

**Volume-II**

**NATIONAL AGRI-FOOD BIOTECHNOLOGY INSTITUTE (NABI)**

(Department of Biotechnology,  
Ministry of Science and Technology, Govt. of India)  
Knowledge City, Sector-81, SAS Nagar, Mohali, Punjab

**FINANCIAL BID DOCUMENT**



**Misc. civil works at Main Campus, NABI,  
Knowledge City, Sector-81, Mohali**

# **TECHNICAL SPECIFICATIONS**

## **1.0 STANDARD SPECIFICATIONS TO BE FOLLOWED**

The work should be executed as per following CPWD specification and also the specification laid in tender document. In case, above specifications are not available for certain item, then the material should conform to ISI and BIS standards.

### **1.1 Civil Engineering Works**

CPWD Specification 2009 Vol. I & II along with latest correction slips. These Specifications have replaced CPWD Specifications 1996 along with Correction Slips issued on them. These Specifications cover all types of Works. The specifications are available as a printed document issued by CPWD and also in soft copy PDF Format in CPWD website.

### **1.2 Electrical Engineering Works**

- (A) CPWD General Specifications for Electrical Works Part I Internal - 2013.
- (B) CPWD General Specifications for Electrical Works Part II External - 1994.
- (C) CPWD General Specifications for Electrical Works Part IV Sub Stations – 2013.

The above specifications shall be read with upto date correction slips (if any).

## **(A) CIVIL WORKS**

### **WORKMANSHIP FOR THE ENTIRE PLUMBING WORK.**

The workmanship shall be best of its kind and shall conform to the specifications, as below or Indian Standard Specifications in every respect or latest trade practices and shall be subject to approval of the Engineer-in- Charge. All materials and/or Workmanship which in the opinion of the Engineer-in- Charge is defective or unsuitable shall be removed immediately from the site and shall be substituted with proper materials and/or workmanship forthwith.

## **WARRANTY AND HANDOVER**

The Contractor shall warrant that all plant, materials and equipment supplied and all workmanship performed by him to be free from defects of whatsoever nature before handover to the Engineer-in-Charge. All the Guarantee/Warranty certificates of all the items shall be in the name of Institute i.e., National Agri-Food Biotechnology Institute (NABI), Mohali.

## **HANDING OVER OF DOCUMENTS**

All testing and commissioning shall be done by the Contractor to the entire satisfaction of the Engineer-in- Charge and all testing and commissioning documents shall be handed over to the Engineer-in-Charge.

**NOTE: In case of any contradiction between the specifications, the contractor shall take the prior approval of the Engineer- In - Charge before executing the same at site.**

### **LIST OF MAKES TO BE ADOPTED**

S.No	Item	Make
1.	Cement	J K Lakshmi/ ACC/ Ultratech/ Ambuja
2.	Steel Reinforcement (TMT bars)	Tata/JSW Jindal/ Sail/Vizag
3.	Stainless Steel	Tata/Jindal/Apollo Tubes Ltd
4.	Mild steel work	Jindal/Apollo/Swasthik/Tata
5.	SS fittings	ISI marked
6.	Paint	Asian Paint/ Berger/ICI
7.	White Cement based putty	Birla White/JK Lakshmi
8.	Calcium Silicate False ceiling	Aerolite/Helix
9.	Aluminium	Jindal, Hindalco (Indal)/ Gulf extrusion/ Alualpha
10.	Gypsum Board	Saint Gobain / India Gypsum/Gypsonite
11.	Glass	Saint Gobain/Modiguard/Sparkle Glass India
12.	Vitrified tiles	Nitco/Johnson/Kajaria

**Note:-** Any other material make not mentioned shall be ISI marked & got approved from Engg-in-charge

**NAME OF WORK: - Misc. civil works at Main Campus, NABI**

**ABSTRACT SHEET**

<b>S.NO</b>	<b>PARTICULARS</b>	<b>AMOUNT (In INR)</b>
1	ESTIMATED VALUE OF WORK (INCLUSIVE OF TAXES, LABOUR CESS ETC)	Rs 26,38,845/-
2	PERCENTAGE (% AGE) QUOTE PLUS/MINUS (+/ -) BY BIDDER ON ESTIMATED AMOUNT (IN FIGURES)	
3	PERCENTAGE (% AGE) QUOTE PLUS/MINUS (+/ -) BY BIDDER ON ESTIMATED AMOUNT (IN WORDS)	
4	NET AMOUNT AFTER UN- CONDITIONAL PERCENTAGE REBATE OR QUOTE ABOVE ESTIMATED VALUE ((IN FIGURES)	
5	NET AMOUNT AFTER UN- CONDITIONAL PERCENTAGE REBATE OR QUOTE ABOVE ESTIMATED VALUE ((IN WORDS)	

Stamp & Signatures of bidder

## **B.O.Q FOR MISC. CIVIL WORKS AT MAIN CAMPUS, NABI**

	<b>Description of Item</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate</b>	<b>Amount</b>
1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, cost of dash fasteners , finishing of walls etc all complete as per architectural drawings and the directions of Engineer-in-charge.				
	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately). <b>The cost shall include any cost of taking out door/frame/handles etc, finishing doors, walls properly and shifting of same within campus to desired location instructed by Engg- in charge etc.</b>				
	Powder coated aluminium (minimum thickness of powder coating 50 micron)				
		KG	605.96	444.9	269591.604
2	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete				
	Upto 5mm depth and 5 mm width	Rmt	65	62.45	4059.25
3	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel iron red oxide primer, paint all complete.				
	Total	KG	2216.71	112.45	249268.8146
4	Providing and fixing IS : 12817 marked stainless steel butt hinges (heavy weight) with stainless steel screws etc. complete :				
	125x64x2.50 mm	Each	72	74.15	5338.8
5	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
	In cement mortar	cum	0.7291	842.75	614.449
6	Dismantling stone slab flooring laid in cement mortar including stacking of serviceable material and disposal of unserviceable material within 50 metres lead	sqm	1.902	109.35	207.984

<p>Providing and fixing stainless steel ( Grade 304) window grill, kitchen storage shelf made of solid rods, channels, sheets, plates, angle etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing with necessary accessories &amp; stainless steel dash fasteners , stainless steel bolts etc., of required size, as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)</p>				
	KG	2017.36	472.4	953002.3757
<p>Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main "T" runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross "T" of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main "T" at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to form grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calicum silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening"for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main "T" runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main "T", bottom exposed with 24 mm of all Tsections shall be pre-painted with polyster baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge.</p>				
	sqm	185.812	1497.90	278327.7948

<p>Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at Code Description Unit Rate No. SUB HEAD : 12.0 ROOFING 215 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts &amp; bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :</p>				
<p>9 12.5 mm thick tapered edge gypsum moisture resistant board</p>	sqm	101.25	958.65	97063.3125
<p>10 Providing and fixing of Stainless steel wire mosquito net in Grade-304 with 0.50 mm dia wire including cutting, moulding, stretching to prevent sags, wastage, transportation, labour , profits, fixing accessories etc complete in all aspects in Aluminium doors.</p>	SQM	41.76	988.9425	41298.239
<p>11 Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours &amp; shade, in skirting, riser of steps, wall cladding, dados over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joint with white cement &amp; matching pigments etc. complete.</p>	sqm	3.84	1135.2	4359.168



12	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
	Granite of matching colour , shade with existing one				
	Area of slab upto 0.50 sqm	sqm	4.64	3351.95	15553.048
13	Labour charges for fixing of puff panel walls, ceiling with utilization of existing 100 mm thick pre-painted galvanized Iron puff panels, view panels including the cost of shifting from storage space, cutting, jointing with silicon,cleats/bottom profile , angle profiles, complete in all aspects. The joints should be sealed properly with silicon etc for prevention of any water seepage. The ceiling, wall cutouts should be packed with puff panels with the use of suitable channel, strips , silicon etc.				
		sqm	27.0	241.5	6520.5
14	Labour charges for fixing of 12mm existing toughened glass door along with existing fittings etc complete in all aspects including cutting in floor for floor spring, cost of silicon, screws/fastners etc.	sqm	2.5	550	1375.0
15	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge	sqm	1.35	1454.55	1963.6425
16	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.	KG	550	2.4	1320.0
17	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	KG	183.333	67.6	12393.33
18	Providing and fixing of heavy duty lockable SS body 75mm dia wheels capable of bearing weight of more than 120 Kgs.	each	8	250.0	2000.0
19	Providing and fixing of foldable handle in stainless steel 4" along with screws, drilling etc complete in all aspects.	each	20	161.345	3226.9
20	Providing and fixing of stainless steel tower bolts 10" along with screws, etc complete in all aspects	each	52	229.1099	11913.7148
21	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	cum	1.512	6215.35	9397.6092

22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	45	56.6	2547.0
23	Manufacturing, supplying and fixing retro reflective overhead signage boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type - III of ASTM-D-4956-01 as approved by Engineer-in-charge, letters, borders etc. as per IRC : 67-2001 in silver white with blue colour back ground and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class II of ASTM-D-4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminium alloys, rivets or bolts & nuts @ 300 mm centre to centre all along the periphery as well as in two vertical rows along with theft resistant measures, including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminium sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawings, specification and direction of the engineer-incharge.(Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment).				
	Informatory signage	sqm	20	4722.2	94444.0
24	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
	Two or more coats applied @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr /10 sqm	sqm	101.25	98.95	10018.69
25	Providing and fixing of Stainless Steel SS 304 plate of thickness 1 mm including of incorporation of letters by means of etching in approved colour , design, including pasting on glass with silicon or SR 998 adhesive and pasting of colours vinyl print of same size to cover adhesive on backside with colour environment friendly message written on it as approved by Engg- in-charge etc complete in all aspects. In case, the plate is to fixed on wall, wooden door etc , it should be fixed with SS studs and if it is ceiling mounted, it should be hanged with the help of SS chains of approved height in proper plumb . For any double sided etching , payment shall be made once for plate size. The cost should include the wastage, cutting, etching, labour , material , transportation,profits etc. In case, any other backing material is required for fixing on wall etc should be provided within quoted rates. Sample shall be provided for approval.	square inch	27000	19.88566	536912.93
	<b>Sub- Total</b>				<b>2612718.154</b>
	Add 1 % labour cess				26127.182
	<b>Net Total Amount</b>				<b>2638845.336</b>

**NOTE: - Payment shall be released item wise based on actual measurement examined at site by Engineer- In- Charge.**

Signature/Stamp of Bidder