



भारत भारी बिजली सीमाबद्ध लिमिटेड
(भारत भारी बिजली सीमाबद्ध लिमिटेड)

Bharat Heavy Electricals Limited
Industry Sector, Transmission Business Group

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AMENDMENT NO-1 TO NIT

DATE: 02.08.07

SUB : AMENDMENT- 01 To NIT 3048 for Civil Works

REF: TENDER SPEC. No. – TBSM/MEJIA/CIVIL/CRB & YARD/TENDER, Dated 06.07.2007.

A. With reference to above tender for civil works of control room building & yard for 400 kV switchyard at Mejia Thermal Power Station (7&8) in West Bengal, following amendments/clarifications may be noted.

1. Cement shall be supplied by BHEL as a free issue material as per terms & conditions stipulated in annexure-I for the civil works as mentioned in Package-A & Package-B of BOQ.
2. PVC is applicable as per annexure –I enclosed.
3. Over Run Clause (C-27.1 of Conditions of Contract for Civil Works) has been deleted. Refer Annexure-I enclosed.
4. The completion period has been increased from 12 months to 15 months from date of LOI.
5. For item No.16,17,18 &19 (Package-A), Drawings are enclosed. The bidders are required to quote accordingly.
6. Item No.91 Package B shall be read as follows

S.No.	Item Description	Quantity	Unit
91	Providing and laying water proofing treatment on roof with elastomeric membrane i/c primer coat, finishing coats & surface finish, all complete as per Customer's specification (Clause no:2.7.0 Doc No:volume -II-G2/S-XIX-4)	sqm	500

7. New Item No. 114,115 & 116 has been added to Package B. Revised BOQ attached.

8. Revised BOQ for Package A & B due to above amendments is enclosed, these will replace our earlier BOQ provided alongwith the tender. Bidders are required to quote accordingly.
9. Please enclose with your Technical Bid a copy of this amendment-01 duly signed by your authorised signatory and stamped.

All other terms & conditions of the tender specification shall remain unchanged.

(R.LODWAL)
SR.DGM/TBSM

ANNEXURE-I
REVISED TERMS AND CONDITIONS

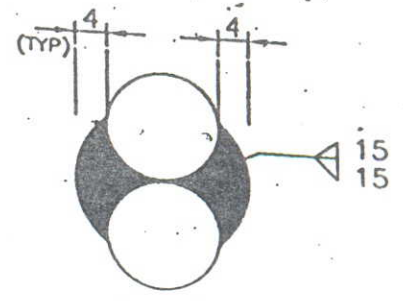
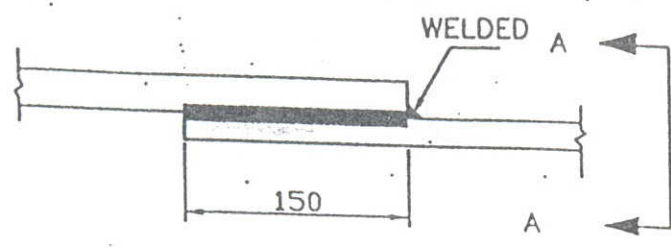
1.0	ISSUE OF MATERIALS
1.1	ISSUE OF CEMENT
1.1.1	Cement as received from the manufacturer/ stockiest will be issued free of cost to the contractor. The theoretical weight of each bag of cement for issued purposes will be considered as 50 kg, the contractor shall be accountable for the cement issued to him on this notional weight only. No claim whatsoever will be entertained because of difference between theoretical and actual weight of the bags of cement.
1.1.2	The empty cement bags duly accounted for against issue shall be the property of the bidder and the same shall be disposed by the bidder as per statutory regulation prevailing in the project.
1.1.3	The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL/ DVC stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL/ DVC stores.
1.1.4	The contractor shall submit to the engineer, a statement indicating estimated quantity of cement and steel required at least two months in advance. In addition, the contractor shall also furnish the estimated requirement of cement and steel during a month by the third week of the previous month indicating his requirement.
1.1.5	Bidder to note that all fasteners like MS/HT/HSFG bolts/nuts, lock nuts, washers etc shall be supplied by the bidder as per applicable item of BOQ-cum Rate schedule.
1.1.6	Bidder to note that cement and steel required for his enabling job like store/site office etc shall be arranged at his own cost.
2.0	RETURN OF MATERIALS
2.1	RETURN OF CEMENT
2.1.1	Sealed cement bags remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned promptly, (within 15 days from assessment) if BHEL/ Engineer is satisfied of the physical condition of the cement. Return of such cement to the project stores/ place as identified within the project area by Engineer/ BHEL will not be entitled to handling and incidental charges. Surplus sealed and good conditioned cement bags will be taken back on weightment basis.
3.0	CEMENT WASTAGE
3.1	CEMENT CONSUMPTION
3.1.1	The theoretical consumption of cement shall be based on the following.
3.1.1.1	For design mix concrete as per approved design mix.
3.1.1.2	For nominal mix concrete work, as per minimum cement as specified or as approved by Engineer-in-charge.
3.1.2	For item of works, where volume mix is permitted in writing by the BHEL, for masonry works, plaster other miscellaneous items, the cement consumption shall be governed by the "Statement of Cement Consumption" attached to Delhi schedule of Rates of CPWD-DSR-2002 unless otherwise specified in the specifications or the drawing of contract of contract or mutually agreed by Engineer-in-charge and contractor.
3.1.3	Actual consumption = Issue – Surplus/ unused quantity of cement returned in good condition by contractor to store. (No sweep cement will be taken back by BHEL).
3.2	CEMENT WASTAGE
3.2.1	Allowable wastage – Two percent (+2%) of theoretical consumption of cement unless specified otherwise in the technical specification.

3.2.2	For any material issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be effected at penal rates.		
3.2.3	Sl no	Cement consumption	Basis of issue & penal recovery
	C-1	Theoretical consumption (without considering any wastage or loss).	Free
	C-2	Actual consumption being Limited to plus two percent (+2%) of aforesaid theoretical consumption towards allowable wastage.	Free
	C-3	Actual consumption beyond two percent (+2%) of above (C-1).	Penal rate
4.0	RECONCILIATION OF BHEL ISSUED MATERIALS		
4.1	The contractor shall submit a reconciliation statement of cement and steel issued to him with each RA bill.		
4.2	At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available with contractor's custody at site.		
4.3	At the time of submission of bills by the contractor, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.		
4.4	The approved drawings/ bar bending schedules are to be considered for the purpose of reconciliation of materials.		
5.0	RECOVERY OF MATERIAL		
5.1	If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA bill at the penal rate stipulated below.		
5.2	PENAL RATE OF MATERIALS		
	Item	Penal rate (Rs)	
5.2.1	Cement (OPC/ PPC/PSC).	7,000/- per MT.	
6.0	ESCALATION/ PRICE VARIATION		
6.1	If after the contractual completion date as mentioned in the tender (base date i.e. 15 months from LOI) as allowed by BHEL the minimum wages for labour, prices of diesel oil and other materials used in the works gets increased, then the contractor shall be entitled for such increase (provided delay is not attributable to the contractor). Likewise, if there is any decrease in the indices/ prices of above mention items, BHEL shall be entitled for refund.		
6.2	The basis for calculation of price variation under each category, their component and base index/ price will be as under:		
	Category	Component	Base index/ price
6.2.1	Labour of all categories	35 %	Minimum wages of unskilled adult male worker as per Minimum Wages Act and notification there under applicable to the project site.
6.2.2	Diesel oil	5 %	Prices of HSD oil at pump of IOC/ BPCL/ HPCL nearest to the project site.
6.2.3	Electrodes	10 %	As per printed price list for 4 mm thick low hydrogen electrode of ADOR Ltd Irrespective of the fact that electrodes used may be of other grades and from other source duly approved by Engineer.
6.2.4	Oxygen gas	2 %	The price of these gases as per Indian Oxygen Ltd/ BOC Ltd, or their authorized agent at their depot, nearest to the project site, irrespective of the fact, that, gas being used is from other source duly approved by the Engineer.

6.2.5	Acetylene gas	5 %	The price of these gases as per Indian Oxygen Ltd/ BOC Ltd, or their authorized agent at their depot, nearest to the project site, irrespective of the fact, that, gas being used is from other source duly approved by the Engineer.
6.2.6	Paints	2 %	The price as per the printed price list for synthetic enamel paint of Berger Paints Ltd at their dealers shop, nearest to the project site, irrespective of the fact that the paint used is from other sources duly approved by the Engineer.
6.2.7	Other materials (other than those issued by BHEL)	21 %	Wholesale Price Index of all commodities as published by RBI.
6.2.8	Fixed component	20 %	Not escalable.
6.3	<p>Payment/ refund due to variation in Index/ Prices shall be determined on the basis of the following notional formula in respect of the identified components viz. labour, materials (other than those issued by BHEL), diesel oil, oxygen gas, acetylene gas, paints, electrodes.</p> <p style="text-align: center;">$K \times R \times (X_n - X_o) A = \text{-----} X_o$ Where, A = Amount to be paid/ refunded due to variation in the index for labour, materials (other than those issued by the BHEL), oxygen gas, acetylene gas, paints, electrodes and prices of diesel oil. K= Component of labour, materials (other than those issued by BHEL), diesel oil, oxygen gas, acetylene gas, paints, electrodes, as indicated in above table. R = Gross value of work done for the billing month. X_n = Revised index no/ price for labour, materials (other than those issued by BHEL), diesel oil, oxygen gas, acetylene gas, paints, electrodes, for the month of work done. X_o = Index no/ price for labour, materials (other than those issued by BHEL), diesel oil, oxygen gas, acetylene gas, paints, electrodes as on the 'BASE DATE'.</p>		
6.4	Total PVC payable against the contract shall have an overall ceiling of 10% of executed value.		
6.5	The quantum of such price variation amount per month shall be restricted to 10 % of each RA bill value (gross) ie 'R'. The difference if any wrt overall ceiling of 10% of the executed value will be paid in the final bill only.		
6.6	The contractor shall produce necessary price list for diesel oil, electrodes, oxygen & acetylene gas, paints and notification issued by the Govt for min wages and RBI Bulletins for receiving payment from BHEL/ refund to be made to BHEL as required in the notional formula mentioned above.		
6.7	The contractor will be required to raise bills for price variation payments on a monthly basis along with the running bills irrespective of the fact whether, any increase/ decrease in price/ index has taken place or not.		
6.8	Escalation shall be not be admissible for the portion of delay, attributable to the contractor.		
7.0	OVER RUN CHARGES		
	No over run charges shall be paid to the contractor in the event the completion period is extended for any reason whatsoever.		

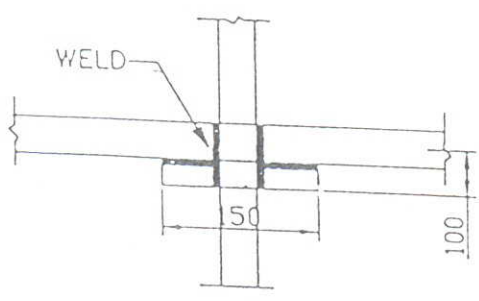
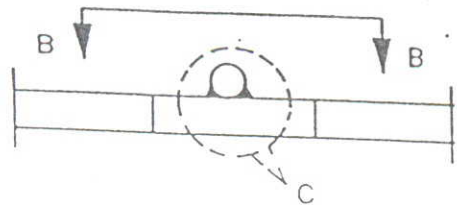
ROD TO ROD

1. STRAIGHT LAP JOINT/RISER

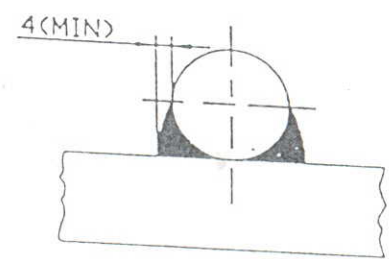


VIEW A-A

2. RIGHT ANGLED JOINT

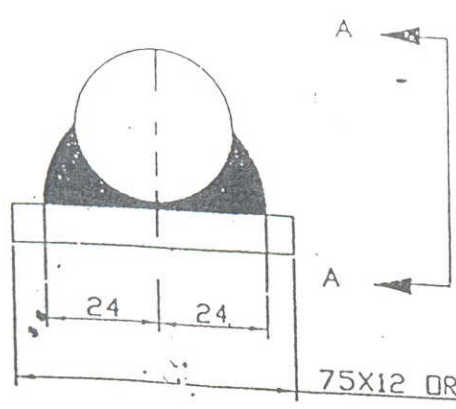


VIEW B-B

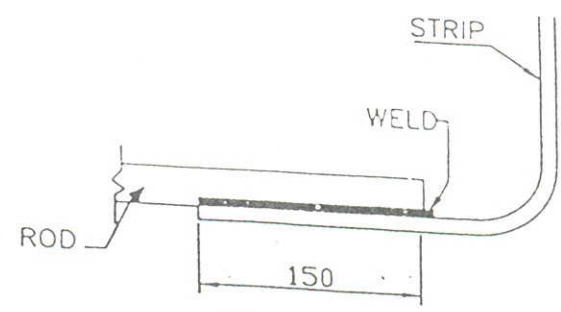


VIEW C

3. ROD TO STRIP



75X12 DR 50X6 GI FLAT



VIEW A-A



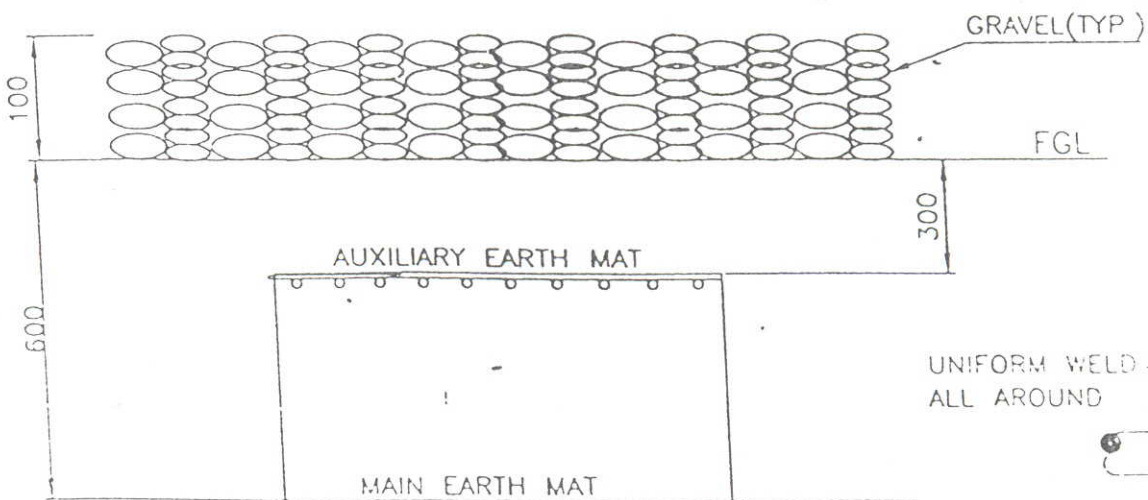
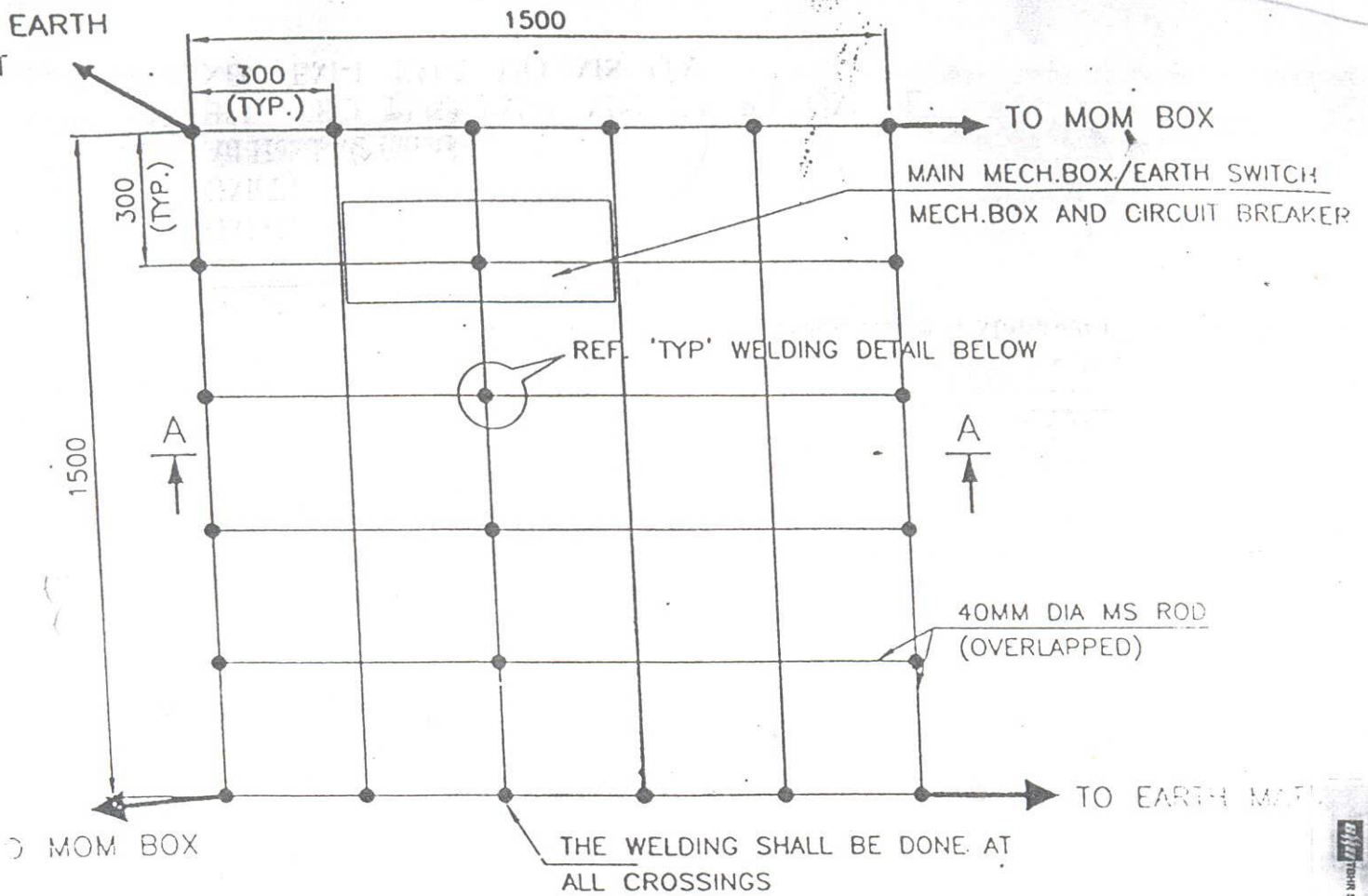
EQUIPMENT EARTHING DETAILS

DRG. No.

TB-STD-316-Rod Welding

REV. 00

SHEET No. 00



SECTION AA

NOTE:

AUX. EARTH MAT SHALL BE SO POSITIONED THAT THE FOOT OF THE OPERATOR ALWAYS LIE OVER THE AUX. EARTH MAT AREA WHILE ATTENDING / OPERATING THE MECH. BOX THE CABLE TRENCH ROUTING SHALL BE PLANNED ACCORDINGLY.



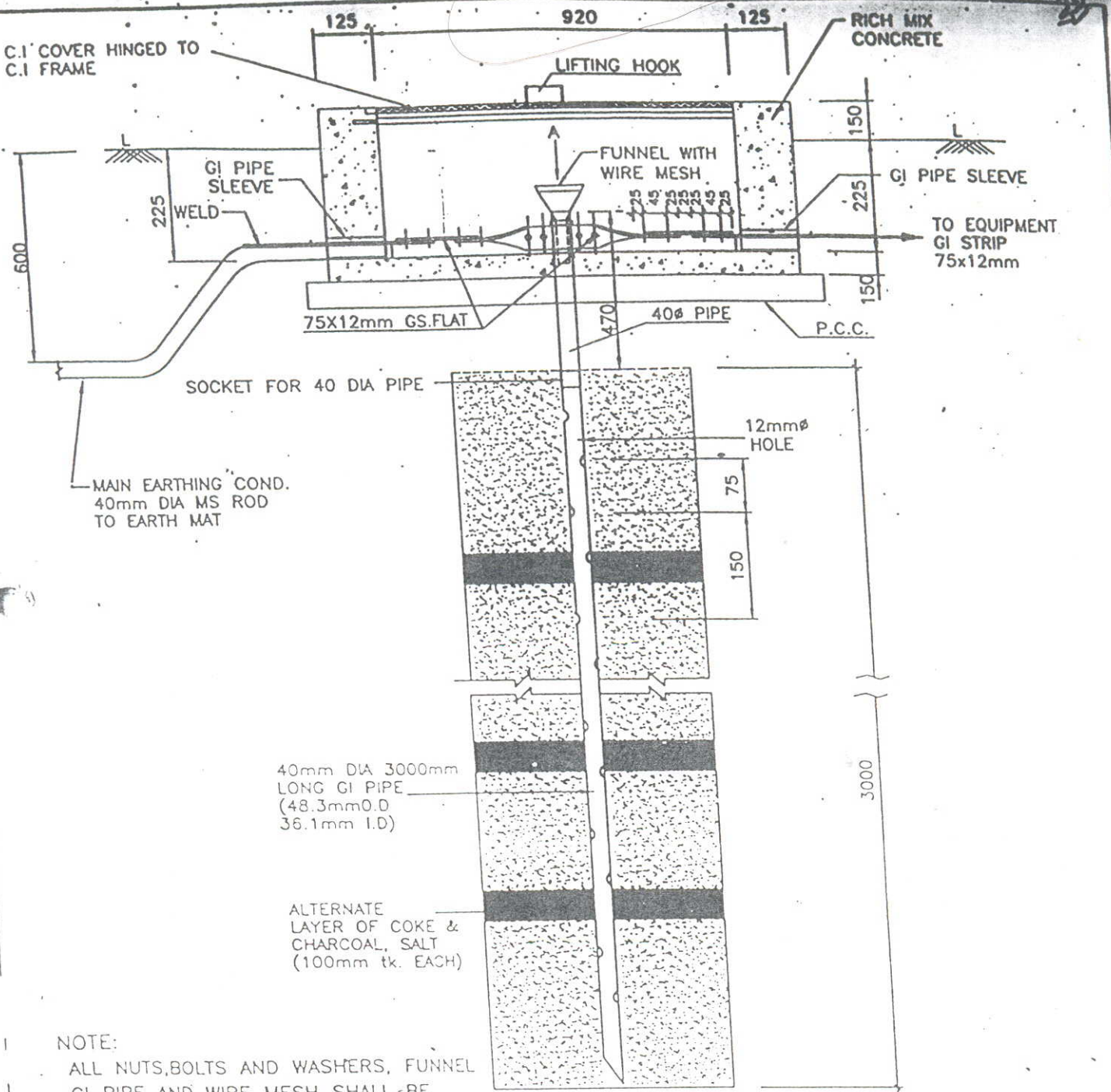
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Report No

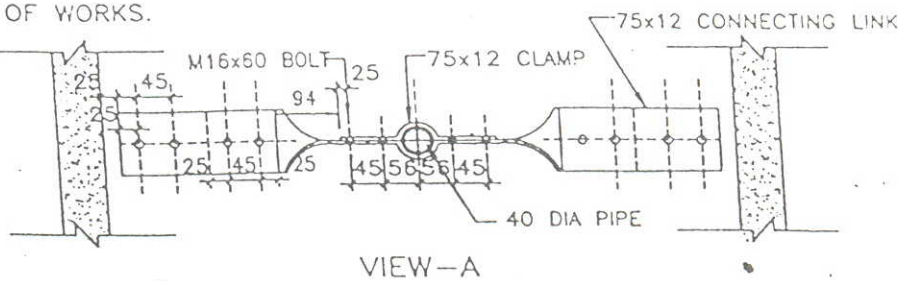
EQUIPMENT EARTHING DETAILS

AUXILIARY EARTH MAT FOR ISOLATOR MAIN MECH. E/S
MECH. BOX & CB (TYP.)

TB-STD-316-Auxiliary Mat.



- NOTE:
- ALL NUTS, BOLTS AND WASHERS, FUNNEL, GI PIPE AND WIRE MESH SHALL BE GALVANISED AS PER SPECIFICATION.
 - PIPE SLEEVE ENDS SHALL BE SEALED AFTER COMPLETION OF WORKS.
 - FUNNEL SHALL BE SECURELY HELD TO THE PIPE.



EQUIPMENT-EARTHING DETAILS
 DETAILS OF PIPE EARTH ELECTRODE
 IN TREATED EARTH PIT (ET)



REVISED BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project
Name of Work

: 400KV Substation at Mejia 7-8
: Package A: CIVIL WORKS IN YARD
(Tower,Equipment,cable trench, area grading, earthing & stores)

S.No.	Item Description	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
	Civil Work				
1	Earthwork in excavation over areas (exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) including disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed.				
(a)	All kinds of soil.	9900	cum		
2	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m.				
(a)	All kinds of soil.	1760	cum		
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.				
		8000	cum		
4	Carriage & disposal of surplus excavated earth beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc., complete as per specifications -				
(a)	Lead upto 1km	2500	cum		
(b)	Lead upto 2km	1000	cum		
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	500	cum		
(b)	1:2:4(1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	25	cum		
©	1:3:6(1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size)	1000	cum		

PACKAGE-A

S.No.	Item Description	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
6	Providing & laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete structural elements, excluding the cost of centering, shuttering, finishing and reinforcement - <u>M25 grade reinforced cement concrete</u> .				
(a)	All works upto plinth level (including footings, rafts, pedestals, columns and walls etc.)	850	cum		
(I)	Walls, columns, pillars, posts and struts.	1600	cum		
(ii)	Beams, cantilevers, suspended floors, lintels, roofs, staircases, etc.	10	cum		
7	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	1200	sqm		
(b)	Columns, pillars, piers, abutments, posts and struts,	4600	sqm		
(c)	Walls	6000	sqm		
8	Steel reinforcement				
(a)	Including supply and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	10000	kg		
(b)	Excluding supply but including bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (See Note No:1)	242000	kg		
9	Providing and fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge	29000	kg		
10	Extra over Items 10 above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer (Mass of zinc coating = As per IS)	29000	kg		
11	Steelwork welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
(a)	In gratings, frames, guard bar, ladders, railings, brackets, gates and similar works.	500	kg		
12	Structural steelwork welded in built up sections like edge protection angles/insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	40000	kg		

S.No.	Item Description	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
13	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc, and of following grade:				
	M25	300	cum		
14	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge. Bolts to be provided by BHEL free of cost.	1000	kg		
15	Earthwork in excavation and grading of and over switchyard areas involving mass cutting in all type of soil by mechanical means and disposal of surplus earth upto lead of one kilometer.	28500	cum		
	Under Ground Earthing				
16	Unloading, storing and laying of 40 mm dia MS Rods at a depth of 600 mm measured from the top of FGL (either top of gravel or top of land as the case may be) for bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----30----% at contract stage.)	75	MT		
17	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB-STD-316-Auxiliary mat Rev 00. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- ----30----% at contract stage.)	100	Nos.		

PACKAGE-A

S.No.	Item Description	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
18	Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-STD-316-Pipe Electrode Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL. Quantity may vary by +/- 40% at contract stage).	8	Nos.		
19	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- 30 30 % at contract stage)	24	Nos.		
20	Installing of 40 mm diameter Rod Electrode without test pit including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- 30 30 % at contract stage)	250	Nos.		
	Stores (See Note No.3)				
21	Open store (as per specs & drgs enclosed with NIT) Qty may vary as per site requirement	1000	Sqm		
22	Closed store 200 Sqm- Type 'A' (As per drg & specs enclosed with NIT) (Party to quote lumpsum price against this item)	1	Lot		
	TOTAL AMOUNT				
NOTE					
1 Reinforcement steel shall be supplied by BHEL <u>free of cost</u> as per norms indicated in conditions of contract. The rate quoted against Item No: 8(b) above shall be deemed to be inclusive of cost against all activities required including transportation of material from nearest SAIL stockyard.					
2 Cement shall be provided free of cost at site. However, the cost of testing of cement shall be included by the bidder in his rates of cement related items.					
3 For construction of stores, Reinforcement steel & Cement shall not be supplied by BHEL as free issue item. It is in bidders scope.					

REVISED BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project
Name of Work

:400kV Substation at Mejia 7-8
:Package B: CIVIL WORKS IN YARD & CRB.
(CRB,gravelling,fence,gate ,drainage,
road)

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
1	Earthwork in excavation over areas (exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) including disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed.				
	All kinds of soil.	800	cum		
2	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m.				
	All kinds of soil.	3000	cum		
3	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.	1000	cum		
4	Carriage & disposal of surplus excavated earth beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc., complete as per specifications .				
(a)	Lead upto 1km.	1500	cum		
(b)	Lead upto 2km.	500	cum		
5	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	150	cum		
6	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	100	litre		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
7	Diluting & injecting chemical emulsion for PRE-CONSTRUCTIONAL ANTI-TERMITE treatment and creating a continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall & floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits, etc complete as per specifications (Plinth area of the building at ground floor only shall be measured for payment)	430	sqm		
8	Providing and laying damp proof course 40mm thick cement concrete 1:1.5:3 (1 Cement:1.5 coarse sand : 3 graded stone aggregate 12.5 mm nominal size) .	10	sqm		
9	Applying two layers of residual petroleum bitumen of penetration 85/25 of approved quality using 1.7 kg per sqm on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	10	sqm		
10	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size	15	cum		
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size	5000	cum		
(c)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	125	cum		
11	Extra for providing and mixing water proofing material in cement concrete work in the proportion recommended by the manufacturers.	50.00	per bag of 50kg of cement used in the mix		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
12	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. - M25 grade				
(a)	All works (rafts, columns & plinth beams) upto plinth level.	850	cum		
(b)	All works from plinth level upto floor V level.	500	cum		
(i)	Walls, columns, pillars, posts and struts.	265	cum		
(ii)	Beams, cantilevers, suspended floors, lintels, roofs, staircases, etc.	300	cum		
13	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	950	sqm		
(b)	Suspended floors, roofs, landings, balconies and access platform.	1200	sqm		
(c)	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	900	sqm		
(d)	Columns, pillars, piers, abutments, posts and struts,	600	sqm		
(e)	Weather shades, chajjas, corbels etc., including edges.	100	sqm		
(f)	Stairs (excluding landings)except spiral-staircases.	40	sqm		
(g)	Walls.	20	sqm		
14	Extra for additional height in centring, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentring at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)				
	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured)	1200	sqm		
15	Steel reinforcement				
(a)	Including supply and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	5000	Kg		
(b)	Excluding supply but including bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (See Note No:1)	65000	kg		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
16	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	255	cum		
17	Extra for brickwork in superstructure above plinth	240	cum		
18	Half brick masonry with bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:4 (1 cement : 4 coarse sand)	100	sqm		
19	Extra for half brick masonry in superstructure above plinth level upto floor V level.	100	sqm		
20	Extra for providing and placing in position 2 Nos 6mm dia MS bars at every third course of half brick masonry (with FPS bricks)	100	sqm		
21	Providing and fixing 20mm thick mirror polished, machine cut for column facia, kitchen platforms, vanity counters and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing etc. complete at all levels. (over 1sqm but upto 2sqm)				
	Granite black.	4	sqm		
22	Providing and fixing ISI marked flush door shutters decorative type ,core of block board construction with frame of 1st class hard wood and well matched reak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
	35 mm thick including ISI marked Stainless Steel butt hinges with nessary screws.	15	sqm		
23	Providing and fixing aluminium sliding door bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc., complete.				
	300 X 16mm	15	each		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
24	Providing and fixing aluminium tower bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.				
	300 X 10mm	30	each		
25	Providing and fixing aluminium handles anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.				
	125mm	8	each		
26	Providing and fixing IS:3564 marked aluminium die cast body tubular type universal door closer of approved quality and make with accessories and screws complete.				
		10.00	each		
27	Supplying and fixing rolling shutters of approved make, made of required size MS laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade no. 2 and MS top cover of required thickness for rolling shutters.				
	80 X 1.20mm MS laths with 1.20mm thick top cover.	8.00	sqm		
28	Providing and fixing ball bearing for rolling shutters.				
		4	each		
29	Providing and fixing 3.0 meter high fencing over 250mm thick 200 mm high toe wall and 2.4 Meter high PVC coated chainlink fencing of minimum 8 gauge (including PVC coating)with barbed wire for remaining height all complete as per Customer's specification and approved drawing. (Rates shall be inclusive of all items like angles, chainlink fence, barbed wire, PCC,RCC for toe wall etc).				
		1050	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
30	Providing and fixing factory made door shutters 30mm thick made of prelaminated flat pressed three layer particle board IS:12823 marked exterior grade (Grade I Type II) having one side decorative lamination of approved shade including II class teak wood lipping of 25mm wide X 12mm thick size with necessary screws and black enamelled M.S. butt hinges complete as per direction of the Engineer-in-charge.	10	sqm		
31	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitred and welded with 15X3mm lugs 10cm long, embedded in cement concrete blocks 15X10X10cm of 1:3:6 (1 cement : 3 coarse sand : 6 graditting except necessary hinges or pivots as required.ed stone aggregate 20mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal sash putty of approved make complete including applying a priming coat of approved steel primer, excluding the cost of metal beading and other fitting except necessary hinges or pivots as required.				
(a)	Fixed	15	sqm		
(b)	Openable	30	sqm		
32	Providing and fixing pressed steel door frames manufactured from commercial mild steel sheet of 1.25mm thickness including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50X25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with spit end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-Charge:				
	Profile C	15	RM		
33	Structural steelwork welded in built up sections like edge protection angles/insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	3000	kg		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
34	Steelwork welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
(a)	In covering of floors/trenches of control room building with chequered plates, stringers, treads, landings etc of staircases involving use of chequered plates, wherever required, all complete.	1500	kg		
(b)	In gratings, frames, guard bar, ladders, stair railings, brackets, gates and similar works.	10000	kg		
35	Cement concrete flooring 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps, etc., complete.				
	40mm thick with 20mm nominal size stone aggregate.	50	sqm		
36	52mm thick CC flooring with " Hardcrete" concrete hardner topping under layer 40mm thick CC 1:2:4 (1cement:2 coarse sand: 4 stone aggregate 20mm nominal size) and top layer 12 mm thick Hardcrete cement hardner consisting of mix 1:2 (1 cement hardner mix: 2 stone aggregate 6mm nominal size) by volume with which Hradcrete hardening compound of approved quality is mixed @ 2 liter Hardcrete per 50 Kg of cement including cement slurry, but excluding the cost of nosing of steps etc., complete.	180	sqm		
37	Cement plaster skirting (upto 30cm height) with cement mortar 1:3 (1cement: 3 coarse sand) finished with a floating coat of neat cement.				
	18mm thick	10	sqm		
38	Precast terrazo tiles 22 mm thick with graded marble chips of size upto 12mm laid in floors,and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles on 20mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand)				
	Light shade using white cement	210	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
39	Precast terrazo tiles 22 mm thick with graded marble chips of size upto 12mm laid in skirting and risers of steps not exceeding 30 cm in height on 12mm cement plaster 1:3(1 cement :3 coarse sand),jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles of :				
	Light shade using white cement	100	sqm		
40	Providing and fixing acid and alkali resistant tiles of approved make and colour jointed with acid/alkali resistant mortar.Bedding shall comprise of potassium silicate mortar as per IS 4832 (Part-I)and resin based mortar complete as per directions of Engineer-in-charge.				
(a)	25 mm thick tiles laid on a bed of 25mm thick mortar 1:4 (1 cement ; 4 coarse sand)	100	sqm		
(b)	12mm thick tiles in dado/skirting on 12mm thick mortar 1:4 (1 cement ; 4 coarse sand)	110	sqm		
41	Providing and fixing 1st quality ceramic glazed tiles conforming to IS:13753 of minimum thickness 5 mm of approved make and colours in skirting,risers of steps and dados over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.	100	sqm		
42	Providing and laying 10 mm thick non skid fully vitrified tiles of approved size ,make and colours etc. laid over 20 mm thick bed of Cement mortar 1:4 (1 Cement:4 coarse sand) including pointing in white cement mixed with pigment of matching shade complete all complete as per customer's specifications.	450	sqm		
43	Providing and laying in floors heavy duty matt finish ceramic tiles of 10mm thickness without warpage of approved make and colour laid in 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigment, etc., complete.	20	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
44	Making khurras 45X45cm with average minimum thickness of 5cm cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate of 20mm nominal size) over PVC sheet 1mX1mX400micron, finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	6	Each		
45	18mm cement plaster on external face of walls in two coats with under layer 12mm thick cement plaster 1:6 (1 cement :6 coarse sand) finished with a top layer of 6mm thick 1:4 (1cement:4 fine sand)	650	sqm		
46	18mm cement plaster on internal walls in cement plaster 1:6 (1 cement :6 coarse sand) on the uneven side of wall .	700	sqm		
47	12mm cement plaster on even side of the walls in the mix: 1:6 (1cement :6coarse sand)	1300	sqm		
48	2mm thick plaster of paris punning over the plastered surfaces on wall surfaces as directed by engineer-in-charge.	1200	sqm		
49	6mm cement plaster to ceiling of mix 1:4 (1 cement : 4 fine sand)	1000	sqm		
50	Applying priming coat				
(a)	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	200	sqm		
(b)	Applying one coat of cement primer of approved brand and manufacture on wall surface:	375	sqm		
51	Distemping with oil bound washable distemper of approved brand and manufacture two or more coats over and including priming coat with cement primer	1100	sqm		
52	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade. Two or more coats on new work.	1200	sqm		
53	Finishing walls with water proofing cement paint " Snowcem-Plus" of M/s Snowcem India Ltd. or equivalent of required shade : New work : Two or more coat.	650	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
54	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:				
	Two or more coats on new work.	600	sqm		
55	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade.				
	Two or more coats on new work.	100	sqm		
56	Forming groove of uniform size from 12X12mm and upto 25X15mm in plastered surface and joints of ceiling and wall as per approved pattern using wooden battens, nailed to the underlayer including removal of wooden battens, repairs to the edges of plaster panel and finishing the groove complete as per specifications and directions of the Engineer-in-charge.	2000.00	RM		
57	Making plinth protection 75mm thick of CC 1:2:4 (1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	100.00	sqm		
58	Providing and fixing white vitreous china water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast iron P or S trap, 10 litre low level P.V.C. (Photo voltaic control) flushing cistern (of approved make) with fittings, C.I./M.S. brackets, 32 mm diameter flush pipe with fitting s and clamps, overflow arrangement with specials and mosquito proof coupling of approved municipal design including painting of fittings and brackets, cutting and making good the walls and floors wherever required.				
	Orissa pattern W.C. Pan of size 580 x 440 mm with integral type foot rests flush pipe and overflow arrangement.	2	each		
59	Providing and fixing white vitreous china pedestal type water closet (European type W.C. Pan) with seat and lid, C.P. Brass hinges and rubber buffers, 10 litre low level flushing cistern with fittings & CI/MS brackets 40mm dia flush bend , overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design compete including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
	W.C. pan with black solid plastic seat and lid with white vitreous china flushing cistern and CP flush bend.	2	each		
60	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430 x260x 350 mm and 340 x 410 x 265 mm sizes respectively with automatic flushing cistern with C.I./ M.S brackets standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required:				
	One urinal basin with 5 litre P.V.C (Photo voltaic control) automatic flushing cistern of approved make.	2	each		
61	Providing and fixing vitreous china under counter wash basin in oval shape of approved colour and size with 15 mm C.P. Brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings etc. cutting and making good the walls wherever required:	2	each		
62	Providing and fixing white vitreous china laboratory sink with C.I. Brackets CP brass chain and rubber plug 40 mm CP brass waste and 40mm CP brass trap with necessary brass unions complete including painting of fittings and brackets, cutting and making good the walls wherever required.				
	Size 600 X 450 X 200 mm	1	each		
63	Providing and fixing 100 mm sand cast iron grating for gully, floor or Nahani trap.	6	each		
64	Providing and fixing 600 x 450 x5.5 mm bevelled edge mirror of float glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. Brass screws and washers complete.	2	each		
65	Providing and fixing 600 x 120 x 5 mm glass shelf with edges rounded off supported on anodised aluminium angle frame with C.P. Brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc. complete.	2	each		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
66	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with C.P. Brass screws with concealed fitting arrangement of approved quality and make.				
67	600 mm long towel rail with total length of 645mm,width 78mm and effective height 88mm,weing not less than 190gms.	2	each		
68	Providing and fixing PTMT liquid soap container 109mm wide,125mm high and 112mm distance from wall of standard shape with bracket of same materials with snap fittings of approved quality ,colour and make ,weighing not less than 105 gm (Prayag or equivalent).	2	each		
69	Providing and fixing Hand drier electrically operated with photo voltaic control with all fittings etc. all complete as per direction of engineer-in-charge.	2	each		
70	Providing and fixing toilet paper holder. CP brass.	2	each		
71	Providing and fixing soil, waste and vent pipes: 100 mm dia. Sand cast iron S & S pipe.	50	RM		
72	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10 x 10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including cost of cutting holes and making good the walls etc. For 100 mm dia pipe	10	each		
73	Providing lead caulked joints to SCI pipes and fittings of diameter 100mm	10	each		
74	Providing and fixing SCI trap of self cleansing design with SCI screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors: 100mm inlet and 100mm outlet.	4	each		
75	Providing and fixing G.I. Pipes complete with G.I. Fitting and clamps , including cutting and making good the walls etc. (internal work). (a) 15 mm dia nominal bore.	100	RM		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
(b)	20 mm dia nominal bore.	100	RM		
(c)	25 mm dia nominal bore.	50	RM		
76	Providing and fixing G.I. Pipes complete with G.I. Fitting and clamps , including trenching and refilling, etc. (external work).				
(a)	15 mm dia nominal bore.	50	RM		
(b)	20 mm dia nominal bore.	100	RM		
©	40 mm dia nominal bore.	50	RM		
77	Making connection of GI distribution branch with GI main of following sizes by providing and fixing tee, including cutting and threading the pipe etc., complete.				
	25 to 40mm nominal bore.	2	each		
78	Providing and fixing brass bib cock of approved quality				
	15mm nominal bore	10	each		
79	Providing and fixing brass stop cock of approved quality				
	15mm nominal bore	10	each		
80	Providing and fixing brass gate valve with CI wheel of approved quality (screwed end)				
(a)	25mm nominal bore	2	each		
(b)	32mm nominal bore	1	each		
81	Providing and fixing ball valve brass of approved quality complete.				
	High or low pressure with plastic floats				
	15mm nominal bore	2	each		
82	Providing and placing on terrace (at all floor levels) polyethylene water storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. The tank should be ISI marked .	1000	per litre capacity		
83	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:3 (1 cement : 3 fine sand) including testing of joints etc. complete.				
(a)	100 mm diameter.	50	RM		
(b)	150 mm diameter.	50	RM		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
84	Providing and fixing square-mouth S.W. Gully trap grade 'A' complete with C.I. Grating brick masonry chamber with bricks of class designation 75 and water tight C.I. Cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as standard design.:				
	100 x 100 mm size P type				
	With F.P.S bricks	2	each		
85	Constructing brick masonry manhole with 75 class designation bricks in cement mortar 1:4 (1 cement: 4 coarse sand) RCC top slab with 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) foundation concrete 1:4:8 (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
	Inside size 90X80cm and 45cm deep including CI cover with frame (light duty) 455X610mm internal dimensions total weight of cover and frame to be not less than 38kg (weight of cover 23kg and weight of frame 15kg)				
	With FPS bricks	2	each		
86	Extra for depth for manholes				
	Size 90X80cm				
	With FPS bricks	2	RM		
87	Making soak pit 2.5m diameter 3m deep with 45X45cm dry brick honeycomb shaft with bricks of class designation 75 and SW drain pipe 100mm diameter, 1.8m long complete as per standard design.				
	With FPS bricks	2	each		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
88	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded builtup standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, anodised transparent or dyed to required shade according to IS: 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips or with expansion fasteners including necessary filling up of gaps at junctions at top , bottom and sides with required PVC/neoprene felt, etc. Aluminium sections shall be smooth , rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, CP brass/stainless steel screws, all complete as per architectural drawings and direction of Engineer-in-charge. (Glazing and panelling to be paid for separately).				
(a)	For fixed portion	100	kg		
(b)	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and fittings wherever required including the cost of PVC/neoprene gasket required	80	kg		
89	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions, etc., with PVC/neoprene gasket, etc., complete as per the architectural drawings and directions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item).				
	With glass panes of 5.5mm thickness (weight not less than 13.75kg/sqm)	50	sqm		
90	Providing and fixing double action hydraulic floor spring of approved brand and manufacture (conforming to IS:6315) for aluminium door including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece MS sheet outer box with slide plate etc., complete as per the directions of Engineer-in-charge. (SS cover plate.)	4	each		
91	Providing and laying water proofing treatment on roof with elastomeric membrane i/c primer coat, finishing coats & surface finish, all complete as per Customer's specification (Clause no:2.7.0 Doc No:volume -II-G2/S-XIX-4)	500	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
92	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc, and of following grade:				
	M25	15	cum		
93	Providing & fixing M.S fan clamp type I of 16mm dia MS bar bent to shape with hooked ends in R.C.C slabs during laying including painting the exposed portion of loop,all as per standard design complete.	5	each		
94	Providing and fixing hand rail by welding etc. to steel ladder railing ,balcony railing& staircase railing including applying priming coat of approved steel primer .				
	M.S. Tube (medium) 32 mm dia	1500	kg		
95	Providing and fixing M.S. grills of required pattern in frames of windows etc. with MS flats,square or round bars etc. all complete.	1500	kg		
96	Providing and fixing aluminium strip edging to stairsae including fixing with rawl plugs and screws with a thin layer of cement mortar 1:3 (1 cement :3 coarse sand):				
	Size of strip edging 50X25X3 mm	150	meter		
97	Add or deduct plaster drip course /groove in plastered surface or moulding to RCC projections:	1000	meter		
98	Providing and fixing at all height false ceiling of 12.5 mm thick tapered edge gypsum board confirming to IS :2095 including suspension system as per customer's specification .The work also includes making openings for light fittings, grills,diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer-in-charge but excluding the cost of painting.	375	sqm		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
99	Providing and fixing at all height aluminium linear 'Luxalon' false ceiling as per customer's specification .The work also includes making openings for light fittings, grills,diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer-in-charge but excluding the cost of painting.	400	sqm		
100	Painting with chemical resistant epoxy paint (two or more coats) at all locations prepared and applied as per manufacturere's specifications including appropriate priming coat,preparation of surface etc. complete.	100	sqm		
101	Providing and fixing thermal insulation of ceiling(under deck insulation) with resin bonded slabs and rolls or equivalent conforming to IS: 8193 DENSITY 48 kg/cum,50 mm thick and fixing with timber pegs as per customer's specification complete.	375	sqm		
102	Providing and fixing thermal insulation with Resin Bonded Fibre wool conforming to IS:1883 ,density 16kg/cum,50mm thick,wrapped in 200G Virgin Polythene bags placed over existing false ceiling and held in position by criss-crossing GI wire.	400	sqm		
103	Providing and laying stone aggregate in switch yard areas in layer of 150mm thick using 40 mm aggregates .Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per Customer's specification. (The rate shall be inclusive of all materials ,labour,loading,unloading etc. required for aggregate laying and antiweed treatment)	57000	sqm		
104	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc, and of following grade:				
	M25	30	cum		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
105	Preparation of subgrade by excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and disposal of surplus earth lead upto 50m.	1512	sqm		
106	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the subgrade.	1512	sqm		
107	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	1512	sqm		
108	Supplying and stacking of graded stone aggregate at site of size range				
(a)	90mm to 45mm	340	cum		
(b)	63mm to 45mm	170	cum		
(c)	53mm to 22.4mm	170	cum		
109	Laying WBM with specified stone aggregate stone screening and blinding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)				
(a)	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size.	340	cum		
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size.	170	cum		
(c)	Base course with stone aggregate 53mm to 22.4mm including stone screening 11.2mm size.	170	cum		
110	Supplying and stacking of moorum at site .	200	cum		
111	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2mm nominal size (Type A)	80	cum		
(b)	11.2mm nominal size (Type B)	80	cum		
112	Providing and laying non-pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
(a)	250mm dia. RCC pipe	10	RM		
(b)	300mm dia. RCC pipe	50	RM		

PACKAGE-B

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
113	Providing and laying non-pressure NP3 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
(a)	300mm dia. RCC pipe	20	RM		
(b)	400mm dia. RCC pipe	20	RM		
114	Providing and fixing on wall face unplasticised rigid PVC rain water pipes conforming to IS:13592 type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion single socketed pipes				
(a)	110mm diameter	120	RM		
115	Providing and fixing on wall face unplasticised PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion				
(a)	110mm coupler	20	Each		
(b)	110mm bend	20	Each		
(c)	110mm shoe	20	Each		
116	Providing and fixing unplasticised PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with MS screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc complete				
(a)	110mm	120	Each		
	TOTAL AMOUNT				

Note	
1	Reinforcement steel shall be supplied by BHEL <u>free of cost</u> as per norms indicated in conditions of contract. The rate quoted against Item No: 15(b) above shall be deemed to be inclusive of cost against all activities required including transportation of material from nearest SAIL stockyard.
2	Cement shall be provided <u>free of cost</u> at site. However, the cost of testing of cement shall be included by the bidder in his rates of cement related items.