

Bharat Heavy Electricals Limited
High Pressure Boiler Plant
Tiruchirappalli – 620 014. India
Civil Engineering Department (Factory)

TENDER DOCUMENT (PRICE BID)

Name of work : Modernization of existing kitchen at
Canteen 58 in BHEL Trichy

Value of work : Rs. 38.00 Lakh

Tender Notice No. : CF:TN:12/14-15

Tender Schedule No. : CF:TS:44/14-15

Period of Contract : 6 Months

Issued to :



221-038

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Unit : TIRUVERUMBUR, BOILER PROJECT, P.O.
TIRUCHIRAPALLI - 620 014.

CIVIL ENGINEERING DEPARTMENT

NOTICE INVITING TENDER

01. Name of work: : Modernization of existing kitchen at Canteen 58 in BHEL Trichy
02. Estimated Cost : Rs. 38.00 Lakh
03. Earnest Money Deposit : Rs.1,00,000.00/-
04. Completion Time : SIX (6) Months
(From the date of commencement of the work which will be reckoned from the date of handing over to the Contractor)
05. Cost of Tender Document : **Rs.750/-**
(Rs. 825/- if required by post) including Sales Tax in DD form This amount will not be refunded under any circumstances.
06. Last Date for Receipt of Tenders : **10.00 Hrs. on 09.01.2015**
07. Date of Tender Opening : **10.15 Hrs. on 09.01.2015**
08. Maintenance Period :6 (Six Months from the date of actual completion of the entire work and Handing over to Bharat Heavy Electricals Limited)

Tender document contains totally **180** pages, Qualification Bid - **151** pages, Price Bid – **29** pages including Bill of Quantities and 3 Drawing etc.

Issued to Messrs. / Thiru :

ISSUING OFFICER

CONTRACTOR

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ACCEPTING OFFICER

SCHEDULE 'A'

LIST OF WORKS AND PRICES

NAME OF WORK:

Modernization of existing kitchen at Canteen 58 in BHEL Trichy

DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate and the same is attached as a separate excel file. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

Sl.No.	Description of work / supplied	Total amount of work / supplies (in figures and words)		Period of contract
		Rs.	Ps.	
1.	Modernization of existing kitchen at Canteen 58 in BHEL Trichy	38,00,000/-		6 SIX MONTHS

BILL OF QUANTITIES

Sl. No.	Appx. Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount Rs. Ps.
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AS PER SEPARATE SHEETS ATTACHED CONTAINING 21 PAGES in PRICE BID.

FROM Page No. **04 to 24.**

CONTRACTOR

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ACCEPTING OFFICER

NAME OF WORK: Modernization of existing kitchen at Canteen 58 in BHEL Trichy

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
1		Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge.			
a	15	All kinds of soil except rock		Cum	
b	15	Ordinary rock		Cum	
2	10	Supply and filling with river sand in foundation, plinth, under floor etc. including watering, ramming, consolidating and dressing complete.		Cum	
3	35	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift up to 1.5 m etc. complete.		Cum	
4	15	Bailing or pumping out water from trenches, foundations etc., at all depths wherever necessary as per standard specifications		Hr	
5	15	Providing and laying in position plain cement concrete of specified grade including consolidation, curing etc. complete, all as per standard specifications. All works upto plinth level. Rate excludes cost of centering and shuttering. 1:2:4 with graded stone aggregate 20 mm nominal size.		Cum	
6	25	Providing and laying in position plain cement concrete of specified grade including consolidation, curing etc. complete, all as per standard specifications. All works upto plinth level. Rate excludes cost of centering and shuttering. 1:4:8 with graded stone aggregate 40 mm nominal size.		Cum	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
7	30	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3 with graded stone aggregate 20 mm nominal size - All works upto plinth level		Cum	
8	40	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. 1:2:4 with graded stone aggregate 20 mm nominal size - All works upto plinth level.		Cum	
9	10	Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement. 1:1.5:3 with graded stone aggregate 20 mm nominal size - Above plinth to floor five level.		Cum	
10	1	Straightening, cutting, bending, placing in position of MS/CTD bars and binding with MS binding wires of 18/20 gauge etc. for reinforcement of RCC works. Rate includes cover blocks, cost of binding wire, conveyance of MS/CTD bars from BHEL stores to site of work, labour etc. complete. MS/CTD bars will be supplied by BHEL at Stores at free of cost.		MT	
11	40	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. Foundations, footings, bases of columns, equipment foundations, precast slabs, kerbs etc. for mass concrete.		Sqm	
12	90	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. Walls (any thickness) including attached pilasters, plinth, stairs, chimney, shafts and string courses etc.		Sqm	
13	40	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. Suspended floors, roofs, landings, balconies, access platform and sunshades.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
14	15	Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level. Lintels, beams, plinth beams, girders, bressumers and cantilevers.		Sqm	
15	2	Providing, hoisting and fixing upto floor V level plain cement concrete elements like slabs etc. of 25 to 150 mm thick of required sizes in mix 1:2:4 using 10 to 20 mm size hard broken granite stone jelly. Rate includes centring, shuttering & finishing with neat cement punning on exposed surfaces but excluding pointing. CEMENT CONSUMPTION - 320.00 K.G PER CUM		Cum	
16	10	Providing precast cement concrete Jali 1:2:4 of 50 mm thick using graded stone aggregate 6 mm nominal size with suitable reinforcement including centring and shuttering, roughening, cleaning, fixing and finishing in cement mortar 1:3 etc.complete. Rate excludes reinforcement steel & fabrication charges. CEMENT CONSUMPTION - 12.80 K.G PER SQM		Sqm	
17	65	Providing and fixing RCC precast perforated lawn drain cover slabs of 75 mm thick in mix 1:2:4 using graded stone aggregate 10 mm nominal size including moulding, shuttering, finishing, carrying and fixing in position etc., complete. Rate excludes reinforcement steel & fabrication charges.		Sqm	
18	40	Labour charges for attending to spalling of concrete in ceiling of buildings. Scope of step by step activities are given:- i) Removing the loose concrete / plaster by knocking with a 2 lbs hammer, scrapping with steel wire brush and exposing the sound concrete. iii) Washing the concrete surface and reinforcement. (By jetting water) iv) Applying passivator coat (2 K.G cement & 1 Lit. Roff bond repair) on rusted reinforcement and bond coat using CM 1:3 & Roff bond repair (5 K.G cement & 1 Lit. Roff bond repair) in layers of 6 mm thick to match with the existing surface. Roff bond repair mix shall be prepared in the proportion as directed by Engineer-in-charge. (OR) Applying rust primer on the steel and maricrete mix to the surface to be attended to by adding water in proportion as directed by Engineer-in-charge in layers of 6 mm thick to match with the existing surface. v) Finishing the surface with clean trowel. Note:- I) Cement & the said chemicals will be supplied by BHEL at Stores at free of cost. ii) Rate includes scaffolding, tools, labour, incidentals etc. complete.		Sqm	

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ACCEPTING OFFICER

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
19	20	Random rubble masonry in foundation and basement in the mix of Cement mortar 1:5 including simultaneous flush pointing, all as per standard specifications.		Cum	
20	40	Brick work with F.P.S bricks (second class ground moulded chamber bricks) of class designation 50/75 in foundation and plinth in: Cement mortar 1:5		Cum	
21	35	Extra for Brick work in superstructure above plinth upto floor three level in all shapes and sizes.		Cum	
22	5	Extra charges for providing half brick masonry, brick on edge walls, fins, balustrade etc		Cum	
23	20	Rectifying the wall cracks by chipping off the existing plastered surfaces to the required width, depth and applying cement slurry in the cracks to the required depth, making good all damages and finishing to match with the existing one by plastering with C.M 1:5, 12/15mm thick and a coat of white wash / snowcem / distemper etc. as the case may be.		Sqm	
24	20	Rectifying the wall cracks by chipping off the existing plastered surfaces to the required width, depth and applying cement slurry in the cracks to the required depth, making good all damages and finishing to match with the existing one by providing chicken mesh and then plastering with C.M 1:5, 12/15mm thick and a coat of white wash / snowcem / distemper etc. as the case may be.		Sqm	
25	0.20	Providing best wooden frames in Teak wood for doors, windows, ventilators and other frames, wrought framed and fixed in position. All as per standard specifications and drawings. Rate includes cost of wood, holdfasts, other materials, labour etc. complete.		Cum	
26	10	Manufacture, supply and fixing best wooden door with frames and shutters in Teak wood comprising of fully panelled shutter of 35 mm thick and frame of size 95 x 70 mm including cost of holdfasts but excluding cost of furniture fittings & fitting charges		Sqm	
27	9	Supply and fixing in position of single leaved 38/40mm thick best quality flush shutters solid core type of approved quality with formaldehyde bonded teak ply (both faces) and with teak wood internal lippings etc., complete all as per drawings and standard specifications but excluding cost of frame and furniture fittings. (Area of shutter only to be measured)		Sqm	
28	30	Labour charges for fixing Shutter only for doors, windows, ventilators etc in proper position.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
29	20	Labour charges for fixing Frame only for doors, windows, ventilators etc. in proper position.		Each	
30	90	Supply and fixing M.S grills for windows, ventilators and also wherever necessary including a priming coat. All according to our design and specification.		KG	
31		Supply & fixing the following furniture fittings of approved brand & quality (ISI marked) in the appropriate position of doors, windows, ventilators, cupboards etc. with appropriate screws, nails etc., all as per standard specifications & instructions of Engineer in charge.			
A	3	Hydraulic door closer - universal type (Medium duty)		Each	
B	3	Hydraulic door closer - universal type (Heavy duty)		Each	
C	5	Brass Mortice lock 100 mm, 6 levers and a pair of brass lever handles		Each	
D	10	D type Anodised Aluminium handle - 125 mm		Each	
E	5	Hanging type door stopper		Each	
F	9.50	250 x 16 mm Anodised Aluminium aldrop		Each	
G	10	150 x 11/12 mm Anodized Aluminium tower bolt		Each	
H	10	250 x 11/12 mm Anodized Aluminium tower bolt		Each	
I	10	125 mm oxidised iron butt hinges (Heavy duty)		Each	
J	10	150 mm oxidised iron butt hinges (Heavy duty)		Each	
K	10	250 mm oxidised iron tower bolt (Heavy duty)		Each	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
32		<p>Providing and fixing 30 mm thick factory made solid panel PVC rigid foam door shutters with frames of Rajshri / Sintex Fomura / Plasopan / Echon / Qute / Gtex or equivalent but as per the specification, all as detailed below.</p> <p>The door shutter shall consist frame made out of 19 Gauge 19 mm M.S. square tube for styles, 15 mm for top & bottom rails, all frames covered with 5 mm thick heat moulded PVC- C channel to form 30 x 50 mm wide styles & 75 mm wide top, lock & bottom rail on either side & 10 mm thick (2x 5mm) 20 mm wide cross PVC sheet as gap insert for top & bottom rail including paneling of 5 mm thick PVC sheet fitted in the MS frame welded / sealed to the styles and rails with 5 mm thick 30 mm wide PVC beading on either side and joined together with solvent cement adhesive etc. An additional 5 mm thick PVC strip of 20 mm wide width is to be stuck on the interior side of the C-Channel using solvent cement etc., complete all as per manufacturer's specification and direction of Engineer in charge. The door frame shall be of size 50 x 47mm made out of 5 mm thick extruded rigid PVC foam sheet mitre at corners, joined perfectly and inserted with 2 Nos. of 150 mm long L shape brackets made of 15 mm MS square tube. The vertical door profile is to be reinforced with 19 Gauge 19 mm MS square tube, all weather sealed throughout the frame. The shutter shall be provided with powder coated 6" tower bolt - 3 Nos., 4" handle - 2 Nos. and 4" SS hinge - 3 Nos. Frame shall have to be rigidly fixed with wall by means of 100 mm SS screws driven at least not less than 10 places.</p>			
A	3	Door with frame		Sqm	
B	3	Door shutter without frame		Sqm	
33	1.5	Collection from BHEL stores and transporting the raw structural steel sections to the contractor's site fabrication shop, fabrication of steel work including all materials going into the process of fabrication and forming an integral part of the steel work together with all shop welding including using low hydrogen electrode wherever necessary, all as per drawings and standard specifications. Rate includes delivery of fabricated steel work at erection site ready for erection, including preparation and supply of drawing office despatch list for BHEL's approval, all charges for packing (wherever called for) handling, conveying, stacking and all other incidental charges both for raw materials and fabricated steel works. Rate excludes raw structural steel sections which will be supplied by BHEL at stores at free of cost.		MT	
34	1.5	Carrying from stacks at erection site to erection positions and erection of fabricated steel work including all handling, conveying, assembling, hoisting, erecting in position and site welding and or bolting, alignment of structures, all as per drawings and standard specifications. Rate includes bolts & nuts, hire for welding tools and plants, labour etc., but excluding cost of fabricated components. If required, power will be given free of cost by BHEL. Weight of fasteners will not be accounted for payment.		MT	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
35	0.70	Fabrication and fixing in position of M.S frames for cable trench cover slabs in required sizes using M.S angles, plates, flats etc., which will be supplied by BHEL at Stores at free of cost, all as per drawings and instructions of Engineer-in-charge. Rate includes conveyance of raw materials from BHEL stores to contractors fabrication shop, fabrication charges including cutting, welding, preparing and supplying DODL's for BHEL's approval, supply of fabricated frames at site of work, fixing in proper position etc., complete.		M.T	
36	0.50	Conveying from BHEL stores to site of work cutting to size and fixing in position of 75 x 75 x 6 mm or other size M.S angles in required lengths for forming the rebates in cable trench (for fixing the cable trench cover slabs) including welding in position of dowel bars to the angles and embedding the angle iron frame in the flooring concrete in proper line and level, all as per drawings and instructions of Engineer-in-charge. Rate includes loading, unloading, handling, welding and other incidental charges, preparing and supplying of DODL's for approval etc. complete, but excluding cost of M.S angles and dowel bars which will be supplied by BHEL at Stores at free of cost.		M.T	
37	65	Fabrication and fixing in position of M.S inserts out of M.S plates, flats, rounds, angles etc., including necessary lugs made of rounds or flats, sizing and cutting to required lengths, threading, bolting and welding as required and placing the same in position in both plain and reinforced cement concrete members, including adjusting the shuttering if necessary, tying and holding to correct level and line. Rate includes cost of all materials, labour etc., complete but excluding raw steel sections which will be supplied by BHEL at Stores at free of cost.		K.G	
38	20	Providing holding down bolts of required sizes with nuts, washers etc. and fixing in proper level, line, alignment etc., all as per drawings and instructions of Engineer-in-charge. Rate includes cost of steel materials, bolts, nuts, washers, fabrication and machining charges, fixing, all labour etc. complete. Bolts including nuts & washers etc.complete in all sizes & lengths.		K.G	
39	15	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators side/top/centre hung with beading etc., complete of standard rolled steel sections, joints mitred and flash butt and sash bars tenoned and rivetted with 15 x 3 mm lugs, 10 cm long, embedded in cement concrete blocks 15 x10 x 10 cm of 1:3:6 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 hinges, pivots, 4 mm plain glass panes with glazing clips and special metal-sash putty of approved make, handles, pegstays etc., complete including a priming coat of approved steel primer excluding the cost of metal beading and other fittings. Rate includes dismantling the masonry and making good all damages etc., complete.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
40	40	Fixing standard steel glazed doors, windows and ventilators in walls with 15 x 3 mm lugs 10 cm long embedded in cement concrete blocks 15 x10 x10 cm of 1:3:6 or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including fixing of glass panes with glazing clips and special metal-sash putty or metal beading with screws. (Only steel doors, windows and ventilators with lugs, glass panes cut to size and glazing clips or metal beading with screws shall be supplied by BHEL at Stores at free of cost)		Sqm	
41	20	Supply and fixing of 3 mm pin headed glass panes with putty, glazing clips etc. for steel doors, windows, ventilators etc. Rate includes removal of broken glasses and old putty.		Sqm	
42	25	Supply and fixing of 4 mm pin headed glass panes with putty, glazing clips etc. for steel doors, windows, ventilators etc. Rate includes removal of broken glasses and old putty.		Sqm	
43	400	Providing putty for glass panes. Rate includes removal of old putty, supply & applying new putty in a proper manner & required quantity at site of work, all as per instructions of Engineer in charge.		R.M	
44	10	Providing and fixing in proper position of fan hook using 10 mm FSICHER SLM-N heavy duty ANCHOR fastener with clamp & bolts in the existing RCC roof slab. Rate includes cost of fan hook (fastener), drilling with power drilling machine to the required dia & depth in the RCC roof slab, inserting and fixing the fan hook in proper position, all labour and all other incidentals etc. complete.		Each	
45	10	Providing and fixing in position of ISI marked steel paneled doors and windows of standard rolled steel sections, joints mitered and welded with 15 x 3 mm lugs, 10 cm long, embedded in cement concrete blocks 15 x 10 x 10 cm of 1:3:6 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 18 gauge MS sheets for panes, handles, peg stays, friction throw hinges etc., complete including a priming coat of approved steel primer. Rate includes dismantling the masonry and making good all damages etc., complete.		Sqm	
46	30	Finishing the top of all floors with 20 mm thick cement concrete (without using sand) in the proportion of one part of cement and three parts of 3 to 10 mm gauge hard broken granite stone chips and finishing the top surface smooth, rounding of corners, curing etc., complete, all as per standard specifications. (Ellis pattern I sort) Consumption of cement- 11.70 K.G /SQM		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
47	40	Flooring with reinforced cement concrete of mix 1:2:4 using 40 mm and down graded hard broken granite stone jelly for thickness varying from 100 to 500 mm laid in panels not exceeding 6 x 30 m between expansion joints, including necessary vibration using needle / board / screed vibrators, all as required including necessary shuttering, painting the sides with bitumen, but excluding fabrication charges for reinforcement, all as per standard specifications. Cement consumption - 320.00 K.G/CUM		Cum	
48	35	Floor finish with 40 mm thick granolithick flooring over the concrete base while it is wet for proper bonding, the bottom 25 mm thick consisting of one part of cement and one part of 6 mm gauge hard broken granite stone chips (the proportion being by volume) and the top 15 mm finished with hardening compound of proportion one part of hardonate (ironite or equivalent) four parts of cement and eight parts of 6 mm gauge blue granite stone chips (the proportion being by weight) including finishing and painting the sides with bitumen etc., complete, all as per standard specifications. Cement consumption - 40 K.G/SQM		Sqm	
49	45	Providing and laying 7 mm thick (approximate) ceramic glazed floor tiles of first quality approved make confirming to IS:15622 and in all colours of required sizes in flooring, treads of steps, landings etc., laid over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of 20 mm thick cement mortar 1:4, finished with flush pointing in white cement using appropriate colour pigment etc. complete, all as per standard specifications. Cement consumption - 12.42 K.G/SQM		Sqm	
50	45	Providing and laying 7mm thick (approximate) ceramic glazed wall tiles of first quality of approved make confirming to IS:15622 and in all colours of required sizes in skirting, walls, risers of steps and dado laid over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of 12 mm thick cement mortar 1:3 plaster and joined with white cement using appropriate colour pigment etc. complete, all as per standard specifications. Cement consumption - 10.44 K.G/SQM		Sqm	
51	310	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications Shahabad slabs 20 to 25 mm thick, single side polished - Tandur gray Cement consumption - 14.91 K.G/SQM		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
52	310	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications Shahabad slabs 20 to 25 mm thick, single side polished - Tandur green Cement consumption - 14.91 K.G/SQM		Sqm	
53	25	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications Granite slabs 16 to 18 mm thick, polished - Green colour Cement consumption - 13.51 K.G/SQM		Sqm	
54	25	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications Granite slabs 16 to 18 mm thick, polished - Blue (Lavender) colour Cement consumption - 13.51 K.G/SQM		Sqm	
55	65	Providing, laying and finishing the top of floor with the following best quality tiles of required sizes over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite tiles (polished), 8 to 10 mm thick (approx)- Gray (Steel) colour Cement consumption - 12.42 K.G/SQM		Sqm	
56	160	Providing, laying and finishing the top of floor with the following best quality tiles of required sizes over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite tiles (polished), 8 to 10 mm thick (approx.) - Red (Gem) colour Cement consumption - 12.42 K.G/SQM		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
57	105	Providing, laying and finishing the top of floor with the following best quality tiles of required sizes over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite tiles (polished), 8 to 10 mm thick (approx.) - Green colour Cement consumption - 12.42 K.G/SQM		Sqm	
58	75	Providing weathering course on top of roof slab with one course of split tiles or pressed flat tiles of 17 to 20 mm thick and of approved brand & size, set in cement mortar 1:3 with an admixture of crude oil at 10% by weight of cement, 12 mm thick bedding layer including pointing the tiles with the same oiled mortar etc., complete, all as per standard specifications. Cement consumption - 9.13 K.G/SQM		Sqm	
59	75	Providing weathering course on top of roof slab with one course of split tiles or pressed flat tiles of 17 to 20 mm thick of approved brand & size set in CM 1:3 with Roff plaster master plus solution (100 ml of plaster master liquid to be mixed with required quantity of water for one bag of cement), 12 mm thick bedding layer including pointing the tiles with same mortar etc. complete, all as per std. specifications. Roff plaster master only will be supplied by BHEL at Stores at free of cost.		Sqm	
60	50	Supply and fixing colour coated Aluminium - zinc Alloy coated steel (Aluminium - around 55 % & Zinc - 43 %) rib profile sheets of 0.47 to 0.50 mm thick (TCT) zinc coating 120 gsm as per IS 277 (yield strength - 550 Mpa) as per ASTM A792 at site of work, sizing as required, hoisting and fixing in proper position for roofing, side sheeting etc. with necessary self drilling/self tapping screws of size 5.50 x 55 mm with EPDM seal or with polymer coated J or L hooks, bolts & nuts 8 mm dia with bitumen and G.I limpet washers filled with white lead complete up to any pitch in horizontal/vertical or curved surfaces all as per drawings, specifications and instructions of Engineer-in-charge. Rate includes cost of all materials, labour, incidentals etc. complete. (Payment will be based on the laid area of roof and side cladding). Rate excludes cost & laying charges of accessories such as ridge pieces, ridge finials, barge boards, curves etc		Sqm	
61	100	Conveying from BHEL stores to site of work, sizing as required, hoisting and fixing in proper position of Aluminium-Zinc Alloy coated rib profile sheets with accessories such as ridge pieces, barge boards, curves etc., for roofing, side cladding etc. with necessary self drilling/self tapping screws of size 5.50 x 55 mm with EPDM seal or with polymer coated J or L hooks, bolts & nuts 8 mm dia with bitumen and G.I limpet washers filled with white lead complete up to any pitch in horizontal/vertical or curved surfaces with necessary G.I hook bolts, crank bolts with nuts, G.I and bitumen washers etc., complete, all as per drawings, specifications and instructions of Engineer-in-charge. Rate excludes cost of Aluminium-Zinc Alloy sheets and its accessories such as ridge pieces, barge boards, curves etc. which will be supplied by BHEL at Stores at free of cost.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
62	320	Plastering with cement mortar as per standard specifications. In Cement mortar 1:5, 12mm thick Consumption of Cement - 7.35 K.G/SQM		Sqm	
63	175	Plastering with cement mortar as per standard specifications In Cement mortar 1:5, 15mm thick Consumption of Cement - 5.33 K.G/SQM		Sqm	
64	12	Damp proof course with cement mortar 1:3, 12 mm thick mixed with an admixture of crude oil at 5 % by weight of cement, all labour etc. complete as per standard specifications. Consumption of Cement - 7.35 K.G/SQM		Sqm	
65	20	Damp proof course with cement mortar 1:3, 20 mm thick mixed with water proofing compound (Accoproof or Impermo or equivalent) at 1 Kg per 50 Kg of cement for water facing surfaces etc. complete., all as per standard specifications. Consumption of Cement - 11.42 K.G/SQM		Sqm	
66	1750	White washing on surfaces using Janathacem or equivalent material of two coats to give an even shade including cleaning, brushing of walls and preparing surfaces in accordance with standard specifications. Rate includes cost of all materials, labour, curing etc., complete.		Sqm	
67	2500	Removing white or colour wash by scraping, sand papering and preparing the surfaces smooth including necessary repairs to scratches etc. complete.		Sqm	
68	1200	Applying one coat of cement primer of approved brand and manufacturer on wall surfaces		Sqm	
69	50	Distempering using oil bound washable distemper of approved brand and shade on surfaces including cleaning, brushing, preparing the surfaces even and sand papered smooth in accordance with standard specifications. Three coats (A priming coat with approved primer and two coats of distempering).		Sqm	
70	120	Painting with two coats synthetic enamel paint of approved brand and shade on surfaces to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, sand papering and stopping, all as per standard specifications.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
71	420	Removing dry or oil bound distemper / water proofing cement paint / paint by scraping, sand papering and preparing the surfaces smooth including necessary repairs to scratches etc., complete.		Sqm	
72	4	Painting one priming coat with approved Red Oxide primer over structural steel works in roof structures, columns etc., including preparing the surfaces by thoroughly cleaning oil, grease, dirt and other foreign matters and scoured with wire brushes, fine steel wool scrapers and sand paper, all as per standard specifications		M.T	
73	4	Painting (excluding priming coat) on structural steel works in roof structures, columns etc.with two coats synthetic enamel paint of approved brand and shade, brushing to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, scaffolding charges etc., complete. All as per standard specifications.		M.T	
74	2000	Painting with two coats of exterior emulsion paint (ACE or any other equivalent and approved brand) of approved shade on surfaces to give an even shade including preparing the surfaces, removal of dirt, thorough cleaning by watering etc., all as per standard specifications. Rate includes cost of necessary plaster of paris and putty wherever required, labour and all incidentals etc., complete.		Sqm	
75	10	Painting with Epoxy paint (two or more coats) at all locations , prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surfaces etc., complete		Sqm	
76	20	Supply RCC pipes (NP2 Class) of 300 mm size with collars at site of work, lowering to trench, laying to proper grade and alignment, joining the collars with stiff mixture of cement mortar 1 : 2, testing of joints etc., but excludes cost of cement which will be supplied by BHEL at stores at free of cost.		Sqm	
77		Dismantling / removing / demolishing as the case may be of the following by manually/mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the near by low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge.			
A	60	Brick work in cement mortar		Cum	
B	3	Stone rubble masonry in cement mortar		Cum	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
C	600	Old plastering / skirting raking out joints / chipping the concrete and roughening the surface.		Sqm	
D	115	Plain Cement Concrete.		Cum	
E	20	RCC works including stacking of steel bars.		Cum	
F	20	RCC or PCC (Using jack hammer for pockets / cable trenches / industrial heavy duty flooring)		Cum	
G	90	Precast concrete or stone slabs in walls, partition walls etc of Thickness upto 40 mm.		Sqm	
H	45	RCC louvers / RCC jally		Sqm	
I	90	Tile work in floors and roofs laid in cement mortar.		Sqm	
J	20	Doors / Windows / Ventilators (steel or wood) including frame and shutters, holdfasts, hinges, fastenings etc. of area 3 sqm & below.		Each	
K	15	Only shutters of Doors / Windows / Ventilators (steel or wood) including hinges, fastenings etc.		Sqm	
L	120	G.I / PVC pipe lines of various dia including all specials		RM	
M	90	A.C / C.I rain water pipes upto 150 mm dia with fittings and clamps.		RM	
N	115	A.C sheets from roofs and side cladding including ridges, valleys, gutters etc.		Sqm	
O	10	Steel partitions including bolts, nuts, cutting rivets, welding etc. and dismembering		Sqm	
78		Providing and fixing G.I pipes and specials (B - Class) of approved brand with G.I fittings and clamps on walls & floors, including cutting and making good the walls & floors etc. complete. (Internal work - exposed on walls)			
A	45	15 mm dia nominal bore		R.M	
B	45	20 mm dia nominal bore.		R.M	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
C	45	25 mm dia nominal bore.		R.M	
D	30	32 mm dia nominal bore.		R.M	
E	30	50 mm dia nominal bore.		R.M	
F	20	80 mm dia nominal bore.		R.M	
79		Providing and laying PVC water pipes and specials conforming to ISS in trenches, joining with proper adhesive as suggested by manufacturers etc. complete. (External work) Earth work excavation for trenches and refilling will be paid separately.			
A	20	PVC Pipe 50 mm OD (6 kg/Sq.cm)		R.M	
B	20	PVC Pipe 75 mm OD (6 kg/Sq.cm)		R.M	
C	15	PVC Pipe 200 mm OD (6 kg/Sq.cm)		R.M	
80	45	Providing and fixing PVC pipes of 110 mm OD (4 K.G / Sqcm) conforming to ISS including joining with proper adhesive as suggested by manufacturers and suitable clamps for rain water pipes, drainage etc. Rate excludes all specials like shoe, bend, tee, tee with door etc.		R.M	
81		Providing and fixing PVC moulded fittings / accessories on walls for rain water pipes conforming to IS13592 Type A including joining with seal rings conforming to IS 5382 and proper adhesive as suggested by manufacturers etc., complete.			
A	10	75 mm shoe		Each	
B	10	110 mm shoe		Each	
C	10	160 mm shoe		Each	
D	10	75 mm bend		Each	
E	10	110 mm bend		Each	
82		Providing and fixing in position of brass wheel valve / gate valve of approved brand with C.I wheel etc. complete. (ISI marked)			
A	15	15 to 25 mm nominal bore		Each	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
B	10	32 mm nominal bore		Each	
C	5	50 mm nominal bore		Each	
D	5	80 mm nominal bore		Each	
83		Providing and fixing in position brass bib cock / stop cock (Medium Duty) of approved brand (ISI marked)			
A	6	15 mm nominal bore.		Each	
B	10	20 mm nominal bore.		Each	
C	10	25 mm nominal bore.		Each	
84	10	Providing and fixing in position 15 mm nominal bore C.P brass long nose bibcock / C.P brass stop cock (concealed) of approved brand (ISI marked)		Each	
85	15	Providing and fixing in position 15 mm nominal bore C.P brass angle valve for basin mixer and geyser points of approved brand (ISI marked)		Each	
86	5	Providing and fixing 600 x 450 x 5 mm bevelled edge mirror of superior glass (approved brand) mounted on 5/6 mm thick hard board / ply wood / plastic folder sheet, fixed to wooden cleats with C.P brass screws and washers, etc. complete		Each	
87		Providing and fixing in position of ready made sink including PVC waste pipe of 32 mm dia with necessary coupling etc. complete.			
A	3	Granite (black) sink of size 23" x 17" x 9"/10" or thereabouts (outer dimensions) - 12 mm thick.		Each	
B	3	Granite (black) sink of size 23" x 23" x 9"/10" or thereabouts (outer dimensions) - 12 mm thick.		Each	
88	10	Providing and fixing in position of 100 x 75 mm Nahani trap with PVC grating, all as per standard specifications		Each	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
89		Providing and fixing in position of brass ball valve of approved brand with plastic float fitted with brass rod etc. complete.			
A	20	20mm nominal bore		Each	
B	20	25mm nominal bore		Each	
90	10	Providing and fixing in position of 25 mm nominal bore C.P half turn flush valve of approved brand (ISI marked) in pipe lines.		Each	
91		Providing rectangular/circular manhole as per Drawing for the following depths. Rate includes earth work excavation in all soils (except hard rock requiring blasting) including soft disintegrated rock, watering and ramming of foundation bed, providing cement concrete 1:4:8 in foundation, including necessary slope and forming channels smoothly finished in C.M 1:2, brick work in C.M 1:5 for arch ring, etc., using standard approved bricks, plastering in cement mortar 1:4 for side walls (outside and inside), cement concrete 1:2:4 using 12 to 20 mm HBGS jelly for manhole cover fixing, providing and fixing C.I steps for ladder rungs, etc., complete. Rate includes an initial lead of 10 m and all lifts for excavation and other charges etc., complete, but excludes cost of manhole cover and frame.			
A	3	Above 1.50 and upto 1.80 m depth (Rectangular) Cement consumption 332.10 Kg / Each		Each	
B	3	Above 1.80 and upto 2.10 m depth (Rectangular) Cement consumption 367.94 Kg / Each		Each	
C	4	Above 2.10 and upto 2.40 m depth (Rectangular) Cement consumption 403.63 Kg / Each		Each	
92		Supply and fixing C.I cover with/without frame for manholes/gully traps.			
A	5	500 mm dia C.I cover only (Without frame) (Medium duty) Weight of the cover to be not less than 58 K.G.		Each	
B	3	500 mm dia C.I cover with frame (Medium duty) Total weight of cover and frame to be not less than 116 K.G (Weight of cover 58 K.G and weight of frame 58 K.G)		Each	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
93		Cleaning & complete removal of all the obstructions/blockage accumulated such as silt, sand, debris, all other wastes etc. from manhole & disposing the same in the near by low level areas. Scope includes opening the manhole cover, removing all the blockage such as silt, sand, debris, all other wastes etc., lifting, disposing the same in the near by low level areas, all labour, tools, repositioning the manhole cover after finishing the job etc., complete.			
A	9	Manhole upto 1.50 metre depth		Each	
B	9	Manhole beyond 1.50 but upto 3.30 metre depth		Each	
94		Painting G.I pipes and fittings with synthetic enamel paint of two coats over a ready mixed priming coat, both of approved quality for new work.			
A	45	15 mm diameter pipe		R.M	
B	45	20 mm diameter pipe		R.M	
C	45	25 mm diameter pipe		R.M	
D	30	32 mm diameter pipe		R.M	
E	30	50 mm diameter pipe		R.M	
95		Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections / appropriate Z sections of approved make conforming to IS:733 & 1285, fixed with rawl plugs & screws or with fixing clips, or with expansion hold 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 joined mechanically wherever required including cleat angle, aluminium snap beading for glazing / panelling, C.P brass / stainless steel screws, all complete as per architectural drawings and instructions of Engineer-in-charge. (Glazing and panelling to be paid for separately)			
A	75	For fixed portion - Anodised aluminium (anodised transparent or dyed to required shade according to IS 1868, minimum anodic coating of grade AC 15)		K.G	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
B	75	For shutters of doors, windows and ventilators including providing and fixing hinges / pivots and making provision for fixing of fittings wherever required including cost of PVC/ neoprene gasket required. (Fittings shall be paid for separately) Anodised aluminium (anodised transparent or dyed to required shade according to IS 1868, minimum anodic coating of grade AC 15)		K.G	
96	150	Extra for powder coated aluminium (minimum thickness of powder coating 50 micron) for aluminium sections.		K.G	
97		Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per drawing and instructions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item.)			
A	15	With float glass panes of 4 mm thick		Sqm	
B	15	With float glass panes of 5.50 mm thick		Sqm	
98	5	Providing and fixing double action hydraulic floor spring with stainless steel cover plate of approved brand and manufacture conforming to IS : 6315 for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S sheet outer box with side plate etc. complete as per instructions of Engineer-in-charge.		Each	
99	5	Providing and fixing 100 mm brass lock (mortise latch & lock with six levers) for aluminium doors including necessary cutting and making good etc.complete.		Each	
100	8	Providing and fixing powder coated (50 micron) aluminium round shape handle of outer dia 100 mm with SS screws etc.complete, all as per instructions of Engineer in charge.		Each	
101	20	Supply and fixing the Plain particle boards- 9 mm thick-Regular Grade-(Novapan-Prime or equivalent) of approved brand & quality in panelling fixed in aluminium doors/window shutters/partition frames etc. with C.P brass/stainless steel screws etc. complete, all as per drawings, specifications and instructions of Engineer in charge. Rate includes cutting to required sizes, wastages etc., complete. Rate excludes cost of respective frame works.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
102	5	Providing silver anodized aluminium alloy grills (DECOGRILLE) of DECOGRILLE Design No.DG 902 with 7.50 mm plates and fixing in proper position in windows/ventilators/balconies/partitions/ fences/racks etc. with necessary appropriate type, material, brand & quality screws as per manufacturers recommendation etc., complete, all as per the instructions of Engineer-in-charge.		Sqm	
103	75	Conveyance of earth, sand, gravel, rough stone, broken stone, brick bats (debris) etc. by contractor's own lorry including loading, leading, unloading, stacking or spreading, all as per instructions of Engineer-in-charge. Payment for conveyance of earth will be made based on pit measurement and for other items based on stack measurements Beyond 1 Km but upto 2 Km		Cum	
104	45	Conveyance of debris generated by dismantling and other modification works by various departments, factory wastes discarded cotton waste, slag, cut tree branches, dried leaves, abandoned broken glass, water closets, urinals, flush tanks, broken furniture, broken refractory bricks, AC materials, hedge cuttings and all other debris and waste materials from various places of factory premises where they are stacked / accumulated and transporting the same by contractor's lorry and disposing off at the specified places, all as per the instructions of Engineer-in-charge. Rate includes labour for collection of the said debris from various places, loading, leading, unloading, spreading, leveling etc. complete. Rate also includes for safe burning of dried leaves, cut pieces of tree branches, wood, waste paper etc., all by following safety precautions. Payment will be made on trip basis with a lorry load of minimum 300 cft./Trip. 1-2 K.M		Each	
105	90	Carrying , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated / bare aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves etc for roofing at all heights with necessary xylon coated self tapping/ self drilling screws with EPDM washers etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer in Charge. Rate includes cost of self tapping / self drilling screws with EPDM washers etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, cost of providing life line and other provisions for safety and all other incidental charges etc., complete but excluding cost of aluminium zinc alloy coated high tensile sheets and its accessories such as ridge pieces, barge boards, curves etc., which will be supplied by BHEL at stores at free of cost. The payment will be made for the actual laid area only.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
106	90	Carrying , hoisting and fixing in position of 0.47 to 0.50mm thick colour coated / bare aluminium zinc alloy coated high tensile steel rib profile sheets with accessories such as ridge pieces, barge boards, curves etc for side sheeting at all heights with necessary xylon coated self tapping/ self drilling screws with EPDM washers etc., complete. All as per drawings, manufacturers specifications and instructions of Engineer in Charge. Rate includes cost of self tapping / self drilling screws with EPDM washers etc., and labour charges for fixing, hire charges for tools and plants like drilling machines, cost of providing life line and other provisions for safety and all other incidental charges etc., complete but excluding cost of aluminium zinc alloy coated high tensile sheets and its accessories such as ridge pieces, barge boards, curves etc., which will be supplied by BHEL at stores at free of cost. The payment will be made for the actual laid area only		Sqm	

TOTAL

SERVICE TAX @ 4.944%

GRAND TOTAL

Rate

In Words

CONTRACTOR

24

ACCEPTING OFFICER

SCHEDULE 'B'

1. The following materials will be issued FREE of cost to contractor at BHEL Stores / Stock yard.

SI.No.	DESCRIPTION	PLACE OF ISSUE
1	Cement	BHEL STORES or Stock yard
2	M.S Rounds, C.T.D Bars & Structural Steel, rails and all railway materials	BHEL STORES or Stock yard

2. It will be the responsibility of the Contractor to submit his demands for the above stores in writing atleast seven days in advance of the actual requirement.
3. Issue of Stores is subject of the availability at the place of issue cited above, items of stores to be issued by BHEL which are not available at the time of indenting by the contractor may be supplied by BHEL after necessary procurement. The contractor shall not be entitled to any claim of compensation for delay in the supply of stores by BHEL under any circumstances.
4. The materials will be issued only during the working hours of the BHEL Stores Department (8.00 a.m. to 4.30 p.m.). Contractor shall have to transport them to the site of work at his own cost as soon as they are issued to him.
5. The steel materials if issued will be in random lengths and sizes as stocked by the BHEL and the cost of all cutting, conversion, substitution and fabrication as well as wastage shall have to be borne by the Contractor.
6. The contractor shall from time to time render proper account of all materials issued to him by BHEL. If he fails to do so, no further issue of materials will be made to him and he will be held responsible for any delay in the execution of the work which may occur on this account.
7. Where A.C. Sheets and accessories, Doors, Windows, Sanitary fittings, Special glasses or other items are issued free of cost to the contractor, the contractor will have to make good at his own cost any loss or damage to any part or whole of the items issued to him as above. All wastage within the premises limits as fixed by BHEL will be charged for at the prescribed issued rates of BHEL. Excess wastage will be charged for at punitive rates which will be 100% higher than the issue rates.
8. All surplus materials in good condition which are not returned to the BHEL Stores as also quantities of materials consumed in excess of the max. permissible limit as fixed by BHEL shall be charged for at punitive rates.

The decision of the Senior Engineer / Dy. Manager / Manager as to the extent to which materials have been rendered surplus or consumed in excess of the actual requirements shall be final and conclusive and binding on the contractor

SCHEDULE 'C'

ISSUE OF TOOLS AND PLANTS TO CONTRACTORS

Sl.No.	Qty.	Particulars	Details of BHEL Crew Supplied	Hire Charges Per unit Per Day	Place of Issue	Remarks
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.....Nil.....

- a. Machineries shall not be operated over time without the written permission of the Sr. Engineer / Dy. Manager / Manager.
- b. All Coolies, Watermen etc., required in addition to BHEL crew mentioned in column 4 above shall be arranged by the contractor at his own expense.
- c.

SCHEDULE 'D'

NOTE : All Drawings are to be signed by the Contractor as well as the officer entering into contract.

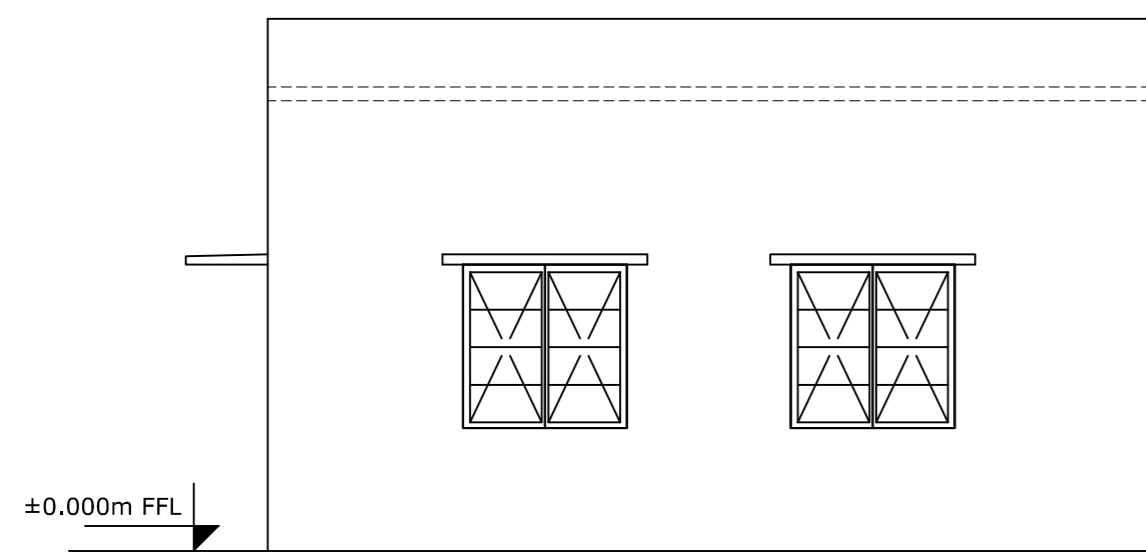
SL.No.	DRAWING NUMBER	DESCRIPTION
1	0-TP-CEG-01639	MODIFICATION TO EXISTING KITCHEN AREA
2	2-TP-CEG-01643	GENERAL ARRANGEMENT & DETAILS OF ELECTRICAL ROOM
3	1-TP-CEG-01650	DETAILS OF FACTORY CANTEEN PLATE WASHING AREA

The above drawing is enclosed in the Price Bid.

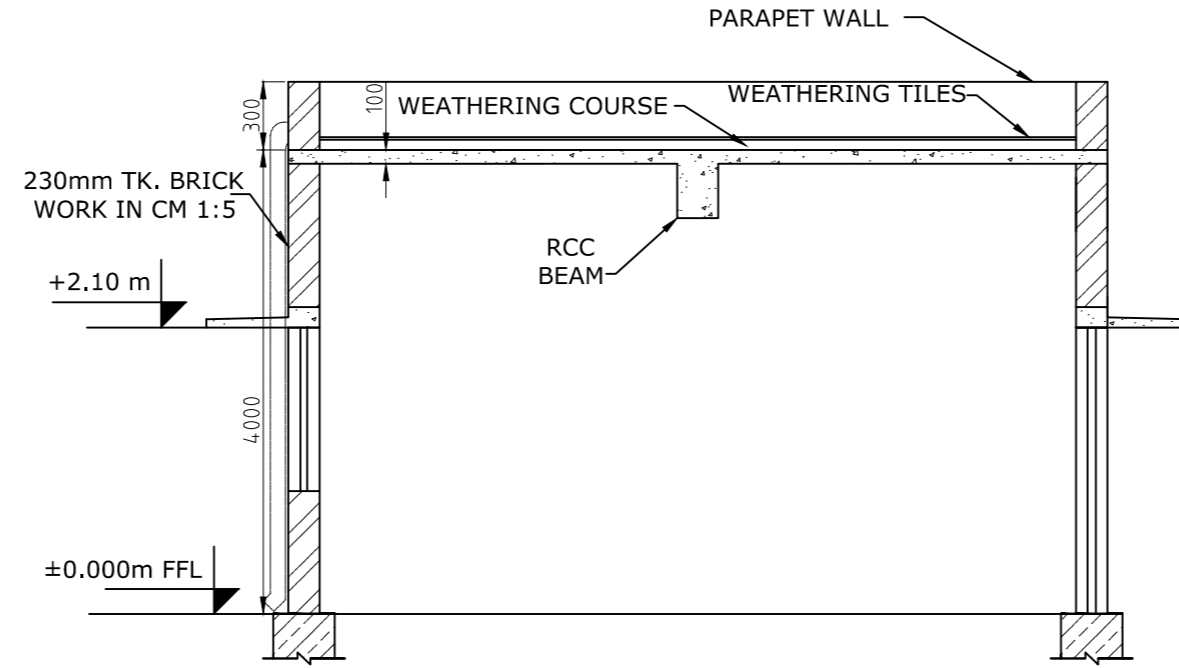
SCHEDULE 'E'

LEAD STATEMENT

Sl.No.	Name of Material	Name of Source	Lead Particulars both for Factory and Township
1	Cement	BHEL Stores	2 Kilometre
2	M.S Rounds, C.T.D Bars & Structural Steel, rails and all railway materials	BHEL Stores	2 Kilometre



ELEVATION



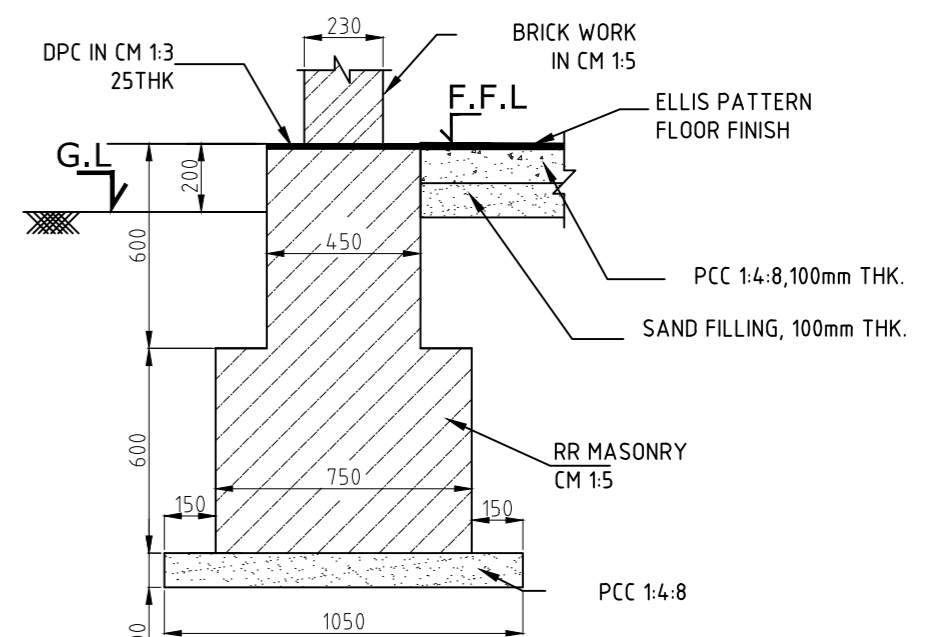
SECTION-XX

NOTES:-

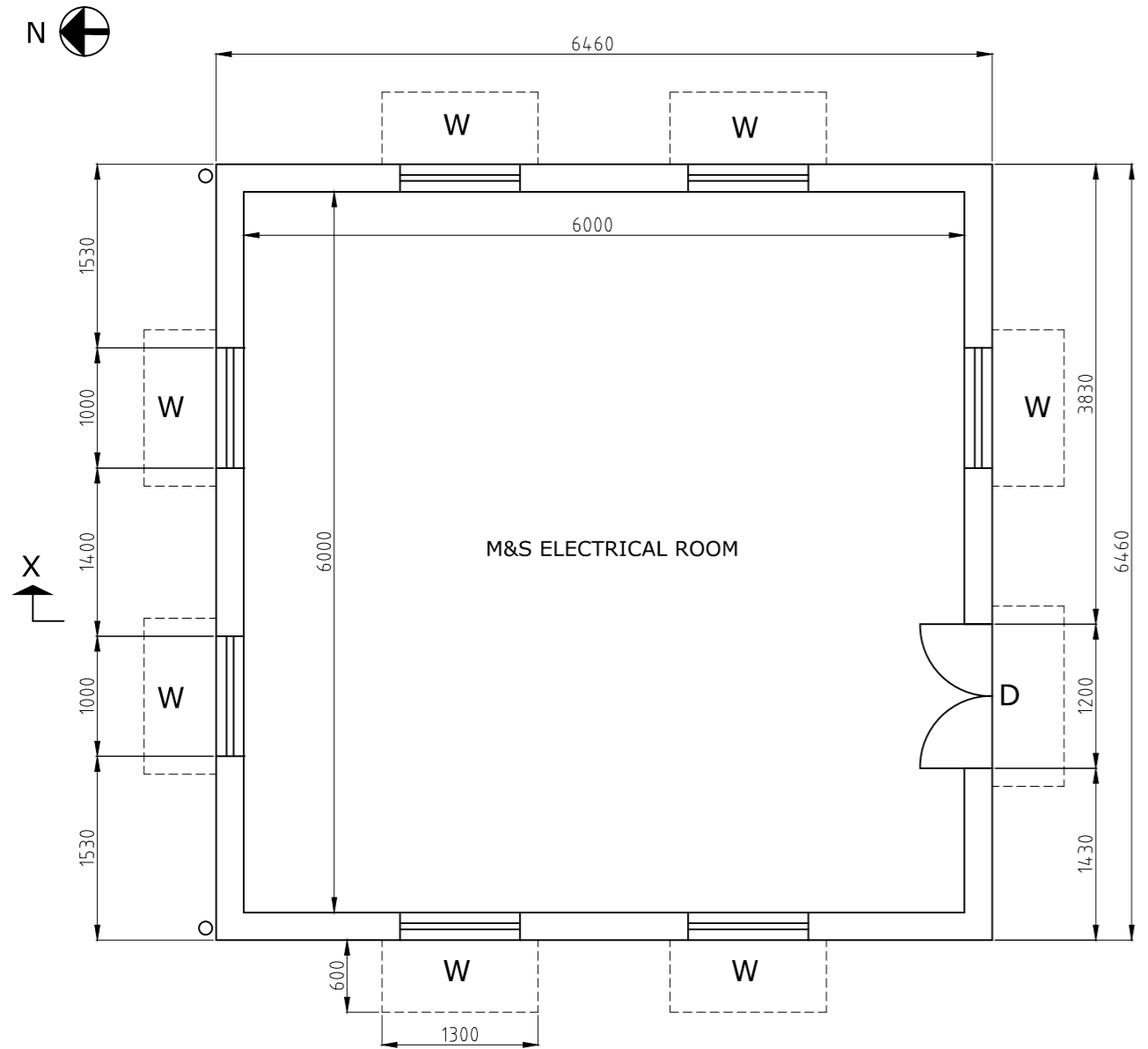
- 1) ALL DIMENSIONS ARE IN 'MM' & LEVELS ARE IN 'M'
- 2) CONCRETE GRADE M20
- 3) ALL REINFORCEMENT BARS SHALL BE HIGH YIELD STRENGTH DEFORMED BARS CONFORMING TO IS:1786-(LATEST REVISION)
- 4) DEVELOPMENT LENGTH LD = 50 TIMES THE DIA OF THE BAR
- 5) CLEAR COVER TO REINFORCEMENT AS FOLLOWS
 A) INTEL-20MM
 B) SUNSHADE-15MM
 C) ROOF SLAB-20MM

LEGEND:-

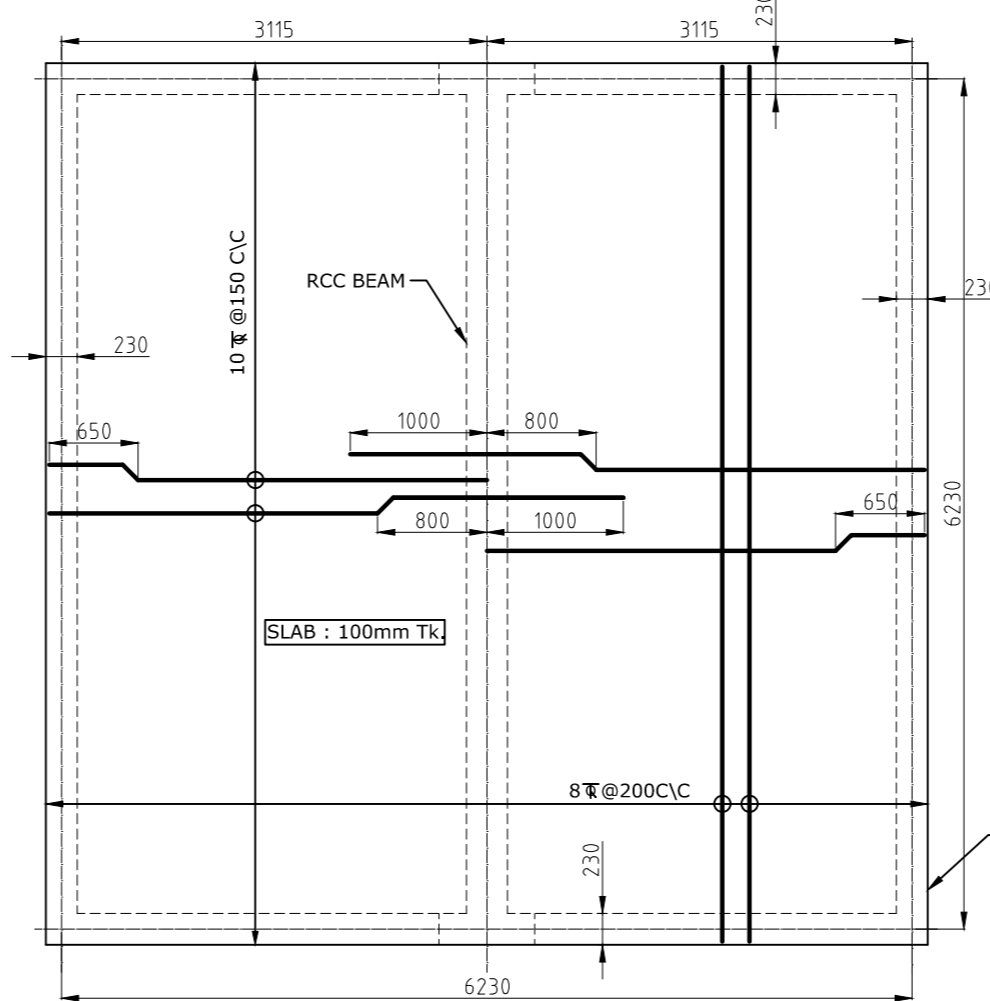
- W - GLAZED STEEL WINDOW - 1000 X 1200
- D - GLAZED STEEL DOOR - 1200 X 2100



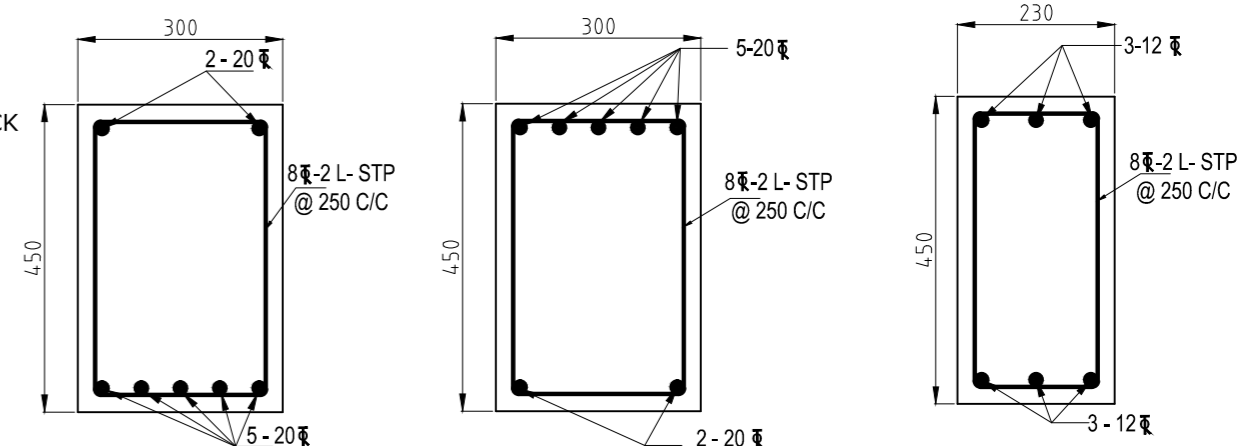
DETAILS OF WALL FOUNDATION & FLOORING



PLAN



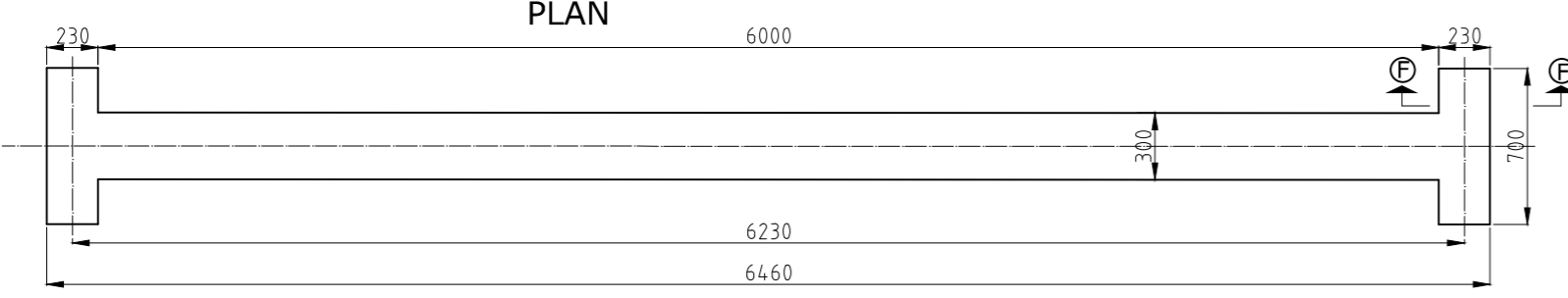
REINFORCEMENT DETAILS OF ROOF SLAB



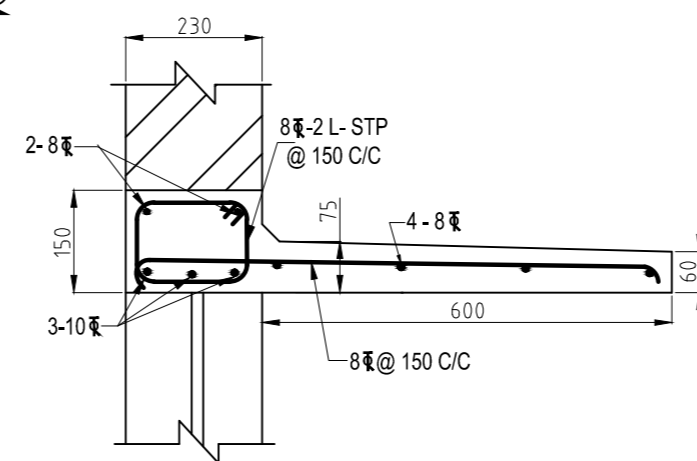
SECTION E-E

SECTION G-G

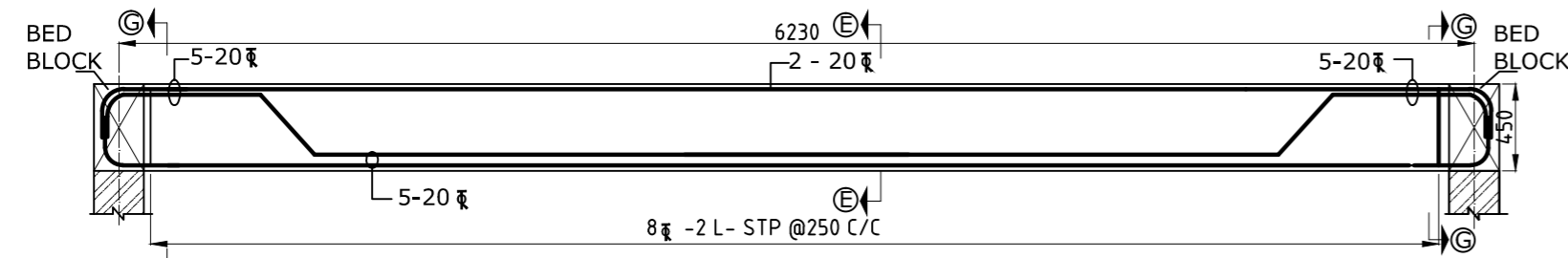
SECTION F-F
DETAILS OF BED BLOCK



PLAN FOR BEAM WITH BED BLOCK



DETAILS OF LINTEL CUM SUNSHADE



LONGITUDINAL SECTION OF BEAM

CAUTION: The information on this drawing is the property of BHARAT HEAVY ELECTRICALS. It must not be used, directly or indirectly, in any way detrimental to the interest of the company.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		58-CANTEEN			
Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		NAME	SIGNATURE	DATE	NO OF VAR
DEPT	CIVIL	DRN	MAHESHWARI B	10.10.14	
CODE	2200	CHD	AARUYIR YOGAA T	10.10.14	
SCALE	1:1	APPD	K.GUNASEKARAN	10.10.14	
GRADE OF UNITS DIM C/M/F	C/M/F	WEIGHT (Kg)	REF TO ASSY / OLD DWG	ITEM NO	NO OF ITEMS
TITLE		CARD CODE	DRAWING NO :	REV	
GENERAL ARRANGEMENT & DETAILS OF ELECTRICAL ROOM		U 01	2-TP-CEG-01643	00	

