

TRIBAL RESEARCH INSTITUTE

Tura, West Garo hills district, Meghalaya

ESTIMATES (PHASE II)



client

Directorate of Art & Culture,
Government of Meghalaya (DAC)

submitted by



archohm consults pvt. ltd
c 28c sector 8
noida

ESTIMATE

Government of Meghalaya			
Name of Work :- Tribal Research Institute,Tura, Meghalaya			
Grand Summary - Phase -02			
S. no	Description		Amount
1	Total of Civil & Finishing Works	Rs.	17,91,06,835.10
2	Total of Plumbing Works	Rs.	94,07,702.43
3	Total of Fire Fighting Works	Rs.	46,54,761.00
4	Total of Electrical Works	Rs.	2,13,24,111.00
5	Total of Hvac Works	Rs.	74,00,921.00
6	Total of AV Works	Rs.	60,93,788.25
(A)	TOTAL OF WORK		22,79,88,118.78

ESTIMATE
OF CIVIL&FINISHING WORKS

<u>SUMMARY (CIVIL & FINISHING WORKS)</u>		
<u>S. No.</u>	<u>ITEM OF CIVIL WORK</u>	<u>AMOUNT</u>
1	ACADEMIC BLOCK	17,44,21,237.72
2	EXTERNAL DEVELOPMENT	46,85,597.39
	TOTAL OF CIVIL & FINISHING WORKS	17,91,06,835.10

<u>SUMMARY (ACADEMIC BLOCK)</u>				
<u>S. No.</u>	<u>ITEM OF CIVIL WORK</u>	<u>AMOUNT</u>		
1.00	Chapter – 1 - Earth Work	Rs.	10,65,899.88	/-
2.00	Chapter – 2 - Cement Concrete Works	Rs.	10,40,27,260.47	/-
3.00	Chapter – 3 - Flooring Works	Rs.	3,23,91,228.44	/-
4.00	Chapter – 4 - Masonry Works	Rs.	9,93,931.72	/-
5.00	Chapter – 5 - Plastering Works	Rs.	2,53,642.58	/-
6.00	Chapter – 6 - Ceiling, Wall Lining and Partition Works	Rs.	20,62,476.96	/-
7.00	Chapter – 7 - Roofing Works	Rs.	12,68,807.03	/-
8.00	Chapter – 8 - Wood Work	Rs.	18,53,700.88	/-
9.00	Chapter – 9 - Aluminium Work	Rs.	42,05,855.80	/-
10.00	Chapter – 12 - Door and Window Fittings	Rs.	3,80,460.00	/-
11.00	Chapter – 19 - Plinth Protection and Drains	Rs.	1,76,441.44	/-
12.00	Chapter – 22 - Water Proofing and Roof Treatment	Rs.	20,44,287.03	/-
13.00	Chapter – 24 - Anti-Termite Treatment Works	Rs.	18,71,476.40	/-
14.00	Market Rate Items	Rs.	2,18,25,769.07	/-
Total		Rs.	17,44,21,237.72	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
1.00	1.0	Chapter – 1 - Earth Work					
1.01	1.1	Earthwork in excavation upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils.					
		In ordinary soil	2,267.29	Cum	179.00	4,05,844.91	/-
1.02	1.1.1	Extra over item no.1.1 above for each 1m depth or part thereof beyond the initial depth of 2m	1,890.57	Cum	77.00	1,45,573.89	/-
1.03	1.4	Earthwork in filling including necessary carriage, watering, ramming etc. complete as directed and specified.					
	1.4.1	Earth/ Sand filling in plinth in layers not exceeding 150mm thick					
	(a)	With earth/stone dust obtained by carriage upto 8 km	297.36	Cum	811.00	2,41,159.50	/-
	(b)	With available excavated earth including breaking of clods, consolidating each layer by ramming and watering with all lead and lifts.	1,301.53	Cum	210.00	2,73,321.58	/-
		Total Earth Work :				10,65,899.88	
2.00	2.0	Chapter – 2 - Cement Concrete Works					
2.01	2.1	Plain cement concrete works with coarse aggregate of sizes 13mm to 32mm in foundation bed for footing steps, walls, brick works etc. as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately).					
		In prop. 1:4:8 (1 cement:4 coarse sand : 8 coarse agg. by volume (using mixture machine)	297.66	Cum	5,900.00	17,56,194.00	/-
2.02	2.2	Plain cement concrete floor base in prop 1:3:6 laid in alternate bays as specified with coarse aggregate of size 13mm to 32mm including dewatering if necessary, and curing etc. complete.					
		100 mm thick in prop 1:3:6	297.36	Sqm	684.00	2,03,394.70	/-
2.03	2.3	Providing and laying 25mm thick damp proof course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturer including curing etc. complete as directed.	238.33	Sqm	274.00	65,302.42	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
2.04	2.6	Providing and laying Concrete in Reinforced Cement Concrete Works Using Batching Plant/ RMC/ Truck mounted batching plant including Transit Mixer and Concrete Pump with coarse sand & 20mm down graded stone aggregate including dewatering if necessary, and curing complete with all necessary laboratory tests etc. but excluding cost of form work and reinforcement for reinforced cement concrete work (form work and reinforcement will be measured and paid separately). (Without using admixture, plasticiser)					
		RCC Grade M35	3,687.65	Cum	12,567.00	4,63,42,697.55	/-
2.05	2.8	Supplying, fitting and fixing in position reinforcement bars upto 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurements for the same is required)					
	a)	From Primary Sources like TATA/ SAIL/ ESSAR/ JINDAL/ SHYAM/ RINL					
	(i)	TMT Corrosion resistant steel (CRS) reinforcement bar	4,361.48	Qntl	9,618.00	4,19,48,666.55	/-
2.06	2.90	Extra over item 2.8 (a, b, c) above for each subsequent floor or part thereof above first floor level.	2,543.52	Qntl	114.00	2,89,961.28	/-
2.07	2.10	Providing form work of ordinary timber planking of thickness not less than 25mm and removal of the same for concrete members so as to give a rough finish including centering, shuttering, strutting and propping etc., for height of propping and centering of supporting floor to the soffit of the concrete member not exceeding 4.0M as specified for the following items:					
	a)	Foundation, footings, bases of columns, pile cap, raft and mass concrete works etc.	333.00	Sqm	350.00	1,16,550.00	/-
	g)	Vertical surface such as walls (any thickness), parapet walls, partitions, walls of septic tank, inspection pit etc. including attached pilasters, buttresses, plinth and string courses and the like.	404.80	Sqm	479.00	1,93,899.20	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
2.08	2.11	Providing form work of 12mm thick Plywood Board and removal of the same for concrete members so as to give a rough finish including centering, shuttering, strutting and propping etc., for height of propping and centering of supporting floor to the soffit of the concrete member not exceeding 4.0M as specified for the following items:					
	(a)	Columns, Pillars, Posts & Strut of square/ rectangular/ polygonal in plan or any shape like Tee/L etc. having plane vertical face	194.00	Sqm	623.00	1,20,862.00	/-
	(b)	Sides and Soffits of Beams, beam haunchings, cantilever girders, bressumers, lintels and horizontal ties. For depth exceeding 1.0M.	5,032.30	Sqm	591.00	29,74,089.30	/-
	(c)	Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajjas, balconies and the like. Floors etc. upto 200mm in thickness.	3,558.08	Sqm	644.00	22,91,403.67	/-
	(d)	Vertical surface such as walls (any thickness), parapet walls, partitions and the like including attached pilasters, buttresses, plinth and string courses and the like.	11,014.00	Sqm	530.00	58,37,420.00	/-
	(e)	Staircase with sloping or stepped soffits including risers and stringers but excluding Landing.	644.07	Sqm	646.00	4,16,069.22	/-
	(f)	Extra for each subsequent 1.0M height or part thereof beyond the initial height of 4.0M as mentioned in item no. 2.11	15,268.96	Sqm	80.00	12,21,516.76	/-
2.09	2.5.3	In Columns, pillars, posts, struts, suspended floor, roof, landing, shelf and support, balcony, lintel, sill band, beam, girder, bressumer, cantilever, staircase etc. above plinth level upto 1st floor level. (Without using admixture, plasticiser)					
		M15 or Prop. 1:2:4 (For Non-structural Works)	0.41	Cum	7,977.00	3,270.57	/-
2.10	DSR 2018/ 5.43	Providing and fixing in position Stainless steel Grade 304 plate-1.0 mm thick as per design for expansion joints.					
	DSR 2018/ 5.43.1	200 mm wide.	39.00	metre	711.90	27,764.10	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
2.11	DSR 2018/ 5.44	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical localtion in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self- centering arrangement that freely rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions					
	DSR 2018/ 5.44.1	Floor Joint of 100 mm gap	39.00	metre	5,594.85	2,18,199.15	/-
		Total Cement Concrete Works :				10,40,27,260.47	
3.00	3.0	<u>Chapter – 3 - Flooring Works</u>					
3.01	3.42	Providing polished granite slab of approved quality, size, shape and thickness not less than 18 mm on floors, skirting, treads and risers of steps over cement mortar bed 15 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile Choksey/Sika/Pidilite/Rouf) /white cement slurry mixed with approved pigment to match the shade of granite slab, complete at all levels as specified and directed. (Cement plastering to be measured and paid separately). (Coloured pigment should be in conformity with colour of slab and as approved and directed by the Department).					
		Executive Quality	753.42	Sqm	6,310.00	47,54,060.42	/-
3.02	3.31	Kota-stone slab flooring of 18 mm thick over 20mm thick base of cement plaster 1:6 (1 cement : 6 coarse sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete.					
		Slab above 0.4sq.m. size	2,729.18	Sqm	2,169.00	59,19,586.00	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.03	3.32	Kota stone slab of 18 mm thick in riser of steps, skirting, dado and pillars laid with 10mm thick cement plaster 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs including rubbing and polishing complete.					
		Slab above 0.4sq.m. size	409.38	Sqm	2,286.00	9,35,834.96	/-
3.04	3.14	Wooden planking in flooring including fixing to wooden frame with iron screws complete (base of the wooden frame to be measured and paid separately.)					
		38mm thick Teak wood plank	1,354.94	Sqm	4,773.00	64,67,123.70	/-
3.05	3.27	Providing VITRIFIED floor tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality of specified size, shape and thickness not less than 18mm on floors, skirting, risers and treads of steps over 15 mm thick base of cement mortar in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey/Sika/Pidilite/Rouf) / white cement slurry mixed with approved pigment to match shade of tiles, mixed with approved pigment to match the shade of the tiles, complete at all levels as specified and directed. (Cement plastering to be measured and paid separately). (Coloured pigment should be in conformity with colour of tiles and as approved and directed by the Department)					
		Premium range	260.00	Sqm	2,434.00	6,32,841.95	/-
3.06	3.28	Providing polished VITRIFIED wall tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8mm on walls and skirting over cement mortar bed 10 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey / Sika / Pidilite / Rouf) or white cement slurry mixed with approved pigment to match shade of tiles complete at all levels as specified and directed. (Cement plastering to be measured and paid separately).					
		Premium range	522.41	Sqm	2,564.00	13,39,455.65	/-
3.07	3.55	Providing, Supplying, fitting, fixing and laying of dressed stone block walling and tile slab (Cherra/local stone block) laid on 25mm thick base in cement mortar 1:3 and jointed with grey cement slurry including clearing, rubbing etc. complete as directed.					
	C)	Size 300mm x 150mm x 50mm	22.14	Sqm	2,663.00	58,958.82	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.08	3.44	Providing and placing Bamboo Floor tiles of size 920mm x 100mm x 15mm of natural colours Maisang product pvt ltd. make or equivalent with natural colours over existing finish concrete levelled floor including joint free, size, shape and thickness not less than 15mm on Floors, Treads, Risers, Skirting complete as directed	69.04	Sqm	4,837.00	3,33,940.43	/-
3.09	3.46	Providing & fixing in position Phenol bonded volatile organic compound compliant, 14mm thick Bamboowood Wall Skirting conforming to IS:13745-1993, made out of Eco friendly Epitome Bamboowood or equivalent in approved variant & colours / finishes of size 1900mm x 85mm having density of 1000 Kg/cum to 1250 Kg/cum & Hardness 1000 Kgf to 1500 Kgf, skirting and accessories finished with UV coating, with under layer of 4mm 40 density EPE (expanded poly ethylene) foam under skirting fixing with screws and rawl complete as specified and directed by Engineer.	655.58	Sqm	8,352.00	54,75,368.66	/-
3.10	DSR 2018/ 11.55	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :					
	DSR 2018/ 11.55.1	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	1,848.76	Sqm	2,476.45	45,78,350.56	/-
	DSR 2018/ 8.2	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.					
	DSR 2018/ 8.2.2	Granite of any colour and shade					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.11	DSR 2018/ 8.2.2.1	Area of slab upto 0.50 sqm	8.16	Sqm	4,217.35	34,413.58	/-
3.12	DSR 2018/ 8.2.2.2	Area of slab over 0.50 sqm	18.01	Sqm	4,007.65	72,164.10	/-
3.13	DSR 2018/ 8.3	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					
	DSR 2018/ 8.3.2	Granite work	27.20	metre	376.25	10,234.00	/-
3.14	DSR 2018/ 8.4	Extra for fixing marble /granite stone, over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive, including cleaning etc. complete.	37.78	metre	434.25	16,406.83	/-
3.15	DSR 2018/ 8.5	Extra for providing opening of required size & shape for wash basin/kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	35.00	each	734.55	25,709.25	/-
3.16	DSR 2018/ 8.10	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.					
	DSR 2018/ 8.10.2	Granite Stone of approved shade	20.40	Sqm	3,216.90	65,624.76	/-
3.17	Analysed on DSR	Granite stone slab 18 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete.	457.00	Sqm	3,248.00	14,84,319.76	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.18	3.25	Providing Ceramic Tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8 mm on floors, skirting, treads and risers of steps over cement mortar bed 15 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with fix-A Tile Choksey/ Sika/ Pidilite/ Rouf/ White cement slurry mixed with approved pigment to match the shade of tiles, complete at all levels as specified and directed (cement plastering to be measured and paid separately).					
	3.25.1	Normal range (sizes 300mmx300mm and above)					
	(a)	Premium Range	32.50	Sqm	1,078.00	35,035.00	/-
3.19		Providing polished ceramic wall tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8mm on walls and skirting over cement mortar bed 10 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey / Sika / Pidilite / Rouf) or white cement slurry mixed with approved pigment to match shade of tiles complete at all levels as specified and directed. (Cement plastering to be measured and paid separately).					
		Executive range- 1 (Sizes 200 mm x 300mm and above)					
	(a)	Premium Range	132.00	Sqm	1,150.00	1,51,800.00	/-
		Total Flooring Work :				3,23,91,228.44	
4.00	4.0	Chapter – 4 - Masonry Works					
4.01	4.16	Autoclave Aerated Concrete Block work using AAC block conforming to IS-2185 (Part-III) in cement mortar in prop 1:5 (1 cement: 5 sand) including racking out joints and curing complete as per specification and as directed.					
	a)	In Sub-structure upto plinth level including dewatering if necessary					
	iii)	AAC Blocks of size 600mm x 200mm x 150mm	7.20	Cum	8,341.00	60,055.20	/-
4.02	b)	In superstructure above plinth level up to 1st floor level.					
	iiii)	AAC Blocks of size 600mm x 200mm x 150mm	89.55	Cum	8,104.00	7,25,701.45	/-
4.03	c)	Extra over item no. 4.16 above for AAC Block work in each subsequent floor or part thereof above 1st floor level.	3.03	Cum	295.00	893.85	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
4.04	4.19	125mm thick wall using Autoclave Aerated Concrete Block (AAC block) conforming to IS-2185 (Part-III) in cement mortar in prop 1:5 (1 cement : 5 sand) including racking out joints and curing complete as per specification and as directed in super structure above plinth up to 1st floor level (protruding rod is to be provided at every 3 course interval and will be measured and paid separately).	115.63	Sqm	1,100.00	1,27,193.00	/-
4.05	4.21	Extra for AAC Block walling for each subsequent floor or part thereof above the 1st floor level over Item No. 4.17, 4.18, 4.19 & 4.20 above.	39.29	Sqm	26.00	1,021.54	/-
4.06	4.2	Filling sunken floor with broken brick bats/ Stone aggregates and sand including compacting and supplying of materials complete as specified and directed for all levels.					
		brick bats	21.89	Cum	3,300.00	72,237.00	/-
4.07	4.2.1	Extra cost for lifting of brickbats/Stone soling and sand for filling of sunk floor for each subsequent floors above the ground floor as directed and specified.	21.89	Cum	312.00	6,829.68	/-
		Total Masonry Works :				9,93,931.72	
5.00	5.0	Chapter – 5 - Plastering Works					
5.01	5.1	10 mm thick Cement plaster in single coat on fair side of brick/concrete walls for interior plastering up to 1st floor level including arises or rounded angles not exceeding 80mm girth and finished even and smooth including curing complete as directed.					
		In cement mortar 1:6	685.02	Sqm	173.00	1,18,508.10	/-
5.02	5.8	Extra over item no 5.1 to 5.7 for interior plastering above 1st floor level for every addl. floor or part thereof including curing complete as directed.					
		On two coat plaster	1.00	Sqm	12.00	12.00	/-
5.03	5.8	Extra over item no 5.1 to 5.7 for exterior plastering up to a height of 1st floor level above ground level including curing complete as directed.					
		On two coat plaster	1.00	Sqm	7.00	7.00	/-
5.04	15.35	Providing surface preparation for walls, ceiling etc. using average 2 mm thick plaster of paris including clearing, rubbing with sand paper, filling gaps, depression etc. where necessary, with chalk powder and plaster of paris paste, making the surface even and smooth complete at all levels as specified and directed.	162.61	Sqm	317.00	51,547.15	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
5.05	15.40	Wall painting (two coats) with acrylic emulsion paint approved brand and manufacture (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac) on new surface to give an even shade after thoroughly brushing the surfaces free from mortar droppings and other foreign matter and sand papered smooth.	162.61	Sqm	215.00	34,961.00	/-
5.06	15.41	Extra over item no 15.40 above for every subsequent coat of wall painting with acrylic emulsion paint of approved brand and manufacture (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac).	162.61	Sqm	150.50	24,472.70	/-
5.07	DSR 2018/ 13.114	Melamine polishing on wood work (one or more coat).	217.92	Sqm	110.75	24,134.64	/-
Total Plastering Work :						2,53,642.58	
6.00	6.0	<u>Chapter - 6 : Ceiling, Wall Lining and Partition Works</u>					
6.01	DSR 2018/ 12.21	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design					
	DSR 2018/ 12.21.1	In 75x75 mm deep chase	185.93	metre	237.25	44,111.89	/-
6.02	DSR 2018/ 12.22	Making khurras 45x45 cm with c.c. 1:2:4 average 5 cms thick including supply of all materials, labour, T and P etc. required for proper completion of work.	2.00	each	244.05	488.10	/-
6.03	6.21	Providing and fixing wood plank ceiling with tongued and grooved joint leaving a gap of 10 mm as per drawing including necessary nails & wood screws complete (Timber frame work to be measured and paid separately					
		Teak wood plank (20mm thick)	552.00	Sqm	2,656.00	14,66,124.08	/-
6.04	DSR 2018/ 12.52	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x 1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.					
	DSR 2018/ 12.52.1	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.	260.00	Sqm	1,504.45	3,91,158.20	/-
6.05	8.1	Providing dressed wood work in post, walls, battens, post plate bressumers etc. including supplying and fixing with spikes, nails, bolt and nuts of 12mm dia(M.S) and required length etc. complete with kiricide oiling two coats to faces in contact with C.C or masonry (M.S flats, angle cleats and bolt and nuts required for flats, angle cleats wherever use shall be measured and paid separately).					
	(a)	With 1st Class Local timber (Pooma/Hollock/ Oak/ Gamari /Diengrai and the like)	1.38	Cum	1,16,372.00	1,60,594.68	/-
Total Ceiling, Wall Lining and Partition Works :						20,62,476.96	
7.00	7.0	Chapter – 7 - Roofing Works					
7.01	7.13	Providing thatch roofing with sun grass (Ullo) in layer of 75 mm thick with half spilt bamboo fillet and tying with galvd. wire complete as directed.					
	a)	150 mm thick.	4,211.56	Sqm	292.00	12,29,775.75	/-
7.02	7.14	Providing and laying thatching, capping to ridge and hip with new sun grass of 75 mm thick (fine work) stiffened with bamboo slips of size 30mm x 6mm and tied with galvd. tying wire complete as directed.	534.68	metre	73.00	39,031.28	/-
Total Roofing Works :						12,68,807.03	
8.00	8.0	Chapter – 8 - Wood Work					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
8.01	8.2	Providing wood work in frame (chowkats) of doors, windows, clerestory windows and other similar works wrought, framed and fixed in position in contact with C.C or brick masonry wall including supplying, fitting and fixing with M.S. hold fast (40mmx3mmx250mm) as per design embedded in cement concrete block in proportion 1:2:4 and with two coats of kiricide oiling to the timber faces in contact with C.C and masonry as directed and specified.					
		With Sal wood	1.54	Cum	1,26,200.00	1,94,206.03	/-
8.02	8.29	Providing and fixing flush door shutters solid core construction with frame of 1st class hard wood with cross band and face veneered ply wood face panels conforming to relevant I.S code including oxidised iron butt hinges (100mm x 75mm x 3.5mm) with necessary wood screws.					
		Non-decorative type face panels and block board core 35 mm thick	108.96	Sqm	4,190.00	4,56,542.40	/-
8.03	8.15	Providing 1st Class Local timber (Pooma/ Hollock/ Oak/ Gamari/ Diengrai and the like) ventilating louvre in 50mm x 38mm size wooden frame with 150mm x 20mm slate made of 1st class local wood including fitting and fixing with nails and painting with two coats of kiricide oiling complete.	275.22	Sqm	3,022.00	8,31,714.84	/-
8.04	DSR 2018/ 9.23	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	108.96	Sqm	401.40	43,736.54	/-
8.05	DSR 2018/ 8.29	Providing and fixing 4mm thick coir veneer board, ISI marked IS : 14842, plain lining with necessary screws, priming coat on unexposed surface etc., complete.	217.92	Sqm	1,502.85	3,27,501.07	/-
		Total Wood Works :				18,53,700.88	
9.00	9.0	Chapter – 9 - Aluminium Work					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
9.01	DSR 2018/ 21.1	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, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :					
	DSR 2018/ 21.1.1	For fixed portion					
	DSR 2018/ 21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	3,529.04	Kg	456.30	16,10,300.95	/-
9.02	DSR 2018/ 21.1.2	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)					
	DSR 2018/ 21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	1,020.00	Kg	546.35	5,57,277.00	/-
9.03	DSR 2018/ 21.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):					
	DSR 2018/ 21.3.2	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/ sqm)	81.60	Sqm	1,296.40	1,05,786.24	/-
9.04	DSR 2018/ 21.8	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.					
	DSR 2018/ 21.8.1	Upto 5mm depth and 5 mm width	630.00	rm	79.45	50,053.50	/-
9.05	DSR 2018/ 21.16	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge					
	DSR 2018/ 21.16.2	Powder coated minimum thickness 50 micron aluminium	48.00	Each	83.60	4,012.80	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
9.06	DSR 2018/ 21.15	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete					
	DSR 2018/ 21.15.2	Powder coated minimum thickness 50 micron aluminium	48.00	Each	71.55	3,434.40	/-
9.07	DSR 2018/ 21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double action hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	104.76	Sqm	4,447.90	4,65,962.00	/-
9.08	DSR 2018/ 21.12	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.					
	DSR 2018/ 21.12.2	Powder coated minimum thickness 50 micron aluminium tubular handle bar	28.00	each	562.60	15,752.80	/-
9.09	Analysed on DSR	Providing and fixing 12mm thick toughened glass in Aluminium frame work including sealing with EPDM / Neoprene gasket all complete as per the architectural drawings and the directions of engineer-in-charge	345.97	Sqm	3,136.00	10,84,961.92	/-
9.10	DSR 2018/ 10.25	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					
	DSR 2018/ 10.25.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	1,277.58	Kgs	131.00	1,67,362.98	/-
9.11	DSR 2018/ 10.27	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm ²), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.					
(a)	DSR 2018/ 10.27.2	10 x 80 mm	160.00	Each	109.00	17,440.00	/-
(b)	DSR 2018/ 10.27.4	10 x 140 mm	848.00	Each	145.65	1,23,511.20	/-
		Total Aluminium Works :				42,05,855.80	
10.00	12.0	<u>Chapter – 12 - Door and Window Fittings</u>					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
10.01	12.4	Supplying, fitting, fixing Stainless Steel fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes for screws including necessary C.P. brass screws etc. complete. (bright natural matt & satin finished)					
a)	a)	Sliding Door Bolt					
	ii)	250x16 mm	60.00	Each	359.00	21,540.00	/-
b)	b)	Tower Bolt					
	i)	250x10 mm	57.00	Each	444.00	25,308.00	/-
	ii)	150x10 mm	52.00	Each	258.00	13,416.00	/-
c)	c)	Door Handle					
	iii)	150mm	114.00	Each	232.00	26,448.00	/-
d)	e)	Butt hinge					
	i)	125mm x 50mm x 2.5mm	240.00	Each	414.00	99,360.00	/-
10.02	12.3	Supplying, fitting, fixing brass fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes for screws including necessary C.P. brass screws etc. complete. (bright natural matt & satin finished)					
	(o)	Mortice Locks cylindrical type (Godrej make polished brass)	30.00	Each	1,703.00	51,090.00	/-
10.03	12.7	Providing, fitting and fixing Heavy duty Door Closer (Godrej make) of size 180mm x 65mm x 64mm complete as specified and directed by the department.	57.00	Each	2,514.00	1,43,298.00	/-
		Total Door & Window fittings :				3,80,460.00	
11.00	19.0	<u>Chapter = 19 : Plinth Protection and Drains</u>					
11.01	19.1	Plinth Protection by providing 50mm thick Cement Concrete base in prop 1:3:6 (1 cement:3 coarse sand : 6 coarse agg. of 20mm nominal size) with a layer of 10mm thick cement plaster in prop 1:3 and finishing with a floating coat of neat cement including necessary levelling and preparing the subgrade complete as directed	335.44	Sqm	526.00	1,76,441.44	/-
		Total Plinth Protection and Drains work :				1,76,441.44	
12.00	22.0	<u>Chapter = 22 : Water Proofing and Roof Treatment</u>					
12.01	DSR 2018/ 22.1	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of :					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		(i) 1st layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound.					
		(ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. (iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cum/sqm thoroughly embedded in the 2nd layer.					
	DSR 2018/ 22.1.1	Using rough kota stone.	122.31	Sqm	1,353.70	1,65,571.05	/-
12.02	DSR 2018/ 22.2	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :					
	DSR 2018/ 22.2.1	Using rough kota stone.	183.60	Sqm	1,738.00	3,19,096.80	/-
12.03	DSR 2018/ 22.26	Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.	140.20	metre	552.20	77,418.44	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
12.04	DSR 2018/22.3	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:					
		(i) Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.					
		(ii) IInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.					
		(iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area.					
		(iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).	145.91	Sqm	705.70	1,02,972.07	/-
12.05	DSR 2018/22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment.					
		(b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		(c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin- charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep.					
		(e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test."All above operations to be done in order and as directed and specified by the Engineer-in-Charge :					
	DSR 2018/ 22.7.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	986.22	Sqm	1,398.50	13,79,228.67	/-
		Total Water Proofing work :				20,44,287.03	
13.00	24.0	Chapter = 24 : Anti-Termite Treatment Works					
13.01	24.1	Pre-construction anti - termite treatment at the bottom of foundation pits and walls on either side up to a height of 300mm from bottom of the excavation made for column plinth beam, wall, trenches etc. by applying the emulsion @ 5 (five) litres per square meter of the surface area before starting construction work (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.					
		With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.	2,812.30	Sqm	211.00	5,93,394.88	/-
13.02	24.2	Pre-construction anti - termite treatment in the back fill in immediate contact with the foundation structure after completion, column, wall etc. to a depth of 450mm and width 300mm (when required refill in 200mm thick layers) applying the emulsion @ 5 (five) litres per square meter towards the concrete and masonry walls so as to ensure earth in contact with the structure well treated - with chemical (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.	2,532.00	Sqm	186.00	4,70,952.00	/-
13.03	24.3	Pre-construction anti-termite treatment by applying in the entire levelled area after plinth filling and before laying floor by applying the emulsion @ 5 (five) litres per square meter of the surface to be spread with light rodding so as to ensure proper absorption by the filled up earth (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.					
		With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.	2,812.30	Sqm	287.00	8,07,129.53	/-
		Total Anti-Termite Treatment Works :				18,71,476.40	
14.00	MR	Market Rate Items					
14.01	MR	Supply & fixing Wooden Fire Cum Acoustic Door of 77mm thick Non-metallic, Asbestos Free Acoustic cum fire/smoke door of 120 minutes fire rating, suitable to achieve approx. 38db, sound reducing properties suitable for fixing in wooden door frame of suitable section 140X70mm made out of Hardwood (Red Mirandi) and the shutter comprising of 2 non -combustible boards sandwiching 41 mm thick fire resistant & acoustic insulation filler. The shutter is faced with 6mm thick commercial ply and 1mm thick Laminate (as per approved shade) on both faces and Hard wooden lipping all around the shutter. The frame shall be fitted with fire & smoke intumescent seal of size 20 x 4mm on all the three sides except bottom and shutter shall be fitted with fire & smoke intumescent seal of size 20 x 4mm on all the three sides except bottom. The door shall have suitable arrangement for Acoustic seals for sound reduction properties. The shutter to be fitted with the frame with the help of ss ball bearing hinges of size 100x75xslide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in Fire Door Fitting	28.80	Sqm	18,996.10	5,47,087.69	/-
i)	MR	Providing and fixing Stainless steel satin finish SS 304 grade BB Hinges of Size 100 x 75 x 3 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'	48.00	Each	284.94	13,677.19	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
ii)	MR	Providing and fixing Door Closer with Std Arm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'	12.00	Each	2,295.36	27,544.35	/-
iii)	MR	Providing and fixing Dead Lock with 90 mm Cylinder BSK for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'	6.00	Each	3,086.87	18,521.20	/-
iv)	MR	Providing and fixing Stainless steel satin finish SS 304 grade D Type Pull Handle of Size 300 x 19 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'	24.00	Each	831.08	19,945.91	/-
v)	MR	Providing and fixing Anchor Fastners of Size M10 X 100 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'	48.00	Each	79.15	3,799.22	/-
vi)	MR	Providing and fixing Fire / Smoke Seal of Size 20 x 4 mm for Frame except bottom for Fire wooden doors of approved make all complete as per the directions of Engineer-in-charge'	40.80	metre	215.86	8,807.28	/-
14.02	MR	Supply and fixing Audi Chair MODEL:- VENUS Seat Assembly: The seat assembly shall be 1.2± 0.1 cm thick flat plywood with molded polyurethane foam & shall be upholstered with 3 layered foam laminated fabric. Upholstery: The seat profile shall be developed to help the user to get necessary comfort in popliteal region and ease of use in forward push for seat sliding feature. Seat: size- 440mm. (W) x 430 mm (D) x 140 mm (T) at front edge and 80 mm at rear edge. Seat frame of ERW Tube / IS :3074-2005 GRADE 1-20 mm square Pipe 1.2 mm OR Mild Steel of size 20 X 5 mm flat " C " bend type. The chair should be placed centre to centre at 550 – 565 mm. Total height of the chair from the floor level shall be 980 -1010 mm and 610 mm from the arm height 445-460 mm. Seat shall be Auto tip with a height of 482 mm. Back: Back Rest frame of 80X 40 ERW Tube conforming to IS : 4923 Rectangular Pipe of 1.6 mm OR Mild Steel of size 25 X 3 mm flat bend as per ergonomic contour " S " bend to suit the body shape and Mild Steel of size 20 X 5 mm flat " C " bend type with cross flat of 12 x 3 mm running across the frame. HRCA / CRCA Sheet Metal / IS:					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		<p>Total height of the chair from the floor level will be 980 - 1010 mm.. The back foam will be designed with contoured lumbar support for upright and tilted conditions. The seat & back frame should be nicely covered with PPCP tray with 3 to 4 mm minimum wall thickness. It should comply to sound acoustic properties.</p> <p>Spacing: The spacing from back to back shall be 1000 mm. The distance from seat to back of the front row should be 262 mm.</p> <p>The foam shall be Flexible PU FOAM: Automotive Grade High Resilience-HR Polyurethane foam of density: 50 ± 2 kg / M3. As per JIS K 6401 and IS:7888 for 25% compression. The foam must be Fire Retardant. PU must be CFC free.</p> <p>Thickness Cushion: 130 ± 20 mm; Backrest: 80 ± 10 mm. Hardness : Seat cushion : 120 ± 20 Newton; Backrest : 80 ±20 Newton. Arm rest: The armrest should be in wooden with melamine polish. The arm rest will be in PPCP with Cup holder</p>					
		<p>PU. Support: The chair shall rest on the ground on two side panel frames (Side Panel/Aisle Panel). Stand will be in tubular steel structure. Metal tube IS : 4923-1997-80 X 40 mm, 1.63 Thickness. M.S. sheet metal frame formed in 1.6 mm . The side wooden panel must be 6 mm thick with fabric upholster with a spacing of 560 mm.</p> <p>Grouting: The side panels will be fixed to the floor using 4 nos Grouting bolt - M 8 X 75 mm expandable anchor fasteners with chemicals for grouting. Springs: For Seat Slide / Push Back mechanism- Coil Spring / Spring Steel IS : 4454 1981 GRADE 2 Tested for 1,00,000 Cycles to be used. Tie up mechanism.</p> <p>Aisle lights: D.C. 12 VOLTS Operated LED Circuit.1 LED current is 20 ma. 2 LED 40 ma. All seats should have provision for numbering for easy traceability. Seat and Row marking: Every seat is to be provided with seat number in such a way that after tip up it is visible. Row plate indicator shall be provided on aisle seat</p>					

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
		Quality: All steel components will be epoxy polyester powder coated to 50-60 microns. The powder coating process should undergo 7 step rust resistance pre treatment process viz degreasing, pickling as per IS standard. After pre treatment process, the components should be NANO coated and passified for better adhesion of paint as per IS 3618 - 1996. The pacified components should be powder coated with epoxy polyester powder to the thickness of 50-60 microns as per IS 101 and oven baked at 180 degrees for getting the scratch resistance finish. Product should have undergone the following testing process for durability and functionality, cross cut test for ensuring adhesion of power coating as per IS standard, Salt spray test for ensuring the rust resistance pre treatment process as per IS standard. Upholstery: The foam laminated foam shall be in approved colours. Seat & Back are duly upholstered with fabric.					
		Fabric shall be no flaming or progressive shouldering within one hour of placement of the cigarettes. Fire rated fabric confirming to BS 3119. The fabric will be Heavy duty-350 GSM grade, 100 % polyester dyed yarn with 3 mm \pm 0.5 mm foam backing. The fabric should be FMVSS 302 STANDARD & Water repellent should be offered is required.	290.00	Each	16,065.82	46,59,088.25	/-
14.03	MR	SUPPLY AND INSTALLATION OF FIRE RETARDENT FARIC WITH NSA Stretch tracks half wrap/ full wrap 12mm and Midseam 12mm with infill of 50mm thick NSAVixum AGN-380 melamine foam panels having Class B1 DIN 4102-1 fire behaviour, sound absorption of NRC \geq 0.85 ISO 354 and theramal conductivity of Max. \leq 0.035 W/mK KS L 9016. As per architects design.	838.54	Sqm	8,703.12	72,97,926.34	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
14.04	MR	Providing and fixing Toilet cubicals with the following specifications Thickness of Compact Laminate : 18 mm Color of HPL Boards: As approved by Engineer-in-charge Size of Cubicle : as per drawing Door Size : 1995mm (H) x 610mm (W) Divider Size : as per drawing Overall Height Of Cubicle : 2100mm (Including boom Gap of 100mm) Accessories: Standard - Merino Make Stainless Steel - 304 Grade accessories) a) SS "U" Channel b) SS "F" channel c) SS Coat Hook d) SS Privacy Thumb turn c/w Occupancy Indicator e) SS Door Knob f) SS Hinges with Cover g) SS Shoe Box Leg 18mm - 316 Grade h) Rubber Lining for Groove i) S.S.Screws 304 G & P .V.C Wall Plugs	40.00	Each	43,744.00	17,49,760.00	/-
14.05	MR	Providing and fixing STURCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium section of grade 63400 WP IS:733 and IS 1285 pure polyester powder coated in approved shade and colour with mullion fixed to beams/columns through adequately designed MS painted anchor brackets and expansion fasteners as required. The design to be as per BIS code for required wind pressure IS:875 part III and use of aluminium section alloy as per IS:8147. System design to strictly consider for thermal movement, air infiltration, water penetration, seismic movement and structural movement. Silicon sealant structural grade and weathering grade shall be "Dow corning – USA" or "GE Silicon – USA" or "WACKER – Germany" as per the design requirement					
	a)	Providing and fixing st. glazing using 6mm thick soft coated glass	145.80	Sqm	11,649.85	16,98,547.40	/-
	b)	Providing and fixing st. glazing using 24 mm thick DGU soft coated glass	444.00	Sqm	13,020.42	57,81,064.26	/-
		Total Market Rate Items :				2,18,25,769.07	

TAKE OFF SHEET							
S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
1.00	Chapter – 1 - Earth Work						
1.01	Earthwork in excavation upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils.						
	In ordinary soil						
	Academic block						
		1	1700.00			1700.00	
	UGT Tank	1	17.00	7.10	4.70	567.29	
						2267.29	Cum
1.02	Extra over item no.1.1 above for each 1m depth or part thereof beyond the initial depth of 2m						
	Academic block						
		1	425.00		1.00	425.00	
		2	425.00		1.00	850.00	
	UGT Tank	1	17.00	7.10	1.00	120.70	
		2	17.00	7.10	1.00	241.40	
		3	17.00	7.10	0.70	253.47	
						1890.57	Cum
1.03	Earthwork in filling including necessary carriage, watering, ramming etc. complete as directed and specified.						
	Earth/ Sand filling in plinth in layers not exceeding 150mm thick						
a)	With earth/stone dust obtained by carriage upto 8 km						
	Academic block						
	Area of Green Room (M)	2	29.14		0.10	5.83	
	Area of Toilet	2	7.00		0.10	1.40	
	Area of Auditorium with stage	1	410.42		0.10	41.04	
	Area of Room (Lobby)	2	6.51	2.50	0.10	3.26	
	Area of Toilet (M)	1	51.81		0.10	5.18	
	Area of Toilet (F)	1	51.81		0.10	5.18	
	Area of Lobby	1	62.13		0.10	6.21	
	Area of Entrance Foyer	1	181.63		0.10	18.16	
	Area of Entrance	1	10.80	1.00	0.10	1.08	
	Area of Green Courtyard	2	10.50	6.50	0.10	13.65	
	Area of Classroom 02	2	79.77		0.10	15.95	
	Area of Toilet (M)	1	26.67		0.10	2.67	
	Area of Toilet (M)	1	4.77	2.36	0.10	1.12	
	Area of Toilet (F)	1	31.52		0.10	3.15	
	Area of Seminar Room-01,02,	2	4.84	3.40	0.10	3.29	
	Area of Seminar Room-03,04,	2	15.05		0.10	3.01	
	Area of Staircase	1	8.30	2.00	0.10	1.66	
	Area of Corridor	1	128.63		0.10	12.86	
	Area of Corridor	1	427.30		0.10	42.73	
	Area of Laboratory	1	15.30	3.13	0.10	4.78	
	Area of Laboratory	1	15.30	1.88	0.10	2.88	
	Area of Laboratory	2	10.85	6.15	0.10	13.35	
	Area of Staircase (Laboratory)	1	10.85	2.80	0.10	3.04	
	Area of Corridor (Cutout)	2	21.12	1.75	0.10	7.39	
	Area of Staircase	1	18.62	15.30	0.10	28.49	
	Area of Library	1	474.02		0.10	47.40	
	Area of Staircase (Library)	2	8.65	1.50	0.10	2.59	
						297.36	Cum
b)	With available excavated earth including breaking of clods, consolidating each layer by ramming and watering with all lead and lifts.						
	Total Excavation					2267.29	
	Less PCC					-297.66	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Less RCC					-1262.82	
	Plinth fill						
	Academic block						
	Area of Green Room (M)	2	29.14		0.20	11.65	
	Area of Toilet	2	7.00		0.20	2.80	
	Area of Auditorium with stage	1	410.42		0.20	82.08	
	Area of Room (Lobby)	2	6.51	2.50	0.20	6.51	
	Area of Toilet (M)	1	51.81		0.20	10.36	
	Area of Toilet (F)	1	51.81		0.20	10.36	
	Area of Lobby	1	62.13		0.20	12.43	
	Area of Entrance Foyer	1	181.63		0.20	36.33	
	Area of Entrance	1	10.80	1.00	0.20	2.16	
	Area of Green Courtyard	2	10.50	6.50	0.20	27.30	
	Area of Classroom 02	2	79.77		0.20	31.91	
	Area of Toilet (M)	1	26.67		0.20	5.33	
	Area of Toilet (M)	1	4.77	2.36	0.20	2.25	
	Area of Toilet (F)	1	31.52		0.20	6.30	
	Area of Seminar Room-01,02,	2	4.84	3.40	0.20	6.58	
	Area of Seminar Room-03,04,	2	15.05		0.20	6.02	
	Area of Staircase	1	8.30	2.00	0.20	3.32	
	Area of Corridor	1	128.63		0.20	25.73	
	Area of Corridor	1	427.30		0.20	85.46	
	Area of Laboratory	1	15.30	3.13	0.20	9.56	
	Area of Laboratory	1	15.30	1.88	0.20	5.75	
	Area of Laboratory	2	10.85	6.15	0.20	26.69	
	Area of Staircase (Laboratory)	1	10.85	2.80	0.20	6.08	
	Area of Corridor (Cutout)	2	21.12	1.75	0.20	14.78	
	Area of Staircase	1	18.62	15.30	0.20	56.98	
	Area of Library	1	474.02		0.20	94.80	
	Area of Staircase (Library)	2	8.65	1.50	0.20	5.19	
						1301.53	Cum
2.00	Chapter – 2 - Cement Concrete Works						
2.01	Plain cement concrete works with coarse aggregate of sizes 13mm to 32mm in foundation bed for footing steps, walls, brick works etc. as directed and specified including dewatering if necessary, and curing complete (shuttering where necessary shall be measured and paid separately).						
	In prop. 1:4:8 (1 cement:4 coarse sand : 8 coarse agg. by volume (using mixture machine)						
	Academic block						
		1	287.00			287.00	
	UGT Tank	1	16.40	6.50	0.10	10.66	
						297.66	Cum
2.02	Plain cement concrete floor base in prop 1:3:6 laid in alternate bays as specified with coarse aggregate of size 13mm to 32mm including dewatering if necessary, and curing etc. complete.						
	100 mm thick in prop 1:3:6						
	Academic block						
	Below Floor						
	Area of Green Room (M)	2	29.14		0.10	5.83	
	Area of Toilet	2	7.00		0.10	1.40	
	Area of Auditorium with stage	1	410.42		0.10	41.04	
	Area of Room (Lobby)	2	6.51	2.50	0.10	3.26	
	Area of Toilet (M)	1	51.81		0.10	5.18	
	Area of Toilet (F)	1	51.81		0.10	5.18	
	Area of Lobby	1	62.13		0.10	6.21	
	Area of Entrance Foyer	1	181.63		0.10	18.16	
	Area of Entrance	1	10.80	1.00	0.10	1.08	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Area of Green Courtyard	2	10.50	6.50	0.10	13.65	
	Area of ClassRoom 02	2	79.77		0.10	15.95	
	Area of Toilet (M)	1	26.67		0.10	2.67	
	Area of Toilet (M)	1	4.77	2.36	0.10	1.12	
	Area of Toilet (F)	1	31.52		0.10	3.15	
	Area of Seminar Room-01,02,	2	4.84	3.40	0.10	3.29	
	Area of Seminar Room-03,04,	2	15.05		0.10	3.01	
	Area of Staircase	1	8.30	2.00	0.10	1.66	
	Area of Corridor	1	128.63		0.10	12.86	
	Area of Corridor	1	427.30		0.10	42.73	
	Area of Laboratory	1	15.30	3.13	0.10	4.78	
	Area of Laboratory	1	15.30	1.88	0.10	2.88	
	Area of Laboratory	2	10.85	6.15	0.10	13.35	
	Area of Staircase (Laboratory)	1	10.85	2.80	0.10	3.04	
	Area of Corridor (Cutout)	2	21.12	1.75	0.10	7.39	
	Area of Staircase	1	18.62	15.30	0.10	28.49	
	Area of Library	1	474.02		0.10	47.40	
	Area of Staircase (Library)	2	8.65	1.50	0.10	2.59	
						297.36	Sqm
2.03	Providing and laying 25mm thick damp proof course with cement concrete in prop 1:1.5:3 with graded stone aggregate of 10mm down nominal size including providing approved damp proof admixture in proportion as recommended by the manufacturer including curing etc. complete as directed.						
	Acadmic block						
	PB	1	238.33			238.33	
						238.33	Sqm
2.04	Providing and laying Concrete in Reinforced Cement Concrete Works Using Batching Plant/ RMC/ Truck mounted batching plant including Transit Mixer and Concrete Pump with coarse sand & 20mm down graded stone aggregate including dewatering if necessary, and curing complete with all necessary laboratory tests etc. but excluding cost of form work and reinforcement for reinforced cement concrete work (form work and reinforcement will be measured and paid separately). (Without using admixture, plasticiser)						
	RCC Grade M35						
	Acadmic block						
	Below plinth						
	Foundation	1	183.00			183.00	
	Grade slab	1	575.00			575.00	
	Column	1	17.00			17.00	
	Shear wall	1	245.00			245.00	
	Beam	1	145.00			145.00	
	UGT Tank						
	UGT Tank Raft	1	16.20	6.30	0.40	40.82	
	UGT Tank RCC Wall	4	5.00	0.20	4.00	16.00	
	UGT Tank RCC Wall	2	15.30	0.20	4.00	24.48	
	Roof slab	1	15.30	5.40	0.20	16.52	
	Above plinth						
	Column	1	17.00			17.00	
	Shear wall	1	776.00			776.00	
	Ramp RCC Wall	1	11.00			11.00	
	Ramp Slab	1	10.00			10.00	
	Beam	1	432.00			432.00	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Slab	1	732.00			732.00	
	NS Wall	1	340.00			340.00	
	Staircase						
	Ground Floor to first Floor						
	Waist Slab	2	3.15	1.70	0.15	1.61	
	Waist Slab	2	2.37	1.70	0.15	1.21	
	Waist Slab	1	10.17	15.70	0.15	23.94	
	Waist Slab	1	5.65	14.70	0.15	12.45	
	Landing	1	2.00	1.30	0.15	0.39	
	Waist Slab	1	2.59	1.70	0.15	0.66	
	Landing	1	2.60	1.50	0.15	0.59	
	Waist Slab	2	2.81	1.20	0.15	1.01	
	Waist Slab	1	20.71	15.30	0.15	47.53	
	Waist Slab	2	3.04	1.50	0.15	1.37	
	First Floor to terrace						
	Landing	1	2.00	1.30	0.15	0.39	
	Waist Slab	1	2.59	1.70	0.15	0.66	
	Landing	1	2.60	1.50	0.15	0.59	
	Waist Slab	2	2.81	1.20	0.15	1.01	
	Landing (ramp)	1	2.60	1.20	0.15	0.47	
	Landing	1	2.60	2.23	0.15	0.87	
	Landing	1	2.60	5.59	0.15	2.18	
	Waist Slab	1	2.70	1.20	0.15	0.49	
	Landing	1	1.50	1.00	0.15	0.23	
	Waist Slab	2	2.59	1.50	0.15	1.16	
	Counter top						
	Ground Floor						
	Counter Top (toilet)	1	1.17	0.47	0.08	0.04	
	Counter Top (toilet)	1	0.92	0.47	0.08	0.03	
	Counter Top (toilet)	1	5.83	0.65	0.08	0.29	
	Counter Top (toilet)	1	5.67	0.65	0.08	0.28	
	Counter Top Toilet (M)	1	3.27	0.65	0.08	0.16	
	Counter Top Toilet (M)	1	3.96	0.66	0.08	0.20	
	First Floor						
	Counter Top Toilet (M)	1	3.27	0.65	0.08	0.16	
	Counter Top Toilet (M)	1	3.96	0.66	0.08	0.20	
	Lintel						
	D1 (750X2100)	40	1.05	0.23	0.20	1.93	
	D2 (1500X2400)	22	1.80	0.23	0.20	1.82	
	D3 (1750X2400)	4	2.05	0.23	0.20	0.38	
	D4 (2500X2400)	2	2.80	0.23	0.20	0.26	
	D5 (2000X2400)	3	2.30	0.23	0.20	0.32	
	D6 (1700X2400)	2	2.00	0.23	0.20	0.18	
	D7 (1000X2400)	3	1.30	0.23	0.20	0.18	
	Toilet Door (600X2100)	3	0.90	0.23	0.20	0.12	
	W1 (1700X3000)	16	2.00	0.23	0.20	1.47	
						3687.65	Cum
2.05	Supplying, fitting and fixing in position reinforcement bars upto 1st floor level, conforming to relevant I.S. Code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and length as per details, supplying and binding with 20G annealed black wire and placing in position with proper blocks, supports, chairs, spacers etc. complete. (Rates inclusive of all wastage, lappage, hooks, chairs, anchorage etc. and no measurements for the same is required)						
	From Primary Sources like TATA/ SAIL/ ESSAR/ JINDAL/ SHYAM/ RINL						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	TMT Corrosion resistant steel (CRS) reinforcement bar						
	Academic block						
	Foundation				13500.00	13500.00	
	Grade slab				18500.00	18500.00	
	Column				7114.00	7114.00	
	Shear wall				208000.00	208000.00	
	Ramp RCC Wall				992.00	992.00	
	Ramp Slab				938.00	938.00	
	Beam				81000.00	81000.00	
	Slab				58541.00	58541.00	
	NS Wall				25000.00	25000.00	
	Staircase			100.00	98.81	9881.00	
	Counter top			40.00	1.36	54.40	
	Lintel			60.00	6.66	399.60	
	UG Tank			125.00	97.82	12227.50	
						436147.50	
						4361.48	Qntl
2.06	Extra over item 2.8 (a, b, c) above for each subsequent floor or part thereof above first floor level.						
	Academic block						
	Total steel (Considered 60% for above 1st floor lvl)				254352.00	254352.00	
						254352.00	
						2543.52	Qntl
2.07	Providing form work of ordinary timber planking of thickness not less than 25mm and removal of the same for concrete members so as to give a rough finish including centering, shuttering, strutting and propping etc., for height of propping and centering of supporting floor to the soffit of the concrete member not exceeding 4.0M as specified for the following items:						
a)	Foundation, footings, bases of columns, pile cap, raft and mass concrete works etc.						
	Academic block						
	Foudation	1	315.00			315.00	
	UGT Tank Raft	1	16.20	6.30	0.40	18.00	
						333.00	Sqm
b)	Vertical surface such as walls (any thickness), parapet walls, partitions, walls of septic tank, inspection pit etc. including attached pilasters, buttresses, plinth and string courses and the like.						
	UGT Tank						
	UGT Tank Wall	4	5.00		4.00	160.00	
	UGT Tank Wall	2	15.30		4.00	244.80	
						404.80	Sqm
2.08	Providing form work of 12mm thick Plywood Board and removal of the same for concrete members so as to give a rough finish including centering, shuttering, strutting and propping etc., for height of propping and centering of supporting floor to the soffit of the concrete member not exceeding 4.0M as specified for the following items:						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
(a)	Columns, Pillars, Posts & Strut of square/ rectangular/ polygonal in plan or any shape like Tee/L etc. having plane vertical face						
	Academic block						
	Column	1	194.00			194.00	
						194.00	Sqm
b)	Sides and Soffits of Beams, beam haunchings, cantilever girders, bressumers, lintels and horizontal ties. For depth exceeding 1.0M.						
	Academic block						
	Beam	1	4941.00			4941.00	
	Lintel						
	D1 (750X2100)	40	1.05	0.23	0.20	26.46	
	D2 (1500X2400)	22	1.80	0.23	0.20	24.95	
	D3 (1750X2400)	4	2.05	0.23	0.20	5.17	
	D4 (2500X2400)	2	2.80	0.23	0.20	3.53	
	D5 (2000X2400)	3	2.30	0.23	0.20	4.35	
	D6 (1700X2400)	2	2.00	0.23	0.20	2.52	
	D7 (1000X2400)	3	1.30	0.23	0.20	2.46	
	Toilet Door (600X2100)	3	0.90	0.23	0.20	1.70	
	W1 (1700X3000)	16	2.00	0.23	0.20	20.16	
						5032.30	Sqm
c)	Flat Surfaces such as soffits of suspended floors, roofs, landings, cantilever slabs, chajjas, balconies and the like. Floors etc. upto 200mm in thickness.						
	Academic block						
	Slab	1	3367.00			3367.00	
	Ramp Slab	1	52.00			52.00	
	UGT Tank						
	Roof slab	1	15.30	5.40		82.62	
	Staircase						
	Ground Floor to first Floor						
	Landing	1	2.00	1.30		2.60	
	Landing	1	2.60	1.50		3.90	
	First Floor to 2nd floor						
	Landing	1	3.27	1.50		4.91	
	Landing	1	3.00	2.00		6.00	
	Landing	1	8.80			8.80	
	Landing (Ramp)	1	3.00	1.50		4.50	
	2nd Floor to terrace						
	Landing	1	3.27	1.50		4.91	
	Counter top						
	Ground Floor						
	Counter Top (toilet)	1	1.17	0.47	0.08	0.70	
	Counter Top (toilet)	1	0.92	0.47	0.08	0.57	
	Counter Top (toilet)	1	5.83	0.65	0.08	4.34	
	Counter Top (toilet)	1	5.67	0.65	0.08	4.22	
	Counter Top Toilet (M)	1	3.27	0.65	0.08	2.48	
	Counter Top Toilet (M)	1	3.96	0.66	0.08	3.03	
	First Floor						
	Counter Top Toilet (M)	1	3.27	0.65	0.08	2.48	
	Counter Top Toilet (M)	1	3.96	0.66	0.08	3.03	
						3558.08	Sqm
d)	Vertical surface such as walls (any thickness), parapet walls, partitions and the like including attached pilasters, buttresses, plinth and string courses and the like.						
	Academic block						
	Shear wall	1	4608.00			4608.00	
	Ramp wall	1	110.00			110.00	
	NS Wall	1	6296.00			6296.00	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
						11014.00	Sqm
e)	Staircase with sloping or stepped soffits including risers and stringers but excluding Landing.						
	Academic block						
	Staircase						
	Ground Floor to first Floor						
	Waist Slab	2	3.15	1.70		10.71	
	Sides	4	3.15		0.15	1.89	
	Waist Slab	2	2.37	1.70		8.07	
	Sides	4	2.37		0.15	1.42	
	Waist Slab	1	10.17	15.70		159.61	
	Sides	2	10.17		0.15	3.05	
	Waist Slab	1	5.65	14.70		83.03	
	Sides	2	5.65		0.15	1.69	
	Waist Slab	1	2.59	1.70		4.40	
	Sides	2	2.59		0.15	0.78	
	Waist Slab	2	2.81	1.20		6.75	
	Sides	4	2.81		0.15	1.69	
	Waist Slab	1	20.71	15.30		316.86	
	Sides	2	20.71		0.15	6.21	
	Waist Slab	2	3.04	1.50		9.11	
	Sides	4	3.04		0.15	1.82	
	First Floor to terrace						
	Waist Slab	1	2.59	1.70		4.40	
	Sides	2	2.59		0.15	0.78	
	Waist Slab	2	2.81	1.20		6.75	
	Sides	4	2.81		0.15	1.69	
	Waist Slab	1	2.70	1.20		3.24	
	Sides	2	2.70		0.15	0.81	
	Waist Slab	2	2.59	1.50		7.76	
	Sides	4	2.59		0.15	1.55	
						644.07	Sqm
f)	Extra for each subsequent 1.0M height or part thereof beyond the initial height of 4.0M as mentioned in item no. 2.11						
	Academic block						
	Area of Auditorium with stage	1	410.42		12.00	4925.08	
	Area of Lobby	1	62.13		9.00	559.13	
	Area of Entrance Foyer	1	181.63		9.00	1634.71	
	Area of Entrance	1	10.80	1.00	9.00	97.20	
	Area of Green Courtyard	2	10.50	6.50	9.00	1228.50	
	Area of Laboratory	1	15.30	3.13	9.00	430.31	
	Area of Laboratory	1	15.30	1.88	9.00	258.88	
	Area of Laboratory	2	10.85	6.15	9.00	1201.10	
	Area of Staircase	1	18.62	15.30	9.00	2563.97	
	Area of Library	1	474.02		5.00	2370.10	
						15268.96	Sqm
2.09	In Columns, pillars, posts, struts, suspended floor, roof, landing, shelf and support, balcony, lintel, sill band, beam, girder, bressumer, cantilever, staircase etc. above plinth level upto 1st floor level. (Without using admixture, plasticiser)						
	M15 or Prop. 1:2:4 (For Non-structural Works)						
	Windows and Ventilators						
	Academic block						
	W1 (1700X3000)	16	1.70	0.30	0.05	0.41	
						0.41	Cum

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
2.10	Providing and fixing in position Stainless steel Grade 304 plate-1.0 mm thick as per design for expansion joints.						
	200 mm wide.						
	Academic block	2	19.50			39.00	
						39.00	m
2.11	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centering arrangement and support plates etc. as per ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical location in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centering arrangement that freely rotates / moves in all directions. The Self - centering arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved						
	Floor Joint of 100 mm gap						
	Academic block	2	19.50			39.00	
						39.00	m
3.00	Chapter – 3 - Flooring Works						
3.01	Providing polished granite slab of approved quality, size, shape and thickness not less than 18 mm on floors, skirting, treads and risers of steps over cement mortar bed 15 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile Choksey/Sika/Pidilite/Rouf) /white cement slurry mixed with approved pigment to match the shade of granite slab, complete at all levels as specified and directed. (Cement plastering to be measured and paid separately). (Coloured pigment should be in conformity with colour of slab and as approved and directed by the Department).						
	Academic Block						
	Ground Floor						
	Area of Classroom 02	2	79.77			159.54	
	Area of Seminar Room-01,02,	2	4.84	3.40		32.92	
	Area of Seminar Room-03,04,	2	15.05			30.10	
	Area of Laboratory	1	15.30	3.13		47.81	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Area of Laboratory	1	15.30	1.88		28.76	
	Area of Laboratory	2	10.85	6.15		133.46	
	First Floor						
	Area of Classroom 02	2	79.77			159.54	
	Area of Seminar Room-01,02,	2	4.84	3.40		32.92	
	Area of Seminar Room-03,04,	2	15.05			30.10	
	Add 15% extra for skirting					98.27	
						753.42	Sqm
3.02	Kota-stone slab flooring of 18 mm thick over 20mm thick base of cement plaster 1:6 (1 cement : 6 coarse sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete.						
	Slab above 0.4sq.m. size						
	Academic Block						
	First Floor						
	Area of Services	2	10.53	6.50		136.89	
	Terrace Floor						
	Area of Terrace (Auditorium)	1	26.81	19.10		511.98	
	Area of Terrace (Auditorium)	1	27.11	19.10		517.71	
	Area of Terrace (Services & Entrance Foyer)	1	22.32	19.10		426.22	
	Area of Sitting	1	47.18	19.10		901.14	
	Area of Sitting	1	18.42	10.60		195.25	
	UGT Tank						
	Area of Pump Room	1	8.00	5.00		40.00	
						2729.18	Sqm
3.03	Kota stone slab of 18 mm thick in riser of steps, skirting, dado and pillars laid with 10mm thick cement plaster 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs including rubbing and polishing complete.						
	Slab above 0.4sq.m. size						
	Add 15% extra for skirting	15%	2729.18			409.38	
						409.38	Sqm
3.04	Wooden planking in flooring including fixing to wooden frame with iron screws complete (base of the wooden frame to be measured and paid separately.)						
	38mm thick Teak wood plank						
	Academic Block						
	Ground Floor						
	Area of Green Room (M)	2	29.14			58.27	
	Area of Auditorium with Stage	1	138.88			138.88	
	Area of Library	1	474.02			474.02	
	Area of Staircase (Library)	2	8.65	1.50		25.94	
	Area of Staircase (Auditorium)	2	14.89	1.70		50.61	
	Tread (Stage)	8	4.00	0.30		9.60	
	Riser	10	4.00		0.15	6.00	
	First Floor						
	Area of Hod Room	1	6.50	4.34		28.21	
	Area of Hod Room	1	6.14	2.67		16.39	
	Area of Hod Room(cabin)	1	18.80			18.80	
	Area of Library	1	103.55			103.55	
	Area of Mezzanine Library	2	16.10	7.70		247.94	
	Add 15% extra for skirting					176.73	
						1354.94	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
3.05	Providing VITRIFIED floor tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality of specified size, shape and thickness not less than 18mm on floors, skirting, risers and treads of steps over 15 mm thick base of cement mortar in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey/Sika/Pidilite/Rouf) / white cement slurry mixed with approved pigment to match shade of tiles, mixed with approved pigment to match the shade of the tiles, complete at all levels as specified and directed. (Cement plastering to be measured and paid separately). (Coloured pigment should be in conformity with colour of tiles and as approved and directed by the Department)						
	Premium range						
	Academic Block						
	Ground Floor						
	Area of Toilet	2	7.00			14.00	
	Area of Toilet (M)	1	51.81			51.81	
	Area of Toilet (F)	1	51.81			51.81	
	Area of Toilet (M)	1	26.67			26.67	
	Area of Toilet (M)	1	4.77	2.36		11.25	
	Area of Toilet (F)	1	31.52			31.52	
	First Floor						
	Area of Toilet (Cabin)	1	2.00	1.77		3.53	
	Area of Toilet (M)	1	26.67			26.67	
	Area of Toilet (M)	1	4.77	2.36		11.25	
	Area of Toilet (F)	1	31.52			31.52	
						260.00	Sqm
3.06	Providing polished VITRIFIED wall tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8mm on walls and skirting over cement mortar bed 10 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey / Sika / Pidilite / Rouf) or white cement slurry mixed with approved pigment to match shade of tiles complete at all levels as specified and directed. (Cement plastering to be measured and paid separately).						
	Premium range						
	Academic block						
	Ground Floor						
	Area of Toilet	2	10.59		2.40	50.84	
	Less D1	-2	0.75		2.10	-3.15	
	Area of Toilet (M)	1	29.66		2.40	71.18	
	Less D5	-1	2.00		2.40	-4.80	
	Area of Toilet (F)	1	29.66		2.40	71.18	
	Less D5	-1	2.00		2.40	-4.80	
	Area of Toilet (M)	1	29.94		2.40	71.85	
	Less D2	-1	1.50		2.40	-3.60	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (M)	1	14.25		2.40	34.20	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (F)	1	27.95		2.40	67.07	
	Less D2	-1	1.50		2.40	-3.60	
	First Floor						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Area of Toilet (Cabin)	1	7.53		2.40	18.07	
	Less D1	-1	0.75		2.10	-1.58	
	Area of Toilet (M)	1	29.94		2.40	71.85	
	Less D2	-1	1.50		2.40	-3.60	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (M)	1	14.25		2.40	34.20	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (F)	1	27.95		2.40	67.07	
	Less D2	-1	1.50		2.40	-3.60	
						522.41	Sqm
3.07	Providing, Supplying, fitting, fixing and laying of dressed stone block walling and tile slab (Cherra/local stone block) laid on 25mm thick base incement mortar 1:3 and jointed with grey cement slurry including clearing rubbing etc. complete as directed.						
	Size 300mm x 150mm x 50mm						
	Academic Block						
	Ground Floor						
	Area of Entrance	1	10.80	1.00		10.80	
	Entrance Steps	2	10.80	0.30		6.48	
	Riser	3	10.80		0.15	4.86	
						22.14	Sqm
3.08	Providing and placing Bamboo Floor tiles of size 920mm x 100mm x 15mm of natural colours Maisang product pvt ltd. make or equivalent with natural colours over existing finish concrete levelled floor including joint free, size, shape and thickness not less than 15mm on Floors, Treads, Risers, Skirting complete as directed						
	Academic Block						
	First Floor						
	Area of Admin	1	41.38			41.38	
	Area of Admin Area (cabin)	1	3.55	2.32		8.22	
	Area of Admin Area (cabin)	1	3.27	3.19		10.40	
	Area of Admin Area (cabin)	1	2.89	3.14		9.04	
						69.04	Sqm
3.09	Providing & fixing in position Phenol bonded volatile organic compound compliant, 14mm thick Bamboowood Wall Skirting conforming to IS:13745-1993, made out of Eco friendly Epitome Bamboowood or equivalent in approved variant & colours / finishes of size 1900mm x 85mm having density of 1000 Kg/cum to 1250 Kg/cum & Hardness 1000 Kgf to 1500 Kgf, skirting and accessories finished with UV coating, with under layer of 4mm 40 density EPE (expanded poly ethylene) foam under skirting fixing with screws and rawl complete as specified and directed by Engineer.						
	Academic Block						
	Area of Auditorium with stage	1	75.000		12.963	972.188	
	Less D2	-2	1.500		2.400	-7.200	
	Less D3	-4	1.750		2.400	-16.800	
	Area of Auditorium (Column)	4	7.000		12.963	362.964	
						1311.152	
	Considered 50% for floor area					655.58	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
3.10	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge :						
	Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.						
	Academic Block						
	Ground Floor						
	Area of Entrance Foyer	1	181.63			181.63	
	Area of Staircase	1	8.30	2.00		16.60	
	Area of Corridor	1	128.63			128.63	
	Less Staircase (Area)	-1	8.30	2.40		-19.92	
	Area of Corridor	1	427.30			427.30	
	Less Staircase	-1	270.91			-270.91	
	Landing	1	2.60	1.50		3.90	
	Area of Corridor (Near Staircase)	2	21.12	1.75		73.92	
	Tread	56	1.70	0.30		28.56	
	Tread	26	1.70	0.40		17.68	
	Tread	23	2.00	0.30		13.80	
	Tread	50	1.20	0.30		18.00	
	Tread (Near Corridor)	19	15.30	1.00		290.70	
	Tread	50	1.50	0.30		22.50	
	Area of Room (Lobby)	2	6.51	2.50		32.55	
	Area of Lobby	1	62.13			62.13	
	Tread	9	15.70	1.00		141.30	
	Tread	5	14.70	1.00		73.50	
	Landing	1	2.00	1.30		2.60	
	Landing	2	1.50	1.00		3.00	
	Area of Staircase (Laboratory)	1	10.85	2.80		30.38	
	First Floor						
	Area of Corridor	1	169.58			169.58	
	Area of Senior Research Cells	1	19.92			19.92	
	Area of Research Cells	1	10.85	2.15		23.33	
	Area of Research Cells	1	10.85	2.00		21.70	
	Area of Research Cells	2	16.05			32.11	
	Area of Corridor	1	427.30			427.30	
	Less Area	-1	255.16			-255.16	
	Area of Ramp	2	17.42	1.20		41.81	
	Landing (Ramp)	1	2.60	1.20		3.12	
	Landing	1	2.00	1.30		2.60	
	Landing	1	2.60	1.50		3.90	
	Landing	1	2.60	2.23		5.80	
	Landing	1	2.60	5.59		14.53	
	Tread	23	2.00	0.30		13.80	
	Tread	50	1.20	0.30		18.00	
	Tread	24	1.20	0.30		8.64	
	Area of Staff Room	1	19.92			19.92	
						1848.76	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
3.11	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 any colour and shade						
	Area of slab upto 0.50 sqm						
	Academic block						
	W1 (1700X3000)	16	1.70	0.30		8.16	
						8.16	Sqm
3.12	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 any colour and shade						
	Area of slab over 0.50 sqm						
	Academic Block						
	Ground Floor						
	Counter Top (Toilet)	1	1.17	0.47		0.54	
	Counter Top (Toilet)	1	0.92	0.47		0.43	
	Counter Top (Toilet)	1	5.83	0.65		3.81	
	Counter Top (Toilet)	1	5.67	0.65		3.70	
	Counter Top (Toilet M)	1	3.27	0.65		2.14	
	Counter Top (Toilet M)	1	3.96	0.66		2.63	
	First Floor						
	Counter Top (Toilet M)	1	3.27	0.65		2.14	
	Counter Top (Toilet M)	1	3.96	0.66		2.63	
						18.01	Sqm
3.13	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.						
	Granite work						
	Academic block						
	W1 (1700X3000)	16	1.70			27.20	
						27.20	m
3.14	Extra for providing opening of required size & shape for wash basin/kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.						
	Academic Block						
	Ground Floor						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Counter Top (Toilet)	1	1.17	0.47		2.10	
	Counter Top (Toilet)	1	0.92	0.47		1.85	
	Counter Top (Toilet)	1	5.83	0.65		7.14	
	Counter Top (Toilet)	1	5.67	0.65		6.97	
	Counter Top (Toilet M)	1	3.27	0.65		4.58	
	Counter Top (Toilet M)	1	3.96	0.66		5.29	
	First Floor						
	Counter Top (Toilet M)	1	3.27	0.65		4.58	
	Counter Top (Toilet M)	1	3.96	0.66		5.29	
						37.78	m
3.15	Extra for providing opening of required size & shape for wash basin/kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.						
	Academic block	1	35.00			35.00	
						35.00	Nos.
3.16	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.						
	Granite Stone of approved shade						
	Academic Block						
	Ground Floor						
	Urinal Partition	2	0.50		1.20	1.20	
	Urinal Partition	10	0.80		1.20	9.60	
	First Floor						
	Urinal Partition	10	0.80		1.20	9.60	
						20.40	Sqm
3.17	Granite stone slab 18 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete.						
	Considered 15% extra for skirting	15%	1470.92			220.64	
	Academic block						
	Ground Floor						
	Riser	58	1.70		0.15	14.79	
	Riser	27	1.70		0.15	6.89	
	Riser	24	2.00		0.15	7.20	
	Riser	52	1.20		0.15	9.36	
	Riser	20	15.30		0.30	91.80	
	Riser	52	1.50		0.15	11.70	
	Riser	10	15.70		0.30	47.10	
	Riser	6	14.70		0.30	26.46	
	First Floor						
	Riser	24	2.00		0.15	7.20	
	Riser	52	1.20		0.15	9.36	
	Riser	25	1.20		0.15	4.50	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
						457.00	Sqm
3.18	Providing Ceramic Tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8 mm on floors, skirting, treads and risers of steps over cement mortar bed 15 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with fix-A Tile Choksey/ Sika/ Pidilite/ Rouf/ White cement slurry mixed with approved pigment to match the shade of tiles, complete at all levels as specified and directed (cement plastering to be measured and paid separately).						
	Normal range (sizes 300mmx300mm and above)						
(a)	Premium Range						
	Academic Block						
	Area of Fire Tank	1	5.00	5.00		25.00	
	Area of Domestic Tank	1	5.00	1.50		7.50	
						32.50	Sqm
3.19	Providing polished ceramic wall tiles of Somany/ Orient/ Nitco/ Qutone make or equivalent of approved quality, size, shape and thickness not less than 8mm on walls and skirting over cement mortar bed 10 mm thick in prop. 1:3 (1 cement : 3 coarse sand) including cutting where necessary finished with flush pointing with Fix-A-Tile (Choksey / Sika / Pidilite / Rouf) or white cement slurry mixed with approved pigment to match shade of tiles complete at all levels as specified and directed. (Cement plastering to be measured and paid separately).						
	Executive range- 1 (Sizes 200 mm x 300mm and above)						
(a)	Premium Range						
	Academic Block						
	Area of Fire Tank	1	5.00	5.00	4.00	80.00	
	Area of Domestic Tank	1	5.00	1.50	4.00	52.00	
						132.00	Sqm
4.00	Chapter – 4 - Masonry Works						
4.01	Autoclave Aerated Concrete Block work using AAC block conforming to IS-2185 (Part-III) in cement mortar in prop 1:5 (1 cement: 5 sand) including racking out joints and curing complete as per specification and as directed.						
	In Sub-structure upto plinth level including dewatering if necessary						
	AAC Blocks of size 600mm x 200mm x 150mm						
	Academic Block						
	Ground Floor						
	Tread (Entrance)	1	10.80	0.90	0.15	2.40	
	Tread (Entrance)	1	10.80	0.60	0.15	2.40	
	Tread (Entrance)	1	10.80	0.30	0.15	2.40	
						7.20	Cum

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
4.02	In superstructure above plinth level up to 1st floor level.						
	AAC Blocks of size 600mm x 200mm						
	Academic Block						
	Steps						
	Ground Floor						
	Tread	56	1.70	0.30	0.15	2.14	
	Tread	26	1.70	0.30	0.15	0.99	
	Tread	9	15.70	0.30	0.15	3.18	
	Tread	5	14.70	0.30	0.15	1.65	
	Tread	23	2.00	0.30	0.15	1.04	
	Tread	50	1.20	0.30	0.15	1.35	
	Tread	19	15.30	0.30	0.15	6.54	
	Tread	50	1.50	0.30	0.15	1.69	
	Wall	2	9.80	0.23	3.55	16.00	
	Wall	2	6.80	0.23	3.55	11.10	
	Wall	4	12.50	0.23	3.55	40.83	
	First Floor						
	Tread	23	2.00	0.30	0.15	1.04	
	Tread	50	1.20	0.30	0.15	1.35	
	Tread	24	1.20	0.30	0.15	0.65	
						89.55	Cum
4.03	Extra over item no. 4.16 above for AAC Block work in each subsequent floor or part thereof above 1st floor level.						
	Above 1st Floor level						
	Academic Block	1	3.03			3.03	
						3.03	Cum
4.04	125mm thick wall using Autoclave Aerated Concrete Block (AAC block) conforming to IS-2185 (Part-III) in cement mortar in prop 1:5 (1 cement : 5 sand) including racking out joints and curing complete as per specification and as directed in super structure above plinth up to 1st floor level (protruding rod is to be provided at every 3 course interval and will be measured and paid separately).						
	Academic Block						
	Ground Floor						
	Wall of WC	1	1.03		3.10	3.18	
	Wall of WC	1	1.39		3.10	4.29	
	Wall Between of Toilet & Toilet	1	5.83		3.80	22.15	
	Wall Between of Toilet & Toilet	1	5.67		3.80	21.53	
	Wall Between Toilet (M) & Toilet (M)	1	4.88		3.70	18.06	
	Wall Between Toilet (M) & Toilet (M)	1	2.36		3.70	8.73	
	Less Opening	-1	0.76		2.10	-1.60	
	First Floor						
	Wall Between Hod Room & WC	1	2.10		4.06	8.52	
	Wall Between Hod Room & WC	1	1.77		4.06	7.16	
	Less D1	-1	0.75		2.10	-1.58	
	Wall Between Toilet (M) & Toilet (M)	1	4.88		3.70	18.06	
	Wall Between Toilet (M) & Toilet (M)	1	2.36		3.70	8.73	
	Less Opening	-1	0.76		2.10	-1.60	
						115.63	Sqm
4.05	Extra for AAC Block walling for each subsequent floor or part thereof above the 1st floor level over Item No. 4.17, 4.18, 4.19 & 4.20 above.						
	Above 1st Floor level						
	Academic block	1	39.29			39.29	
						39.29	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
4.06	Filling sunken floor with broken brick bats/ Stone aggregates and sand including compacting and supplying of materials complete as specified and directed for all levels.						
	brick bats						
	Toilet Sunken						
	Academic Block						
	First Floor						
	Area of Toilet (Cabin)	1	2.00	1.77	0.30	1.06	
	Area of Toilet (M)	1	26.67		0.30	8.00	
	Area of Toilet (M)	1	4.77	2.36	0.30	3.37	
	Area of Toilet (F)	1	31.52		0.30	9.46	
						21.89	Cum
4.07	Extra cost for lifting of brickbats/Stone soling and sand for filling of sunk floor for each subsequent floors above the ground floor as directed and specified.						
	Toilet Sunken						
	Qty same as above					21.89	
						21.89	Cum
5.00	Chapter – 5 - Plastering Works						
5.01	10 mm thick Cement plaster in single coat on fair side of brick/concrete walls for interior plastering up to 1st floor level including arises or rounded angles not exceeding 80mm girth and finished even and smooth including curing complete as directed.						
	In cement mortar 1:6						
	Academic block						
	Internal Plaster						
	Ground Floor						
	Area of Toilet	2	10.59		3.10	65.66	
	Less D1	-2	0.75		2.10	-3.15	
	Area of Toilet (M)	1	29.66		3.10	91.95	
	Less D5	-1	2.00		2.40	-4.80	
	Area of Toilet (F)	1	29.66		3.10	91.94	
	Less D5	-1	2.00		2.40	-4.80	
	Area of Toilet (M)	1	29.94		3.10	92.80	
	Less D2	-1	1.50		2.40	-3.60	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (M)	1	14.25		3.10	44.18	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (F)	1	27.95		3.10	86.64	
	Less D2	-1	1.50		2.40	-3.60	
	First Floor						
	Area of Toilet (Cabin)	1	7.53		3.10	23.34	
	Less D1	-1	0.75		2.10	-1.58	
	Area of Toilet (M)	1	29.94		3.10	92.80	
	Less D2	-1	1.50		2.40	-3.60	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (M)	1	14.25		3.10	44.18	
	Less Opening	-1	0.76		2.10	-1.60	
	Area of Toilet (F)	1	27.95		3.10	86.64	
	Less D2	-1	1.50		2.40	-3.60	
						685.02	Sqm
5.02	Extra over item no 5.1 to 5.7 for interior plastering above 1st floor level for every addl. floor or part thereof including curing complete as directed.						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	On two coat plaster						
	LS Qty	1				1.00	
						1.00	Sqm
5.03	Extra over item no 5.1 to 5.7 for exterior plastering up to a height of 1st floor level above ground level including curing complete as directed.						
	On two coat plaster						
	LS Qty	1				1.00	
						1.00	Sqm
5.04	Providing surface preparation for walls, ceiling etc. using average 2 mm thick plaster of paris including clearing, rubbing with sand paper, filling gaps, depression etc. where necessary, with chalk powder and plaster of paris paste, making the surface even and smooth complete at all levels as specified and directed.						
	Internal plaster qty	1	685.02			685.02	
	Less vitrified wall tile	-1	522.41			-522.41	
						162.61	Sqm
5.05	Wall painting (two coats) with acrylic emulsion paint approved brand and manufacture (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac) on new surface to give an even shade after thoroughly brushing the surfaces free from mortar droppings and other foreign matter and sand papered smooth.						
	Qty same as puuty	1	162.61			162.61	
						162.61	Sqm
5.06	Extra over item no 15.40 above for every subsequent coat of wall painting with acrylic emulsion paint of approved brand and manufacture (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac).						
	Qty same as acrylic paint	1	162.61			162.61	
						162.61	Sqm
5.07	Melamine polishing on wood work (one or more coat).						
	Qty same as Veneer	1	217.92			217.92	
						217.92	Sqm
6.00	Chapter – 6 - Ceiling, Wall Lining and Partition Works						
6.01	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design						
	In 75x75 mm deep chase						
	Academic block						
	Parapet Wall	1	18.42	10.60		58.04	
	Parapet Wall	1	47.18	16.77		127.89	
						185.93	metre
6.02	Making khurras 45x45 cm with c.c. 1:2:4 average 5 cms thick including supply of all materials, labour, T and P etc. required for proper completion of work.						
	Academic block						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	Khurra					2.00	
						2.00	Nos
6.03	Providing and fixing wood plank ceiling with tongued and grooved joint leaving a gap of 10 mm as per drawing including necessary nails & wood screws complete (Timber frame work to be measured and paid separately						
	Teak wood plank (20mm thick)						
	Academic Block						
	Ground Floor						
	Area of Auditorium with stage	1	419.558			419.558	
	First Floor						
	Area of Admin	1	41.377			41.377	
	Area of Admin Area (cabin)	1	3.550	2.315		8.218	
	Area of Admin Area (cabin)	1	3.265	3.185		10.399	
	Area of Admin Area (cabin)	1	2.885	3.135		9.044	
	Area of Hod Room	1	6.500	4.340		28.210	
	Area of Hod Room	1	6.140	2.670		16.394	
	Area of Hod Room(cabin)	1	18.804			18.804	
						552.00	Sqm
6.04	Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm center to center and cross "T" of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main "T" at 600 mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid						
	including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x 1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge.						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	GI Metal Ceiling Lay in plain Tegular edge Global white color tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending.						
	Academic Block						
	Ground Floor						
	Area of Toilet	2	7.001			14.002	
	Area of Toilet (M)	1	51.805			51.805	
	Area of Toilet (F)	1	51.809			51.809	
	Area of Toilet (M)	1	26.665			26.665	
	Area of Toilet (M)	1	4.765	2.360		11.245	
	Area of Toilet (F)	1	31.517			31.517	
	First Floor						
	Area of Toilet (Cabin)	1	2.000	1.765		3.530	
	Area of Toilet (M)	1	26.665			26.665	
	Area of Toilet (M)	1	4.765	2.360		11.245	
	Area of Toilet (F)	1	31.517			31.517	
						260.00	Sqm
6.05	Providing dressed wood work in post, walls, battens, post plate bressumers etc. including supplying and fixing with spikes, nails, bolt and nuts of 12mm dia(M.S) and required length etc. complete with kiricide oiling two coats to faces in contact with C.C or masonry (M.S flats, angle cleats and bolt and nuts required for flats, angle cleats wherever use shall be measured and paid separately).						
	With 1st Class Local timber (Pooma/Hollock/ Oak/ Gamari /Diengrai and the like)						
	Quantity same as Wooden ceiling	1	552.00			552.00	
	Considered 50x50mm section for frame					1.38	Cum
7.00	Chapter – 7 - Roofing Works						
7.01	Providing thatch roofing with sun grass (Ullo) in layer of 75 mm thick with half spilt bamboo fillet and tying with galvd. wire complete as directed.						
	150 mm thick.						
	Academic block						
	Roof area	2	1267.42			2534.83	
	Roof area	2	487.40			974.80	
	Add 20% extra for slopping					701.93	
						4211.56	Sqm
7.02	Providing and laying thatching, capping to ridge and hip with new sun grass of 75 mm thick (fine work) stiffened with bamboo slips of size 30mm x 6mm and tied with galvd. tying wire complete as directed.						
	Academic block						
		1	534.68			534.68	
						534.68	m
8.00	Chapter – 8 - Wood Work						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
8.01	Providing wood work in frame (chowkats) of doors, windows, clerestory windows and other similar works wrought, framed and fixed in position in contact with C.C or brick masonry wall including supplying, fitting and fixing with M.S. hold fast (40mmx3mmx250mm) as per design embedded in cement concrete block in proportion 1:2:4 and with two coats of kiricide oiling to the timber faces in contact with C.C and masonry as directed and specified.						
	With Sal wood						
	Academic block						
	D2 (1500X2400)	22	1.50		2.40	138.60	
	D5 (2000X2400)	3	2.00		2.40	20.40	
	D6 (1700X2400)	2	1.70		2.40	13.00	
	D7 (1000X2400)	3	1.00		2.40	17.40	
						189.40	
	Considered 65x125mm section					1.54	Cum
8.02	Providing and fixing flush door shutters solid core construction with frame of 1st class hard wood with cross band and face veneered ply wood face panels conforming to relevant I.S code including oxidised iron butt hinges (100mm x 75mm x 3.5mm) with necessary wood screws.						
	Non-decorative type face panels and block board core 35 mm thick						
	Academic block						
	D2 (1500X2400)	22	1.50		2.40	79.20	
	D5 (2000X2400)	3	2.00		2.40	14.40	
	D6 (1700X2400)	2	1.70		2.40	8.16	
	D7 (1000X2400)	3	1.00		2.40	7.20	
						108.96	Sqm
8.03	Providing 1st Class Local timber (Pooma/ Hollock/ Oak/ Gamari/ Diengrai and the like) ventilating louvre in 50mm x 38mm size wooden frame with 150mm x 20mm slate made of 1st class local wood including fitting and fixing with nails and painting with two coats of kiricide oiling complete.						
	Academic block						
		8	5.50		6.26	275.22	
						275.22	Sqm
8.04	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).						
	Flush Door Quantity	1	108.96			108.96	
						108.96	Sqm
8.05	Providing and fixing 4mm thick coir veneer board, ISI marked IS : 14842, plain lining with necessary screws, priming coat on unexposed surface etc., complete.						
	Flush Door Quantity	2	108.96			217.92	
						217.92	Sqm
9.00	Chapter – 9 - Aluminium Work						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
9.01	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, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :						
	For fixed portion						
	Powder coated aluminium (minimum thickness of powder coating 50 micron)						
	Academic Block						
	GL4 (4850x3600)	4	4.85		3.60	69.84	
	GL5 (4550x3600)	4	4.55		3.60	65.52	
	GL7 (2670x3600)	1	2.67		3.60	9.61	
	GL8 (5950x3600)	1	5.95		3.60	21.42	
	Glass Partition (2150x3000)	5	2.15		3.00	32.25	
	Glass Partition (1955x3000)	4	1.96		3.00	23.46	
	Glass Partition (2000x3000)	5	2.00		3.00	30.00	
	Glass Partition (10850x3000)	4	10.85		3.00	130.20	
	Glass Partition (2080x3000)	2	2.08		3.00	12.48	
	Glass Partition (7725x3000)	2	7.73		3.00	46.35	
						441.13	
	Considering @ 8 kg per Sqm					3529.04	Kgs
9.02	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)						
	Powder coated aluminium (minimum thickness of powder coating 50 micron)						
	Academic Block						
	W1 (1700X3000)	16	1.70		3.00	81.60	
						81.60	
	Considering @ 12.5 kg per Sqm					1020.00	Kgs
9.03	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
a)	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/ sqm)						
	Academic Block						
	W1 (1700X3000)	16	1.70		3.00	81.60	
						81.60	Sqm
9.04	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						
	Academic Block						
	GL4 (4850x3600)	4	4.85		3.60	67.60	
	GL5 (4550x3600)	4	4.55		3.60	65.20	
	GL7 (2670x3600)	1	2.67		3.60	12.54	
	GL8 (5950x3600)	1	5.95		3.60	19.10	
	Glass Partition (2150x3000)	5	2.15		3.00	51.50	
	Glass Partition (1955x3000)	4	1.96		3.00	39.64	
	Glass Partition (2000x3000)	5	2.00		3.00	50.00	
	Glass Partition (10850x3000)	4	10.85		3.00	110.80	
	Glass Partition (2080x3000)	2	2.08		3.00	20.32	
	Glass Partition (7725x3000)	2	7.73		3.00	42.90	
	W1 (1700X3000)	16	1.70		3.00	150.40	
						630.00	Mtr
9.05	Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-incharge						
	Powder coated minimum thickness 50 micron aluminium						
	Academic Block						
	W1 (1700X3000)	16	3.00			48.00	
						48.00	No
9.06	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete						
	Powder coated minimum thickness 50 micron aluminium						
	Qty same as above	1	48.00			48.00	
						48.00	Nos.
9.07	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & double action hydraulic floor spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-incharge (Door handle, lock and stopper etc.to be paid separately).						
	Academic Block						
	GL1 Door (2000x2400)	2	2.00		2.40	9.60	
	GL4 Door (1000X2400)	4	4.85		2.40	46.56	
	GL5 Door (1000x2400)	4	4.55		2.40	43.68	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	GL7 Door (1000x2400)	1	1.00		2.40	2.40	
	GL8 Door (1050x2400)	1	1.05		2.40	2.52	
						104.76	Sqm
9.08	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.						
	Powder coated minimum thickness 50 micron aluminium tubular handle bar						
	Academic Block						
	GL1 Door (2000x2400)	2	4.00			8.00	
	GL4 Door (1000X2400)	4	2.00			8.00	
	GL5 Door (1000x2400)	4	2.00			8.00	
	GL7 Door (1000x2400)	1	2.00			2.00	
	GL8 Door (1050x2400)	1	2.00			2.00	
						28.00	Nos
9.09	Providing and fixing 12mm thick toughened glass in Aluminium frame work including sealing with EPDM / Neoprene gasket all complete as per the architectural drawings and the directions of engineer-in-charge						
	Academic Block						
	GL4 (4850x3600)	4	4.85		3.60	69.84	
	Less Door	-4	4.85		2.40	-46.56	
	GL5 (4550x3600)	4	4.55		3.60	65.52	
	Less Door	-4	4.55		2.40	-43.68	
	GL7 (2670x3600)	1	2.67		3.60	9.61	
	Less Door	-1	1.00		2.40	-2.40	
	GL8 (5950x3600)	1	5.95		3.60	21.42	
	Less Door	-1	1.05		2.40	-2.52	
	Glass Partition (2150x3000)	5	2.15		3.00	32.25	
	Glass Partition (1955x3000)	4	1.96		3.00	23.46	
	Glass Partition (2000x3000)	5	2.00		3.00	30.00	
	Glass Partition (10850x3000)	4	10.85		3.00	130.20	
	Glass Partition (2080x3000)	2	2.08		3.00	12.48	
	Glass Partition (7725x3000)	2	7.73		3.00	46.35	
						345.97	Sqm
9.10	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.						
	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works						
	Academic Block						
	Ground Floor						
	Waist Slab	4	3.15			12.60	
	Waist Slab	4	2.37			9.49	
	Waist Slab	2	2.59			5.18	
	Waist Slab	4	2.81			11.25	
	Waist Slab	4	3.04			12.15	
	First Floor						
	Waist Slab	2	2.59			5.18	
	Waist Slab	4	2.81			11.25	
	Landing (ramp)	2	2.60			5.20	
	Ramp Railing	1	18.43			18.43	
	Waist Slab	2	2.70			5.40	
	Waist Slab	4	2.59			10.35	
	12 Kg per m					1277.58	
						1277.58	Kg

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
9.11	Providing and fixing carbon steel galvanised (minimum coating 5 micron) dash fastener of 10 mm dia double threaded 6.8 grade (yield strength 480 N/mm ²), counter sunk head, comprising of 10 mm dia polyamide PA 6 grade sleeve, including drilling of hole in frame , concrete/ masonry, etc. as per direction of Engineer-in-charge.						
a)	10 x 80 mm						
	Academic Block						
	W1 (1700X3000)	16	10.00			160.00	
						160.00	Nos
b)	10 x 140 mm						
	Academic Block						
	GL4 (4850x3600)	4	16.00			128.00	
	GL5 (4550x3600)	4	16.00			128.00	
	GL7 (2670x3600)	1	16.00			32.00	
	GL8 (5950x3600)	1	16.00			32.00	
	Glass Partition (2150x3000)	5	12.00			120.00	
	Glass Partition (1955x3000)	4	12.00			96.00	
	Glass Partition (2000x3000)	5	12.00			120.00	
	Glass Partition (10850x3000)	4	12.00			96.00	
	Glass Partition (2080x3000)	2	12.00			48.00	
	Glass Partition (7725x3000)	2	12.00			48.00	
						848.00	Nos
10.00	Chapter – 12 - Door and Window Fittings						
10.01	Supplying, fitting, fixing Stainless Steel fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes for screws including necessary C.P. brass screws etc. complete. (bright natural matt & satin finished)						
a)	Sliding Door Bolt						
	250x16 mm						
	Academic block						
	D2 (1500X2400)	22	2.00			44.00	
	D5 (2000X2400)	3	2.00			6.00	
	D6 (1700X2400)	2	2.00			4.00	
	D7 (1000X2400)	3	2.00			6.00	
						60.00	Nos
b)	Tower Bolt						
i)	250x10 mm						
	Academic block						
	D2 (1500X2400)	22	2.00			44.00	
	D5 (2000X2400)	3	2.00			6.00	
	D6 (1700X2400)	2	2.00			4.00	
	D7 (1000X2400)	3	1.00			3.00	
						57.00	Nos
ii)	150x10 mm						
	Hostel Block						
	D2 (750X2100)	26	2.00			52.00	
						52.00	Nos
c)	Door Handle						
	150mm						
	Academic block						
	D2 (1500X2400)	22	4.00			88.00	
	D5 (2000X2400)	3	4.00			12.00	
	D6 (1700X2400)	2	4.00			8.00	
	D7 (1000X2400)	3	2.00			6.00	
						114.00	Nos

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
d)	Butt hinge						
	125mm x 50mm x 2.5mm						
	Academic block						
	D2 (1500X2400)	22	8.00			176.00	
	D5 (2000X2400)	3	8.00			24.00	
	D6 (1700X2400)	2	8.00			16.00	
	D7 (1000X2400)	3	8.00			24.00	
						240.00	Nos
10.02	Supplying, fitting, fixing brass fittings of approved make, reasonably smooth, free from sharp edges and corners, flaws and other defects and with counter sunk holes for screws including necessary C.P. brass screws etc. complete. (bright natural matt & satin finished)						
	Mortice Locks cylindrical type (Godrej make polished brass)						
	Chapter – 19 - Plinth Protection and Drains						
	Academic block						
	D2 (1500X2400)	22	1.00			22.00	
	D5 (2000X2400)	3	1.00			3.00	
	D6 (1700X2400)	2	1.00			2.00	
	D7 (1000X2400)	3	1.00			3.00	
						30.00	Nos
10.03	Providing, fitting and fixing Heavy duty Door Closer (Godrej make) of size 180mm x 65mm x 64mm complete as specified and directed by the department.						
	Academic block						
	D2 (1500X2400)	22	2.00			44.00	
	D5 (2000X2400)	3	2.00			6.00	
	D6 (1700X2400)	2	2.00			4.00	
	D7 (1000X2400)	3	1.00			3.00	
						57.00	Nos
11.00	Chapter – 19 - Plinth Protection and Drains						
11.01	Plinth Protection by providing 50mm thick Cement Concrete base in prop 1:3:6 (1 cement:3 coarse sand : 6 coarse agg. of 20mm nominal size) with a layer of 10mm thick cement plaster in prop 1:3 and finishing with a floating coat of neat cement including necessary levelling and preparing the subgrade complete as directed						
	Building perimeter (Academic block)	1	335.44	1.00		335.44	
						335.44	Sqm
12.00	Chapter – 22 - Water Proofing and Roof Treatment						
12.01	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of :						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	(i) 1st layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound.						
	(ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. (iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.						
	Using rough kota stone.						
	Academic block						
	Raft	1	16.20	6.30		102.06	
	Raft top surface	1	16.20	6.30	0.45	20.25	
						122.31	Sqm
12.02	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :						
	Using rough kota stone.						
	Academic block						
	Tank	1	15.30	5.40	4.00	165.60	
	Raft sides	1	16.20	6.30	0.40	18.00	
						183.60	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
12.03	Providing and applying of swellable type water stop tape, 19mm x 25mm thick in linear meter (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running meter. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.						
	Basement						
	Academic block						
	Tank	3	15.30	5.40		124.20	
	Wall corner	4	4.00			16.00	
						140.20	m
12.04	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:						
	(i) 1st course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface.						
	(ii) 2nd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface.						
	(iii) 3rd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area.						
	(iv) 4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).						
	Academic block						
	Academic block						
	First Floor						
	Area of Toilet (Cabin)	1	2.000	1.765		3.530	
	Area of Toilet (M)	1	26.665			26.665	
	Area of Toilet (M)	1	4.765	2.360		11.245	
	Area of Toilet (F)	1	31.517			31.517	
	Add 25% extra for sides					72.96	
						145.91	Sqm

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
12.05	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment.						
	(b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.						
	(c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin- charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineerin-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep.						
	(e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test."All above operations to be done in order and as directed and specified by the Engineer-in-Charge :						
	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.						
	Academic Block						
	Area of terrace	1	47.18	16.77		790.97	
	Area of terrace	1	18.42	10.60		195.25	
						986.22	Sqm
13.00	Chapter – 24 - Anti-Termite Treatment Works						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
13.01	Pre-construction anti - termite treatment at the bottom of foundation pits and walls on either side up to a height of 300mm from bottom of the excavation made for column plinth beam, wall, trenches etc. by applying the emulsion @ 5 (five) litres per square meter of the surface area before starting construction work (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.						
	With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.						
	Academic block						
	Under floors at plinth level	1	2812.30			2812.30	
						2812.30	Sqm
13.02	Pre-construction anti - termite treatment in the back fill in immediate contact with the foundation structure after completion, column, wall etc. to a depth of 450mm and width 300mm (when required refill in 200mm thick layers) applying the emulsion @ 5 (five) litres per square meter towards the concrete and masonry walls so as to ensure earth in contact with the structure well treated - with chemical (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.						
	With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.						
	Qty same as above	1	2812.30			2812.30	
						2812.30	Sqm
13.03	Pre-construction anti-termite treatment by applying in the entire levelled area after plinth filling and before laying floor by applying the emulsion @ 5 (five) litres per square meter of the surface to be spread with light rodding so as to ensure proper absorption by the filled up earth (supplying of necessary tools and accessories by the contractor) as per the direction of the Department complete.						
	With aqueous emulsion having concentration 1:499 with Premise 350 SC (Imidachloprid 30.5% SC) and water, i.e. 0.07% in water.						
	Qty same as above	1	2812.30			2812.30	
						2812.30	Sqm
14.00	Market Rate Items						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
14.01	Supply & fixing Wooden Fire Cum Acoustic Door of 77mm thick Non-metallic, Asbestos Free Acoustic cum fire/smoke door of 120 minutes fire rating, suitable to achieve approx. 38db, sound reducing properties suitable for fixing in wooden door frame of suitable section 140X70mm made out of Hardwood (Red Mirandi) and the shutter comprising of 2 non -combustible boards sandwiching 41 mm thick fire resistant & acoustic insulation filler. The shutter is faced with 6mm thick commercial ply and 1mm thick Laminate (as per approved shade) on both faces and Hard wooden lipping all around the shutter. The frame shall be fitted with fire & smoke intumescent seal of size 20 x 4mm on all the three sides except bottom and shutter shall be fitted with fire & smoke intumescent seal of size 20 x 4mm on all the three sides except bottom. The door shall have suitable arrangement for Acoustic seals for sound reduction properties. The shutter to be fitted with the frame with the help of ss ball bearing hinges of size 100x75x3mm & fasteners including all type of acoustic seal. The door is fitted with Acoustic seals of RAVEN make as per the details given below. Rates are included Corner & P Type seal & Acoustic Seals.						
	Academic block						
	D3 (1750X2400)	4	1.75		2.40	16.80	
	D4 (2500X2400)	2	2.50		2.40	12.00	
						28.80	Sqm
	Fire Door fittings						
i)	Providing and fixing Stainless steel satin finish SS 304 grade BB Hinges of Size 100 x 75 x 3 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	8.00			32.00	
	D4 (2500X2400)	2	8.00			16.00	
						0.00	
						48.00	Each
ii)	Providing and fixing Door Closer with Std Arm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	2.00			8.00	
	D4 (2500X2400)	2	2.00			4.00	
						12.00	Each
iiii)	Providing and fixing Dead Lock with 90 mm Cylinder BSK for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	1.00			4.00	
	D4 (2500X2400)	2	1.00			2.00	
						6.00	Each

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
iv)	Providing and fixing Stainless steel satin finish SS 304 grade D Type Pull Handle of Size 300 x 19 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	4.00			16.00	
	D4 (2500X2400)	2	4.00			8.00	
						24.00	Each
v)	Providing and fixing Anchor Fasteners of Size M10 X 100 mm for Fire wooden doors of approved make and model all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	8.00			32.00	
	D4 (2500X2400)	2	8.00			16.00	
						48.00	Each
vi)	Providing and fixing Fire / Smoke Seal of Size 20 x 4 mm for Frame except bottom for Fire wooden doors of approved make all complete as per the directions of Engineer-in-charge'						
	Academic block						
	D3 (1750X2400)	4	1.75		2.40	26.20	
	D4 (2500X2400)	2	2.50		2.40	14.60	
						40.80	m
14.02	Supply and fixing Audi Chair MODEL:- VENUS Seat Assembly: The seat assembly shall be 1.2± 0.1 cm thick flat plywood with molded polyurethane foam & shall be upholstered with 3 layered foam laminated fabric. Upholstery: The seat profile shall be developed to help the user to get necessary comfort in popliteal region and ease of use in forward push for seat sliding feature. Seat: size- 440mm. (W) x 430 mm (D) x 140 mm (T) at front edge and 80 mm at rear edge. Seat frame of ERW Tube / IS :3074-2005 GRADE 1-20 mm square Pipe 1.2 mm OR Mild Steel of size 20 X 5 mm flat " C " bend type. The chair should be placed centre to centre at 550 – 565 mm. Total height of the chair from the floor level shall be 980 -1010 mm and 610 mm from the arm height 445-460 mm. Seat shall be Auto tip with a height of 482 mm. Back: Back Rest frame of 80X 40 ERW Tube conforming to IS : 4923 Rectangular Pipe of 1.6 mm OR Mild Steel of size 25 X 3 mm flat bend as per ergonomic contour " S " bend to suit the body shape and Mild Steel of size 20 X 5 mm flat " C " bend type with cross flat of 12 x 3 mm running across the frame. HRCA / CRCA Sheet Metal / IS: 1079-1994 Type C / U of 2 mm sheets.						
	Academic block						
		290				290.00	
						290.00	Nos

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
14.03	SUPPLY AND INSTALLATION OF FIRE RETARDENT FARIC WITH NSA Stretch tracks half wrap/ full wrap 12mm and Midseam 12mm with infill of 50mm thick NSAVixum AGN-380 melamine foam panels having Class B1 DIN 4102-1 fire behaviour, sound absorption of $NRC \geq 0.85$ ISO 354 and thermal conductivity of Max. ≤ 0.035 W/mK KS L 9016. As per architects design.						
	Academic Block						
	Area of Auditorium with stage	1	103.230		12.963	1338.119	
	Less D2	-2	1.500		2.400	-7.200	
	Less D3	-4	1.750		2.400	-16.800	
	Area of Auditorium (Column)	4	7.000		12.963	362.964	
						1677.083	
	Considered 50% for floor area					838.54	Sqm
14.04	Providing and fixing Toilet cubicals with the following specifications Thickness of Compact Laminate : 18 mm Color of HPL Boards: As approved by Engineer-in-charge Size of Cubicle : as per drawing Door Size : 1995mm (H) x 610mm (W) Divider Size : as per drawing Overall Height Of Cubicle : 2100mm (Including boom Gap of 100mm) Accessories: Standard - Merino Make Stainless Steel - 304 Grade accessories) a) SS "U" Channel b) SS "F" channel c) SS Coat Hook d) SS Privacy Thumb turn c/w Occupancy Indicator e) SS Door Knob f) SS Hinges with Cover g) SS Shoe Box Leg 18mm - 316 Grade h) Rubber Lining for Groove i) S.S.Screws 304 G & P .V.C Wall Plugs						
	Academic Block						
	Ground Floor						
	WC (1350x1325)	2				2.00	
	WC (1350x1273)	1				1.00	
	WC (1420X960)	3				3.00	
	WC (1420X910)	2				2.00	
	WC (1420X960)	3				3.00	
	WC (1420X910)	3				3.00	
	WC (1420X885)	1				1.00	
	WC (1420X925)	1				1.00	
	WC (1420X1190)	1				1.00	
	WC (1420X885)	2				2.00	
	WC (1420X960)	1				1.00	
	WC (1420X910)	1				1.00	
	WC (1420X1115)	1				1.00	
	WC (1420X1190)	1				1.00	
	WC (1420X885)	2				2.00	
	WC (1420X960)	1				1.00	
	WC (1420X910)	1				1.00	
	WC (1420X1115)	1				1.00	
	First Floor					0.00	
	WC (1420X1190)	1				1.00	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	WC (1420X885)	2				2.00	
	WC (1420X960)	1				1.00	
	WC (1420X910)	1				1.00	
	WC (1420X1115)	1				1.00	
	WC (1420X1190)	1				1.00	
	WC (1420X885)	2				2.00	
	WC (1420X960)	1				1.00	
	WC (1420X910)	1				1.00	
	WC (1420X1115)	1				1.00	
						40.00	Each
14.05	Providing and fixing STURCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium section of grade 63400 WP IS:733 and IS 1285 pure polyester powder coated in approved shade and colour with mullion fixed to beams/columns through adequately designed MS painted anchor brackets and expansion fasteners as required. The design to be as per BIS code for required wind pressure IS:875 part III and use of aluminium section alloy as per IS:8147. System design to strictly consider for thermal movement, air infiltration, water penetration, seismic movement and structural movement. Silicon sealant structural grade and weathering grade shall be "Dow corning – USA" or "GE Silicon – USA" or "WACKER – Germany" as per the design requirement						
a)	Providng and fixing st. glazing using 6mm thick soft coated glass						
	Acadmic block						
	GL2 (10500x3600)	2	10.50		3.60	75.60	
	GL6 (19500x3600)	1	19.50		3.60	70.20	
						145.80	Sqm
b)	Providng and fixing st. glazing using 24 mm thick DGU soft coated glass						
	Acadmic block						
	GL1 (10500x3600)	1	10.50		3.60	37.80	
	Less Door	-2	2.00		2.40	-9.60	
	GL2 (10500x3600)	3	10.50		3.60	113.40	
	GL3 (21500x3600)	3	21.50		3.60	232.20	
	GL6 (19500x3600)	1	19.50		3.60	70.20	
						444.00	Sqm

SUMMARY (EXTERNAL DEVELOPMENT)				
<u>S. No.</u>	<u>ITEM OF CIVIL WORK</u>	<u>AMOUNT</u>		
1.00	Chapter – 1 - Earth Work	Rs.	1,91,211.75	/-
2.00	Chapter – 2 - Plastering Works	Rs.	10,06,200.00	/-
3.00	Chapter – 3 -Road Work	Rs.	34,88,185.64	/-
Total		Rs.	46,85,597.39	/-

SCHEDULE OF QUANTITIES**Name of work: Proposed External Development of Tribal Research Institute**

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
1.00	1.0	Chapter – 1 - Earth Work					
1.01	1.1	Earthwork in excavation upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils.					
		In ordinary soil	749.25	Cum	179.00	1,34,115.75	/-
1.02	DSR 2018/ 2.30	Excavating holes more than 0.10 cum & upto 0.5 cum including getting out the excavated soil, then returning the soil as required in layers not exceeding 20cm in depth, including consolidating each deposited layer by ramming, watering etc, disposing of surplus excavated soil, as directed within a lead of 50 m and lift upto 1.5 m.					
	DSR 2018/ 2.30.1	All kinds of soil	720.00	Each	79.30	57,096.00	/-
		Total Earth Work :				1,91,211.75	
2.00	2.0	Chapter – 5 - Plastering Works					
		General purpose (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac).	1,560.00	Sqm	147.00	2,29,320.00	/-
2.01	15.38	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)					
	b)	For 1.0mm thick application	1,560.00	Sqm	498.00	7,76,880.00	/-
		Total Plastering Work :				10,06,200.00	

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.00	16.0	ROAD WORK					
3.01	DSR 2018/16.79	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paverfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	337.50	Cum	2,641.40	8,91,472.50	/-
3.02	DSR 2018/16.78	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.					
	DSR 2018/16.78.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	270.00	Cum	2,517.70	6,79,779.00	/-
3.03	DSR 2018/16.30	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :					
(a)	DSR 2018/16.30.1	On W.B.M. @ 0.75 Kg l sqm	1,350.00	Sqm	42.05	56,767.50	/-
(b)	DSR 2018/16.30.2	On bituminous surface @ 0.50 Kg l sqm	1,350.00	Sqm	33.65	45,427.50	/-
3.04	DSR 2018/16.54	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.					
	DSR 2018/16.54.2	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.	87.75	Cum	9,981.90	8,75,911.73	/-

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.05	DSR 2018/16.57	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.					
	DSR 2018/16.57.2	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.	54.00	Cum	11,499.40	6,20,967.60	/-
3.06	DSR 2018/16.69	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	28.50	Cum	8,376.15	2,38,750.06	/-
3.07	DSR 2018/16.62	Providing and applying 2.5 mm thick road marking strips (retroreflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	82.62	Sqm	607.30	50,174.52	

Item No.	MPWD 2015-16 / DSR 2018	Description of Item	Quantity	Unit	Rate Rs.	Amount Rs.	
3.08	DSR 2018/16.18	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.					
	DSR 2018/16.18.1	With G.I. barbed wire	1,518.91	metre	19.05	28,935.24	/-
		Total Road work :				34,88,185.64	

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
1.00	Chapter – 1 - Earth Work						
1.01	Earthwork in excavation upto a depth of 2m below the existing ground level for foundation trenches of foundations, footings of column/ walls, retaining walls, septic tank etc. including bailing out water where necessary and removal of surplus earth with all lead and lifts as directed and specified for the following classification of soils.						
	In ordinary soil						
	External Development						
	Road area	1	1350.00		0.56	749.25	
						749.25	Cum
1.02	Excavating holes more than 0.10 cum & upto 0.5 cum including getting out the excavated soil, then returning the soil as required in layers not exceeding 20cm in depth, including consolidating each deposited layer by ramming, watering etc, disposing of surplus excavated soil, as directed within a lead of 50 m and lift upto 1.5 m.						
	All kinds of soil						
	Fencing	720				720.00	
						720.00	Each
2.00	Chapter – 2 - Plastering Works						
	General purpose (Asian paint/ Berger paint/ ICI paint/ J & N paint/ Nerolac).						
	Fencing	1	1300.00		1.20	1560.00	
						1560.00	Sqm
						1560.00	Sqm
3.00	Road Work						
3.01	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paverfinisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						
3.01	Road area	1	1350.00		0.25	337.50	
						337.50	Cum
3.02	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.						

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30						
	Road Area	1	1350.00		0.20	270.00	
						270.00	Cum
2.03	Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :						
a)	On W.B.M. @ 0.75 Kg l sqm						
	Road Area	1	1350.00			1350.00	
						1350.00	Sqm
b)	On bituminous surface @ 0.50 Kg l sqm						
	Road Area	1	1350.00			1350.00	
						1350.00	Sqm
3.04	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.						
	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.						
	Road Area	1	1350.00		0.07	87.75	
						87.75	Cum
3.05	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.						
	40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.						
	Road Area	1	1350.00		0.04	54.00	
						54.00	Cum

S No.	Item Description	Nos	Length	Width	Height	Quantity	Unit
3.06	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).						
		1	275.40	0.23	0.45	28.50	
						28.50	Cum
3.07	Providing and applying 2.5 mm thick road marking strips (retroreflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.						
		1	275.40	0.30		82.62	
						82.62	Sqm
3.08	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.						
	With G.I. barbed wire						
	Fencing						
		1	1518.91			1518.91	
						1518.91	m

ESTIMATE
OF PLUMBING WORKS

SUMMARY PLUMBING WORKS PHASE -02			
ACADEMIC BLOCK & EXTERNAL DEVELOPMENT			
S. No.	Description	Amount (Rs.)	
		DSR	MR
1.0	SEWERAGE SYSTEM	7,18,812.85	0.00
2.0	STORM WATER DRAINAGE SYSTEM	6,78,455.95	0.00
3.0	EXTERNAL WATER SUPPLY	7,63,173.60	5,41,555.00
4.0	SOIL WASTE & VENT PIPES AND FITTINGS	3,63,165.44	33,912.00
5.0	INTERNAL WATER SUPPLY	4,28,951.45	7,22,236.00
6.0	SANITARY FIXTURES	24,99,127.00	1,86,323.00
7.0	RAIN WATER PIPES AND FITTINGS	1,81,172.89	0.00
8.0	TUBEWELL & TUBEWELL PUMPS	2,12,410.25	1,37,850.00
9.0	PUMPING SYSTEM	15,930.00	10,17,424.00
10.0	WATER TREATMENT SYSTEM	3,282.00	5,21,054.00
11.0	SUCTION AND DELIVERY PIPES AND VALVES FOR WATER SUPPLY PUM	74,273.00	3,08,594.00
	TOTAL	59,38,754.43	34,68,948.00
	TOTAL OF PHE WORKS (MPWD SOR / DSR + MR ITEMS)	94,07,702.43	

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
1.0	SEWERAGE SYSTEM									
1.1	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :									19.1
a)	100 mm diameter	Metre	10		10.00	317.05	-	3170.50	-	19.1.1
1.2	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :									19.6
a)	250mm dia RCC pipe	Metre	150		150.00	754.45	-	113167.50	-	19.6.3
1.3	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design :									19.3
a)	100mm diameter S.W. / RCC pipe	Metre	10		10.00	388.30	-	3883.00	-	19.3.1
b)	150mm diameter S.W. / RCC pipe	Metre	15		15.00	629.30	-	9439.50	-	19.3.4
c)	250mm diameter S.W. / RCC pipe	Metre	180		180.00	861.15	-	155007.00	-	19.3.4
1.4	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:									19.4
	150 x 100mm size P-type									19.4.2
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	8		8.00	2317.4	-	18539.20	-	19.4.2.1
1.5	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone- III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :									19.7
	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :									19.7.1
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	9		9.00	10905.05	-	98145.45	-	19.7.1.1
1.6	Extra for depth for manholes :									19.8
	Size 90 x 80 cm									19.8.1
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	4.5		4.50	7503	-	33763.50	-	19.8.1.1

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
1.7	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :									19.9
	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :									19.9.1
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	2		2.00	11038.1	-	22076.20	-	19.9.1.1
1.8	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m									19.10
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	3.5		3.50	6448.4	-	22569.40	-	19.10.1
1.9	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	35		35.00	463.05	-	16206.75	-	19.16
1.10	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.									2.6
a)	All kinds of soil	Cum	37		37.00	181.85	-	6728.45	-	2.6.1

[illegible]

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
a)	150mm dia RCC pipe	Metre			0.00	462.6	-	0.00	-	19.6.2
b)	250mm dia RCC pipe	Metre	220		220.00	754.45	-	165979.00	-	19.6.3
c)	300mm dia RCC pipe	Metre	65		65.00	863.65	-	56137.25	-	19.6.4
d)	450mm dia RCC pipe	Metre			0.00	1392.7	-	0.00	-	19.6.5
2.3	Constructing brick masonry road gully chamber 50x45x60cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450mm precast RCC horizontal grating with frame complete as per standard design.									19.27
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	17		17.00	5209.1	-	88554.70	-	19.27.1
2.4	Extra for depth beyond 45 cm of brick masonry chamber :									19.31
	For 455x610 mm size									19.31.1
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	2.5		2.50	3979.1	-	9947.75	-	19.31.1.1
2.5	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement : 4 coarse sand), inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :									19.9
	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :									19.9.1
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each			0.00	11038.1	-	0.00	-	19.9.1.1
2.6	Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m									19.10
a)	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre			0.00	6448.4	-	0.00	-	19.10.1

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
2.7	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each			0.00	463.05	-	0.00	-	19.16
2.8	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.									2.6
a)	All kinds of soil	Cum			0.00	181.85	-	0.00	-	2.6.1
2.9	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 up to 50 m and lift upto 1.5 m.	Cum			0.00	219.65	-	0.00	-	2.25
2.10	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :									2.10
a)	All kind of soil									2.10.1
	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Metre	285		285.00	364.2	-	103797.00	-	2.10.1.2
b)	Pipes, cables etc. exceeding 300 mm dia. but not exceeding 600 mm dia.	Metre			0.00	568.6	-	0.00	-	2.10.1.3
	TOTAL OF STORM WATER DRAINAGE SYSTEM CARRIED OVER TO SUMMARY							6,78,455.95	0.00	
3.0	EXTERNAL WATER SUPPLY									
3.1	Supplying fitting and fixing CPVC Pipes with all necessary fittings of SUPREME/ PRINCE/ SFMC/ FUSION brand or equivalent, in exposed or in trenches including trenching and refilling the same etc. complete as directed									38.9
	32mm diameter	Rm	10		10.00	479.00	-	4790.00	-	
	40mm diameter	Rm	10		10.00	559.00	-	5590.00	-	
	50mm diameter	Rm	285		285.00	712.00	-	202920.00	-	
	63mm diameter	Rm			0.00	1,543.00	-	0.00	-	
	75mm diameter	Rm	20		20.00	1,929.00	-	38580.00	-	

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 / ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
II	PIPING									
3.2	Supplying fitting and fixing UPVC Pipes with all necessary fittings (Using uPVC high pressure pipes & fittings of SUPREME/ PRINCE/ SFMC/ FUSION brand or equivalent) in exposed or in trenches including trenching and refilling the same etc. complete as directed									38.8
	25mm diameter	Rm	10		10.00	170.00	-	1700.00	-	
	32mm diameter	Rm			0.00	216.00	-	0.00	-	
	63mm diameter	Rm	385		385.00	462.00	-	177870.00	-	
XXIX	MANHOLE COVER									
3.3	Providing fitting and fixing 450mm dia. 90mm thick C.I. Man hole cover and frame of 38 Kg. weight complete as directed and specified (For Underground Tank)	Each	8		8.00	3,735.00	-	29880.00	-	34.46
3.4	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design :									18.32
a)	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	12		12.00	1,582.45	-	18989.40	-	18.32.1
3.5	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :									18.33
a)	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	3		3.00	9288.4	-	27865.20	-	18.33.1
3.6	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.									16.7
3.6.1	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified									16.7.1
a)	80 mm dia	Each	1		1.00	3691	-	3691.00	-	ELECT. DSR 2018 / 16.7.1.5

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
3.7	Providing, fixing, testing & commissioning of lever operated gun metal ball valve with SS ball.									
a)	25mm nominal bore	Each	7		7.00	-	1183.00	-	8281.00	MR
b)	32mm nominal bore	Each	1		1.00	-	2210.00	-	2210.00	MR
c)	50mm nominal bore	Each	4		4.00	-	4818.00	-	19272.00	MR
d)	65mm nominal bore	Each	2		2.00	-	8161.00	-	16322.00	MR
3.8	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m :									2.10
a)	All kind of soil									2.10.1
	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Metre	690		690.00	364.2	-	251298.00	-	2.10.1.2
3.9	Providing & fixing M.S. Puddle Flange fabricated of 600 mm long 'C' class pipe pieces with screwed ends with center of pipe welded with 6mm thick M.S. plate of size (100mm+D) X (100mm+D) for R.C.C. water tank walls / slabs. The entire fitting shall be hot dipped galvanised. (D indicated above nominal dia metre of pipe in mm).									
a)	25mm dia	Each		20	20.00	-	813.00	-	16260.00	MR
b)	32mm dia	Each		12	12.00	-	1,162.00	-	13944.00	MR
c)	40mm dia	Each		12	12.00	-	1,452.00	-	17424.00	MR
d)	50mm dia	Each		30	30.00	-	1,742.00	-	52260.00	MR
e)	65mm dia	Each		10	10.00	-	2,033.00	-	20330.00	MR
f)	80mm dia	Each		20	20.00	-	2,323.00	-	46460.00	MR
g)	100mm dia	Each		30	30.00	-	2,904.00	-	87120.00	MR
h)	150mm dia	Each		20	20.00	-	3,485.00	-	69700.00	MR
i)	200mm dia	Each		8	8.00	-	5,227.00	-	41816.00	MR
j)	250mm dia	Each		10	10.00	-	7,550.00	-	75500.00	MR
3.10	Providing, fixing, testing and commissioning of 100mm dia G.I. Vent Pipe on Under ground and over head tank including cost of 2 Nos. 90° bend and painting with enamel paint complete with in all respect.(100mm Dia)	Each	8		8.00	-	6,832.00	-	54656.00	MR
	TOTAL OF EXTERNAL WATER SUPPLY CARRIED OVER TO SUMMARY							7,63,173.60	5,41,555.00	
4.0	SOIL WASTE & VENT PIPES AND FITTINGS									
XXIV	PVC PIPES, BENDS, JUNCTIONS, TEES ETC.									
4.1	Supplying, fitting and fixing PVC pipes/ bends/ Junctions etc. of Supreme/Prince or other ISI approved make, including joining ,fitting and fixing with clamps etc. as necessary complete at all levels including below G.L as directed and specified.									34.36
	PVC pipes of 6 Kg/cm2 as directed and specified.									34.36.1
(b)	110mm dia.	each	80		80.00	596.00	-	47680.00	-	
(c)	75mm dia.	each	13		13.00	446.00	-	5798.00	-	
4.2	87.5 degree PVC bend as directed and specified.									34.36.2
(b)	110mm dia.	each	120		120.00	391.00	-	46920.00	-	

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
(c)	75mm dia.	each	6		6.00	333.00	-	1998.00	-	
4.3	87.5 degree PVC bend with door as directed and specified.									34.36.3
(a)	In exposed surfaces or in trenches.									
(ii)	110mm dia.	each	2		2.00	484.00	-	968.00	-	
4.4	PVC single tee with door as directed and specified.									34.36.6
(a)	In exposed surfaces or in trenches.									
(ii)	110mm dia.	each	18		18.00	558.00	-	10044.00	-	
4.5	PVC single 'Y' as directed and specified.									34.36.7
(a)	In exposed surfaces or in trenches.									
(ii)	110mm dia.	each	135		135.00	558.00	-	75330.00	-	
(iv)	75mm dia.	each	8		8.00	484.00	-	3872.00	-	
4.6	PVC plain double 'Y' as directed and specified.									34.36.9
(a)	In exposed surfaces or in trenches.									
(i)	110mm dia.	each	1		1.00	633.00	-	633.00	-	
4.7	PVC coupler as directed and specified.									34.36.13
(a)	In exposed surfaces or in trenches.									
(i)	110mm dia.	each	12		12.00	240.00	-	2880.00	-	
(ii)	75 mm dia.	each	6		6.00	180.00	-	1080.00	-	
4.8	PVC reducing Tee as directed and specified.									34.36.15
(a)	In exposed surfaces or in trenches.									
(iii)	110 mm x 75mm	each	9		9.00	662.00	-	5958.00	-	
4.9	PVC socket plug in exposed surface or trenches as necessary complete at all levels including below G.L. as directed and specified.									34.36.17
(a)	110 mm	each	37		37.00	253.00	-	9361.00	-	
(b)	75 mm	each				214.00	-	0.00	-	
4.10	PVC cleaning pipe in exposed surface or trenches as necessary complete at all levels including below G.L. as directed and specified.									34.36.18
(b)	110 mm	each	12		12.00	455.00	-	5460.00	-	
(d)	75 mm	each	6		6.00	290.00	-	1740.00	-	
4.11	Providing fitting and fixing PVC cowl of ISI make complete as directed and specified.									34.38
(b)	110mm dia. PVC cowl of ISI make	each	12		12.00	231.00	-	2772.00	-	
(d)	75mm dia. PVC cowl of ISI make	each	6		6.00	217.00	-	1302.00	-	
II PIPING										
4.12	Supplying fitting and fixing UPVC Pipes with all necessary fittings (Using uPVC high pressure pipes & fittings of SUPREME/ PRINCE/ SFMC/ FUSION brand or equivalent) in exposed or in trenches including trenching and refilling the same etc. complete as directed									38.8
	32mm diameter	Rm	80		80.00	216.00	-	17280.00	-	
	50mm diameter	Rm	55		55.00	319.00	-	17545.00	-	
4.13	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :									4.1
(a)	1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size)	Cum	15.4		15.40	6788.6	-	104544.44	-	4.1.3

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			Academic Block	EXT.						
4.14	Providing, fixing, testing and commissioning uPVC deep seal 'P' or 'S' Trap of self cleansing design with or without vent arm with provision for connecting uPVC inlet fitting complete including cost of cutting and making good the walls and floors wherever required.									
a)	For 110mm inlet and 110mm outlet.	each	72		72.00		471.00	-	33912.00	NSI
	TOTAL OF SOIL WASTE & VENT PIPES AND FITTINGS CARRIED OVER TO SUMMARY							3,63,165.44	33,912.00	
5.0	INTERNAL WATER SUPPLY									
V	CHLORINATED POLY VINYLE CLORIDE (CPVC) PIPES									
5.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings i/c fixing the pipe with clamps at 1.00m spacing. This includes jointing of pipes & fittings, with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineerin-Charge,,Concealed work, including cutting chases and making good the wall etc.									36.5
(a)	Exposed or in trenches									
(i)	15mm OD	R.m.	5		5.00	342.00	-	1710.00	-	
(ii)	20mm pipe	R.m.	160		160.00	375.00	-	60000.00	-	
(iii)	25mm OD	R.m.	95		95.00	418.00	-	39710.00	-	
(iv)	32mm OD pipe	R.m.	85		85.00	487.00	-	41395.00	-	
(v)	40 mm OD pipe	R.m.	65		65.00	567.00	-	36855.00	-	
(vi)	50mm OD	R.m.	50		50.00	730.00	-	36500.00	-	
(vii)	65mm OD	R.m.	50		50.00		1452.00	-	72600.00	MR
(viii)	80mm OD	R.m.	15		15.00		1804.00	-	27060.00	MR
(b)	Concealed by chiselling or breaking brick wall/ C.C. wall/ R.C.C. wall and making good to the damaged structure.									
(i)	15mm OD	R.m.	60		60.00	392.00	-	23520.00	-	
(ii)	20mm pipe	R.m.	365		365.00	438.00	-	159870.00	-	
(iii)	25mm OD	R.m.	25		25.00	502.00	-	12550.00	-	
(iv)	32mm OD pipe	R.m.			0.00	596.00	-	0.00	-	
(v)	40 mm OD pipe	R.m.			0.00	696.00	-	0.00	-	
(vi)	50mm OD	R.m.			0.00	916.00	-	0.00	-	
II	PIPING									
5.2	Supplying fitting and fixing CPVC Pipes with all necessary fittings of SUPREME/ PRINCE/ SFMC/ FUSION brand or equivalent, in exposed or in trenches including trenching and refilling the same etc. complete as directed									38.9
(i)	50mm diameter	Rm	5		5.00	712.00	-	3560.00	-	
(ii)	63mm diameter	Rm			0.00	1,543.00	-	0.00	-	
XXIX	MANHOLE COVER									
5.3	Providing fitting and fixing 450mm dia. 90mm thick C.I. Man hole cover and frame of 19 Kg. weight complete as directed and specified (For Over head Tank)	Each	4		4.00	2,002.00	-	8008.00	-	34.48

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			Academic Block	EXT.						
5.4	Constructing masonry Chamber 30x30x50 cm inside, in brick work in cement mortar 1:4 (1 cement :4 coarse sand) for stop cock, with C. I. surface box 100x100 x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12mm thick, finished with a floating coat of neat cement complete as per standard design :									18.32
a)	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each	1		1.00	1,582.45	-	1582.45	-	18.32.1
5.5	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.									16.7
5.5.1	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified									16.7.1
a)	80 mm dia	Each	1		1.00	3691	-	3691.00	-	ELECT. DSR 2018 / 16.7.1.5
5.6	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :									18.18
a)	50 mm nominal bore	Each	1		1.00	-	6840.00	-	6840.00	MR
b)	65 mm nominal bore	Each			0.00	-	14833.00	-	0.00	MR
5.7	Providing, fixing, testing and commissioning of Air Release Valves screwed ends with ball valve of approved brand of manufacture, with accessories etc., complete.									
a)	15mm dia	Each	6		6.00	-	847.00	-	5082.00	MR
5.8	Providing, fixing, testing & commissioning of class O Careflex ST insulation 6mm thick to hot water pipe and fittings and valves as per manufacturer's recommendations complete to satisfaction of Engineer in charge.									
a)	15mm nominal bore (6 mm thick insulation)	Meter			0.00	-	67.00	-	0.00	MR
b)	20mm nominal bore (6 mm thick insulation)	Meter			0.00	-	79.00	-	0.00	MR
5.9	Providing, fixing, testing & commissioning of lever operated gun metal ball valve with SS ball.									
a)	20mm nominal bore	Each	1		1.00	-	967.00	-	967.00	MR
b)	25mm nominal bore	Each	4		4.00	-	1183.00	-	4732.00	MR
c)	32mm nominal bore	Each	4		4.00	-	2210.00	-	8840.00	MR
d)	40mm nominal bore	Each	8		8.00	-	3093.00	-	24744.00	MR
e)	50mm nominal bore	Each	5		5.00	-	4818.00	-	24090.00	MR
f)	65mm nominal bore	Each	3		3.00	-	8161.00	-	24483.00	MR

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			Academic Block	EXT.						
(a)	White									
(ii)	Medium.	Each	36		36.00	4,377.00	-	157572.00	-	
XI	KITCHEN SINK (STAINLESS STEEL)									
6.5	Providing fitting & fixing stainless steel kitchen sink of Parryware make with CI/MS brackets, C.P. brass chain with rubber plug, PVC waste pipe etc. complete including painting the fittings, cutting & making good the walls wherever required. (Sink cock, stop cocks, waste coupling are to be paid separately									34.15
(c)	Sink with drain board (37 in. x 18 in)	Each	2		2.00	5,970.00	-	11940.00	-	
XIV	MIRROR									
6.6	Providing fitting and fixing Mirror with plastic frame of size 500x400mm complete as directed and specified.	Each	30		30.00	861.00	-	25830.00	-	34.18
XVI	SOAP TRAY, SOAP DISH, LIQUID SOAP DISPENSER AND LIQUID SOAP CONTAINER									
6.7	Providing, fitting and fixing CP soap tray / soap dish complete as directed and specified.									34.22
(b)	Medium.	Each			0.00	1,469.00	-	0.00	-	
6.8	Providing, fitting and fixing Liquid soap dispenser and liquid soap container complete as directed and specified.									34.23
(b)	Medium.	Each	17		17.00	1,194.00	-	20298.00	-	
XVII	TOWEL RAIL, TOWEL RACK, TOWEL RING & ROBE HOOK									
6.9	Providing, fitting and fixing CP towel rail complete as directed and specified.									34.24
(b)	Without Hook.									
(ii)	Medium.	Each			0.00	1,607.00	-	0.00	-	
6.10	Providing, fitting and fixing Chrome Plated towel ring complete as directed and specified.									34.26
(b)	Medium.	Each	1		1.00	1,297.00	-	1297.00	-	
6.11	Providing, fitting and fixing Chrome Plated robe hook complete as directed and specified.									34.27
(b)	Medium.	Each	41		41.00	850.00	-	34850.00	-	
XIX	TOILET PAPER HOLDER									
6.12	Providing, fitting and fixing Chrome Plated TOILET PAPER holder complete as directed and specified.									34.30
(b)	Medium.	Each	41		41.00	987.00	-	40467.00	-	
XX	WASTE COUPLING									
6.13	Providing, fitting and fixing Chrome Plated waste coupling complete as directed and specified.	Each	36		36.00	641.00	-	23076.00	-	34.31
XXI	BOTTLE TRAP									
6.14	Providing, fitting and fixing Chrome Plated bottle trap complete as directed and specified.	Each	36		36.00	1,878.00	-	67608.00	-	34.32
6.15	Providing, fitting and fixing Chrome Plated bottle trap pipe complete as directed and specified.									34.33
(b)	Pipe for bottle trap 450mm long	Each	36		36.00	778.00	-	28008.00	-	
VII	BIB COCK									
6.16	Supplying fitting and fixing C.P. bib cock 15mm dia of approved brand directed and specified (G.I. & C.P. pipes will be measured separately)									36.7
(b)	Long body bib cock with wall flange	Each	43		43.00	1,244.00	-	53492.00	-	

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			Academic Block	EXT.						
VIII	STOP COCK									
6.17	Supplying fitting and fixing chrome plated (C.P.) stop-cock of approved brand and size as mentioned below as directed and specified.(G.I. & C.P pipes will be measured and paid separately)									36.9
(e)	15mm dia, Heavy (Concealed with adjustable wall flange)	Each	120		120.00	1,781.00	-	213720.00	-	
IX	PUSH BIB COCK									
6.18	(Supplying fitting and fixing push bib cock 15mm dia complete as directed and specified as follows. (pipes will be measured and paid separately)									36.10
	C.P.C.H.									
(b)	Heavy quality	Each	36		36.00	346.00	-	12456.00	-	
X	PILLAR COCK									
6.19	Supplying, fitting and fixing C.P. pillar cock 15mm dia as directed.									36.11
(b)	Medium.	Each			0.00	1,059.00	-	0.00	-	
XI	SINK COCK									
6.20	Supplying fitting and fixing Chrome Plated (C.P.) sink cock of approved brand as directed and specified. (G.I. & C.P pipes will be measured and paid separately)									
(b)	Medium.	Each	2		2.00	1,720.00	-	3440.00	-	36.12
XIII	SHOWER									
6.21	Supplying fitting and fixing overhead adjustable Chrome Plated (C.P.) spray shower 15mm dia. of Sona make with wall flange as directed and specified.(pipes will be measured and paid separately)									36.14
(a)	Shower arm (Chrome Plated)									
(ii)	Medium	Each			0.00	728	-	0.00	-	
(b)	Overhead shower (Chrome Plated)									
(ii)	Medium	Each			0.00	1,521.00	-	0.00	-	
XIV	HEALTH FAUCET									
6.22	Supplying fitting and fixing Health faucet with 1m long flexible tube with wall flange as directed and specified.									36.15
(ii)	Medium	Each	41		41.00	1,156.00	-	47396.00	-	
XV	BASIN MIXER									
6.23	Supplying, fitting and fixing Chrome Plated (C.P.) basin mixer complete as directed.									36.16
	Central hole									
(ii)	Medium	Each			0.00	4,303.00	-	0.00	-	
XVI	WALL MIXER									
6.24	Supplying, fitting and fixing Chrome Plated (C.P.) wall mixer complete as directed.									36.17
(a)	Non-Telephonic									
(ii)	Medium	Each			0.00	3,642.00	-	0.00	-	
XVII	SINK MIXER									
6.25	Supplying, fitting and fixing Chrome Plated (C.P.) sink mixer complete as directed.									36.18
(b)	Medium	Each	2		2.00	3,963.00	-	7926.00	-	

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			Academic Block	EXT.						
8.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level. (Quantity of depth of bore hole indicated in quantity is indicative. Exact depth will be ascertained as per water aquifer of site)									23.1
a)	Rocky strata including Boulders									23.1.2
	300 mm dia	M	60		60.00	1223.2	-	73392.00	-	23.1.2.1
8.2	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge.. (Quantity of pipes of indicated in quantity is indicative. Exact depth will be ascertained as per water aquifer of site)									23.10
a)	150 mm nominal size dia having minimum wall thickness 5.00 mm	M	30		30.00	1661.85	-	49855.50	-	23.10.2
8.3	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed/ plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumestic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge. (Quantity of pipes of indicated in quantity is indicative. Exact depth will be ascertained as per water aquifer of site)									23.11
a)	150 mm nominal size dia	M	30		30.00	1769.6	-	53088.00	-	23.11.2
8.4	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.									23.14
a)	150 mm clamp.	Each	1		1.00	1489.8	-	1489.80	-	23.14.2

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			Academic Block	EXT.						
8.5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of usable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by "V" notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, i/c disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge. (Quantity given is indicated in quantity is indicative. Exact time of development quality of water aquifer of site)	Hrs.	40		40.00	857.6	-	34304.00	-	23.12
8.6	Providing and fixing single / multistage submersible tubewell pump suitable for 150mm bore with stainless steel casing, NORYL impeller, stainless steel shaft and built in non return valve coupled with submersible squirrel cage motors suitable for 145V ± 10% volts. 3 phase, 50 cycles AC supply.									
a)	Capacity 250 lpm									MR
	Head 50m to 60m	No.	1		1.00		38000.00	-	38000.00	
	Head may vary depending upon depth of aquifer of site. The agency to quote accordingly									
8.7	65mm dia GI column pipe of heavy class duly flanged.	mtr.	75		75.00		625.00	-	46875.00	MR
8.8	Providing and fixing gunmetal pressure gauge (100mm dia) of rating (0-10 kg/cm ²) with gunmetal isolating cock and connecting pipe.	No.	1		1.00		2500.00	-	2500.00	MR
8.9	Providing and fixing 65mm cable clips with nuts & bolts.	Nos.	24		24.00		25.00	-	600.00	MR
8.10	Providing and fixing 65mm dia supporting clamps with nuts and bolts.	Pair	1		1.00		1000.00	-	1000.00	MR
8.11	Providing and fixing 3C - 6 sq.m submersible cable. (Quantity of cable may vary depending upon the depth of water aquifer at site.)	M	100		100.00		150.00	-	15000.00	MR
8.12	Providing and fixing Butterfly valve of cast body with stainless steel disc and stainless steel stem, teflon bushing and niterite o'rings.									
a)	65mm dia	No.	1		1.00		4500.00	-	4500.00	MR
8.13	Providing and fixing steel wire rope 6mm dia complete with wire rope clamps for safety of pump set.	M	75		75.00		125.00	-	9375.00	MR
8.14	Supplying & laying 1.1KV grade aluminium conductor PVC insulated and PVC sheathed armoured cables including 8 SWG GI earth wire on surface/cable trays as required.									
a)	3 Core - 6sq.mm	M	10		10.00		500.00	-	5000.00	MR

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			Academic Block	EXT.						
8.15	Providing, installation, testing & commissioning of dust and vermin proof motor control panel fabricated from 14 SWG MS sheet with stove enamelled paint and comprising of: Outdoor type.									
a)	63 amps incoming MCB (1 No.)									
b)	One no fully automatic Dol starter with push buttons and indicating lights.5.5 KWs									
c)	One panel type volt meter 96mm square with Rotary selection switch for reading voltage between phase and neutral or incoming feeder.									
d)	Three Neon Phase indicating lights on the incoming Main.									
e)	One Ampere meter 96mm square panel type of appropriate range.									
f)	Etched plastic identification plates for all switch gears.									
g)	Space for liquid level controller.									
h)	All internal wiring should be colour coded from incoming main to switchgear, starters, meters, indicating lights.	No.	1		1.00		15000.00	-	15000.00	MR
8.16	Supplying of 150mm dia tail plug with all required specials complete as per directions of Engineer -in-Charge.									23.15
a)	150 mm clamp.	No.	1		1.00	280.95	-	280.95	-	23.15.2
TOTAL OF TUBEWELL & TUBEWELL PUMPS CARRIED OVER TO SUMMARY								2,12,410.25	1,37,850.00	
9.0 PUMPING SYSTEM										
9.1	Providing, fixing, testing and commissioning of Vertical in line type pump set with SS casing, SS impeller and SS shaft suitable for operation on 400/440 volts, 3 phase 2900 RPM, TEFC electric motor mounted on a common channel base plate with coupling guard, 150mm dia pressure gauge, GM isolation cock and cement concrete foundation with plaster complete as required.									
a)	Filter Feed pumps for Academic Block									
	Pump capacity - 50 lpm									
	Head - 20 m									
	RPM - 2900	Each	2		2		59,312.00	-	118624.00	MR
b)	Filter Feed pumps for Hostel block									
	Pump capacity - 100 lpm									
	Head - 20 m									
	RPM - 2900	Each			0		65,592.00	-	0.00	MR
c)	Domestic water transfer pumps for Academic Block									
	Pump capacity - 100 lpm									
	Head - 35 m									
	RPM - 2900	Each	2		2		71,925.00	-	143850.00	MR
d)	Domestic water transfer pumps for Hostel block									
	Pump capacity - 200 lpm									
	Head - 30 m									
	RPM - 2900	Each			0		1,11,303.00	-	0.00	MR
e)	Rain water transfer pumps for Academic Block									
	Pump capacity - 50 lpm									
	Head - 20 m									
	RPM - 2900	Each	2		2		59,312.00	-	118624.00	MR

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			Academic Block	EXT.						
iii)	Over voltage and under voltage tripping machanism for persistent voltage fluctuations of more than $\pm 10\%$ of the rated voltage for more than 5 minutes. (1set)									
iv)	Phase indicating lamps with toggle switches.									
v)	Indication lamps for ON/OFF/TRIP status of motors.									
b)	Aluminium bus bar of 100 amps for three phase and neutral.									
c)	Outgoing Feeders/Starters.									
i)	16 amps TPN MCB with DOL starter each suitable 0.5 HP filter feed pumps (2 Nos).									
ii)	16 amps TPN MCB with DOL starter each suitable for 1.5 HP for domestic water supply (2 Nos).									
iii)	16 amps TPN MCB with DOL starter each suitable for 0.5 HP for rain water supply (2 Nos).									
iv)	16 amps TPN MCB with DOL starter each suitable for 1.5 HP for Submersible water supply (2 Nos).									
v)	16 amps TPN MCB each suitable for 0.75 HP drainage pumps panel in pumproom (1 Set).									
vi)	10 amps TPN MCB with selector switch for 60 Watt metering pump									
vii)	32 amps TPN MCB each suitable for 5 HP tubewell pumps panel (1 Sets).									
viii)	Rotary manual/auto/off switch. (8 Nos.)									
ix)	Spares									
a)	16 amps TPN MCB - 2 Nos.									
b)	32 amps TPN MCB - 2 Nos.									
x)	Note :									
a)	All switch gear/panels shall be suitable for 10 KA rating.									
b)	All outgoing will have 96 sq. mm size ammeter and CT.									
c)	All starter will have spare 10 amps 230 V coil auxiliary contractor for building Automation system.									
d)	All starter units for pumps to be provided with 3 level liquid level contractor.									
e)	Lamps.									
f)	All pumps to be provided with duty selector switch.									
g)	All pumps to be provided with sequence timer 220/440 V AC/DC and alternate working of pumps between 6 to 8 hours or alternate use of pumps after one service in sequence.									
h)	All pumps to be provided with over load relay.									
i)	All starter to be provided with single phase preventor.									
j)	Necessary cable alleys for space switches, level controller internal wiring and copper earthing of all equipment shall also be included. All switch gears/control gears shall be motor duty rating.	Each	1		1		2,44,071.00	-	244071.00	MR

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			Academic Block	EXT.						
11.1	Providing, fixing, testing and commissioning G.I. suction & delivery headers / pipes for water supply pumps (IS:1239 heavy class) jointed with G.I. heavy class welded flanged fittings (bends, tees, reducers, plugs, flange & blank flanges etc) and clamps all complete. Note: All pipes & fittings in pump room will be welded flanged types.									
a)	32 mm nominal bore	Meter	35		35		644.00	-	22540.00	MR
b)	40 mm nominal bore	Meter	15		15		710.00	-	10650.00	MR
c)	50 mm nominal bore	Meter	195		195		859.00	-	167505.00	MR
d)	65 mm nominal bore	Meter	10		10		1,025.00	-	10250.00	MR
e)	80 mm nominal bore	Meter	10		10		1,200.00	-	12000.00	MR
f)	100 mm nominal bore	Meter			0		1,593.00	-	0.00	MR
11.2	Painting for G.I. Pipes with two or more coats of synthetic enamel paint of approved quality and shade over a coat of approved primer coat as directed including surface preparation (Shade as per pipe colour code).									
a)	32 mm nominal bore	Meter	35		35		30.00	-	1050.00	MR
b)	40 mm nominal bore	Meter	15		15		40.00	-	600.00	MR
c)	50 mm nominal bore	Meter	195		195		50.00	-	9750.00	MR
d)	65 mm nominal bore	Meter	10		10		60.00	-	600.00	MR
e)	80 mm nominal bore	Meter	10		10		70.00	-	700.00	MR
f)	100 mm nominal bore	Meter			0		80.00	-	0.00	MR
11.3	Providing, fixing, testing and commissioning lever operated gun metal Ball Valve with SS ball.									
	32 mm dia	Each	13		13		3,269.00	-	42497.00	MR
11.4	Providing, fixing, testing and commissioning gunmetal horizontal Non-Return Valve with flanged ends tested to 20 kg/cm ² .									
a)	32mm dia	Each	4		4		2,363.00	-	9452.00	MR
b)	50mm dia	Each	6		6		3,500.00	-	21000.00	MR
11.5	Supplying, fixing, testing and commissioning of following valves, strainers, gauges in the chilled water plumbing duly insulated to the same specifications as the connected piping and adequately supported as per specifications.									ELECT. DSR 2018 /16.7
11.5.1	BUTTERFLY VALVE (MANUAL) with C I body SS Disc, Nitrile Rubber Seal & O- Ring PN 16 pressure rating for chilled water/hot eater circulation as specified									16.7.1
a)	100mm dia	Each			0	5169.00	-	0	-	16.7.1.4
b)	80mm dia	Each	1		1	3,691.00	-	3,691	-	16.7.1.5
c)	65mm dia	Each	2		2	3,436.00	-	6,872	-	16.7.1.6
d)	50mm dia	Each	8		8	3,167.00	-	25,336	-	16.7.1.7
e)	40mm dia	Each	4		4	2,925.00	-	11,700	-	16.7.1.8
11.5.2	NON - RETURN VALVE with duel plate of C I body SS plates vulcanized NBR seal flanged end & PN 16 pressure rating for chilled / hot water circulation including insulation as specified.									16.7.3
a)	65mm dia	Each			0	3507	-	0	-	16.7.3.6
11.5.3	Y - STRAINER of Ductile CI Body flanged ends with stainless steel strainer for chilled / hot water circulation including insulation as specified.									16.7.4
a)	80mm dia	Each			0	7123	-	0	-	16.7.4.5
b)	65mm dia	Each	2		2	6207	-	12,414	-	16.7.4.6
c)	40mm dia	Each	4		4	3565	-	14,260	-	16.7.4.8

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
	TOTAL OF SUCTION AND DELIVERY PIPES AND VALVES FOR WATER SUPPLY PUMPS CARRIED OVER TO SUMMARY							74,273.00	3,08,594.00	

ESTIMATE
OF FIRE FIGHTING WORKS

SUMMARY FIRE FIGHTING WORKS PHASE -02			
ACADEMIC BLOCK & EXTERNAL DEVELOPMENT			
S. No.	Description	Amount (Rs.)	
		DSR	MR
1.0	FIRE FIGHTING PUMPS & EQUIPMENTS	24,041.00	12,16,384.00
2.0	SUCTION AND DELIVERY PIPES AND VALVES FOR FIRE FIGHTING PUMPS	4,05,190.00	5,37,243.50
3.0	FIRE HYDRANT SYSTEM	16,63,488.00	3,30,048.00
4.0	FIRE EXTINGUISHER	4,52,303.00	26,064.00
	TOTAL	25,45,022.00	21,09,739.50
	TOTAL OF FIRE FIGHTING WORKS (MPWD SOR / DSR + MR ITEMS)	46,54,761.50	

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S. No.	Description	Unit	Qty	EXT.	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block							
	1 no. 250A TPN MCCB with Thermal Magnetic Release & ROH, with 96 mm (0 -1000 A) ammeter with 3 CT and selector switch, 96 mm (0 - 300 V) Voltmeter with selector switch, phase indication light with protection fuse-01 Set.									
	OUTGOINGS									
	i) For 1 x 55 KW Fire hydrant pump.									
	200 A TP MCCB with Star delta starter, overload relay start / stop push buttons, 96 mm (0-500 A) ammeter with three CT & selector switch, on / off / trip indication light with protection fuses, single phase preventer. - 1 Set									
	ii) For 1 x 11 KW Jockey Pump									
	63 A TP MCB, 25 A Star delta starter, overload relay, start/stop push buttons, ammeter (0-100A) with three CT & selector switch, on/off/trip indication lights with protection fuse, single phase preventer. - 1 Set									
	iii) 32A MCB for battery charging alongwith engine start relay 24V DC with AMF Panel - 01 set									
	iv) Provision for starting the diesel engine fire pump with battery charger for trickle & boost charging. The diesel engine driven fire pump shall start automatically in the event of pressure drop beyond preset limit on mains failure or failure of electrical driven pumps to start.									
	Note:- CABEL CONNECTION									
	Separate neutral link to be provided wherever TP MCCB are used.									
	Following provisions to be made in the fire panel:									
	Audio visual alarm & indications having disconnect / reset facility with a range of 1/2 km. Annunciator to be provided in the Fire panel with hooter and acknowledge, test and reset P Bs. The indication shall come on when electrical driven pump set fails to start on pressure drop or when there is power failure during pressure drop.									
	Facility for mode selection ie auto or manual test & local/remote.									
	Protection failure & control cabling.									
	Panel shall be interlocked in such a way when fire pump starts on pressure drop in the header, supply to working chiller A/c panel is disconnected.									
	Remote indication of ON/OFF/TRIP shall be provided through potential free contact.									
	Provision of remote starting/stopping (manuals) of the engine shall be made.									
	NOTE :									
	All pumps operation shall be controled by flow switches.									
	The logic of control panel based on specification attached.									
	All pumps shall be works automatically or manually.									
	5 Amp power required for diesel engine pump from main fire fighting panel.									
	(panel starter shall be based on pumps motor rating if any changes in motor rating the starter rating shall change and fabrication shall start only after approval of drawing)	Each	1		1		2,10,657.00		2,10,657.00	MR

S. No.	Description	Unit	Qty	EXT.	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block							
1.6	Providing, laying, jointing, testing, & commissioning the PVC insulated & sheathed FRLS (Flame Retardant Low Smoke) Armoured Cables of 1.1 K.V. Aluminium Conductor including supplying and making end termination with brass compression glands:									
a)	3 core x 6 sq.mm	Metre	45		45		200.00		9,000.00	MR
b)	3 core x 35 sq.mm	Metre	30		30		308.00		9,240.00	MR
1.7	Providing, fixing, testing and commissioning of electric driven booster pump suitable for automatic operation consisting of the following:									
	(a) Horizontal end suction centrifugal pump complete with mechanical seal and including necessary arrangement for testing of pump									
	(b) Squirrel cage induction motor suitable for 415 V, 50 Hz, AC supply of suitable rating for the above pump with synchronous speed of 2900 RPM T.E.F.C. type and conforming to IP:55 and flexible coupling and coupling guard with the pump.									
	(c) Common bed plate of fabricated mild steel channel or cast iron type.									
	(d) Suitable reinforced cement concrete pump foundation including cushy foot mounting, foundation bolts, washers as required.									
	The pump shall be of the following specifications:									
	Discharge - 450 lpm									
	Head - 35 m									
	No. of stage preferred - Single									
	Speed RPM - 2900									
	Material of construction									
	a) Impeller - Bronze									
	b) Casing - C.I.									
	c) Shaft & Shaft Sleeve - SS-410									
	d) Bearing - Grease Lubricated									
	e) Seal & Make - Mechanical									
	Type of pump - End suction	Each	1		1		73,492.00		73,492.00	MR
1.8	Providing, fixing, testing and commissioning of dust, damp and vermin proof, wall mounted factory built sheet steel enclosed nondrawout modular panel for water supply pumps, fabricated out of suitable sized square tubular section and covered with 2.0mm thick CRCA sheet, hinged doors of 2mm thick CRCA sheet, duly painted complete with earth bus, necessary metering protections & indications and mounted with the following including all inter connection etc (for Fire Booste pump).									
a)	32A TP MCB with DOL starter, overload relay, start/stop push buttons, ammeter (0-40A) with three CT & selector switch, on/off/trip indication lights with protection fuse, single phase preventer. - 01 Set									
b)	One panel type volt meter 96mm square with Rotary selection switch for reading voltage between phase and neutral or incoming feeder.									
c)	One Ampere meter 96mm square panel type of appropriate range.									
d)	Etched plastic identification plates for all switch gears.									
e)	Space for 32 ampere MCB.									
f)	All internal wiring should be colour coded from incoming main to switchgear, starters, meters, indicating lights.									
g)	Single phasing preventors. (1 No.)									
h)	Rotary manual/auto/off switch. (1 No.)	Each	1		1		20,339.00		20,339.00	MR

S. No.	Description	Unit	Qty Academic Block	EXT.	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR- 2018 & N.S.I
1.9	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	Each	4		4	1,508.00	-	6,032.00	-	FIRE DSR 2019 /22
	TOTAL OF PUMPING SYSTEM CARRIED OVER TO SUMMARY							24,041.00	#####	
2.0	SUCTION AND DELIVERY PIPES AND VALVES FOR FIRE FIGHTING PUMPS									
2.1	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :									FIRE DSR 2019 /7
a)	50 mm dia	Metre	10		10	787.00	-	7,870.00	-	7.4
b)	65 mm dia	Metre	5		5	1,004.00	-	5,020.00	-	7.5
c)	80 mm dia	Metre	10		10	1,122.00	-	11,220.00	-	7.6
d)	100 mm dia	Metre	20		20	1,499.00	-	29,980.00	-	7.7
e)	150 mm dia	Metre	30		30	2,064.00	-	61,920.00	-	7.8
f)	200 mm dia (wall thickness 6.3 mm)	Metre	20		20	2,926.00	-	58,520.00	-	7.9
2.3	Providing, fixing, testing and commissioning fire retardant / extinguishing electrical insulated synthetic mat of 3mm thick $\pm 10\%$ conforming to latest BIS doc no.-ET-02(5440) meeting requirements of IS 3043 / IS 5216 (Part I, II & III), IS 8437 & IEC 479 suitable for all voltages not exceeding 3.3 KV AC supply and having minimum width of 1000mm ± 20 mm and including supply of required quantity of adhshive / compound and fixing the same at site as per site requirement.	Metre	2.5		2.5	-	5,771.00	-	14,427.50	MR
2.4	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.									ELECT. DSR 2018 /4.1
	150mm width x 50mm depth x 1.6 mm thickness.	Metre	25		25	531.00	-	13,275.00	-	4.1.2
2.5	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	10		10	483.00	-	4,830.00	-	ELECT. DSR 2018 / 5.11
2.6	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	50		50	206.00	-	10,300.00	-	ELECT. DSR 2018 / 5.15
2.7	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	1		1	6,216.00	-	6,216.00	-	ELECT. DSR 2018 / 5.4
2.8	Providing and fixing in position the industrial type pressure gauges with gun metal / brass valves complete as required	Each	5		5	1,094.00	-	5,470.00	-	ELECT. DSR 2018 /16.8
2.9	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :									FIRE DSR 2019 /11
a)	200 mm dia	Each	2		2	14,958.00	-	29,916.00	-	11.7
b)	150 mm dia	Each	4		4	8,699.00	-	34,796.00	-	11.6
c)	100 mm dia	Each	3		3	6,454.00	-	19,362.00	-	11.5
d)	80 mm dia	Each	2		2	4,842.00	-	9,684.00	-	11.4
e)	65 mm dia	Each	1		1	4,149.00	-	4,149.00	-	11.3

S. No.	Description	Unit	Qty	EXT.	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block							
f)	50 mm dia	Each	1		1	3,671.00	-	3,671.00	-	11.2
2.10	Providing, installation, testing and commissioning of non-return valve of following sizes conforming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :.									FIRE DSR 2019 /14
a)	150 mm dia	Each	2		2	17,577.00	-	35,154.00	-	14.7
b)	100 mm dia	Each	2		2	10,836.00	-	21,672.00	-	14.5
c)	65 mm dia	Each	1		1	6,274.00	-	6,274.00	-	14.3
2.11	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange.									FIRE DSR 2019 /15
a)	150 mm dia	Each	2		2	10,659.00	-	21,318.00	-	15.3
b)	80 mm dia	Each	1		1	4,573.00	-	4,573.00	-	15.1
2.12	Providing, fixing, testing and commissioning reinforced Neoprene Flexible Pipe connectors with all accessories on all pumps delivery.									
a)	Suitable for 20 Kg/cm ²									
(i)	100mm	Each	2		2	-	6,895.00	-	13,790.00	MR
(ii)	65mm	Each	1		1	-	4,943.00	-	4,943.00	MR
2.13	Providing, fixing, testing and commissioning of FM approved Venturi type Flow meter of approved brand of manufacture, with accessories etc., complete.									
	For 100mm dia	Each	1		1	-	1,21,793.00	-	1,21,793.00	MR
2.14	Providing, fixing, testing and commissioning of Pressure release valve. (FM/UL Listed)									
a)	100mm dia	Each	1		1	-	2,20,474.00	-	2,20,474.00	MR
b)	20mm dia	Each	2		2	-	32,347.00	-	64,694.00	MR
2.15	Providing, fixing, testing and commissioning of waste cone with site glasses.									
	100 x 200	Each	1		1	-	97,122.00	-	97,122.00	MR
	TOTAL OF SUCTION AND DELIVERY PIPES AND VALVES FOR FIRE FIGHTING PUMPS CARRIED OVER TO SUMMARY							4,05,190.00	5,37,243.50	
3.0	FIRE HYDRANT SYSTEM									
3.1	Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe conforming to IS 1239/3589 i/c fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation & providing cement concrete blocks as supports, anticorrosive treatment with coaltar/asphalt tape as per IS 10221, refilling the trench etc. of following sizes complete as required.									FIRE DSR 2019 /6
(a)	150 mm dia pipe	m	370		370.00	2,376.00	-	8,79,120.00		6.2
(b)	100 mm dia pipe	m	70		70.00		1,598.00		1,11,860.00	MR
3.2	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :									FIRE DSR 2019 /7
(a)	25 mm dia pipe	m	10		10.00	471.00	-	4,710.00	-	7.1
(b)	80 mm dia pipe	m	10		10.00	1,122.00	-	11,220.00	-	7.6
(c)	100 mm dia pipe	m	190		190.00	1,499.00	-	2,84,810.00	-	7.7
(d)	150 mm dia pipe	m	15		15.00	2,064.00	-	30,960.00	-	7.8

S. No.	Description	Unit	Qty	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block						
3.3	Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Gunmetal/Stainless Steel cap and chain as required :								FIRE DSR 2019 /9
(a)	Single headed Gunmetal	Set	13	13.00	7,494.00	-	97,422.00	-	9.1
3.4	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required :								FIRE DSR 2019 /16
(a)	Gun Metal	Set	18	18.00	5,188.00	-	93,384.00	-	16.1
3.5	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required.								FIRE DSR 2019 /17
	20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585								
	20 mm nominal internal dia gun metal globe valve & nozzle.								
	Drum and brackets for fixing the equipments on wall.								
	Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket.								
(a)	30 m	Set	9	9.00	8,413.00	-	75,717.00	-	17.1
3.6	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required :								FIRE DSR 2019 /18
(a)	Gun metal	Nos.	9	9.00	2,402.00	-	21,618.00	-	18.1
3.7	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :								FIRE DSR 2019 /11
(a)	100 mm dia	Set	8	8.00	6,454.00	-	51,632.00	-	11.5
(b)	150 mm dia	Set	3	3.00	8,699.00	-	26,097.00	-	11.6
3.8	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :								FIRE DSR 2019 /14
(a)	100 mm dia	Set	3	3.00	10,836.00	-	32,508.00	-	14.5
(b)	150 mm dia	Set	1	1.00	17,577.00	-	17,577.00	-	14.7
3.9	Providing, fixing, testing & commissioning of Drainage Provision for the risers with necessary 40 mm dia pipe, ball valve etc as required. Maximum length of pipe shall be 10 M.	Each	5	5.00		7,592.00	-	37,960.00	MR
3.10	Providing, fixing, testing & commissioning of 25 mm dia screwed inlet forged brass single acting air valves connected with ball valve on inlet side at top of the Risers.	Each	4	4.00		2,381.00	-	9,524.00	MR
3.11	Providing and fixing in position the industrial type Pressure Gauges with gun metal / brass valves complete as required (For Hydrant & Pump room)	Each	9	9.00	1,094.00	-	9,846.00	-	ELEC. DSR 2018 / 16.8

S. No.	Description	Unit	Qty Academic Block	EXT.	Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR- 2018 & N.S.I
3.12	Providing, fixing, testing & commissioning of door with frame for all internal fire hydrants fabricated from 18 gauge CRCA M.S. sheet double door including 2 nos allen key lock for locking along with padlock arrangement & fully glazed with 5 mm thick float glass approved by local Fire Authority, stove enameled fire red finish with " fire hose' written on front with radium strip suitable to house 15 mm long four length of canvas hose with couplings, one no of branch pipe, one fire mans axe and two numbers of portable extinguishers, first aid fire hose and supports for hoses, branch pipes, Axe and hose reel. as per approved design including necessary fixing arrangement for hoses & axe and branch pipe.).	Sq.m	18		18.00		8,635.00	-	1,55,430.00	MR
3.13	Providing, fixing, testing & commissioning of standard Fireman's Axe with heavy insulated rubber handle.	Each	9		9.00		879.00	-	7,911.00	MR
3.14	Supplying and fixing orifice plate made out of 6 mm thick stainless steel (Grade 304) with orifice of required size to be fitted between flange & landing valve of external and internal hydrants to reduce pressure at the outlet to the level of 3.5 kg/cm2 complete as required.	Each	5		5.00	1,291.00	-	6,455.00	-	FIRE DSR 2019 /13
3.15	Providing, fixing, testing & commissioning of suction coupling for fire brigade drawl of water from tank with 150 mm dia GI (Heavy class) pipe and foot valve (Pipe max 8 M long).	Each	1		1.00	-	7,363.00	-	7,363.00	MR
3.16	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required :									FIRE DSR 2019 /19
a)	2 way-100 mm dia M.S. Pipe	Each	1		1.00	6,590.00	-	6,590.00	-	19.1
b)	4 way - 150 mm dia M.S. Pipe	Each	1		1.00	13,822.00	-	13,822.00	-	19.2
	TOTAL OF FIRE HYDRANT & EXTINGUISHING SYSTEM CARRIED OVER TO SUMMARY							#####	3,30,048.00	
4.0	FIRE EXTINGUISHER									
4.1	Supply, Installation, Fixing ABC DRY CHEMICAL POWDER Fire Extinguisher of 5.0kg trolley mounted confirming to IS: 2171 and CO2 cartridge confirming to IS: 4947, Powder confirming to IS: 4308.	Each	26		26.00	11,786.00	-	3,06,436.00	-	MPWD SOR 2015 - 2016 - 28.1
4.2	Supply, Installation, Fixing of CO2 based Aluminium Fire Extinguisher of 4.5 kg capacity	Each	4		4.00	21,048.00	-	84,192.00	-	MPWD SOR 2015 - 2016 - 28.8
4.3	Supply, Installation, Fixing of MECHANICAL FOAM (AFFF) Fire Extinguisher of 9.0Ltrs confirming to IS: 10204 and CO2 Cartridge confirming to IS: 4947, (AFFF) confirming to IS: 4989.	Each	2		2.00	8,306.00	-	16,612.00	-	MPWD SOR 2015 - 2016 - 28.6
4.4	Supply, Installation, Fixing of MECHANICAL FOAM (AFFF) Fire Extinguisher of 50Ltrs onfirming to IS: 10204 and CO2 Cartridge confirming to IS: 4947, (AFFF) confirming to IS: 4989.		1		1.00	45,063.00	-	45,063.00	-	MPWD SOR 2015 - 2016 - 28.7

S. No.	Description	Unit	Qty		Total Qty	Rate in Figures (in Rs.) MPWD SOR & DSR	Rate in Figures (in Rs.) Non SOR & DSR	MPWD SOR & DSR Amount (in Rs.)	Non SOR & DSR / MR Amount (in Rs.)	MPWD SOR & DSR-2018 /ELCT. DSR-2018 & N.S.I
			Academic Block	EXT.						
4.5	Providing and fixing Carbon-Di-Oxide fire extinguishers trolley mounted with all accessories internal discharge tube, high pressure discharge hose, discharge nozzle, suspension bracket, ISI marked as per IS:2878 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.									
a)	Capacity 22.5 kg.	Each	1		1.00	-	26,064.00	-	26,064.00	MR
	TOTAL OF FIRE EXTINGUISHERS CARRIED OVER SUMMARY							4,52,303.00	26,064.00	

ESTIMATE
OF ELECTRICAL WORKS

SUMMARY PHASE -02 (ACADEMIC & EXTERNAL DEVELOPMENT)			
SI No.	AREA	MR AMOUNT	SOR/DSR AMOUNT
1	DISTRIBUTION BOARD	-	2,45,552
2	WIRING SYSTEM (INTERNAL)	1,46,988	81,13,064
3	LIGHTS & FANS	-	53,52,164
4	EXTERNAL LIGHTING	67,10,017	18,354
5	UPS / INVERTER SYSTEM	7,37,972	-
	SUB TOTAL	75,94,977	1,37,29,134
	TOTAL (MR + SOR/DSR)		2,13,24,111

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
1	DISTRIBUTION BOARD						
1.1	Supplying fitting and fixing of SPN/ TPN MCB Metal Enclosure Distribution Board						56
a	(a) 4 Way (8+12) Modules	Each	5	3708.00		18,540	(a)
b	(b) 6 Way (8+18) Modules	Each	0	4284.00		-	(b)
c	(c) 8 Way (8+24) Modules	Each	5	4910.00		24,550	(c)
d	(d) 12 Way (8+36) Modules	Each	5	6135.00			(d)
1.2	Supplying & fixing of Load Kontaket Miniature Circuit Breakers(MCBs)						51
a	(b) 6-32 Amp SP MCB Capacity	Each	300	507.00		1,52,100	(b)
1.3	Supplying fitting and fixing of Load Kontaket Miniature Circuit Breakers Double Pole (Isolator)						53
a	(a) 32-125 Amp DP Isolator	Each	5	1794.00		8,970	(a)
1.4	Supplying fittings and fixing complete 415v TPN IC Main Switch with neutral link						49
a	(a) 32 Amp Capacity	Each	2	2240.00		4,480	(a)
b	(b) 63 Amp Capacity	Each	8	4614.00		36,912	(b)
	SUB TOTAL DISTRIBUTION BOARD				-	2,45,552.00	
2	WIRING SYSTEM (Internal wiring) :						
	LIGHT/CEILING FAN/EXHAUST FAN						
2.1	Drawing of Main and Sub-Main Line wiring approved VIR or PVC cable 250 V Grade in Heavy Gauge 16Swg E.T. Conduit Pipe With all necessary accessories						27
a	(a) With 2×2.5mm ² copper wire						(a)
i	(i) With copper conductor	per mtr	7000	240		16,80,000.00	(i)
2.2	Wiring in concealed with 2×1.5sqmm PVC insulated single core conductor of 660V grade in No.16 Swg.. Heavy Gauge welded stove enameled painted, 20mm dia MS Conduit pipe (E.T) including accessories such as bends, Tees, junction boxes, sockets, locknuts brass brushes, etc and required sizes of MS Box & recommended front plate for housing switches, sockets, fan regulator bell push, etc matching the colour of the surrounding wall, etc as required or as directed by the Engineer incharge or Architect including earthing Conduit.						20
a	(a) Long Point upto 10mts						(a)
i	(i) With copper conductor	Each	400	2520		10,08,000.00	(i)
b	(b) Medium Point upto 6mtrs						(b)
i	(i) With copper conductor	Each	400	1857		7,42,800.00	(i)
c	(c) Short Point upto 3mtrs						(c)
i	(i) With copper conductor	Each	250	1360		3,40,000.00	(i)
2.3	Wiring as in item No.1 above for Stair Case/Two Way Switch Light Point Controlled by 2 Nos, 2Way 5Amp Switches						26
a	(a) Long Point upto 10mts						(a)
i	(i) With copper conductor	Each	10	2594		25,940.00	(i)
b	(b) Medium Point upto 6mtrs						(b)
i	(i) With copper conductor	Each	10	1932		19,320.00	(i)
c	(c) Short Point upto 3mtrs						(c)
i	(i) With copper conductor	Each	5	1435		7,175.00	(i)
2.4	Supplying fitting and fixing F/T Fan Regulator (Best quality) complete with all accessories & materials.	No	60	860		51,600.00	93
	POWER POINTS :						
2.5	Drawing of Main and Sub-Main Line wiring approved VIR or PVC cable 250 V Grade in Heavy Gauge 16Swg E.T. Conduit Pipe With all necessary accessories						27
a	(b) With 2×4mm ² copper wire						(b)
i	(i) With copper conductor	per mtr	3500	282		9,87,000.00	(i)

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
2.6	Wiring as in item No. 19 Complete to a Light Plug Point when fixed elsewhere .						21
a	(a) Long Point upto 10mts						(a)
i	(i) With copper conductor	Each	100	2,916		2,91,600.00	(i)
b	(b) Medium Point upto 6mtrs						(b)
i	(i) With copper conductor	Each	50	2,160		1,08,000.00	(i)
c	(c) Short Point upto 3mtrs						(c)
i	(i) With copper conductor	Each	50	1,601		80,050.00	(i)
2.7	Wiring as in item No.19 above with 2×4Sqmm wire including supplying and fitting 15Amp 5 in 1 /SS combined with continuous earth wire to a power plug point complete.						22
a	(a) Long Point upto 10mts						(a)
i	(i) With copper conductor	Each	50	3,432		1,71,600.00	(i)
b	(b) Medium Point upto 6mtrs						(b)
i	(i) With copper conductor	Each	40	2,337		93,480.00	(i)
c	(c) Short Point upto 3mtrs						(c)
i	(i) With copper conductor	Each	10	1,516		15,160.00	(i)
2.8	Drawing 3 phase line 4 wire with approved VIR or PVC cable 660 V grade wire in Heavy gauge 16Swg E.T. conduit Pipe with all necessary accessories						28
a	(a)With 2×2.5mm ² conductor in MS Conduit						(a)
i	(i) With copper conductor	per mtr.	1	322		322.00	(i)
b	(b)With 4×4mm ² conductor in MS Conduit						(b)
i	(i) With copper conductor	per mtr.	175	405		70,875.00	(i)
c	(c)With 4×6mm ² conductor in MS Conduit						©
i	(i) With copper conductor	per mtr.	250	543		1,35,750.00	(i)
d	(d)With 4×10mm ² conductor in MS Conduit						(d)
i	(i) With copper conductor	per mtr.	500	959		4,79,500.00	(i)
e	(e)With 4×16mm ² conductor in MS Conduit						€
i	(i) With copper conductor	per mtr.	10	1,437		14,370.00	(i)
2.9	Supplying & Drawing of the following size of PVC insulated Copper Wire, S/C in the existing surface/ recessed PVC/ M.S. conduit						134
a	3×10sqmm PVC Copper wire	per mtr	300	537		1,61,100.00	(e)
2.10	Providing supplying including carriage testing of the following sizes Alluminium armoured underground cable and all over PVC selected as per ISI mark of 1100volt grade						88
a	(a) 4×4mm ²	Mtr.	1550	568.00		8,80,400.00	(a)
b	(b) 4×6mm ²	Mtr.	1	607.00		607.00	(b)
2.11	TELE-COMMUNICATION SYSTEM AND LAN SYSTEM :						DSR-2018
a	Supplying and drawing of UTP CAT 6 LAN Cable in the existing surface/ recessed Steel/ PVC conduit as required. : 1 run of cable (For Lan & Telephones)	M	4875	49		2,38,875.00	1.53.1
b	Supplying and drawing 2 Pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.	M	750	20		15,000.00	1.18.2
c	SITC of RJ11 Modular Socket for Telephone System complete	Nos.	10	119		1,190.00	1.24.6
d	SITC of CAT6 UTP RJ45 Modular Socket for Telephone / LAN System.	Nos.	65	300		19,500.00	MR
e	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular Lan & telephone etc in recess etc. as required. : 1 or 2 Module (75mmX75mm)	Nos.	75	243		18,225.00	1.27.1
f	: Supplying & fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required. : 25 mm	M	5063	90		4,55,625.00	1.21.2

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
g	SITC of Hybrid IP PBX communication system suitable for minimum 36 extension , IP & Analogue port with Maximum total Port (Extn + Trunk) 36 / Max.Trunk Port 8-12/ Analogue Trunk 12 / ISDN Trunk 6 (12 ch) / Max.IP Gateway 1 (4 ch) / Max Extension Port 28 / Analogue Proprietary Telephone 4/ Single Line Telephone 24/ Digital Proprietary Tel (except T75/T76 Series) 4 or 24 with additional AC Adaptor Digital Proprietary Tel (T76 Series) 24 / DSS Console 4/ Cell Station 4 or 8 with additional AC Adaptor/ Voice Processing System 1/ Wireless Telephone 28/ PC-Console 2 / complete with standard accessories as per required. Make: Avaya/ Nortel/ Alcatel-Lucent/ Panasonic	Nos.	1	89,444	89,444.00		MR
h	SITC of Digital Phones.	Nos.	10	4,130	41,300.00		MR
i	SITC of Analogue Phones.	Nos.	15	614	9,204.00		MR
j	SITC for CU telephone cable 10 Pair. Make: Skytone / Havells / Bonton	Mtr.	100	35	3,500.00		MR
k	SITC for telephone krone module with suitable back box 10 Pair.	Nos.	2	1,770	3,540.00		MR
	Note: All Computer/ Laptops/ Server / LAN Switches / Racks etc. shall be extra as per Client. Only wiring has been considered.						
	Sub Total WIRING SYSTEM (Internal wiring) :				1,46,988.00	81,13,064.00	
3	LIGHTS & FANS						
3.1	Supplying,fitting and fixing of LED lightings complete. Make: Syska / Havells / Signify / Divinity						66
(a)	(a)LED T5 Tube Lights PA Bulbs (Silver Series)						(a)
(i)	(i)4-16W (CW) 2' Led Tube Light	Each	0	1,488		-	(i)
(ii)	(ii) 6-22W (with aluminium body).	Each	0	1,955		-	(ii)
(b)	(b) LED Tube Light-Streak Series	Each					(b)
(i)	(i) 18-22W 1200mm (CW) 4' Led Tube Light	Each	30	4,411		1,32,330.00	(i)
©	(c) LED Down Light						©
(vi)	(vi)LED Down Light 28-39W 8" (NW)	Each	28	16,631		4,65,668.00	(vi)
(vii)	(vii)LED Down Light(Square)-Royale Series 8-20W (NW)	Each	350	4,265		14,92,750.00	(vii)
(viii)	(viii)LED Slim Down Lights(Edge Lit)- Edge Series 5-20W	Each	0	3,681		-	(viii)
(ix)	(ix)LED Ceiling Down Lights (Suspended Rectangular approx. 50x50x1200)- Edge Series 30W-40W (NW)	Each	394	5,474		21,56,756.00	(ix)
(x)	(x)LED Surface Down Lights-Round (Black/White) 8-30W	Each	0	6,536		-	(x)
(xi)	(xi)LED Surface Down Lights-Square (Black/White) 8-30W	Each	0	6,536		-	(xi)
(d)	(d) LED Ceiling Lights 9-30W	Each	0	9,179		-	(d)
€	(e) LED Track Lights					-	€
(i)	(i)LED Track Lights 12-35W (Square)	Each	0	16,763		-	(i)
(ii)	(ii)LED Track Lights 15-35W (Round) with Track	Each	3	16,763		50,289.00	(ii)
(iii)	(iii)LED Track Lights 45W (Round)	Each	0	19,620		-	(iii)
(f)	(f) LED Grilled Series(Multibox) 15-30W (NW) Spot Light	Each	35	2,210		77,350.00	(f)
(g)	(g) LED panel Light					-	(g)
(i)	(i)Recess Round 3-18W	Each	0	3,083		-	(i)
(ii)	(ii)Recess Square 3-24W	Each	0	3,813		-	(ii)
(iii)	(iii) Flat panel(2'X2') 36-48W (NW)	Each	60	10,655		6,39,300.00	(iii)
(iv)	(iv) Surface Round 6-24W	Each	0	3,880		-	(iv)
(v)	(v) Surface Square 6-24W	Each	0	3,880		-	(v)
(i)	(i) LED Strip Lights (WW)	Each	5	7,400		37,000.00	(i)
(ii)	(ii) LED Strip Lights- Cuttable	Each	0	8,834		-	(ii)

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
3.2	Supplying and fitting of ceiling fan AC operated type 220/250 volt. Complete with 3 Nos of blades down rod canopy hanging shackle & regulator complete with 30mm length down rod supplied with the fan by the dealer but the extra length will be charged @ Rs25.00/ mtr						78
a	(b)AC ceiling Fan '1200'mm sweeps	Each	60	4,243		2,54,580.00	(ii)
3.3	Supplying fitting & fixing of wall/ Table Fan with all necessary attachments and accessories as required						79
a	(a) 450mm Wall Fan	Each	1	6,206		6,206.00	(a)
b	(b) 400mm Table Fan	Each	1	3,875		3,875.00	(b)
3.4	Supplying fitting and fixing of exhaust fan double bearing self lubricating type single phase 50Hz 250V AC operated complete with supporting frame, fan blades, nuts and bolts, fan regulator, capacitor, adjustable type lever and other petty accessories as required						81
a	(a)Light duty Exhaust fan : 250mm/300mm, 1Phase	Each	12	3,005		36,060.00	(a)
b	(b)Medium Duty Exhaust Fan: 380mm/450mm, 1Phase	Each	0	5,840		-	(b)
3.5	(k) LED Decorative and Garden Light						(k)
(i)	(i)Wall Light / Wall Recessed Light / Step Light (Approx. 3 to 5 Watt, IP65, WW, 230V) Make: Dotspot / Havells / Divinity / Litolux	Each	50	12,912		6,45,600.00	(i)
(ii)	(ii)Garden Light (Approx. 5 to 10 Watt, IP66, WW, 230V, in Ground Concrete Embedded) Make: Dotspot / Havells / Divinity / Litolux	Each	10	14,865		1,48,650.00	(ii)
3.6	Supply, installation, Testiing and Comissioning of suspended/ surface mounted approx 100W LED Highbay made of Aluminum alloy pressure die casted housing & control gear box for better heat dissipation and aesthetic appeal. Luminaire Efficacy>130 Lm/W, CCT 5700K, System Lumen > 13000. High efficiency long life LED module with SMD LED package mounted on MCPCB. High quality PC lens with optional narrow & wide beam angles for uniform distribution. Powered by an Built-In IP67 Potted, isolated electronic LED driver (SMPS based constant current supply) with lower THD, Output Open / Short Circuit protection, Over Voltage protection, Surge Voltage Protection & other safety test as per IS 15885 Part-2/Sec 13 and CISPER-15.Suspended by means of heavy duty eye-bolt provided with the fixture. Operating temperature: -10°C to +45°C, Operating voltage range: 140-270V, Average life L70B50: 50000 hours, Surge voltage protection upto 4 kV, IP 65, Driver IP 67, complete with driver, tilttable mounting bracket suspension kit etc all. Make: Havells: Saucer GenX / Philips / Wipro/ LT	Each	35	16,520	5,78,200.00		MR
	Sub Total - LIGHTS & FANS				-	53,52,164.00	
4	EXTERNAL LIGHTING						66

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
4.1	SITC of approx 60 watt decorative LED post top mounted luminaire. Fixture made of Corrosion resistant aluminum housing, Electrostatic powder coating with color option available HM1 to HM6 standard colors with optional RAL codes, as per approval, IP66, IK08, Higher CRI LED Chips, Constant Light Output (CLO), Marine grade body, with IP rated terminal box. Equipped with high efficiency LED chips, Optimized symmetrical lighting distribution, Glare minimizing diffuser, Quarter bin LED chips, Lumen output (absolute photometry): 5400lm - 5600lm, Color temperature: 3000K, 4000K, 2700K (optional), CRI > 70 (4000K), CRI > 80 (3000K), Lumen depreciation: L70B50 > 60000h, Photobiological safety: Risk Group 1, Efficacy (absolute photometry): 90 lm/W (4000K at 1050mA), ULOR: 0%, Drive current: 1050mA, 700mA (optional), 525mA (optional), Optimized PCB - Design, Energy class: A, Power factor: > 0.95, Input Voltage: 220V - 240V, 120V - 270V (optional) at 50Hz / 60Hz. Operating Temperature -50°C / +55°C, Easy installation and maintenance with modular structure, Spigot diameter: 60mm (optional 76mm), In compliance with EN 60598, EN 62722, UL listed, ENEC Certified. Make : Kreis-Heper / Rosa / Cariboni	Each	26	48,734	12,67,084.00		MR
4.2	SITC of approx 78watt LED Street light with Optimized distribution. Fixture should be equipped with highly flexible LED optics that uniformly illuminate the desired road area without spilling light. Fixture should have Marine grade body as Corrosion resistant aluminum housing with electrostatic powder coating . Fixture should be dark sky compliant that is there should be no light spill in back or upper hemisphere and Glare should be minimum and should be <10. delivered lumen output of around 9000lm. CCT 4000K and CRI-70 (with 4000K). LED Binning of the fixture should be within 3 MacAdam Ellipse. Fixture should have special optics as combination of type III and type IV to achieve the desired light effect. Lumen efficacy of around 110lm/W (with 4000K). Fixture should have lumen depreciation of L90 B50 at 1,18,000 hours. IP 66 and minimum impact resistance of IK08 rated. Fixture should have Operating Temperature range of -5°C to +55°C. Fixture should have surge protection of 10KV. Fixture should be CE & UL certified. Make : Tura -Heper / Cariboni / EWO / Bega	Each	27	52,911	14,28,597.00		MR

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
4.3	Supply, installation, testing and commissioning of 4M Straight Aluminium Pole Mast having approx Ø114 mm base dia and approx Ø60 mm top dia. suitable with bracket attachment for the LED Light fixture on top. Body Material as Cones are rolled from aluminum alloy pipes EN AW-6060. Their base is plated from aluminum alloy plates EN AW-5754. Average thickness between 3 ~ 4 mm. Each aluminium column should have wiring chamber (400mm x 85mm) for fuse-box as Wiring chamber cover is being cut by laser at 500 mm from the base (shall be suitable for cable terminations, wiring, mcb mounting etc). Baseplate Made on die-cast aluminum and being pressed together with the conical surface, which stiffen the base. Base plate Dimensions approx. 224mm x 224mmx8mm. Pitch distance 180x180mm. Pole should have Net weight of 11.4kg with Approximate unit volume of 0.09m3. mounted on concrete foundation. & shall be with sleeves put on the threaded anchor endings on which base plate is installed , what protects against corrosion on threaded anchor endings. Finish Polyester powder coating RAL colors or special finish shall be as per approval. Fixture mounting height at 4m. Make: Technilum / Heper Alcopole / Rosa	Each	26	55,569	14,44,794		MR
4.4	Supply, installation, testing and commissioning of 6M high Straight Aluminium Pole Mast having Ø146 mm base dia and Ø70 or Ø60 mm top dia. suitable with bracket attachment for the LED Light fixture on top. Body Material as Cones are rolled from aluminum alloy pipes EN AW-6060. Their base is plated from aluminum alloy plates EN AW-5754. Average thickness between 4 ~ 5 mm. Each aluminium column should have wiring chamber (400mm x 95mm) for fuse-box as Wiring chamber cover is being cut by laser at 500 mm from the base (shall be suitable for cable terminations, wiring, mcb mounting etc). Baseplate Made on die-cast aluminum and being pressed together with the conical surface, which stiffen the base. Base plate Dimensions approx. 320mm x 320mm. Fixing pitch distance 250mm x 250mm. Pole should have Net weight of approx 26kg with Approximate unit volume of 0.265 m3. shall be mounted on concrete foundation. & shall be with sleeves put on the threaded anchor endings on which base plate is installed , what protects against corrosion on threaded anchor endings. Finish Polyester powder coating RAL colors or special finish shall be as per approval. Fixture mounting height at 6m. Make: Technilum / Heper Alcopole / Rosa	Each	27	88,495	23,89,365		MR
4.5	Copper Wiring in Existing Casing Capping/Regid PVC Pipe/Conduit Pipe. (for Poles internal from MCB Box to Luminaire)						27
a	2×1.5sqmm PVC copper wire	per mtr	266	69		18,354	(A)
4.6	Feeder Piller						

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
a	Supply, installation, testing and commissioning of outdoor type feeder pillar for External Street Lighting (Double door type IP 65) of suitable size not less than 30 cm and up to 45 cm deep made out of 16 SWG thick steel sheet duly compartmentalised having 4 strip busbar of 100 amp capacity, double door with spring loaded allen key type locking arrangement for inner compartment and seperate coupboard type concealed locking arrangement for outer door. (Panel will have separate compartment for electric supply co.) duly rain and dust protected. The panel shall be fixed on M S angle iron frame work of size 50mmX50mmX6mm (NS) 90 cm long legs out of which 45 cm duly grouted in cement concrete 1:2:4 (1 cement, 2 sand and 4 stone aggregate 20 cm) and having following accessories mounted inside the cubicle panel i/c connections, inter connections, earth studs, painting etc. as reqd.						
	: 415 V, 63 Amps, 4P, (10 KA) MCCB : 1 Each						
	: 415 V, 63 Amps TP + N + E (4 strip) Al. Busbar (20 KA): 1 set.						
	: Voltmeter 0-500 Volt 96 sqmm flush type with selector switch : 1 Each						
	: Ammeter, 96 sqmm flush type with selector switch & 100/ 5 Amp CTs : 1 Set						
	: Indicating lamps (RYB) with control HRC fuse with fuse fitting. : 1 Set						
	: 40 Amp. 4 pole, 10 KA, 415V, 50 Hz MCB : 9 Nos.						
	: 40 Amp. 2 pole, 10 KA, 230V, 50 Hz MCB : 1 Nos.						
	: Power contractor 4 pole, 40 Amp., 415V, 50 Hz. : 7 Nos.						
	: Contact multiplier : 10A, NO/NC as required : 7 Nos.						
	: 10/6 Amp. 1 pole, 10 KA, 415V, 50 Hz MCB : 1 No.						
	: Selector / Test switches as required in control circuit						
	Surge arrestor : B/C type - obo make						
	: Danger notice plate.						
	Note: The contactors shall be controlled by a time switch / Digital with adjustable time of switching 'ON' and 'Off' the lamps throughout the year; mounted inside the Feeder pillar.	Each	1	1,80,177	1,80,177		MR
	Sub Total - EXTERNAL LIGHTING				67,10,017.00	18,354.00	
5	UPS / INVERTER SYSTEM :						
5.1	S.I.T.C. 10 KVA UPS shall be of specification as under: : In-put power supply : 415 V (+ 10 % - 20 %), +/- 3%), 3 phase : Output power supply: 415 V (+/-1 %) 3 phase, (+/- 0.5%) : Sinusoidal waveform : Overload capacity of 110% for 15 minutes. : Out-put regulation shall be +/- 1 % against input and load variation. : The UPS shall be natural /forced air-cooled as required, : The UPS shall be suitable to work at 45-degree C temperature and relative humidity of 95 %.	No	1	3,89,872	3,89,872.00		MR

SL. NO	ITEM OF WORK	Unit	Qty.	Rate	MR AMOUNT	SOR/DSR AMOUNT	MPWD ELE SOR 2016-2017 / DSR-2018 / MARKET RATES (MR)
				(Rs/unit)	(Rs.)	(Rs.)	
	: Battery pre-exhaust alarm at-least two minutes before 'DC Low' tripping. : Protected against Out-put Over-load, D C input, Low/High In-put Voltage, :battery bank shall be suitable to supply the specified power for 20~25 minutes to the Unit. The batteries shall be "Sealed Maintenance Free Lead Acid" / Value Regulated Lead Acid (VRLA) type of 12v/42AH. out-put to be connected as a D.C. bus system for the Unit with Open Battery Rack & Interlinks						
	Make : Powertron (delhi) / Consul neowatt / Delta/ Legrand						
5.2	S.I.T.C.Inveter shall be of specification as under: : In-put power supply : 415 V (+ 10 % - 20 %), +/- 3%), 3 phase : Output power supply: 415 V (+/-1 %) 3 phase, (+/- 0.5%) : Sinusoidal waveform : Overload capacity of 110% for 15 minutes. : Out-put regulation shall be +/- 1 % against input and load variation. : The Inverter shall be natural /forced air-cooled as required, : The Inverter shall be suitable to work at 45-degree C temperature and relative humidity of 95 %. : Battery pre-exhaust alarm at-least two minutes before 'DC Low' tripping. : Protected against Out-put Over-load, D C input, Low/High In-put Voltage, :battery bank shall be suitable to supply the specified power for 20~25 minutes to the Unit. The batteries shall be "Sealed Maintenance Free Lead Acid" / Value Regulated Lead Acid (VRLA) type of 12v/42AH. out-put to be connected as a D.C. bus system for the Unit with Open Battery Rack & Interlinks						
a	10 KVA Inveter with 20~25 minutes Backup	Each	1	3,48,100	3,48,100.00		MR
b	6 KVA Inveter with 20~25 minutes Backup	Each	0	2,92,404	-		MR
	Make : Powertron (delhi) / Consul neowatt / Luminous						
	Sub Total - UPS / INVERTER SYSTEM				7,37,972.00	-	
	TOTAL				75,94,977.00	1,37,29,134.00	

Note: All ELV / Computer / Laptops, Server / LAN Switches / Racks etc. shall be extra as per Client.

Genral Conditions :

- Contractor shall take each item approval from consultant before any material procurement at site installation. Aslo shall call for specific item inspection at production shop floor before dispatch clearance.
- Contractor shall furnish all statutory approvals & certifications with any local authorities or agencies for smooth completion of electrical works.
- Contrctor shall make shop drawings and take necessary approvals from consultant before site executions.

ESTIMATE
OF HVAC WORKS

SUMMARY PHASE -02				
ACADEMIC BLOCK				
S. No.	Description		Amount (Rs.)	
			DSR/SOR	MR
A	ESTIMATED COST (ACADEMIC BLOCK)	Rs.	23,19,046.00	50,81,875.00
	TOTAL OF HVAC WORK (A)	Rs.	23,19,046.00	50,81,875.00
	TOTAL OF HVAC WORKS (MPWD SOR / DSR + MR ITEMS)	Rs.	74,00,921.00	

S.No.	Description	Unit	Total Qty.	Rate Rs.	Amount Rs.	Ref. M.R. / DSR - 2018
1	<u>Condensing Unit (Outdoor Unit VRV/VRF Heat Pump Type)</u>					
	Supply, installation testing and commissioning of air cooled condenser heat pump type for cooling & heating application with hermetically sealed inverter scroll compressor, condenser coil, propeller fans, controls, outdoor units to be side/top discharge, gas charging R-410, expansion kit, communication kit, controller & control cabling, refnet joints, M.S. stand for mounting condensing unit as per specification, requirement and drawings.					
1.1	42 HP (16+16+10 HP) (33.6 TR)	Nos.	1	13,22,950	13,22,950	M.R.
1.2	32 HP (16+16 HP) (25.6 TR)	Nos.	1	10,37,760	10,37,760	M.R.
1.3	Imported fittings Y-joints and headers etc.	Nos.	2	6,107	12,214	M.R.
1.4	Corded remote controls	Nos.	4	4,071	16,284	M.R.
2	<u>Ceiling-Suspended Airhandling Units (DX Type)</u>					
	Supply, installation, testing and commissioning of ceiling mounted DX type factory built ceiling suspended Air handling units Double skin type with 40+-2 mm thick panels consisting of G.I casing of thickness 0.6 mm outside layer and 0.6 mm inside layer with zinc coating and polyurethane foam (PUF) insulation having density of 42+-2 kg/m ³ , complete with backward curve Plug type direct driven fan with IP - 20 VFD, 6 row deep DX cooling & heating coil . Filter section having 50 mm thick Pre filters MERV 8, Fine filter MERV-13, mixing box with VCD, IE-3 motor suitable for 415+-10% volts, 50 Hz, 3 phase AC supply, drain connections with stainless steel drain pan (18 Ga) with PUF insulation, fire retardent canvas connection and necessary vibration isolation arrangement to avoid any vibration alongwith etc. complete as per specifications and drawings.					
2.1	4,000 cfm, 10.0 TR , 6 Row deep for cooling & heating, 20 mmwg external static	Nos.	2	2,71,059	5,42,118	M.R.
2.2	2,000 cfm, 5.0 TR , 6 Row deep for cooling & Heating, 20 mmwg external static	Nos.	1	1,76,503	1,76,503	M.R.

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
	Both Item no. 2.1 & 2.2 connect to 32 HP ODU.					
3	Floor Mounted Airhandling Units (DX Type)					
	Supply, installation, testing and commissioning of Floor mounted DX type site built floor mounted Air handling units Double skin type with 40+-2 mm thick panels consisting of G.I casing of thickness 0.6 mm outside layer and 0.6 mm inside layer with zinc coating and polyurethane foam (PUF) insulation having density of 42+-2 kg/m ³ , complete with backward curve Plug type direct driven fan with IP - 20 VFD, 6 row deep DX cooling & heating coil. Filter section having 50 mm thick Pre filters MERV-8, Fine filter MERV 13 ,mixing box with VCD, IE-3 motor suitable for 415+-10% volts, 50 Hz, 3 phase AC supply, drain connections, fire retardant canvas connection and necessary vibration isolation arrangement to avoid any vibration alongwith etc. complete as per specifications and drawings.					
3.1	11,000 cfm, 32.8 TR, 6 Row deep for Cooling & heating ,25 mmwg external static Connect to 42 HP outdoor	Nos.	1	4,99,568	4,99,568	M.R.
4	<u>Exhaust Fans - Axial Flow Type :</u> <u>(Normal/Emergency)</u> <u>(Fire rated : 250 deg for 2 Hrs.)</u>					
	Supply, installation, testing and commissioning of AMCA Certified (For Air and Sound Performance) vane/tube axial flow fan of different capacity as mentioned in schedule in standard M.S./G.I. construction. Entire fan model & AMCA Seal shall appear in technical submittal of fan. All the fans are synthetic enamelled painted/hot dip galvanized with minimum 220 GSM Zinc Coating and complete with bird screen at inlet, along with backdraft damper & canvas connection at outlet. The electric motor coupler shall be squirrel cage induction motor (IE-3 type) confirming to IS - 325-IP - 55 with class 'H' insulation. Motor shall be of high temperature resistance "Class H Smoke Spill" 250° C for 2 hrs. Fan shall be CE or UL certified for high temperature. Fan Total Efficiency should not be less than 70 %, noise level should not be more than 75 dba when measured in hemispherical reverberant room conditions at a distance of 3 mtrs from the fan. Fans should be as per specification and drawings.					
	Motor make shall be same as mentioned on the fire certificate.					
4.1	23,500 cfm, 25 mmwg S.P.	Nos.	1	1,74,220	1,74,220	M.R.

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
5	<u>Fresh Air Fans - Axial Flow Type :</u> <u>(Normal/Emergency)</u> <u>(Non Fire Rated)</u>					
	Supply, installation, testing and commissioning of AMCA Certified (For Air and Sound Performance) vane/tube axial flow fan of different capacity as mentioned in schedule in standard M.S.construction. Entire fan model & AMCA Seal shall appear in technical submittal of fan. All the fans are synthetic enamelled painted/hot dip galvanized with minimum 220 GSM Zinc Coating and complete with bird screen at inlet. The electric motor coupler shall be squirrel cage induction motor (I.E-3 type) confirming to IS - 325-IP - 55 with class 'F' insulation. Fan efficiency should not be less than 70 %, noise level should not be more than 75 dba when measured in hemispherical reverberant room conditions. Fans should be as per specification and drawings.					
5.1	23,500 cfm, 25 mmwg S.P.	Nos.	1	1,62,888	1,62,888	M.R.
6	<u>Propeller Fan</u>					
	Supply, installation, testing and commissioning of industrial type propeller type fan for exhaust air complete with in and out gravity louvers, 3 pin socket with 5RM cabling complete as per specifications, requirement, standard and drawings.					
6.1	200 CFM, 10 mmwg S.P.	Nos.	2	5,066	10,132	M.R.
7	<u>Refrigerant Piping</u>					
	Supply, installation, testing and commissioning of interconnecting refrigerant pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units complete with supports as per specifications, all the piping shall be eddy current test certified the pipe installation shall be protected with UV & water protective coating of approved make as per specifications and drawings.					
7.1	41.3 mm O.D.(insulation : 19 mm) (Hard Pipe)	RM	25	2,443	61,075	M.R.
7.2	34.9 mm O.D.(insulation : 19 mm) (Hard Pipe)	RM	30	2,239	67,170	M.R.
7.3	28.6 mm O.D.(insulation : 19 mm) (Hard Pipe)	RM	10	2,036	20,360	M.R.
7.4	22.2 mm O.D.(insulation : 13 mm) (Hard Pipe)	RM	5	1,764	8,820	M.R.
7.5	19.1 mm O.D.(insulation : 13 mm) (Soft Pipe)	RM	80	1,493	1,19,440	M.R.
7.6	15.9 mm O.D.(insulation : 13 mm) (Soft Pipe)	RM	5	1,221	6,105	M.R.
7.7	12.7 mm O.D.(insulation : 13 mm) (Soft Pipe)	RM	10	1,004	10,040	M.R.
7.8	9.5 mm O.D.(insulation : 13 mm) (Soft Pipe)	RM	30	801	24,030	M.R.

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
8	Hi Wall Split Unit					
	Supply, installation, testing and commissioning of high wall mounted split unit airconditioners heat pump type (for cooling & heating application) with evaporator with fan with motor, cooling coil, filter, all enclosed in decorative plastic casing, condenser with hermetically sealed inverter scroll rotary compressor, condenser coil, propeller fan with motor, cordless remote control, 5 Star Rating, drain pump, mounting stand for odu as per standards, requirement.					
8.1	2.0 TR with drain pump	Nos.	2	71,243	1,42,486	M.R.
8.2	1.5 TR with drain pump	Nos.	2	62,761	1,25,522	M.R.
9	Extra Refrigerant Piping (Circuit Length)					
	Supply and fixing of copper soft/hard refrigerant piping along (Circuit length) with control cabling and earthing should be insulated with 9 mm thick pipe section of nitrile rubber the pipe installation shall be protected with UV & water protective coating.					
9.1	2.0 TR	RM	25	1,018	25,450	M.R.
9.2	1.5 TR	RM	15	1,018	15,270	M.R.
10	Drain Piping					
	Supply & fixing of UPVC drain piping complete with fittings, U-trap, supports valves and insulated with 9 mm thick Nitrile rubber insulation complete as per standards, requirements and drawings.					
10.1	50 mm dia	RM	30	281	8,430	M.R.
10.2	40 mm dia	RM	10	190	1,900	M.R.
10.3	32 mm dia	RM	30	133	3,990	M.R.
10.4	25 mm dia	RM	45	92	4,140	M.R.
11	Ducting					
11.1	G.I. Sheet Metal Ducting (Rectangular Duct)					
	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.					
11.1.1	Thickness 0.63 mm sheet (24 Gauge)	Sqm	320	983	3,14,560	DSR-16.12.1.1
11.1.2	Thickness 0.80 mm sheet (22 Gauge)	Sqm	360	1,154	4,15,440	DSR-16.12.1.2

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
11.1.3	Thickness 1.00 mm sheet (20 Gauge)	Sqm	155	1,273	1,97,315	DSR-16.12.1.3
11.1.4	Thickness 1.25 mm sheet (18 Gauge)	Sqm	10	1,677	16,770	DSR-16.12.1.4
11.2	<u>G.I. Sheet Metal Ducting (Rectangular Duct)</u>					
	Supply, installation, balancing and commissioning of site fabricated GSS sheet metal rectangular ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.					
11.2.1	Thickness 0.63 mm sheet (24 Gauge)	Sqm	40	942	37,680	DSR-16.12.2.1
11.2.2	Thickness 0.80 mm sheet (22 Gauge)	Sqm	45	1,104	49,680	DSR-16.12.2.2
11.2.3	Thickness 1.00 mm sheet (20 Gauge)	Sqm	20	1,458	29,160	DSR-16.12.2.3
11.2.4	Thickness 1.25 mm sheet (18 Gauge)	Sqm	10	1,615	16,150	DSR-16.12.2.4
12	<u>Insulation</u>					
	Supplying and fixing 50 mm thick aluminium foil faced resin bonded fibre glass insulation (on duct) of density 24 kg/cu.m or mineral wool insulation(non combustible) of density 44 kg/cu m after applying two coats of cold setting adhesive (CPRX compound) sealing all joints with self adhesive aluminium tape & covering with 0.63mmx19mm GI wire mesh netting butting all joints and laced with GI wire complete as per specifications and as required. (for indoor applications).	Sqm	110	432	47,520	DSR 16.24
13	<u>Duct Acoustic Lining</u>					
13.1	Supplying and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m³, with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	Sqm	790	510	4,02,900	DSR-16.25
14	<u>Acoustic Insulation for AHU Room</u>					
14.1	Supplying, fixing acoustic lining on wall and ceiling of AHU rooms with 50mm thick, density 32 kg/cu.m resin bonded glass fiber insulation friction fixed in 610mm x 610 mm frame work made of 25 X 50 X50 X 50 X 25 mm made out of 0.6mm thick GI sheet U shaped channel and covered with reinforced fiber glass tissue and finished with 0.80 mm perforated aluminium sheet etc.complete as required and as per specifications.	Sqm	210	1139	2,39,190	DSR 16.22
15	<u>Grilles / Diffuser</u>					

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
15.1	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers as per specifications.	Sqm	5.2	8,480	44,096	DSR-16.15
15.2	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required.	Sqm	8.8	5,507	48,462	DSR-16.16
15.3	Supplying, fixing testing commissioning of exhaust/supply/ fresh air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core.	Sqm	0.1	11,363	1,136	DSR-16.17
15.4	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core.	Sqm	0.1	7,559	756	DSR-16.18

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
16	<u>Louvers</u>					
	Supply and fixing of Fresh / Exhaust air Aluminium extruded with bird screen, damper adjustable louvers as per specifications and drawings.	Sqm	5.4	5,884	31,774	M.R.
17	<u>Volume Control Damper</u>					
	Supply, installation, testing and commissioning of GI volume control duct damper rectangular complete with neoprene rubber gaskets, nuts, bolts, screws linkages, flanges etc, as per specifications.	Sqm	4.9	6,500	31,850	DSR-16.13
18	<u>Fire Damper</u>					
	Supply, installation , testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.					
18.1	Fire dampers	Sqm	5	9,883	49,415	DSR-16.20.1
18.2	Actuator assembly (10 NM)	Nos.	8	9,212	73,696	DSR-16.20.2
19	<u>Control & Transmission Wiring</u>					
	Supply and fixing of control cum transmission wiring of 2 core x 1.5 sqmm copper in suitable conduits between indoor and out door unit.	RM	125	237	29,625	M.R.
20	<u>Controller Wiring</u>					
	Supply and fixing control wiring of 2 core x 1.5 sqmm copper between indoor units and their wired remote.	RM	25	237	5,925	M.R.
21	<u>Electrical Panel (For Audi & Library Outdoor)</u>					
	Supply, installation, testing and commissioning of sub panel/starter panel weather proof IP-55 board cubical compartmentalised, wall mounted made of 2.0 mm thick steel sheet duly painted complete with voltmeter, ammeter, indicating lights for selector switch, incoming/ outgoing feeders CTS contactors, NO/NC contacts on all outgoing complete as per specifications and required.					
	1 No. 160 Amps TPN incoming MCB.					
	1 set 200 Amps TPN Aluminium conductor bus bar duly sleeved.					
	4 No. 63 Amps TPN MCB outgoing for 16 HP VRV DX Outdoor unit. (14.72 kw).					

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
	1 No. 40 Amps TPN MCB outgoing for 10 HP VRV DX Outdoor unit. (9.2 kw).					
	2 No. 63 Amps TPN MCB for Spare (EP-1)	Set	1	69,042	69,042	M.R.
22	Electrical Starter Panel					
	Supply, installation, testing and commissioning of sub panel/starter panel weather proof board cubical compartmentalised, wall mounted made of 2.0 mm thick steel sheet duly painted complete with voltmeter, ammeter, indicating lights for selector switch, incoming/ outgoing feeders CTS contactors, NO/NC contacts on all outgoings complete as per specifications and required.					
22.1	1 No. 25 Amps TPN MCB outgoing along with 1 No. star delta starter for Axial fan. (7.5 kw).	Set	2	32,476	64,952	M.R.

S.No.	Description	Unit	Total Qty.	Rate	Amount	Ref. M.R. / DSR - 2018
				Rs.	Rs.	
22.2	1 No. 25 Amps MCB outgoing for AHU fan motor. (5.5 kw).	Set	1	24,048	24,048	M.R.
22.3	1 No. 16 Amps MCB outgoing for CSAHU fan motor. (0.75/2.2 kw).	Set	3	25,933	77,799	M.R.
23	ELCB					
	Supply ,installation, testing & commissioning of weather proof ELCB (Earth leakage circuit breaker) with suitable rating near outdoor unit with IP 55 protection.					
23.1	16 HP	No.	4	7,607	30,428	M.R.
23.2	10 HP	No.	1	7,607	7,607	M.R.
24	Power Cabling					
	Providing & fixing of XLPE insulated armoured Aluminium & copper cables for various equipments through walls/ceiling with appropriate clamps & fixing arrangement as per specifications and drawings.					
24.1	4C - 16 sqmm (Copper)	Rm	10	648	6,480	M.R.
24.2	4C - 10 sqmm (Copper)	Rm	280	449	1,25,720	M.R.
24.3	4C - 6 sqmm (Copper)	Rm	15	286	4,290	M.R.
24.4	3C - 4 sqmm (Aluminium)	Rm	70	76	5,320	M.R.
25	Cable Tray					
	Supplying and installing following size of perforated painted with powder coating M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.					
25.1	300 mm width X 50 mm depth X 1.6 mm thickness	Rm	10	621	6,210	DSR-4.1.4
25.2	150 mm width X 50 mm depth X 1.6 mm thickness	Rm	480	531	2,54,880	DSR-4.1.2
26	Earthing					
	Supply and laying of double earthing continuity conductors of G.I. /G.S.S between panel boards and equipments as drawings.					
26.1	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Rm	740	57	42,180	DSR 5.16
	Total (Rs).				74,00,920	
	NOTE: All Emergency fan shall be Interlocking with fire panel					

ESTIMATE
OF AV WORKS

S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
#	Part A : Audio System						
1.1	Main FoH	Supply, installation, testing and commissioning of Digital beam-steering line array column loudspeaker with onboard DSP and 600 watts (12 x 50 W) of amplification with Twelve (12) x 2.25-inch full-range transducers with 58 Hz – 18 kHz frequency range also Dante digital audio network interface and line-level analog input with Articulated Array configuration which allows wide, 160° horizontal coverage and Modular design allows building vertical arrays using 1-3 units. The system should also have multiple algorithms for beam steering control that designers can optimise consistency of coverage, tonal balance, and maximum SPL per job; Maximum SPL @ 1 m 112 dB SPL (118 dB SPL peak) complete with standard accessories as required. Approved Make: Bose / L Acoustics / d&b audiotechnik	4	Nos	4,24,438.00	16,97,752.00	MR
1.2	Subwoofer	Supply, installation, testing & Commissioning of Modular 12" Installation friendly subwoofer with a free field Freq. Range of 36 Hz - 250Hz or better. It should have an axial Sensitivity of > = 91 dB (1W/1m) or more delivering a Max. Calculated SPL(Continuous) of >=117 dB (123dB Peak).The loudspeaker should have a nominal impedance of 8ohm or better and continuous Power Handling of 400W (1600W Peak) or more. at least 12 suspension / rigging points shall be available for flexible installs. The Subwoofer shall be enclosed in Baltic birch plywood with powder coated steel grille. Approved Make: Bose / L Acoustics / d&b audiotechnik	2	Nos	1,97,362.78	3,94,725.56	MR
1.3	Green Room Speaker	Supply, installation, testing & Comissioning of Green room loudspeaker with frequency response: 100Hz to 17kHz or better; nominal dispersion: 140 H x 140 V or better; power handling: 15W or better; Sensitivity: 84 dB or better; Max SPL: 96 dB SPL or better; Transducer: 2.25" or better complete with standard accessories as required. Approved Make: Bose / L Acoustics / d&b audiotechnik	2	Nos	16,639.47	33,278.93	MR
1.4	Volume Controller	Supply, installation, testing & Comissioning of 35-40W Analog Speaker line volume controller complete with standard accessories as required. Approved Make: Atlas/Apart	2	Nos	8,621.75	17,243.49	MR
1.5	Amplifier for Subwoofer	Supply, installation, testing & Commissioning of Class D amplifier with 2 Channels of 600W outputs, LZ or HZ or mixed use operation; Frequency :20 Hz – 20 kHz for LZ mode, Dynamic Range: ≥ 100 dBA complete with standard accessories as required. Phoenix input and output connector. Shall include a Multichannel input compatible with Audio DSPs form the same manufacturer. Approved Make: Bose / Labgruppen / Powersoft	1	Nos	1,18,131.70	1,18,131.70	MR

S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
1.6	Amplifier For Green Rooms	Supply, installation, testing & Comissioning of intregated low impedance Class D, with Amplifier Power as 1 x 90 W @ 70/100V ; Frequency Response - 40 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz) ; THD+N - ≤0.3 % (at full rated power) ; Channel Separation (Crosstalk) - ≤-60 dBV (below rated power, 1 kHz); A/D and D/A Converters - 24-bit / 48 kHz; Audio Latency - 10.4 ms - (any input to speaker output or aux output) ; Maximum Input Level : +10 dBV or better for green room complete with standard accessories as required. Approved Make: Bose / Labgruppen / Powersoft	1	Nos	41,933.26	41,933.26	MR
1.7	Audio DSP	Supply, installation, testing & Comissioning of Digital Audio Conferencing Processor with at least 12 Mic/Line inputs & 8 analog outputs, 24 Bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : < 0.002 % ; Channel Separation (Crosstalk) : < 108 dB ; Frequency Response 20 Hz - 20 kHz ; Signal-to-Noise Ratio 90 dB ;Dynamic Range > 115 dB; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; 32X32 or more Bidirectional DANTE Audio Networking ports, Shall include USB Audio as standard Feature. inbuilt DSP features like Conference room Routers, Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates , Source selectors etc. Shall Support at least 15 remote Zone controllers Approved Make: Bose / Symetrix / bi-amp	1	Nos	2,77,605.16	2,77,605.16	MR
1.8	Gooseneck Microphone	Supply, Installation, testing and commissioning of Highest audio quality; Sturdy and robust 6 mm gooseneck; RFI-proof due to Scudio technology; High sensitivity; Excellent high gain before feedback; Unobtrusive due to small dimensions; Non-glare surface; shock mount for gooseneck microphones providing maximum isolation from physical vibration. It can be used for all microphones of the SHM series with a male XLR connection complete with standard accessories as required. Approved Make: Beyerdynamic/Clearone/Clock Audio	1	Nos	53,259.33	53,259.33	MR

S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
1.9	Wireless Handheld Microphone	Supply, Installation, Testing and commissioning of wireless Handheld Microphone with cardioid polar pattern and dynamic transducer. Should have frequency response up to 50-17KHz. Should support Up to 40 MHz switching bandwidth. Should be wireless system is an attractively designed receiver with a robust metal housing and a clear parameterized front panel. Intuitively operating elements in combination with a backlit LC display enable a particularly user-friendly menu navigation. The frequency response of the system is from 45 to 15 kHz. A balanced XLR output and a balanced jack output are provided as analogue audio ports. Should support 18 active channels per frequency band. Should have Audio frequency response up to 45 – 15 kHz. Should support worldwide free license. Should have Audio dynamic range up to 106 dB (A-weighted). Should have Transmission range up to 120 Meters and 10 h Battery Operation. Should be supplied with standard accessories as required. Approved Make: Beyerdynamic/Clearone/Clock Audio	2	Nos	68,317.31	1,36,634.61	MR
1.1	Wireless Lapel Microphone	Supply, Installation, Testing and commissioning of Wireless Lapel Microphone. The ergonomic belt pack transmitters with a belt clip are practical in use. The transmission power can be switched between 10 mW and 50 mW. Settings are simple to configure on the receivers and are transmitted quickly and easily to the transmitters via infrared synchronization. The integrated pilot tone function ensures interference-free transmission and warns when the battery power is running low. All transmitters are equipped with an LC display and have a programmable mute button. Should support Up to 40 MHz switching bandwidth. Should be wireless system is an attractively designed receiver with a robust metal housing and a clear parameterized front panel. Intuitively operating elements in combination with a backlit LC display enable a particularly user-friendly menu navigation. The frequency response of the system is from 45 to 15 kHz. A balanced XLR output and a balanced jack output are provided as analogue audio ports. should support 18 active channels per frequency band. Should have Audio frequency response up to 45 – 15 kHz. Should have Audio dynamic range up to 106 dB (A-weighted). Should have Transmission range up to 120 Meters and 10 h Battery Operation. The	2	Nos	73,817.43	1,47,634.86	MR
		Total for Audio System				29,18,198.91	
#	Part B : Video and Control System						
2.1	Projection Screen	Supply, installation, testing and commissioning of 283" motorised projection screen having 16:10 format with IR remote and low Voltage Control Module complete with standard accessories as required. Approved Makes: Suvira/Draper/Dalite	1	Nos	2,71,725.33	2,71,725.33	MR

S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
2.2	Projector with Long Throw Lens	Supply, installation, testing and commissioning of 3LCD laser projector with long throw lens and 9,000 brightness or better at native WUXGA Resolution. Should have typical lifetime of 20,000 hours and contrast ratio of 4,000,000:1. Should have HDMI x 2, 3GSDI x 1 (BNC), HDBaseT (RJ45 x 1), VGA x 1, DP x 1, USB x 1 (type A), WiFi dongle (optional) signal Input and HDMI x 1, VGA x 1 signal Output. Should have RS232 In, Control via HDBaseT, Ethernet (10/100) RJ45, Wired remote control (3.5mm stereo) - loop out available for daisy chaining complete with standard accessories as required. Approved Makes: Christie/Digital Projection/Barco	1	Nos	16,11,829.04	16,11,829.04	MR
2.3	Projector Mount Bracket/Kit	Supply, installation, testing and commissioning of custom projector mount kit / bracket for projector complete with standard accessories as required. Approved Makes: Custom	1	Nos	17,644.50	17,644.50	MR
2.4	Passive Wall Plate	Supply, installation, testing & Commissioning of customized stainless steel having HDMI and VGA + 3.5 mm Stereo Jack complete with standard accessories as required. Approved Make: Custom	1	Nos	6,391.12	6,391.12	MR
2.5	Presentation Switcher	Supply, installation, testing & Commissioning of 4K60 Presentation Switcher/Scaler; Should have 3 HDMI inputs, 1 Cat6 (HDBaseT) & 1 VGA inputs; Should have HDMI & Cat6 (HDBaseT) scaled output; Should support Embedding and de-embedding capability for audio at HDMI, VGA input and HDMI output respectively; HDCP 2.2 & HDMI 2.0 compatible; Should supports distance of up to 100m for the Cat6 (HDBaseT) inputs and outputs; Should have 1 mic inputs for mixing purpose or switching with 48V phantom selection; Supports Audio-follow-Video for every input; Should have bi-directional data tunnelling for over the HDBaseT output port; Should support 4K video resolution @ 60Hz (4:4:4) complete with standard accessories as required. Approved Make: Kramer/Lightware/Extron	1	Nos	3,05,085.72	3,05,085.72	MR
2.6	Controller	Supply, installation, testing & Commissioning of compact master/space controller; Should operate over Ethernet with control interfaces that include: 4 x bidirectional RS-232, 4 x IR, 4 x GPI/O, and 4 x relays. It controls devices such as scalars, video displays, audio amplifiers, Blu-ray players, sensors, screens, shades, door locks, and lights ; Should support 10/100/1000Mbps Ethernet connectivity complete with standard accessories as required. Approved Make: Kramer/Lightware/Extron	1	Nos	1,44,423.01	1,44,423.01	MR
2.7	HDBT Receiver	Supply, installation, testing & Commissioning of HDBaseT Receiver that receives HDMI plus control signal over a CAT X type cable, HDTV and HDCP compatible, supports 2K and 4K and supports for Deep Color, Lip Sync, HDMI Uncompressed Audio Channels, Dolby TrueHD, DTS-HD, CEC complete with standard accessories as required. Approved Make: Kramer/Lightware/Extron	1	Nos	37,731.41	37,731.41	MR

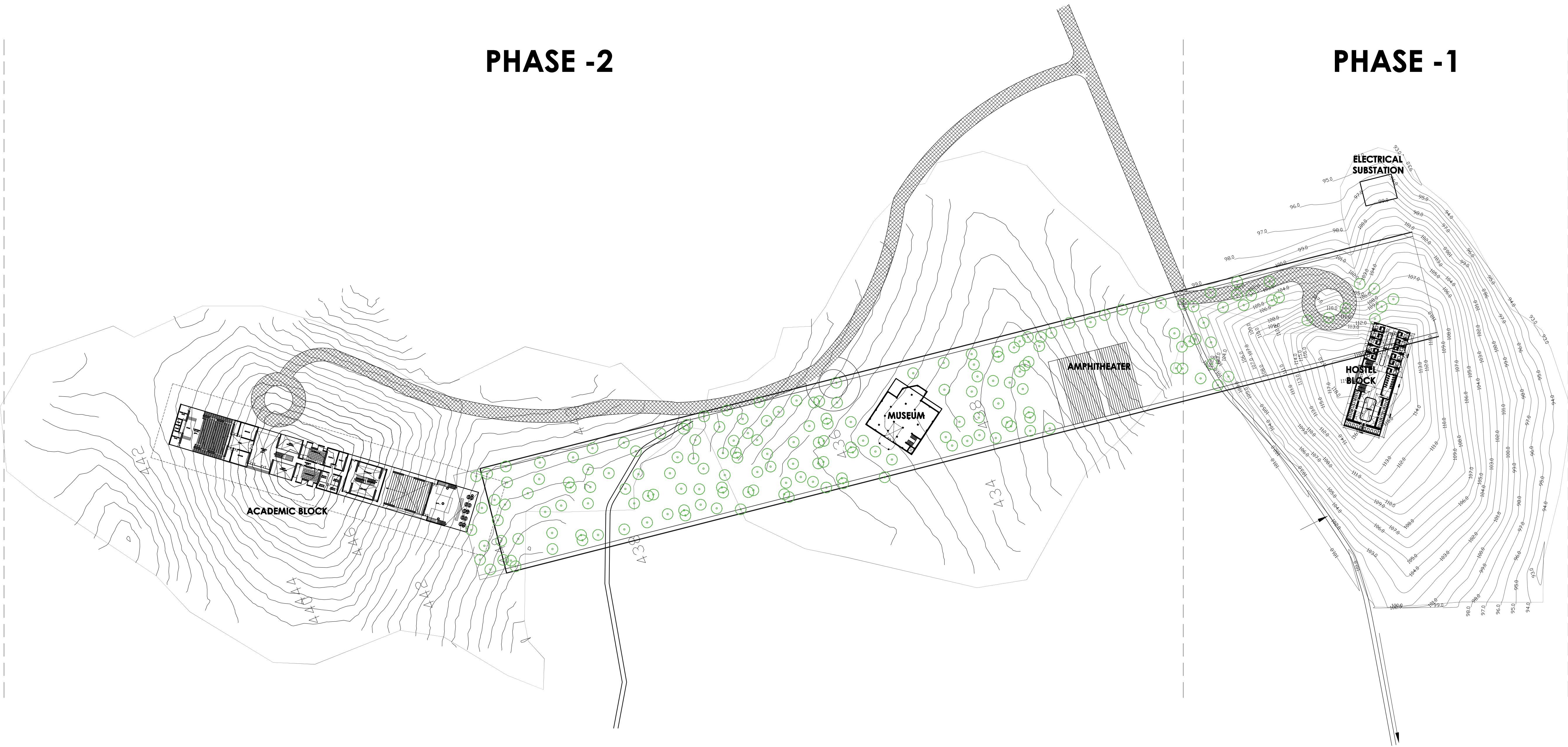
S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
2.8	Control Touch Panel	Supply, Installation, Testing and commissioning of 7 inch IPS color screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m2, contrast ratio 800:1, 16:10 aspect ratio, Ethernet Communication RJ45 port, inbuilt speaker & mic, etc. Should be supplied with table mount as well as wall mount kit.Should have appropriate app, etc. Approved Make: Kramer/Lightware/Extron	1	Nos	2,19,343.22	2,19,343.22	MR
2.9	Wireless Presenter	Supply, installation, testing & Commissioning of Features wireless presentation technology Fully automated operation – just connect and present;Compact, surface-mountable form factor – hides discreetly behind the room display;Leverages your existing Wi-Fi wireless network for BYOD connectivity;Compatible with Windows, macOS, Android, and Apple iOS devices;HDMI® input provides wired connectivity for sources with resolutions up to HD 1080p60 ;HDMI output feeds a single HD or WUXGA display device;HDCP 1.4 compliant;Customizable welcome screen provides clear instructions for presenters;Integrates natively with Microsoft Office 365 and Outlook calendaring applications via Microsoft Exchange;Integrates with room scheduling and enterprise management services;Allows scheduled on/off display control;High-speed 10/100 Ethernet LAN port complete with standard accessories as required. Approved Make: Kramer/Lightware/Crestron	1	Nos	1,89,816.25	1,89,816.25	MR
2.10	I5 Laptop	Supply, installation, testing & Commissioning of Laptop having I3-8th Generation or better processor, 8 Gb DDR4 RAM & 1GB HDD memory complete with standard accessories as required. Approved Make: Dell/HP	1	Nos	71,680.79	71,680.79	MR
2.11	Wooden Podium	Supply, installation, testing and commissioning of Wooden Customized podium. It should be finished as interior at site. Should have accommodate space for AV Equipment. Should be supplied with Power DBU and cables/connectivity as per required complete with standard accessories as required. Approved Make: Custom	1	Nos	80,001.78	80,001.78	MR
2.12	Network Switch	Supply, Installation, Testing and commissioning of 24 port PoE manage Network Switch. Should have Network Protocol and Standards Compatibility : • IEEE 802.3i 10BASE-T• IEEE 802.3u 100BASE-TX• IEEE 802.3ab 1000BASE-T• IEEE 802.3z 1000BASE-X• IEEE 802.3x full-duplex flow control• IEEE 802.3af. Should have performance specifications as follows: Forwarding modes: Store-and-forward• Bandwidth: 20Gbps full duplex• Network latency: Less than 4 µs for 64-byte frames in store-and-forward mode for 1000Mbps to 1000Mbps transmission• Buffer memory: 512KB embedded memory per unit• Address database size: 4k media access control (MAC) addresses per system• Mean time between failures (MTBF): 157,004 hours (~18 years)• Acoustic noise: 0 dB complete with standard accessories as required. Approved Make: Netgear/HPE/Cisco	1	Nos	44,737.84	44,737.84	MR

S/N	Items	Item Descriptions	QTY	Unit	Unit Price	MR AMOUNT	SOR / DSR / MARKET RATES (MR)
2.13	Wifi Router	Supply, installation, testing & Commissioning of WIFI Router/Access Point complete with standard accessories as required. Approved Make: Netgear/HPE/Cisco	1	Nos	17,042.99	17,042.99	MR
		Total for Video and Control System				30,17,453.00	
#	Part C : Cable and Other Accessories						
3.1	Floor Box	Supply, Installation, testing and commissioning of Floor Box for Podium connectivity complete with standard accessories as required. Approved Make: Custom	1	Nos	19,398.93	19,398.93	MR
3.2	Speaker Cable	Supply , installation , testing and commissioning of 2.5 sq. mm Speaker Cable spool complete with standard accessories as required.	200	Mtrs	130.33	26,065.74	MR
3.3	Microphone Cable	Supply, installation, testing and commissioning of Microphone Cable complete with standard accessories as required. Approved Make: Extron/Kramer/Lightware	50	Mtrs	87.72	4,386.06	MR
3.4	STP Cable	Supply, installation, testing and commissioning of Shielded twisted pair Cable complete with standard accessories as required. Approved Make: Krystal/Kramer/Belden	300	Mtrs	161.66	48,497.32	MR
3.5	HDMI Cable	Supply , installation , testing and commissioning of 15 ft HDMI Cable with High-Quality Connectors — 24K gold-plated connectors resist corrosion, and offer the best possible connectivity and provides 4K@60Hz (4:4:4) resolution complete with standard accessories as required. Approved Make: Extron/Kramer/Lightware	1	Nos	4,609.12	4,609.12	MR
3.6	VGA Cable	Supply , installation , testing and commissioning of 15 ft 15-pin HD (M) to 15-pin HD (M) & 3.5mm Stereo Audio Cable. Easy Connection — Pre-terminated with molded 15-pin HD connectors (male to male), gold-plated pins and thumbscrews and a 3.5mm stereo mini jack. complete with standard accessories as per tender specifications. Approved Make: Extron/Kramer/Lightware	1	Nos	7,492.65	7,492.65	MR
3.7	HDMI Cable	Supply , installation , testing and commissioning of 6 ft HDMI Cable with High-Quality Connectors — 24K gold-plated connectors resist corrosion, and offer the best possible connectivity and provides 4K@60Hz (4:4:4) resolution complete with standard accessories as required. Approved Make: Extron/Kramer/Lightware	6	Nos	3,352.20	20,113.23	MR
3.8	VGA Cable	Supply , installation , testing and commissioning of 6 ft 15-pin HD (M) to 15-pin HD (M) & 3.5mm Stereo Audio Cable. Easy Connection — Pre-terminated with molded 15-pin HD connectors (male to male), gold-plated pins and thumbscrews and a 3.5mm stereo mini jack. complete with standard accessories as per tender specifications. Approved Make: Extron/Kramer/Lightware	1	Nos	5,517.67	5,517.67	MR
3.9	Bulk Connectors	Supply, Installation, Testing and commissioning of Bulk Connectors and Other accessories as required. Approved Make: Neutrik/Switchcraft/Amphenol	1	Lot	22,055.63	22,055.63	MR
		Total for Cable and Other accessories				1,58,136.34	
		Grand Total				60,93,788.25	

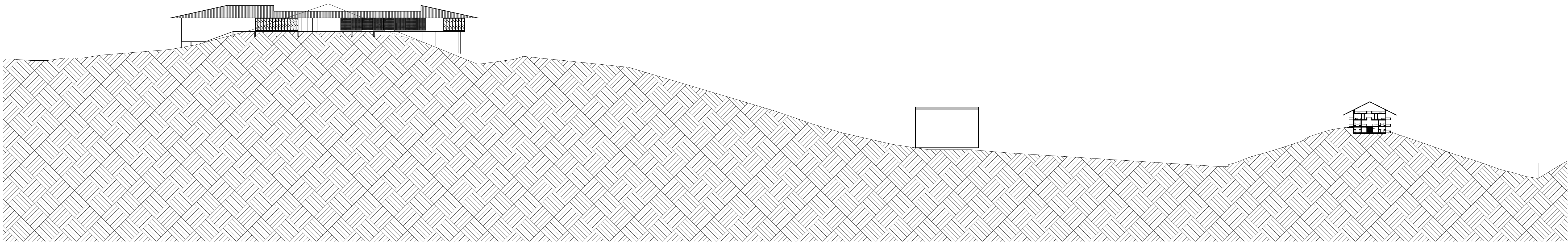
ARCHITECTURE TENDER DRAWINGS

PHASE -2

PHASE -1

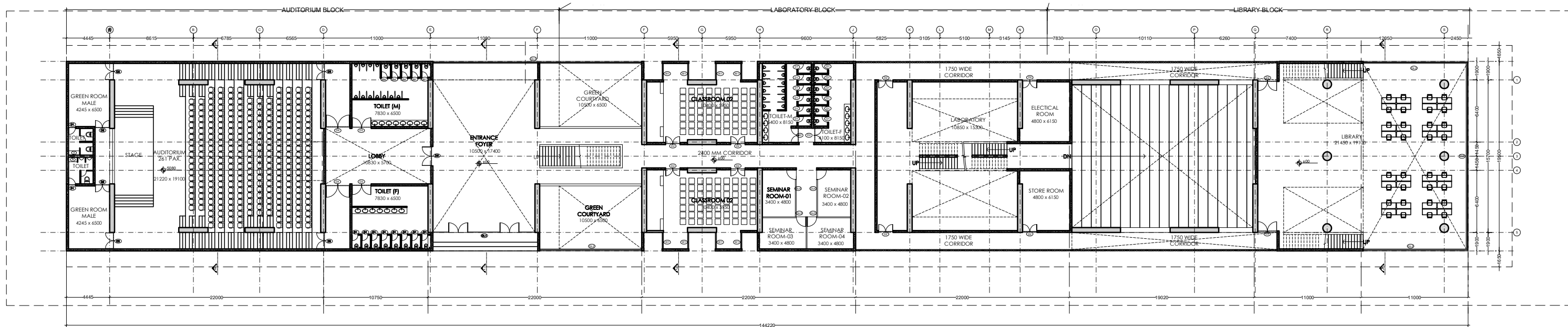


1 SITE PLAN
SCALE :- 1:2000

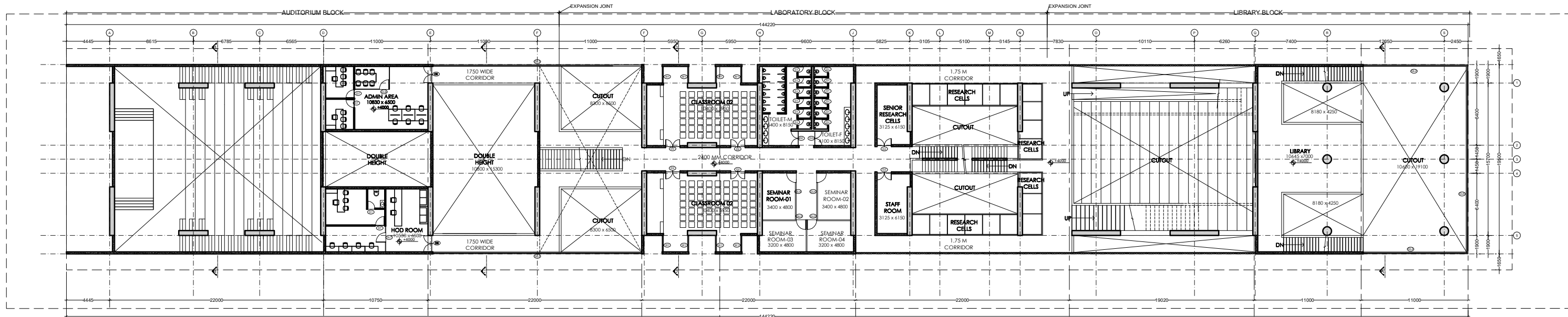


2 SITE SECTION
SCALE :- 1:2000

NOTES:						Client:		Project:		TRIBAL RESEARCH INSTITUTE, MEGHALAYA		Sheet Title:		SITE PLAN		N 	
1. DO NOT SCALE THE DRAWING. FOLLOW ONLY FIGURED DIMENSIONS.				REVISIONS		ASSTT. ARCHITECT PLANNER		Architects:		Structural Consultants:		IV/AC Consultants:		Environmental Consultants:		Drawn By: NR	
2. ALL DIMENSIONS GIVEN IN THIS DRAWING ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.				No. Date Descriptions Revision by		ARCHITECT PLANNER-I		TECHNO ENGINEERING CONSULTANTS PVT. LTD.		LIC-150, jeevan prakash apartment, 156, delhi, new delhi-110055 TEL:- +91-11-26322955 FAX: +91-11-26319842 Email: info@ahcon.in		#		#		Checked By: AN	
3. ALL DIMENSIONS TO BE VERIFIED ON SITE AND APPROVED BY THE SITE ENGINEER.						CHIEF ARCHITECT & PLANNER		c-28c, sector-6, noida - 201301 (del) t: 91 120 42 46 788 m: 91 120 46 40 300 e: info@archohm.com www.archohm.com		ARCHOHM ARCHITECTS INTERIORS c-28c, sector-6, noida - 201301 (del) t: 91 120 42 46 788 m: 91 120 46 40 300, t: 91 120 42 46 788 e: info@archohm.com, www.archohm.com		#		#		Design By: SG	
4. ANY DISCREPANCY OR AMBIGUITY IN THE DRAWINGS SHOULD IMMEDIATELY BE BROUGHT TO NOTICE OF THE ARCHITECT.						HOUSING COMMISSIONER		DIRECTORATE OF ARTS & CULTURE GOVERNMENT OF MEGHALAYA, (DAC)		TECHNO ENGINEERING CONSULTANTS pocket-1-a, 30-d siddhartha extension new delhi-110014, tel: 011-26344668 e-mail: aeb_tec@yahoo.co.in, tec@tel.net.in							
5. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS.																Date: 27-02-2021	
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																Drawing No.: A-TRI-SP-01-01	
																A R0	



1 GROUND FLOOR PLAN
ACADEMIC BLOCK



2 FIRST FLOOR PLAN
ACADEMIC BLOCK

NOTES:

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REVISIONS			
No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER-II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

Project:

TRIBAL RESEARCH INSTITUTE, MEGHALAYA

Architects:

ARCHCHM
ARCHITECTS
CONSULTANTS

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Email: info@archchm.com, www.archchm.com

Drawn By: NR
Checked By: AN
Design By: SG

Sheet Title:

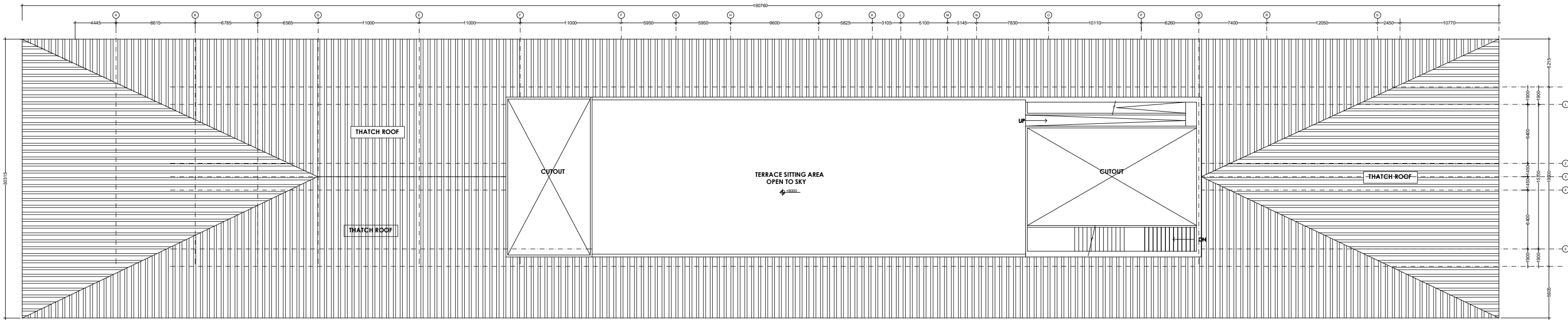
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FLOOR PLANS**

Date: 27-02-2021
Drawing No: A-TRI-AB-01-01

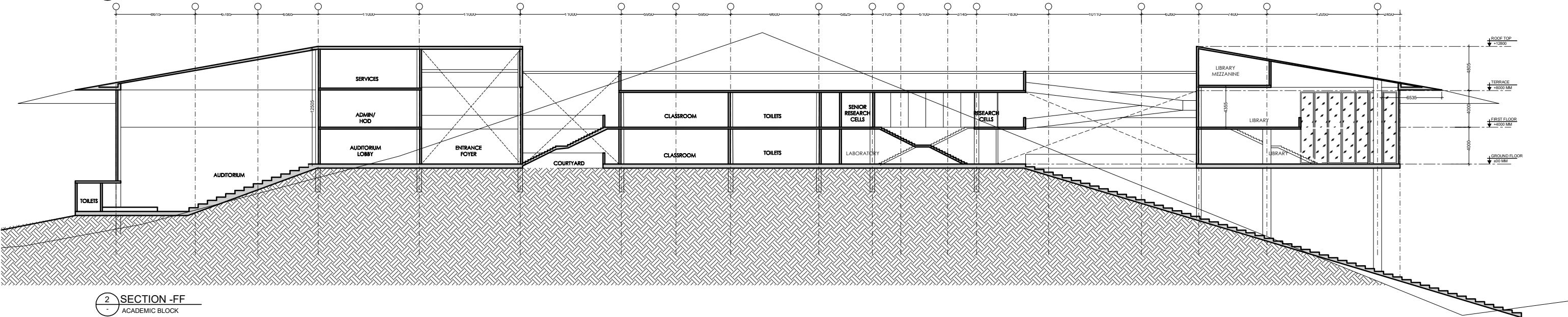
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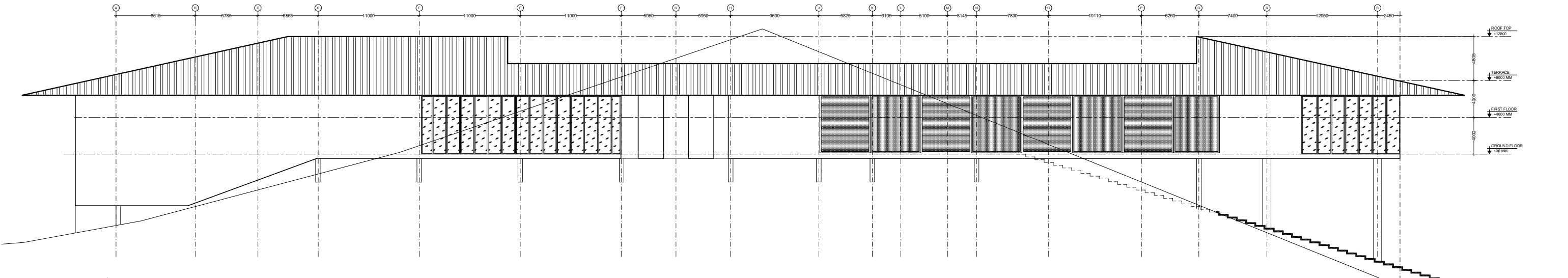
A R0



1 ROOF PLAN
ACADEMIC BLOCK



2 SECTION -FF
ACADEMIC BLOCK



2 ELEVATION -1
ACADEMIC BLOCK

NOTES:

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REVISIONS			
No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER-II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

Project:

TRIBAL RESEARCH INSTITUTE, MEGHALAYA

Architects:

ARCHOHM
ARCHITECTS
CONSULTANTS

Structural Consultants:

**TPC TECHNICAL PROJECTS
CONSULTANTS PVT. LTD.**
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Gurgaon-122001
Ph: +91-120-4240788
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MEP Consultants:

ABD HUSAIN CONSULTANTS
G-142, Jyoti Park, Apartment No. 102
Sector-14, New Delhi-110025
Ph: +91-11-26322935, FAX: +91-11-26319642
E-mail: info@ahc.co.in

Electrical Consultants:

ARCHOHM
ARCHITECTS
CONSULTANTS

Interior Designers:

ARCHOHM
ARCHITECTS
CONSULTANTS

Drawn By	NR
Checked By	AN
Design By	SG

Sheet Title:

**ACADEMIC BLOCK
SECTION & ELEVATION**

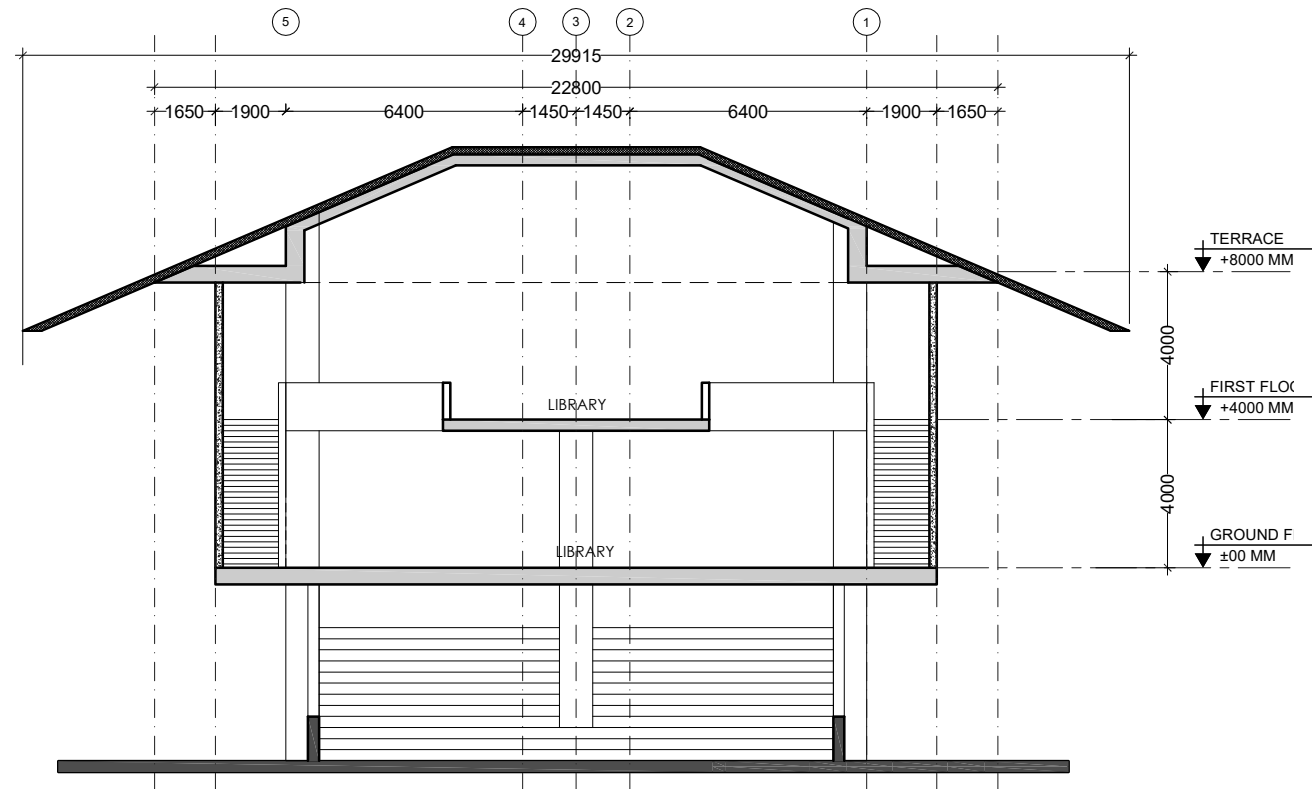
Date: 27-02-2021 Scale: 1:400 Project No: AO-19-011

Drawing No: A-TRI-AB-01-02

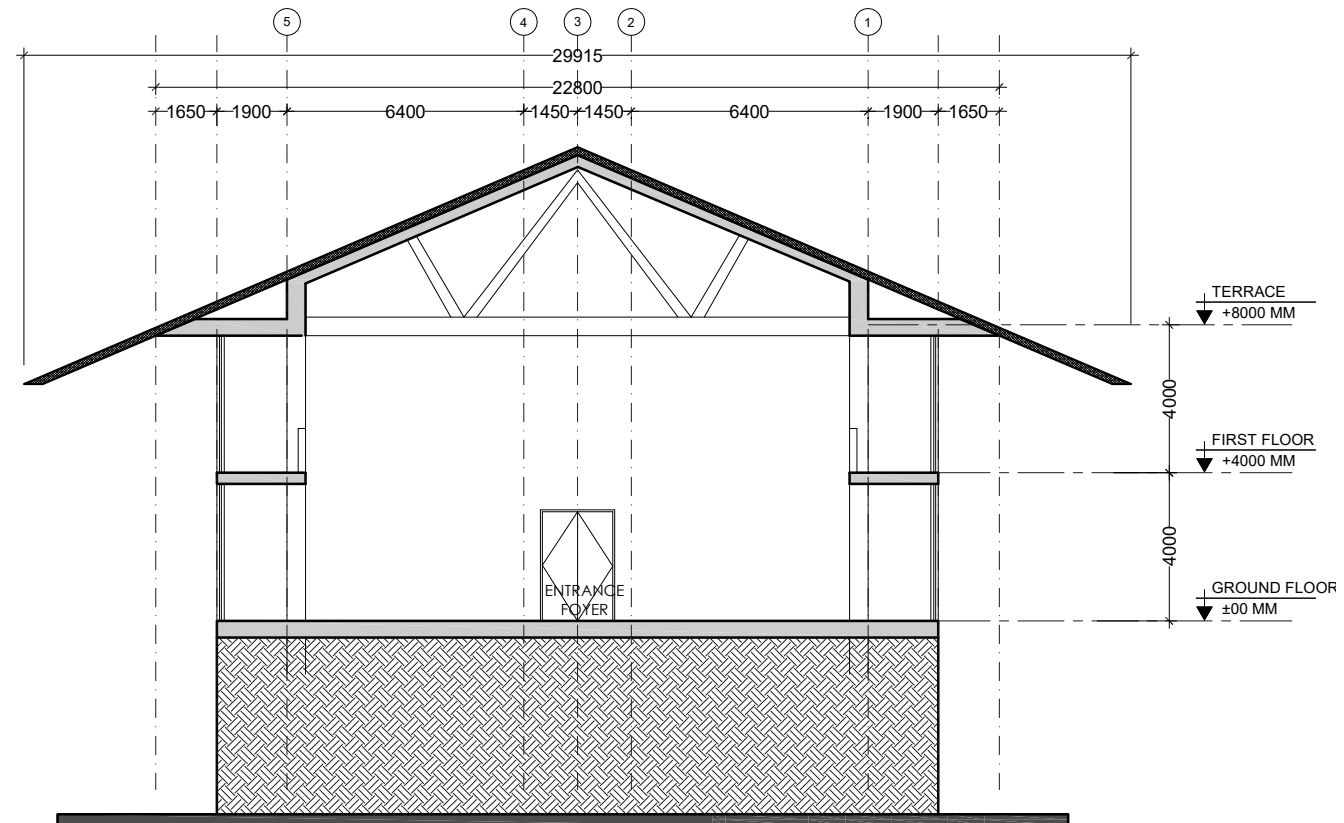
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TENDER DRAWING

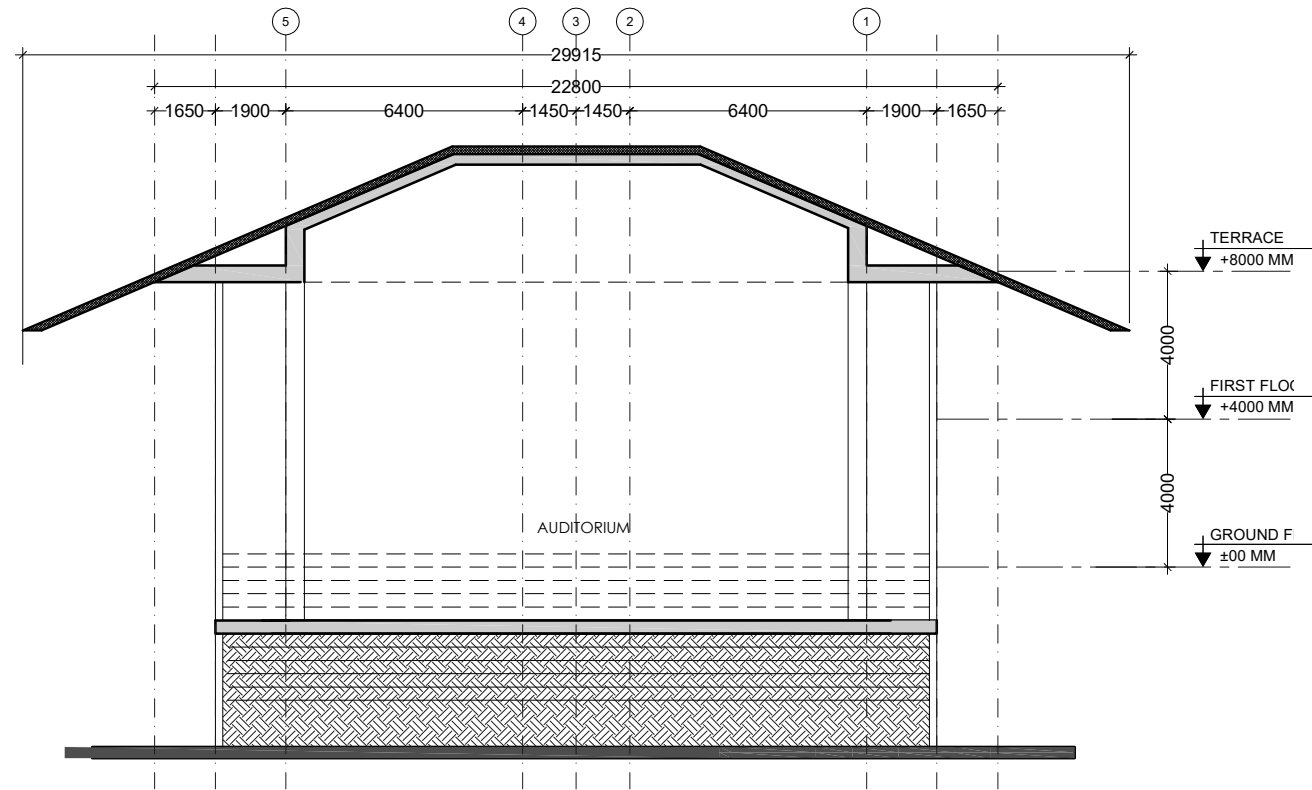




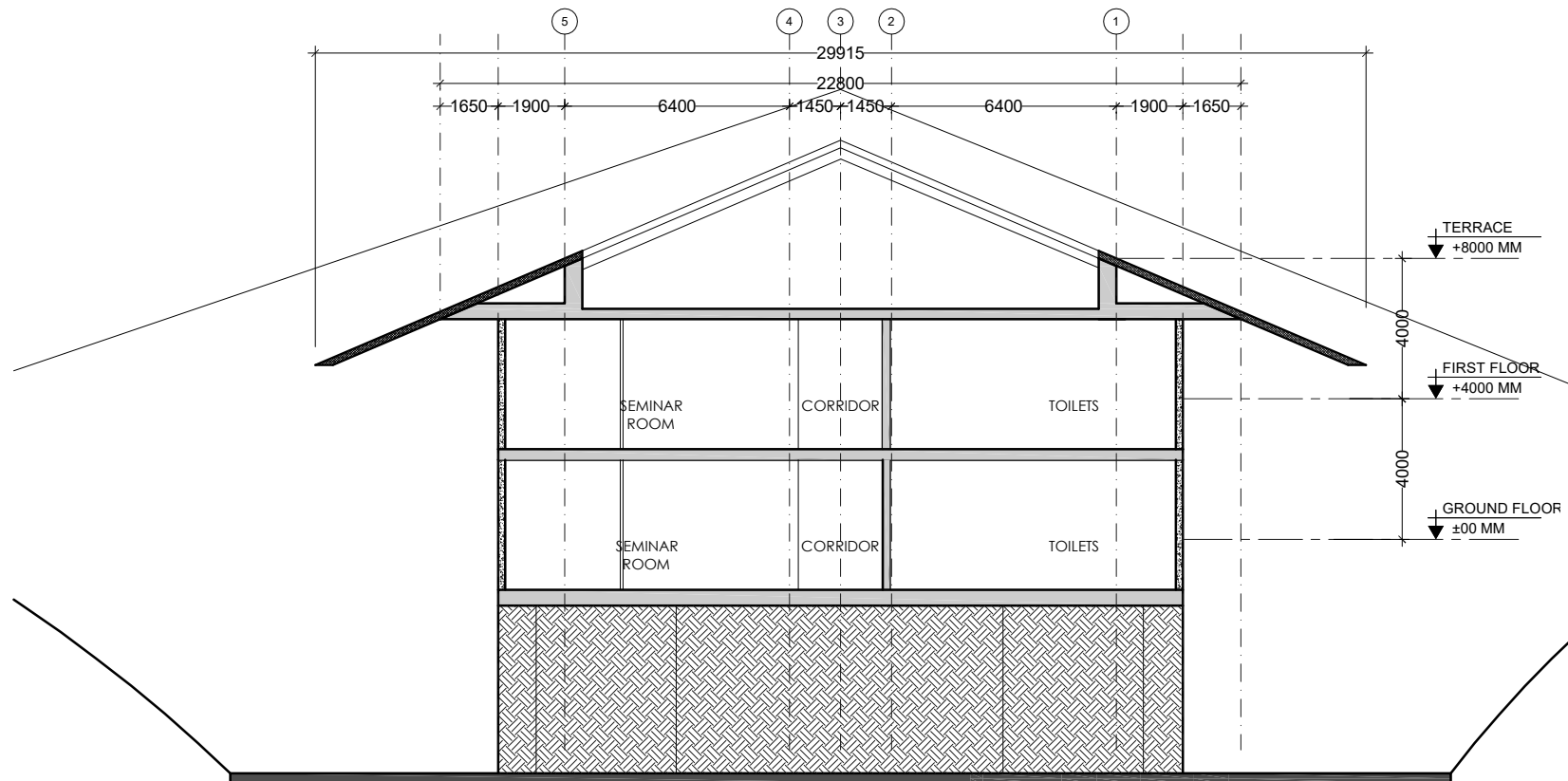
1 SECTION -AA
ACADEMIC BLOCK



1 SECTION -CC
ACADEMIC BLOCK



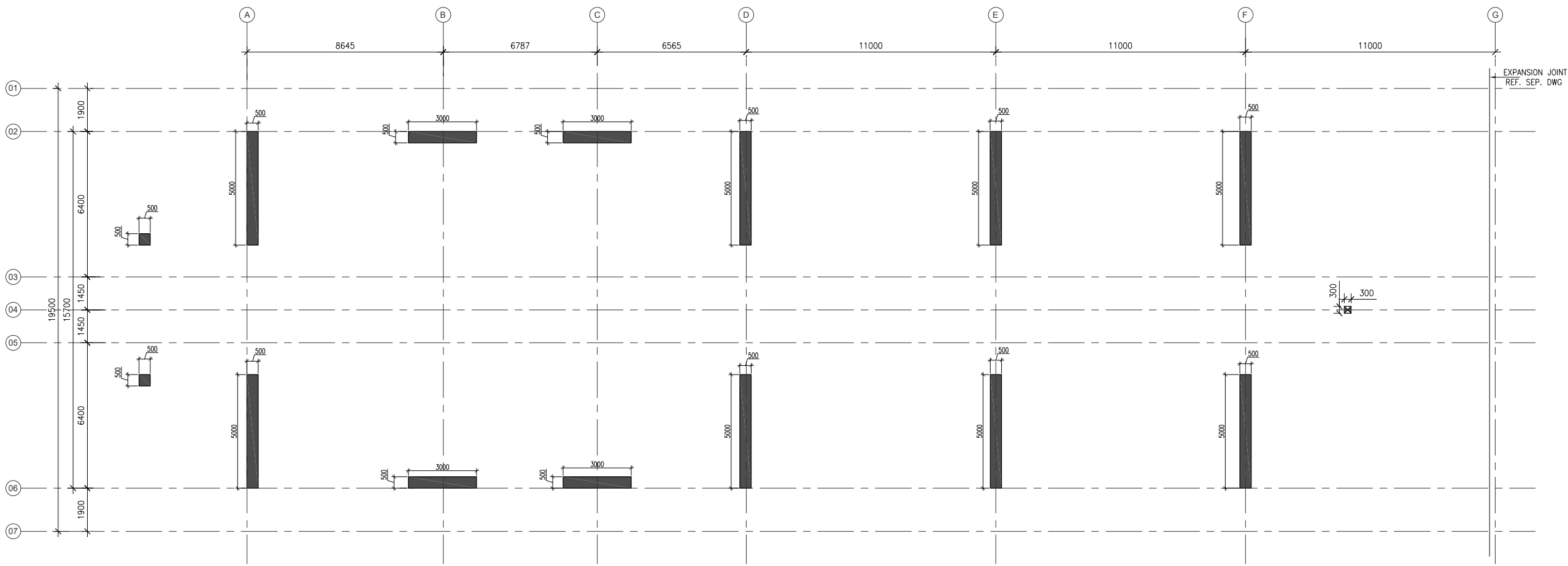
2 SECTION -BB
ACADEMIC BLOCK



2 SECTION -DD
ACADEMIC BLOCK

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	No.	Date	Descriptions							Revision by
Drawing No: A-TRI-AB-01-03										

STRUCTURAL TENDER DRAWINGS



COLUMN LAYOUT PLAN

NOTES

- Dimensions are not to be scaled.
- All Dimensions are in Millimeters unless stated otherwise.
- The contractor shall verify all dimensions, details, specifications & site conditions & shall report any error, omission and/or anomaly to the Campus Designer before commencement of work.
- For construction purposes, the dimensions shall not be measured directly of the drawings. The drawings shall not be used for construction until they are issued for construction.
- These drawings are to be read in co-ordination with HVAC, Electrical, Plumbing drawings & all relevant sections of specifications.
- All shop drawings should be provided to the Architects for approval.


TENDER DRAWINGS

REV.NO	DATE	DESCRIPTION
REVISIONS		


PROJECT

TRIBAL RESEARCH INSTITUTE,
MEGHALAYA

ARCHITECTS :



ARCHITECTURE
ENGINEERING




INTERIORS

c-28c, sector-8,
noida - 201301 (up)
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TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD.
H.O- B-74, SECTOR 57, NOIDA
UTTAR PRADESH-201301(INDIA)
BOARD NO:-91-120-4306800

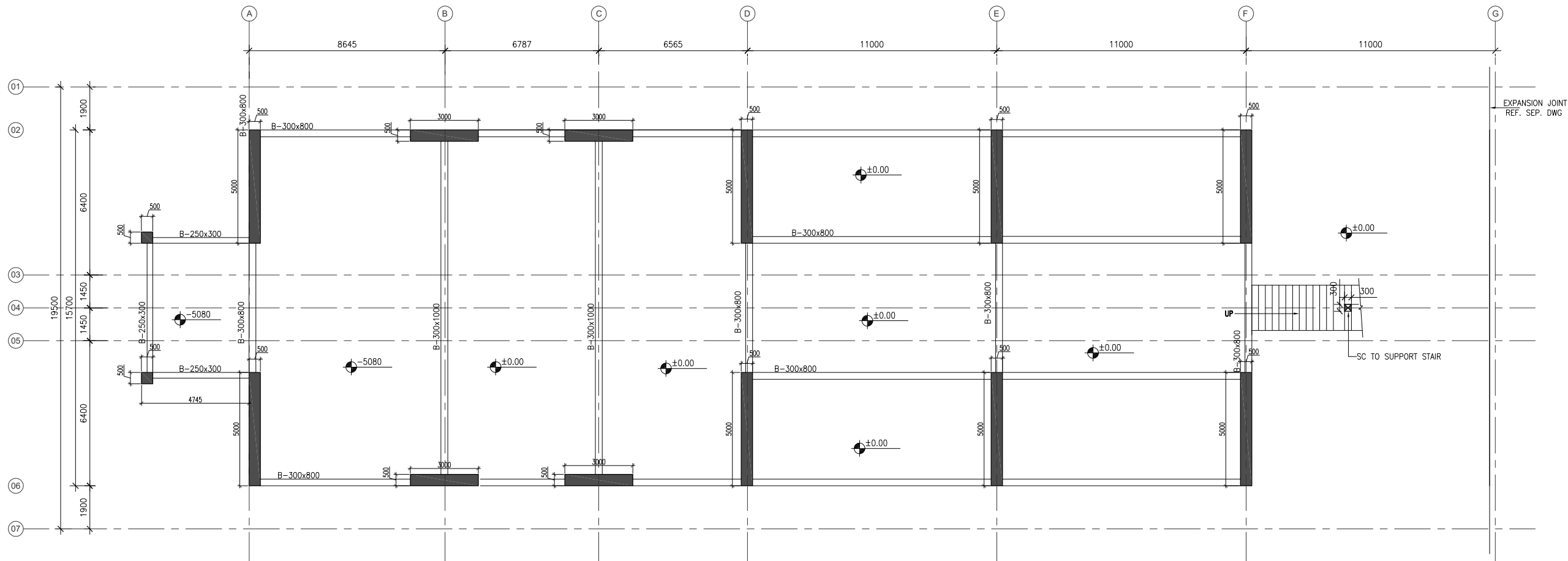


DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING
GURGAON * HYDERABAD * NEWDELHI * NOIDA

DRAWING TITLE :


COLUMN LAYOUT PLAN
ACADEMIC BLOCK (TOWER-A)

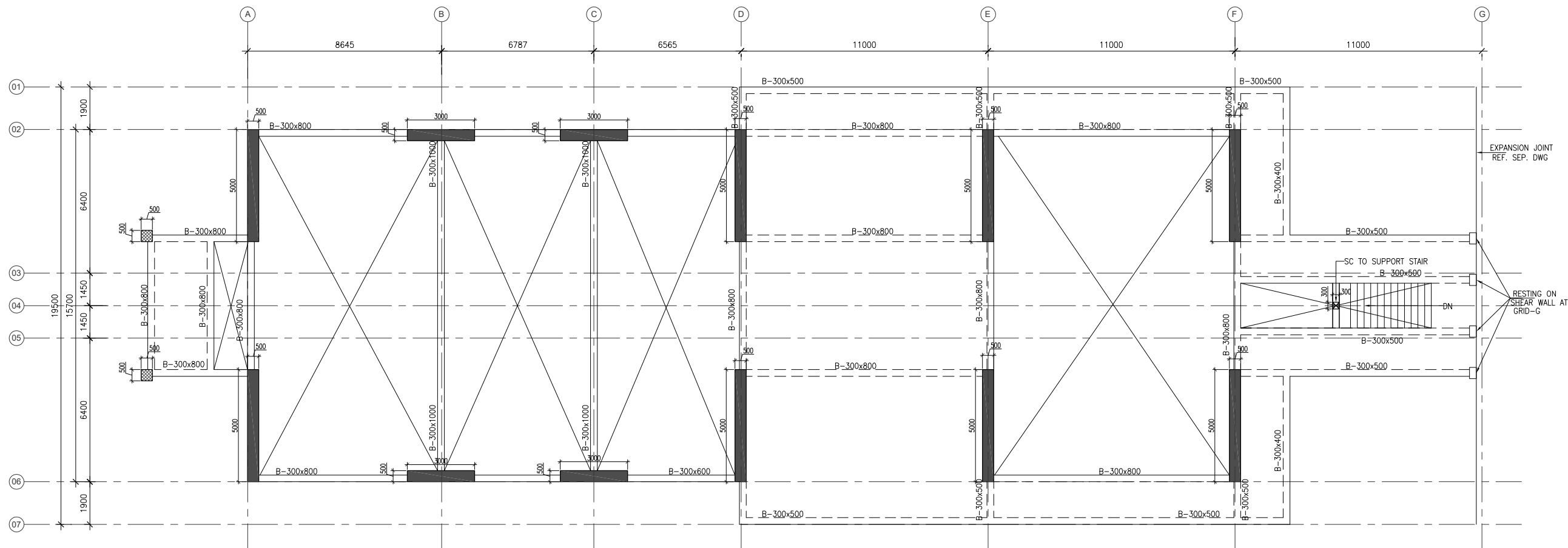
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	
SCALE :	1:100	2020-032-TRI-S-T-A-02



GROUND FLOOR LEVEL PLAN


- NOTES
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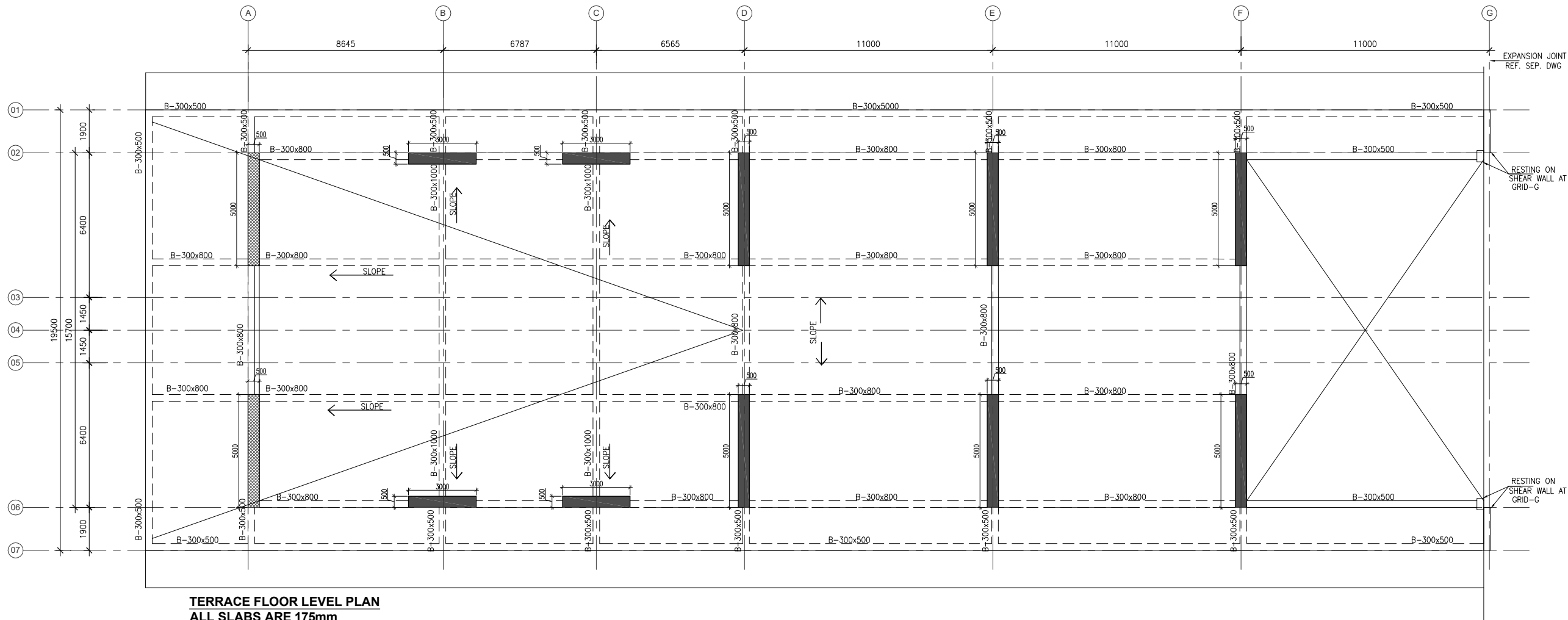
TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
GROUND FLOOR LEVEL PLAN ACADEMIC BLOCK (TOWER-A)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-A-03



FIRST FLOOR LEVEL PLAN
ALL SLABS ARE 175mm

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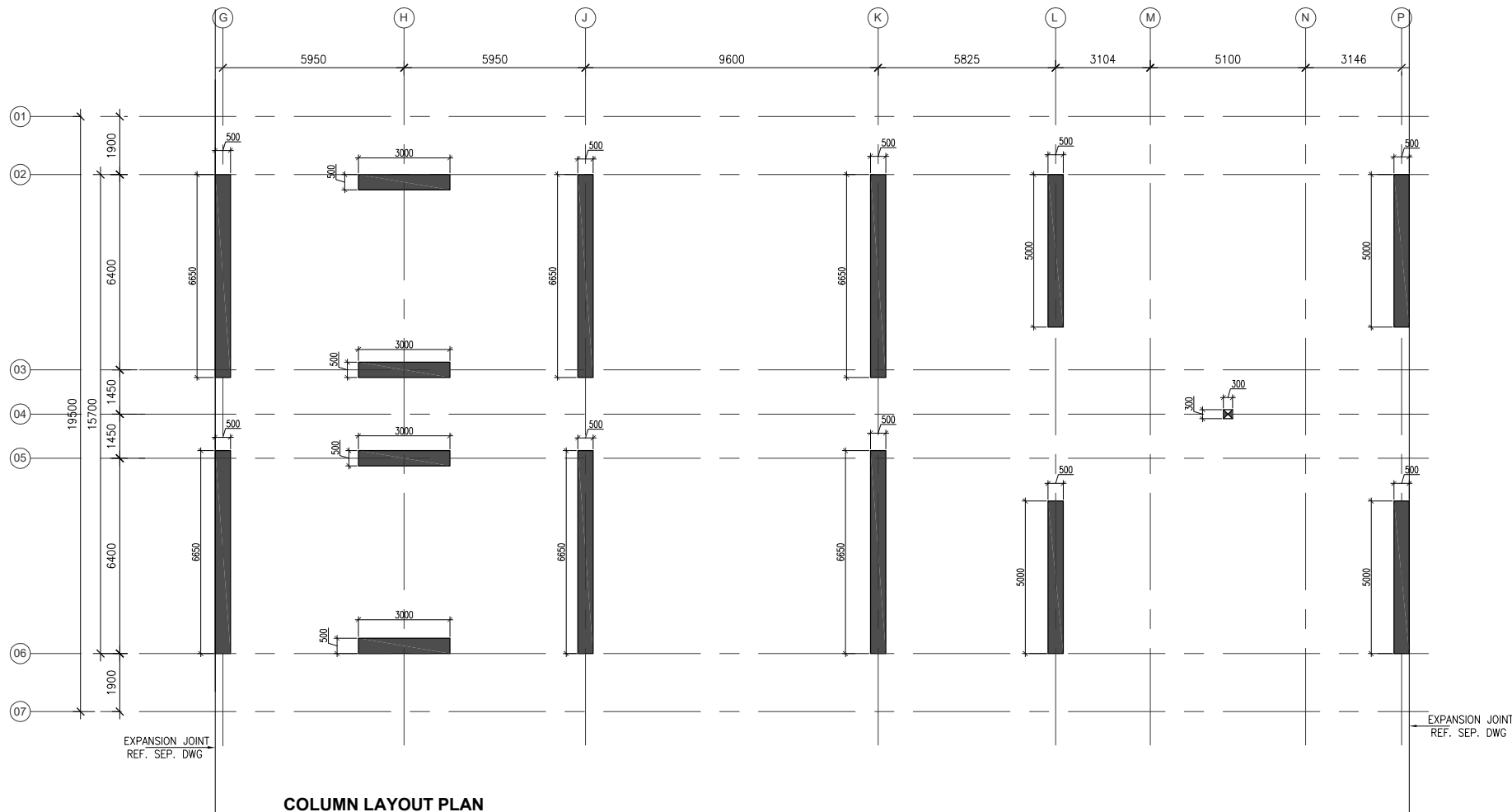
TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
FIRST FLOOR LEVEL PLAN ACADEMIC BLOCK (TOWER-A)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-A-04



NOTES

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TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
TERRACE LEVEL PLAN ACADEMIC BLOCK (TOWER-A)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-A-05



COLUMN LAYOUT PLAN

NOTES

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NOTES:-
1. ± 0.00 - REFER TO ROAD LVL.


TENDER DRAWINGS

REV.NO	DATE	DESCRIPTION
REVISIONS		

PROJECT

TRIBAL RESEARCH INSTITUTE,
MEGHALAYA

ARCHITECTS :



ARCHOHM
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URBANISM
INTERIORS

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noida - 201301 (up)
t 91 120 46 40 300
f 91 120 42 46 788
mail@archohm.com
www.archohm.com

STRUCTURAL CONSULTANTS

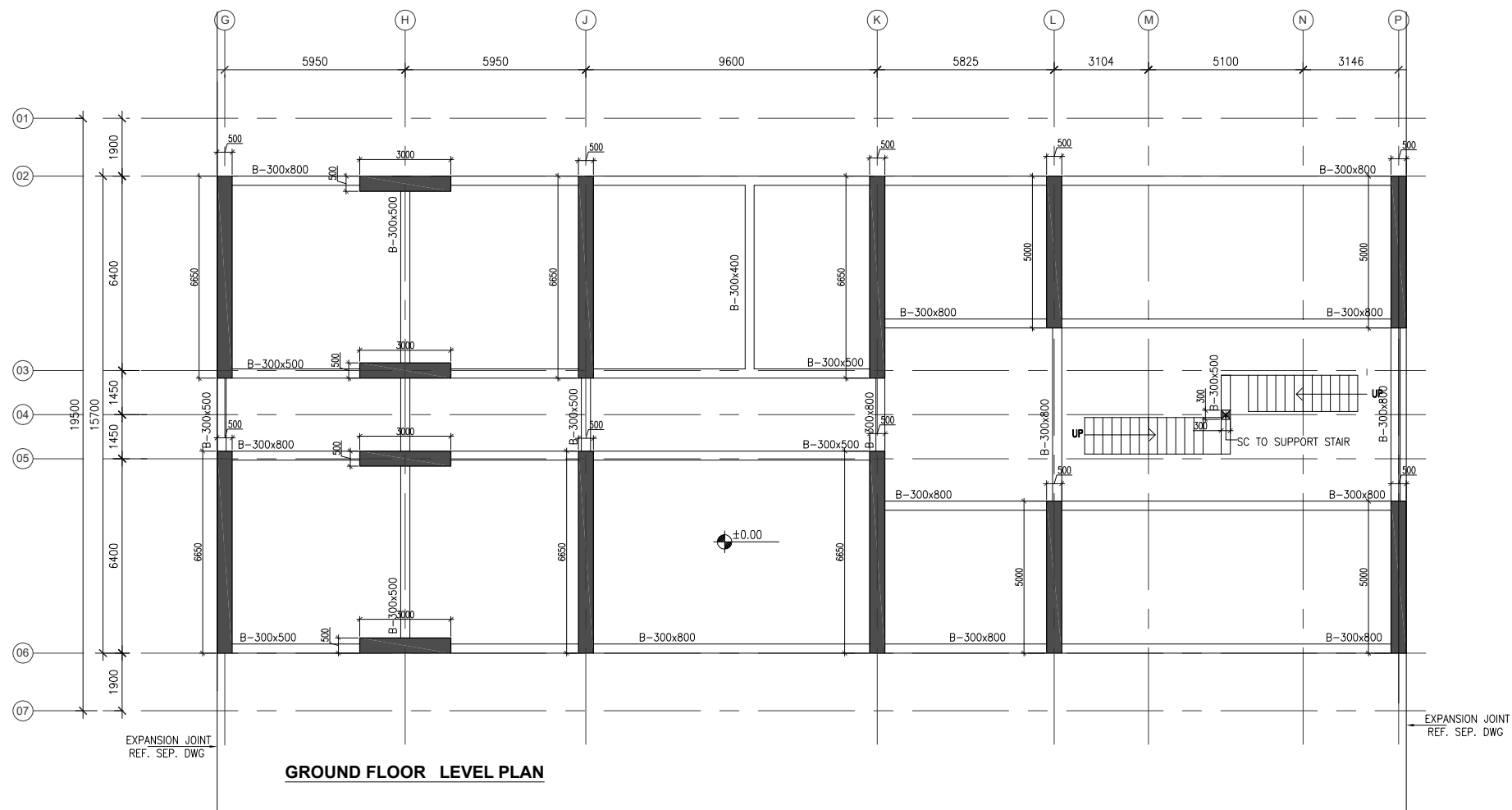
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD.
H.O- B-74, SECTOR 57, NOIDA
UTTAR PRADESH-201301(INDIA)
BOARD NO:-91-120-4306800

DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING
GURGAON * HYDERABAD * NEWDELHI * NOIDA

DRAWING TITLE :


COLUMN LAYOUT PLAN
ACADEMIC BLOCK (TOWER-B)

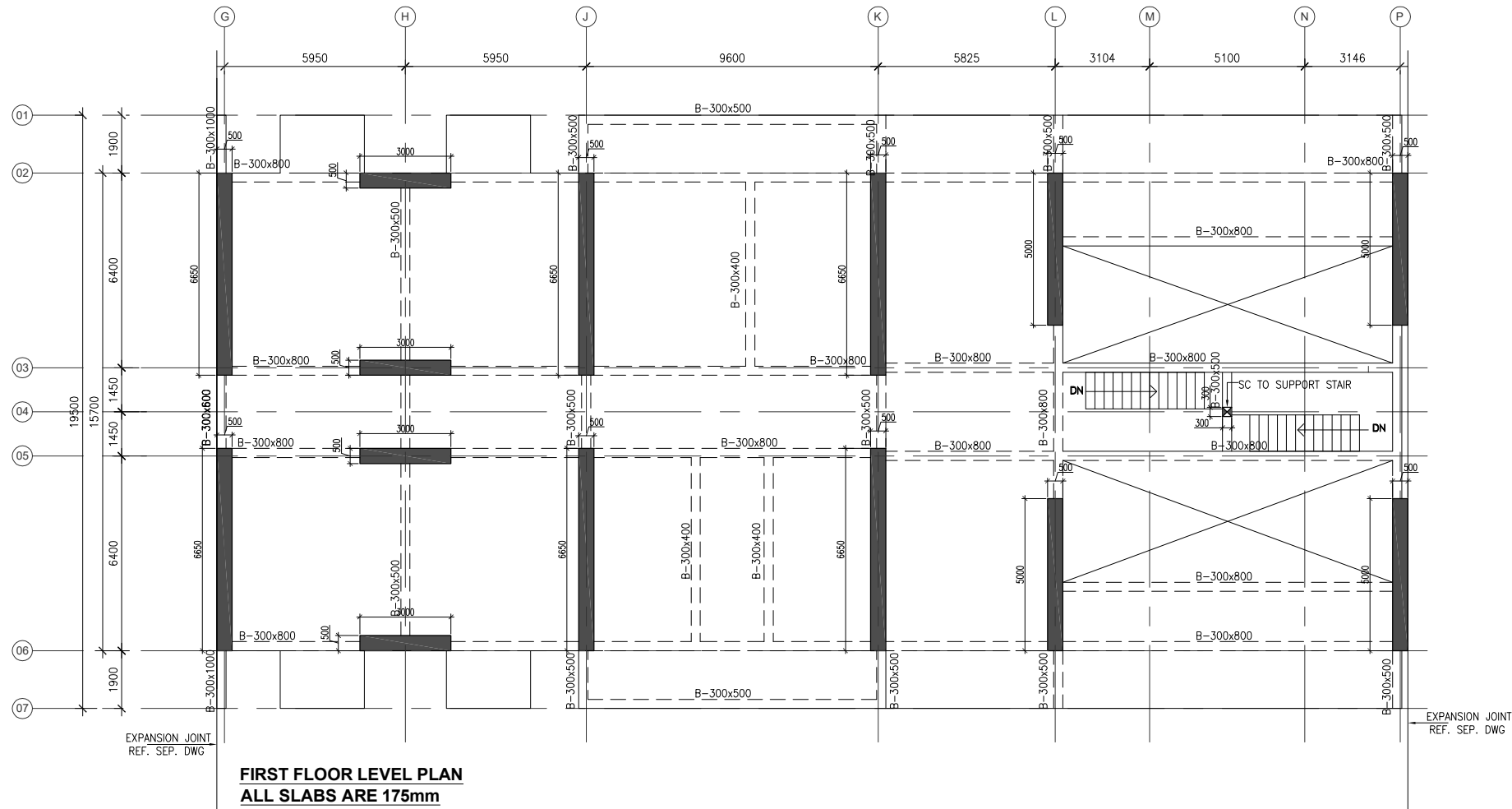
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DATE :	15.09.2020								
DRAWN BY :	ARUN	RO							
CHKD BY :	P.G.	DRAWING NO.							
SCALE :	1:100	2020-032-TRI-S-T-B-02							



GROUND FLOOR LEVEL PLAN

- NOTES
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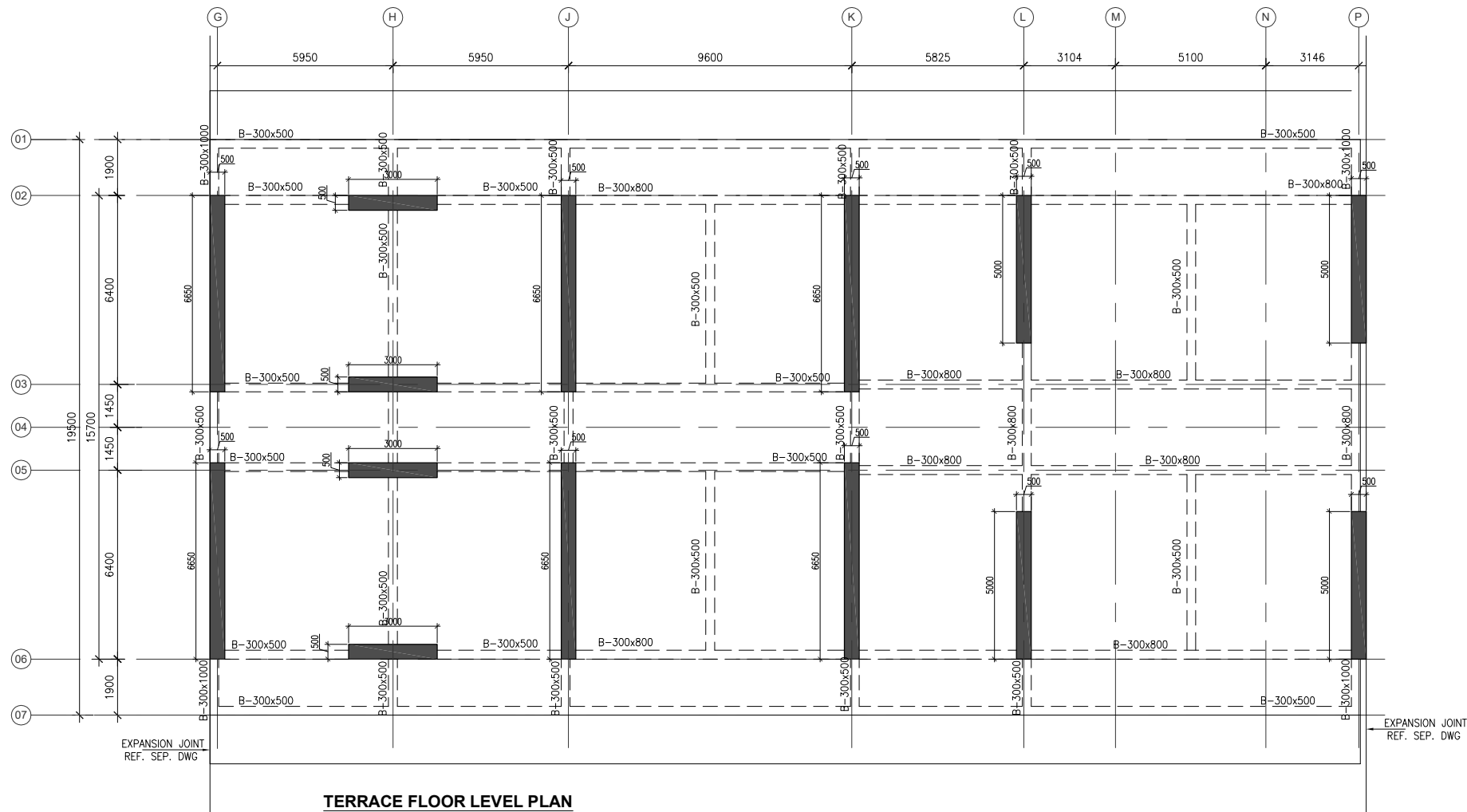
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REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
GROUND FLOOR LEVEL PLAN ACADEMIC BLOCK (TOWER-B)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-B-03



NOTES

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TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
<div><div><div>ARCHO</div><div>HM</div></div><div>ARCHITECTURE ENGINEERING</div><div>INTERIORS</div></div> <div>c-28c, sector-8, noida - 201301 (up) t 91 120 46 40 300 f 91 120 42 46 788 mail@archohm.com www.archohm.com</div>		
STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON • HYDERABAD • NEWDELHI • NOIDA		
DRAWING TITLE :		
FIRST FLOOR LEVEL PLAN ACADEMIC BLOCK (TOWER-B)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-A-04

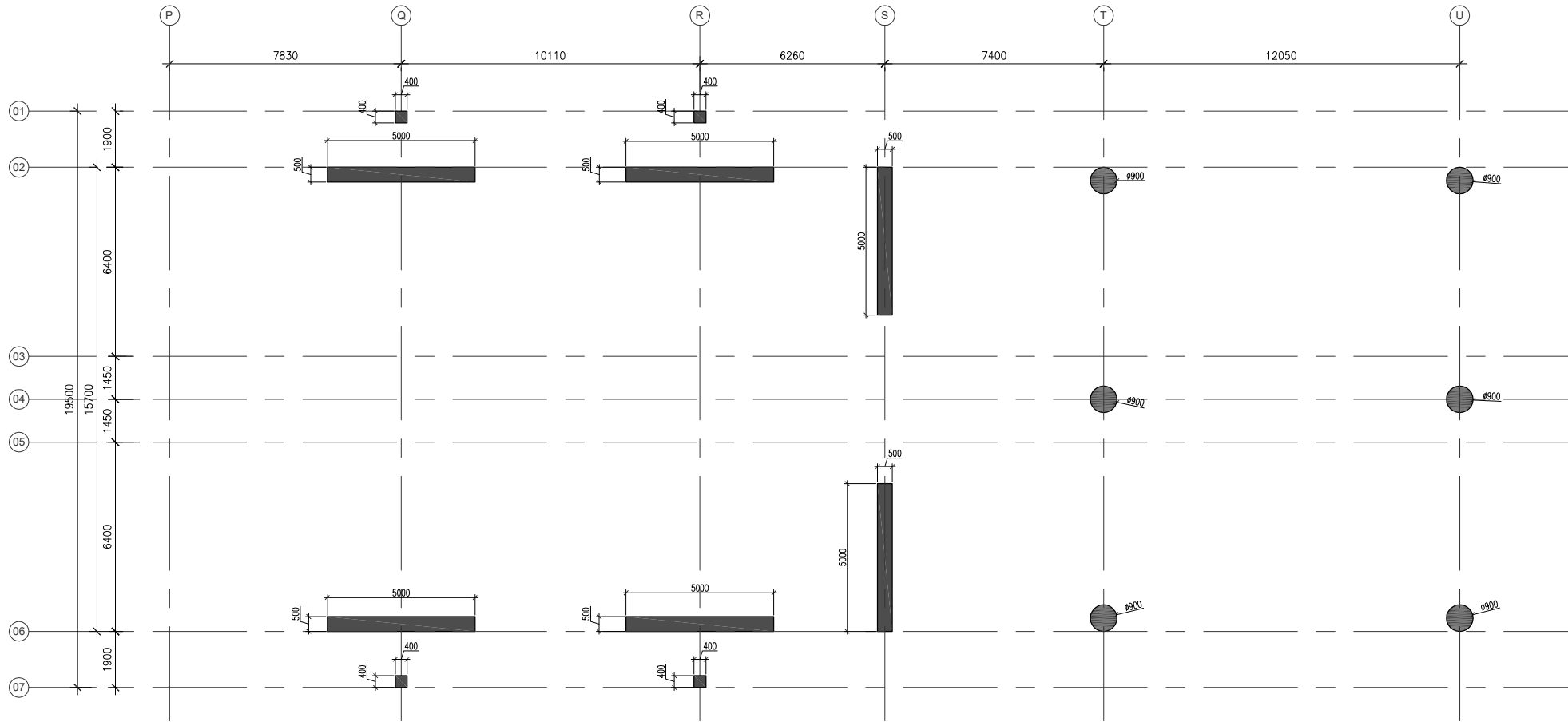


TERRACE FLOOR LEVEL PLAN
ALL SLABS ARE 175mm

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TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
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ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
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TERRACE LEVEL PLAN ACADEMIC BLOCK (TOWER-B)		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
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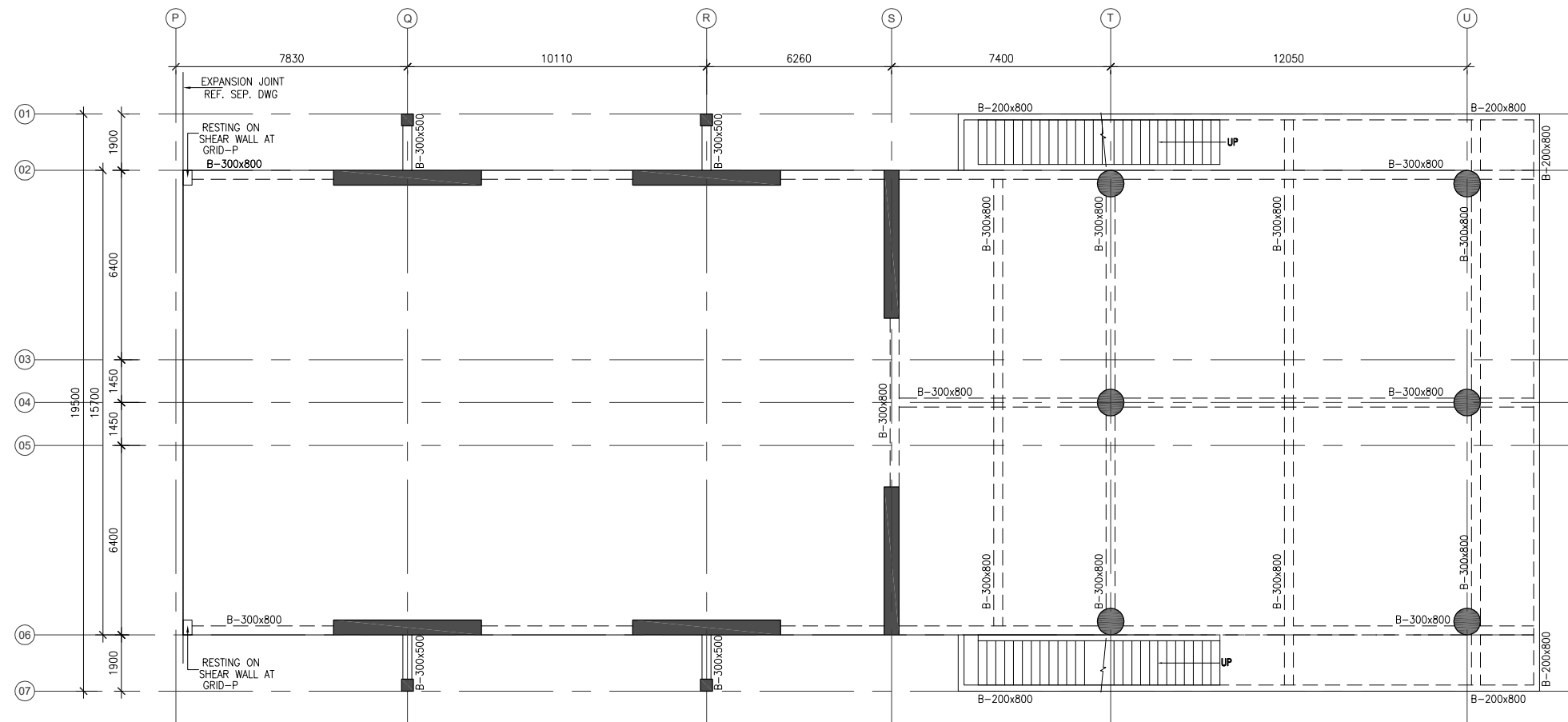


COLUMN LAYOUT PLAN

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PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
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STRUCTURAL CONSULTANTS		
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
COLUMN LAYOUT PLAN TOWER-C		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-C-02

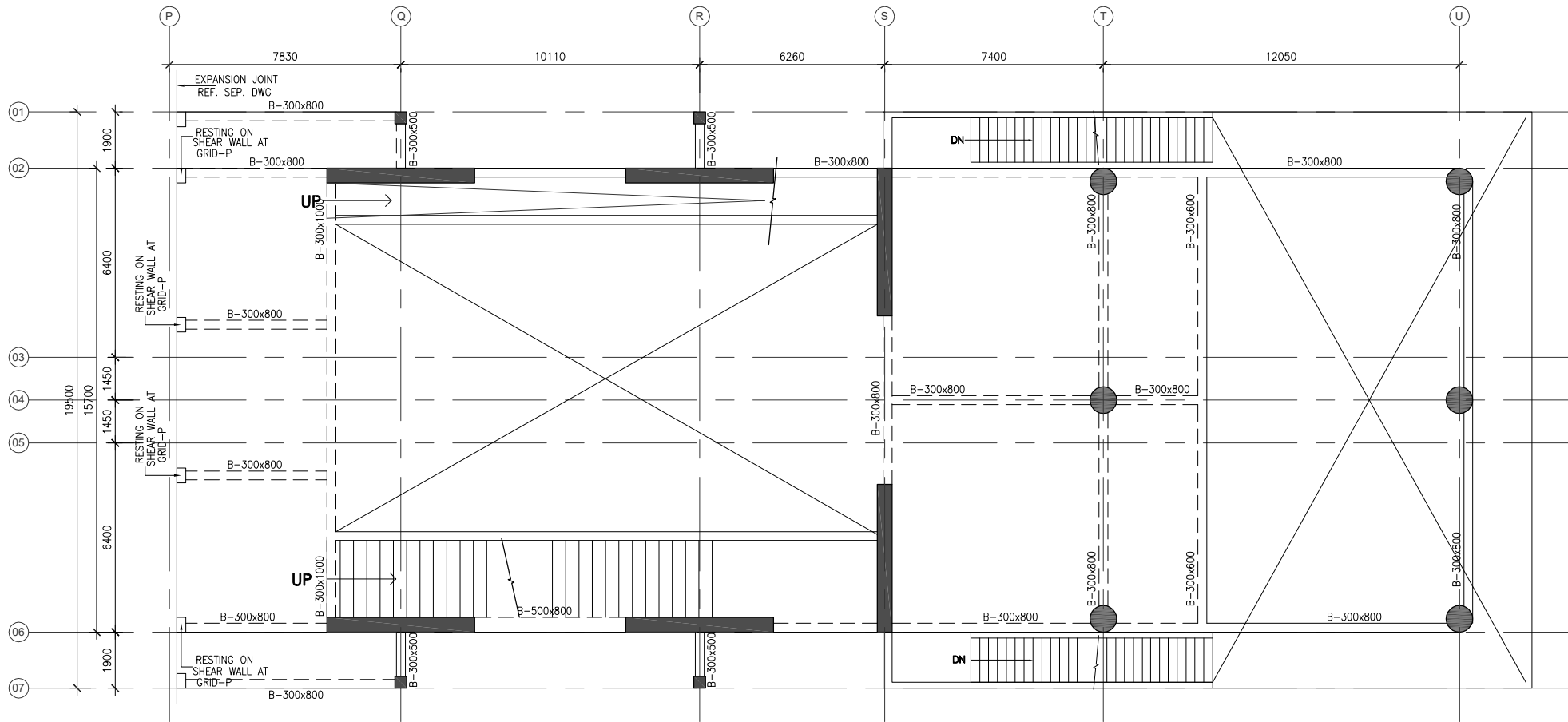


GROUND FLOOR LEVEL PLAN
ALL SLABS ARE 175 mm THK

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TENDER DRAWINGS		
REV.NO	DATE	DESCRIPTION
REVISIONS		
PROJECT		
TRIBAL RESEARCH INSTITUTE, MEGHALAYA		
ARCHITECTS :		
<div><div>ARCHOHM ARCHITECTURE ENGINEERING</div><div>ARCHOHM INTERIORS</div></div> <div>c-28c, sector-8, noida - 201301 (up) t 91 120 46 40 300 f 91 120 42 46 788 mail@archohm.com www.archohm.com</div>		
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TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD. H.O- B-74, SECTOR 57, NOIDA UTTAR PRADESH-201301(INDIA) BOARD NO:-91-120-4306800		
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING GURGAON * HYDERABAD * NEWDELHI * NOIDA		
DRAWING TITLE :		
GROUND FLOOR LEVEL PLAN TOWER-C		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-C-03



FIRST FLOOR LEVEL PLAN
ALL SLABS ARE 175 mm THK

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TENDER DRAWINGS

REV.NO	DATE	DESCRIPTION
REVISIONS		

PROJECT

TRIBAL RESEARCH INSTITUTE,
MEGHALAYA

ARCHITECTS :



STRUCTURAL CONSULTANTS

TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD.
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BOARD NO:-91-120-4306800



DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING
GURGAON * HYDERABAD * NEWDELHI * NOIDA

DRAWING TITLE :

FIRST FLOOR LEVEL PLAN
TOWER-C

PROJECT CODE	2020-032	REVISION							
DATE :	15.09.2020								
DRAWN BY :	ARUN	RO							
CHKD BY :	P.G.	DRAWING NO.							
SCALE :	1:100	2020-032-TRI-S-T-C-04							

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TENDER DRAWINGS

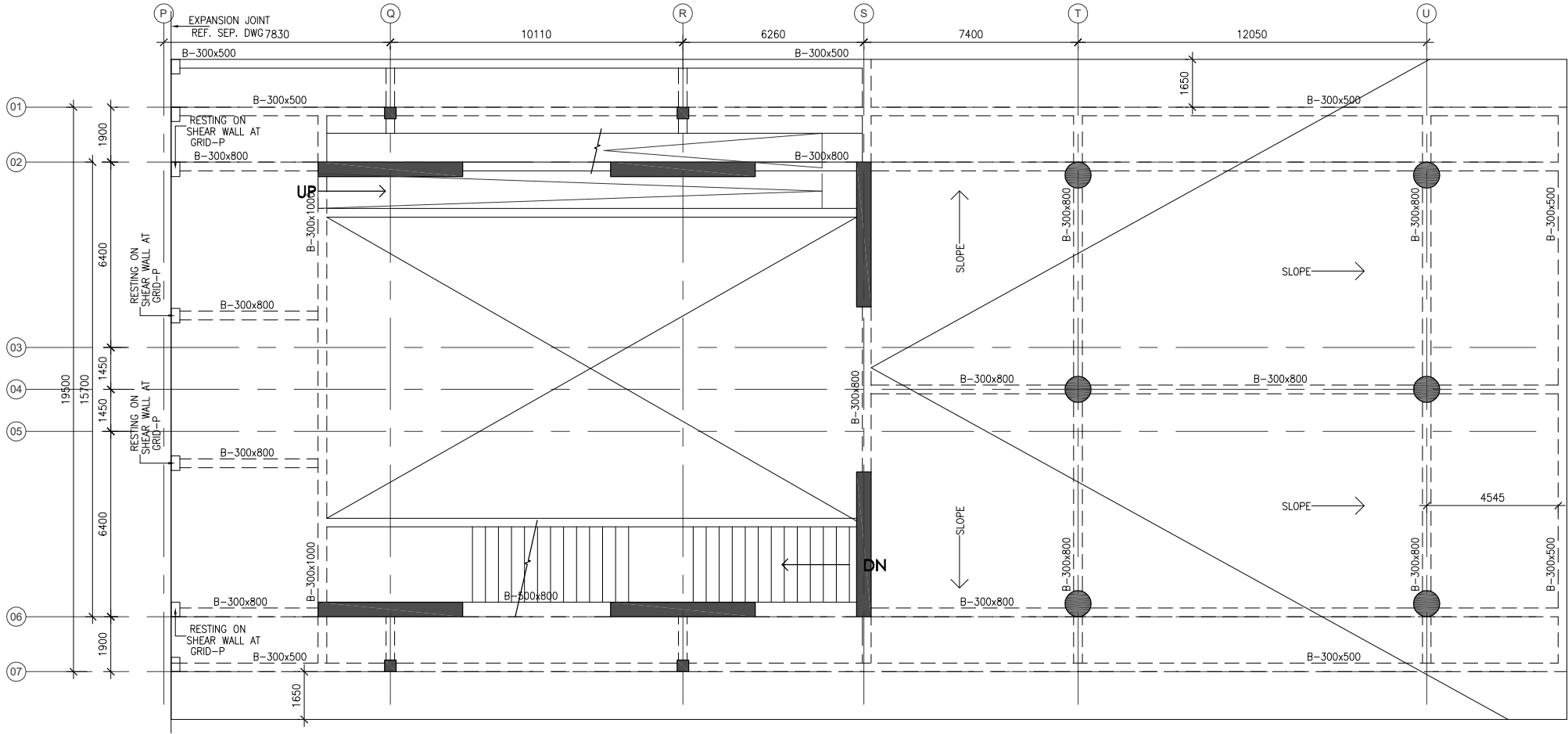
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REVISIONS		

PROJECT
TRIBAL RESEARCH INSTITUTE,
MEGHALAYA

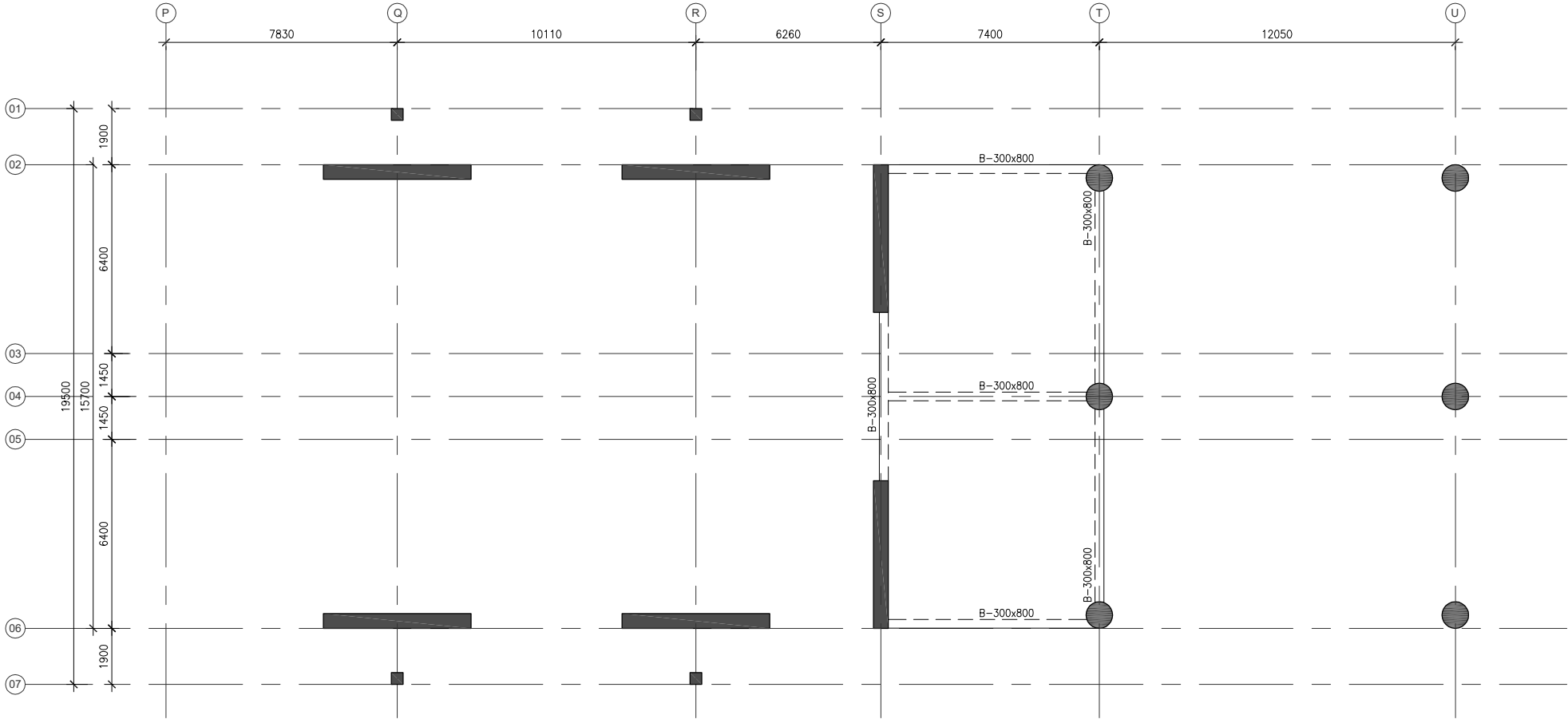
ARCHITECTS :
ARCHOHM
ARCHITECTURE INTERIORS
c-28c, sector-8,
noida - 201301 (up)
t 91 120 46 40 300
f 91 120 42 46 788
mail@archohm.com
www.archohm.com

STRUCTURAL CONSULTANTS
TPC TECHNICAL PROJECTS CONSULTANTS(P)LTD.
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UTTAR PRADESH-201301(INDIA)
BOARD NO:-91-120-4306800
DESIGN & ENGINEERING * COST & QUALITY MANAGEMENT * RETROFITTING
GURGAON * HYDERABAD * NEWDELHI * NOIDA
DRAWING TITLE :

TERRACE LEVEL PLAN TOWER-C		
PROJECT CODE	2020-032	REVISION
DATE :	15.09.2020	
DRAWN BY :	ARUN	RO
CHKD BY :	P.G.	DRAWING NO.
SCALE :	1:100	2020-032-TRI-S-T-C-05

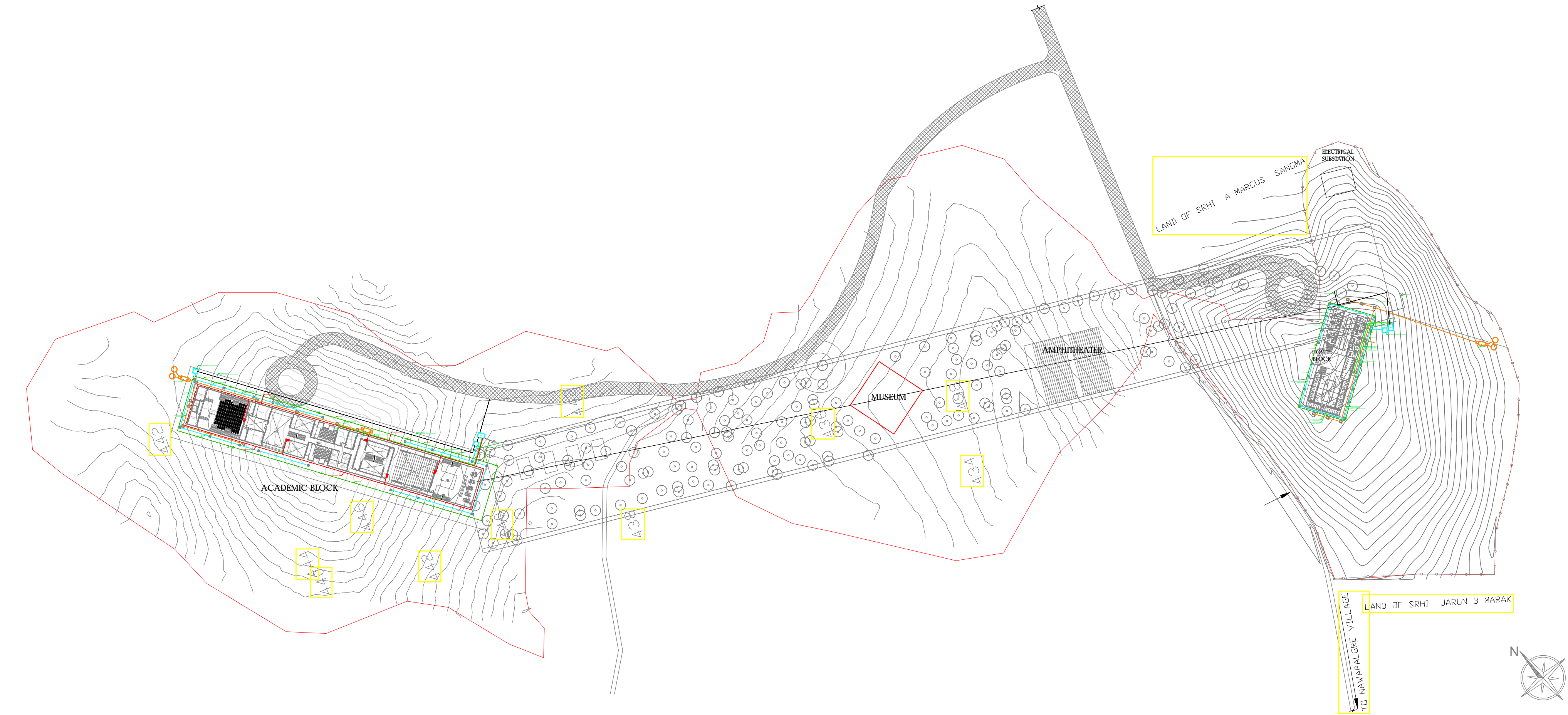


TERRACE FLOOR LEVEL PLAN
ALL SLABS ARE 175 mm THK



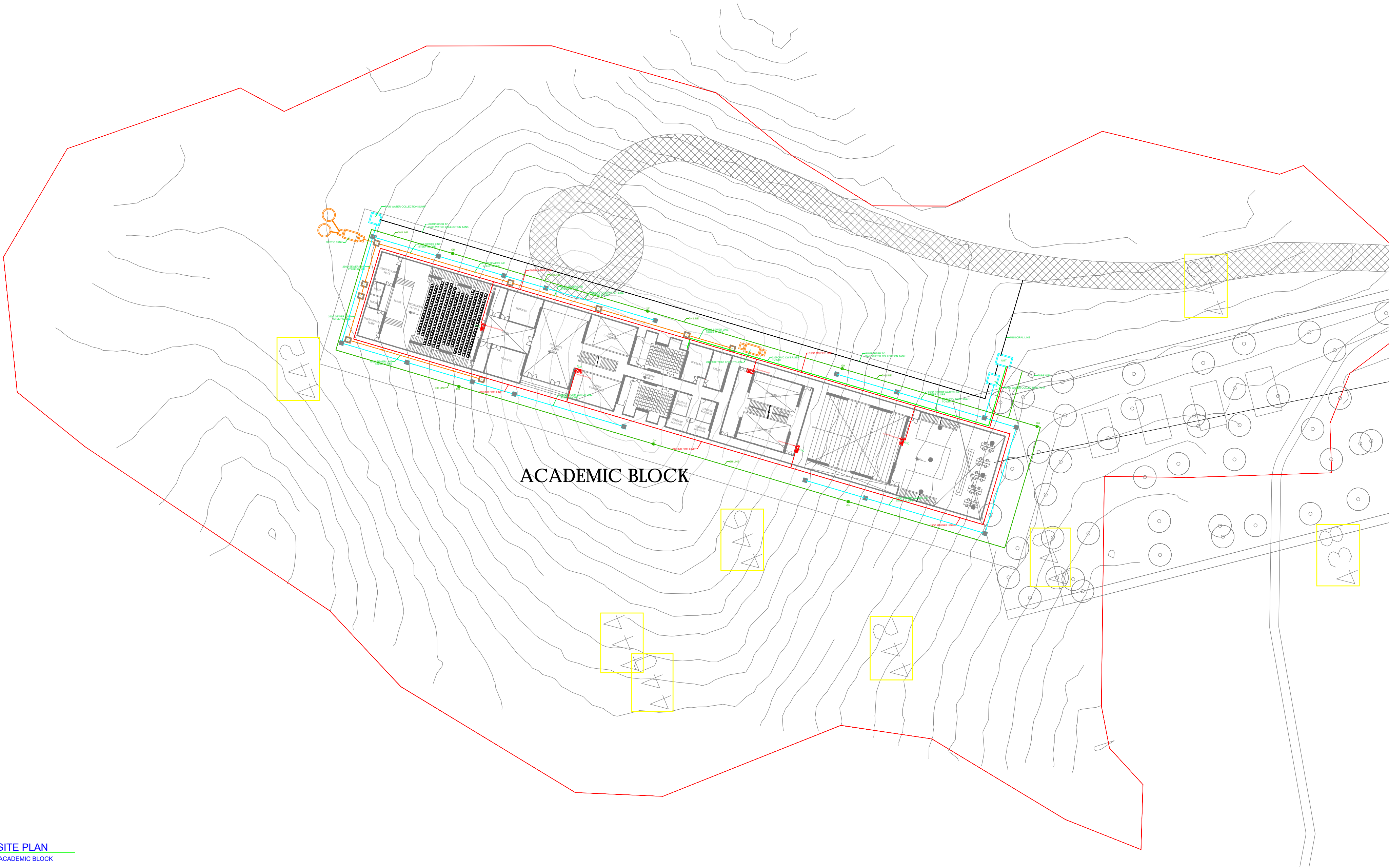
LIBRARY MEZZANINE LEVEL FLOOR PLAN
ALL SLABS ARE 175 mm THK

PLUMBING TENDER DRAWINGS



SITE PLAN

NOTES:								Client:				Project:		TRIBAL RESEARCH INSTITUTE, MEGHALAYA		Sheet Title:		N	
1. DO NOT SCALE THE DRAWING. FOLLOW ONLY FIGURED DIMENSIONS.																		SITE PLAN	
2. ALL DIMENSIONS GIVEN IN THIS DRAWING ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.																		PLUMBING DRAWINGS	
3. ALL DIMENSIONS TO BE VERIFIED ON SITE AND APPROVED BY THE SITE ENGINEER.																			
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SITE PLAN
ACADEMIC BLOCK

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REVISIONS			
No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER-III	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

Project:

TRIBAL RESEARCH INSTITUTE, MEGHALAYA

Architects:

ARCHOHM
ARCHITECTURE
ENGINEERING
INTERIORS

Structural Consultants:
TPC TECHNICAL PROJECTS CONSULTANTS PVT. LTD.
H.O. B-74, Sector-07(Cy Park Plaza)
New Delhi-110029
Ph: +91-11-26322928, FAX: +91-11-26319642
Email: info@tpcpl.com

MEP Consultants:
TECHNO ENGINEERING CONSULTANTS
Pocket-1A, 3D-2, Siddhartha Extension
New Delhi-110014, India
E-mail: sab_tec@yahoo.co.in, tec@tel.net.in

HVAC Consultants:
ABID HUSAIN CONSULTANTS
Lot-182, Jeevan prakash apartment, 10th
offile, New Delhi-110025
TEL: +91-11-26322928, FAX: +91-11-26319642
Email: info@ahs.com

Acoustic Consultants:
ARCHOHM
c-28/c, sector-8, node - 201301 (up)
t: 91 120 42 40 788
mail@archohm.com
www.archohm.com

Environmental Consultants:
ARCHOHM
c-28/c, sector-8, node - 201301 (up)
t: 91 120 42 40 788
mail@archohm.com, www.archohm.com

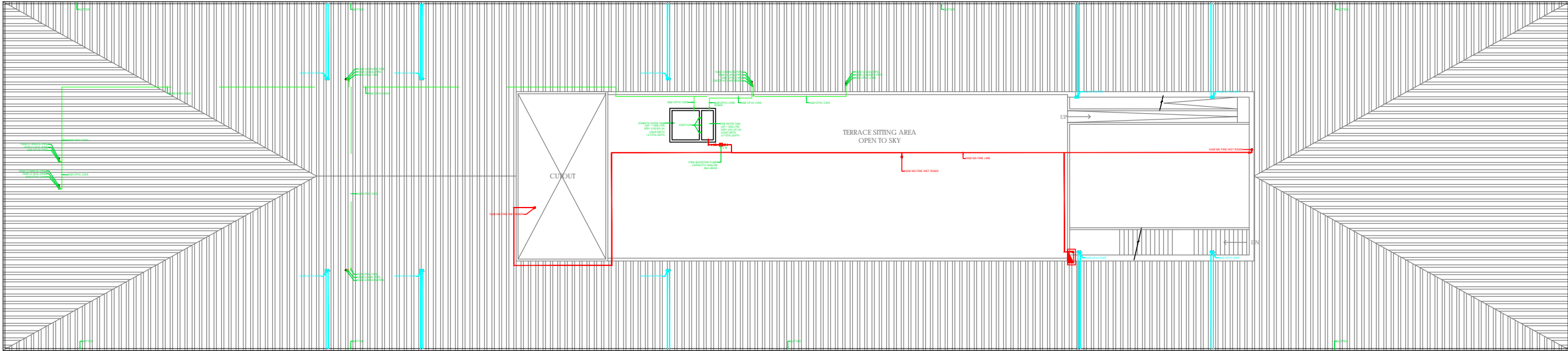
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Checked By	AN
Design By	SG

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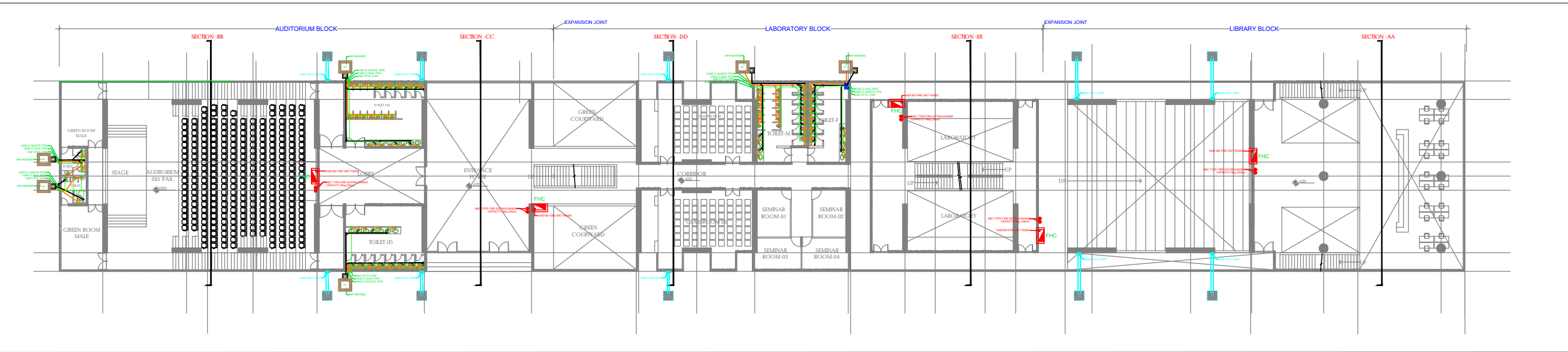
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PLUMBING DRAWINGS**

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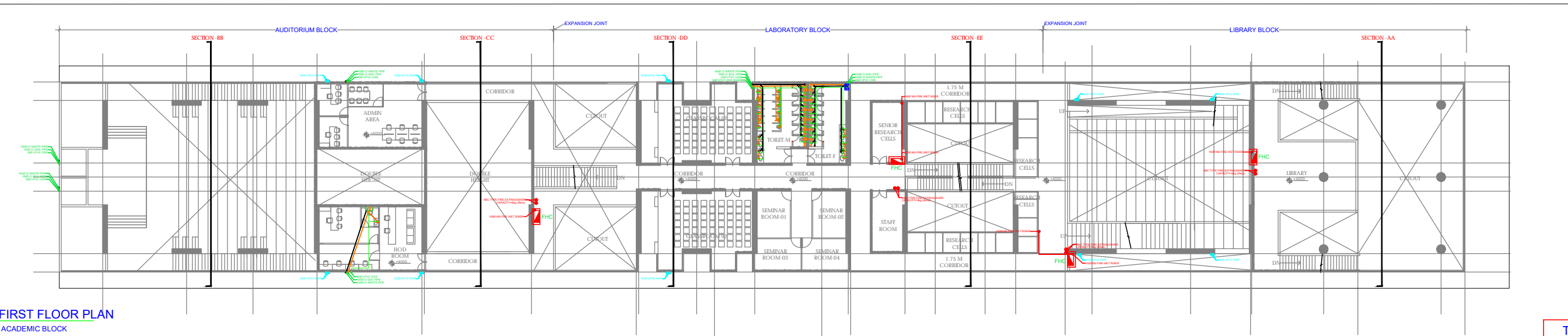
Project No.: AO-19-011
A R0



1 ROOF PLAN
ACADEMIC BLOCK



2 GROUND FLOOR PLAN
ACADEMIC BLOCK



3 FIRST FLOOR PLAN
ACADEMIC BLOCK

NOTES:				REVISIONS				TENDER DRAWING			
1. DO NOT SCALE THE DRAWING. FOLLOW ONLY FIGURED DIMENSIONS.				No.				Sheet Title:			
2. ALL DIMENSIONS GIVEN IN THIS DRAWING ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.				Date				ACADEMIC BLOCK			
3. ALL DIMENSIONS TO BE VERIFIED ON SITE AND APPROVED BY THE SITE ENGINEER.				Descriptions				PLUMBING DRAWINGS			
4. ANY DISCREPANCY OR AMBIGUITY IN THE DRAWINGS SHOULD IMMEDIATELY BE BROUGHT TO NOTICE OF THE ARCHITECT.				Revision by				Date:			
5. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS.								27-02-2021			
6. THE ± 0 REFERS TO LEVEL ESTABLISHED AT SITE IN PRESENCE OF THE SITE SUPERVISOR AND THE ARCHITECT. ALL REMAINING LEVELS ARE RELATIVE TO THIS LEVEL.								Scale:			
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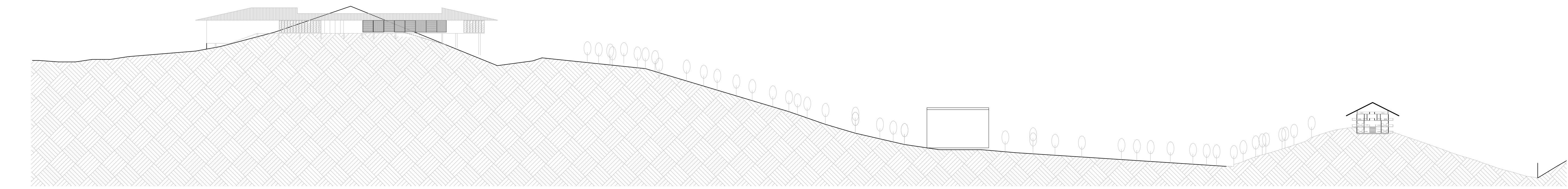
ELECTRICAL TENDER DRAWINGS

PHASE -2

PHASE -1



1 SITE PLAN
SCALE : 1:2000



2 SITE SECTION
SCALE : 1:2000

SYMBOL	DESCRIPTION
	HDPE PIPES

NOTES:

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No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

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Drawn By: DK

Checked By: AKD

Design By: SPG

Sheet Title:

**CABLE ROUTING
SITE PLAN**

Date: 27-02-2021 Scale: 1:2000 Project No: AO-19-011

Drawing No: E-TRI-SP-01-01 E R0

PHASE -2

PHASE -1



SYMBOL	DESCRIPTION	QTY.
⊕	4M HEIGHT POLE WITH LED POST TOP LIGHT	30 NOS.
○	6M HEIGHT POLE WITH LED LIGHT	42 NOS.

NOTES:

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No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

Project:

TRIBAL RESEARCH INSTITUTE, MEGHALAYA

Architects:	Structural Consultants:	HVAC Consultants:	Environmental Consultants:	Drawn By:	DK
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Design By:	SPG	Landscape Architects:			

Sheet Title:

**STREET LIGHTING LAYOUT
SITE PLAN**

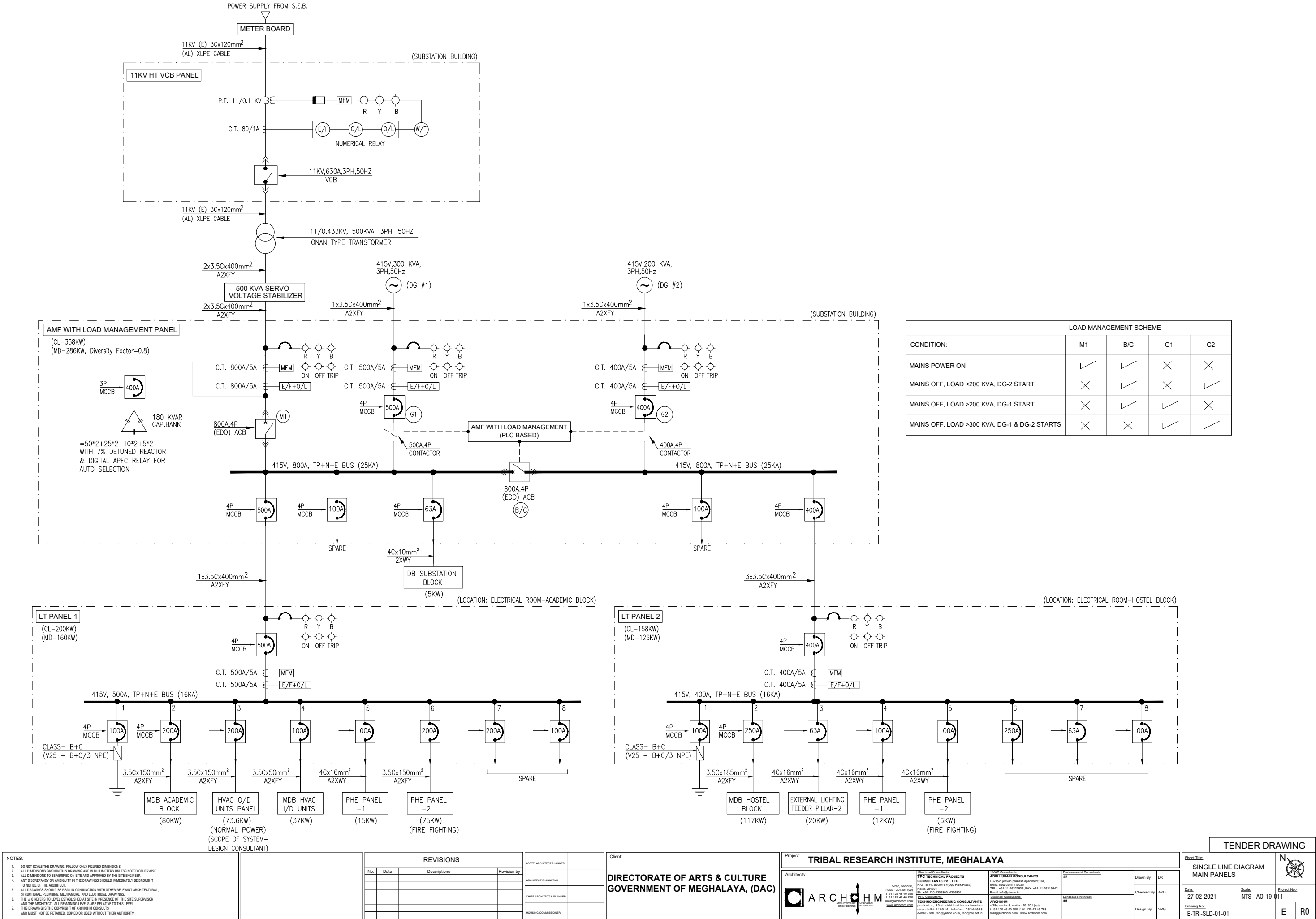
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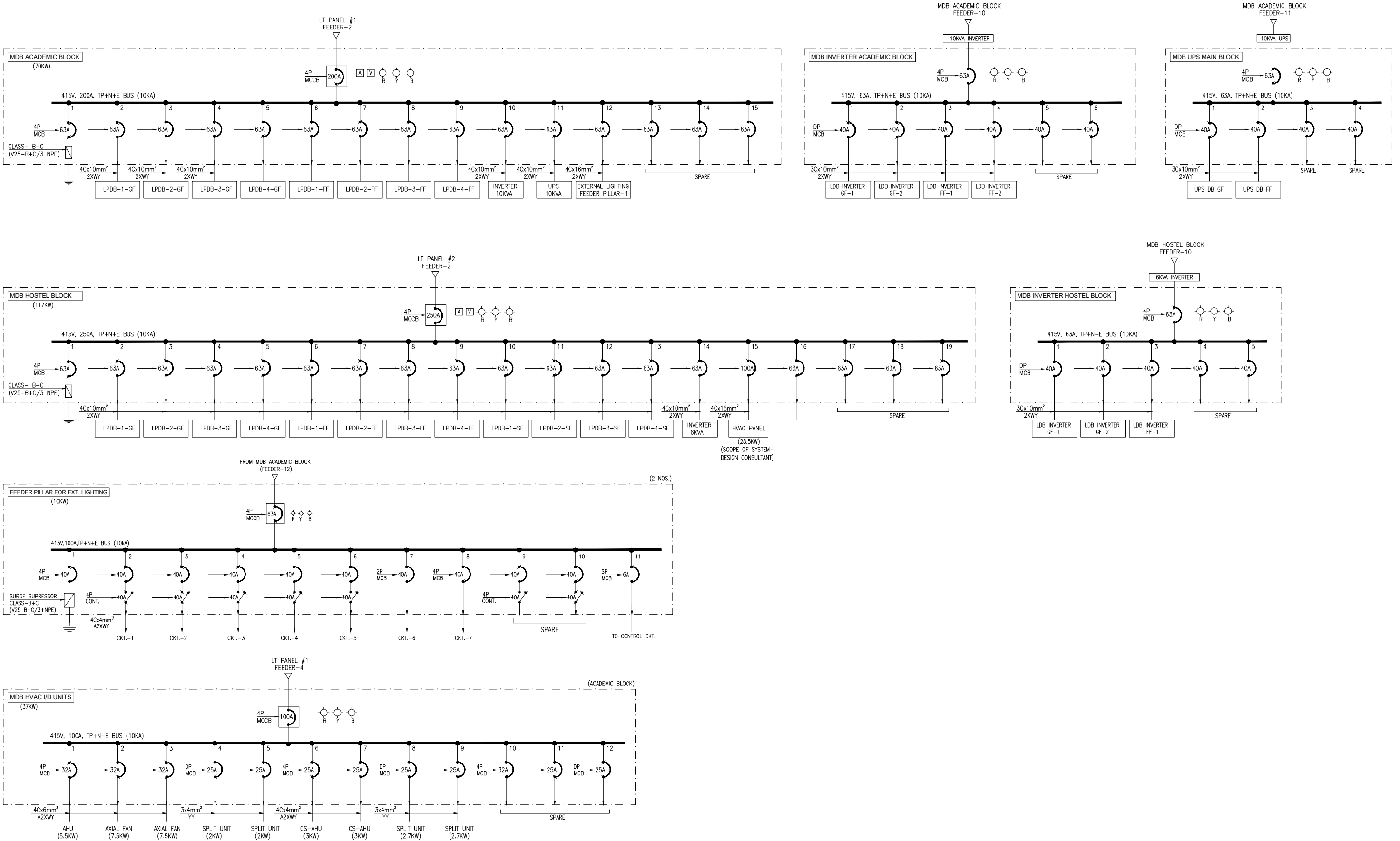
Scale: 1:2000

Project No: AO-19-011

Drawing No: E-TRI-SP-01-02

E R0





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No.	Date	Descriptions	Revision by

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ARCHITECT PLANNER-II

CHIEF ARCHITECT & PLANNER

HOUSING COMMISSIONER

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

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Landscape Architect:

Drawn By

Checked By

Design By

OK

AKD

SPG

Sheet Title:

**SINGLE LINE DIAGRAM
MDBS**

Date:

27-02-2021

Scale:

NTS A0-19-011

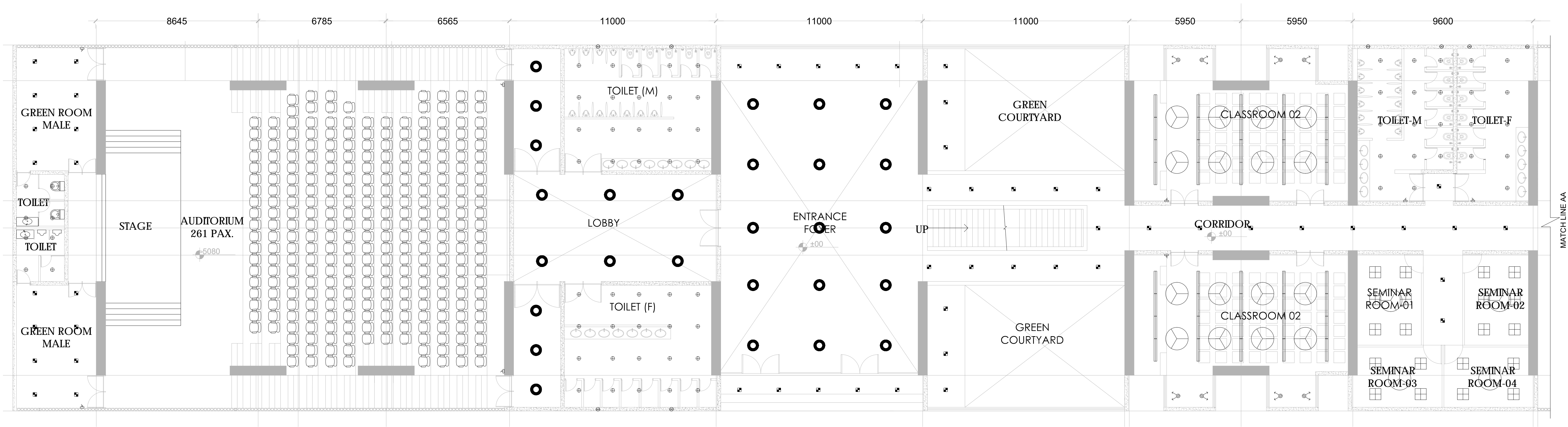
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E-TRI-SLD-01-02

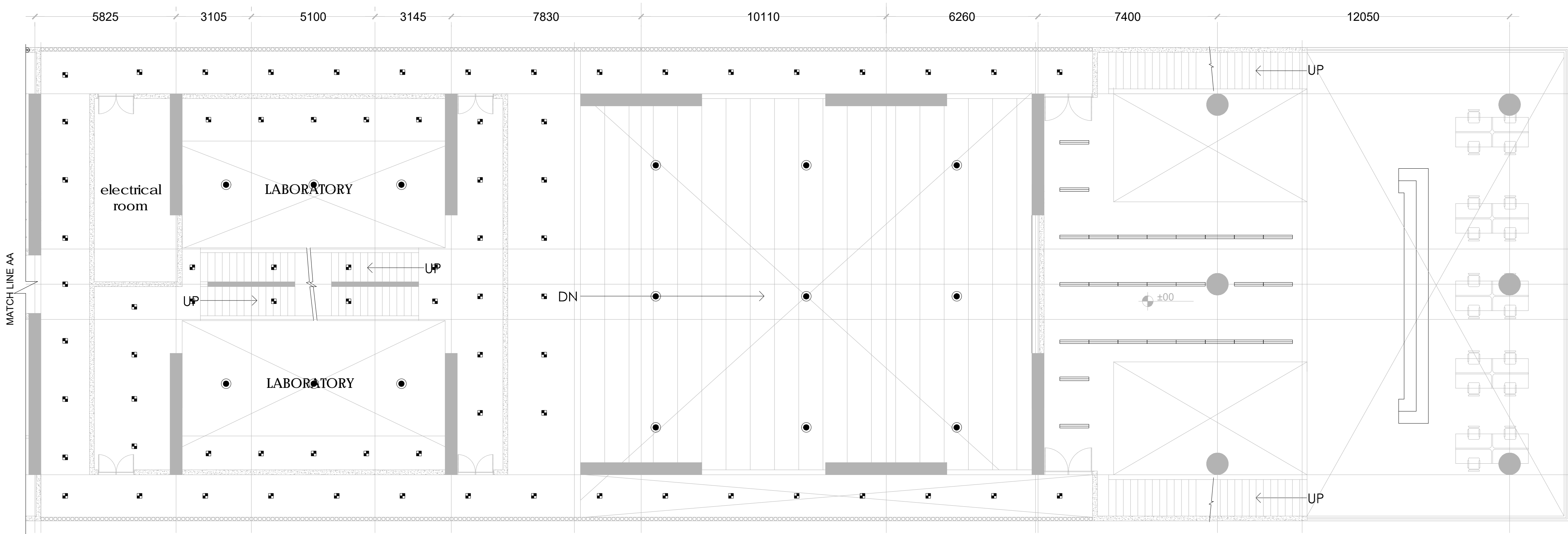
E

R0

TENDER DRAWING



1 GROUND FLOOR PLAN
ACADMIC BLOCK



1 GROUND FLOOR PLAN
ACADMIC BLOCK

LEGEND		
SYMBOL	DESCRIPTION	MOUNTING HEIGHT ABOVE FFL. (FROM BOTTOM OF SWITCH BOARD)
	SWITCH 1 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	SWITCH 2 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	10 WATT LED LIGHT	RECESSED MOUNTED
	18 WATT LED LIGHT	SURFACE MOUNTED
	36 WATT LED SQUARE LIGHT	RECESSED MOUNTED
	28 WATT LED LINEAR LIGHT	SUSPENDED / RECESSED MOUNTED
	25 WATT LED DECORATIVE LIGHT	SUSPENDED / RECESSED MOUNTED
	28 WATT LED TUBE LIGHT	SURFACE / WALL MOUNTED
	14 WATT LED TUBE LIGHT	SURFACE / WALL MOUNTED
	20 WATT LED SPOT LIGHT (TILTABLE)	SURFACE MOUNTED
	100 WATT LED HIGH BAY LIGHT	SURFACE / SUSPENDED MOUNTED
	3-5 WATT LED STEP LIGHT	WALL MOUNTED @ 300mm
	EXHAUST FAN - 200mm	WALL MOUNTED
	CEILING FAN - 1200mm	SUSPENDED
	ELECTRICAL DB	MOUNTED ON WALL (TOP OF DB 1800MM FROM FFL)

NOTES:

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No.	Date	Descriptions	Revision by

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CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

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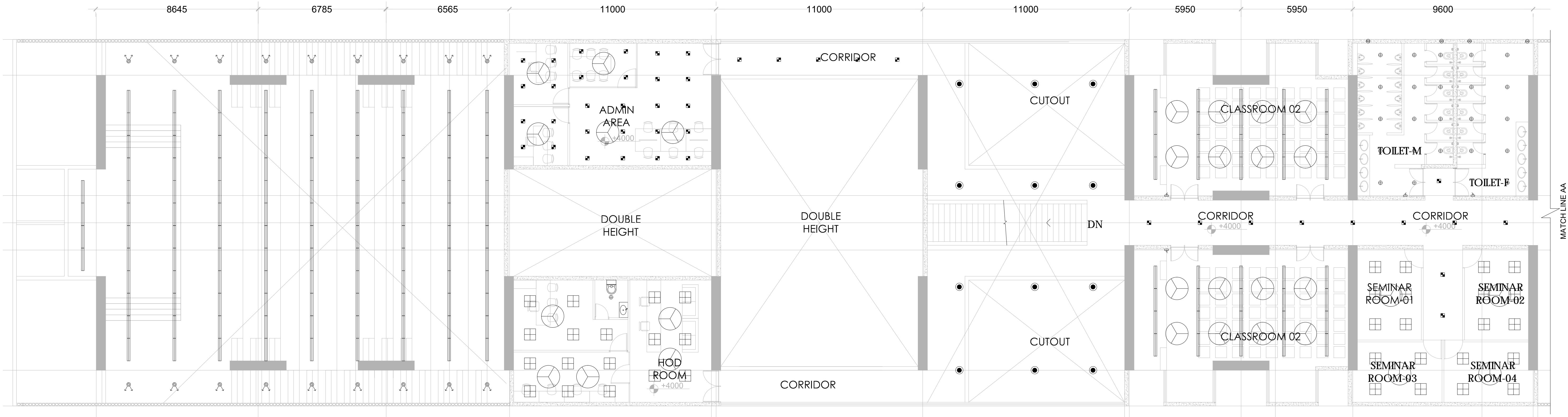
**GOVERNMENT OF MEGHALAYA
ARTS & CULTURE DEPARTMENT**

Project:

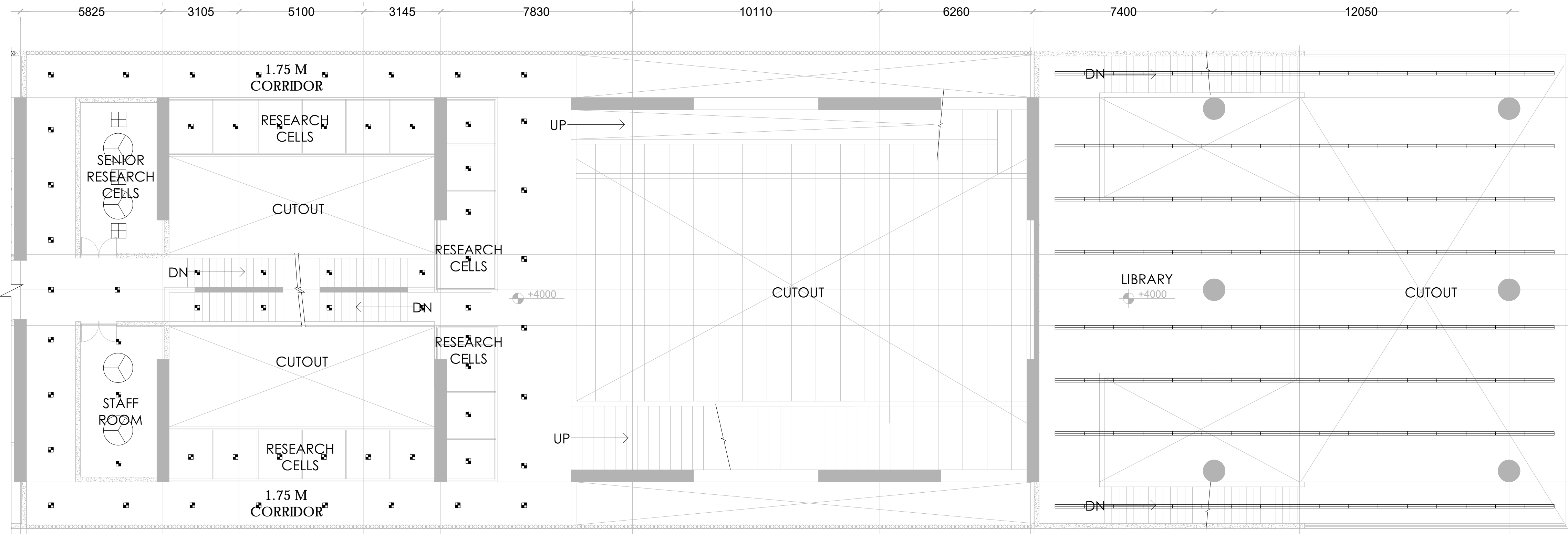
TRIBAL RESEARCH INSTITUTE, MEGHALAYA

Architects:	Structural Consultants:	HVAC Consultants:	Environmental Consultants:	Drawn By:	DK
ARCHOHM ARCHITECTS CONSULTANTS o28b, sector-8, naha-201301 (top) t 91 120 42 40 300 f 91 120 42 46 788 mail@archohm.com www.archohm.com	TPC TECHNICAL PROJECTS CONSULTANTS PVT. LTD. H.O. B-74, Sector-07 (Opp Park Plaza) Noida-201301 Ph: +91-120-4306800, 4306801 FAX: +91-120-4306800, 4306801	ABID HUSAIN CONSULTANTS G-102, 2nd floor, apartment 106, okhla, new delhi-110025 TEL: +91-11-26322995, FAX: +91-11-26319642 Email: info@abidh.com		Checked By:	AKD
				Design By:	SPG

Sheet Title:		Project No:	
LIGHTING LAYOUT GROUND FLOOR ACADMIC BLOCK		AO-19-011	
Date:	Scale:		
27-02-2021	1:200		
Drawing No:			
E-TRI-AB-01-01		E	R0



1 FIRST FLOOR PLAN
ACADMIC BLOCK



1 FIRST FLOOR PLAN
ACADMIC BLOCK

LEGEND		
SYMBOL	DESCRIPTION	MOUNTING HEIGHT ABOVE FFL. (FROM BOTTOM OF SWITCH BOARD)
	SWITCH 1 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	SWITCH 2 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	10 WATT LED LIGHT	RECESSED MOUNTED
	18 WATT LED LIGHT	SURFACE MOUNTED
	36 WATT LED SQUARE LIGHT	RECESSED MOUNTED
	28 WATT LED LINEAR LIGHT	SUSPENDED / RECESSED MOUNTED
	25 WATT LED DECORATIVE LIGHT	SUSPENDED / RECESSED MOUNTED
	28 WATT LED TUBE LIGHT	SURFACE / WALL MOUNTED
	14 WATT LED TUBE LIGHT	SURFACE / WALL MOUNTED
	20 WATT LED SPOT LIGHT (TILTABLE)	SURFACE MOUNTED
	100 WATT LED HIGH BAY LIGHT	SURFACE / SUSPENDED MOUNTED
	3-5 WATT LED STEP LIGHT	WALL MOUNTED @ 300mm
	EXHAUST FAN - 200mm	WALL MOUNTED
	CEILING FAN - 1200mm	SUSPENDED
	ELECTRICAL DB	MOUNTED ON WALL (TOP OF DB 1800MM FROM FFL)

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ARCHITECT PLANNER-II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

GOVERNMENT OF MEGHALAYA
ARTS & CULTURE DEPARTMENT

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Environmental Consultants:
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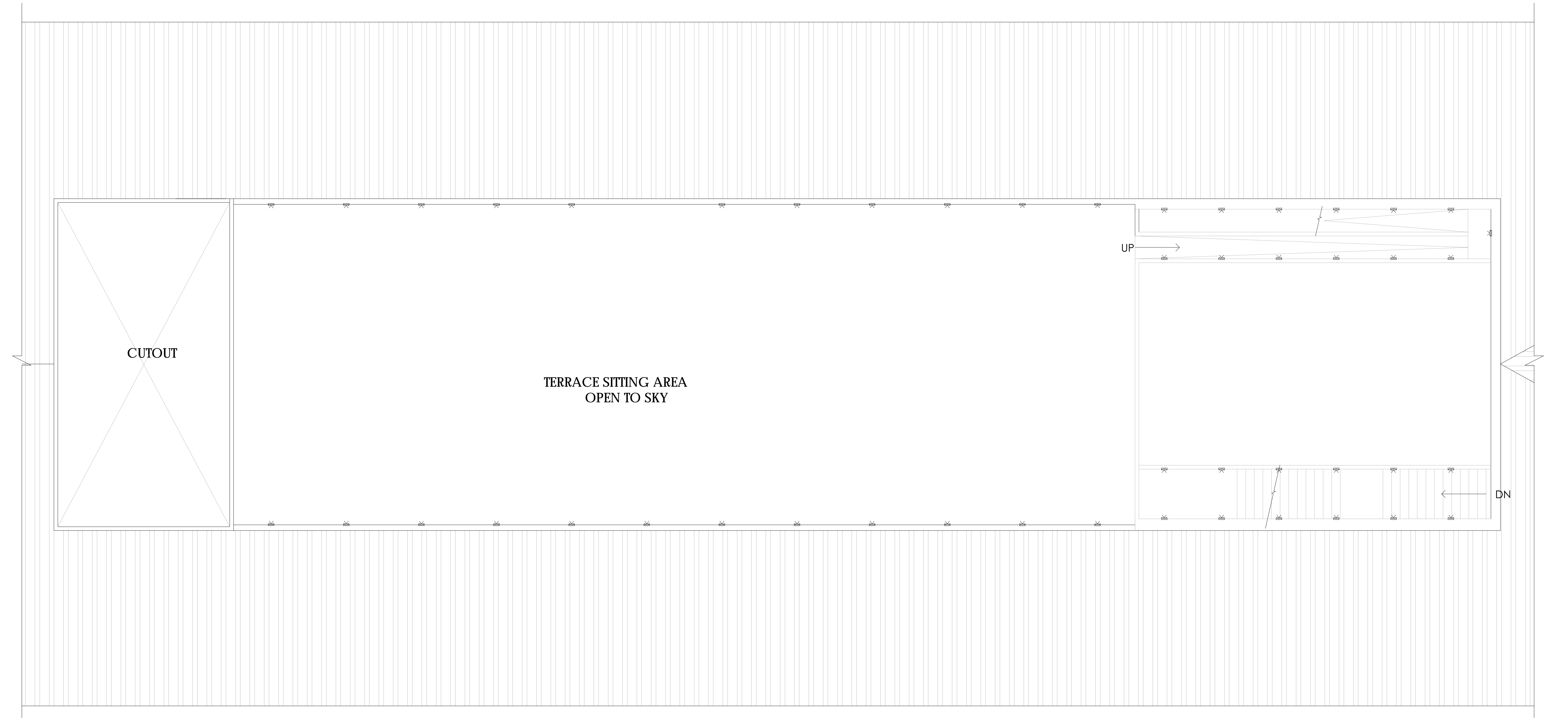
Landscape Architects:
#

Drawn By: DK

Checked By: AKD

Design By: SPG

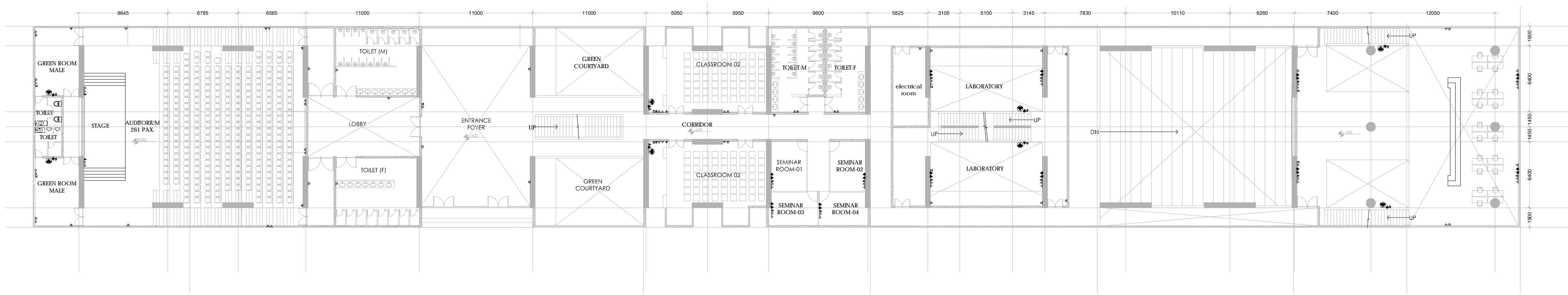
TENDER DRAWING			
Sheet Title: LIGHTING LAYOUT FIRST FLOOR ACADMIC BLOCK		Date: 27-02-2021	Scale: 1:200
Drawing No: E-TRI-AB-01-02		Project No: AO-19-011	E R0



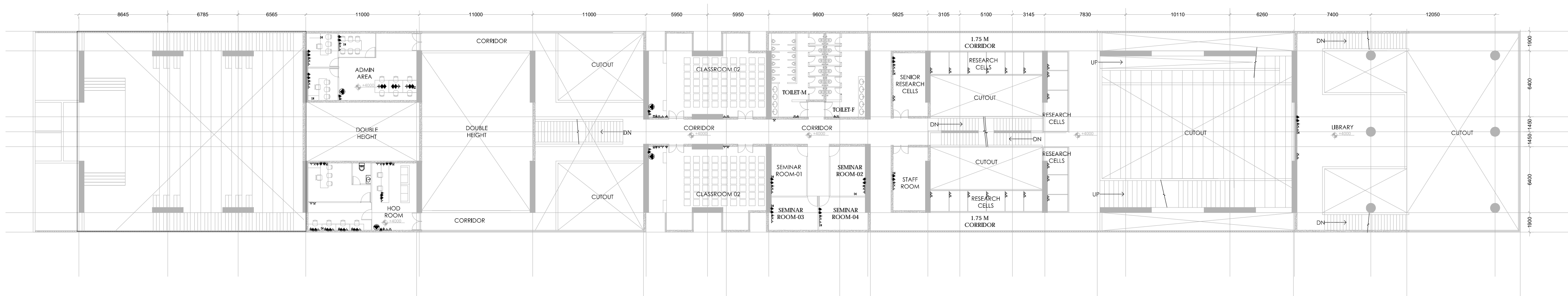
1 TERRACE FLOOR PART PLAN
ACADMIC BLOCK

LEGEND		
SYMBOL	DESCRIPTION	MOUNTING HEIGHT ABOVE FFL. (FROM BOTTOM OF SWITCH BOARD)
	SWITCH 1 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	SWITCH 2 WAY	1050mm AFFL (150mm FROM DOOR FRAME)
	3-5 WATT LED STEP LIGHT	WALL MOUNTED @ 300mm

TENDER DRAWING																
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	No. Date Descriptions Revision by				ASST. ARCHITECT PLANNER		 GOVERNMENT OF MEGHALAYA ARTS & CULTURE DEPARTMENT		Architects: ARCHOHM ARCHITECTS CONSULTANTS INDIA 10/10, Sector-8, Noida-201301 (UP) t: 91 120 46 40 300 f: 91 120 42 46 788 m: 91 98100 110014 e: info@archohm.com, www.archohm.com		Structural Consultants: TPC TECHNICAL PROJECTS CONSULTANTS PVT. LTD. H.O. B-74, Sector-07 (Opp Park Plaza) Noida-201301 t: 91 120 46 40 300 f: 91 120 42 46 788 m: 91 98100 110014 e: info@tpc.co.in, tpv@tpc.net.in		HVAC Consultants: ABID HUSAIN CONSULTANTS L-102, Sector-07 (Opp Park Plaza) Noida-201301 t: 91 120 46 40 300 f: 91 120 42 46 788 m: 91 98100 110014 e: info@abidh.com, www.abidh.com		Environmental Consultants: # #	
					ARCHITECT PLANNER II											
					CHIEF ARCHITECT & PLANNER											
					HOUSING COMMISSIONER											
										Drawn By DK		Date: 27-02-2021 Scale: 1:200 Project No: AO-19-011				
												Checked By AKD		Drawing No: E-TRI-AB-01-03		
												Design By SPG		E R0		



2 GROUND FLOOR PLAN
ACADMIC BLOCK



1 FIRST FLOOR PLAN
ACADMIC BLOCK

LEGEND

SYMBOL DESCRIPTION		MOUNTING HEIGHT ABOVE FFL. (FROM BOTTOM OF SW SOCKET)
	SWITCH 1 WAY	1050MM
	SWITCH 2 WAY	1050MM
	13/6A SWITCH SOCKET (RAW POWER)	150MM OR AS MENTION
	13/6A SWITCH SOCKET (ON UPS)	150MM OR AS MENTION
	16/6A SWITCH SOCKET (RAW POWER)	150MM OR AS MENTION
	16/6A SWITCH SOCKET (ON UPS)	150MM OR AS MENTION
	LAN SOCKET	150MM OR AS MENTION
	TELEPHONE SOCKET	150MM OR AS MENTION
	WIFI ROUTER	CEILING / WALL@-300mm FROM CEILING
	ELECTRICAL DB	MOUNTED ON WALL (TOP OF DB 1800MM FROM FFL)

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REVISIONS

No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER
ARCHITECT PLANNER-II
CHIEF ARCHITECT & PLANNER
HOUSING COMMISSIONER

Client:

GOVERNMENT OF MEGHALAYA
ARTS & CULTURE DEPARTMENT

Project:

TRIBAL RESEARCH INSTITUTE, MEGHALAYA

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Environmental Consultants:

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Landscape Architects:

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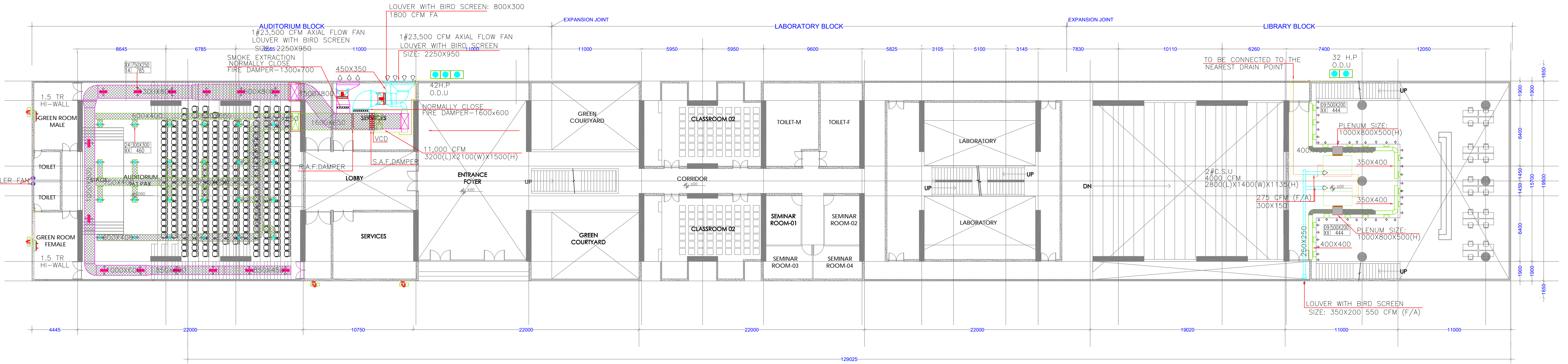
Design By
SPG

Checked By
AKD

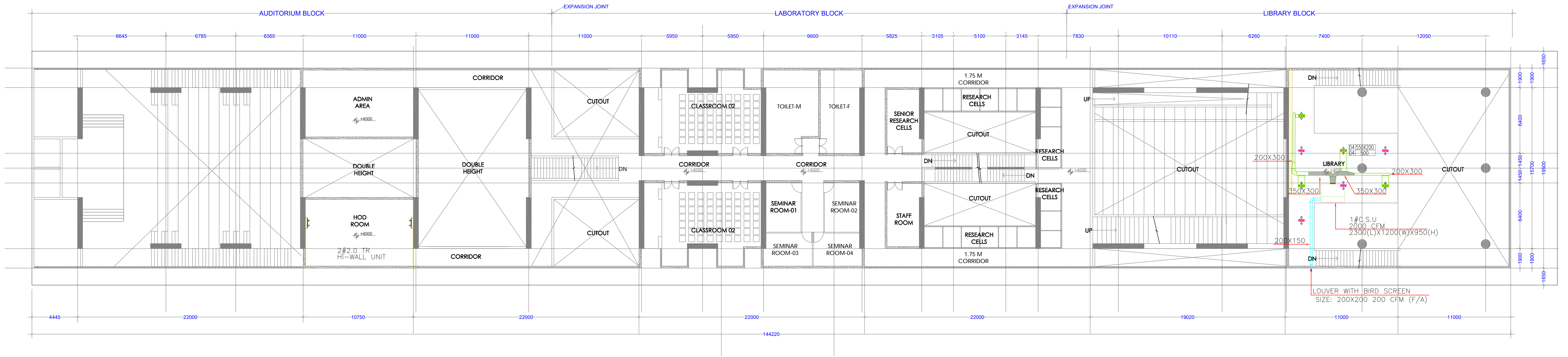
Drawn By
DK

TENDER DRAWING			
Sheet Title:		Project No:	
SW SOCKET LAYOUT ACADMIC BLOCK PLANS		AO-19-011	
Date:	Scale:	Project No:	
27-02-2021	1:200	AO-19-011	
Drawing No:		Project No:	
E-TRI-AB-02-01		AO-19-011	
E		R0	

HVAC TENDER DRAWINGS



GROUND FLOOR PLAN
ACADEMIC BLOCK



FIRST FLOOR PLAN
ACADEMIC BLOCK

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No.	Date	Descriptions	Revision by

ASST. ARCHITECT PLANNER	
ARCHITECT PLANNER-II	
CHIEF ARCHITECT & PLANNER	
HOUSING COMMISSIONER	

Client:

**DIRECTORATE OF ARTS & CULTURE
GOVERNMENT OF MEGHALAYA, (DAC)**

Project: **TRIBAL RESEARCH INSTITUTE, MEGHALAYA**

Architects:

ARCHOHM
ARCHITECTS
CONSULTANTS

Structural Consultants:
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TENDER DRAWING

Sheet Title:
**ACADEMIC BLOCK
HVAC DRAWINGS**

Date:
27-02-2021

Scale:
1:150

Project No.:
AO-19-011

Drawing No.:
H-TRI-AB-01-01

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