



National Research Centre for Orchids
(Indian Council of Agricultural Research)
Pakyong – 737 106, Sikkim, India

Tel. No: 91-03592-257954(Director)
Web Site: <http://www.sikkim.nic.in/nrco>

Telefax 03592-257289
Email: nrcochids@rediffmail.com



F. No. NRC(O)/W/14/10-11/

Dated:

NOTICE INVITING TENDER

Sealed bids are invited by the Director, National Research Centre for Orchids (ICAR), Pakyong, Sikkim from the recognized Govt./Govt. Undertaking (both Central and State) construction Agency for the below mentioned works to be executed at NRC for Orchids, Darjeeling campus, Darjeeling, West Bengal.

Interested Agencies may obtain tender documents viz; details of the works, Terms and Conditions etc. from the Office of the NRC for Orchids, (ICAR,), Pakyong, Sikkim during Office hours for the following works or may be down loaded from the website: <http://www.sikkim.nic.in/nrco> on payment of ₹ 1000/- (Rupees One Thousand) (non refundable) through Bank Draft drawn in favour of “**Director, NRC for Orchids**”, payable at **Pakyong (BRANCH CODE:9036)**.

Sl. No.	Description of work	Estimate Value (₹ in lakhs)
1.	Farm Store, Pack House, Culture Room Residential Quarter (Type-IV 2 Nos.) in one combined multi-storied (5 storied) building at National Research Centre for Orchids (ICAR), Darjeeling Campus, Darjeeling	1,17,25,176.00

Last date of receipt of Sealed Bids is **15/12/2010 at 2.00 p.m.** and will be opened on the same day at 3.30 p.m. in the presence of the authorized representatives of the Construction Agencies who wish to be present.

Asstt. Administrative Officer

Copy to:

1. Scientist Incharge, NRC for Orchids, Darjeeling Centre, AJC Bose Road, Darjeeling-734401
2. Computer Assistant (T-3), NRC for Orchids, Pakyong with the request to upload the Tender Notice and other documents in the website of the Institute.
3. Chairperson (Works), NRC(O), Pakyong.
4. Chairman, SPC, NRC(O), Pakyong.
5. Notice Board, NRC for Orchids, Pakyong

Asstt. Administrative Officer



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TERMS AND CONDITIONS FOR THE EXECUTING AGENCY

1. The work shall have to be completed by the executing Agency within stipulated time to be given in the work order.
2. Extension of time beyond the agreed time of completion shall be granted to executing Agencies after taking into account the delay due to unavoidable circumstances on written request at least two months before the expiry period allowed for completion of the work.
3. The duration of completion offered by the construction Agency of the Project shall be taken into account for preference.
4. If the work is not completed within the scheduled time of mutually extended period, penalty @ 0.25% per month and maximum to 2.5% of the total cost of the work shall be imposed.
5. Security deposit for each work shall be considered for release after one year of successful completion of the works in question based on successful performance of completed works.
6. Any dispute to be arises between the Agency and the Institute shall be referred to the sole arbitrator to be appointed by the Council and the decision of which shall be the final.
7. Charges for water electricity if provided by the Institute will be charged from the Agency as per percentage fixed by CPWD.
8. The Agency to whom work has been awarded will be the principal employer for the labour force. The Institute / Council shall have no liability in this regard.
9. Records relevant to measurements, financial progress, test contract, purchase of materials etc. to be made available for inspection by executing Agency.
10. The Executing Agency has to submit @2.5% on the estimated cost of each items of works as security deposit through Demand draft/ Bankers Cheque for the period of contract toward proper performance of contract which shall be released after one year of successful completion of works and which will be treated as guarantee period for successful performance of completed works
11. Payable cost of work will be on the basis of submission of detailed monthly accounts for the work done duly signed by the Project Manager/ Engineer I/C and Unit accounts Head.
12. Contractors engaged by the Construction Agency should abide by the other terms and conditions laid on general guide lines whichever applicable.
13. For details of plan & design of the buildings and other general terms and condition etc. Please contact office of NRC for Orchids, Pakyong, Sikkim during office hours on all working days.

Asstt. Administrative Officer

Details of works for construction of Farm Store, Pack House, Culture Room and Staff Quarter (Type-IV – 2 Nos.) at National Research Centre for Orchids, Darjeeling Campus, Darjeeling					
Sl. No.	Description	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
A.	Civil Works				
	Earth Work				
	Earth work in excavation by mechanical (Hydraulic excavator) or manual means in for foundation trenches or drains (not exceeding 1.5 mtr in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 mtr, including getting out of excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 mtr.				
	(a) All kinds of soil.	1023.49	Cum.		
	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 50m and lift upto 1.5m.	499.84	Cum.		
	CEMENT CONCRETE Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering- All work upto plinth level:				
	1:3:6 (1cement: 3coarse sand: 6graded stone aggregate 40mm nominal size).	63.3	Cum.		
	1:4:8 (1cement: 4coarse sand: 8graded stone aggregate 40mm nominal size).	74.89	Cum.		
	REINFORCED CEMENT CONCRETE Providing and laying in position specified grade of reinforced cement concrete excluding cost of centering, shuttering, finishing and reinforcement.: All work up to plinth level				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	190.56	Cum.		
	Reinforced cement concrete work in walls including attachment pilasters, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level excluding cost of centering, shuttering, finishing and reinforcement.				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	138.56	Cum.		
	Reinforced cement concrete work in beams, suspended floors ,roofs having slop up to15 ⁰ landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircase and spiral staircase up to floor five level excluding cost of centering, shuttering, finishing and reinforcement.				
	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	209.2	Cum.		
	SHUTTERING & FORMWORK				
	Centering and shuttering including strutting, propping etc. and removal of form for:				
	1) Foundations, footings, bases of columns etc. for mass concrete	248.11	Sqm		
	2) walls (any thickness) including attached pillers, btresses, plinth and string courses ect.	253.11	Sqm		
	3) Suspended floor, roofs, landing, balconies and access platform	1126.26	Sqm		
	4) Lintels, beams, plinth beams, girders, bressumers and cantilevers.	194.16	Sqm		
	5) Columns, pillars, piers, abutments, posts and struts.	182.79	Sqm		
	REINFORCEMENT				
	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.				
	6) Thermo-mechanically treated bars.	35446.0	Kg.		
	BRICK WORK				
	Brick work with F.P.S bricks of class designation 75 in foundation and plinth in				

	1) Cement mortar 1:4 (1cement: 4coarse sand).	87.87	Cum		
	Half brick masonry with FPS bricks of class designation 75 in superstructure above plinth level to floor V level:				
	2) Cement mortar 1:4 (1cement: 4coarse sand).	1333.10	sqm.		
	WOOD WORK / DOORS				
	Providing wood work in frames of doors, windows, clearstorey windows, Jali Shutters and other frames, wrought, framed and fixed in position.				
	Well seasoned second class teak wood	2.67	cum		
	Providing and fixing ISI marked flush door shutters conforming to IS: 2202 (Part-I) non-decorative type, core of block board construction with frame of first class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutter:				
	1) 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	9.45	Sqm		
	Providing and fixing paneled or paneled and glazed shutters for doors, windows and clerestory windows including ISI marked black enameled MS butt hinges with necessary screws excluding , paneling which will be paid for separately.				
	35 mm thick including ISI marked stainless steel butt hinges with necessary screws .	37.80	Sqm		
	ALUMINIUM FITTINGS				
	Providing and fixing Anodised aluminium(Grade AC- 10) sliding door bolts with nuts and screws etc. complete.2 Nos per Door				
	i) 300x16mm.	24.00	Each.		
	Providing and fixing Anodised Aluminium (Grade AC-10) tower bolts (Barrel type) with necessary screws etc. complete.4Nos per Door				
	iii) 200x12mm.	72.00	Each.		
	v) 100 x 10 mm	12.00	Each.		
	Providing and fixing Anodised Aluminium (Grade AC-10) door Handles with necessary screws etc.2 Nos per Door				
	i) 125 mm.	48.00	Each.		
	Providing and fixing Anodised Aluminium (Grade AC-10) rubber Door Stoppers necessary screws etc. complete.1 nos per Door	24.00	Each.		
	Providing and fixing Anodised Aluminium (Grade AC-10) rubber Door Stoppers necessary screws etc. complete.1 nos per Door	24.00	Each.		
	ALUMINIUM WORK				
	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standered tubuler sections / appropriate Z sections and other sections of approved make conforming to IS : 1285 fixed with rawl plugs and 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 jointed mechanically whereover required including cleat angle, Aluminium snap beading for glazing/ panelling , CP brass / stainless screws , all complete as per architectural drawings and the directions of Engineer-in-Charge. (Glazing and Panelling to be paid separately)				
	Powder coated aluminium (minimum thickness of powder coating 50 micron)	264.57	kg		
	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partitions etc. with 6mm thick clear float glass including EPDM gasket , perforated aluminium spacers, desiccants, sealant, etc. as per specifications, drawings and direction of Engineer-in-Charge complete	233.00	Sqm		
	FLOORING				

Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08 % and conforming to IS: 15622 of approved make in all colours on 20 mm thick bed of cement mortar 1:4 including grouting the joints with white cement and matching pigments etc, complete.				
Size of tiles 60 x 60 cm	547.93	Sqm.		
Providing and laying ceramic glazed non skid floor tiles 300x300mm, minimum 8 mm thick of 1st quality conforming to IS: 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20mm thick cement mortar 1:4 (1cement: 4coarse sand) including pointing the joints with white cement and matching pigment etc. complete.	29.16	Sqm.		
Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacture) of approved make in colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-charge 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 @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shades complete.	127.01	Sqm.		
FINISHING				
Providing two coats of Birla White Wall Care Putty (Water Resistant White Cement based putty for concrete/ mortar walls and ceiling both internal and external) after removing all loosely adhering material from the wall surface with the help of emery stone, putty blade or wire brush and moistening the wall with sufficient quantity of clean water as specified and directed by the department. (Total thickness of two coats is maximum 1.5mm)				
1.5MM Thick	2,974.10	Sqm.		
INSIDE PLASTER				
12MM Cement Plaster of mix				
2) 1:4 (1cement: 4 fine sand)	2,974.10	Sqm.		
OUT SIDE PLASTER				
20 mm cement plaster of mix				
1) 1:4 (1 cement : 4 coarse sand)	987.34	Sqm.		
PAINT				
INSIDE PAINT				
Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade. New work (two or more coats) over and including priming coat of cement primer.	2,974.10	Sqm.		
OUTSIDE PAINT				
Finishing walls with water proofing cement paint of required shades				
1) New work (Two or more coats applied @ 3.84 kg/10sqm)	987.34	Sqm		
PAINTING STEEL BASED SURFACE				
With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel work (second coat)	445.54	Sqm		
Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @0.90 ltr/10 sum over an under coat of primer applied @ 0.80 ltr/ 10 sum of approved brand or manufacture	445.54	Sqm		
PAINTING WOOD BASED SURFACE				
Applying priming coat :				
With ready mixed pink or Grey primer of approved brand and manufacture on wood work (hard and soft wood)	104.50	Sqm		
Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :	104.50	Sqm		

	CEILING				
	Providing and fixing flat pressed 3 layer medium density particle board or graded particle board (Grade I) IS 3087 marked in ceiling with necessary nails etc. complete (frame to be paid separately)				
	12. mm thick	160.13	Sqm		
	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade. New work (two or more coats) over and including priming coat of cement primer.	160.13	Sqm		
	STEEL WORKS/STRUCTURAL WORK				
	Steel work welded in built up section/framed work including cutting, hoisting fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
	(1) In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete.	1,520.28	Kg		
	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.				
	1) M.S. Tube	250.26	Kg		
	ROOF TRUSS				
	Steel work in built up tubular trusses including cutting hoisting fixing in position and applying a priming coat of approved steel primer , welded and bolted including special shaped washers etc. complete.				
	Hot finished welded type tubes	4,803.00	Kg		
	ROOFING				
	Providing ridges or hips of 60 cm over all width plain sheet fixed with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen limpet washers complete.				
	0.80 mm thick with zink coating not less than 275 kg/m2	68.78	Rm		
	Providing corrugated G.S sheet roofing including vertical /curved surface fixed with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen limpet washers or with GI lipet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surface) excluding the cost of purlins, rafters, trusses and including cutting to size and shape wherever required.				
	0.80 mm thick with zink coating not less than 275 kg/m2	264.21	Sqm		

Sl. No.	Description	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
B.	SANITARY AND WATER SUPPLY				
	SECTION I – SANITARY INSTALLATIONS				
1.	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :				
a.	W.C. pan with ISI marked white solid plastic seat and lid	6.00	Each		
	Providing and fixing white vitreous china wash basin with CI/MS brackets, 15mm CP brass pillar taps, 32mm CP brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required.				
b.	Flat back Wash basin size 550x400mm with single 15 mm CP brass pillar tap.	6.00	Each		
	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350mm and 340x410x265mm sizes respectively with automatic flushing cistern with 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 :				
c.	One urinal basin with 5 litre white P.V.C. automatic flushing cistern.	6.00	Each		
	SECTION - II - TOILET REQUISITES				
1.	Providing and fixing 600x450mm bevelled edge mirror of superior class (of approved quality) complete with 6mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	6.00	Each		
2.	Providing and fixing PTMT liquid soap container 109 mm wide, 125 high and 112 mm distance from wall of standard shape with braket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms	6.00	Each		
3.	Providing and fixing C.P. brass bib cock of approved quality conforming to IS : 8931.				
a.	15mm nominal bore	8.00	Each		
4.	Providing and fixing C.P. brass angle valve for WC cistern, wash basin and gyser points of approved quality conforming to IS : 8931.				
(a).	15mm nominal bore	18.00	Each		
5.	Providing and fixing unplasticised PVC connection pipe with PTMT Nuts collar and bush of approved quality and colour.				
(a).	15mm nominal bore with 30cm length.	18.00	Each		
6	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fitting arrangement of approved quality and colour.				
(a).	600 mm long towel rail with total length of 640 mm, width 78mm and effective height of 88mm, weighing not less than 190gms.	6.00	Each		
7.	Providing and fixing PTMT Bottle Trap for Wash basin and sink.				
(a)	Bottle trap 31mm single piece moulded with height of 270mm, effective length of tail pipe 260mm from the centre of the waste coupling 77mm breadth with 25mm minimum water seal, weighing not less than 260gms.	8.00	Each		
8.	Providing and fixing C.P. brass shower rose with 15 or 20mm inlet	6.00	Each		

9.	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.	12.00	Each		
SECTION -III- WATER SUPPLY					
1.	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc., (Internal work):				
	Exposed on wall				
(a)	15mm dia. nominal bore	557.00	Metre		
(b)	25mm dia nominal bore.	356.00	Metre		
2.	Concealed pipe including painting with anticorrosive bitumestic paint, cutting chases and making good the wall.				
(a)	15mm dia nominal bore.	557.00	Metre		
(b)	20mm dia nominal bore	356.00	Metre		
3.	Providing and fixing brass ball valves with brass body (nickle coated), brass ball (hard chrome plated), teflon seat, complete in all respect.				
(a)	15 mm diameter pipe	12.00	Each		
(b)	25 mm diameter pipe	12.00	Each		

Sl.	Description	Qty.	Unit	Rate (Rs.)	Amount (Rs.)
C.	ELECTRICAL				
1	Wiring to a light point with 1,5 Sq.mm. P.V.C. insulated F.R. unsheathed 1.1 KV voltage grade (I.S.I. marked as approved by the department) single core copper conductor cable in recessed PVC conduit wiring system including 6 amps flush type switch in iron clad switch board (I.S.I.) marked with phenolic laminated sheet cover, ceiling rose and earthing the point with 1.5 sq.mm. FR single core PVC insulated copper cable complete. (Ref. APWD schedule 2004-2005 item no. 112 for a, b & c. Ref rate analysis for c.)				
(a)	Short point upto 3.00 metre length	33	per point		
(b)	Medium point upto 6.00 metre length	55	per point		
(c)	Long point upto 10.0 metre length	48	per point		
(d)	long point upto 15.0 metre length	8	per point		
2	Wiring to a Fan/Exhaust fan point with 1,5 Sq.mm. P.V.C. insulated F.R. unsheathed 1.1 KV voltage grade (I.S.I. marked as approved by the department) single core copper conductor cable in recessed PVC conduit wiring system including 6 amps flush type switch in iron clad switch board (I.S.I.) marked with phenolic laminated sheet cover, ceiling rose complete. (Ref. APWD schedule 2004-05 item no. 113.)				
(a)	Short point upto 3.00 metre length	1	per point		
(b)	Medium point upto 6.00 metre length	37	per point		
(c)	Long point upto 10.0 metre length	32	per point		
3	Wiring to 5 pin 6 amps plug with 1.5 Sq.mm. P.V.C. insulated unsheathed single core 1.1 KV grade (ISI marked (as approved by the Deptt.) copper conductor cable when fixed on the same board in recessed P.V.C. conduit wiring system including 5 pin 6 amps flush type plug socket and 6 amps flush type switch including earth continuity with 2.5 sq.mm. PVC insulated unsheathed copper wire to third pin of the plug socket etc. as required complete. (Ref. APWD schedule item no. 116.)	11	per point		
4	Wiring for twin control light point with 1.5 sq.mm. P.V.C. insulated unsheathed copper conductor cable in recessed P.V.C. conduit with 2 way 6 amps flush type switch, I.C. switch board with phenolic laminated sheet cover, ceiling rose including connection etc. as required. (Ref. APWD schedule 2004-05 item no.118.)				
(a)	Short point upto 3.00 metre length	2	per point		
(b)	Medium point upto 6.00 metre length	2	per point		
5	Wiring for circuit/ submain wiring along with earth wire with the following sizes of PVC insulated unsheathed 1.1 KV grade copper conductor single core cable in recessed P.V.C. conduit wiring system. (Ref. CPWD schedule 2007-Internal item no. 1.14)				
(a)	2x2.5 sq.mm.+ 1x2.5 sq.mm. earth wire	1260	Mtr		
(b)	2x4.0 sq.mm. + 1x4.0 sq.mm. earth wire	141	Mtr		
(c)	2x10.0 sq.mm. + 1x10.0 sq.mm. earth wire	321	Mtr		
6	Supplying and fixing 18 S.W.G. sheet steel metal boxes of following nominal size fitted with suitable size phenolic laminated sheet covers in front, including painting etc. as required in recessed wiring syatem. (Ref. APWD schedule 2004-05 item no. 207)				
(a)	100 mm x 100 mm x 60 mm deep (Nominal size)	71	each		
(b)	200 mm x 150 mm x 60 mm deep (nominal size)	7	each		
7	Supplying and fixing L type cast aluminium anodized wall bracket 150 mm. (nominal size) projection length with 3 mm thick, 75 mm dia back plate and brass lamp hplder (suitable for CFL) , 25 cm dia non inflammable white plastic shade, 13 W CFL including connection etc. complete. (Ref. rate analysis.)	14	each		

8	Supplying, installation, testing and commissioning of prewired precoated CRCA sheet steel chanel with reflector and decorative end caps 1x36 FTL luminaires complete with all accessories such as electronic ballast directly on wall/ceiling including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 36 W FTL. (Catalogue Ref. Bajaj, BCIR 136 WEB or equivalent of approved make). (Ref. rate analysis)	11	each		
9	Supplying, installation, testing and commissioning of prewired 1x18 W FTL Luminaires in plastic extruded housing with in-built electronic control gear and decorative end caps complete with all accessories such as electronic ballast directly on wall/ceiling including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 1x18 W FTL. (Catalogue Ref. Bajaj, BCIP 118 LHD or equivalent of approved make) (Ref rate analysis)	64	each		
10	Supplying, installation, testing and commissioning of recessed mounting prewired 2x36 W L type CFL decorative luminaires in white powder coated CRCA sheet steel housing with aluminium mirror reflector, mounting bracket and with electronic ballasts in the false ceiling type Armstrong/Gypsum or similar ceiling mounting with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 2x36 W L type CFLs. (Catalogue Ref. Bajaj, BMMR 236 CFL WEB2 OR equivalent of approved make). (Ref. rate analysis)	5	each		
11	Supplying, installation, testing and commissioning of recessed mounting prewired 4x18 / 20 W FTL decorative square modular luminaires in white powder coated CRCA sheet steel housing with aluminium CAT II mirror reflector and with electronic ballasts in the false ceiling type Armstrong/Gypsum or similar ceiling mounting with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 4x18/20 W fluorescent tube lamps. (Catalogue Ref. Bajaj, BJDL 02 418/420 WEB4 OR equivalent of approved make). (Ref. rate analysis)	22	each		
12	Supplying, installation, testing and commissioning of recessed mounting prewired 2x36 W L type CFL decorative luminaires in white powder coated CRCA sheet steel housing with aluminium mirror reflector, mounting bracket and with electronic ballasts in the false ceiling type Armstrong/Gypsum or similar ceiling mounting with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 2x36 W L type CFLs. (Catalogue Ref. Bajaj, BMMR 236 CFL WEB2 OR equivalent of approved make). (Ref. rate analysis)	5	each		
13	Supplying, installation, testing and commissioning of recessed mounting prewired 2x13 W CFL decorative horizontal down lighters with powder coated CRCA sheet steel ring and aluminium reflector and with electronic ballasts in the false ceiling type Armstrong/Gypsum or similar ceiling mounting with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballast and 2x13 W CFLs. (Catalogue Ref. Bajaj, BJDR 213 H W2EB OR equivalent of approved make.). (Ref. rate analysis)	13	each		
14	Supplying, installation, testing and commissioning of recessed mounting prewired 2x26 W CFL decorative horizontal down lighters with powder coated CRCA sheet steel ring and aluminium reflector and with electronic ballasts in the false ceiling type Armstrong/Gypsum or similar ceiling mounting with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballasts and 2x26 W CFLs. (Catalogue Ref. Bajaj, BJDR 226 CFL OR equivalent of approved make). (Ref. rate analysis)	6	each		
15	Supplying, installation, testing and commissioning of surface mounting prewired 2x13 W CFL decorative down lighters with powder coated CRCA sheet steel body and satin bright aluminium reflector and with electronic ballasts in steel bridge/roof truss with necessary support/arrangement complete including connection with 1.5 sq.mm. single core copper conductor as required and directed by the Deptt. complete with electronic ballasts and 2x13 W CFLs. (Catalogue Ref. Bajaj, BJDS 213 C W2EB OR equivalent. of approved make). (Ref. rate analysis)	7	each		

16	Supplying, installation, fitting, fixing, testing and commissioning of 900 mm sweep high speed A.C. ceiling fan complete with all accessories electronic stepped fan regulator, down rod , canopy etc. with making necessary connection etc. complete and as required and directed by the Deptt. (Ref. rate analysis)	18	each		
17	Supplying, installation, fitting, fixing, testing and commissioning of 900 mm sweep high speed A.C. ceiling fan complete with all accessories electronic stepped fan regulator, down rod of required length and size, canopy etc. with making necessary connection etc. as required complete with all arrangements like hook, clamps, supports etc. for mounting on steel roof truss including making hole in false ceiling as directed by the Deptt. (Ref rate analysis)	49	each		
18	Supplying, installation, fitting, fixing, testing and commissioning of 300 mm sweep, 4 blade, 900 rpm, 1250 cfm free air delivery heavy A.C. Exhaust Fan of approved make in the existing hole on the wall and making necessary connection etc. complete as required and directed by the Deptt. (Ref. APWD schedule item no. 271.c.i.)	3	each		
19	Supplying with fitting and fixing 4 pole MCCB incomer and MCB outgoing sheet steel, phosphatised, powder painted double door surface mounting TPN Vertical MCB DB incorporated with busbar, neutral link, earth bar and DIN rail etc. fitted on wall with grouting nut bolts as required complete with making necessary connection as specified and directed . (Ref. APWD schedule 2004-05 item no. 286.)				
(a)	8 way TPN (4+24) double door	1	each		
20	Supplying with fitting and fixing sheet steel, phosphatised, powder painted double door flush mounting 2+2 pole incomer Consumer SPN MCB DB incorporated with busbar, neutral link, earth bar and DIN rail etc. fitted on wall with grouting nut bolts as required complete with making necessary connection as specified and directed. (Ref. APWD schedule 2004-05 item no. 280.)				
(a)	8 Way double door	2	each		
(b)	12 way double door	7	each		
21	Supplying with fitting and fixing 300 mA sensitivity 240/415 V 50 Hz DP RCCB of the following capacity complete with making necessary connection as specified and directed by the Deptt. (Ref. APWD schedule 2004-05 item no. 355.)				
(a)	25 A, 2Pole, 300 mA	2	each		
(b)	40 A, 2 pole, 300 mA	7	each		
22	Supplying with fitting and fixing Single Pole 10 KA ,240/415 V 50 Hz, B Series MCB of following capacity complete with necessary connection as specified and directed by the Deptt. (Ref. APWD schedule 2004-05 item no. 340)				
(a)	6 A , SP	74	each		
(b)	10 A, SP	7	each		
23	Supplying with fitting and fixing Single Pole 10 KA , 240/415 V 50 Hz, C Series MCB of following capacity complete with necessary connection as specified and directed by the Deptt. (Ref. APWD schedule 2004-05 item no. 341)				
(a)	16 A, SP	2	each		
(b)	32 A, SP	8	each		
24	Supplying with fitting and fixing SPN 10 KA, 240/415 V 50 Hz, C Series MCB of following capacity complete with necessary connection as specified and directed by the Deptt. (Ref. APWD schedule 2004-05 item no. 342)				
(a)	16 A , SPN	2	each		
(b)	32 A, SPN	7	each		
25	Supplying, fixing, of switch/socket (ISI marked of approved make) on the existing metallic board (Switch boards mentioned in item no.6.) including connections etc. complete . (Ref. APWD schedule 2004-05 item no. 158.)				
(a)	6 Amps flush type switch (one way)	71	each		
(b)	16 Amps flush type switch	7	each		
(c)	5 pin 6 Amps socket outlet	71	each		
(d)	5 pin 16 Amps socket outlet	7	each		
26	Supplying with fitting and fixing panel mounting open execution 35/36 KA 415 V 50 Hz 4P MCCB (without				

	enclosure) of the following capacity suitable for fitting in MCCB Incomer MCB DB complete with necessary connection as specified and directed by the Deptt. (Ref. rate analysis)				
(a)	80 A (O.L.R. range 60 - 80 A)	1	each		
27	Supplying, laying, drawing of following size XLPE insulated PVC sheathed 1.1 KV grade aluminium conductor LT armoured cable in 50 mm dia HDPE including supplying , laying and fixing of HDPE pipe on floor , wall, ceiling including digging of pucca floor (in ground floor) making hole in RCC floor (for raising the pipe and cable vertically), making good of the damaged floor etc. complete as directed by the Deptt. (Ref. rate analysis)				
(a)	25 sq.mm., 3 1 / 2 core	48	Mtr		
28	Providing Cable end termination for the following size XLPE Insulated PVC sheathed , 1100 V grade, aluminum conductor heavy duty armoured cable including supplying and fixing of approved make heavy single compression cable gland conforming to relevent IS code, supply and fixing of suitable size cable lugs etc. complete as directed. (Ref. CPWD schedule -external 2007 item no.4.1.20.)				
(a)	25 Sq.mm. , 3 1/2 Core	2	each		
29	Supplying and laying 6 S.W.G. bare copper wire on surface or in recess for loop earthing along with the cable run in HDPE pipe mentioned in item no.27. for loop earthing. (Ref. rate analysis)	104	Mtr		
30	Supplying and fixing of 20 mm PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recess conduit as required. (For loop earthing of the Steel bridges from DB). (Ref CPWD schedule 2007 item no. 1.21.1)	30	Mtr		
31	Providing and drawing 1 no 10 sq.mm. single core PVC insulated unsheathed copper conductor cable in existing recess/surface PVC conduit for loop earthing of the steel bridges. (Ref. rate analysis)	40	Mtr		
32	Installation of Earth Station with 600 mm x 600 mm x 6 mm thick (18 kg approx) G.I. earth plate including providing brick masonry chamber and hinged cover plate, watering pipe with funnel , G.I. bolts, nuts, check nuts etc. with salt (5 kg), charcoal (96 kg.) as required including excavation work and refilling complete. (Ref. APWD schedule 2004-05 item no 245.a + 245.c.) .	11	each		
33	Providing and fixing lightning conductor finial made of 25 mm dia 300 mm long G.I. tube having single prong at top with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required. (Ref. CPWD schedule 2007 item no. 4.2.)	4	each		
34	Riveting, sweating and slodering of G.I. tape (with another G.I. tape, base of the finial or any other metallic object) as required. (Ref. CPWD schedule 2007 item no. 4.4)	250	each		
35	Providing and fixing G.I. tape 20 mm x 3 mm thick on roof (Assam type ridged building roof) for lightning conductor complete as required. (for horizontal run). (Ref. CPWD schedule 2007 item no. 4.7)	343	Mtr		
36	Providing and fixing G.I. tape 20 mm x 3 mm thick on surface of wall for lightning conductor complete as required. (for vertical run). (Ref. CPWD schedule 2007 item no. 4.8)	247	Mtr		
37	Providing and fixing testing point made of 20 mm x 3 mm thick G.I. Strip 125 mm long with 4 nos of G.I. Bolts, nuts, check nuts and spring washer etc. complete as required. (Ref. CPWD schedule 2007 item no. 4.12)	11	each		
38	Providing and laying 32 mm x 6 mm thick G.I. strip from earth electrode directly on ground as required. (Ref. CPWD schedule 2007 item no. 4.14)	77	Mtr		