be a registered dealer with the ODISHA Value Added Tax Act, 2003, if not registered yet and a copy of the said registration certificate ( JVAT FORM NO: 101 ) along with TIN Number must be provided to Site R.A.O.   | Bidder must be a registered dealer with the ODISHA Value Added Tax Act, 2003, if not registered yet and a copy of the said registration certificate ( JVAT FORM NO: 101 ) along with TIN Number must be provided to Site R.A.O.  |
| 44      | 35.4                     | Vendor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL.  | Vendor is responsible to furnish all documentary evidences towards payment of Works Contract Tax as and when required by BHEL.   |
| 45      | 35.5                     | <p>Way Bill: No way Bill will be provided by BHEL for bringing materials from outside State to ODISHA State.</p> <p>The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with State VAT Act Authorities, for bringing their materials, plants &amp; machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose. The contractor must be a Registered Dealer with the Sate VAT Act, if not registered yet and a copy of the said Registration Certificate along with TIN number must be provided to site RAO/ BHEL.</p>   | <p><u>Way Bill</u>: No way Bill will be provided by BHEL for bringing materials from outside State to ODISHA State.</p> <p>The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with State VAT Act Authorities, for bringing their materials, plants &amp; machinery at site for execution of the works under this contract, Road Permit / Way Bill, if equired, shall be arranged by the contractor and BHEL will not supply any Road Permit / Way Bill for this purpose.The contractor must be a Registered Dealer with the Sate VAT Act, if not registered yet and a copy of the said Registration Certificate along with TIN number must be provided to site RAO / BHEL</p>   |

**ANNEXURE-B TO TCN-03**

**JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO. PSER:SCT: RKL-C1755:16.**

**Revision of clauses of TCC/Vol-1F**

| <b>Sl. No.</b> | <b>Clause No. of TCC-VOL-IF</b> | <b>Existing clause</b>   | <b>Revised clause</b>   |
|----------------|---------------------------------|--|---|
| 46             | 35.8                            | Under Building and Other Construction Workers (Regulation of employment and conditions of service) (BOCW) Rule 2009 dated 30-04-2009; the contractor shall do necessary registration before commencement of work. The required forms may be collected from office of Dy. Labour Commissioner, ROURKELA/ Local Area.  | B.O.C.W Cess: Under Building and Other Construction Workers (Regulation of employment and conditions of service) (BOCW) Rule 2009 dated 30-04-2009; the contractor shall do necessary registration before commencement of work. Vide Section 46 of the BOCW Act. The required forms may be collected from office of Dy. Labour Commissioner, ROURKELA / Local Area.<br>Vide Section 3(1) of this Act of the BOCW Welfare Cess Act, 1996. "There Shall be levied and collected a cess for the purposes of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, at such rate not exceeding two percent, but not less than one per cent, of the cost of construction incurred by an employer, as the Central Government may, by notification in the Official Gazette, from time to time specify.<br>Vide notification no. SO 2899 dt. 26.09.96, 'employer' is required to pay cess on the cost of construction @ 1% of the cost of construction. Hence discharge of B.O.C.W Cess, payment proof (Challan) is must and must be accompanied with each and every R.A Bills including Final Bills.<br>If subsequently Cess is being deposited by the Owner of the Project for any reasons, BHEL will reduce the Contract Price by 1 % or may recover the same from the Bills. |
| 47             | 35.9                            | Entry Tax: Presently no Entry Tax is applicable in ODISHA as the applicability of Entry Tax has been quashed by Honable ODISHA HIGH COURT.<br>Entry Tax: If however, on a later date, Entry Tax is applicable, Contractor has to get Entry Tax Registration Certificate from Local Sales Tax Authority and has to pay Entry Tax of their own for bringing scheduled goods to local area Karanpura for use, sale & consumption for this Project / Work Order. Entry Tax paid Challan / Invoice Copy shall be made available to BHEL-Site Finance along with Tax Invoice as mentioned aforesaid. | Entry Tax: Contractor has to get Entry Tax Registration Certificate from Local Sales Tax Authority and has to pay Entry Tax on the Import Value for bringing scheduled goods to local area of ROURKELA for use, sale & consumption for this Project / Purchase Order. Entry Tax paid Challan / Invoice Copy shall be made available to BHEL-Site Finance on a monthly basis.<br>.   |
| 48             | 36.1                            | For all items of works, as per the the Price schedule, Vol-III, billing shall be on item rate basis. However, Interim Payment shall be limited to 95% of gross bill amount.  | DELETED   |
| 49             | 36.2                            |  | Renamed as 36.1   |
| 50             | 36.3                            |  | Renamed as 36.2   |
| 51             | 36.4                            |  | Renamed as 36.3   |
| 52             | 36.4.1                          |  | Renamed as 36.3.1   |
|                | 36.4.2                          |  | Renamed as 36.3.2   |
|                | 36.4.3                          |  | Renamed as 36.3.3   |
|                | 36.4.4                          |  | Renamed as 36.3.4   |
| 53             | 36.5                            |  | Renamed as 36.4   |
| 54             | 36.6                            |  | Renamed as 36.5   |
| 55             | 36.7                            |  | Renamed as 36.6   |
| 56             | 36.8                            |  | Renamed as 36.7   |

## ANNEXURE-B TO TCN-03

JOB:MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.

TENDER NO. PSER:SCT: RKL-C1755:16.

## Revision of clauses of TCC/Vol-1F

| SI. No. | Clause No. of TCC-VOL-1F | Existing clause  | Revised clause  |
|---------|--------------------------|--|---|
| 57      | 43.1                     | <p>Structures fabricated at shop shall be supplied by BHEL for erection at site. However, in certain cases, bidder will have to carry out both fabrication and erection on case to case basis, as decided by engineer in charge.</p> <p>Primarily, all structural steel shall have bolted connections i.e. for Power House, Mill bunker structure etc. Thus, Major scope of erection (items as per BOQ) shall consist of erection of bolted structures supplied by BHEL in pre-fabricated condition.</p> <p>However, site fabrication will be applicable for bunker shell structures and few other bare minimum items which otherwise calls for fabrication at site.</p> <p>It may be noted by the bidder that quality plan for erection of bolted structures will be highly stringent. Quality plan for structural works will be issued during execution stage upon approval of customer (NSPCL).</p> | <p>Structures fabricated at shop shall be supplied by BHEL/bidder for erection at site. However, in certain cases, bidder will have to carry out both fabrication and erection on case to case basis, as decided by engineer in charge.</p> <p>Primarily, all structural steel shall have bolted connections i.e. for Power House, Mill bunker structure etc. Thus, Major scope of erection (items as per BOQ) shall consist of erection of bolted structures supplied by BHEL in pre-fabricated condition.</p> <p>However, site fabrication will be applicable for bunker shell structures and few other bare minimum items which otherwise calls for fabrication at site.</p> <p>It may be noted by the bidder that quality plan for erection of bolted structures will be highly stringent. Quality plan for structural works will be issued during execution stage upon approval of customer (NSPCL).</p> |

**VOLUME-III  
PRICE SCHEDULE, REV-02**

**JOB: MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC. BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC. FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO : PSER:SCT: RKL-C1755:16.**

| SL NO | PREAMBLE  |
|-------|---|
| 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 Volume-1A, 1B, 1C, 1D, 1E, 1F, II and other tender sections (as applicable as per NIT) and shall have precedence over any contrary statement mentioned any where in this document. The tenderer shall sign & stamp all the pages of the tender document as a token of their acceptance. Submission of unfilled formats with sign & stamp shall be construed as acceptance of the contents of the same.   |
| 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 guidance/tender purposes giving some idea of the work involved. The work is to be executed as per terms & conditions of the tender and actual 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, taxes (except service tax), 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 thirty percent (+/- 30 %) 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 and 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 service 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. The rates of unit rate/optional items shall remain valid till execution of the order, if the job/work is awarded to the bidder.   |
| 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.   |
| 12    | The tenderer 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 before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work.  |
| 13    | No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. 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. The same modality shall be applicable for other item rate service contracts where item with same description is repeated in different schedules.  |
| 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. PVC/escalation is not payable for these Non-scheduled items.   |
| 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. No idling charge whatsoever (either for labour or any other resources) is payable by BHEL for any reason whatsoever.   |
| 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 GRAND Total price will be 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.  |

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**TENDER NO : PSER:SCT: RKL-C1755:16.**

**SCH-1-GRAND TOTAL PRICE**

| SL.NO       | DESCRIPTION OF WORK  | PRICE SCHEDULE REF   | TOTAL PRICE (INR)                         |
|-------------|--|----------------------|---|
| A           | SCHEDULE ITEM  |                      |   |
| 1.0         | TOTAL PRICE OF SCH-2-PART-1-SERVICE (MAIN PLANT CIVIL & STRUCTURAL WORK, ROAD WORK, LEVELLING & GRADING, COOLING TOWER ETC.-SERVICE).  | SCH-2-PART-1-SERVICE |   |
| 2.0         | TOTAL PRICE OF SCH-3-PART-2-SUPPLY (MAIN PLANT CIVIL & STRUCTURAL WORK, ROAD WORK, LEVELLING & GRADING, COOLING TOWER ETC.-SUPPLY).  | SCH-3-PART-2-SUPPLY  |   |
| 3.0         | <b>GRAND TOTAL PRICE (1.0+2.0)</b>   |                      |   |
| <b>B</b>    | <b>NON-SCHEDULE ITEM</b><br>Quote % above or % below or at par for items not covered as above of this schedule. The rate shall be derived from Delhi schedule of rate 2014.  |                      |   |
| 1a)         | Rate of complete item  |                      | ____% above/ ____% below /At par DSR 2014 |
| 1b)         | Rate of supply of material at site only  |                      | ____% above/ ____% below /At par DSR 2014 |
| 1c)         | Rate for execution complete excluding supply of materials.   |                      | ____% above/ ____% below /At par DSR 2014 |
| <b>NOTE</b> |  |                      |   |
| 1.0         | Bidder shall quote total price for total price of SCH-2-PART-1 (Service part) and SCH-3-PART-2 (Supply part) only at sl no 1.0, & 2.0 above respectively. 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 recknoed & will stand null & void. |                      |   |
| 2.0         | Bidder to note that grand total price at sl no 3.0 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 to note that SCH-2 covers service of respective items, unless specified otherwise in the description of items.  |                      |   |
| 4.0         | Bidder to note that SCH-3 covers supply of respective items, unless specified otherwise in the description of items.   |                      |   |

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BOUNDARY WALL AND MISC. FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO : PSER:SCT: RKL-C1755:16.**

**SCH-1-GRAND TOTAL PRICE**

|      |   |
|------|---|
| 5.0  | Bidder's quoted total price of SCH-2, & SCH-3 at sl no 1.0 & 2.0 above respectively shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules/ parts. 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. |
| 6.0  | 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 after rounded off .  |
| 7.0  | 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 SI No.5 above.  |
| 8.0  | Unit rates of each item of works of respective schedules/ parts will be derived by dividing derived amount by corresponding quantities. In deriving the unit rates of each item in this manner, figures only upto 8 decimal places will be taken into account. Any adjustment, if required, due to such methodology, will be effected in final bill.  |
| 9.0  | Successful bidder shall draw a schedule of quantities of various items of work of SCH-3 and obtain BHEL's approval/ clearance in writing before procurement, supply, etc.   |
| 10.0 | 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.  |
| 11.0 | Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.   |

| VOLUME-III   |   |      |          |   |
|--|---|------|----------|---|
| JOB: MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC. BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER |   |      |          |   |
| TENDER NO : PSER:SCT: RKL-C1755:16.  |   |      |          |   |
| SCH-2-PART-1-SERVICE   |   |      |          |   |
| ST. NO   | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
| <b>Civil, Structural &amp; Architectural works of Main Power House Building, TG &amp; BFP foundations, Boiler</b>              |   |      |          |   |
| 100  | <b>EARTH WORK</b>   |      |          |   |
|  | Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.  |      |          |   |
| 101  | Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 500 m, spreading/levelling of disposed materials etc all complete for following depths below ground level.   |      |          |   |
|  | a Depth from ground level but not exceeding 2 m   | CUM  | 202685   | 0.01302127  |
|  | b Depth exceeding 2 m but not exceeding 4 m   | CUM  | 119200   | 0.00844513  |
|  | c Depth exceeding 4 m but not exceeding 6 m   | CUM  | 15000    | 0.00117080  |
|  | d Depth exceeding 6 m but not exceeding 8 m   | CUM  | 1000     | 0.00008586  |
|  | e Depth exceeding 8 m but not exceeding 10 m  | CUM  | 500      | 0.00004713  |
|  | f Depth exceeding 10 m but not exceeding 15 m   | CUM  | 500      | 0.00005194  |
| 102  | Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.   | CUM  | 200      | 0.00000624  |
| 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 500 m, spreading / levelling of disposed materials etc all complete for following depths below ground level. |      |          |   |
|  | a Depth from ground level but not exceeding 2 m   | CUM  | 100      | 0.00001045  |
|  | b Depth exceeding 2 m but not exceeding 4 m   | CUM  | 100      | 0.00001261  |
|  | c Depth exceeding 4 m but not exceeding 6 m   | CUM  | 12200    | 0.00176533  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
|        | d Depth exceeding 6 m but not exceeding 8 m   | CUM  | 1700     | 0.00028988  |
|        | e Depth exceeding 8 m but not exceeding 10 m  | CUM  | 1000     | 0.00020054  |
|        | f Depth exceeding 10 m but not exceeding 15 m   | CUM  | 1000     | 0.00022035  |
| 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 500m, spreading / levelling of disposed materials etc all complete for following depths below ground level. |      |          |   |
|        | a Depth from ground level but not exceeding 2 m   | CUM  | 10       | 0.00000234  |
|        | b Depth exceeding 2 m but not exceeding 4 m   | CUM  | 10       | 0.00000258  |
|        | c Depth exceeding 4 m but not exceeding 6 m   | CUM  | 100      | 0.00002942  |
|        | d Depth exceeding 6 m but not exceeding 8 m   | CUM  | 500      | 0.00017622  |
| 106    | Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required, setting out, levelling, deawtering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 500m, spreading / levelling of disposed materials etc all complete for following depths below ground level.   |      |          |   |
|        | a Depth from ground level but not exceeding 2 m   | CUM  | 100      | 0.00002570  |
|        | b Depth exceeding 2 m but not exceeding 4 m   | CUM  | 100      | 0.00002834  |
|        | c Depth exceeding 4 m but not exceeding 6 m   | CUM  | 100      | 0.00003236  |
|        | d Depth exceeding 6 m but not exceeding 8 m   | CUM  | 100      | 0.00003877  |
|        | d Depth exceeding 6 m but not exceeding 8 m   | CUM  | 500      | 0.00019384  |
|        | e Depth exceeding 8 m but not exceeding 10 m  | CUM  | 500      | 0.00024737  |
|        | f Depth exceeding 10 m but not exceeding 15 m   | CUM  | 500      | 0.00024797  |
| 107    | <b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/ <b>selected materials from compulsorily excavated soil</b> available within a lead upto 500m and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following  |      |          |   |
|        | a Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 5100     | 0.00028477  |
|        | b Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 5100     | 0.00025415  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
|        | d Each layer compacted so as to achieve at least 75% relative density as per IS-2720 part XIV in case of sandy soils.  | CUM  | 100      | 0.00000450  |
|        | e Each layer compacted so as to achieve at least 70% relative density as per IS-2720 part XIV in case of sandy soils.  | CUM  | 100      | 0.00000414  |
| A107   | <b>Back filling</b> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade in well compacted layers of 150 mm thickness and using/with <b>selected materials from compulsorily excavated soil</b> available within a lead upto 500m and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following |      |          |   |
|        | a Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 190000   | 0.01163595  |
| Aa     | Each layer compacted so as to achieve at least 97% maximum dry density as per IS-2720 (Part-VIII)  | CUM  | 3000     | 0.00018373  |
|        | b Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 63000    | 0.00344215  |
| 108    | Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials <b>directly from excavation</b> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following  |      |          |   |
|        | a Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 2600     | 0.00014518  |
|        | b Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 5100     | 0.00025415  |
|        | c Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)   | CUM  | 100      | 0.00000449  |
|        | d Each layer compacted so as to achieve at least 75% relative density as per IS-2720 part XIV in case of sandy soils.  | CUM  | 100      | 0.00000504  |
|        | e Each layer compacted so as to achieve at least 70% relative density as per IS-2720 part XIV in case of sandy soils.  | CUM  | 100      | 0.00000456  |
| A108   | Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade in well compacted layers of 150 mm thickness and using/with selected materials <b>directly from excavation</b> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following  |      |          |   |

| ST. NO     | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|------------|---|------|----------|---|
| a          | Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 40000    | 0.00223353  |
| b          | Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 5000     | 0.00024917  |
| c          | Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 500      | 0.00002252  |
| d          | Each layer compacted so as to achieve at least 75% relative density as per IS-2720 part XIV in case of sandy soils.   | CUM  | 100      | 0.00000504  |
| e          | Each layer compacted so as to achieve at least 70% relative density as per IS-2720 part XIV in case of sandy soils.   | CUM  | 100      | 0.00000456  |
| 109        | Extra over ST No. 101 and 103 to 107 for carriage of excavated earth/selected materials for every 1 km or part thereof beyond an initial lead of 500m.  | CUM  | 55000    | 0.00082556  |
| c          | Each layer compacted so as to achieve at least 85% maximum dry density as per IS-2720 (Part-VII)  | CUM  | 10       | 0.00000235  |
| d          | Each layer compacted so as to achieve at least 75% relative density as per IS-2720 part XIV in case of sandy soils.   | CUM  | 10       | 0.00000271  |
| e          | Each layer compacted so as to achieve at least 70% relative density as per IS-2720 part XIV in case of sandy soils.   | CUM  | 10       | 0.00000244  |
| 111        | Providing and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.  | CUM  | 3200     | 0.00121235  |
| <b>200</b> | <b>CONCRETE WORKS</b>   |      |          |   |
|            | <b>Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b> |      |          |   |
| 201        | Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as <b>filling course</b> at any depth below finished floor level, under and around foundations/floors, mass fill etc.  | CUM  | 1700     | 0.00219858  |

| ST. NO   | DESCRIPTION OF ITEM  | UNIT | QUANTITY    | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|----------|--|------|-------------|---|
| A201 ISG | Providing and laying 75 mm thick P. C. C. (1 : 4 : 8) with 10 mm nominal size stone aggregates), shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers ( slurry mix application ) as per manufacturer's specification. 75 mm thick P. C. C. ( 1 :4:8 ) with 40 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft.<br>For Slurry Mix: A minimum of 2 coats shall be applied on the surface. The first coat being applied, when the surface is still damp and left to harden for 4 to 6 hours. After 4 to 6 hours of the application of second coat, it shall be finished by rubbing down with a soft dry sponge. The coverage shall not be less than 1 : 1 Kgs. / m2 in the 2 coats. A lap of 75 mm shall be provided at the joints. The coating shall be air dried for 4 to 6 hours and, thereafter, cured for 7 days after the application of last coat. The rate quoted should be all inclusive. | Sqm  | <b>4000</b> | 0.00057159  |
| B201 ISG | <b>Concrete of grade M5</b> (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as <b>filling course</b> at any depth below finished floor level, under and around foundations/floors. <u>mass fill etc.</u>   | CUM  | <b>10</b>   | 0.00001230  |
| 202      | Concrete of <b>grade M10</b> (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc.  | CUM  | <b>8750</b> | 0.01236694  |
| 203      | Concrete of <b>grade M15</b> (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as <b>lean concrete, levelling course</b> , mud mat under and around foundations/floors at any depth below finished floor level etc.  | CUM  | <b>10</b>   | 0.00001503  |
| 204      | Concrete under floors, paving, plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.  |      |             |   |
| b        | M20 Grade  | CUM  | <b>1200</b> | 0.00176088  |
| A204 ISG | Concrete under floors, paving, plinth protection, pipe encasing etc complete with 12 mm nominal size graded aggregate at any depth below finished floor level for the following grades.  |      |             |   |
| a        | M15 Grade  | CUM  | <b>100</b>  | 0.00013179  |
| b        | M20 Grade  | CUM  | <b>500</b>  | 0.00071389  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 205    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.  |      |          |   |
| a      | M25 Grade   | CUM  | 43600    | 0.07068027  |
| b      | M30 Grade   | CUM  | 2600     | 0.00551525  |
| 206    | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size <b>in superstructure</b> at any level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete <b>as per specification &amp; drawing for the following</b>   |      |          |   |
| a      | M25 Grade   | CUM  | 11550    | 0.02020088  |
| b      | M30 Grade   | CUM  | 1510     | 0.00299910  |
| A207   | Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade <b>M-35 Grade</b> in machine foundations for TG, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level (except TG deck and top decks supported over vibration isolation system) including addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing | CUM  | 2000     | 0.00462316  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 208    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 of grades mentioned below for reinforced concrete works using graded aggregate in top decks of all machine foundations supported on vibration isolation system (excluding supply and installation of vibration system) and top deck of TG foundation at all levels including addition of suitable plastisizers conforming to IS9103 to achieve a slump more than 125 mm in concrete as per manufacturers recommendation, preparation of scheme for concreting, getting it approved by engineer, labour, materials, equipment, handling, batching, transporting, mixing, pumping, placing, leveling, vibrating, compacting, curing, testing, cleaning and rendering the exposed surface with cement sand mortar to give a smooth and even surface, maintaining and submitting records of concreting, petrographic examination and potential reactivity of aggregate etc. all complete as per specification, drawing and instructions of engineer, including UPV testing as directed by engineer in charge, rectification of the defects in concreting observed by ultra-sonic pulse velocity (UPV) testing by cement/epoxy grout etc, but excluding formwork, staging, reinforcement, embeddments and temperature control of concrete.<br>Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%. |      |          |   |
|        | b) M35 grade (with 20mm nominal size graded stone aggregate)  | CUM  | 700      | 0.00152858  |
| 209    | Extra over St. No. 205 to 208 for controlling of temperature of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for Providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.  | CUM  | 2500     | 0.00053436  |
| 210    | Extra over ST Nos. 205 to 207 for <b>conducting UPV test</b> for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.  | CUM  | 900      | 0.00057333  |
| 211    | Providing and <b>encasing</b> of structural steel member with <b>concrete</b> using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)   |      |          |   |
|        | a) M20 grade  | CUM  | 100      | 0.00013623  |
|        | b) M25 grade  | CUM  | 10       | 0.00001946  |
| A211   | Providing and <b>encasing</b> of structural steel member with <b>concrete</b> using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades.   |      |          |   |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
|        | b M25 grade  | CUM  | 1500     | 0.00291889  |
| 212    | Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.  |      |          |   |
|        | a 1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)   | CUM  | 150      | 0.00025316  |
|        | b 1:1.5:3 (1 part cement, 1.5 part sand, 3 parts of aggregate by volume)   | CUM  | 370      | 0.00090460  |
| 213    | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.                               |      |          |   |
|        | a M 25 grade   | CUM  | 100      | 0.00032002  |
|        | b M 30 grade   | CUM  | 10       | 0.00001798  |
| A213   | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in precast works</b> (Except boundary wall) like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent preacast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades |      |          |   |
|        | a M 20 grade   | CUM  | 50       | 0.00009456  |
|        | b M 25 grade   | CUM  | 200      | 0.00041608  |
|        | c M 30 grade   | CUM  | 200      | 0.00045775  |

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|--------|---|------|----------|---|
| Ab213  | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in perforated / without perforation precast RCC slabs for cover over drain/trench etc</b> including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for <b>M30 grades</b> .   | CUM  | 25       | 0.00006136  |
| B213   | Providing and laying <b>Precast Reinforced concrete</b> wall panels, copings, architectural features etc. as per approved design and drawing submitted by bidder with design Mix cement concrete of <b>grade M30</b> as per IS:456 & IS 10262-2009 using graded aggregate for Concrete <b>in precast boundary-wall works</b> . The work shall include cost of formwork/moulds , provision of suitable grooves/key for interlocking of panels after erection, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting for all leads, erection with required T&P without damage, setting in position with cement sand mortar (1:3), filling the gaps with cement sand mortar (1:3) , etc all complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing. |      |          |   |
| a      | M 25 grade  | CUM  | 100      | 0.00024545  |
| b      | M 30 grade  | CUM  | 7000     | 0.01768568  |
| C213   | Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in perforated / withoutperforation precast RCC slabs for cover over drain/trench etc</b> including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for <b>M30 grades</b> .  | CUM  | 100      | 0.00024545  |

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|--------|---|------|----------|---|
| 214    | Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete <b>in water retaining/conveying structures</b> including addition of suitable plastisizer cum waterproofing cement additives conforming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. |      |          |   |
| a      | M 25 grade  | CUM  | 800      | 0.00135356  |
| b      | M 30 grade  | CUM  | 7010     | 0.01462584  |
| 215    | Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.   |      |          |   |
| a      | Plain cement concrete of all grades   | CUM  | 60       | 0.00002007  |
| b      | Reinforced cement concrete of all grades  | CUM  | 60       | 0.00002896  |
| A215   | Rebate over ST No. 215b for taking into account the deemed cost of all serviceable material including reinforcement steel which bidder will be getting out of it by taking them outside plant for bidder's purpose instead of stacking to a lead of 500m inside plant.  |      |          |   |
| a      | Plain cement concrete of all grades   | CUM  | 20       | 0.00000335  |
| b      | Reinforced cement concrete of all grades  | CUM  | 20       | 0.00000483  |
| 216    | <b>Chipping of concrete</b> in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .  | CUDM | 510      | 0.00041644  |
| 217    | Extra over and above St No 216 for <b>cutting of reinforcement</b> , all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.   | SQCM | 310      | 0.00004597  |

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|------------|---|------|----------|---|
| 218        | Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.   | CUDM | 110      | 0.00000641  |
| 220        | Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.   | CUM  | 150      | 0.00021588  |
| 221        | Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in sloped surface of canal lining or channel cast in alternate panels with provision of expansion gap/construction joints at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete, compaction with special equipments, etc all complete as per specification & drawing for the following. |      |          |   |
| b          | M25 Grade   | CUM  | 50       | 0.00011708  |
| <b>300</b> | <b>FORM WORKS</b>   |      |          |   |
|            | <b>Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.</b>   |      |          |   |
| 301        | Fairface form work with good quality water proof ply wood of required thickness and smooth surface <b>below finished ground floor level</b> for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.  | SQM  | 120000   | 0.02449673  |
| 302        | Fairface form work with good quality water proof ply wood of required thickness and smooth surface <b>above finished ground</b> floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.  | SQM  | 75000    | 0.01810236  |

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|------------|---|------|-------------|---|
| A302       | Fairface form work with good quality water proof ply wood of required thickness and smooth surface having high quality shuttering finish with tolerance of +/- 5mm <b>above finished ground</b> floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.  | SQM  | <b>6700</b> | 0.00161714  |
| 303        | Fairface Formwork with good quality water proof ply wood of required thickness and smooth surface <b>for TG</b> superstructure (above base raft level) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights.   | SQM  | <b>400</b>  | 0.00035184  |
| ISG<br>303 | Providing ,fixing & removing curved type of shuttering including staging, proping (cost incl. of submitting supporting design & drawing and approval etc.) at all locations, heights and levels above or bellow ground with Slip Formwork complete as per specification and directions of engineer incharge   | SQM  | <b>2850</b> | 0.00255477  |
| A303       | <b>Fairface formwork with good quality water proof ply wood of required thickness and smooth surface for BFP decks</b> supported on vibration isolation system resting on steel framing at approx. 14.5 M including preparation of scheme, designing, submission and approval of staging drawing with necessary removable steel framing for supporting the formwork, sufficient props, braces and ties etc. all complete. | SQM  | <b>200</b>  | 0.00017592  |
| 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 | <b>200</b>  | 0.00003711  |
| b          | Pockets of depths more than 150mm and upto 300 mm depth   | Each | <b>200</b>  | 0.00005188  |
| c          | Pockets of depths more than 300mm and upto 600 mm depth   | Each | <b>200</b>  | 0.00008910  |
| d          | Pockets of depths more than 600mm and upto 1000 mm depth  | Each | <b>200</b>  | 0.00017820  |
| e          | Pockets of depths more than 1000mm and upto 1500 mm depth   | Each | <b>200</b>  | 0.00025241  |

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|------------|--|------|----------|---|
| 305        | Fairface plywood with filmface/laminated formwork above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights where ever specifically mentioned in the drawing.  | SQM  | 1        | 0.00000032  |
| A306       | Fixing and alignment of formwork for fan stack (curved and inclined surfaces) for elevation from 10.0m-16.0m (approx.). Formwork only shall be supplied by BHEL. All other scaffolding, staging, tying ,nailing,bolting ,caulking, transportation of formwork from site store, de-shuttering, returning the formwork back to store etc. shall included in cost.  | SQM  | 4000     | 0.00163312  |
| <b>400</b> | <b>REINFORCEMENT</b>   |      |          |   |
| 401        | Transporting, straightening, cutting, bending, placing in position at any level, binding of mild steel reinforcements conforming to grade 1 of IS:432 (part 1 or grade IS-2062) in concrete including cost of reinforcement and binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.   | MT   | 37       | 0.00036177  |
| 402        | Transporting, straightening, cutting, bending, placing in position at any level, binding in position of <b>steel reinforcements of TMT steel of grade Fe-500</b> HYSD confirming to <b>IS:1786</b> including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(STEEL WILL BE SUPPLIED BY BHEL FREE OF COST)</b> | MT   | 6205     | 0.02110148  |
| A402       | Straightening, stretching, placing in position as per drawing, cutting after casting of concrete etc. of <b>uncoated stress relieved strands (diameter, length, ply and number as per drawing)</b> of minimum 0.2 percent proof load of 32460 N confirming to <b>IS:6006</b> in precast wall panels, columns etc. complete all as per specifications, drawings and as directed by Engineer.                                | MT   | 15       | 0.00016819  |
| 403        | Providing, straightening, cutting, bending, placing in position at any level, binding in position of <b>steel reinforcements of TMT steel of grade Fe-500D or 500EQR</b> confirming to <b>IS:1786</b> including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.   | MT   | 1        | 0.00002998  |

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|------------|---|------|----------|---|
| 404        | Extra over ST No. 402 & 403 for providing <b>fusion bonded epoxy coating</b> by mechanised & qualified process including blast cleaning to white metal as per Swedish code, heating in induction heater, electrostatically spraying the epoxy powder, complete fusion to give minimum coating thickness of 200-300 microns, gradual cooling without affecting the properties of steel, testing as per ASTM 775 and IS:13620, flexibility & holiday test, proper packing, safe transportation, touchup at site, etc. complete to ensure proper resistance of FBE against corrosive environment. The bidder has to transport the steel from BHEL site store to vendor plant and bringing back to site and special handling during straightening, cutting, bending, placing and providing PVC coated binding wire. | MT   | 1        | 0.00000613  |
| 405        | Straightening, cutting, bending, placing in position at any level, binding in position of corrosion resistant steel -HCRM re-bars of approved make with steel of grade Fe-500 confirming to IS:1786 norms including cost of binding wire, labour, scaffolding, Transporting to & from stores etc complete all as per specifications, drawings and as directed by Engineer. <b>(STEEL WILL BE SUPPLIED BY BHEL FREE OF COST AS PER TCC)</b>  | MT   | 1800     | 0.01007248  |
| 406        | Providing, straightening cutting, bending, placing in position at any level, binding of <b>mild steel reinforcements in brickwork</b> including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.   | MT   | 5        | 0.00014853  |
| 407        | Providing, straightening, cutting, bending, placing in position at any level, binding in position high yield strength steel reinforcements in brickwork/concrete enclahing including cost of reinforcement and binding wire, labour, scaffolding etc. complete all as per specifications & drawings.  | MT   | 1        | 0.00002715  |
| <b>500</b> | <b>WATER PROOFING WORKS</b>   |      |          |   |
|            | <b>Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge. (CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>   |      |          |   |
| 501        | Providing and laying <b>underbed grading plaster with cement mortar 1:4</b> (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.  | SQM  | 250      | 0.00002492  |

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|----------|--|------|--------------|---|
| A501     | Providing and laying <b>underbed screed concrete mix (M-15 grade) grading having</b> minimum 25mm thickness at the lowest point of the slope laid over RCC slab including <del>preparation of surface, batching, mixing, leveling etc. all complete.</del>   | SQM  | <b>16000</b> | 0.00087420  |
| B501     | Providing and laying <b>grading plaster with cement mortar 1:4</b> (1 cement : 4 sand) over screed concrete and average thickness of 15 mm including preparation of surface, batching, <del>mixing, leveling etc. all complete.</del>  | SQM  | <b>14800</b> | 0.00175944  |
| A502     | Providing and applying over-deck insulation of minimum 75 mm thick Extruded Polyurethane foam with minimum density 18 kg/Cu.m. above water proofing with mortar and Joints sealed with adhesive tape over roof and above it White glazed tile chips shall be provided for roofing over under bed of cement mortar(1:4)/ concrete(1:2:4) including all workmanship, topping spreading white cement slurry at an average rate of 2.5 kg/sq m(unless noted otherwise)jointing and joint filling with white cement slurry (unless noted otherwise) ,laying to plumb and water level in desired pattern ,casting in panels . Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete. (water proofing to be paid separately) | SQM  | <b>600</b>   | 0.00019021  |
| A502 ISG | Providing and laying in-situ <b>light weight foam concrete insulation</b> as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:5 (1 cement: 5 coarse sand) after the curing period of laid foam concrete and providing of expansion joint at intervals as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.125 Kcal/sqm-hr deg C and the weight of the insulating material shall be from 0.5 to 0.75 gm/cm <sup>3</sup> , strength not less than 5 Kg/sq.cm or (0.5N/sq.mm.). Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.                          |      |              |   |
| a        | Average 50 mm thickness  | SQM  | <b>2000</b>  | 0.00062082  |
| b        | Average 75 mm thickness  | SQM  | <b>100</b>   | 0.00004005  |
| c        | Average 100 mm thickness   | SQM  | <b>10</b>    | 0.00000344  |
| 503      | Providing and applying <b>bitumen felt water proofing for normal treatment</b> having bonding materials consisting of blown type conforming to IS: 702 or residual bitumen conforming to IS: 73 or a mixture of the two with one layer of felt consisting of five courses and with a minimum overlap of 75 to 100 mm of felt including preparation of surfaces etc all complete. (For description of layers refer specification)   |      |              |   |
| a        | <b>With hessian base felt</b>  | SQM  | <b>1</b>     | 0.00000027  |
| b        | <b>With fiber base felt</b>  | SQM  | <b>1</b>     | 0.00000030  |

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|--------|--|------|----------|---|
| 505    | Providing and applying <b>bitumen felt water proofing for extra heavy treatment</b> having bonding materials consisting of blown type conforming to IS: 702 or residual bitumen conforming to IS: 73 or a mixture of the two with three layers of felt consisting of nine courses and with a minimum overlap of 75 to 100 mm of felt including preparation of surfaces etc all complete for following base felts (For description of layers refer specification):  |      |          |   |
| a      | <b>With hessian base felt</b>  | SQM  | 1        | 0.00000033  |
| b      | <b>With fiber base felt</b>  | SQM  | 1        | 0.00000036  |
| 506    | <b>Providing and applying PU based water proofing treatment with one coat of polyurethane</b> or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and <b>two successive liquid coatings of high solids content urethane pre-polymers</b> or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric for edges, joints & vulnerable points etc all complete as per specifications and directions of engineer in charge.  | SQM  | 4000     | 0.00084057  |
| A506   | <b>Providing and applying PU based water proofing treatment with one coat of polyurethane</b> or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and <b>two successive liquid coatings of high solids content urethane pre-polymers</b> laid over reinforcing layer of polyscrim cloth or non woven geotextile or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric for edges, joints & vulnerable points etc all complete as per specifications and directions of engineer in charge. | SQM  | 12000    | 0.00252172  |
| 507    | <b>Providing and laying wearing course</b> consisting of <b>25mm thick plain cement concrete</b> 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  | 16000    | 0.00240164  |

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|--------|--|------|----------|---|
| A507   | Providing and laying of 20 mm thick 1:4 cement mortar with chicken wire mesh over finished surface of elastomeric membrane etc. all complete as per specifications and direction of engineering incharge.  | SQM  | 12000    | 0.00184446  |
| 508    | Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 250x250 mm / 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway and entire equipment area with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)  | SQM  | 6001     | 0.00190962  |
| A508   | Providing and laying pressed cement concrete tiles of 20 mm thickness and size 250x250 mm / 300x300 mm with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)  | SQM  | 7000     | 0.00201738  |
| 509    | Providing and applying two coats of bitumen grade 85/25 as per IS 702 ( @ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.   | SQM  | 9000     | 0.00169135  |
| A509   | Providing and applying three coats of bitumen grade 85/25 as per IS 702 ( @ 1.7kg/sqm / coat, in three coats and it should be heated to about 120 degree celsius before application) with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / water/ ash including surface preparation etc. all complete. The butimen coating shall be applied over one coat of suitable primer followed by minimum 3 coats of bitumen paint conforming to IS 9862 to achieve a DFT of 150 micron of bitument coat. (Cost of primer included in this item). | SQM  | 20000    | 0.00180123  |
| B509   | Providing and applying two coats of hot bitumen (20/30) over a coat of primer in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation, primer etc. all complete.  | SQM  | 30000    | 0.00270184  |
| 510    | Providing and applying water proofing with blown bitumen bonding material conforming to IS:702 of 65/25 grade in Basements, ducts, pits, tunnels etc below the ground level on the concrete surfaces exposed to soil / ash and up to 150 mm above ground level on outside of walls and top of RCC slab including preparation of surface, brick lining single brick thick with 1:4 cement mortar etc. all complete with following number of layers of bitumen felts:  |      |          |   |
| a      | 2 Layers of felt for depth up to 5m below ground level for floors  | SQM  | 1000     | 0.00020540  |
| b      | 3 Layers of felt for depth beyond 5m below ground level for walls  | SQM  | 1000     | 0.00030579  |

| ST. NO   | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|----------|--|------|----------|---|
| 511      | Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.  | KG   | 50       | 0.00000450  |
| 512      | Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.   | SQM  | 9000     | 0.00099968  |
| A515     | Providing and applying Moisture Compatible Corrosion Resistant Coating System or its equivalent in all surfaces in direct contact with water/ water spray/moist air upto and including Fan Deck slab level including basin slab, inner faces of cladding walls, all faces of cell partition wall, all faces of columns, all faces of beams (both cast in situ and precast), bottom surface of fandeck slab for counter flow tower and both surface of fandeck slab for cross flow tower, inner face of fanstack, all faces of hot water basin (for cross flow tower) etc. of cooling tower as per specification and approval of engineer-in-charge.  | SQM  | 20000    | 0.00390266  |
| B515 ISG | <p>Providing and applying on the outer surface of walls, frames and roof slabs coming in contact with earth, polymer modified cementitious coating in two layers as specified and as per manufacturer's specifications shall be provided directly on the concrete surface. Modified liquid polymer blend shall be a dispersion containing 100 % acrylic based polymer solids. Polymer shall be mixed in the ratio of 1 cement: 0.5 polymer (for minimum solid content of polymer 30%). Portland cement based dry powder. Clean, fine specially prepared quartz sand approximately 0.6 mm size. The liquid polymer shall be stirred well and cement based powder shall then be added slowly to make a Slurry Mix. For preparation of Brush Topping Mix, quartz sand shall be added slowly and mixed well till a homogeneous mixture is obtained. The mix shall be used within half an hour of the preparation. Addition of quartz sand may not be necessary, in case dry power contains the same.</p> <p>For Brush Topping Mix: This shall be applied in two coats. A primary coat of slurry mix can also be first applied on the surface as first coat. After the coating has dried up, a coat of Brush Topping Mix shall be applied over it with a push broom or any other similar brush. It shall be left in broom finished condition. The nominal thickness shall be 1.5 mm and minimum thickness shall be 1.0 mm. A lap of 75 mm shall be provided at the joints. It shall be ensured that no pinhole exists and rebrushing shall be done to cover the pinholes, if any. The Coating shall be air dried for 4 to 6 hours and thereafter cured for 7 days after the application of last coat. Rate of application of coating shall be established to achieve the required thickness. The rate quoted should be all inclusive.</p> | SQM  | 2000     | 0.00062683  |

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|------------|--|------|----------|---|
| A516       | Providing and applying acrylic based polymer modified cementitious composite coating to internal/external concrete surfaces on over/underground structures of approved make, specification and as per manufacturer's recommendation.   | SQM  | 500      | 0.00014980  |
| <b>600</b> | <b>JOINT AND FILLERS</b>   |      |          |   |
|            | <b>Joints &amp; fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 601        | Providing & 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.  |      |          |   |
| a          | 12 mm wide joints.   | SQM  | 1010     | 0.00031109  |
| b          | 20 mm wide joints.   | SQM  | 110      | 0.00004901  |
| c          | 25 mm wide joints  | SQM  | 5100     | 0.00314477  |
| d          | 50 mm wide joints  | SQM  | 101      | 0.00007805  |
| 602        | Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:   |      |          |   |
| a          | 12mm X 25mm  | RM   | 4001     | 0.00091525  |
| b          | 20mmX25mm  | RM   | 700      | 0.00022418  |
| c          | 25mmX25mm  | RM   | 3001     | 0.00137299  |
| d          | 50mmX25mm  | RM   | 201      | 0.00017233  |
| 603        | Providing and filling in position hot applied bitumin sealing compund (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   | 1        | 0.00000014  |
| b          | 12mm X 25mm  | RM   | 201      | 0.00003126  |
| c          | 20mmX25mm  | RM   | 1        | 0.00000022  |
| 605        | Providing and sealing of joints with premium grade silicon sealant ( Silpruf 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   | 1001     | 0.00033476  |

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|------------|--|---------|----------|---|
| b          | 50mmX25mm  | RM      | 201      | 0.00009703  |
| 606        | Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:   |         |          |   |
| c          | 150 mm wide and 6 mm thick   | RM      | 2500     | 0.00102220  |
| d          | 230 mm wide and 6 mm thick   | RM      | 3800     | 0.00183437  |
| 607        | Providing and fixing <b>copper water stops</b> in joints of deep underground structure all complete for the following:   |         |          |   |
| a          | 150 mm wide and 8 mm thick   | RM      | 200      | 0.00009655  |
| <b>700</b> | <b>MS EMBEDMENTS</b>   |         |          |   |
|            | <b>Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |         |          |   |
| 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 etc. <b>The surface shall be prepared by Manual Cleaning and provided with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of Minimum 50 Micron Dry Film Thickness (DFT) etc. all complete</b> | MT      | 60       | 0.00058928  |
| A702       | Same as above with BHEL supplied material free of cost including loading, transportation, unloading, etc. all complete from BHEL store to plant site. <b>The surface shall be prepared by Manual Cleaning and provided with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of Minimum 50 Micron Dry Film Thickness (DFT). etc. all complete.</b>  | MT      | 110      | 0.00114350  |
| 703        | Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.   | MT      | 60       | 0.00046778  |
| 704        | Erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.   | MT      | 60       | 0.00058928  |
| 705        | Transporting, Erecting and installing following items in concrete/ brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.  |         |          |   |
| a          | MS pipes of all diameters  | Quintal | 15       | 0.00002582  |

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|------------|--|---------|----------|---|
| b          | PVC pipes / conduits of all diameters  | Quintal | 105      | 0.00022216  |
| c          | UPVC pipes / conduits of all diameters   | Quintal | 5        | 0.00001058  |
| d          | Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:  |         |          |   |
| i          | Upto 250 kg  | Each    | 101      | 0.00000752  |
| ii         | Beyond 250 Kg and upto 500 kg  | Each    | 210      | 0.00002333  |
| iii        | Beyond 500 Kg and upto 750 kg  | Each    | 201      | 0.00003729  |
| e          | Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:  |         |          |   |
| i          | Upto 250 kg  | Each    | 101      | 0.00000752  |
| ii         | Beyond 250 Kg and upto 500 kg  | Each    | 215      | 0.00002388  |
| iii        | Beyond 500 Kg and upto 750 kg  | Each    | 201      | 0.00003729  |
| 706        | Placing, locking and releasing of Vibration Isolation spring modules over the foundation at all elevations including Providing all assistance under the supervision of the supplier, transportation from BHEL store, necessary staging, platforms, leveling, alignment etc. all complete.  | Each    | 55       | 0.00004388  |
| <b>800</b> | <b>GROUTING</b>  |         |          |   |
|            | <b>Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>  |         |          |   |
| 801        | Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at minimum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.<br><b>BHEL will supply cement free of cost as per TCC</b> | SQM     | 1100     | 0.00033782  |
| 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. <b>BHEL will supply cement free of cost as per TCC</b>   | CUM     | 21       | 0.00018712  |

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|------------|--|------|----------|---|
| 803        | Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips ) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). <b>BHEL will supply cement free of cost as per TCC</b>  | CUM  | 51       | 0.00030293  |
| 804        | Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).  | CUM  | 30       | 0.00062371  |
| 805        | Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).  | CUM  | 30       | 0.00062371  |
| <b>900</b> | <b>900 DOORS, WINDOWS, VENTILATORS, LOUVERS</b>  |      |          |   |
|            | <b>Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |          |   |
| 901        | Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothing, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)   | CUM  | 5        | 0.00016489  |
| 902        | Providing and fixing teakwood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately) | SQM  | 10       | 0.00003341  |

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|--------|---|------|----------|---|
| 903    | Transporting, 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, partical board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides,approved ISI mark anodised fittings like door stopper, 300mm long tower bolts,16x300mm long aldrops,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish flat oil paint confirming to IS: 137 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  | 200      | 0.00019333  |
| 904    | Transporting and fixing single or double steel door shutters with 35 mm thk 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.  | SQM  | 50       | 0.00005725  |
| A904   | Providing and fixing <b>single or double steel door shutters</b> with 35mm(minimum) thk flush <b>design shutter</b> comprising of two outer sheets of 1.2 mm steel sheets rigidly connected and reinforced inside with continuous vertical 1.0 mm stiffeners, spot welded in position at not more than 150mm on centres, side ,top & bottom edges of shutters shall be reinforced by continuous pressed steel channel with minimum 1.2 mm, including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.  | SQM  | 300      | 0.00121187  |
| 905    | Transporting and fixing <b>single or double steel door shutters</b> with <b>18 gauge M.S. sheets shutter</b> presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.   | SQM  | 50       | 0.00004932  |

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|--------|---|------|----------|---|
| 906    | Transporting and fixing <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately) | SQM  | 30       | 0.00002075  |
| A906   | Fixing <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 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 rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)                  | SQM  | 150      | 0.00009402  |

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|--------|---|------|------------|---|
| B906   | Fixing of <b>anodised tubular aluminium doors</b> (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent. The door frame shall be of 101.4mm x 44.6mm and shutter of 50mm tubular extrusions, <b>3mm</b> thick. The opening arrangement shall be single action or double action as shown in drawing with spring hinges in floor. The glazing shall be 5.5mm thick plain glass panes fixed with necessary gaskets and aluminium beading strip. The door shall be provided with one security lock. The shutters shall be provided with 1.6mm thick 300x150mm push plates and 1.6mm thick 300mm wide kick plate of anodised aluminium for full width of door inside and outside. The door frames shall be polished and anodized with approved colour. The average thickness of anodic coating shall not be less than 15 microns as per IS: 1868. Door frame shall be provided with approved anchors @ 90 cm c/c maximum for fixing. (Glazing shall be paid separately) | SQM  | <b>150</b> | 0.00008880  |
| 907    | Transporting and fixing fire proof steel doors (single or double shutter) with panic devices having 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  | <b>50</b>  | 0.00013170  |
| A907   | <b>Transporting and fixing fire proof steel doors</b> (single or double shutter) with panic devices shall be 35mm thk flush design comprising of two outer sheets of 1.2 mm steel sheets rigidly connected and reinforced inside with continuous vertical 1.0 mm stiffeners, spot welded in position at not more than 150mm on centers , side ,top & bottom edges of shutters shall be reinforced by continuous pressed steel channel with minimum 1.2 mm, 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  | <b>100</b> | 0.00025151  |
| 908    | Transporting and fixing of 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      | openable type   | SQM  | <b>300</b> | 0.00016481  |
| b      | fixed type  | SQM  | <b>150</b> | 0.00007898  |

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|--------|---|------|--------------|---|
| 909    | <p><b>Transporting and fixing</b> anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings &amp; fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalllic protection etc.including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, Providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.</p>   | Kg   | <b>400</b>   | 0.00003242  |
| A909   | <p><b>Transporting and fixing anodised (Electro colour dyed) aluminium work</b> with 15 micron coating thickness of Jindal, Hindalco or other equivalent approved make for <b>door panels, grill</b>, door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings &amp; fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metalllic protection etc.including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.</p> | Kg   | <b>21000</b> | 0.00170216  |

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|--------|---|------|----------|---|
| 910    | Transporting and fixing of aluminium composite panel(ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade ,color etc all complete as per specification including all fixing accessories like washer, nut, bolt clip, base frame etc. (Cost of all fixing accessories, base frame arrangement included in this item)  |      |          |   |
| a      | 3mm   | SQM  | 1        | 0.00000062  |
| b      | 4mm   | SQM  | 1500     | 0.00196784  |
| c      | 5mm   | SQM  | 401      | 0.00064356  |
| 911    | Fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :  |      |          |   |
| a      | Over head hydraulic door closures   | Each | 110      | 0.00003329  |
| b      | Floor mounted Hydraulic door closers  | Each | 60       | 0.00003091  |
| 912    | Fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications.   | Kg   | 5050     | 0.00010915  |
| A912   | Fixing pressed steel frames for partition fabricated from minimum 2.0mm galvanized steel sheet pressed to form a profile of nominal size 60mm x 70 mm & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 300mm from the edges & every 500mm c/c etc all complete as per specifications.   | Kg   | 325      | 0.00000702  |
| 913    | Transporting 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  | 59       | 0.00003638  |
| b      | Mechanically Operated   | SQM  | 345      | 0.00026266  |
| c      | Electrically operated   | SQM  | 209      | 0.00032589  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 914    | Transporting and fixing in position PVC doors(25 thk double skin) of sintex or equivalent make including door frame ,all fitting & fixtures as per specification, drawing and instructions of engineer in charge.                       | SQM  | 70       | 0.00003678  |
| A914   | Transporting and fixing in position solid core FRP doors including door frame,all fitting & fixtures as per specification, drawing and instructions of engineer in charge.  | SQM  | 120      | 0.00006938  |
| 915    | Transporting and fixing 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       | 0.00000167  |
| b      | 4 mm thick clear float glass  | SQM  | 1810     | 0.00034232  |
| c      | 5.5 mm thick clear float glass  | SQM  | 10       | 0.00000212  |
| d      | 6 mm thick wired glass  | SQM  | 700      | 0.00016391  |
| e      | 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges  | SQM  | 10       | 0.00000415  |
| f      | 4 mm thick ground glass   | SQM  | 10       | 0.00000111  |
| g      | 6 mm thick tinted heat reflecting type float glass  | SQM  | 10       | 0.00000256  |
| h      | 6 mm thick clear toughened safety glass   | SQM  | 710      | 0.00021869  |
| 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  | 210      | 0.00012016  |
| j      | Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)  | SQM  | 110      | 0.00006433  |
| k      | One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).          | SQM  | 110      | 0.00005944  |
| l      | 6 mm thick clear float glass  | SQM  | 10       | 0.00000147  |
| Ae     | 2mm thick fire and UV resistant Polycarbonate sheet   | SQM  | 200      | 0.00022275  |
| Ak     | One outer 6mm thick heat-reflecting type toughened glass and one inner 6mm thick clear toughened glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).         | SQM  | 100      | 0.00006683  |
| Am     | 2 mm thick polycarbonate sheet with profile matching with metal sheeting  | SQM  | 100      | 0.00011138  |
| An     | 6 mm thick reflective toughened glass   | SQM  | 300      | 0.00023380  |
| Ao     | One outer 6mm thick toughened, fire resistant plane glass and one inner 6mm thick fire resistant, tinted glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured). | SQM  | 100      | 0.00006683  |

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|--------|--|------|----------|---|
| 916    | Providing and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.   | RM   | 150      | 0.00002783  |
| 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  | 120      | 0.00015145  |
| 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  | 110      | 0.00016221  |
| 919    | Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.  | SQM  | 110      | 0.00025196  |
| 920    | Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealent, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.  | SQM  | 601      | 0.00126296  |
| A920   | Roof skylight structure for atrium with 4mm embossed clear translucent polycarbonate IR sheet both side UV coated minimum 55% light transmission, solar control, approved make, texture and shade, fixed to powder coated aluminium section with 60mm width top and bottom with EPDM rubber gasket , sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealent, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification | SQM  | 600      | 0.00175512  |
| A921   | Providing and applying minimum 250 micron DFT epoxy based Finish painting / polishing in desired shades on all wooden doors / windows / ventilators / partitions including thinners etc. all complete.   | SQM  | 101      | 0.00002426  |
| A922   | Providing and fixing automatic closing sliding glass doors with fittings, fixtures including all necessary arrangement including sensor, motor, frames, finishes etc. all complete.  | EACH | 11       | 0.00002972  |

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|-------------|--|------|----------|---|
| A923        | Providing and fixing 120 minutes Fire Rated Fully Glazed non load bearing fixed partition with valid fire test certificate from national or international lab as per specification. The Partition Frame shall be manufactured from minimum 2.0mm galvanized steel sheet pressed to form a profile of nominal size 60mm x 70 mm & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 300mm from the edges & every 500mm c/c. The frame shall be finished with etch primer for scratch resistance and shall be powder coated of approved shade and color. The glass panels shall be minimum 11mm thick, 120 minute fire rated, with 15 minute full insulation non wired toughened glass having a sound reduction of greater than 37dB, light transmission of 87% and compliant to class 1B1category of impact resistance as per EN 12600. Shop drawings for the item with all construction and anchoring details along with fire rating test reports shall be got approved from Engineer-in-charge before execution. | SQM  | 100      | 0.00051047  |
| A924        | Providing, fabricating and fixing Single sheet steel door of 18 gauge mild steel with suitable stiffeners hot dip galvanized or seal spray zinc coated as per BS:5493 (for a very long period of maintenance of more than 20 years) . The galvanization shall not be less than 610 gm / sq.m as per IS : 4759. The door shall be provided with all fitting, fixture, locking arrangement etc as per specification.   | MT   | 2        | 0.00007661  |
| A925        | Providing and applying fire resistant transparent paint (as per IS:162) over french polish/flat oil paint (minimum 2 coats) on wood surface made from best quality shelac, denatured spirit and other suitable alcohol soluble ingredients and made by a well known approved manufacturer as per IS:348/(flat oil paint IS:137) including required base preparation etc. all complete as per specification   | SQM  | 150      | 0.00002927  |
| <b>1000</b> | <b>BRICKWORK</b>   |      |          |   |
|             | <b>Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge. (CEMENT FOR BRICK WORK AND MANUFACTURE OF FLY ASH BRICKS IF MANUFACTURE AT PROJECT PREMISES WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>   |      |          |   |
| 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.  |      |          |   |
| a           | Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2  | CUM  | 610      | 0.00115786  |

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|--------|---|------|----------|---|
|        | b Using <b>clay ash bricks</b> as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%  | CUM  | 10       | 0.00001899  |
|        | c Using <b>burnt clay bricks</b> of class designation 7.5 of nominal dimension  | CUM  | 60       | 0.00014799  |
|        | d Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension  | CUM  | 100      | 0.00024665  |
| 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.   |      |          |   |
|        | a Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2   | CUM  | 6300     | 0.01577337  |
|        | b Using <b>clay ash bricks</b> as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%  | CUM  | 10       | 0.00002372  |
|        | c Using <b>burnt clay bricks</b> of class designation 7.5 of nominal dimension  | CUM  | 260      | 0.00065096  |
|        | d Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension  | CUM  | 50       | 0.00012519  |
| 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.   |      |          |   |
|        | a Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2   | CUM  | 301      | 0.00078723  |
| 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. |      |          |   |
|        | a Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2   | SQM  | 501      | 0.00017603  |
|        | b Using <b>clay ash bricks</b> as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%  | SQM  | 1        | 0.00000043  |
|        | c Using <b>burnt clay bricks</b> of class designation 7.5 of nominal dimension  | SQM  | 101      | 0.00004222  |
|        | d Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension  | SQM  | 1        | 0.00000039  |
| A1003  | Providing <b>Light Weight Aerated Concrete Panel of thickness 200mm to 300mm in walls</b> at all heights, places and position above or below plinth/graded level including jointing, scaffolding etc complete as per specification.   | CUM  | 150      | 0.00007682  |

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|--------|---|------|----------|---|
| 1004   | Providing <b>brick soling</b> including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item).<br><b>Using brick on edge.</b>                     |      |          |   |
| a      | Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2   | SQM  | 51       | 0.00002349  |
| b      | Using <b>clay ash bricks</b> as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%  | SQM  | 1        | 0.00000042  |
| c      | Using <b>burnt clay bricks</b> of class designation 7.5 of nominal dimension  | SQM  | 51       | 0.00002349  |
| d      | Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension  | SQM  | 1        | 0.00000039  |
| 1005   | Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item.)-<br><b>Using flat bricks.</b>                             |      |          |   |
| a      | Using <b>fly ash Cement bricks</b> confirming to IS 12894 with crushing strength of 75 kg/cm2   | SQM  | 250      | 0.00004144  |
| b      | Using <b>clay ash bricks</b> as per IS 13757 with crushing strength of 75 kg/cm2 and minimum percentage of fly ash 25%  | SQM  | 1        | 0.00000012  |
| c      | Using <b>burnt clay bricks</b> of class designation 7.5 of nominal dimension  | SQM  | 51       | 0.00000697  |
| d      | Using <b>burnt clay bricks</b> of class designation 5.0 of nominal dimension  | SQM  | 150      | 0.00001744  |
| 1006   | <b>Breaking</b> of existing brick <b>work</b> at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.  | CUM  | 51       | 0.00001706  |
| 1007   | 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. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately) | CUM  | 6        | 0.00001261  |
| 1008   | 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  | 51       | 0.00000546  |
| 1009   | <b>Making openings</b> in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.  | CUM  | 6        | 0.00000245  |
| 1010   | Supply and placing in position <b>mild steel wire fabric</b> of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.   | SQM  | 1        | 0.00000021  |

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|-------------|---|------|----------|---|
| A1010       | Supply and placing in position <b>mild steel wire fabric</b> of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete/brickwork or at the junction of RCC & brickwork including cutting, bending, fixing etc. complete.   | SQM  | 51       | 0.00001179  |
| 1011        | <b>Filling existing brick wall/ partition wall opening</b> at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete. | SQM  | 51       | 0.00002349  |
| 1012        | Providing and filling brick bats in soak pits all complete.   | CUM  | 10       | 0.00000461  |
| A1013       | Providing and placing precast cement concrete solid block (size 300x200x100) of mix of M 25 grade , including hoisting and setting in position with cement mortar 1:3 (1 cement : 3 coarse sand), at all height, place and position, including raking out joints, curing, scaffolding etc complete excluding plastering and painting.       | CUM  | 200      | 0.00049834  |
|             |   |      |          |   |
| <b>1100</b> | <b>DAMP PROOF COURSE</b>  |      |          |   |
|             | <b>Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level as per specification, drawings and as directed by engineer - in - charge. (CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>  |      |          |   |
| 1101        | Providing Damp Proof Course 40mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.   | SQM  | 250      | 0.00007190  |
| A1101       | <b>Providing Damp Proof Course 40mm thick 1:1.5:3 concrete (12mm 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 &amp; one after the DPC.</b>  | SQM  | 1200     | 0.00046832  |
|             |   |      |          |   |
| <b>1200</b> | <b>CEMENT MORTAR PLASTER</b>  |      |          |   |
|             | <b>Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge. (CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL)</b>   |      |          |   |
| 1201        | Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including Providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.  | SQM  | 100      | 0.00001483  |

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|--------------|--|------|----------|---|
| A1201        | Providing 20mm thick plaster in two layers outside the building/boundary wall or unfair face of walls in cement mortar 1:6 on walls, finished to a smooth finish including Providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.   | SQM  | 39000    | 0.00590083  |
| 1202         | 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  | 100      | 0.00001261  |
| A1202        | Providing 15mm 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  | 20000    | 0.00270184  |
| 1203         | Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.   | SQM  | 10       | 0.00000126  |
| 1204         | Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.   | SQM  | 8500     | 0.00088801  |
| 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  | 600      | 0.00004914  |
| 1207         | <b>Forming groove</b> of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.   | RM   | 950      | 0.00003536  |
| 1208         | Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.  | RM   | 450      | 0.00001675  |
| 1209         | 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  | 200      | 0.00044550  |
| 1210         | <b>Ruled pointing</b> in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.   | SQM  | 200      | 0.00003711  |
| A1210 ISG    | 20 mm thick plaster (1:3) admixed with approved quality water proofing compound  | SQM  | 500      | 0.00007565  |
| B1210 ISG    | 10 mm thick plaster (1:3) admixed with approved quality water proofing compound  | SQM  | 500      | 0.00006755  |
| <b>A1211</b> | Providing <b>20mm thick plaster inside</b> the water retaining structures in cement mortar <b>1:3 with approved quality of water proofing compound/ admixture</b> on walls finished to a smooth finish as per specification all complete.  | SQM  | 100      | 0.00001513  |

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|--------|---|------|----------|---|
| A1212  | Providing 10mm thick plaster below roof slab of water retaining structures in cement mortar 1:3 with approved quality of water proofing compound/ admixture to a smooth finish as per specification all complete.   | SQM  | 50       | 0.00000675  |
| 1300   | <b>FINISHES TO CONCRETE / PLASTERED SURFACES</b>  |      |          |   |
|        | <b>Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 1301   | 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  | 2010     | 0.00004465  |
| 1302   | Two or more coats of Exterior masonry paint (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and suitable pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellent, alkali resistant and extremely durable with color fastness as per specification. | SQM  | 6200     | 0.00055094  |
| 1303   | Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.  | SQM  | 100      | 0.00000745  |
| A1303  | Providing and applying two or more coats of oil bound destemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline. (Cost of primer is included in this item).   | SQM  | 100      | 0.00001255  |
| 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  | 29200    | 0.00184086  |
| A1304  | 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  | 510      | 0.00003552  |
| 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  | 100      | 0.00001111  |
| A1305  | 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.(Cost of primer is included in this item)   | SQM  | 6200     | 0.00077801  |

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|--------|--|------|--------------|---|
| B1305  | Providing and applying two or more coats of premium quality <b>acrylic emulsion paint</b> as per IS 15489 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.(Cost of primer is included in this item)  | SQM  | <b>42100</b> | 0.00624348  |
| 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  | <b>200</b>   | 0.00003711  |
| 1307   | Two or more coats of <b>fire resistant transparent paint</b> as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications.   | SQM  | <b>10</b>    | 0.00000259  |
| 1308   | Two or more coats of black <b>anti-corrosive bitumastic</b> painting of approved brand and manufacture to give an even shade complete.   | SQM  | <b>10</b>    | 0.00000111  |
| 1309   | Two or more coats of <b>synthetic enamel paint</b> of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.   | SQM  | <b>12</b>    | 0.00000133  |
| 1310   | Providing and applying 3 coats of <b>water proof cement paint</b> 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  | <b>5510</b>  | 0.00061203  |
| 1311   | Providing and applying <b>resin bonded granular textured finish, for external applications</b> 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 altogether 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  | <b>7900</b>  | 0.00323015  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
| A1311  | Providing and applying resin bonded granular textured finish with low VOC (volatile organic compound) , 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 altogether 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  | 100      | 0.00014926  |
| 1312   | Providing and applying 2 mm thick <b>plaster of paris punning on walls</b> including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.   | SQM  | 12100    | 0.00076282  |
| 1313   | Providing and applying ready made <b>Epoxy Paint</b> over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer.  | SQM  | 110      | 0.00012251  |
| A1313  | Providing and applying ready made <b>Epoxy Paint</b> over areas other than steel structure with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer.(Cost of epoxy primer is included in this item)   | SQM  | 100      | 0.00012537  |
| 1314   | Providing and applying Synthetic plaster for external applications composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface.The final finish Paint 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  | 10       | 0.00000334  |
| 1315   | 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 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  | 10       | 0.00000186  |

| ST. NO      | DESCRIPTION OF ITEM   | UNIT | QUANTITY     | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|---|------|--------------|---|
| <b>1400</b> | <b>FLOORING AND SKIRTING</b>  |      |              |   |
|             | <b>Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.(CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>  |      |              |   |
| 1401        | Providing and laying 50 mm thick <b>heavy duty cement concrete in flooring</b> with <b>metallic hardener pigmented topping</b> 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):  | SQM  | <b>2900</b>  | 0.00099248  |
| 1402        | Providing and laying 25 mm thick <b>heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates )</b> flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles <b>in skirting and dado</b> complete as per specification.   | SQM  | <b>100</b>   | 0.00003422  |
| A1401       | Providing and laying 52 mm thick <b>heavy duty cement concrete in flooring</b> with <b>metallic hardener pigmented topping</b> 12mm thick uniform graded treated iron particles in flooring. Under layer of 40mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 20mm 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 (hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturers specification) including cement slurry, rounding off edges, aluminium strips etc. all complete as per specification (Quoted item rate shall be inclusive of providing aluminium joint strips) | SQM  | <b>27000</b> | 0.00924031  |
| A1402       | Providing and laying 25 mm thick <b>heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates )</b> flooring with metallic hardener pigmented topping of 12 mm thick uniform graded treated iron particles <b>in skirting and dado</b> complete as per specification.   | SQM  | <b>200</b>   | 0.00006845  |

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|--------|--|------|-------------|---|
| 1403   | Providing and laying precast polished heavy duty cement concrete tiles (Carborundum topping) of size 300X300X25 thick of approved shade as per IS 1237, including cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc. all complete for following:   |      |             |   |
| a      | <b>Laid in floors</b>  | SQM  | <b>1210</b> | 0.00076355  |
| b      | <b>Laid in skirting</b>  | SQM  | <b>160</b>  | 0.00011288  |
| A1404  | Providing and laying interlocking M35 Grade concrete blocks in paving with approved colour and pattern and underlain by 200mm thick with 63 mm and down aggregate with interstices filled with selected moorum including aggregate, sand, moorum etc all complete as per specifications and recommendations of manufacturer.   |      |             |   |
| a      | <b>60mm</b>  | SQM  | <b>1</b>    | 0.00000041  |
| b      | <b>75mm</b>  | SQM  | <b>301</b>  | 0.00014530  |
| c      | <b>80mm</b>  | SQM  | <b>1901</b> | 0.00094734  |
| 1405   | Providing and laying 50 mm thick floor finish with <b>25mm thk Terrazo Tiles</b> including cement mortar bedding of 1:3 (1 cement : 3 sand) with neat cement slurry etc. all complete.   | SQM  | <b>5</b>    | 0.00000223  |
| 1406   | Providing and laying <b>polished Kota stone</b> 18mm to 20mm thk in <b>flooring</b> . Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding granite polishing etc. all complete. | SQM  | <b>250</b>  | 0.00013930  |
| 1407   | Providing and laying <b>polished Kota stone</b> 14mm to 16mm thk in <b>flooring</b> . Under bed shall average 35mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding granite polishing etc. all complete. | SQM  | <b>150</b>  | 0.00009669  |
| 1408   | Providing <b>polished Kota stone 18mm to 20mm thk in skirting</b> projecting 6mm from adjacent plaster including cutting brickwall upto the required depth, edging, finishing etc. all complete.   | SQM  | <b>125</b>  | 0.00008074  |
| 1409   | Providing <b>polished Kota stone 14mm to 16mm thk in skirting</b> projecting 6mm from adjacent plaster including cutting brickwall upto the required depth, edging, finishing etc. all complete.   | SQM  | <b>25</b>   | 0.00001608  |

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|--------|---|------|-------------|---|
| 1410   | <b>Marble stone Flooring laid in 50mm overall thickness</b> with 18-20mm thick marble slabs (grade -1) with minium 30mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level.The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.                            | SQM  | <b>50</b>   | 0.00010396  |
| 1411   | <b>Marble stone Flooring laid in 50mm overall thickness</b> with 14 -16mm thick marble slabs (grade -1) with minium 35mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level.The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.                           | SQM  | <b>10</b>   | 0.00001856  |
| 1412   | Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete. | SQM  | <b>1810</b> | 0.00430133  |
| 1414   | Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.   | SQM  | <b>110</b>  | 0.00028584  |
| 1415   | Providing and laying <b>polished Granite stone 14-16mm thk in skirting and dado with 6mm thick projection from adjacent plaster</b> including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.  | SQM  | <b>10</b>   | 0.00001203  |
| A1416  | Providing and laying <b>vitrified ceramic tiles of polished variety</b> of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with <b>neat cement slurry @3.3kg/sqm etc. all complete for following</b>   |      |             |   |
| a      | 9mm to 10mm thick tiles In flooring   | SQM  | <b>1000</b> | 0.00104471  |
| b      | 5mm to 6mm thick tiles In skirting and dado upto specific height  | SQM  | <b>200</b>  | 0.00015587  |

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|--------|---|------|----------|---|
| A1416  | Providing and laying <b>vitrified ceramic (with recycle content) tiles</b> of polished variety of size 600x600/800x800 from reputed / approved manufacturer, complete including including underbed of 40.5 mm thick cement concrete mix 1:1.5:3 (1 cement: 1.5 sand : 3 stone aggregates 12.5mm well graded) with 3mm groove joints as per approved pattern pointed neatly with 3X4mm stainless epoxy grout SP- 100 of Laticrete or approved equivalent in approved colour to match colour of tile etc. all complete for following. |      |          |   |
| a      | 10mm thick tiles In flooring  | SQM  | 10       | 0.00000854  |
| b      | 10mm thick tiles In skirting and dado upto specific height  | SQM  | 300      | 0.00025613  |
| 1417   | Providing and laying vitrified ceramic tiles of matt/mirror finish of size 600x600mm from reputed / approved manufacturer including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following.  |      |          |   |
| a      | 7mm thick tiles In flooring   | SQM  | 10       | 0.00000771  |
| b      | 10mm thick tiles In flooring  | SQM  | 10       | 0.00000928  |
| c      | 7mm thick tiles In skirting and dado upto specific height   | SQM  | 1        | 0.00000078  |
| d      | 10mm thick tiles In skirting and dado upto specific height  | SQM  | 1        | 0.00000093  |
| A1417  | Providing and laying <b>vitrified ceramic tiles of matt finish</b> of size 600x600mm from reputed / approved manufacturer complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3kg/sqm etc. all complete for following  |      |          |   |
| b      | 10mm thick tiles In flooring  | SQM  | 200      | 0.00016439  |
| 1418   | Providing and laying 10 mm thk non-skid fully <b>vitrified tiles</b> of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in <b>flooring and skirting</b> over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water. complete as per specification laid in pattern of following sizes   |      |          |   |
| a      | 400X400 mm  | SQM  | 100      | 0.00007793  |
| b      | 600X600 mm  | SQM  | 100      | 0.00008538  |
| 1419   | Providing and laying <b>granite stone slab</b> of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting,making corners,moulding and opening etc. all complete.   | SQM  | 51       | 0.00013253  |
| 1420   | Providing and laying <b>Heavy Duty dust pressed Ceramic Tiles</b> of 7mm thick of reputed manufacturer of approved finish shade and colour including underbed of cement mortar 1:3 with neat cement slurry etc. all complete.   |      |          |   |
| a      | 300X300 mm  | SQM  | 10       | 0.00000631  |
| b      | 600X600 mm  | SQM  | 210      | 0.00014815  |

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|--------|---|------|----------|---|
| 1421   | Providing and laying <b>Heavy Duty dust pressed (grade-5) Ceramic Tiles (Matt Finish) of size 600x600mm(approved size) and 7mm thick</b> of reputed / approved manufacturer (Kajaria,jhonson, 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 all complete.  | SQM  | 15       | 0.00001077  |
| 1422   | Providing & fixing <b>Acid / Alkali resistant (Chemical resistant) tiles</b> confirming to IS:4457 in <b>flooring/Dado</b> and shall be laid over bitumastic lining of min 12mm thick ( to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding 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 <u>abrasion resistant &amp; durable</u>   |      |          |   |
| a      | 20mm thick  | SQM  | 50       | 0.00008169  |
| b      | 38mm thick  | SQM  | 350      | 0.00067561  |
| Ac     | 300x300x14mm thick  | SQM  | 300      | 0.00063043  |
| 1423   | Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado bedded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.   |      |          |   |
| a      | 20mm thick  | SQM  | 1        | 0.00000163  |
| b      | 38mm thick  | SQM  | 801      | 0.00166545  |
| Ac     | 300x300x14mm thick  | SQM  | 500      | 0.00105072  |
| A1424  | Providing & fixing chemical resistant ( <b>AR</b> )(Acid / Alkali) bricks (75mm thick) <b>conforming to IS:4860 in the floor of neutralization pit.</b> 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 layer followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with acid/alkali resistant epoxy mortar upto a depth of 20 mm/ 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  | 51       | 0.00013253  |

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|--------|---|------|----------|---|
| B1424  | Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) <b>conforming to IS:4860 in the wall of neutralization pit.</b> 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 layer followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with acid/alkali resistant epoxy mortar upto a depth of 20 mm/ 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  | 51       | 0.00014190  |
| C1424  | Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (20mm thick) <b>conforming to IS:4860 in acid/alkali storage area ,floors,pedestals, saddles, dado etc.</b> 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 layer followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with acid/alkali resistant epoxy mortar upto a depth of 20 mm/ 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  | 50       | 0.00008166  |
| D1424  | Providing & fixing chemical resistant (AR)(Acid / Alkali) <b>tiles</b> (75mm thick) <b>conforming to IS:4860 in the floor of neutralization pit.</b> 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 layer followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with acid/alkali resistant epoxy mortar upto a depth of 20 mm/ 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  | 50       | 0.00010507  |
| 1425   | Providing and laying polished Marble slabs (Aranga white or equivalent approved shade/color /design) 20 mm thk in staircase landing/skirting and corridors over minimum 20 mm thick underbed of 1 cement : 2 sand : 4 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over underbed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded marbel nosing, pigments, curing, grinding, making corners, granite polishing etc complete.   | SQM  | 1401     | 0.00291299  |

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|-------------|--|------|----------|---|
| 1426        | Providing and laying <b>marble skirting /dado (Aranga white or approved shade/color /design) equivalent of minimum 20mm thickness</b> projecting 6mm from adjacent plaster all complete including underbed cement mortar 1:3, scaffolding etc. all complete.   | SQM  | 1        | 0.00000223  |
| 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 underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry including pigments, curing etc all complete for following thicknesses: |      |          |   |
| a           | 5mm thick  | SQM  | 1        | 0.00000056  |
| b           | 7mm thick  | SQM  | 501      | 0.00035345  |
| 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  | 101      | 0.00048750  |
| A1430       | Providing and fixing <b>dividing strips</b> in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.   |      |          |   |
| a           | Glass strips 40 mm wide and minimum 6 mm thick.  | RM   | 200      | 0.00001261  |
| b           | Aluminium strips 40 mm wide and minimum 3 mm thick   | RM   | 200      | 0.00003675  |
| c           | Brass strips 20 mm wide and minimum 4 mm thick.  | RM   | 210      | 0.00001678  |
| d           | Glass strips 50 mm wide and minimum 6 mm thick.  | RM   | 500      | 0.00003482  |
| e           | Aluminium strips 50 mm wide and minimum 3 mm thick.  | RM   | 310      | 0.00006161  |
| 1431        | Providing and laying wooden panel flooring and skirting of PERGO or equivalent of approved color,shade all complete as per manufacturer specification.   | SQM  | 1        | 0.00000111  |
| A1432       | Providing and laying 2 mm thick homogenous anti-static PVC skirting of approved color,shade all complete as per manufacturer specification.  | SQM  | 51       | 0.00001684  |
| A1433       | Providing and laying 10 mm thick x 37 mm high teak-wood lining shall be provided around the room where the floor panels meet the wall surfaces with the top of the lining matching with the finished top of floor panels of approved color,shade all complete as per manufacturer specification.   | RM   | 101      | 0.00003942  |
| <b>1500</b> | <b>ROOFING / SIDE CLADDING</b>   |      |          |   |

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|--------|--|---------|-------------|---|
|        | <b>Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |         |             |   |
| A1501  | Transportation and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied oions for equipment, pump, tanks,fire fighting civil works ,AHP etc. if any etc and any other building/structure/works necessary for completion of project. ll complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.f-drilling fasteners of required size w |         |             |   |
| a      | Span Upto 1800mm   | SQM     | <b>5600</b> | 0.00128776  |
| b      | Span Exceeding 1800mm and upto 2500 mm   | SQM     | <b>6200</b> | 0.00185010  |
| 1502   | Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.  | QUINTAL | <b>50</b>   | 0.00141081  |

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|--------|--|------|-------------|---|
| A1504  | Transportation and fixing <b>External sheet of Permanent colour coated metal cladding</b> shall be troughed (Minimum depth of trough= 28 mm & Maximum pitch of trough= 200 mm) zinc-aluminium alloy (55% Aluminium, 43.4% Zinc and 1.6% Silicon) coated, not less than 150 gm/sq m, having High Tensile sheet (Fy=550 MPa) of <b>0.5 mm (minimum) Base Metal Thickness</b> including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over minimum 5 microns of suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 12 microns over minimum 5 microns of suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 2 for the durability.  | SQM  | <b>2300</b> | 0.00044328  |
| A1505  | Transportation and fixing <b>Inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness</b> having minimum yield strength 200 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm total on both sides of both sheets including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed surface of the sheet shall be permanently colour coated with silicon modified polyester paint of minimum dry film thickness (DFT) 20 microns over suitable primer. Other face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. The sheet shall be fixed directly to side runners and Z spacers as per IS : 277. The sheet shall be fixed at the rate not more than 1500mm center to center to hold the insulation and external sheeting. | SQM  | <b>2000</b> | 0.00040107  |
| 1506   | Providing and fixing <b>insulation of resin bonded mineral wool</b> of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations.  | SQM  | <b>1000</b> | 0.00051996  |

| ST. NO    | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-----------|--|------|----------|---|
| A1506 ISG | <p><b>Transportation and fixing of</b> Prefabricated sandwich panels comprising troughed profile with outer sheet matching with permanent color coated (non-insulated) metal sheet specified above at point "a" and inner sheet made up of slight profiled linear tray of 0.5mm BMT 340 Mpa galvanized steel of 150 gsm zinc coating (total on both sides) with RMP color coating of 25 microns on the exposed side over the primer and 12 microns on the covered side over a 5 microns primer coat. The insulation material shall be of high density CFC- free 30mm (at the valley position of the outer sheet) thick polyurethane foam insulation of density 40 – 42 Kg/m<sup>3</sup> sandwiched in between the two sheets. The panel should be finished with a malefemale jointing system. The panels shall be fixed to the purlins with hexa-headed self-drilling fasteners of required size with synthetic washers at the crests. Flashing and capping (top and bottom) shall be made of pre-coated Galvalume sheet in plain form but in required</p> | SQM  | 100      | 0.00002516  |
| 1507      | <p>Providing and fixing <b>insulation of resin bonded mineral wool</b> of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue &amp; tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.</p>  | SQM  | 1000     | 0.00064184  |
| 1508      | <p>Providing and installing <b>under deck insulation</b> using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.</p>   | SQM  | 600      | 0.00041680  |
| 1509      | <p>Transportation and fixing UV stabilised fiberglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'J' or 'L' hooks, bolts &amp; nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured outof 2400 TEX panel rovigs incorporating minimum 0.3% ultra-violet stabilizer in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent,clear or pigmented, textured or smooth as specified.</p>   |      |          |   |

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|--------|---|------|----------|---|
| a      | 2 mm thick corrugated (2.5" or 4.2" or 6") or step-down (2" or 3" or 6" ) as specified  | SQM  | 250      | 0.00004818  |
| 1510   | Transportation and fixing 1 mm thick corrugated/semicorrugated <b>G.I. sheet in roofs, cladding</b> of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.  | SQM  | 1050     | 0.00017589  |
| A1511  | Transportation and fixing Prefabricated sandwich panels comprising troughed profile with outer sheet of permanent Color coated (non-insulated) metal sheets troughed (Minimum depth of trough= 28 mm & Maximum pitch of trough= 200 mm) zinc-aluminium alloy (55% Aluminium, 43.4% Zinc and 1.6% Silicon) coated, not less than 150 gm/sq m, having High Tensile sheet (Fy=550 MPa) of 0.5 mm (minimum) Base Metal Thickness. The exposed face of the outer sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over minimum 5 microns of suitable primer. Inner face of the outer sheet shall be provided with suitable pre-coating of minimum DFT 12 microns over minimum 5 microns of suitable primer and inner sheet made up of slight profiled linear tray of 0.5mm BMT 340 Mpa galvanized steel of 150 gsm zinc coating (total on both sides) with RMP color coating of 25 microns on the exposed side over the primer and 12 microns on the covered side over a 5 microns primer coat. The insulation material shall be of high density CFC- free 30mm (at the valley position of the outer sheet) thick polyurethane foam insulation of density 40 – 42 Kg/m <sup>3</sup> sandwiched in between the two sheets. The panel should be finished with a malefemale jointing system. The panels shall be fixed to the purlins with hexa-headed self-drilling fasteners of required size with synthetic washers at the crests. Flashing and capping (top and bottom) shall be made of pre-coated Galvalume sheet in plain form but in required shape. | SQM  | 4015     | 0.00082685  |
| 1600   | <b>FALSE CEILING</b>  |      |          |   |
|        | <b>False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |          |   |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
| 1601   | Transportation and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, Providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.   |      |          |   |
| a      | 12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).   | SQM  | 5        | 0.00000138  |
| b      | 12 mm thick GRG board in profile (dome ,curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).   | SQM  | 10       | 0.00000230  |
| A1601  | Providing and fixing <b>glass fibre reinforced gypsum plaster board (GRG) ceiling</b> (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.   |      |          |   |
| a      | 12.5 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).   | SQM  | 200      | 0.00005507  |
| 1602   | Transportation , fixing and laying light weight <b>mineral fiber tile false ceiling</b> 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 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 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 or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate. | SQM  | 710      | 0.00008750  |

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|--------|---|------|-------------|---|
| 1603   | Transportation and Fixing <b>permanently colour coated aluminium false ceiling</b> of approved colour and <b>Luxalon 84 C</b> or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. ( Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)   | SQM  | <b>1800</b> | 0.00106530  |
| 1604   | Transportation ,Fixing etc. <b>permanently colour coated aluminium false ceiling</b> of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301) | SQM  | <b>10</b>   | 0.00000592  |
| 1605   | Transportation , 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) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)   | SQM  | <b>10</b>   | 0.00000482  |

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|--------|---|------|----------|---|
| 1606   | Transportation , fixing and laying <b>12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm)</b> of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301) | SQM  | 10       | 0.00000252  |
| A1606  | Transportation and fixing <b>12.5mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm)</b> of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movment platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)        | SQM  | 700      | 0.00017616  |
| A1607  | Transportation ,Fixing etc. 12 mm thick calcium silicate board of 'HILUX' or equivalent with suspension system as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement , providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (With concealed grid and finished flat seamless).  | SQM  | 200      | 0.00003849  |
| 1700   | <b>RAIN WATER DOWN TAKE PIPES</b>   |      |          |   |
|        | <b>Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.(CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>  |      |          |   |

| ST. NO      | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|--|------|----------|---|
| 1701        | Fixing of HCl down take pipes of 100 mm dia. with water tight lead joint, fixing clamps etc. all complete.   | RM   | 10       | 0.00000220  |
| 1702        | Fixing of galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-I) / IS:3589 all complete.   | RM   | 510      | 0.00009646  |
| 1703        | Fixing of HCl down take pipes of 150mm dia with water tight lead joint etc. all complete.  | RM   | 210      | 0.00007481  |
| 1704        | Fixing of galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.   | RM   | 1500     | 0.00041698  |
| 1705        | Fixing of UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.   | RM   | 510      | 0.00005429  |
| 1706        | Fixing of UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.   | RM   | 410      | 0.00006152  |
| 1707        | Fixing of GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.   |      |          |   |
| a           | 100 mm Dia   | RM   | 10       | 0.00000208  |
| b           | 150 mm Dia   | RM   | 10       | 0.00000300  |
| c           | 200 mm Dia   | RM   | 10       | 0.00000455  |
| 1708        | Fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.   |      |          |   |
| a           | 110 mm Dia   | RM   | 10       | 0.00000069  |
| b           | 160 mm Dia   | RM   | 10       | 0.00000097  |
| c           | 200 mm Dia   | RM   | 10       | 0.00000130  |
| A1709       | Fixing of cast iron cement down take pipes conforming to IS:4984 as per specification of following diameters.  |      |          |   |
| a           | 110 mm Dia   | RM   | 510      | 0.00011325  |
| b           | 160 mm Dia   | RM   | 510      | 0.00013806  |
| c           | 200 mm Dia   | RM   | 10       | 0.00000326  |
| A1710       | Fixing ,installation etc. of 450x450 <b>KHURRAS</b> for rain water down take pipes with 1:2:4 concrete over PVC sheet of 1000x1000x400 micron and finished with 12mm thk, cement sand plaster 1:3 etc. all complete as per specification.  | Each | 200      | 0.00009006  |
| Ab 1710     | Fixing of Galvanised steel ERW pipes (273mm OD, 4mm thick) of steel grade Fe330 conforming to IS: 3589 with welded joints shall be used for all TP's, Crusher house, and Conveyor galleries specification of diameter 273 OD , 4 mm thick all complete as per the directions of Engineer in charge | Rmt  | 1000     | 0.00032551  |
| <b>1800</b> | <b>MISCELLANEOUS WORKS</b>   |      |          |   |

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|--------|---|------|-------------|---|
|        | <b>Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.(CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>  |      |             |   |
| 1801   | <b>Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm</b> in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill | CUM  | <b>1750</b> | 0.00262154  |
| A1801  | <b>Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm</b> in layers not exceeding 300 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill | CUM  | <b>7100</b> | 0.01116456  |
| 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 in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.       | CUM  | <b>300</b>  | 0.00044941  |
| 1802   | Providing and mixing approved <b>Bipolar Concrete penetrating Corrosion inhibiting admixture</b> in concrete as per detail specification of manufacturer etc. all complete.   | Kg   | <b>1</b>    | 0.00000012  |
| 1803   | Anti termite chemical treatment of soil with <b>Chlorpyriphos/Lindane E.C. 20% with 1% concentration</b> conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment)  | SQM  | <b>5200</b> | 0.00057759  |
| 1804   | Transportation and installation of approved <b>25mm thick vibration damping resilient pads</b> on/around foundation of vibrating equipment and at other locations all complete.   | SQM  | <b>55</b>   | 0.00001839  |
| A1805  | Providing 50mm thick <b>premix carpet surfacing</b> laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete. Tack coat of hot bitumen at the rate of 1kg/sqm shall be uniformly applied in between the layers by means of sprayers as per specification.  | SQM  | <b>250</b>  | 0.00005839  |

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|--------|---|------|----------|---|
| 1806   | Providing 50mm thick <b>anti corrosive layer</b> laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete. | SQM  | 251      | 0.00015191  |
| 1807   | Providing and fixing <b>G.I strips</b> minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.   | Kg   | 201      | 0.00002233  |
| 1808   | Providing and fixing <b>aluminium strips</b> minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.  | Kg   | 201      | 0.00007096  |
| 1809   | Providing Chemical injection grouting with pressure pump for <b>water retaining concrete structures</b> conforming to IS:6494, including fixing nozzles, cost of approved cement, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.   | Kg   | 150      | 0.00001666  |
| 1810   | Transporting, laying and fixing <b>rails and guide rails in concrete</b> for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.   | MT   | 36       | 0.00058916  |
| 1811   | Providing and fixing <b>weep holes</b> in Drains consisting of <b>100 mm dia HDPE pipe sleeves</b> with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening covered with 40 mm downgraded aggregates in 300 X 300 mm sq. and 300 mm deep size all complete.   | EACH | 700      | 0.00015971  |
| 1812   | Laying of <b>earthing mats/rods</b> including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. <u>Earthing mats/rods shall be supplied by BHEL free of cost</u> )             | MT   | 51       | 0.00045444  |
| 1813   | Providing <b>Earthing pit</b> as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.   | EACH | 10       | 0.00005569  |
| 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 | 10       | 0.00007426  |
| 1815   | Providing and fixing <b>GI rungs</b> in concrete/brick walls having zinc coating of <b>minimum 900 g/sqm</b> etc. all complete.   | Kg   | 625      | 0.00006942  |

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|--------|---|------|----------|---|
| 1816   | Fixing PVC <b>pressure release valve</b> of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.  | EACH | 200      | 0.00053464  |
| 1817   | Fixing <b>HDPE pipes in</b> concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.  |      |          |   |
| a      | Upto 75 mm dia  | RM   | 1        | 0.00000006  |
| b      | 100 mm dia  | RM   | 1        | 0.00000007  |
| c      | 150 mm dia  | RM   | 501      | 0.00005360  |
| d      | 200 mm dia  | RM   | 501      | 0.00009484  |
| 1818   | Providing and laying dry <b>stone pitching</b> of <b>230 mm</b> thickness for slope protection in <b>cement mortar 1:6</b> including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.   | SQM  | 25       | 0.00004397  |
| 1819   | Transportation and erection of <b>stoplog gates in CW Pumps</b> with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fasteners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) (SS component shall be measured separately for payment) | MT   | 70       | 0.00180175  |
| 1820   | SS component mentioned under ST No. 1819.   | MT   | 10       | 0.00052506  |
| 1821   | Transportation and erecting in position and testing / examining bolted and / or welded structural steel work for <b>stationary screens</b> made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416 etc all complete.   | MT   | 60       | 0.00140946  |
| 1825   | Supply and laying approved quality Stone aggregate 40mm size in transformer yards.  | CUM  | 5        | 0.00000819  |

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|--------|--|------|----------|---|
| 1826   | Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.  | CUM  | 305      | 0.00049938  |
| 1827   | Supply and laying fire clay refractory brick work with fire clay mortar conforming to IS: 6 & 195 including curing etc. all complete on tank pads & in building walls.   | CUM  | 5        | 0.00001559  |
| 1828   | Dismantling old existing reinforced/non-reinforced brickwork/blockwork/stone masonry work in mud/lime/ cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete. | CUM  | 51       | 0.00001706  |
| 1829   | Dismantling old existing plain/re-inforced concrete work at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.   | CUM  | 51       | 0.00002842  |
| A1829  | Rebate over ST No. 1828/ 1829 for taking into account the deemed cost of all serviceable material which bidder will be getting out of it by taking them outside plant for bidder's purpose instead of stacking at plant site.  | CUM  | 50       | 0.00025989  |
| 1830   | Dismantling old existing structural steel work at any level including plates, bolts, cutting rivets, welding, dismembering and stacking the dismantled materials within a lead upto 1km etc all complete.  | MT   | 51       | 0.00026509  |
| A1834  | Providing and fixing aluminium angle nosing with minimum 50x25x3 angle for edge protection of RCC stairs including jigs and fixtures all complete.   | MT   | 5        | 0.00010507  |
| A1835  | Anti weed chemical treatment of soil with suitable chemical etc all complete.  | SQM  | 500      | 0.00010507  |
| A1836  | 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  | 8500     | 0.00178622  |
| A1837  | Supply and fixing of bar screen of 5 mm square M. S. bar at inlet point of Rain water collecting tanks with 50 mm X 50 mm opening etc all complete   | SQM  | 10       | 0.00000330  |
| A1838  | Making 250mm dia bore hole up to a maximum depth of 20 m below ground level in all types of rocks including all equipments, tools & plants, lowering casing pipes, bentonite slurry, removal of casing pipes etc. complete in all types of soil.   | RM   | 400      | 0.00021615  |
| A1839  | Supply & fixing 150mm dia perforated PVC pipe ISI mark 6 Kg/ cm <sup>2</sup> with air vent at top as per the drawing & specification complete.   | RM   | 150      | 0.00006755  |
| A1840  | Providing & fixing 150 dia PVC pipe ISI mark 6 Kg/cm <sup>2</sup> as per specification.  | RM   | 300      | 0.00012158  |
| A1841  | Supply & packing uniformly 6mm to 3mm size gravel in the bore hole surrounding the perforated PVC pipe.  | CUM  | 50       | 0.00005404  |
| A1842  | Supply & packing uniformly downgraded 40mm size gravel at all depth in the well dug for rain water harvesting.   | CUM  | 50       | 0.00005103  |

| ST. NO      | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|--|------|----------|---|
| A1843       | Supply & packing uniformly downgraded 40mm size pebbles at all depth in the well dug for rain water harvesting.  | CUM  | 300      | 0.00032422  |
| A1844       | Supply & laying 300mm thick coarse sand layer at all depth in the well dug for rain water harvesting.  | CUM  | 1100     | 0.00069347  |
| A1845       | Providing 3 tier Racking System in store including installation etc. all complete as per specification. (refer clause 18.03.00, Technical Specification Section – VI, Vol – II F Bid Doc. No. : CC&M-C-347-211, Civil - Section 1 (Tech. Spec.), Page 103 of 117)  | L.S. | 1        | 0.00029948  |
| A1846       | Basin cleanig and conducting water tightness test as per IS:3370 etc. all complete as per directions of Engineer-In-Charge. Cost to include all rectification measures such as pressure injection grouting etc complete in order to pass water tightness test. Measurement shall be for each basin compartment.  | EACH | 2        | 0.00059897  |
| A1848       | Supply and Fixing of lightning arrester over structure/building in any level/any location including laying & fixing of earthing strip from earthing pit to Lighting arrester as per IS standard 3070 or any relevant IS standard   | Each | 8        | 0.00007205  |
| <b>2000</b> | <b>FENCING AND GATES</b>   |      |          |   |
|             | <b>Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 2001        | Supplying and erecting in position 2.4 m high <b>PVC coated gavanised chain linked fencing</b> of minimum 8 gauge (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. <b>GI barbed wire fencing of height of 600 mm</b> confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under item 2007) | RM   | 100      | 0.00018012  |
| A2001       | Supplying and erecting in position 2.4 m high above toe wall <b>PVC coated gavanised chain linked fencing</b> of minimum 8 gauge (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. (Toe wall and Fence post to be paid separately)  | RM   | 100      | 0.00018012  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 2002   | Supplying and erecting in position <b>2.4 m high gavanised chain linked fencing</b> conforming to IS 2761 of <b>10G</b> hot dip galvanised steel wires woven in the form of zig-zag mesh giving an opening size of 50 mm square. <b>GI barbed wire fencing of height of 600 mm</b> conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be separately under ST No. 2007)  | RM   | 100      | 0.00030020  |
| 2003   | Supplying and erecting in position <b>2.4 m high PVC coated gavanised chain linked fencing</b> of minimum <b>8 gauge</b> (including PVC coating ) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. <b>Concertina of height of 600 mm</b> at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be separately under ST No. 2007) | RM   | 151      | 0.00011306  |
| 2004   | Supplying and erecting in position <b>2.4 m high gavanised chain linked fencing</b> conforming to IS 2761 of 10G hot dip galvanised steel wires woven in the form of zigzag mesh giving an opening size of 50 mm square. <b>Concertina of height of 600 mm</b> at top of chain link fencing shall be provided with all accessories. Concertinal 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.  | RM   | 1        | 0.00000300  |
| 2005   | Supplying and fixing <b>600mm high G.I. barbed wire fencing on top of boundary wall</b> consisting of min. <b>6 nos.</b> strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply with barbs of 16G spaced at 100mm including GI clips, anchors, accessories etc. all complete. (Structural post shall be separately under ST No. 2007)  | RM   | 1        | 0.00000300  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY    | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|-------------|---|
| 2006   | Supplying and fixing <b>600mm high concertina on top of boundary wall</b> including GI tension wires, clips, anchors, accessories etc. all complete. Concertinal 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. (Structural post shall be separately under ST No. 2007)   | RM   | <b>201</b>  | 0.00002196  |
| A2006  | Supplying and fixing <b>600mm high concertina on top of boundary wall</b> as per specification with Y shaped MS angle (maximum loop spacing of 125mm) including GI tension wires, clips, anchors, accessories, embedded plates etc. all complete. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. All nuts, bolts, fasteners, clamping strips, clamps, clips etc. shall be galvanized(@610 gm/sq.m.). | RM   | <b>2400</b> | 0.00026226  |
| 2007   | Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m <sup>2</sup> on steel posts.  | MT   | <b>16</b>   | 0.00098608  |
| A2007  | Supply and fixing of pre- cast R. C. C. of minimum M20 grade Fence posts as per specification all complete.   | CUM  | <b>1</b>    | 0.00000330  |
| 2008   | Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.   | MT   | <b>1</b>    | 0.00004826  |
| 2009   | Supply, fabrication and installing in position and testing <b>galvanised MS Gates</b> out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, <u>paintings etc. all complete.</u>  | MT   | <b>2</b>    | 0.00015593  |
| 2010   | Supply, fabrication and installing in position and testing <b>MS Gates</b> out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.  | MT   | <b>4</b>    | 0.00025840  |

| ST. NO      | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|---|------|----------|---|
| A2011       | Supply, fabrication and installing in position <b>Cantilever type motorized sliding MS gate</b> of approved size and design, erecting and fixing at main entrance including all guides, rails, alignments, control panels, switches, paintings etc all complete as per specification and as directed by Engineer. Gate latches shall be arranged for padlocking with the padlock <u>accessible from both sides of the gate</u> .  | MT   | 11       | 0.00078167  |
| A2012       | Supply, fabrication and installing in position <b>Motorized sliding MS gate</b> of approved size and design, erecting and fixing at main entrance including all guides, rails, alignments, control panels, switches, paintings etc all complete as per specification and as directed by Engineer. The gate shall be operable by push button at designated areas at both the guard house and the security office in the Administration / Plant Service area, and by card reader <u>or key switches</u> . | MT   | 11       | 0.00072782  |
| A2013       | Supply, fabrication and installing in position wicket gate of approved size and design, erecting and fixing including all fittings, fixtures, paintings etc all complete as per specification and as directed by Engineer.  | MT   | 1        | 0.00006617  |
| <b>2100</b> | <b>WATER SUPPLY</b>   |      |          |   |
|             | <b>Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 2101        | Providing and fixing in position tested heavy duty type <b>chromium plated (CP) brass long neck bib cocks</b> including sockets, union, nuts etc all complete - <b>15mm</b> nominal bore.   | EACH | 51       | 0.00004164  |
| 2102        | Providing and fixing in position heavy duty <b>brass stop cock</b> of approved quality including all specials etc all complete - <b>15mm</b> nominal bore.  | EACH | 86       | 0.00003516  |
| 2103        | Providing and fixing in position heavy duty <b>brass full way valve</b> with wheel of approved quality including all specials etc all complete for following sizes:   |      |          |   |
| a           | 25mm nominal bore.  | EACH | 24       | 0.00002138  |
| b           | 50mm nominal bore.  | EACH | 24       | 0.00004456  |
| 2104        | Providing and fixing <b>GI pipes class B medium class</b> conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, <b>complete for internal works</b> with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good <u>the walls etc all complete for following sizes:</u>  |      |          |   |
| a           | 15 mm nominal bore.   | RM   | 101      | 0.00001649  |
| b           | 20 mm nominal bore.   | RM   | 301      | 0.00005367  |
| c           | 25 mm nominal bore.   | RM   | 150      | 0.00003008  |
| 2105        | Providing and fixing <b>GI pipes class B complete for external work</b> with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:  |      |          |   |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| a      | 15 mm nominal bore.   | RM   | 101      | 0.00001801  |
| b      | 20 mm nominal bore.   | RM   | 101      | 0.00001953  |
| c      | 25 mm nominal bore.   | RM   | 101      | 0.00002177  |
| d      | 50 mm nominal bore.   | RM   | 200      | 0.00006689  |
| 2106   | Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.  | EACH | 32       | 0.00004277  |
| A2106  | Providing and fixing <b>wall to wall mirror( 5.5 mm thick float glass) with bevelled edges including all fittings</b> in toilet from reputed mirror manufacturer. Mirror shall be mounted with CP brass screws, washers etc all complete.                                 | SQM  | 25       | 0.00003341  |
| 2107   | Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.  | EACH | 26       | 0.00002896  |
| 2108   | Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) all complete.  | EACH | 12       | 0.00000223  |
| A2108  | Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 20mm) all complete.  | EACH | 31       | 0.00000575  |
| 2109   | Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.  | EACH | 21       | 0.00000429  |
| 2110   | Providing and fixing C.P. soap holder mounted with C.P. screws etc all complete.  | EACH | 36       | 0.00000735  |
| 2111   | Providing and fixing stainless steel / C.P. <b>liquid soap dispenser</b> . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.  | EACH | 42       | 0.00000779  |
| 2112   | Providing and fixing glazed vitreous wall mounted <b>paper holder</b> with suitable cover cum cutter fitted with CP screws etc. sll complete.   | EACH | 42       | 0.00000779  |
| 2113   | Providing and fixing <b>chromium plated brass shower</b> rose with 15 or 20 mm inlet all complete.  | EACH | 17       | 0.00000441  |
| A2113  | Providing and fixing of <b>heavy quality shower rose of chromium plated brass with flat bottom, of dia 100 mm or with uniform perforation</b>   | EACH | 10       | 0.00000259  |
| 2114   | Providing & fixing in position <b>P.V.C. water tank</b> of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105. |      |          |   |
| a      | 1000 litres capacity  | EACH | 6        | 0.00004456  |
| b      | 2000 litres capacity  | EACH | 5        | 0.00008168  |
| c      | 5000 litres capacity  | EACH | 4        | 0.00009644  |

| ST. NO      | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|--|------|----------|---|
| 2115        | Providing and fixing approved <b>stainless steel sink with integrated drainboard</b> as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.  | EACH | 6        | 0.00001694  |
| <b>2200</b> | <b>SANITARY WORKS</b>  |      |          |   |
|             | <b>Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 2201        | Supply and fixing <b>glazed vitreous china Wash Basin</b> conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete. |      |          |   |
| a           | White  | EACH | 13       | 0.00005309  |
| b           | Colored  | EACH | 42       | 0.00017153  |
| 2202        | Providing and fixing approved vitreous china <b>laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5)</b> with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.  | EACH | 4        | 0.00001931  |
| 2203        | Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS:13983 including all fittings etc. all complete.   | EACH | 17       | 0.00005680  |
| 2204        | Providing and fixing <b>colour glazed vitreous china European type water closet conforming to IS:2556</b> with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.   |      |          |   |
| a           | Floor mounted  | EACH | 18       | 0.00006014  |
| b           | Wall mounted   | EACH | 17       | 0.00005680  |
| 2205        | Providing and fixing <b>colour glazed vitreous indian type Orissa pattern (580x440mm) water closet</b> conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.   | EACH | 18       | 0.00005346  |

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|--------|---|------|----------|---|
| 2206   | Providing and fixing white <b>flat back glazed vitreous china urinals</b> of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete. | EACH | 63       | 0.00030408  |
| 2207   | Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.                        |      |          |   |
| a      | 75mm dia pipes  | RM   | 310      | 0.00017719  |
| b      | 110mm dia pipes   | RM   | 510      | 0.00041399  |
| c      | 160mm dia pipes   | RM   | 120      | 0.00014741  |
| d      | 200mm dia pipes   | RM   | 10       | 0.00001256  |
| 2208   | Providing, laying light duty non pressure <b>NP3 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.   |      |          |   |
| a      | 200mm dia   | RM   | 600      | 0.00024533  |
| b      | 300mm dia   | RM   | 330      | 0.00024153  |
| c      | 450mm dia   | RM   | 30       | 0.00003008  |
| d      | 600mm dia   | RM   | 30       | 0.00005020  |
| e      | 900mm dia   | RM   | 30       | 0.00009577  |
| A2208  | Providing, laying non pressure <b>spun CI pipes</b> with collars including jointing, testing of joints etc all complete for following.  |      |          |   |
| a      | 200mm dia   | RM   | 515      | 0.00046382  |
| b      | 300mm dia   | RM   | 215      | 0.00020331  |
| c      | 450mm dia   | RM   | 15       | 0.00001560  |
| b      | 600mm dia   | RM   | 15       | 0.00001716  |
| e      | 900mm dia   | RM   | 15       | 0.00001889  |
| 2209   | Providing, laying light duty non pressure <b>NP2 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.   |      |          |   |
| a      | 150mm dia   | RM   | 15       | 0.00000538  |
| b      | 250mm dia   | RM   | 15       | 0.00000647  |
| c      | 300mm dia   | RM   | 15       | 0.00000887  |
| d      | 500mm dia   | RM   | 65       | 0.00005749  |
| 2210   | Providing, laying light duty non pressure <b>NP4 class RCC pipes</b> with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following:   |      |          |   |

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|-------------|---|------|----------|---|
| a           | 450mm dia   | RM   | 1        | 0.00000126  |
| b           | 600mm dia   | RM   | 50       | 0.00008523  |
| c           | 900mm dia   | RM   | 1        | 0.00000311  |
| 2211        | Providing and fixing <b>C.I Manhole heavy duty cover of size 600mmx450mm</b> including frame from reputed manufacture etc. all complete.  | EACH | 5        | 0.00001655  |
| 2212        | Providing and fixing <b>circular heavy duty C.I. manhole cover of 600 mm dia</b> with frame etc. all complete.  | EACH | 25       | 0.00015795  |
| 2213        | Providing and fixing <b>square mouth S.W Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes: |      |          |   |
| a           | 100x100mm P or S Type.  | EACH | 2        | 0.00000234  |
| b           | 150x100mm P or S Type.  | EACH | 65       | 0.00008270  |
| c           | 150x150mm P or S Type.  | EACH | 15       | 0.00002042  |
| 2214        | Providing and fixing <b>square mouth S.W Gully trap</b> grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes: |      |          |   |
| a           | 100x100mm P or S Type.  | EACH | 2        | 0.00000178  |
| b           | 150x100mm P or S Type.  | EACH | 15       | 0.00001893  |
| c           | 150x150mm P or S Type.  | EACH | 15       | 0.00002506  |
| 2215        | Providing and fixing <b>C.I. floor traps with C.P jalli</b> all complete.   | EACH | 95       | 0.00005293  |
| 2216        | Providing and fixing <b>heavy duty UPVC floor traps with C.P jalli</b> all complete.  | EACH | 32       | 0.00002258  |
| 2217        | Providing and installing approved brand single tap <b>water cooler of 80 L</b> cooling capacity all complete.   | EACH | 2        | 0.00007054  |
| 2218        | Providing and installing approved brand single tap <b>water cooler of 150 L</b> cooling capacity all complete.  | EACH | 19       | 0.00134027  |
| 2219        | Providing and fixing white vitreous <b>urinal partitions</b> of size 675x325x85mm all complete.   | EACH | 32       | 0.00005941  |
| A2219       | Providing and fixing 18 mm thick white marble <b>urinal partitions</b> of size 600x1200mm all complete.   | EACH | 20       | 0.00003713  |
| 2220        | Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.  | EACH | 2        | 0.00011138  |
| <b>2300</b> | <b>STRUCTURAL STEEL</b>   |      |          |   |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
|        | <b>Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| A2301  | Transportation, fabrication and erection of <b>structural steel with mild steel rolled section / built up section / combination of both</b> conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc <b>including blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ), 2 coats of primer &amp; touch up panting as per requirement and item No.2302/A2302 (Cost of primer , blast cleaning and touch up painting shall be paid separately in item No.2302/A2302) ,</b> connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and upto 40 mm & 66o C for welding over 40 mm and upto 63 mm & 110o C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.( <b>Item also includes submission of optimized cutting plan as per fabrication drawing and stacking of cut pieces/scrap steel as per sizes for easy retrieval for further use).</b> ( <b>STRUCTURAL STEEL WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC</b> ) | MT   | 1780     | 0.02412123  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
| B2301  | Bolted Erection of structural steel of mild steel/High strength steel rolled section / built up section / combination of both conforming to IS:2062, pipe sections] true to line, level, plumb & dimension, rectification if any, and assembly, installation of erection/connection bolts and application of final finish paint coat(Payment for <b>final finish paint coat</b> shall be made separately as per Item No. <b>C2304</b> ) as per approved drawing, specification and approval of engineer in charge. Erection joints shall be mostly bolted with HSFG bolts/washer/nut, which will be paid separately under item BOQ. Erection bolts shall be arranged by the bidder and is not payable. the work shall be satisfactorily completed with required tightening of HSFG bolts along with DTI (DIRECT TENSION INDICATOR) washers to be supplied by the bidder(Cost of DTI washer isincluded in this item and not payable separately). Welding required for erection/seating shall be included in this item. The prefabricated structure shall be supplied in variable length to the maximum length of 10 meters -12 metersand all erection work on ground or at any elevation is included in this item. Payment shall be made for weight of permanent structure, HSFG nuts, bolts & splice plate, DTI washers, gusset plates, stiffeners but not for erection bolts & nuts, etc. | MT   | 7670     | 0.04741458  |
| 2302   | Extra over ST NO. 2301 for <b>blast cleaning of steel structures</b> to near white metal surface(Sa 2 1/2 ) and applying epoxy based zinc phosphate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection <b>including touch-up painting etc all complete.</b>   | MT   | 1        | 0.00000184  |
| A2302  | Extra over ST NO. <b>A2301</b> for blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) and two component self curing Inorganic Zinc ethyle Silicate Primer Coat (Solid by Volume Minimum 62+2% and Zinc Dust %age on dry film minimum 80%).Zinc dust pigment shall conform to ISO 3549 and Zinc dust pigment content shall be determined in accordance with ASTM D 2371. Minimum Dry Film Thickness (DFT) of primer coat shall be 60 Micron. It shall be applied over shot blast cleaned surface to near white metal finish conforming to Sa 2 ½ finish of Swedish standard SIS-05-5900 and shall have profile of 20 to 30 micron. The Primer Coat shall be applied in Shop immediately after blast cleaning by Airless spray technique. <b>including touch-up painting etc all complete as per specification.</b>   | MT   | 1780     | 0.00326711  |
| 2304   | Providing and applying two coats of <b>synthetic enamel paint</b> with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.  | MT   | 1        | 0.00000157  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
| A2304  | Providing and applying Intermediate Coat of Polyamide Cured pigmented Micaceous Iron Oxide (MIO content minimum 30%) Epoxy based Paint (Solid by Volume Minimum 62+2%) of Minimum 75 Micron DFT at shop by Airless spray technique of approved make and shade to achieve an even shade over steel sections already having primer coats including touch-up painting etc all complete as per specification.  | MT   | 1780     | 0.00095438  |
| B2304  | Providing and applying Finish Coat of Polyamide Cured colour pigmented Epoxy based Paint (Solid by Volume Minimum 60%) of Minimum 75 Micron DFT by brush/Airless spray technique before/after erection of approved make and shade to achieve an even shade over steel sections already having intermediated coats including touch-up painting, protection, cleaning, scaffolding etc all complete as per specification.  | MT   | 1780     | 0.00097148  |
| C2304  | Providing and applying Final Finish Coat of Polyurethane based colour pigmented Paint (Solid by Volume Minimum 55+2%) of Minimum 50 Micron DFT by brush/Airless spray technique after erection of approved make and shade to achieve an even shade over steel sections already having finish coats including touch-up painting, protection, cleaning, scaffolding etc all complete as per specification.   | MT   | 9450     | 0.00596324  |
| 2305   | <b>Providing and applying two coats of epoxy based colour finish paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete</b>  | MT   | 1        | 0.00000197  |
| 2306   | Providing, laying and clamping of <b>crane rails</b> over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.   | MT   | 10       | 0.00066345  |
| 2307   | Transportation, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. (Bolts, nuts, washers shall be paid separately under item 2310 & 2311 as applicable) | MT   | 215      | 0.00398849  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT    | QUANTITY   | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|---------|------------|---|
| 2308   | Transportation,, fabrication, erection and alignment of factory made <b>galvanised welded grating units</b> with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, <del>drilling welding edge preparation etc all complete</del>            | MT      | <b>15</b>  | 0.00022459  |
| 2309   | Extra over above ST NO. 2301/2307 for <b>finishing the grating units</b> with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.   | MT      | <b>16</b>  | 0.00027326  |
| 2310   | Transporting and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.  | Quintal | <b>30</b>  | 0.00003521  |
| 2311   | <b>Fixing in positing of high strength structural bolts</b> (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.  | Quintal | <b>5</b>   | 0.00001768  |
| A2311  | <b>Fixing of high strength structural bolts</b> (of property class 8.8/10.6 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.   | Quintal | <b>250</b> | 0.00088402  |
| 2312   | <b>Dismantling of steel structure</b> , lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions ( weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete. | MT      | <b>30</b>  | 0.00013810  |

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|--------|--|------|----------|---|
| 2313   | Addition to, alterations in and/or modification of " <b>Erection Marks</b> " including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:   |      |          |   |
| a      | In erected position  | MT   | 20       | 0.00011583  |
| b      | In fabrication yard  | MT   | 20       | 0.00010395  |
| 2314   | <b>Re-erection of dismantled fabricated structural steel</b> members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding consumables etc all complete. | MT   | 25       | 0.00019213  |
| A2315  | Fabrication and erection of <b>minimum 6mm thick stainless steel liner of grade SS:304</b> on M.S. plate for inside surfaces vertical portion of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel etc. all complete. <b>(STRUCTURAL STEEL WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b>  | MT   | 150      | 0.00413265  |
| 2317   | Transportation and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ±50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.  |      |          |   |
| a      | 20 Tons  | EACH | 10       | 0.00002680  |
| c      | 40 Tons  | EACH | 10       | 0.00004617  |
| d      | 50 Tons  | EACH | 10       | 0.00004830  |
| 2318   | Providing and fixing flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.  | RM   | 150      | 0.00015040  |

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|-------------|--|------|--------------|---|
| 2319        | Transporting, fabrication and fixing of <b>stainless steel pipe hand railing of 38mm dia</b> including SS Accessories ,transportation, loading/unloading etc. all complete..   | MT   | <b>11</b>    | 0.00037160  |
| 2320        | Supply, fabrication and fixing of <b>GI pipe hand railing (900 mm high)</b> of 32 mm/40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..  | MT   | <b>1</b>     | 0.00005672  |
| A2320       | Fabrication and fixing of <b>GI pipe hand railing</b> of 32 mm/40 mm dia (Medium Grade) with galvanised using 610 gm/sqm of zinc including transportation, loading/unloading, painting etc. all complete..   | MT   | <b>90</b>    | 0.00141659  |
| 2321        | Conducting <b>radiography test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | RM   | <b>60</b>    | 0.00012918  |
| 2322        | Conducting <b>ultasonic test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | RM   | <b>60</b>    | 0.00004676  |
| 2323        | Conducting <b>ultasonic test on steel plates</b> as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | SQM  | <b>60</b>    | 0.00000277  |
| 2324        | Conducting <b>magnetic particle test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.   | RM   | <b>60</b>    | 0.00003520  |
| 2325        | Conducting <b>dye penetration test on welds</b> wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)   | RM   | <b>60</b>    | 0.00002763  |
| A2326       | Supplying, fabrication, erection and alignment of factory made CI grill units for catch pit including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation. etc. all complete.   | MT   | <b>5</b>     | 0.00022534  |
| <b>2400</b> | <b>ROAD WORKS</b>  |      |              |   |
|             | <b>Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating, shuttering, formwork and curing (excluding cost of reinforcement), with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specification and as per direction of engineer in charge for the following(Item No 2418 &amp; 2419).(CEMENT WILL BE SUPPLIED FREE OF COST BY BHEL AS PER TCC)</b> |      |              |   |
| 2401        | <b>Preparation of sub grade</b> by excavating earth to required depth for all types of soil, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.   | CUM  | <b>33000</b> | 0.00184266  |

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|--------|--|------|--------------|---|
| 2402   | Supplying and <b>filling with selected good earth</b> of approved quality in layers not exceeding <b>300 mm loose thickness</b> using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete. | CUM  | <b>5000</b>  | 0.00112277  |
| 2404   | Providing & laying <b>water bound macadam sub base course</b> in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.  | CUM  | <b>10800</b> | 0.01163306  |
| 2405   | Providing & laying <b>water bound macadam base course</b> in layers of required thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.  | CUM  | <b>500</b>   | 0.00053857  |
| 2406   | Providing & Laying <b>water bound macadam base course</b> with stone aggregate 50mm to 20mm size stone screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of <b>blinding material moorum etc all complete.</b>   | CUM  | <b>3700</b>  | 0.00431863  |
| 2407   | Providing & applying <b>tack coat</b> of low viscosity liquid bitumen of grade 80/100 conforming to IS 73, 217 or 454 as applicable @10 kg/ 10 sqm for untreated WBM surface including <b>scraping, cleaning with compressed air etc all complete.</b>   | SQM  | <b>2000</b>  | 0.00018012  |
| 2409   | Providing, mixing & laying of <b>bituminous macadam course</b> of specified thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material including <b>hot mixing, hot laying, rolling etc all complete for the following.</b>  |      |              |   |
| a      | 75mm compacted thickness   | SQM  | <b>2000</b>  | 0.00080815  |
| 2410   | Providing, mixing & laying <b>20 mm compacted thick premix carpet</b> in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all <b>complete.</b>  | SQM  | <b>2000</b>  | 0.00054037  |
| 2411   | Providing and applying <b>liquid seal coat</b> comprising of an application of a layer of bituminous binder using medium setting grade bitumen at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling etc all complete.   | SQM  | <b>2000</b>  | 0.00012368  |

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|--------|--|------|-------------|---|
| A2412  | Supplying and laying <b>450mmx250mmx500mm</b> deep <b>precast concrete kerb stone</b> of grade <b>M-25</b> 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   | <b>7000</b> | 0.00126086  |
| B2412  | Supplying and laying <b>300mmx250mmx150mm</b> deep <b>precast concrete kerb stone</b> of grade <b>M-25</b> 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   | <b>6100</b> | 0.00093028  |
| 2415   | <b>Dismantling of existing road</b> consisting of premix carpet, kerb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.   | SQM  | <b>5900</b> | 0.00123985  |
| 2416   | Providing 20mm compacted thick <b>premix carpet on existing/damaged</b> road surfaces in a single course composed of suitable small size aggregate premixed with a bituminous binder using medium setting grade bitumen on the existing base including tack coat, cleaning of existing surface, mixing, applying, rolling etc all complete.                  | SQM  | <b>1000</b> | 0.00028820  |
| A2417  | Providing and laying of plain cement concrete of grade <b>M20</b> using 40 mm graded stone aggregate including providing and fixing formwork, compaction etc. all complete   | CUM  | <b>300</b>  | 0.00062539  |
| A2418  | Providing and laying <b>cement concrete of grade M35</b> using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing forwork etc. all complete. (Excluding the cost of reinforcement and dowel bar)                    | CUM  | <b>8000</b> | 0.02780619  |
| A2419  | Providing & laying dry lean cement <b>concrete of grade M10</b> with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.   | CUM  | <b>6000</b> | 0.01602734  |
|        | <b>REINFORCEMENT</b>   |      |             |   |
| 2420   | Fixing in position <b>MS dowel bar</b> 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. <b>(STEEL WILL BE SUPPLIED BY BHEL FREE OF COST)</b>  | MT   | <b>60</b>   | 0.00020404  |

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|--------|--|------|--------------|---|
| 2421   | Providing, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of <b>TMT steel of grade Fe-500</b> confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc all complete as per specification, drawing and as directed by Engineer. | MT   | <b>250</b>   | 0.00085018  |
| 2422   | Providing, straightening cutting, bending, placing in position at any level, binding in position of steel reinforcement of <b>mild steel reinforcements</b> including cost of binding wire, labour, scaffolding transportation to & from stores etc all complete as per specifications, drawings and as directed by Engineer.                        | MT   | <b>10</b>    | 0.00003401  |
|        | <b>MISCELLANEOUS</b>   |      |              |   |
| 2423   | Providing & installation of <b>bitumen impregnated fibre board</b> of specified thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.  | SQM  | <b>1000</b>  | 0.00021915  |
| 2424   | Providing and filling in position <b>hot applied bitumen sealing compound (Grade A)</b> 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   | <b>16500</b> | 0.00252622  |
| A2426  | Providing & laying <b>75 mm thick precast interlocking concrete pavers (Grade M35)</b> of approved colour and pattern as per specification and recommendation of manufacturer.   | SQM  | <b>15000</b> | 0.00960956  |
| A2427  | Providing and laying <b>20mm thick sand layer</b> below concrete pavers including compaction etc all complete as per specification, drawing and as directed by Engineer.   | SQM  | <b>25000</b> | 0.00024016  |
| A2428  | Providing and laying Impermeable plastic sheeting 125 microns thick laid flat without creases as per IRC 15-2002 etc all complete as per specification, drawing and as directed by Engineer.   | SQM  | <b>20000</b> | 0.00062443  |
| A2429  | Providing and laying <b>Inverted Choke with 25 mm course of screenings (Grading-B)</b> over prepared subgrade including compaction etc all complete as per specification, drawing and as directed by Engineer.   | CUM  | <b>600</b>   | 0.00208186  |
| B2430  | Providing and installation of Variable message signs including Cantilever type MS supports etc. all complete as per drawings, specifications, manufacturer's recommendations, indian standards.  | EACH | <b>100</b>   | 0.00006004  |
| A2431  | Scarifying the existing bituminous road surface/tiles to a depth of 50mm by mechanical/manual means including disposal of the scarified materials within 1km lead etc all complete and as directed by the Engineer-in-charge.  | SQM  | <b>2000</b>  | 0.00030020  |

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|-------------|---|------|--------------|---|
| A2432       | Scarifying the existing WBM to a depth of 75mm by mechanical/manual means, consolidation/compaction including making good the undulations to receive new WBM layer over the thus prepared surface etc all complete and as directed by the Engineer-in-charge.   | SQM  | <b>2000</b>  | 0.00036025  |
| <b>2600</b> | <b>LEVELING ,GRADING &amp; ENABLING WORK</b>  |      |              |   |
| 2601        | <b>Cutting of trees having girth more than 300 mm</b> measured at a height of 1m above ground level including removal of roots, stacking the seviceable material like trunks,branches etc at specified area within the plant boundary and disposal of unseviceable parts/materials wwithin a lead upto 1km etc all complete.  | EACH | <b>1000</b>  | 0.00009006  |
| 2602        | <b>Earth work in stripping</b> of top soil upto a maximum <b>depth of 0.30m</b> below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a <b>lead upto 1km</b> etc all complete as per specification, drawing and as directed by the engineer-in-charge.                               | Sq.m | <b>75000</b> | 0.00157608  |
| 2603        | Earth work in excavation upto any <b>depth below ground level in all types of soil</b> including moorum, ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a <b>lead upto 1km</b> , spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge. | CUM  | <b>27000</b> | 0.00173458  |
| 2608        | <b>Earth work in filling</b> upto any depth below ground level for grading to proper grade and level in layers <b>not exceeding 300mm loose thickness</b> with selected approved soil <b>directly from excavation</b> within a lead upto1km and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer for the following |      |              |   |
| a           | Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)  | CUM  | <b>7000</b>  | 0.00039087  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY     | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|--------------|---|
| 2609   | <b>Earth work in filling</b> upto any depth below ground level for grading to proper grade and level in layers <b>not exceeding 300mm loose thickness</b> with selected approved soil from compulsorily <b>excavated soil available within a lead upto 1km</b> and compacted as specified including re-excavation of stacked earth, all lifts, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer for the following.                 |      |              |   |
| a      | Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)   | CUM  | <b>32000</b> | 0.00178682  |
| 2610   | Extra over <b>ST No. 2601,2602,2603,2608,2609</b> for carriage of unserviceable material/earth for every 1 km or part thereof beyond an initial lead of 1km.   | CUM  | <b>45000</b> | 0.00067546  |
| 2611   | <b>Earth work in filling</b> upto any depth below ground level for grading to proper grade and level in layers <b>not exceeding 300 mm loose thickness</b> with <b>approved borrowed soil</b> (borrowed soil to be arranged by the bidder) and compacted as specified including supplying boorrowed soil, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following. |      |              |   |
| a      | Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)   | CUM  | <b>40000</b> | 0.00542771  |
| b      | Each layer compacted so as to achieve at least 75% relative density as per IS-2720 part XIV in case of sandy soils   | CUM  | <b>5000</b>  | 0.00130589  |
| A2612  | Providing and laying <b>300 mm thick stone pitching</b> including caulking with 1 cement: 4 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification. <u>drawing and as directed by the engineer.</u>  | CUM  | <b>3500</b>  | 0.00420287  |
| 2613   | Consolidation of subgrade/ existing surface with 12 T power roller or vibromax including making good the undulations with earth and rerolling the subgrade for road, hard surfacing of equipment store,fabrication yard, assembly yard etc as directed by BHEL.  | SQM  | <b>5000</b>  | 0.00090061  |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|----------|---|
| 2614   | Providing and laying stone/boulder for making road with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 200mm, any depths etc in one layers approximately 250mm thickness after compaction, hand packing, filling in interstices with quarry spalls/ moorum and providing a layer of 25mm thickness (consolidated) including watering, thoroughly compacting layer with 12 tonne power roller or vibromax with minimum 8 passes etc all as per the direction of the engineer and as per specification  | CUM  | 1000     | 0.00120082  |
| 2615   | Providing & laying water bound macadam base for hard surfacing of open equipment store, preassembly yard etc in layers of required thickness with stone aggregate 90mm to 45mm size stone screening and binding material including screening, sorting, spreading and consolidation with power road roller 12T including carriage spreading and consolidation of blinding material moorum etc Including cost of material, labour, all complete.   | CUM  | 1000     | 0.00107714  |
| 2616   | 1.5M high fencing with MS angle post of size 45X45X5/6 mm 2.1 M long post placed every 3M centre to centre embeded in concrete blocks(1:2:4), every 15th post, last but one end post corner post shall be strutted on both sides and post on one side only and provided with 8 horizontal lines and two diagonal sinterwoven with horizontal wires, of barbed wire 9.38 kg per 100 metres (min) between two post fitted and fixed with GI staples turn buckles, angle post shall be embeded in plain cement concrete(1:2:4)size 300x300x600mm deep below ground etc complete including excavation, backfilling, concreting, one coat of primer, two coat of synthetic enamel paint finish. (Contractor will supply all materials including cement, structural steel, paint, labour etc complete. |      |          |   |
| A)     | For structural angle with two coata of bitumen based protective coating etc complete.  | MT   | 4        | 0.00018331  |
| B)     | Providing, fitting, fixing galvanised chain link fencing of approved quality 50mmx50mmx8 g, by means of galvanised `C` clips, with fixing of galvinised special clips etc. Contractor to supply all materials. Angle post to be paid separately as per item no 2732 (A).   | SQM  | 3000     | 0.00054037  |
| C)     | For G I barbed with all fixing etc complete.   | MT   | 1        | 0.00005247  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM (Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 2617   | Installation of 30 mtr high lighting mast with head frame, power winch rope ,trailing cable, concrete foundation including bolt, lamps, lighting fixture, controlgear, built in wiring etc complete of make BAJAJ/Crompton Greaves/ Philips/ Havels/ any other BHEL approved vendor make.(Lamp shall be as per 2x400W BGENF 22 R or equivalent make with CG Boxes and Lamps etc complete in all respects -16 Nos). Supply of control panel housing suitable control for the operation of the mast-1 No ( Civil work like excavation, concrete etc will be paid separately as per relevant items of BOQ) | set  | 7        | 0.00016715  |

**VOLUME-III  
PRICE SCHEDULE, REV-02**

**JOB: MAIN PLANT CIVIL & STRUCTURAL WORK INCLUDING MISC. BUILDING, ROAD WORK, LEVELLING & GRADING, FIRE FIGHTING, COOLING TOWER (IDCT), AHP, BOUNDARY WALL AND MISC. FOUNDATIONS/ STRUCTURES AT 1X250 MW ROURKELA PP-II EXPANSION, ODISHA.**

**TENDER NO : PSER:SCT: RKL-C1755:16.**

**SCH-3-PART-2-SUPPLY**

| ST. NO      | DESCRIPTION OF ITEM  | UNIT    | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-------------|--|---------|----------|---|
| <b>400S</b> | <b>REINFORCEMENT</b>   |         |          |   |
| 401S        | Supplying mild steel reinforcements conforming to grade 1 of IS:432 (part 1 or grade IS-2062) as per specifications & drawings.  | MT      | 37       | 0.00084411  |
| A402S       | Supplying uncoated stress relieved strands (diameter, length, ply and number as per drawing) of minimum 0.2 percent proof load of 32460 N confirming to IS:6006 in precast wall panels, columns etc. complete all as per specifications, drawings and as directed by Engineer. | MT      | 15       | 0.00039244  |
| <b>700S</b> | <b>MS EMBEDMENTS</b>   |         |          |   |
|             | <b>Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |         |          |   |
| A701S       | Supply of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. all complete.  | MT      | 60       | 0.00137499  |
| 704S        | Supply of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. all complete.      | MT      | 60       | 0.00137499  |
| 705S        | Supplying following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.   |         |          |   |
| a           | MS pipes of all diameters  | Quintal | 15       | 0.00006025  |
| b           | PVC pipes / conduits of all diameters  | Quintal | 105      | 0.00051847  |
| c           | UPVC pipes / conduits of all diameters   | Quintal | 5        | 0.00002469  |
| d           | Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:  |         |          |   |
| i           | Upto 250 kg  | Each    | 101      | 0.00003378  |
| ii          | Beyond 250 Kg and upto 500 kg  | Each    | 210      | 0.00008965  |
| iii         | Beyond 500 Kg and upto 750 kg  | Each    | 201      | 0.00009703  |

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|--------|--|------|----------|---|
| e      | Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:  |      |          |   |
| i      | Upto 250 kg  | Each | 101      | 0.00003754  |
| ii     | Beyond 250 Kg and upto 500 kg  | Each | 215      | 0.00010379  |
| iii    | Beyond 500 Kg and upto 750 kg  | Each | 201      | 0.00010898  |
| 900S   | <b>DOORS, WINDOWS, VENTILATORS, LOUVERS</b>  |      |          |   |
|        | <b>Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |          |   |
| 903S   | <b>Supplying of solid core flush door shutter</b> as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle 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 handles on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldraps, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately) | SQM  | 200      | 0.00045115  |
| 904S   | Supplying of <b>single or double steel door shutters with 45mm thk flush design shutter</b> comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.  | SQM  | 50       | 0.00013365  |
| 905S   | Supplying of <b>single or double steel door shutters with 18 gauge M.S. sheets shutter</b> presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.  | SQM  | 50       | 0.00011510  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
| 906S   | Supplying of <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 ( minimum anodized coating of grade AC15 ). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)  | SQM  | 30       | 0.00004838  |
| A906S  | Supplying <b>anodized extruded aluminium doors (single or double shutter)</b> conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 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 rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. <b>Glazing shall be clear float glass of 6mm thickness</b> including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)   | SQM  | 150      | 0.00021939  |
| B906S  | Supplying <b>anodised tubular aluminium doors</b> (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent. The door frame shall be of 101.4mm x 44.6mm and shutter of 50mm tubular extrusions, <b>3mm</b> thick. The opening arrangement shall be single action or double action as shown in drawing with spring hinges in floor. The glazing shall be 5.5mm thick plain glass panes fixed with necessary gaskets and aluminium beading strip. The door shall be provided with one security lock. The shutters shall be provided with 1.6mm thick 300x150mm push plates and 1.6mm thick 300mm wide kick plate of anodised aluminium for full width of door inside and outside. The door frames shall be polished and anodized with approved colour. The average thickness of anodic coating shall not be less than 15 microns as per IS: 1868. Door frame shall be provided with approved anchors @ 90 cm c/c maximum for fixing. (Glazing shall be paid separately) | SQM  | 150      | 0.00020714  |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY   | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|------------|---|
| 907S   | <b>Supplying of fire proof steel doors</b> (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.   | SQM  | <b>50</b>  | 0.00030729  |
| A907S  | <b>Supplying fire proof steel doors</b> (single or double shutter) with panic devices shall be 35mm thk flush design comprising of two outer sheets of 1.2 mm steel sheets rigidly connected and reinforced inside with continuous vertical 1.0 mm stiffeners, spot welded in position at not more than 150mm on centers, side, top & bottom edges of shutters shall be reinforced by continuous pressed steel channel with minimum 1.2 mm, 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  | <b>100</b> | 0.00058690  |
| 908S   | Supplying of <b>steel windows/ventilator</b> with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision.including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)   |      |            |   |
| a      | <b>openable type</b>  | SQM  | <b>300</b> | 0.00038474  |
| b      | <b>fixed type</b>   | SQM  | <b>150</b> | 0.00018436  |

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|--------|---|------|----------|---|
| 909    | Supplying of anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-mettalic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, Providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure. | Kg   | 400      | 0.00007565  |
| A909S  | Supplying <b>anodised (Electro colour dyed) aluminium work</b> with 15 micron coating thickness of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), rawl plugs, expansion fasteners, SS screws or with fixing clips, required PVC/neoprene felt for bi-mettalic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.                                 | Kg   | 21000    | 0.00397171  |
| 910S   | Design,drawing,Supplying of aluminium composite panel(ACP) of following thickness with PVDF or polyester coating for interior partition of approved shade ,color etc all complete as per specification.   |      |          |   |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|----------|---|
|        | a 3mm   | SQM  | 1        | 0.00000145  |
|        | b 4mm   | SQM  | 1500     | 0.00459043  |
|        | c 5mm   | SQM  | 401      | 0.00150357  |
| 911S   | Supplying of door closers as per IS 3564 ,of approved make & quality all complete of following type :   |      |          |   |
|        | a Over head hydraulic door closures   | Each | 110      | 0.00007774  |
|        | b Floor mounted Hydraulic door closers  | Each | 60       | 0.00007216  |
| 912S   | Supplying pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications.  | Kg   | 5050     | 0.00025773  |
| A912S  | Supplying pressed steel frames for partition fabricated from minimum 2.0mm galvanized steel sheet pressed to form a profile of nominal size 60mm x 70 mm & fixed to the supporting construction by means of M 10 X 120 or bigger steel bolts at 300mm from the edges & every 500mm c/c etc all complete as per specifications.  | Kg   | 325      | 0.00001659  |
| 913S   | Supplying 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  | 59       | 0.00008488  |
|        | b Mechanically Operated   | SQM  | 345      | 0.00061272  |
|        | c Electrically operated   | SQM  | 209      | 0.00044999  |
| 914S   | Transporting and fixing in position PVC doors(25 thk double skin) of sintex or equivalent make including door frame,all fitting & fixtures as per specification, drawing and instructions of engineer in charge.  | SQM  | 70       | 0.00008582  |
| A914S  | Supplying of <b>solid core FRP doors</b> including door frame, all fitting & fixtures as per specification, drawing and instructions of engineer in charge.   | SQM  | 120      | 0.00016184  |

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|--------|---|------|----------|---|
| 915S   | Supply 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 as per Specification for the followings                          |      |          |   |
| a      | 4 mm thick clear sheet glass  | SQM  | 10       | 0.00000390  |
| b      | 4 mm thick clear float glass  | SQM  | 1810     | 0.00079984  |
| c      | 5.5 mm thick clear float glass  | SQM  | 10       | 0.00000494  |
| d      | 6 mm thick wired glass  | SQM  | 700      | 0.00038204  |
| e      | 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges  | SQM  | 10       | 0.00000967  |
| f      | 4 mm thick ground glass   | SQM  | 10       | 0.00000259  |
| g      | 6 mm thick tinted heat reflecting type float glass  | SQM  | 10       | 0.00000599  |
| h      | 6 mm thick clear toughened safety glass   | SQM  | 710      | 0.00051027  |
| 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  | 210      | 0.00028042  |
| j      | Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)  | SQM  | 110      | 0.00015012  |
| k      | One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).                        | SQM  | 110      | 0.00013863  |
| j      | 6 mm thick clear float glass  | SQM  | 10       | 0.00000342  |
| Ae     | 2mm thick fire and UV resistant Polycarbonate sheet   | SQM  | 200      | 0.00051971  |
| Ak     | One outer 6mm thick heat-reflecting type toughened glass and one inner 6mm thick clear toughened glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).                       | SQM  | 100      | 0.00018192  |
| Am     | 2 mm thick polycarbonate sheet with profile matching with metal sheeting  | SQM  | 100      | 0.00025986  |
| An     | 6 mm thick reflective toughened glass   | SQM  | 300      | 0.00054577  |
| Ao     | One outer 6mm thick toughened, fire resistant plane glass and one inner 6mm thick fire resistant, tinted glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).               | SQM  | 100      | 0.00018192  |
| 1500S  | <b>ROOFING / SIDE CLADDING</b>  |      |          |   |
|        | <b>Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, lags, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b> |      |          |   |

| ST. NO | DESCRIPTION OF ITEM  | UNIT | QUANTITY    | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|--|------|-------------|---|
| A1501S | Designing & supplying <b>permanently color coated galvanised MS troughed metal sheet decking</b> plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum <b>0.8mm</b> with minimum trough depth of <b>44 mm</b> having minimum yield strength of <b>250 MPa</b> and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. |      |             |   |
|        | a Span Upto 1800mm   | SQM  | <b>5600</b> | 0.00300589  |
|        | b Span Exceeding 1800mm and upto 2500 mm   | SQM  | <b>6200</b> | 0.00431815  |
| A1504S | Designing, Supplying External sheet of Permanent colour coated metal cladding shall be troughed (Minimum depth of trough= 28 mm & Maximum pitch of trough= 200 mm) zinc-aluminium alloy (55% Aluminium, 43.4% Zinc and 1.6% Silicon) coated, not less than 150 gm/sq m, having High Tensile sheet (Fy=550 MPa) of 0.5 mm (minimum) Base Metal Thickness including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over minimum 5 microns of suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 12 microns over minimum 5 microns of suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.   | SQM  | <b>2300</b> | 0.00103295  |

| ST. NO    | DESCRIPTION OF ITEM  | UNIT | QUANTITY    | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|-----------|--|------|-------------|---|
| A1505     | <p>Designing &amp; supplying <b>Inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.6mm bare metal thickness</b> having minimum yield strength 250 MPa and zinc-aluminium alloy coating not less than 150gm/sqm total on both sides of both sheets including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed surface of the sheet shall be permanently colour coated with silicon modified polyester paint of minimum dry film thickness (DFT) 20 microns over suitable primer. Other face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. The sheet shall be fixed directly to side runners and Z spacers as per IS : 277. The sheet shall be fixed at the rate not more than 1500mm center to center to hold the insulation and external sheeting.</p> | SQM  | <b>2000</b> | 0.00093664  |
| A1506 ISG | <p><b>Supplying of</b> Prefabricated sandwich panels comprising troughed profile with outer sheet matching with permanent color coated (non-insulated) metal sheet specified above at point "a" and inner sheet made up of slight profiled linear tray of 0.5mm BMT 340 Mpa galvanized steel of 150 gsm zinc coating (total on both sides) with RMP color coating of 25 microns on the exposed side over the primer and 12 microns on the covered side over a 5 microns primer coat. The insulation material shall be of high density CFC- free 30mm (at the valley position of the outer sheet) thick polyurethane foam insulation of density 40 – 42 Kg/m<sup>3</sup> sandwiched in between the two sheets. The panel should be finished with a malefemale jointing system. The panels shall be fixed to the purlins with hexa-headed self-drilling fasteners of required size with synthetic washers at the crests. Flashing and capping (top and bottom) shall be made of pre-coated Galvalume sheet in plain form but in required shape.</p>  | SQM  | <b>100</b>  | 0.00005872  |

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|--------|--|------|----------|---|
| 1509S  | Designing & supplying UV stabilised fiberglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured outof 2400 TEX panel rovigs incorporating minimum 0.3% ultra-violet stabilizer in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent,clear or pigmented, textured or smooth as specified.  |      |          |   |
| a      | 2 mm thick corrugated (2.5" or 4.2" or 6") or step-down (2" or 3" or 6" ) as specified   | SQM  | 250      | 0.00011228  |
| 1510S  | Supplying of 1 mm thick corrugated/semicorrugated <b>G.I. sheet in roofs, cladding</b> of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.  | SQM  | 1050     | 0.00040978  |
| A1511S | Designing & supplying Prefabricated sandwich panels comprising troughed profile with outer sheet of permanent Color coated (non-insulated) metal sheets troughed (Minimum depth of trough= 28 mm & Maximum pitch of trough= 200 mm) zinc-aluminium alloy (55% Aluminium, 43.4% Zinc and 1.6% Silicon) coated, not less than 150 gm/sq m, having High Tensile sheet (Fy=550 MPa) of 0.5 mm (minimum) Base Metal Thickness. The exposed face of the outer sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) of minimum dry film thickness (DFT) 20 microns over minimum 5 microns of suitable primer. Inner face of the outer sheet shall be provided with suitable pre-coating of minimum DFT 12 microns over minimum 5 microns of suitable primer and inner sheet made up of slight profiled linear tray of 0.5mm BMT 340 Mpa galvanized steel of 150 gsm zinc coating (totalon both sides) with RMP color coating of 25 microns on the exposed side over the primer and 12 microns on the covered side over a 5 microns primer coat. The insulation material shall be of high density CFC- free 30mm (at the valley position of the outer sheet) thick polyurethane foam insulation of density 40 – 42 Kg/m3 sandwiched in between the two sheets. The panel should be finished with a malefemale jointing system. The panels shall be fixed to the purlins with hexa-headed self-drilling fasteners of required size with synthetic washers at the crests. Flashing and capping (top and bottom) shall be made of pre-coated Galvalume sheet in plain form but in required shape. | SQM  | 4015     | 0.00192852  |
| 1600S  | <b>FALSE CEILING</b>   |      |          |   |

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|--------|--|------|----------|---|
|        | <b>False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |
| 1601S  | Supplying of glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, Supplying openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.  |      |          |   |
| a      | 12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).   | SQM  | 5        | 0.00000321  |
| b      | 12 mm thick GRG board in profile (dome ,curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).   | SQM  | 10       | 0.00000537  |
| A1601S | Supplying <b>glass fibre reinforced gypsum plaster board (GRG) ceiling</b> (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.  |      |          |   |
| a      | 12.5 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).   | SQM  | 200      | 0.00012849  |
| 1602S  | Supplying of light weight <b>mineral fiber tile false ceiling</b> 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 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 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 or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate. | SQM  | 710      | 0.00020419  |

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|--------|---|------|----------|---|
| 1603S  | Supplying <b>permanently colour coated aluminium false ceiling</b> of approved colour and <b>Luxalon 84 C</b> or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. ( Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)   | SQM  | 1800     | 0.00248570  |
| 1604   | Supplying <b>permanently colour coated aluminium false ceiling</b> of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301) | SQM  | 10       | 0.00001381  |
| 1605S  | Supplying of 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) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST No 2301)   | SQM  | 10       | 0.00001381  |

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|-------------|--|------|------------|---|
| 1606        | Supplying of <b>12mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm)</b> of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movement platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST.No.2201) | SQM  | <b>10</b>  | 0.00000587  |
| A1606S      | Supplying <b>12.5mm thick Gypsum board plain/perforated false ceiling tiles(600x600mm)</b> of India Gypsum or equivalent make in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc. including two or more coats of acrylic emulsion paint of approved colour to give an even shade with smooth finish all complete.as per architectural design and detail.metal suspension system as per ASTM C-635 shall be hot dipped M.S.galvanized (grade 180 as per is :277) nominal size of T-section shall be 24 x 38 mm or 24 x 25 mm cross runners. 24mm wide exposed flange surface shall be permanently color coated.suspension system shall be as per manufacturer's specification supported over movement platform.The work to be complete as per specifications, drawings and direction of engineer.( Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL and shall be paid under ST.No.2201)  | SQM  | <b>700</b> | 0.00041104  |
| A1607S      | Supply of 12 mm thick calcium silicate board of 'HILUX' or equivalent with suspension system as per manufacturers details including supporting grid system, expansion fasteners for suspension arrangement , providing openings for AC ducts, return air grills, light fixtures, etc., all complete. (With concealed grid and finished flat seamless).   | SQM  | <b>200</b> | 0.00008982  |
| <b>1700</b> | <b>RAIN WATER DOWN TAKE PIPES</b>  |      |            |   |
|             | <b>Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.</b>  |      |            |   |
| 1701S       | <b>Supplying of HCl down take pipes of 100 mm dia. with water tight lead joint, fixing clamps etc. all complete.</b>   | RM   | <b>10</b>  | 0.00000512  |
| 1702S       | <b>Supplying of galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-I) / IS:3589 all complete.</b>   | RM   | <b>510</b> | 0.00022537  |

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|----------|--|------|----------|---|
| 1703S    | Supplying of HCl down take pipes of 150mm dia with water tight lead joint etc. all complete.   | RM   | 210      | 0.00015874  |
| 1704S    | Supplying of galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.  | RM   | 1500     | 0.00097447  |
| 1705S    | Supplying of UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.  | RM   | 510      | 0.00012677  |
| 1706S    | Supplying of UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.  | RM   | 410      | 0.00014352  |
| 1707S    | Supplying of GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.  |      |          |   |
| a        | 100 mm Dia   | RM   | 10       | 0.00000486  |
| b        | 150 mm Dia   | RM   | 10       | 0.00000701  |
| c        | 200 mm Dia   | RM   | 10       | 0.00001062  |
| 1708S    | Supplying HDPE down take pipes conforming to IS:4984 as per specification of following diameters.  |      |          |   |
| a        | 110 mm Dia   | RM   | 10       | 0.00000161  |
| b        | 160 mm Dia   | RM   | 10       | 0.00000227  |
| c        | 200 mm Dia   | RM   | 10       | 0.00000303  |
| A1709S   | Supplying of cast iron cement down take pipes conforming to IS:4984 as per specification of following diameters.   |      |          |   |
| a        | 110 mm Dia   | RM   | 510      | 0.00026426  |
| b        | 160 mm Dia   | RM   | 510      | 0.00032213  |
| c        | 200 mm Dia   | RM   | 10       | 0.00000760  |
| A1710S   | Supplying 450x450 KHURRAS for rain water down take pipes as per specification.   | Each | 200      | 0.00021014  |
| Ab 1710S | Supplying Galvanised steel ERW pipes (273mm OD, 4mm thick) of steel grade Fe330 conforming to IS: 3589 with welded joints shall be used for all TP's, Crusher house, and Conveyor galleries specification of diameter 273 OD , 4 mm thick all complete as per the directions of Engineer in charge | Rmt  | 1000     | 0.00075952  |
| 1800S    | <b>MISCELLANEOUS WORKS</b>   |      |          |   |
|          | <b>Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.</b>  |      |          |   |
| 1804S    | Supplying of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.   | SQM  | 55       | 0.00003471  |

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|--------|--|------|----------|---|
| 1810S  | Supplying of <b>rails and guide rails in concrete</b> for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.   | MT   | 36       | 0.00137471  |
| 1816S  | Supplying PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.   | EACH | 200      | 0.00124753  |
| 1817S  | Supplying HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.   |      |          |   |
| a      | Upto 75 mm dia   | RM   | 1        | 0.00000013  |
| b      | 100 mm dia   | RM   | 1        | 0.00000015  |
| c      | 150 mm dia   | RM   | 501      | 0.00005360  |
| d      | 200 mm dia   | RM   | 501      | 0.00022139  |
| 1819S  | Design, supply, fabrication of <b>stoplog gates in CW Pumps</b> with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) (SS component shall be measured separately for payment) | MT   | 70       | 0.00420409  |
| 1820S  | SS component mentioned under ST No. 1819.  | MT   | 10       | 0.00122514  |
| 1821S  | Design,Supply, fabricating, bolted and / or welded structural steel work for <b>stationary screens</b> made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416 etc all complete.  | MT   | 60       | 0.00328872  |
| 2300S  | <b>STRUCTURAL STEEL</b>  |      |          |   |
|        | <b>Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.</b>   |      |          |   |

| ST. NO | DESCRIPTION OF ITEM   | UNIT | QUANTITY    | WEIGHTAGE FOR AMOUNT OF EACH ITEM( Nearest to the 8 decimal points) W.R.T THE GRAND TOTAL AMOUNT (AT SL. NO. 3.0 OF SCH-1). |
|--------|---|------|-------------|---|
| 2301S  | <b>SUPPLY OF FINISHED PRODUCT OF DIFFERENT STRUCTURES IN POWER PLANT ITEMS AS PER SPECIFICATION AND AS DIRECTED BY ENGINEER-IN-CHARGE.</b>  |      |             |   |
| a      | <p>Total firm price for procurement of required steel, fabrication/manufacture as required based on approved drawing and Supply on FOR site basis all required finished product of structure involving Supply, transportation, Unloading and Receipt of steel materials from vehicles using bidder's own resources like T&amp;P , manpower etc at bidder's facilities /works/factory, outside project premises, stacking, stockkeeping, fabrication, welding, blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) and two component self curing Inorganic Zinc ethyle Silicate Primer Coat (Solid by Volume Minimum 62+2% and Zinc Dust %age on dry film minimum 80%).Zinc dust pigment shall conform to ISO 3549 and Zinc dust pigment content shall be determined in accordance with ASTM D 2371. Minimum Dry Film Thickness (DFT) of primer coat shall be 60 Micron. It shall be applied over shot blast cleaned surface to near white metal finish conforming to Sa 2 ½ finish of Swedish standard SIS-05-5900 and shall have profile of 20 to 30 micron. The Primer Coat shall be applied in Shop immediately after blast cleaning by Airless spray technique .</p> <p>Primer Coat shall be followed with the application of Intermediate Coat of Polyamide Cured pigmented Micaceous Iron Oxide (MIO content minimum 30%) Epoxy based Paint (Solid by Volume Minimum 62+2%) of Minimum 75 Micron DFT. This Coat shall be applied in Shop after an interval of Minimum overnight (from the application of Primer Coat) by Airless spray technique .</p> <p>Intermediate Coat shall be followed with the application of Finish Coat of Polyamide Cured colour pigmented Epoxy based Paint(Solid by Volume Minimum 60%) of Minimum 75 Micron DFT.This Coat shall be applied after an interval of Minimum overnight and maximum indefinite (from the application of Intermediate Coat) either before Erection by Airless spray technique or after Erection by brush and / or airless spray in coats of minimum 35 micron (DFT) at shop and 40 micron (DFT) after erection. Colour and shade of the Coat shall be as approved by the Owner(cost of primer, intermediate coat,finish coat as mentioned above included in this item. )</p> | MT   | <b>7670</b> | 0.25729404  |

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|--------|--|------|----------|---|
|        | <p>on structural steel made from mildsteel conforming to IS:2062, pipes conforming to IS:1161/IS:1239, chequered plate conforming to IS:3052 and mild steel rounds, at all elevations involving rolled sections (including mild steel rounds), builtup sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, junction towers, trestles, conveyor galleries, gantry girders, bunkers, roof trusses, portals, laced purlins, spaceframes, shear connectors, hangers, struts, monorails, galleries, stiffeners, wallbeams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, gratings, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails, toe plates, MS Rungs, insert plates, edge angles-embedments, lugs, posts, cccstays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, Straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts &amp; nuts (weight of erection bolts &amp; nut not payable, Supply of permanent bolt of grade C mild steel bolts &amp; nuts to be paid separately under respective items of BOQ), temporary preassembly (full length column height), edge preparation, preheating (min preheat and interpass temperature of 20 degree C for welding over 20 mm and upto 40 mm &amp; 66 degree C for welding over 40 mm and upto 63mm &amp; 110 degree C for thickness over 63mm &amp; use of low hydrogen / radiogenic electrodes), postheating, testing of welders, inspection of welds, visual inspection, nondestructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing as per erection scheme, Delivering finished products to Rourkela project site, protection against damage in transit, again receipt of finished product, stock at project site as per specification, drawings and instructions of the Engineer and as detailed in the tender for 1 x 250 MW NSPCL Rourkela Project</p> |      |          |   |
| 2307S  | <p>Supplying, fabrication of factory made <b>electroforged galvanised grating units</b> with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, <u>welding, edge preparation, etc. all complete.</u></p>  | MT   | 215      | 0.00930648  |
| 2308S  | <p>Supplying, fabrication of factory made <b>galvanised welded grating units</b> with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.</p>   | MT   | 15       | 0.00052403  |

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|--------------|--|---------|------------|---|
| 2310S        | Supplying of <b>permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363)</b> and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.   | Quintal | <b>30</b>  | 0.00008215  |
| 2311         | <b>Supplying of high strength structural bolts</b> (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.   | Quintal | <b>5</b>   | 0.00004125  |
| A2311        | <b>Supplying of high strength structural bolts</b> (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.   | Quintal | <b>250</b> | 0.00206271  |
| 2317S        | Supplying of <b>PTFE type sliding bearings</b> of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of $\pm 50$ mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.   |         |            |   |
| a            | 20 Tons  | EACH    | <b>10</b>  | 0.00006253  |
| c            | 40 Tons  | EACH    | <b>10</b>  | 0.00010774  |
| d            | 50 Tons  | EACH    | <b>10</b>  | 0.00011271  |
| 2319S        | Supply of <b>stainless steel pipe hand railing of 38mmdia</b> including SS Accessories ,transportation, loading/unloading etc. all complete..  | MT      | <b>11</b>  | 0.00086707  |
| A2320S       | Supply of <b>GI pipe hand railing</b> of 32 mm/40 mm dia (Medium Grade) with galvanised using 610 gm/sqm of zinc including transportation, loading/unloading, etc. all complete..  | MT      | <b>31</b>  | 0.00113852  |
| <b>2617S</b> | Supply of 30 mtr high lighting mast with head frame, power winch rope ,trailing cable, concrete foundation including bolt, lamps, lighting fixture, controlgear, built in wiring etc complete of make BAJAJ/Crompton Greaves/ Philips/ Havels/ any other BHEL approved vendor make.(Lamp shall be as per 2x400W BGENF 22 R or equivalent make with CG Boxes and Lamps etc complete in all respects -16 Nos). Supply of control panel housing suitable control for the operation of the mast-1 No | set     | <b>7</b>   | 0.00039003  |