

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
POWAI, MUMBAI, MAHARASHTRA – 400 076.

EO/A/UMBRELLA/WKS-159/22-23

ESTATE OFFICE

Name of work :Percentage (%) Rate contract for repair, renovation, addition and alteration works, waterproofing, retrofitting to buildings, road works, minor construction work etc. in the IIT Bombay Campus under one Umbrella contract for 2 years.

Schedule of work

Sr. No.	Description of work	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
1	Earthwork				
1.1	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including getting out and disposal of excavated earth upto 50 m and lift upto 1.5 m, as directed by Engineer-in-Charge:	425.00	m2	60.77	25825.49
1.2	Excavation for foundation, trenches, Roadway etc. in earth, soil of all types, sand, gravel, soft and hard murum, soft rock etc. including removing the excavated materials up to a distance of 50 meters beyond the site of work and lift up to 1.50 meters, stacking and spreading as directed preparing the bed for the foundation and necessary dewatering using pump, backfilling, ramming, watering, including shoring and strutting, providing necessary barricading around excavated area etc. complete.	795.00	m3	190.78	151671.56
1.3	Excavation for foundation, trenches, Roadway etc. in earth, soil of all types, sand, gravel, loose boulders, soft and hard murum, soft rock etc. beyond 1.50 meter and upto 3.00 meter depth including removing the excavated materials up to a distance of 50 meters beyond the building area, stacking and spreading as directed including dewatering using pumps, preparing the bed for the foundation and necessary backfilling, ramming, watering complete including shoring and strutting, providing necessary barricading around excavated area etc. complete..	545.00	m3	433.08	236026.99
1.4	Excavation for foundation, trenches, Roadway etc. in earth, soil of all types, sand, gravel, loose boulders, soft and hard murum, soft rock etc. beyond 3.0 meter and upto 4.5 meter depth including removing the excavated materials up to a distance of 50 meters beyond the building area, stacking and spreading as directed including dewatering using pumps, preparing the bed for the foundation and necessary backfilling, ramming, watering complete including shoring and strutting, providing necessary barricading around excavated area etc. complete..	65.00	m3	791.74	51463.40

1.5	Excavation work in Hard rock (blasting prohibited) by mechanical means (Hydraulic excavatory) manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50m.	130.00	m3	752.92	97880.02
1.6	Excavation work in Hard rock (blasting prohibited) by mechanical means (Hydraulic excavatory) manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, beyond 1.5m upto 3.0m including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50m.	150.00	m3	1528.43	229265.13
1.7	Excavation work in Hard rock (blasting prohibited) by mechanical means (Hydraulic excavatory) manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, beyond 3m upto 4.5m including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50m.	100.00	m3	2665.35	266534.83
					1058667.41
2	Concrete				
2.1	Providing and laying in position machine batched and machine mixed design mix M-25 (1:1:2) grade cement concrete for all work up to plinth level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	440.00	m3	7391.02	3252048.28

2.2	Providing and laying in position machine batched and machine mixed design mix M-25 (1:1:2) grade cement concrete for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	600.00	m3	8312.37	4987419.99
2.3	Providing and laying in position Ready mix M-25 grade cement concrete for all work up to plinth level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	440.00	m3	7697.31	3386817.76
2.4	Providing and laying in position Ready mix M-25 grade cement concrete for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	600.00	m3	8618.66	5171196.55
2.5	Providing and laying in position Ready mix M-30 grade cement concrete for all work up to plinth level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	600.00	m3	7470.70	4482421.40
2.6	Providing and laying in position Ready mix M-30 grade cement concrete for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	800.00	m3	8392.05	6713640.13

2.7	Providing and laying in position Ready mix M-40 grade cement concrete for all work up to plinth level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	440.00	m3	7630.01	3357205.30
2.8	Providing and laying in position Ready mix M-40 grade cement concrete for all work above plinth level upto any floor level for reinforced cement concrete work, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge including compacting, roughening the surface if special finish is to be provided, casting cubes and testing etc. completed as directed.	440.00	m3	8551.36	3762598.34
2.9	Providing and laying cement concrete 1:11/2: 3 (M-20) upto plinth level using sand as fine aggregate and graded stone aggregate 20mm maximum size for foundation, coping and bedding, levelling, dewatering by any means, compaction, finishing, curing etc. complete all as directed.	45.00	m3	6792.76	305674.28
2.10	Providing and casting in position ready mixed M-20 grade cement concrete for foundation, coping and bedding etc. as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade excluding shuttering, including compaction, finishing, curing etc. including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge including casting cubes and testing.	25.00	m3	7097.79	177444.87
2A	Centering and shuttering including strutting, propping etc. and removal of form for all heights :				
2.11	Foundations, footings, bases of columns, coping, raft etc.	100.00	m2	222.37	22236.86
2.12	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	500.00	m2	434.07	217037.26

2.13	Suspended floors, roofs, landings, staircase waste slab, balconies, cantilever chajjas and access platform	100.00	m2	484.18	48417.77
2.14	Lintels, beams, plinth beams, girders, bressumers and cantilevers	100.00	m2	393.14	39314.36
2.15	Columns, Pillars, Piers, Abutments, Posts and Struts	50.00	m2	536.40	26820.10
2.16	Providing and fixing in position tor steel bar having grade Fe-500D or more for reinforcement of various diameters for R.C.C. footings, foundations, slabs, beams, columns, canopies, staircases, chajjas, lintels, pardies, coping, fins, dowel bars with sleeve, tie bar, any other required work etc. as per detailed designs, drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed as directed.	80000.00	Kg	63.40	5072228.47
					41022521.73
3	ROAD work				
3.1	Carefully removing existing paver blocks with WBM layer from its position, keeping the same at site and laying existing available WBM layer as per direction and refixing the blocks over the bed of sand/ grit with average 30mm thick including compaction using compactor machine etc. completed as directed.	275.00	m2	204.00	56100.00
3.2	Cutting of road surfaces manually including bituminous macadam, soling etc. including stacking the debris upto a distance of 50 metres or spreading as directed.	235.00	m2	202.94	47689.73
3.3	Providing and laying, spreading and compacting Grade -I Metal (size range 63 to 45mm (2) using Screening Type-A (13.2mm agg.) stone aggregates to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel / vibratory roller 8- 10 tonnes capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up the interstices of coarse aggregate, watering and compacting to the required density etc. complete. (compacted thickness will be taken for payment)	3000.00	m3	2919.26	8757780.00

3.4	Providing and laying, spreading and compacting Grade -II Metal (size range 53 to 22.40mm)(2) using Screening Type-B (11.2mm agg.) stone aggregates to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel / vibratory roller 8- 10 tonnes capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up the interstices of coarse aggregate, watering and compacting to the required density etc. complete. (compacted thickness will be taken for payment)	3000.00	m3	3052.47	9157410.00
3.5	Construction of granular sub-base, Grade-V having gradation as per MORTH table 400-1 (size range 75 mm to 0.425 mm) by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material using machinery 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, collecting samples, testing as per section 900 of MORTH and submitting reports etc. completed as directed. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Compacted thickness will be taken for payment.)	3000.00	m3	2395.89	7187682.53
3.6	Providing, laying, spreading and compacting graded stone aggregate having gradation as per MORTH Table 400-13 (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 paver finisher 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 including collecting samples, testing as per section 900 of MORTH and submitting reports etc. completed as directed. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Compacted thickness will be taken for payment.)	100.00	m3	2444.68	244467.88

3.7	<p>Construction of dry lean cement concrete over compacted granular sub base (GSB) with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 26.5 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per MORTH, Table 600-1, cement content not to be less than 150 Kg/cum of concrete, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in- charge including collecting samples, testing and submitting reports etc. completed as directed. Specification, mix design, methodology and testing should be done as per IRC 15: 2017. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Compacted thickness will be taken for payment.)</p>	100.00	m3	3820.17	382016.54
3.8	<p>Construction of Cement treated Aggregate base (CTB) over compacted granular sub base (GSB) with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 26.5 mm, aggregate gradation after blending to be as per MORTH, Table 600-1, cement content should not be less than 4% by weight of mix, optimum moisture content to be determined during trial length construction, unconfined compressive strength (UCS) not to be less than 5 MPa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in- charge including collecting samples, testing as per section 900 of MORTH and submitting reports etc. completed as directed. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Compacted thickness will be taken for payment.)</p>	100.00	m3	3573.00	357300.00
3.9	<p>Providing and laying hot mix hot laid 60 mm thick (compacted thickness) Dense bituminous macadam grading – 2 (nominal maximum aggregate size of 26.5 mm) having gradation as per MORTH, Table no.500.10 with VG-40 grade bitumen with minimum bitumen content of 4.8% by weight of total mix and hydrated lime filler @ 2% by weight of total aggregate, including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying DBM-2 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber , compacting the DBM-2 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Dense Bituminous macadam for each day work are to tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item.). The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).</p>	500.00	m2	762.00	381000.00

3.10	<p>Providing and laying hot mix hot laid 50 mm thick (compacted thickness) Bituminous concrete grading – 1 (nominal maximum aggregate size of 19 mm) having gradation as per MORTH, Table no.500.17 with VG-40 grade bitumen with minimum bitumen content 5.5% by weight of mix and hydrated lime filler @ 2% by weight of aggregate including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying BC-1 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber , compacting the BC-1 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Bituminous concrete for each day work are to tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item.). The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).</p>	35000.00	m2	848.00	29680000.00
3.11	<p>Providing and laying hot mix hot laid 40 mm thick (compacted thickness) Bituminous concrete grading – 2 (nominal maximum aggregate size of 13.2 mm) having gradation as per MORTH, Table no.500.17 with VG-40 grade bitumen with bitumen content 5.8% by weight of mix and lime filler @ 2% by weight of Aggregate including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying BC-2 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber , compacting the BC-2 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Bituminous concrete for each day work are to tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item. The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).</p>	35000.00	m2	678.00	23730000.00

3.12	<p>Providing and laying design mix/ ready mix cement concrete of M-40 grade, in roads using cement content as per design mix, using coarse sand and graded stone aggregate of 26.5 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve of 32mm dia. having length not less than 500mm @ 300mm c/c, providing tie bars of 10mm dia. having length not less than 600mm @ 400 c/c wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for Transverse/ contraction/ expansion, construction & longitudinal joints by groove cutting machine, providing and filling joints using cold Polysulfide joint fillers and sealants including casting cubes and bemas for testing the samples for compressive and flexural strength.and submitting reports etc. completed as per direction of Engineer-in-charge. Note:- Cement content should be not be less than 385 kg/cum. Cement concrete manufactured in automatic batching plant (RMC plant) i/c transportation to site in transit mixer. Specification, mix design, methodology and testing should be done as per IRC 15: 2017. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Items of cutting groove, joint fillers, sealants, providing dowel bars with sleeve/ tie bars to be paid separately in respective items).</p>	4000.00	m3	10908.00	43632000.00
3.13	<p>Providing and laying design mix/ ready mix cement concrete of M-30 grade, in roads using cement content as per design mix, using coarse sand and graded stone aggregate of 26.5 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve of 32mm dia. having length not less than 500mm @ 300mm c/c, providing tie bars of 10mm dia. having length not less than 600mm @ 400 c/c wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for Transverse/ contraction/ expansion, construction & longitudinal joints by groove cutting machine, providing and filling joints using cold Polysulfide joint fillers and sealants including casting cubes and bemas for testing the samples for compressive and flexural strength.and submitting reports etc. completed as per direction of Engineer-in-charge. Note:- Cement content should be not be less than 385 kg/cum. Cement concrete manufactured in automatic batching plant (RMC plant) i/c transportation to site in transit mixer. Specification, mix design, methodology and testing should be done as per IRC 15: 2017. (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Items of cutting groove, joint fillers, sealants, providing dowel bars with sleeve/ tie bars to be paid separately in respective items).</p>	600.00	m3	10390.00	6234000.00

3.14	Cutting Transverse/ contraction/ expansion, construction & longitudinal joints by groove cutting machine upto required depth including labour, trasportation, tools and plants etc. compled as directed.	2000.00	Rmt	20.00	40000.00
3.15	Providing and filling the joint using foam baker rod as base with cold Polysulfide with labour, trasportation, tools and plants etc. completed as directed.	2000.00	Rmt	247.00	494000.00
3.16	Providing and filling the joint using pre-moulded joint filler up to full depth for sealing the joints with labour, trasportation, tools and plants etc. completed as directed.	100.00	Rmt	25.00	2500.00
3.17	Providing and fixing 900mm x 450mm rectangular medium duty Composite FRP manhole covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	15.00	Each	5481.00	82215.00
3.18	Providing and fixing 900mm x 450mm rectangular Heavy duty Composite FRP manhole covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	1300.00	Each	7954.00	10340200.00
3.19	Providing and fixing 900mm x 600mm rectangular medium duty Composite FRP manhole covers with frame for inspection chamber / manhole / gulley trap and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	15.00	Each	6229.00	93435.00
3.20	Providing and fixing 900mm x 600mm rectangular Heavy duty Composite FRP manhole covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	15.00	Each	9679.00	145185.00
3.21	Providing and fixing 600mm x 600mm squire Heavy duty Composite FRP grating covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	700.00	Each	9909.00	6936300.00
3.22	Providing and fixing 900mm x 900mm rectangular Heavy duty Composite FRP grating covers with frame for inspection chamber / manhole / gulley trap/ over storm water drain and other required places manufactured by M/s.KK or equivalent etc. all complete as directed.	5.00	Each	15429.00	77145.00
3.23	Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material within all lifts and lead upto 50 mt lead including removing pipe road side railing etc complete as directed by Engineer In charge.	500.00	m2	4.13	2063.75

3.24	Providing and applying Prime coat with cationic bitumen emulsion SS1 grade conforming to IS:8887 or medium curing cutback bitumen MC30 conforming to IS:217 as per MORTH, section no.502 using mechanical sprayer with emulsion pressure distributor with temperature maintaining unit at the rate of 0.85 Kg./Sq.m on the granular surface. Including cleaning the loose soil, dust etc by brushing and brooming etc complete as directed.	35000.00	m2	15.02	525681.91
3.25	Providing and applying tack coat with Cationic bitumen emulsion (RS 1) complying with IS:8887 at the rate of 0.30 kg./sq.m or tack coat with suitable low viscosity paving bitumen of VG10 grade confirming to IS.73 at the rate of 0.20 kg./sq.m, as per MORTH, section no.503 using mechanical sprayer with emulsion/ bitumen pressure distributor with temperature maintaining unit at the rate of 0.2 kg./sq.m on the Bituminous Surface including cleaning the loose soil, dust etc by brushing and brooming etc complete as directed.	35000.00	m2	10.03	351123.41
3.26	Providing and fixing factory made kerbstone of size 500 x 400 x 150 mm in M-25 grade of concrete using design mix minimum cement content as per IS 456 for the moderate exposure condition excluding P.C.C (1:11/2:3) 100mm thick bedding, fixing the kerb stone over P.C.C bedding and grouting the joints with 1:3 cement mortar to the required line, level, curing, one coat of primer and two coat of synthetic enamel paint etc. complete (Rate excluding excavation) (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).NOTE:- Excavation and M-20 bed pcc for kerb stone will be paid separately under respective items.	500.00	Rmt	384.00	192000.00
3.27	Providing and fixing factory made water table of size 500 x 400 x 100 mm in M-25 grade of concrete using design mix minimum cement content as per IS 456 for the moderate exposure condition including P.C.C (1:11/2:3) 100mm thick bedding fixing the watertable over PCC bedding and grouting the joints with 1:3 cement mortar to the required line, level, curing etc. complete(Rate excluding excavation) .NOTE:- Excavation and M-20 bed pcc for water table will be paid separately under respective items.	500.00	Rmt	242.00	121000.00

3.28	<p>Applying stamping finish to the top surface of freshly laid plain/reinforced cement concrete of specified grade in porticos, sidewalks, driveways, pool decks and open yards as per direction of the Engineer-in-Charge. The process shall include the following:-</p> <ul style="list-style-type: none"> The concrete shall be placed and screeded to the finished grade, and floated to a uniform surface by using standard finishing techniques. The approved color hardener @ 2.7 kg/sqm shall be applied evenly to the surface of the fresh concrete by the dry shake method by sprinkling in two or more shakes, floated after each shake and trowelled only after the final floating. The approved release agent @ 0.113 kg/sqm shall be applied evenly to the trowelled surface before stamping or the said release agent can be applied to the flexible polyurethane stamp moulds of approved design and in required sizes to achieve final stamped pattern. These stampings shall be placed on the surface of concrete in three to four pieces at a time and tapped gently with rammers of sufficient size & weight to leave proper stamp marks and the process repeated for the remaining concrete surface till the whole surface to be stamped is completed within the time while concrete is in plastic stage of setting. 				
	<ul style="list-style-type: none"> After stamping, the curing shall be done as per manufactures specifications. After initial curing the imprinted joints shall be grouted using cement slurry mixed with color hardener as per the requirement. The surface shall be sealed by applying acrylic based sealer not less than 0.167 litre/sqm.on finished surface. The construction joints shall be provided by groove cutting of size 4mm x 20mm in panel size 3m x 3 m or lesser as per the site conditions and filling the same with 10 mm baker rod and providing and laying (PU) Polyurethane based joint sealer of approved make as per manufacturer's specifications and finished by applying Polyurethane resin based top protective clear coat of minimum 80 micron applied with rollers on properly cured and dry clean surface. (Cost of concrete for flooring is not included in this item which shall be paid separately.) 	25000.00	m2	560.00	14000000.00
3.29	<p>Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-In-charge.</p>	50.00	m3	234.46	11723.22
3.30	<p>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.</p>	15000.00	m2	448.58	6728671.08

3.31	Painting road surface marking with adequate nos of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white/ yellow shade, including cleaning the surface of all dirt, scales, oil, grease and foreign material etc complete. (Two or more coats)	128.00	m2	152.60	19533.12
3.32	Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/-5) degrees to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	1320.00	Nos	182.41	240784.10
3.33	Constructing water entrant chambers for road side of internal clear dimensions 600mm x 600mm with 230mm thick brick masonry wall in cement mortar 1:6 over a bed of 100mm thick cement concrete M-20 (1:1½:3) foundation with 75mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 20mm thick on internal, external and all exposed faces, finished with floating coat of neat cement including 100 mm thick cement concrete coping M-20 (1:1½ :3) and plastering etc. complete for chamber of depth upto 600mm.	6000.00	Nos	5488.35	32930100.00

3.34	<p>Manufacturing, supplying and fixing retro reflective sign boards of Mandatory/ Regulatory sign boards of 900 mm diametre with support length of 3750 mm made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bilingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing, specification and direction of Engineer--in-charge.</p>	20.00	Each	5487.67	109753.44
3.35	<p>Manufacturing, supplying and fixing retro reflective sign boards of Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bilingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing, specification and direction of Engineer--in-charge.</p>	20.00	Each	3971.62	79432.43

3.36	Cutiing the existing bituminous pavement upto 60mm thick depth with milling machine with conveyor belt including cleaning of the milled surface bottom & sides with brushes etc. complete & stacking of the milled materail with mechanical transport at a distance of 50 mtr from working site etc. completed as directed.	25000.00	m2	93.00	2325000.00
3.37	Providing and laying hot mix hot laid of required thickness Dense bituminous macadam grading – 2 (nominal maximum aggregate size of 26.5 mm) having gradation as per MORTH, Table no.500.10 with VG-40 grade bitumen with minimum bitumen content of 4.8% by weight of total mix and hydrated lime filler @ 2% by weight of total aggregate, including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying DBM-2 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber , compacting the DBM-2 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Dense Bituminous macadam for each day work are to tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item.). The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).	15.00	m3	12708.00	190620.00
3.38	Providing and laying hot mix hot laid 50 mm thick (compacted thickness) Bituminous concrete grading – 1 (nominal maximum aggregate size of 19 mm) having gradation as per MORTH, Table no.500.17 with VG-40 grade bitumen with minimum bitumen content 5.5% by weight of mix and hydrated lime filler @ 2% by weight of aggregate including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying BC-1 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber , compacting the BC-1 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Bituminous concrete for each day work are to tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item.). The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).	15.00	m3	16954.00	254310.00

3.39	Providing and laying hot mix hot laid 40 mm thick (compacted thickness) Bituminous concrete grading – 2 (nominal maximum aggregate size of 13.2 mm) having gradation as per MORTH, Table no.500.17 with VG-40 grade bitumen with bitumen content 5.8% by weight of mix and lime filler @ 2% by weight of Aggregate including diverting the traffic flow supplying all materials, heating bitumen & chips in hot mix plant at 150 to 160 °C bringing to site, laying BC-2 at 115 to 140 °C in proper line & level using sensor paver, thickness with suitable camber, compacting the BC-2 layer with vibratory steel wheel road roller to 8 to 10 tonnes, followed by pneumatic tire roller (PTR) of 8 to 10 tonne. Mix sample of Bituminous concrete for each day work are to be tested as specified in Section 900 of MORTH etc. completed as directed. (Excluding tack coat) (Note : The mix design with all relevant data to be submitted & prior approval is to be obtained from IIT Bombay. Cost of testing of samples will be paid separately in respective item. The minimum compaction of the layer should be 96% of Gmm (theoretical maximum specific gravity).	15.00	m3	16968.00	254520.00
3.40	Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, driveway & traffic parking etc. of any colour & 80mm thick of M-30 grade, approved design & pattern laid in required pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineerin-Charge.	50.00	m2	1006.00	50300.00
3.41	Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, driveway & traffic parking etc. of any colour & 60mm thick of M-30 grade, approved design & pattern laid in required pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineerin-Charge.	50.00	m2	842.00	42100.00
3.42	Providing and laying Lacquer finish coloured paver blocks in specified pattern 80mm thick for floor and steps etc. with compressive strength not less than 45 N/sqmm over and including 50mm thick compacted bed of fine sand in specified decorative designs with blocks of different colour and pattern including filling the joints with fine sand and cleaning completed as directed.	50.00	m2	1157.00	57850.00
3.43	Providing and laying Lacquer finish coloured paver blocks in specified pattern 60mm thick for floor and steps etc. with compressive strength not less than 45 N/sqmm over and including 50mm thick compacted bed of fine sand in specified decorative designs with blocks of different colour and pattern including filling the joints with fine sand and cleaning completed as directed.	50.00	m2	917.00	45850.00

3.44	Cleaning of existing road surface before applying tack coat including removing the concrete patch work, removing dust, soil particles, mud and other external substances by loosening the hardened soil and dust by shovels, Cleaning the loose soil dust etc by brushing and brooming, cleaning the entire road surface and patches opened for pot hole repair using a high pressure air jet from a Compressor just before applying tack coat and laying Bituminous concrete including arranging compressor keeping it at site along with the laying of Bituminous concrete, fuel, operator all rental charges etc complete as directed.	500.00	m2	7.00	3500.00
3.45	Testing Dense bituminous macadam, Bituminous concrete and premix seal coat sample in Highway Engineering lab of IIT Bombay / VJTI / SPCE. (Marshal stability, flow, VMA, Air voids, VFB , binder content in the mix Density of the mix, quality of binder, gradation of mix. Sample of all truck load will be collected by Engineer in charge / his representative and testing as decided by Engineer in charge, including sealing the samples selected by Engineer in charge / his representative for testing, sending the sample to the above Institute, paying all testing charges and submitting test reports etc. complete as directed (payment will be made against the number of samples tested.)	50.00	Nos	6969.00	348450.00
3.46	Laying old cement concrete interlocking paver blocks of any design/shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	500.00	m2	239.85	119926.56
3.47	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-In-charge.	50.00	m3	234.46	11723.22
3.48	Providing and fixing signboards with 3mm thick ACP sheet & radium sticker background including pasting, computerized designing & radium sticker cutting and pasting, fixing etc. all complete as directed by Engineer in charge.	5.00	m2	5557.00	27785.00
3.49	Providing and laying cold mix bituminous macadam at various places in IITB campus for filling or repairing road potholes, patch work including transportation, cleaning, barricating, laying, levelling, cutting the potholes in regular shape and company the cold mix layer with power road roller 8 to 10 tonnes etc complete as directed by Engineer In charge.	1.00	M.T	25526.00	25526.00
3.50	Providing & laying waterproof paper (polythene sheet) of 150 GSM including overlap (to be not less than 10cm) etc. complete as specified as directed.	24000.00	m2	38.00	912000.00

3.51	Providing and fixing post delineators made of ABS round body fitted with 2 nos 100 mm dia high reflective reflectors and mounted on MS pipe of 65 mm dia duly powder coated anti-rust and anti theft steel to be installed as per direction of Engineer-in-charge.	50.00	Each	635.75	31787.42
					208071541.34
4	Brickwork				
4.1	Providing second class burnt brick masonry with IS approved quality well burnt bricks having in cement mortar 1:6 in superstructure including striking joints, racking out joints, watering and scaffolding complete.	300.00	m3	6651.57	1995470.17
4.2	Providing second class burnt brick masonry with IS approved quality well burnt bricks including providing RCC patli M-20 concrete (1:1½:3), 100mm x 100mm to the full length of wall at every one meter height, using two numbers 8mm dia tor steel reinforcement, scaffolding, racking out joints and watering complete and shuttering.	100.00	m2	784.45	78445.27
4.3	Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineerin-Charge. (The payment of RCC band and reinforcement shall be made for seperately).	50.00	m3	6520.40	326020.24
					2399935.68
5	Stone work				
5.1	Providing uncoursed rubble masonry of trap stones in cement mortar 1:6 (Cement:sand/grit) including racking out joints when plastering is to be done, striking out joints, watering and pointing with cement mortar 1:3 on outside exposed faces, including providing M-20 grade concrete block header @ 1 header per sqm. to the full thickness of wall, providing weep holes with 100mm dia P.V.C pipes etc. all complete as directed.	50.00	m3	4546.95	227347.39
5.2	Providing uncoursed rubble masonry (using IITB stones) of trap stones in cement mortar 1:6 (Cement:sand/grit) including racking out joints when plastering is to be done, striking out joints, watering and pointing with cement mortar 1:3 on outside exposed faces, including providing M-20 grade concrete block header @ 1 header per sqm. to the full thickness of wall, providing weep holes, with 100mm dia P.V.C pipes including collecting and transporting stone form various locations from IIT Campus upto working site, cutting stones/ bouldres in piceses as per requirement, scaffolding etc. complete as directed.	50.00	m3	3275.00	163750.00

5.3	Providing coursed rubble masonry of trap stones in cement mortar 1:6 (Cement:sand/grit) including racking out joints when plastering is to be done, striking out joints, watering and pointing with cement mortar 1:3 on outside exposed faces, including providing M-20 grade concrete block header @ 1 header per sqm. to the full thickness of wall, providing weep holes, with 100mm dia P.V.C pipes etc. all complete as directed.	15.00	m3	5319.76	79796.45
5.4	Laying dry trap / rubble stone soling of required thickness including hand packing and compacting etc. complete using IITB stone including transporting stone from various locations from IIT campus up to working site and cutting the stone in required size as per requirement.	100.00	m3	246.00	24600.00
5.5	Laying dry trap / rubble stone soling of required thickness including hand packing and compacting in proper level all complete as directed by Engineer-in-charge.	400.00	m3	892.00	356800.00
5.6	Removing soling without dust nuisance including sorting out the stone chips and debris separately and stacking upto distance of 50 metres as directed.	200.00	m3	202.00	40400.00
5.7	Pointing on stone work with cement mortar 1:3 (1 cement : 3 fine sand) :Flush/ruled pointing in proper line and level all complete.	100.00	m2	193.13	19313.22
5.8	Providing coursed rubble masonry (using IITB stones) of trap stones in cement mortar 1:6 (Cement:sand/grit) including racking out joints when plastering is to be done, striking out joints, watering and pointing with cement mortar 1:3 on outside exposed faces, including providing M-20 grade concrete block header @ 1 header per sqm. to the full thickness of wall, providing weep holes, with 100mm dia P.V.C pipes including collecting and transporting stone stacked from various locations of IIT Campus upto working site, cutting stones/ bouldres in piceses as per requirement, scaffolding etc. complete as directed.	25.00	m3	3160.00	79000.00
5.9	Providing and laying dry trap / rubble stone pitching to the sloping side in average 200 to 300mm thickness including cuffing, dressing and levelling the undulation of sloping surface, making uniform slope in line and level, laying stone pitching in line level etc. including removing loose earth, cleaning compacting the base providing and fixing 100mm dia. A.C. pipe for weep holes at in 1m. c/c in staggered position if required.	20.00	m2	565.00	11300.00
					1002307.06
6	Granite, Marble, Kadappa				

6.1	Providing and fixing not less than 16 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut Marble (area of slab upto 0.50 m2) 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.	50.00	m2	2235.09	111754.70
6.2	Providing and fixing not less than 16 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut Marble (area of slab above 0.50 m2) 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.	50.00	m2	2121.24	106062.20
6.3	Providing and fixing not less than 16 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut Granite (area of slab upto 0.50 m2) 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.	800.00	m2	3843.10	3074476.72
6.4	Providing and fixing not less than 16 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut Granite (area of slab above 0.50 m2) 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.	800.00	m2	3569.48	2855582.08
6.5	Providing and fixing Kadappa stone slab for kitchen platform/cupboard shelves of approved type and design 25mm to 30 mm thick in cement mortar 1:4 including filling joints, curing, cleaning etc. complete.	300.00	m2	721.00	216300.00
6.6	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 not less than 16 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 :	10.00	m2	3310.99	33109.93

6.7	Providing and laying Polished 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 not less than 16 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.	10.00	m2	3368.15	33681.48
6.8	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.	50.00	Rmt	305.26	15263.12
					6446230.23
7	Wood work				
7.1	Providing and fixing 2nd class country teakwood frame for doors, windows, ventilators by using wood of required size as per site condition including all moulding, rebating, hold fast and finishing with one coat of primer, applying coal tar on the external faces of frame etc. complete.	5.00	m3	122650.00	613250.00
7.2	Providing and fixing single leaf or double leaf panelled door shutters 35mm thick as per detailed drawings consisting of country cut teak wood styles, top rail, frieze rail of 95mm x 35mm, lock rail of 145mm x 35mm and bottom rail of 245mm x 35mm and insert panels of 12mm thick, marine plywood generally conforming to IS: 710 with heavy duty M.S. pressed butt hinges bright finished of required size with necessary screws, P/F 300mm long heavy duty stainless steel aldrop, other require fittings and fixtures etc. complete.	100.00	m2	4906.00	490600.00
7.3	Providing and fixing solid core flush door in single or double leaf 35 to 40mm thick of commercial type of exterior grade, approved commercial plywood facing both side without glazing and venetians, all necessary beads, moulding and lipping, 300mm long 2 nos. decorative type S.S handles for each shutters, 8" long stainless steel tower bolt 1 no for each shutter, 6 lever Godrej mortise lock with triplicate keys and other required fittings etc. complete (without frame). (fittings will be approved by Engineer in charge before fixing)	100.00	m2	5289.00	528900.00
7.4	Providing and fixing solid core flush door in single or double leaf 35 to 40mm thick of commercial type of exterior grade, approved commercial plywood facing both side without glazing and venetians, all necessary beads, moulding and lipping, 300mm long 2 nos. decorative type S.S handles for each shutters, 8" long stainless steel tower bolt 1 no for each shutter, 12" long stainless steel heavy duty aldrop and other required fittings etc. complete (without frame). (fittings will be approved by Engineer in charge before fixing)	100.00	m2	5098.00	509800.00

7.5	P/F single leaf FRP moulded shutter 35mm thk. of Advance FRP company in flush or depress panel design as approved. FRP thickness to be 2.00mm, including extra reinforcement on sides and edges. The core of shutter to be Polyon Foam done in situ with wooden styles embedded for taking hinges, fixtures etc. Both side of shutter to be finish in Gel-Coat. Shutter to have recess to hinges. The whole shutter to be totally waterproff, resistance to mild acid/alkali. Colour as per choice including fixing of fittings such as 3 nos 4" heavy type stainless steel hinges for each shutter, 9" long tadi patti S.S, 2nos. 9" long S.S handles for each shutter etc. completed as directed.	100.00	m2	3880.00	388000.00
7.6	Refixing aluminium/ wooden framed door and windows, grill, by making small modification with new screws and required fittings etc. complete as directed.	100.00	Nos	1336.00	133600.00
7.7	Providing and fixing 6mm thick commercial plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	341.00	17050.00
7.8	Providing and fixing 8mm thick commercial plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	440.00	22000.00
7.9	Providing and fixing 12mm thick commercial plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	626.00	31300.00
7.10	Providing and fixing 18mm thick commercial plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	873.00	43650.00
7.11	Providing and fixing 12mm thick marine plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	1059.00	52950.00
7.12	Providing and fixing 18mm thick marine plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	100.00	m2	1306.00	130600.00
7.13	Providing and fixing 9mm thick marine plywoods for table top, panelling, shutters, partition and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	30.00	m2	950.00	28500.00
7.14	Providing and fixing 12mm thick cement bonded wood particle board (bison panel) for chajja, ceiling, staircase at any floor, providing suitable hole for fixing nuts and bolts including making suitable groove on walls, making vata at joint, P/F sheet in proper slope including double scaffolding wherever required complete as directed.	100.00	m2	1143.00	114300.00

7.15	Providing and fixing 20mm thick cement bonded wood particle board (bison panel) for chajja, ceiling, staircase at any floor, providing suitable hole for fixing nuts and bolts including making suitable groove on walls, making vata at joint, P/F sheet in proper slope including double scaffolding wherever required complete as directed.	100.00	m2	1431.00	143100.00
7.16	Providing and fixing 2nd class teak wood moulded beading of size 50x12mm to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete	170.00	Rmt	137.18	23320.90
7.17	Providing and fixing 2nd class teak wood moulded beading of size 50x20mm to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete	120.00	Rmt	177.42	21290.98
7.18	Providing and fixing openable shutter made up of 18mm thick commercial plywood of approved make, P/F 1mm thick designer sunmika on expose side and edges of shutters and frame, P/F 0.80mm thick white sunmika on unexposed side and frame, P/F stainless steel hinges 2 nos. for each shutter, 1no handle(S.S) for each shutter, ball cage etc. with screws in line and level, P/F wooden frame of required size for frame rectification of all damages etc. complete as directed.	50.00	m2	3942.00	197100.00
7.19	Providing & fixing in position plywood panelling made using 2" x 1.5" teakwood frame at 600mm c/c as frame with 12mm thick commercial plywood, finish with 1mm thick designer or solid colour laminate of century, green lam, royal touch, marino brand with approved pattern and colour, making necessary groves wherever required as per standard practice, making necessary arrangement for removable type panels for electrical work using mirror screws,, making edges smooth with all required fittings and fixtures etc. complete as directed.	40.00	m2	4890.00	195600.00
7.20	Providing and fixing pin up board on walls using 8mm thick plywood for backside support, P/F 12mm thick soft board on plywood with fabric of approved pattern and design with all required fittings and fixtures and necessary hardware etc. completed as dircated. The basic cost of fabric to be Rs. 350/- per RM (3 feet width).	20.00	m2	4585.00	91700.00
7.21	Providing and fixing openable shutter made up of 18mm thick marine plywood of approved make, P/F 1mm thick designer sunmika on expose side and edges of shutters and frame, P/F 0.80mm thick white sunmika on unexposed side and frame, P/F stainless steel hinges 2 nos. for each shutter, 1no handle(S.S) for each shutter, ball cage etc. with screws in line and level, P/F wooden frame of required size for frame rectification of all damages etc. complete as directed.	20.00	m2	4384.00	87680.00

7.22	Providing and fixing 2nd class teak wood lipping/ moulded beading or taj beading of required size fixed with wooden adhesive of approved quality and screws/ nails on the edges as per direction of Engineer-in-charge	100.00	Rmt	73.78	7377.89
7.23	Providing & fixing 1mm thick designer laminate of approved brand and pattern wherever required including, making necessary groves wherever required as per standard practice with all required fittings and fixtures etc. complete as directed.	200.00	m2	1036.00	207200.00
7.24	Providing & fixing 4mm teak veneer of approved brand and pattern on partition/ door shutter/ door frame/ over window including, making necessary groves wherever required as per standard practice with all required fittings and fixtures etc. complete as directed.	90.00	m2	1047.00	94230.00
7.25	Providing and laying 5mm thick acrylic sheet of 450mm width of approved company for damp proof course (Top glas acrylic/Swastik/Forte) in the bottom of brick masonry/concrete wall by cutting, making slit in it at floor level by 100 mm overlapping end to end including plastering, filling the gaps by mortar and making good surface etc. all complete as directed.	25.00	m2	1127.00	28175.00
7.26	Carefully removing existing wooden doors of any size and type with/without frame without damaging and re-fixing the same after completion of repair works and required modification like cutting from bottom, fixing bedding patti, etc. with required necessary fixtures and fittings including screws/hinges, etc wherever required all complete as directed.	150.00	Nos	537.00	80550.00
7.27	Removing door / windows / cupboard shutter & frame removing shutters & old fittings keeping them aside and taking out the old dilapidated frame out of campus, providing wraughting to shape & fixing C. P. Teakwood frame of same size & design as existing finished size (95mm x 70mm, 70mm x 32mm) applying one coat of coal tar to the backside of members fixing new M.S. Hold fasts 4 Nos. for windows and 6 Nos. for doors with screws fixing the frame in proper position on the wall refixing the removed shutters with all existing fittings for doors & windows or of same size & number as existing fittings including painting two coats of synthetic enamel paint over a coat of primer on all exposed surfaces of frame rectifying all defects to original specification all complete as directed	2.00	m3	181574.00	363148.00
7.28	Providing and fixing country teakwood 2nd class fully glazed single / double leaf windows / ventilators rectangular in shape adopting section of 70mm x 32mm for styles and rails as per drawing including providing and fixing 4mm thick plain / bajiri glass with teakwood beading, fixing the window / ventilator shutters with 75mm size butt hinges (Brass oxidized) 2 Nos. for each shutter, aluminium towerbolt 100mm size one for each shutter, aluminium handle 125mm one for each shutter, hooks & eyes 200mm one for each shutter, applying two coats of synthetic enamel paint of approved brand and shade over a coat of wood primer etc. Complete.	10.00	m2	6784.00	67840.00

7.29	Replacing by providing and fixing 5 mm thick plain/bajri glass of doors and windows etc. including teakwood beading etc. complete.	10.00	m2	1217.00	12170.00
7.30	Providing and fixing double leaf half glazed wooden door shutter including for door shutter 35mm thick as per detailed drawings consisting of country cut teak wood styles, top rail, frieze rail of 90mm x 35mm, lock rail of 100mm x 35mm and bottom rail of 150mm x 35mm and insert 5mm thick glass with bedding patti generally conforming to IS: 710 with heavy duty brass aldop 12" , M.S. pressed 5" butt hinges bright finished, towerbolt 6" size amd handles of required size with necessary screws, including painting , finishing , etc. complete.	15.00	m2	4858.00	72870.00
7.31	Providing & fixing fixed glazed partition in wooden frame as per detailed drawing consisting country teak wood frame for outer vertical member of size 200mm x 50mm & for internal member of size 50mm x 50mm with using 5mm thick glass fixed in bedding patti including painting, cleaning etc. complete.	6.00	m2	5714.00	34284.00
7.32	Providing and fixing teakwood fully glazed single / double leaf windows / ventilators rectangular in shape adopting section of 70mm x 32mm for styles and rails as per existing pattern including providing and fixing 5mm thick plain / bajiri glass with teakwood beading, fixing the window / ventilator shutters with 75mm size brass butt hinges 2 Nos. for each shutter, aluminium towerbolt 100mm size one for each shutter, aluminium handle 125mm one for each shutter or as per site requirement, of classic/Archies make hooks & eyes 200mm one for each shutter, etc. including 2 coats of SEP of existing colour/shade of the bldg over a one coat of wood primer etc. complete. (Contractor will be allowed to take away old frame and for which 5% deduction will be made of schedule rate of this item. Note: Sample testing to be carried out from each lot as per IS requirement before commencement of work at contractor's risk and cost.)	120.00	m2	6567.00	788040.00
7.33	Providing & fixing in position overhead storage cabinet having depth 1'-6" made out of using 18mm thick commercial plywood for sides, top, bottom, shelf & 12mm thick ply for back sides, 1mm thick decorative sunmica for outside and 1mm thick white sunmaica for inside surfaces , CP teakwood frame work/support fixing the unit on wall, 01 nos handle for each shutter, magnet, lock, polish with including necessary edging ,moulding,buffering, autohinges, & other hardware required fitting etc. all complete as per drawing or as directed.	10.00	m2	12573.00	125730.00
					5745906.77
8	Steel Work				
8.1	Providing and fabricating structural steel works in rolled sections like joists, channels, angles, tees, hollow sections and any other required sections etc. as per detailed designs & drawings for supports, rafters, purlins, railing, staircase and any other work including fixing in position with connecting plates, braces and welding, riveting, bolting as necessary including one coat of redoxide priming coat, scaffolding etc. complete.	3000.00	kg	67.01	201043.23

8.2	Providing, fabricating and fixing Chequered Plate of required thickness for steps and any other work including in required size, welding, fixing necessary supporting M.S frame work with the plate including one coat of steel primer and two coat of SEP etc. completed as directed. (M.S work will be paid separately)	500.00	Kg	75.44	37720.69
8.3	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-incharge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	900.00	Kg	541.62	487458.00
8.4	Fabricating and fixing structural steel works supplied by Institute in rolled sections like joists, channels, angles, tees, hollow sections and any other required sections etc. as per detailed designs & drawings for supports, rafters, purlins, railing and any other work including fixing in position with connecting plates, braces and welding, riveting, bolting as necessary including painting, scaffolding etc. complete.	670.00	Kg	26.00	17420.00
8.5	Providing and fixing hand rail of using 'C' class G.I pipe approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer and two cost of synthetic enamel paint.	770.00	kg	114.94	88503.16
8.6	Providing and fixing mild steel grill work for window, ventilator, partition weighing 15 kg per sqm as per drawing including necessary welding and painting with one coat primer and two coats of anti-corrosive paint of approved shade etc. complete as directed.	500.00	m2	1705.00	852500.00
8.7	Add for extra weight or deduct for less weight over item no.8.6 for fabricating such as cutting, shaping, riveting etc. mild steel for grill works including welding and painting with one coat of primer and two coats of anti-corrosive paint of approved shade etc. complete as directed.	1000.00	kg	116.00	116000.00
8.8	Providing and fixing in position collapsible steel shutters with vertical channels 20 x 10 x2mm and braced with flat iron diagonals 20 x 5mm size with Top bottom rail of T-iron 40 x 40 x 6mm with 40mm dia. Steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles including applying priming coat of approved steel primer etc. Including removing the existing damaged collapsible gate and taking it away out of IIT campus etc. Complete as directed.	20.00	m2	6146.12	122922.43
8.9	Providing and fixing 50mm x 50mmx 8 gauge crimped mesh by cutting, welding etc with applying one coat of primer and two coats of synthetic enamel paint, scaffolding etc all complete as directed by engineer in charge.	50.00	m2	824.00	41200.00

8.10	Providing and fixing weld mesh of 25mm x 25mm (10 guage) to structural steel frame work as per existing pattern of detailed drawing or as directed one coat of primer and two coat synthetic enamel paint, scaffolding etc complete.	50.00	m2	773.00	38650.00
8.11	Providing and fixing G. I. chain link fencing 50mm x 50mm x 8 guage thick and of desired height for fencing including welding the chain link fencing with G.I. pipes or M.S. angle frames / flats, applying one coat of metal primer and two coats of synthetic enamel paint of approved colour / brand etc. complete.	50.00	m2	696.00	34800.00
8.12	Providing and fixing 16mm dia. mild steel round bars at 100mm c/c to windows / ventilators / fanlights, fixing mild steel Flats 40 x 6mm in frame, cutting a recess to fit the flat exactly including drilling the holes to flats to pass the bars through it 25mm inside in wooden frame including providing one central mild steel flat of 40 x 6mm by drilling holes (when bar length exceeds 75cm) etc. complete.	100.00	Kg	70.86	7086.00
8.13	Providing cutting,fixing,welding M.S. structural steel for balcony/window railings using box sections of various sizes such as 120 x 60 x 5mm, 50 x 50mm x 5mm thick and 25 x 25mm soild section same as existing grills in Ananta building or as directed by Engineer incharge and taking away the old grill including one coat of matel primer, scaffolding etc, all complete. 5% amount this will be deducted for scrap valve of material Note :- Mode of maeasurement will be Elevational area of grill)	30.00	m2	4901.00	147030.00
8.14	Providing and fixing G.I. Welded mesh 12mm x 12mm and (18 gauge) to teakwood frame work including fixing weld mesh with 37mm x 12mm teakwood bedding patti and necessary pocketing for opening for shutters with necessary screws , fitting as directed	40.00	m2	685.00	27400.00
8.15	Providing and fixing G. I. Concertain barbed wire tape coil 450mm dia 12 gauge over the fencing on structural steel supporting frame work {structural steel required for this item will be paid separately} as per drawing and as directed at site in proper position with minimum 8 circular rings on 1 meter straight lenght, fixing with M.S. angle and flats as stated above, welding the angles, flats by welding/ nuts bolt clamps as necessary as per manufacturers specification including providing and fixing using staple clips, turn buckle and strengthening bolt, tying the coil with angle iron supports through out the length, scaffolding if required, tools plants etc. complete as directed.	50.00	Rmt	497.00	24850.00

8.16	Providing structural steel work in rolled sections fixed with connecting plates or angle cleats as in main and cross beams as per detailed designs & drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position, making riveted/ bolted/ welded connections and painting, scaffolding etc. complete. Note : This rate is applicable from rear side of vidya niwas upto hostel no. 12/13 and around coal dongri area where vehicular access is not possible.	500.00	kg	100.52	50260.00
8.17	Providing and fixing G. I. chain link fencing 50mm x 50mm x 8 guage thick and of desired height for fencing including welding the chain link fencing with G.I. pipes or M.S. angle frames / flats, applying one coat of metal primer and two coats of synthetic enamel paint of approved colour / brand etc. complete. Note : This rate is applicable from rear side of vidya niwas upto hostel no. 12/13 and around coal dongri area where vehicular access is not possible.	50.00	m2	1044.00	52200.00
8.18	Providing and fixing G. I. Concertain barbed wire tape coil 450mm dia 12 gauge over the fencing on structural steel supporting frame work {structural steel required for this item will be paid separately} as per drawing and as directed at site in proper position with minimum 8 circular rings on 1 meter straight lenth, fixing with M.S. angle and flats as stated above, welding the angles, flats by welding/ nuts bolt clamps as necessary as per manufacturers specification including providing and fixing using staple clips, turn buckle and strengthening bolt, tying the coil with angle iron supports through out the length, scaffolding if required, tools plants etc. complete as directed. Rate is including portable power generator with fuel & required electric cable, head load, scaffolding etc complete. Note : This rate is applicable from rear side of vidya niwas upto hostel no. 12/13 and around coal dongri area where vehicular access is not possible.	50.00	Rmt	745.50	37275.00
8.19	Labour charges for modification of the existing window MS grills by means of cutting, fabricating, welding etc and refixing it in position/line/level/plumb including scaffolding, taking care of necessary safety precautions at site etc. complets as directed.	30.00	m2	361.00	10830.00
8.20	Modifying existing chequered plates supplied by IIT by making necessary cutting, welding, making holes, including all lead and lift, transporting the plates from anywhere inside IIT till work site all complete as directed.	100.00	m2	425.00	42500.00
8.21	Providing and fixing Galvanised Welded mesh 12mm x 12mm and (18 gauge) to teakwood frame work including fixing weld mesh with 37mm x 12mm teakwood bedding patti and necessary pocketing for opening for shutters with necessary screws , fitting as directed	20.00	m2	685.00	13700.00
8.22	Providing and fixing light duty ductile iron grating of size 300mmx600mm of NECO or equivalent make in proper line and level all complete as directed.	5.00	Nos	2195.00	10975.00

8.23	Providing and fixing heavy duty ductile iron grating of size 300mmx600mm of NECO or equivalent make in proper line and level all complete as directed.	5.00	Nos	6369.00	31845.00
8.24	Providing and fixing light duty ductile iron grating of size 450mmx600mm of NECO or equivalent make in proper line and level all complete as directed.	5.00	Nos	2925.00	14625.00
8.25	Providing and fixing heavy duty ductile iron grating of size 450mmx600mm of NECO or equivalent make in proper line and level all complete as directed.	5.00	Nos	7283.00	36415.00
8.26	Providing and fixing new worm gear at top and bottom with all necessary fitting etc., complete.	2.00	Nos	7170.00	14340.00
8.27	Providing and fixing rolling steel shutter fabricated from 18/19 gauge steel laths with side guides, bottom rail, brackets, door suspension shaft including rolling springs, locking arrangement and housing box at the top with one coat of red lead primer etc. complete.	18.00	m2	5674.00	102132.00
8.28	Removing rolling shutters, door shutters and window shutters of any size and type with fittings (if available) and taking out the same outside IIT Campus etc. complete. (5% cost will be deducted from Item of work for material taken outside campus)	18.00	m2	158.00	2844.00
8.29	Providing and fabricating structural steel works in extruded hollow sections like joists, channels, angles, tees, square and rectangular bars and any other required sections etc. as per detailed designs & drawings for gate, grill and any other work including fixing in position with connecting plates, braces and welding, riveting, bolting as necessary including one coat of redoxide priming coat, scaffolding etc. complete.	0.50	kg	144.00	72.00
					2664596.51
9	Flooring				
9.1	Providing and laying rectified Glazed Ceramic floor tiles conforming to IS: 15622 of size 300mm x 300mm as directed by Engineer-in-charge having thickness not less than 5mm, of 1st quality conforming to IS : 15622, of approved make, in all colours, shades including 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including pointing the joints with white cement and matching pigments etc., complete.	100.00	m2	1033.08	103307.67
9.2	Providing and fixing 1st quality ceramic wall tiles conforming to IS: 15622 of size 300mmx450mm and 300mm x 600mm as directed by Engineer-in-charge having thickness not less than 5mm, of approved make, in all colours, shades of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement plaster /mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade	2000.00	m2	853.93	1707864.27

9.3	Providing and laying vitrified tiles of Size 600x600 mm and above for floor, skirting, dado's, riser, tread of steps tiles in different sizes having thickness not less than 10mm with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) or 20 mm thick plaster of cement mortar 1:3 (1 cement : 3 coarse sand) , jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	6000.00	m2	1133.28	6799698.33
9.4	Providing and laying vitrified tiles of Size 1000x1000 mm for floor, dados, skirting, riser, tread etc tiles in different sizes having thickness not less than 10mm with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) or 20 mm thick plaster of cement mortar 1:3 (1 cement : 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joints with white cement and matching pigments etc., complete.	50.00	m2	2359.38	117968.87
9.5	Providing and laying Kotah stone for flooring, skirting, tread, riser of steps 25mm to 30mm thick of required size in plain / diamond pattern on a bed of 1:4 cement mortar (1 cement : 4 crush sand) or 20 mm thick plaster of cement mortar 1:3 (1 cement : 3 coarse sand) including cement float, filling joints with neat cement slurry, curing, polishing and cleaning complete.	500.00	m2	1327.79	663895.55
9.6	Providing and fixing two mm thick PVC flooring (vinyl flooring) in roll or tile form manufacture by armstrong of approved shade and in approved pattern on smooth and leveled bed, fixing the flooring as per manufacturer specifications etc. complete.	500.00	m2	1610.00	805000.00
9.7	Providing and fixing wooden flooring of 8 mm / 10 mm thk (AC-4 Grade) of approved make vista /amstrong/pergo in slat form including foam for levelling . Measurement will include the skirting and side/ floor profiles if any.	100.00	m2	1725.00	172500.00
9.8	Removing the old cement concrete or any type of tiles from floor / wall carefully including levelling the surface, cleaning the site, stacking the debris etc. complete.	6000.00	m2	56.41	338454.31
9.9	Providing and fixing Chequerred precast Cement concrete tiles 22mm thick of approved colour and pattern over steps vertically and horizontaly including filling the joints with light shed pigment with white cement to match the shade of tiles including rubbing, curing and cleaning etc. complete on 20mm thick bed of cement mortar 1:4 (1 Cement : 4 coarse sand) .	100.00	m2	1039.61	103961.19
9.10	Carefully removing the existing damaged PVC/ wooden flooring sheets / tiles cleaning and leveling the surface and taking out the same outside IIT Campus as directed etc. all complete.	500.00	m2	46.00	23000.00

9.11	Supplying providing and laying four layer Ultra Cushioned System Synthetic surface layer at Tennis Court of total 1.26mm thick,including preparing the surface for laying synthetic surface, consisting bottom layer for filler coat for levelling the pores etc, Second layer of cushion resurfacer, third and fourth layer as a top coat,making all necessary marking of courts as per the standards etc. complete as directed by Engineer Incharge and Sports Officer. (All material used should be of Indo Sports make .)	500.00	m2	674.00	337000.00
9.12	Providing and laying at any floor ceramic tiles Johnson &Johnson /Nitco/ Kajaria/ Bell/ somani for flooring approved by IITB of size 600x600mm quality, brand and shade as available in market on cement mortar 1:4 bedding using white cement pigments finished to levels slope as required including cutting of tiles. Curing, acid washing etc. all complete.	40.00	m2	857.00	34280.00
9.13	Machine polishing to cement / marble mosaic tiled flooring or any other type of flooring including cleaning, washing, etc. complete.	10.00	m2	242.00	2420.00
9.14	Hand polishing to dado, skirting including cleaning, washing etc. complete as directed.	10.00	m2	116.00	1160.00
9.15	Providing and laying white/colour veined marble slabs 18mm thick in one piece stone for claddings,platform,treads and risers of steps and stair cases with rounded nosing and grooves for the treads laid on bed/ plaster of cement mortar 1:4 including cement float, filling joints with neat cement slurry, curing , polishing and cleaning complete.	10.00	m2	1745.70	17457.00
9.16	Providing and fixing towel ring round flange of approved jaguar or equivalent make etc. Complete.	4.00	No	1298.00	5192.00
9.17	Providing & levelling the undulation/ sagging of floor with cement mortar 1:4 upto 30 thk to make proper base for floor tileing including levelling, curing, and cleaning etc. complete at any floor	4.00	m2	175.00	700.00
9.18	Providing and fixing Welspun CNL flooring including skirting/profile of approved design /make and pattern of upto 5.0 mm thk in grain slats or any other size or any other pattern, approved colour etc and cleaning /brooming/mopping the floor before installation and laying Cusioning base /Plastic sheet etc complete as approved and directed.(Skirting/profile shall not be paid separately)	100.00	m2	3842.00	384200.00
9.19	Providing and fixing at all height ceramic mosaic tiles of size 37mmx37mmx5mm thick unglazed matt series of shon ceramic pvt ltd or equivalent make, according to existing external mosaic wall tiles. Including providing sound tile-MTA/Leticrete/Ultra bond/Kerakoll or any other approved make multipurpose tile fixing adhesives as per manufacturers specifications and finished with grouting materials in the joints in approved colour..etc. including curing, scaffolding,cleaning with soap water and acid..etc. all complete as per direction of Engineer In-charge.	500.00	m2	2745.00	1372500.00

9.20	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having water absorption less than 0.5% and conforming to IS: 15622, of approved make in allcolours and shades in outdoor floors such as footpath, court yard,multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	20.00	m2	1662.98	33259.60
9.21	Providing and laying rectified Glazed Ceramic floor tiles conforming to IS: 15622 of size 300mm x 300mm as directed by Engineer-in-charge having thickness not less than 5mm, of 1st quality conforming to IS : 15622, of approved make, in all colours, shades including Fixing tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness complete.	250.00	m2	941.07	235267.50
9.22	Providing and fixing Ist quality ceramic wall tiles conforming to IS: 15622 of size 300mmx450mm and 300mm x 600mm as directed by Engineer-in-charge having thickness not less than 5mm, of approved make, in all colours, shades of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, including Fixing tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness complete.	250.00	m2	761.92	190480.00
9.23	Providing and laying vitrified tiles of Size 600x600 mm and above for floor, skirting, dado's, riser, tread of steps tiles in different sizes having thickness not less than 10mm with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, including Fixing tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness complete.	250.00	m2	1041.27	260317.50
9.24	Providing and laying vitrified tiles of Size 1000x1000 mm for floor, dados, skirting, riser, tread etc tiles in different sizes having thickness not less than 10mm with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, including Fixing tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness complete.	250.00	m2	2267.37	566842.50
9.25	Providing and laying plain ceramic tiles of size 600mmx600mm and thickness as per manufacturers specification of approved make for flooring in required position including Fixing tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477, in average 3mm thickness complete.	250.00	m2	942.00	235500.00

9.26	Providing and laying not less than 16 mm thick Italian Marble stone slab machine cut, mirror polished Marble stone flooring, in required design (Simple geometrical, abstract etc.) and in patterns in combination with Italian marble stones of different colours, shades and finished surface texture etc., in linear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab laid over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with white cement slurry @ 4.4 kg/sqm including pointing with white cement slurry admixed with pigment to match the marble shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.	50.00	m2	5739.62	286981.05
					14799207.33
10	Roofing				
10.1	Providing and fixing armstrong mineral fibre board 600mm x 600mm sheet in existing false ceiling frame by removing damaged sheet with required modification in frame as necessary all complete as directed.	100.00	Per Nos.	594.00	59400.00
10.2	Providing and fixing modular false ceiling of 600mm x 600mm c/c and placing 3mm thick square aluminium composite sheet (also bond sheet) to be fixed on frame work of aluminium section for suspended false ceiling consisting of aluminium T 1" x 1 ½"(25 x 40mm) weighing 0.259 Kg/m suspended on GI wire at 1200mm c/c, fixed on wall beams, slab including rounding the edge with aluminium T of 1"x 1 ½" (25mm x 40mm) weighing 0.259kg/m(all aluminium section shall be anodized 15micron or powder coated), making necessary cutout for light and fixtures including all labour, material, lifts and scaffolding all complete as directed by Engineer incharge etc.	50.00	m2	1874.00	93700.00
10.3	Providing & fixing 12mm thick Gypsum board on partition, false ceiling including, making necessary groves wherever required as per standard practice, The boards should be taped and filled from underside to give smooth, seamless surface with all required fittings and fixtures etc. complete as directed.	650.00	m2	1050.00	682500.00
10.4	Providing & fixing cove false ceiling of 6mm thick calcium silicate board of hilux make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of intermediate G.I chanel 45 x15 x 0.90mm & perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long of required width as per site condition suspended from ceiling using angle hangers of 25 x10 x0.50mm of required length with nuts & bolts including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds all as per manufacture's specification .	100.00	Rmt	445.00	44500.00

10.5	Providing & fixing cove false ceiling of 12.5mm thick gypsum board of Gyproc make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of intermediate G.I channels 45 x15 x 0.90mm & perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long of required width as per site condition suspended from ceiling using angle hangers of 25 x10 x0.50mm of required length with nuts & bolts including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds suitable for boards, all as per manufacture's specification	200.00	Rmt	427.00	85400.00
10.6	Providing & Fixing of G.I Lay-in perforated metal ceiling system consisting of 600x600mm size grid with fleece laying in tiles of pre-coated galvanized steel in 0.4/0.5 mm thickness in required colour with 15mm wide T - section silhouete flanges of required colour having rotary stitching on the main Runner including P/F 1200mm &600mm cross Tees as per manufacturer specifications.	500.00	m2	1763.00	881500.00
10.7	Providing & Fixing of Dune microlook R.H 99% NRC ceiling system consisting of 600x600mm size grid with fleece laying in tiles of pre-coated galvanized steel in 0.4/0.5 mm thickness in required colour with 15mm wide T - section silhouete flanges of required colour having rotary stitching on the main Runner including P/F 1200mm &600mm cross Tees as per manufacturer specifications.	500.00	m2	1469.00	734500.00
10.8	Providing & fixing 12mm thick Calcium Silicate board on partition, false ceiling including, making necessary groves wherever required as per standard practice, The boards should be taped and filled from underside to give smooth, seamless surface with all required fittings and fixtures etc. complete as directed.	100.00	m2	1647.00	164700.00
10.9	Providing & fixing 6mm thick Calcium Silicate board on partition, false ceiling including, making necessary groves wherever required as per standard practice, The boards should be taped and filled from underside to give smooth, seamless surface with all required fittings and fixtures etc. complete as directed.	50.00	m2	1502.00	75100.00

10.10	<p>Providing & fixing 6mm thick calcium silicate board (make: Hilux) false ceiling in classrooms, labs at all floors, foyer area, washrooms etc including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I chanel 45 x15 x 0.90mm running at the spacing of 1200 mm c/ c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of calcium silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c,</p>	50.00	m2	1312.00	65600.00
	<p>including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds in three layers covering up to 150mm on both sides of joints, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, covering the carpet, tables, chairs, machines etc with plastic sheets all complete as per drawings, specificaton and direction of the Engineer in charge but excluding the cost of painting.</p>				

10.11	<p>Providing & fixing 12.5mm thick gypsum board of Gyproc make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I chanel 45 x15 x 0.90mm running at the spacing of 1200 mm c/ c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/ partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of gypsum Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds,</p>	100.00	m2	1228.00	122800.00
	<p>jointing tapes,finishing with jointing compounds in three layers covering up to 150mm on both sides of joints all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, covering the carpet, tables, chairs, machines etc with plastic sheets all complete as per drawings, specificaton and direction of the Engineer in charge.</p>				
10.12	<p>Providing and fixing plain precoated galvanized iron sheet for covering, partition, door bottom and any other work having thickness 0.60mm of Jindal Make of required colour along with necessary accessories like self drilling and tapping screws with weather cap with all leads and lift etc. complete as directed.</p>	20.00	m2	661.00	13220.00
10.13	<p>Providing at all heights, levels and locations 0.71 mm thick aluminium sheet, the profile detail width 1044/920 mm, cover width 1000/875 mm. aluminium profile industrial troughed sheet of Alloy 1500/31000/40800, conforming to IS 1254, IS 737, IS 2676. The sheet shall be fixed using self drilling/self tapping SS screws of size 5.5x65 mm with EPDM seal complete upto required pitch in horizontal, vertical or curved surfaces i/c cutting to size and shape where required as per specifications, detail drawings and direction of Engineer-in-Charge. The rate shall be inclusive of all screws, seal, ridge, labour, scaffolding, machinery for fixing and approved sealent where required etc. but excluding the cost of purlins, rafters and trusses.</p>	100.00	m2	906.10	90609.90

10.14	Providing and fixing colour coated Galvalume profile pre-coated sheet for roofing and cladding having thickness 0.50mm TCT of Jindal Make with required colour along with necessary accessories like self drilling and tapping screws with weather cap with all leads and lift including scaffolding etc. complete as directed.	660.00	m2	845.00	557700.00
10.15	Providing fabricating and fixing in position required shape pre-coated Galvalume with 0.50 mm TCT flashing having 150mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	410.00	Rmt	550.00	225500.00
10.16	Providing fabricating and fixing in position required shape pre-coated Galvalume with 0.50 mm TCT flashing having 200mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	310.00	Rmt	607.00	188170.00
10.17	Providing fabricating and fixing in position required shape pre-coated Galvalume with 0.50 mm TCT flashing having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	310.00	Rmt	1067.00	330770.00
10.18	Providing fabricating and fixing in position required shape pre-coated Galvalume with 0.50 mm TCT gutter having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	235.00	Rmt	573.00	134655.00
10.19	Providing fabricating and fixing in position required shape pre-coated Galvalume with 0.50 mm TCT ridge having 610mm width of Jindal make with required lapping for side of roofing sheet including cutting and fabricating in approved design,fixing the flashing properly as per manufacturers specification including scaffolding etc complete as directed.	235.00	Rmt	515.00	121025.00
10.20	Removing old G.I/asbestos/FRP sheet roof covering as decided and stacking the usable sheets as and where directed in the IIT Campus, including all leads and lifts, scaffolding etc. all complete as directed.	150.00	m2	37.66	5649.00
10.21	Carefully refixing the old pre-coated galvanised iron profile/GI/FRP sheets as per availability and requirement by using self drilling /self tapping screws and sealing the joints properly with approved sealant materials including all leads and lifts, scaffolding etc. all complete as directed.	150.00	m2	270.00	40500.00
10.22	Providing & Fixing BLACK Tar Felt Sheet For FRP sheet Joint seal and making it water tight including necessary material like adhesive etc all complete as directed.	100.00	Rmt	144.00	14400.00

10.23	<p>Providing and fixing multicell 16mm thick (min.) Polycarbonate UV Insulated sheets of Danpalon/ SABIC/ GE/ Tuflite make of approved colour in curve or plane shape, panel width 900mm (min.), panels shall be uniform in colour with multi-cell structure. Weight of the panel shall not be less than 3.11Kg/sqm. Panels shall have vertical standing seam at both sides of the panel including all fittings and fixtures such as snap on connector with grip lock 1 / 2 tooth locking mechanism for water and air tightness. Panels shall be fixed on purlins with SS expansion fastener and polycarbonate U connectors. Panels shall be sealed with additional End-cap/Aluminium U profile(mill finish) for ends or welded ends. Panels shall be fixed on end wall by making grooves on wall plaster and fixing the sheet with necessary cement plastering/ grouting with required flashing at the junction of wall/concrete surface and sheets and other required fittings as per manufacturer specifications including scaffolding etc. Panels should be covered under 10 years warranty against any manufacturing defects Note: Payment for flashing will be made in separate item.</p>	10.00	m2	5081.00	50810.00
10.24	<p>Providing and fixing of approved make 10mm thick Multicell UV protected Polycarbonate Panel System with 3 cells and 4 walls structure over structural steel framework as per approved colour/shade. Co-extruded UV protected panels shall have width of not less than 900mm to ensure best performance for wind uplift, vibration, oil canning and visual appearance. Panels shall be manufactured with vertical standing seam at both sides of the panel. Welding or gluing up of standing seam is not acceptable. Panels shall be fixed with Stainless steel retention clips of SS-304 grade and connectors. Snap-on connectors to interlock the panels shall have a grip-lock double tooth locking mechanism to ensure maximum uplift capability. Panels shall have End-cap/ Aluminium U-profile/ Glazing bar for ends as per requirement. The weight of the panel shall not be less than 2.06 kg per square meter. Panel shall be co-extruded with special anti-glare compound (if required) to make it anti-glare/soft light to prevent glare and sun streaks. Polycarbonate panels shall not have yellowness Index more than -6.86 as per ASTM G 155 when tested for minimum of 1000 hours exposed to UV light source under Xenon Arc Lamp with irradiance 0.35 W/m2 @340mm. Approved Make: Tuflite / Bayer / Tileron / Brett Martin / Koscon (Steel frame work will be paid separately in respective item)</p>	30.00	m2	4448.00	133440.00
10.25	<p>Removing and refixing existing G.I. Sheet / prelaminate sheet Fencing from the structural steel frame work for the purpose of repairing the existing eastern boundary wall including fixing in position with nut bolt arrangement, welding, riveting, bolting connecting plates, brasses Scaffolding upto required height, site welding etc complete as site through contractors own cost.</p>	100.00	m2	156.00	15600.00

10.26	Providing and fixing corrugated galvanized iron sheets of 0.63 mm thickness (24 B.W.G.) for eastern boundary wall fencing if required without wind ties including fastening with galvanized iron screws and nut bolts to the existing structural steel frame work etc complete. As directed by Engineer in charge.	35.00	m2	803.20	28111.94
10.27	Carefully removing ACP sheet paneling with aluminium frame work and refixing the same at its original location by correcting slope without damaging it with all necessary fittings, fixtures, screws, gaskets, pump filled structural 789 grade silicon sealant & hardware, making joints watertight up to any height including replacing damaged ACP sheet and aluminium members (if any) using scaffolding or any mechanical arrangements erected for ACP facade cleaning work etc. completed as directed Engineer In-charge.. (Replacment of damaged ACP sheet and aluminium members will be paid in respective item.)	20.00	m2	508.00	10160.00
10.28	Design, supply and installation of ACP work incorporating of 4 mm thick Aluminum Composite Cladding sheet of Altobond or Eurobond make of approved colour, the top and bottom layer of 0.5 mm thick Aluminum Sheet sandwiched with 3 mm thick polythylene core, supported by M. S. cleat duly black painted. The back up structure will be made of Aluminum 38 mm x 38 mm rectangular tube with all fittings, fixtures, hardware and pump filled 789 grade Silicone Sealant with all fittings and fixtures up to any height using scaffolding or any mechanical arrangements erected for ACP facade cleaning work etc. completed as directed Engineer In-charge..	20.00	m2	4501.00	90020.00
10.29	Providing and pumping 789 grade Silicone sealants for the ACP sheet joints, window frames / window frame joints etc. including racking out and cleaning existing loose joints & making joints watertight up to any height using scaffolding or any mechanical arrangements erected for ACP facade cleaning work etc. all complete as directed by Engineer In-charge.	100.00	Rmt	158.00	15800.00
10.30	Providing and fixing 4mm thick exterior grade ACP sheet of approved colour and pattern over existitng alumnium frame, fixing the panels using 3M tape, filling the joints using 789 grade silicon sealant with all required fittings and fixtures, screws, hardware using scaffolding or any mechanical arrangements erected for ACP facade cleaning work etc complete as directed by Engineer In-charge. .	20.00	m2	2852.00	57040.00
10.31	P/F 12mm thick (minimum) Polycarbonate UV Insulated Sheets of Danpalon/ SABIC/ GE/ Tuflite make of approved colour in required shape, panel width shall not be laess than 900mm, panels shall be uniform in colour including all fittings and fixtures such as snap on connector with grip lock double tooth locking mechanisam, millfinish aluminium U profile end cap, required flashing at the junction of wall/concrete surface and sheets and other required fittings as per manufacturer specifications,including scaffolding etc.all complete as directed by Engineer In-charge.	100.00	m2	4531.00	453100.00

10.32	P/F 22mm thick (minimum) Polycarbonate UV Insulated Sheets of Danpalon/ SABIC/ GE/ Tuflite make of approved colour in required shape, panel width shall not be less than 900mm, panels shall be uniform in colour including all fittings and fixtures such as snap on connector with grip lock double tooth locking mechanism, millfinish aluminium U profile end cap, required flashing at the junction of wall/concrete surface and sheets and other required fittings as per manufacturer specifications, including scaffolding etc. all complete as directed by Engineer In-charge.	500.00	m2	6175.00	3087500.00
10.33	Providing & fixing 6mm thick Shera board false ceiling in required colour pattern and texture screwed/ fixed to the under structure of suspended G.I grid constructed and suspended from the main ceiling consisting of ceiling section of size 25 x 50 mm maximum c/c distance of 600 x 600mm perimeter channel and intermediate channel at maximum c/c to distance of 1200mm galvanised grid should be fixed to reinforced cement concrete slab. The shera board should be fixed to galvanised iron grid with necessary screws. The board should be taped and filled from underside to give smooth, seamless ceiling. The rate should include necessary additional ceiling section and intermediate channels. Additional intermediate channels should be fixed to strap hangers for additional support to prevent strapping at every 1200mm item to be completed in all respect including necessary sleeves for ducts finishing of joints cut outs and including labour, material, lift and scaffoldings at any height etc. all completed	200.00	m2	3824.00	764800.00
10.34	Providing and fixing acoustic board 25mm thick of armstrong, Anutone make in required colour, pattern, size and shape on existing plywood using clips, pasting the board on plywood using suitable pasting gel, necessary cutting, fitting all complete as directed. (excluding plywood)	20.00	m2	9353.00	187060.00
10.35	Providing and placing glasswool sheets of 50mm thickness of density not less than 48 Kg/m ³ wrapped in 200G virgin polyethene bags placed in panelling, false ceiling frame held in position by criss cross GI wire including all lead, lift and scaffolding till any height all complete as directed.	100.00	m2	509.00	50900.00
10.36	P/f 5mm thick glass for vision panel in door including making necessary cutting in the door of required size with necessary teakwood moulding and melamine polish on moulding all complete as directed.	10.00	m2	1875.00	18750.00
10.37	P/A Termigaurd spray (Make: Pidilite) on plywood evenly as per manufacturer's specification all complete as directed.	10.00	m2	53.00	530.00

10.38	Providing & fixing cove false ceiling of 6mm thick Shera board make at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of intermediate G.I channels 45 x15 x 0.90mm & perimeter channels 0.50mm thick 27mm high having flanges of 20mm and 30mm long of required width as per site condition suspended from ceiling using angle hangers of 25 x10 x0.50mm of required length with nuts & bolts including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes,finishing with jointing compounds for boards all as per manufacture's specification.	5.00	Rmt	589.00	2945.00
10.39	Supplying and fixing in position sandwich roofing in curved shape using color galvalume profile precoated sheet for roofing having thickness 0.5mm TCT and jindal make with required colour at top and bottom sheet including necessary accessories like self drilling and tapping screws with weather cap with all leads and lift and fixing as per manufacturers specification, stiching the lap joints (Minimum 150mm) along the length of the sheet with rivets at a maximum spacing of 450 mm including necessary cutting of sheet wherever required and fixing properly in all respects to make the wall /roof water tight and leak proof, providing and fixing WMVPR RB Glasswool 16 kg/m3 - 50mm thickness between galvalume sheets and G. I. Channel having 50mm depth and 1.5mm thickness and connecting the Z purlins with each other including scaffolding etc complete all as directed. No extra payment will be made for overlapping.	500.00	m2	1919.00	959500.00
10.40	Supplying and fixing in position sandwich roofing using color galvalume profile precoated sheet for roofing having thickness 0.5mm TCT and jindal make with required colour at top and bottom sheet including necessary accessories like self drilling and tapping screws with weather cap with all leads and lift and fixing as per manufacturers specification, stiching the lap joints (Minimum 150mm) along the length of the sheet with rivets at a maximum spacing of 450 mm including necessary cutting of sheet wherever required and fixing properly in all respects to make the wall /roof water tight and leak proof, providing and fixing WMVPR RB Glasswool 16 kg/m3 - 50mm thickness between galvalume sheets and G. I. Channel having 50mm depth and 1.5mm thickness and connecting the Z purlins with each other including scaffolding etc complete all as directed. No extra payment will be made for overlapping.	100.00	m2	1865.00	186500.00

10.41	Supplying and fixing in position sandwich roofing using above existing sheet in required color galvalume profile pre-coated sheet for roofing having thickness 0.5mm TCT and jindal make with required colour at top including necessary accessories like self drilling and tapping screws with weather cap with all leads and lift and fixing as per manufacturers specification, stitching the lap joints (Minimum 150mm) along the length of the sheet with rivets at a maximum spacing of 450 mm including necessary cutting of sheet wherever required and fixing properly in all respects to make the wall /roof water tight and leak proof, providing and fixing WMVPR RB Glasswool 16 kg/m ³ - 50mm thickness between galvalume sheets and G. I. Channel having 50mm depth and 1.5mm thickness and connecting the Z purlins with each other including scaffolding etc complete all as directed. No extra payment will be made for overlapping.	100.00	m2	1399.00	139900.00
10.42	Providing and fixing plain pre-coated galvanized iron sheet for covering and any other work having thickness 0.50mm of Jindal Make of required colour along with necessary accessories like self drilling and tapping screws with weather cap with all leads and lift etc. complete as directed.	20.00	m2	661.00	13220.00
10.43	Providing and fixing trap door in existing false ceiling cutting and making 8mm Calcium silicate board trap door for service line using 15 mm GI pre-coated wall angle for framing and 8 mm calcium silicate board including all fixture with G.I support, stepladder , putty for felling gaps and joints ..etc.all complete as directed by Engineer In-charge.	100.00	Nos	1356.00	135600.00
10.44	Providing and fixing in position Calcium silicate board (hilux make) false ceiling as per India gypsum manufacturer's instruction with 12 mm thick Calcium silicate board screw/fixes to the underside of suspended from the main ceiling as per manufacture's instruction and specification. G. I. Grid should consist of ceiling sections at maximum center to center distance 450 mm, Perimeter channel intermediate 1200 mm. The ceiling section should be fixed to intermediate channel with connection clips G. I. Grid should be fixed to R.C.C.slabs above with the help of 25mmX0.5mm strap hanger & soffit cleat. The joints between soffit cleat, strap hanger &G.I. grid should be fixed with nut bolts, Soffit cleats should be fixed to R.C.C. ceiling with W.E.type rawl plug& fastener maximum c/c distance (both ways) of strap hangers should be 1200mm including covering the furniture while working etc.	50.00	m2	1771.00	88550.00
10.45	Providing and fixing cove false ceiling using 12mm Calcium silicate board (hilux make) using G.I frame work for intermediate and perimeter channels of required width as per site requirement, entire suspended by strap hangers from soffits on the slab spread suitably including finishing with jointing, paper tape, covering furniture etc. complete as per manufacturer's specifications.	30.00	Rmt	492.00	14760.00

10.46	Removing existing modular alto bond or other 600X600mm grid false ceiling sheets with false ceiling aluminium supports, stacking the material without getting damaged to desired location and re-fixing the false ceiling after completion of other renovations including all necessary supports, making necessary cutout for light and fixture, all labour, material, lifts and scaffolding, covering the floor area, furniture with good quality sheets As directed by Engineer in charge etc.	50.00	m2	359.00	17950.00
10.47	Providing and fixing of approved make 8mm thick Multicell UV protected Polycarbonate Panel System with 3 cells and 4 walls structure over aluminium frame work at as per approved colour/shade. Co-extruded UV protected panels shall have width of not less than 900mm to ensure best performance for wind uplift, vibration, oil canning and visual appearance. Panels shall be manufactured with vertical standing seam at both sides of the panel. Welding or gluing up of standing seam is not acceptable. Panels shall be fixed with Stainless steel retention clips of SS-304 grade and connectors. Snap-on connectors to interlock the panels shall have a grip-lock double tooth locking mechanism to ensure maximum uplift capability. Panels shall have End-cap/ Aluminium U-profile/ Glazing bar for ends as per requirement. The weight of the panel shall not be less than 2.06 kg per square meter. Panel shall be co-extruded with special anti-glare compound (if required) to make it anti-glare/soft light to prevent glare and sun streaks. Polycarbonate panels shall not have yellowness Index more than –6.86 as per ASTM G 155 when tested for minimum of 1000 hours exposed to UV light source under Xenon Arc Lamp with irradiance 0.35 W/m2 @340mm. Approved Make: Danpal/Tuflite / Bayer / Tileron / Brett Martin / Koscon	20.00	m2	2812.00	56240.00
10.48	Providing and fixing 3mm thick corrugated glass fibre sheet of translucent top side tissue material as per IS 12866, resin with U.V stablized isophthalic base , light, transmission approved manufacture and desired shade including fixing the sheet with G.i. nut bolts/J hooks with bitumen washers, scaffolding etc. All directed.	50.00	m2	1926.00	96300.00
					11406985.85
11	Finishing				
11.1	Scrapping the entire wall / ceiling surface thoughly with patra & sand paper, filling the holes with lambi / POP, Providing and applying one coat of seal cement primer of IITB approved brand, applying the entire area with readymade wall putty, covering the floor, windows, instruments during priming coat as required etc. complete.	50000.00	m2	42.36	2118205.72
11.2	Providing and applying roller finish Acrylic plastic emulsion paint of of IITB approved manufacturer and of desired colour and shade to old / new ceiling & wall surfaces in two coats with the use of stepladder/ scaffolding, preparing and levelling the surfaces with Acrylic palty, as per manufactures specification (excluding priming coat) complete.	50000.00	m2	63.35	3167276.48

11.3	Providing and applying Acrylic oil bound distemper of IITB approved manufacturer and of desired colour and shade to old / new surfaces in two or more coats including scaffolding, preparing the surfaces (excluding priming coat), covering the floor, windows, instruments during painting including scaffolding complete.	50000.00	m2	34.17	1708322.88
11.4	Providing and applying one priming coat of IITB approved brand to wood and wood based surface, including preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter, sand papering including scaffolding etc.	10000.00	m2	40.07	400710.64
11.5	Providing and applying one priming coat of IITB approved brand over steel and other metal surface, including preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter, sand papering including scaffolding etc.	10000.00	m2	33.36	333638.90
11.6	Providing and applying two coats of synthetic enamel paint of IITB approved brand and shade to wood and steel work including scaffolding Scrapping, cleaning, covering the floor, windows, instruments during painting, easing all fittings etc. complete.	20000.00	m2	89.89	1797751.86
11.7	Providing and applying three coats of white wash on old / new plastered surface for walls and ceiling and asbestos sheet using step ladder/ scaffolding upto 3mtr. height, scrapping and cleaning the surface by sand paper and brooming, adding Robbin blue as required, adding adhesives for bonding, cleaning the floor, filling all cracks, holes etc. with plaster of paris, covering the floor, windows, instruments during painting etc. complete.	50.00	m2	19.78	988.88
11.8	Providing and applying French polishing in two or more coats for required finish on previously polished wood including knotting, preparing the surface, scaffolding etc. complete as directed.	100.00	m2	240.48	24048.37
11.9	Providing and applying Melamine polish of required finish to wood work by spray machine including knotting and preparing the surface by scrapping, applying French polishing, scaffolding if required etc. complete as directed.	600.00	m2	968.00	580800.00

11.10	<p>Providing / applying interior wall finish luster of Asian/ Berger/ Nerolac/ Dulex Paints or equivalent make on internal wall surface as detailed below scrapping the surface with emery paper and wipe clean. Applying Asian/ Berger/ Nerolac/ Dulex Paints or equivalent wall primer with mineral turpentine with brush 8 to 10% and oil 15 to 20% with roller and allowing to dry for a period 6 to 8 hours. Applying Asian/ Berger/ Nerolac/ Dulex Paints or equivalent Acrylic wall putty with appropriate proportion of water allowing to dry for period 4 to 6 hours. Scrapping with emery paper 180 and wipe clean.</p> <p>Applying Asian/ Berger/ Nerolac/ Dulex Paints or equivalent wall primer with brush with mineral turpentine 8 to 10% and oil 15 to 20% with roller scrapping emery paper 320 and wipe clean, Applying Asian/ Berger/ Nerolac/ Dulex Paints or equivalent interior wall finish luster 1st coat with brush/ rubber/ sprary with mineral turpentine 7 to 9% and oil with roller 19 to 21% after 8 hours of activity and applying 2nd coat with of Asian/ Berger/ Nerolac/ Dulex Paints or equivalent interior wall finish lustre with mineral turpentine 7 to 9% with brush and oil with roller 19 to 21% after allowing dry for the period of 6 to 8 hours activity.</p>	170.00	m2	202.00	34340.00
11.11	<p>Providing and applying one coat of Berger Protectomastic self priming high build coating, solvent borne zinc rich primer, having thickness as per manufacturer specification including preparing the surface by thoroughly removing grease, oil and other containments preferebly by using Bison degreasing solvent, using mechanical tools along with manual chipping and wire brushing to remove loose rust, thoroughly dust down all surfaces, followed by one coat of Epilux – 4 High Build Epoxy finish having thickness as per manufacturer specification followed by two coats of acrylic polyurethane enamel paint of Bergerthane finish of Berger having thickness as per manufacturer specification including tools, taking all safety measures etc complete..</p>	500.00	m2	564.00	282000.00
11.12	<p>Providing and applying white cement based Birla make wall care putty of average thickness 1mm, over plaster/ concrete surface in proper line / level to prepare surface even and smooth for including preparing the wall surface for the application of wall care putty etc. complete as directed.</p>	20000.00	m2	100.15	2002979.92
11.13	<p>Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.</p>	1000.00	m2	136.09	136092.57
11.14	<p>Providing and applying 12 mm thick (average) premixed formulated one coat gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS: 2547 (Part - 1 & II) 1976, applied on hacked / uneven background such as bare brick/ block/ RCC work on walls & ceiling at all floors and locations, finished in smooth line and level etc. complete.</p>	85.00	m2	249.20	21181.77

11.15	Providing and applying one coat of acrylic primer and two coats of exterior acrylic paint of approved colour & shade of IITB approved manufacturer i.e. Berger, Asian, Killick Nixon, Goodlass, Nerolac, ICI, Decocem and as per manufacturer's specification on old or new plastered surface over concrete / brickwork, stonework as per manufacturer's specification including scaffolding and cleaning the surface thoroughly with coir brush, watering the surface etc. complete including covering the floor, window glass with plastic sheet etc. all complete as directed by Engineer In-charge.	50000.00	m2	110.12	5506188.35
11.16	Providing and applying two coat of synthetic enamel paint of IITB approved brand (Asian, Berger, ICI, Jenson & Nicholson, Goodlass Nerolac) and shade to tubelight and ceiling fans with the use of step ladder including scrapping cleaning etc. complete.	20.00	Nos	80.00	1600.00
11.17	Providing and applying acrylic synthetic plaster (Dura plaster) of IITB approved make manufacturer over existing cement plaster or concrete surface including removing existing paint/synthetic plaster to receive the acrylic synthetic plaster as per manufacturer specification Including all the necessary tools & plants,stepladder etc, complete all as directed by Engineer in charge.	5000.00	m2	423.00	2115000.00
11.18	Providing and applying lamination polish to woodwork including knotting, sanding the wood with a sandpaper, cleaning and preparing the surface smooth to receive lamination polish as per manufacturers specification, finishing the surface using buffing wheel Etc. All Complete.	20.00	m2	7,113.00	142260.00
11.19	Elastomeric coating shield be in suitable shades including cost of material, cleaning the external surfaces/plaster/Rcc Members by stiff brushes/by special mehods as directed by pressurised water jet, including scaffoding.P/A coating system as per approved scheme and type as per detailed specifications, including cutting demarcating grooves at any height with electrically operated cutter machine between sound & unsound plaster,cracks external wall, separation cracks and filling this cracks with polymer modified cementious mortar in layers not more than 20mm thick inlcuding cleaning the crack finishing to match the plaster. The entire system shall be guarnteed for water tightness and for colour fastening for five years. The contractor shall submit detailed scheme for coating which shall be got approved from conern engineer-in-charge. The system shall be manufactured and gurantedd by reputed & approved manufacturer.The system shall either have colour of its own or there shall be final coating of approved shade as intgral part of system (list of apporved brands for Elastomeric Coating:- BASF , Jotun)	5000.00	m2	278.00	1390000.00
					21763386.33
12	Building Repair				

12.1	Carefully removing internal or external plaster in patches or any length without damaging structure brickwork in the vicinity by using electric cutting tools including cutting a groove first to demarcate exact area of damage taken place stacking the debris with in 50 meter, cleaning the site etc. complete. including covering the furniture, floor, windows and partitions with plastic sheets while chipping including scaffolding. Note:- a) No extra payment shall be made for extra thickness removed. b) Proper tools to be used for removal of concrete and it should be seen by contractor no damage on the other side / near by area will be taken place and if required other portions are to be checked by the contractors with respect to the damage before commencement of the work. c) The area in vertical plane shall be measured.	60000.00	m2	25.68	1540930.17
12.2	Chipping the R.C.C surface and cleaning the rusted reinforcement and exposed surface by wire brush mechanical device or any other established method and applying rust removing solution of approved make and quality with cotton waste swab to reinforcement and allowing to dry the same for 24 hour, brushing of loose particles and applying first coat of rust preventive coating of polymer and cement slurry in 1:1.5 proportion with soft brush without adding water including applying another coat of rust preventing after 4 hours allowing air curing for 48 hours etc. Including scaffolding etc. Complete.	60000.00	m2	120.00	7200000.00
12.3	Providing and applying an effective bond coat of Polymer (SBR) approved by IITB and cement in the proportion of 1:1 by using brush in multiples coats as required to accommodate the whole thickness of polymer modified mortar wherever required including scaffolding wherever required on the surface of old concrete / repaired concrete Polymer (SBR) of approved manufacturer should have the following properties: · Suspended solid particles should not be less than 40% · Specific gravity should not be more than 1.01 · PH should not be less than 8.5 Note: The actual consumption of polymer shall be measured for payment on weight basis. Challans of authorized dealer will be verified.	60000.00	Kg	417.00	25020000.00
12.4	Providing and Placing in position readymix polymer mortar manufacture by Dr. Fixit, Sunanda, Roff, MC Bouchmey, Chembond and adding water in the proportion of 1:0.14 (polymer mortar : water) in prepared grooves / cracks of the concrete court in layers as directed including mixing the polymer mortar with water using forced action mixer mild curing with water for 3 days and finishing the surface in all respect including scaffolding etc. Complete. (Payment will be paid for the actual quantity of polymer mortar PX used on weight basis. Challans of authorised Dealer will be verified etc all complete as directed by Estate office).	825000.00	Kg	78.00	64350000.00
12.5	Providing internal cement plaster 12mm thick in single coats in cement mortar 1:4 without neeru finish to concrete or brick surfaces in all positions with the use of step ladder and curing complete	40000.00	m2	198.29	7931662.88

12.6	Providing sand face plaster externally using approved screened sand in all positions including base coat of 15mm thick in cement mortar 1:4 using water proofing compound per cement bag as per manufacturer specification and curing the same for not less than two days and keeping the surface of base coat rough to receive the sand faced treatment not to exceed 8mm thick in cement mortar 1:4 using water proofing compound per cement bag as per manufacturer specification as per manufacturer specification, finishing the surface by taking out grains and curing for 14 days, scaffolding etc. complete.	20000.00	m2	634.00	12680000.00
12.7	Providing internal cement plaster 20mm thick in a single coat in cement mortar 1:4 without neeru finish to concrete or brick surfaces in all positions with the use of step ladder and curing complete.	10000.00	m2	275.34	2753400.00
12.8	Providing temporary steel supports such as tubular steel props 50mm dia, as required for supporting system till the repaired work of the beam, column, slab, chajja, etc. work completed in all respects as directed and when required in any floor of any height inside and outside of the building and removing the supporting system as directed without damaging the structure.	1700.00	No	91.00	154700.00
12.9	Providing and applying HILTY HIT-HY injection in RCC including fixing various diameter reinforce bars including drilling hole as per manufacturer specifications, blowing out the hole and finishing etc. Complete as directed.	336.00	Nos	654.00	219744.00
12.10	Providing and laying super fluid micro concrete of approved manufacturer at any floor after reinforcement treatment coat including mixing with 10mm to 5mm size quartz aggregate in the ratio of 1 part Pidilite make roff crete to 0.75 part of quartz aggregate by weight providing marine plywood formwork in line and level, cleaning, curing etc. complete.	230000.00	KG	73.00	16790000.00
12.11	Providing and erecting at site steel tubular H – frame double scaffolding with bracings to all heights as directed by engineer in charge before commencement of work and removing the same after completion of all external work requiring double scaffolding.	4000.00	m2	144.00	576000.00
12.12	Providing and erecting at site bamboo double scaffolding wherever required to all height as directed by engineer incharge before commencement of work and removing the same after completion of all external work requiring scaffolding.	6550.00	m2	71.00	465050.00
12.13	Providing and erecting mat bamboo scaffolding wherever required to all height as directed by engineer incharge before commencement of work and removing the same after completion of all external work requiring scaffolding.	3050.00	m2	19.00	57950.00

12.14	Fixing temporary partition during execution of work at site made up of G.I sheets and G.I frame work supplied by Institute including transporting material from Estate store, removing the partition after completion of work and stacking the material at Estate store etc. completed as directed.	120.00	m2	267.00	32040.00
12.15	Providing and fixing heavy duty anchor fastners of size 6" & 12mm dia including drilling hole as per manufacturer specifications, blowing out the hole and finishing including scaffolding etc. Complete as directed.	20.00	Nos	133.00	2660.00
12.16	Providing and applying an effective bond coat of Epoxy bonding agent manufactured by M/s. Krishna conchem, Dr. Fixit , Roff , Chembond or M.C. Bouchmey and hardner in the proportion and mixing throughly base & hardner as per manufacture instruction (Base hardner) by using brush in multiples of coat as required to accommodate the whole thickness of PMM wherever required including double scaffolding upto any height wherever required on the surface of old concrete/required concrete. Note- The actual consumption of Epoxy bonding coat shall be measured for payment on weight basis . Challans of authorized dealer will be verified	100.00	Kg	1042.00	104200.00
12.17	Drilling straight and inclined holes upto 300mm depth and upto 20mm dia in concrete / masonry using electrically operated drilling machine and fixing nipple for grouting, including scaffolding, conducting water test.	120.00	Nos	31.00	3720.00
12.18	Grouting existing RCC structure as per following operations including scaffolding, sealing leak paths with lead wool, removing nipple, plugging the hole with neat cement paste by ram packing, cleaning etc. complete. 1) Add Sunflex powder 1.00 kg in one bag of cement of 50 kg with adequate water. 2) Using mechanical means of pressure grouting with the above mix. The pressure shall be 5-10 psi. 3) The grouting to be done into the cracks of ceiling , walls , columns, & beam if necessary. 4) After through grouting sealing the holes with cement slurry.	600.00	Kg	31.00	18600.00

12.19	<p>Providing and filling separation crack of 75mm width and 25mm deep with polymer modified cementitious mortar.</p> <p>a) Demarcating groove, removing plaster / concrete carefully, washing with potable water.</p> <p>b) Filling polymer modified cementitious mortar in layers of 20mm thick (applying bond coat at every layer) upto profile of concrete in vicinity (composition of mortar: cement 1Kg.: polymer (SBR) of approved manufacturer 15% by wt. of cement : 3Kg silica sand (grading IS 383, zone II, silt content = 0%) over a polymer + cement bond coat including applying making tape on both side of groove, cleaning, finishing to match the plaster in vicinity, double scaffolding disposing of debris anywhere in IITB campus, cleaning as directed etc. complete.</p> <p>c) Proportion</p> <p>d) Bond coat</p> <p>e) SBR polymer + cement in the ratio 1:1 by volume</p> <p>f) Polymer modified cementitious mortar</p> <p>g) SBR polymer 150ml.</p> <p>h) Cement 1 Kg.</p> <p>i) Silica sand 3.0 kg.</p> <p>(Note: - Demarcating groove, breaking Plaster / concrete shall be paid under respective items).</p>	500.00	Rmt	162.00	81000.00
12.20	<p>Grouting in any RCC structure with low viscosity Monomer manufactured by M/s. CICO, SIKKA, MC Bouchmey, Sunanda Chemicals, Roffee etc. or any other approved brand epoxy based product of similar properties, as per manufacture's specification by providing suitable arrangement for grouting at pressure 2 to 3 kg / sqm. for all lift and leads. The grouting is to be done after cement grouting is completed etc. as directed.</p>	20.00	Kg	823.00	16460.00
12.21	<p>Providing and erecting arrester/safety net in double layer mesh having first layer 4mm PP rope in 100mmx100mm and second layer with blue fish net with 18mm mesh supported by border rope and tie cord 12mm PP at terrace floor level (6th floor level) to prevent the debris from falling on ground during progress of work and keeping the same during the entire period.</p>	500.00	m2	74.00	37000.00
12.22	<p>Providing and erecting Mechanical lift for shifting material and lowering down debris on hire basis with steel tubular H – frame double scaffolding with bracings to all heights till completion of entire work as directed by engineer in charge and removing the same as per directions of Engineer In Charge after completion of work.</p>	3.00	Per month	40495.00	121485.00
12.23	<p>Providing and fixing Jute kantan (Tarat) screen to the scaffolding of external wall at 6th floor level removing the same after the work is over etc. complete</p>	250.00	m2	12.00	3000.00

12.24	Providing and making temporary suspended access platform (working platform) by using structural steel like ISMC, ISMA, cleats etc. centering and shuttering as directed by Consultant including necessary fabrication work, strutting, propping etc and removal of formwork at (6th floor level) heights of same after completion of all related work to avoid direct fall of debris wherever necessary and as directed by Engineer in charge. Platform will be used till completion of entire work including making gable in external wall at floor level and making good after completion of work. Mode of measurement : Projected plan area of platform from external wall of the bldg.	200.00	m2	987.00	197400.00
12.25	Cutting, demarcating grooves at any height with electrically operated cutter machine between sound and unsound plaster, cracks on external wall, separation cracks Including Scaffolding etc. complete.	500.00	Rmt	37.00	18500.00
12.26	Supporting the roof trusses using structural steel section as per direction including necessary welding, cutting, joining, transporting and removing the same after completion of repair work and depositing the material in Estate Office etc. completed as directed.	10.00	Per Job	2167.00	21670.00
12.27	Providing and erecting mat scaffolding using H-frame and bamboos wherever required upto 15m height as directed before commencement of work and removing the same after completion of all works requiring scaffolding.	1000.00	m2	329.00	329000.00
					140726172.05
13	Dismantling and Demolition				
13.1	Removing door shutters and window shutters of any size and type with fittings (if available) and taking out the same outside IIT Campus etc. complete. (Recovery of wood scrap will be done @ Rs. 25 per kg, aluminium scrap will be done @ Rs. 120 per kg and structural steel will be done @ Rs. 20 per kg from Item of work against actual weight if material taken outside campus)	790.00	Nos	248.11	196005.40
13.2	Removing teak wood or aluminium paneled / partly glazed or veneer / plywood partitions, any type of ceiling carefully without damaging the frame or panels and taking out the same outside IIT Campus etc. complete. (Recovery of wood scrap will be done @ Rs. 25 per kg, aluminium scrap will be done @ Rs. 120 per kg and structural steel will be done @ Rs. 20 per kg from Item of work against actual weight if material taken outside campus)	1770.00	m2	27.86	49313.21
13.3	Carefully removing the existing G.I. pipe 12mm to 50mm diameter from floor / walls / slab etc. without damaging the structures and taking out the same outside campus including scaffolding etc. completed as directed. (5% cost will be deducted from item of work for material taken outside IIT Campus)	7200.00	Rmt	72.98	525429.67
13.4	Carefully removing the existing C.I. / PVC / HDPE / C I drain pipes from floor / slab without damaging the structure and taking out the same out of IIT Campus including scaffolding etc. completed as directed.	3700.00	Rmt	94.00	347800.00

13.5	Removing urinal pans or wash hand basins with brackets including disconnecting the sanitary and water supply connections, removing the same carefully and stacking the serviceable materials as and where directed including throwing the unserviceable materials out side the campus etc. complete.	475.00	Nos	89.00	42275.00
13.6	Removing w.c. pans including disconnecting the sanitary and water supply connections, removing and breaking flooring and bed concrete around pans and removing pan carefully and disposing the debris outside the campus etc. complete.	400.00	Nos	63.57	25429.93
13.7	Dismantling plain cement concrete work including breaking concrete by chiselling, wedging etc., and stacking the debris upto a distance of 50 metres or spreading as directed.	775.00	m3	705.29	546595.96
13.8	Dismantling burnt brick masonry (in cement mortar) with plaster including sorting out serviceable bricks and lowering down debris, stacking the same and debris separately upto a distance of 50 metres or spreading the debris as directed.	1130.00	m3	966.23	1091844.76
13.9	Pulling down stone masonry in cement mortar with plaster / pointing without dust nuisance including sorting out the stone chips and debris separately and stacking upto distance of 50 metres or spreading the debris as directed.	830.00	m3	543.57	451161.19
13.10	Removing galvanised iron or asbestos cement sheet roof covering and taking out the same outside IIT Campus, scaffolding etc. complete. (Recovery of scrap will be done @ Rs. 5 per kg from Item of work against actual weight if material taken outside campus)	1300.00	m2	80.37	104482.86
13.11	Disposing debris, loose stones, boulders, concrete pieces broken etc. collected and stacked as directed including loading in trucks, transporting out of IIT Campus including obtaining approval from Government/ private land owners for disposing off on to their approved location. The contractor will be solely responsible for disposing debris out of campus and the debris are to be removed from site within 72 hours from stacking (30% voids will be deducted from actual measurement for debris, loose stones, boulders, concrete pieces).	4150.00	m3	688.00	2855200.00
13.12	Removing excavated earth or debris including loading in trucks and conveying to approved dumping point in IITB campus unloading spreading etc. complete. 30% voids will be deducted in case of truck measurement.	1235.00	m3	181.00	223535.00

13.13	Dismantling Reinforced cement concrete work including breaking concrete by chiselling, wedging including scaffolding, covering area with jute kantan to avoid spreading of dust etc., stacking the debris upto a distance of 50 metres as directed.	5350.00	m3	1667.68	8922080.27
13.14	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 meters lead etc. completed as directed.	13600.00	kg	2.75	37422.59
13.15	Dismantling existing kitchen platform made of marble top and kadappa support carefully and lowering down the debris at ground level and stacking up to 50 meters beyond the building area for tacking out the same all complete as directed. (size approximately 3.5mt X 0.6 mt)	4.00	Job	1720.00	6880.00
13.16	Removing kitchen platform and above/below service platform shutter of any size and type with frame including existing SS trolley ,and stacking the same and depositing to hillside maintenance unit as directed by Engineer in charge including lead and lift from any floor etc, complete.	15.00	Per Job	2452.00	36780.00
13.17	Dismantling existing kitchen platform made of kadappa/concrete slab top and kadappa/concrete support carefully and lowering down the debris at ground level and stacking up to 50 meters beyond the building area or spreading/leveling in low laying area as directed by Engineer Incharge. as directed.etc, complete. (size approximately 5.0 mt X 0.6 mt)	30.00	Nos	3240.00	97200.00
13.18	Carefully dismantling R.C.C. slab (including existing china mosaic waterproofing with IPS and brickbat coba), beam, columns, lintel, chajja work without damaging structure, brickwork in vicinity including breaking concrete by using electrically operated breaker machine, chiselling, wedging, etc. cutting the reinforcement, lowering down debris, stacking the serviceable materials and stacking the debris upto a distance of 50 metres or spreading as directed including scaffolding and covering the floor with plywood etc. all complete. (5% cost of the item will be recovered against the cost of dismantled material)	50.00	m3	1667.68	83383.93
13.19	Removing and refixing existing aluminium partition including any required modification all complete as directed by Engineer in charge.	50.00	m2	492.00	24600.00
					15667419.78
14	Sanitary				
14.1	Taking out old C.I. / PVC nahani trap with connecting pieces from floor carefully and taking out the same outside campus etc. complete.	650.00	Nos	161.00	104650.00

14.2	Providing and fixing white vitreous china pedestal type water closet (European type) with ISI marked solid plastic seat and lid, 10 liter low level white P.V.C. flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required etc. complete as directed.	340.00	Nos	3919.63	1332673.00
14.3	Providing and fixing coloured vitreous china pedestal type water closet (European type) with seat and lid, 10 liter low level coloured P.V.C. flushing cistern & C.P. flush bend with fittings & C.I. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required etc. complete as directed.	19.00	Nos	5999.31	113986.87
14.4	Providing and fixing White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot restswater closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required etc. completed as directed.	290.00	Nos	4006.19	1161794.85
14.5	Providing and fixing coloured Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot restswater closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level coloured P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required etc. completed as directed.	15.00	Nos	4272.53	64087.90
14.6	Providing and fixing white wall hung with cistern closet Parryware make of approved model with UF Soft close Seat & Cover wall hung fittings and other required fittings, cutting and making good walls and floors etc. complete as directed.	110.00	Nos	15619.00	1718090.00
14.7	Providing and fixing coloured wall hung with cistern closet Parryware make of approved model with UF Soft close Seat & Cover wall hung fittings and other required fittings, cutting and making good walls and floors etc. complete as directed.	16.00	Nos	19460.00	311360.00
14.8	Providing and fixing 10cm cast iron nahani trap with cast iron plug bend and piece of cast iron pipe upto plug bend etc. complete.	550.00	Nos	1792.00	985600.00
14.9	Providing and fixing in position best quality salt glazed stone ware gully trap with 150mm x 150mm square inlet and 100 mm n.b. outlet conforming to IS 651 including embedding the trap in M-15 (1:2:4) cement concrete, construction of brick masonry chamber 300mm x 300mm internal in 230mm thick brick masonry, plastering, finishing with neat cement floating coat, providing and fixing C. I. cover and frame weighing not less than 7 kg. etc including removing the old damaged gully trap, connecting all old and new inlets and out let pipes including running lines, jointing etc. all complete as directed.	230.00	Nos	1861.10	428052.40

14.10	Providing and fixing urinal sensor flush valve electrically or battery operated of Askon or equivalent make including making cut out in walls and concealed outlet pipe up to the urinal pot with all required fittings and fixtures etc. completed as directed.	125.00	Nos	11249.00	1406125.00
14.11	Providing and fixing white urinal parryware or equivalent make including necessary fittings such as L shaped hooks, spreader and flushing system and bottle trap of Jaquar, Click Clack Waste coupling of jaquar, connection pipe upto trap or pipe etc. complete as directed.	83.00	Nos	8440.00	700520.00
14.12	Providing and fixing 12mm thick frosted toughen glass for urinal partition including making edge molding and polishing, fixing the glass over D type stainless steel hooks of approved quality, making necessary holes in glass etc. completed as directed.	4.00	m2	8572.00	34288.00
14.13	Providing and fixing liquid soap dispenser (Model no.1135N) of Jaquar make with all require fittings and fixtures etc. completed as directed.	2.00	Nos	1357.00	2714.00
14.14	Providing and fixing liquid soap dispenser (Model no.1137N) of Jaquar make with all require fittings and fixtures etc. completed as directed.	2.00	Nos	2910.00	5820.00
14.15	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	240.00	Each	657.30	157752.73
14.16	Providing and fixing P.V.C. rain water pipes 150mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding, and maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete.	2100.00	Rmt	954.00	2003400.00
14.17	Providing and fixing P.V.C. rain water pipes 100mm outer dia. conforming to I.S. including proper rain water receiving recess with P.V.C. plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding, and maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete.	800.00	Rmt	859.00	687200.00

14.18	Carefully removing existing PVC rain water of various diameter from its position and refixing the same by replacing damaged fittings including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding etc. completed as directed.	1500.00	Rmt	282.00	423000.00
14.19	Disconnecting damaged overhead/terrace PVC water storage tank of any size from water supply line and removing from the roof of the building carefully with out damaging any structural members of the building by using chainpulley arrangement and depositing in Estate stores etc. complete.	10000.00	Per lit	1.00	10000.00
14.20	Providing hoisting and fixing in position ISI mark plastic storage water tank of BMC approved plastic overhead tank on roof of buildings at any height with all fitting, fixtures connecting the tank (in let and out let) with the existing water line, providing and fixing over flow pipe with mosquito proof brass coupling & mosquitoproof CI cover with locking arrangements approved by MCGB, using required fitting / fixtures as directed by Estate office.	180000.00	Per lit	10.00	1800000.00
14.21	Providing and laying 100mm dia. P.V.C. pipes conforming to I.S. in trenches including proper slope, filling the joints using rubber gasket with solvent cement etc. completed as directed.	138.00	Rmt	418.00	57684.00
14.22	Providing and laying 75mm dia. P.V.C. pipes conforming to I.S. in trenches including proper slope, filling the joints using rubber gasket with solvent cement etc. completed as directed.	118.00	Rmt	321.00	37878.00
14.23	Providing and laying 50mm dia. P.V.C. pipes conforming to I.S. in trenches including proper slope, filling the joints using rubber gasket with solvent cement etc. completed as directed.	58.00	Rmt	271.00	15718.00
14.24	Providing and laying 40mm dia. P.V.C. pipes conforming to I.S. in trenches including proper slope, filling the joints using rubber gasket with solvent cement etc. completed as directed.	68.00	Rmt	234.00	15912.00
14.25	Providing and fixing ISI approved 75mm dia. HDPE pipes manufactured by NOCIL / PIL of various diameters with wall thickness of 2.60 mm to 10.00mm for taking drain water with all required fittings such as bend, tee, elbows etc. with proper line and gradient connecting all joints with fusion butt welding by using hot plate, keeping hole in wall / pardi etc. filling the patches, with cement concrete 1:1½:3, clamping the pipes on wall / column etc. with the use of scaffolding, testing the line, providing inspection joints with and caps etc. all complete as directed.	460.00	Rmt	523.00	240580.00
14.26	Providing and fixing ISI 1729/2002 grade 75mm dia. cast iron waste water pipes with necessary fittings such as bends, tees, single junctions, double junctions, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2 and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holders / battens including necessary scaffolding complete or as directed.	1450.00	Rmt	1037.00	1503650.00

14.27	Providing and fixing ISI 1729/2002 grade 100mm dia. cast iron soil / waste water pipe with necessary fittings such as bends, tees, single junctions, double junctions, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2 and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holders / battens including necessary scaffolding complete or as directed.	1450.00	Rmt	1774.00	2572300.00
14.28	Providing and fixing 1/2" dia CP push tap of Jaquar with wall flange with stainless steel pipe upto urinal pot including necessary fittings and fixtures etc. complete as directed.	310.00	Nos	2309.00	715790.00
14.29	Providing and fixing oval shape white earthenware below counter wash hand basin of Parryware make including one cold water angle cock of Jaguar make (Continental series), Stainless steel waste coupling, PVC heavy duty flexible pipe up to trap etc. complete as directed.	80.00	Nos	4881.00	390480.00
14.30	Providing and fixing oval shape below counter colour glazed earthenware wash hand basin of Parryware make including one cold water angle cock of Jaguar make (Continental series), Stainless steel waste coupling, PVC heavy duty flexible pipe up to trap etc. complete as directed.	1.00	Nos	5944.00	5944.00
14.31	Providing & fixing colour table top wash hand basin including vertical pillar cock of jaguar, Stop Cock of jaguar, waste Coupling, chromium plated brass bottle trap, Connection Pipe upto trap or pipe, etc complete as directed.	21.00	Nos	9430.00	198030.00
14.32	Providing and fixing stainless steel sink having bowl size 610 x460x254mm of nirali make inside platform or on brackets including UPVC waste coupling pipe up to outlet pipe, steel waste coupling etc. complete as directed.	160.00	Each	10164.00	1626240.00
14.33	Providing and fixing stainless steel sink having bowl size 560 x410x254mm of nirali make inside platform or on brackets including UPVC waste coupling pipe upto outlet pipe, steel waste coupling etc. complete as directed.	15.00	Each	8398.00	125970.00
14.34	Providing and fixing stainless steel sink having bowl size 410 x355x165mm of nirali make inside platform or on brackets including UPVC waste coupling pipe upto outlet pipe, steel waste coupling etc. complete as directed.	9.00	Each	5294.00	47646.00
14.35	Providing and fixing white glazed earthenware corner wash hand basin of size 400 x 400 of parryware make including waste coupling, PVC pipe upto trap, testing etc. complete.	15.00	Each	2570.00	38550.00
14.36	Providing and fixing bottle trap 31mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 gms for Wash basin, urinal and sink and removing old fittings (if any) depositing it in Estate store.	105.00	Each	337.02	35387.22

14.37	Providing and fixing bottle trap 38 mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 263 gms for Wash basin, urinal and sink and removing old fittings (if any) depositing it in Estate store.	95.00	Each	350.32	33280.48
14.38	Providing and fixing 15.88 mm outer dia pipe stainless Steel pipe and fitting of grade AISI 304 as per JIS standard 3448 complete with press type fitting, fixing of the pipe with stainless steel clamps at 1.00m spacing including testing of joints complete as per direction of Engineer-in-charge.	60.00	Rmt	292.36	17541.84
14.39	Providing and fixing 22.22 mm outer dia pipe stainless Steel pipe and fitting of grade AISI 304 as per JIS standard 3448 complete with press type fitting, fixing of the pipe with stainless steel clamps at 1.00m spacing including testing of joints complete as per direction of Engineer-in-charge.	30.00	Rmt	448.98	13469.38
14.40	Providing and fixing 15 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	660.00	Rmt	163.90	108171.23
14.41	Providing and fixing 20 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	210.00	Rmt	206.32	43326.62
14.42	Providing and fixing 25 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	170.00	Rmt	247.88	42139.40
14.43	Providing and fixing 32 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	130.00	Rmt	331.40	43082.41

14.44	Providing and fixing 40 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	100.00	Rmt	441.99	44198.56
14.45	Providing and fixing 50 mm dia nominal bore Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.	80.00	Rmt	628.93	50314.12
14.46	Providing and fixing stainless steel cockroach trap of approved pattern, quality and make with all required fittings and fixtures etc. completed as directed.	240.00	Nos	437.00	104880.00
14.47	Providing and fixing 150 mm inner diameter ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL with wall thickness from 10mm to 14mm for drainage pipe line with all required fittings etc. with proper line and gradient connecting all joints with fusion butt welding by using suitable welding machine or hot plate etc, testing the line & joints with smoke test method as per manufacturer specification or as per direction of Engineer In-charge etc. all complete as directed.	570.00	Rmt	1773.00	1010610.00
14.48	Constructing chambers of internal clear dimensions 900mm x 900mm with 230mm thick brick masonry wall in cement mortar 1:6 over abed of 150mm thick cement concrete M-20 (1:1½:3) foundation with 150mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 12mm thick on internal, external and all exposed faces, finished with floating coat of neat cement including providing and fixing precast R.C.C. frame and cover of suitable size, medium duty (weight carrying capacity of 300 Kg/m ²), manufactured by KK Industries or equivalent as approved by Engineer Incharge and fixing with cement concrete coping M-20 (1:1½ :3) and plastering complete including necessary dewatering, if required etc. for chambers of depth upto 1000mm.	29.00	Nos	13505.00	391645.00
14.49	Constructing chambers of internal clear dimensions 900mm x 600mm with 230mm thick brick masonry wall in cement mortar 1:6 over abed of 150mm thick cement concrete M-20 (1:1½:3) foundation with 150mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 12mm thick on internal, external and all exposed faces, finished with floating coat of neat cement including providing and fixing precast R.C.C. frame and cover of suitable size, medium duty (weight carrying capacity of 300 Kg/m ²), manufactured by KK Industries or equivalent as approved by Engineer Incharge and fixing with cement concrete coping M-20 (1:1½ :3) and plastering complete including necessary dewatering, if required etc. for chambers of depth upto 1000mm.	43.00	Nos	11672.00	501896.00

14.50	Providing and constructing brick masonry inspection chamber 900mm x 450mm upto 900mm in depth including cement concrete in M-20 foundation, PCC 10 cm thick channels, brick masonry, plastering on inside and outside as required in cement mortar 1:6 and airtight heavy duty RCC cover with frame work fixed in cement concrete 1:2:4 etc all complete as directed bt Engineer In charge.	70.00	No.	10920.00	764400.00
14.51	Making connection / disconnection of G. I. Distribution branch with G. I. Main of following 25 to 40 mm nominal bore sizes by providing and fixing tee, including cutting and threading the pipe etc. Complete.	80.00	Nos	884.20	70736.03
14.52	Arresting leakage through HDPE pipe by welding/jointing the damaged member with required tools and tackles all complete as directed by Engineer-in-charge.	116.00	Job	163.00	18908.00
14.53	Providing and fixing white glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 55cm x 40cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe upto trap etc. completed as directed.	8.00	No	4019.00	32152.00
14.54	Providing and fixing colour glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 55cm x 40cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe and trap	4.00	No	4617.00	18468.00
14.55	Providing and fixing white glazed earthenware wash hand basin of approved brand (Hindware/Cera/ parryware) of 45 x 30 cm size including one cold water pillar tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including polyethylene waste water pipe upto trap etc. completed as directed.	4.00	No	3674.00	14696.00
14.56	Providing and fixing chromium plated towel rod 20 mm dia and 75 cm. in length including all accessories complete.	4.00	No	845.00	3380.00
14.57	Providing and fixing regular flush valve of Jaguar including making concealed arrangment by making cut out in walls including fixing 32mm dia galvanised iron / PVC heavy type flush pipe with fittings and clamps up to the WC and other required fittings and fixtures etc. completed as directed.	5.00	Nos	3379.00	16895.00
14.58	Providing and fixing hindware make white color Low level 10 liters capacity PVC Dual flushing cistern with all fittings as approved by IITB inlet G.I. pipe with stop tap, brass chromium plated waste coupling and providing and fixing 32mm or required heavy duty PVC outlet bend pipe from flushing cistern upto the pan, 12mm dia PVC connection to the tank etc. all complete. as directed.	10.00	No	2833.00	28330.00
14.59	Providing & fixing ISI approve heavy type Angle Cock (Cavier make Rienza series) including extension Pipe, C.P Double nippal etc.complete.	4.00	No	1512.00	6048.00

14.60	Providing and fixing ISI approve two way Wall mixture (cavier / Jaquar make) system with provision for only overhead shower complete with 115mm long bend pipe including fixtures etc. complete.	10.00	No	3968.00	39680.00
14.61	Providing and fixing ISI approve three in one Wall mixture (Jaquar make) system with provision for both hand shower and overhead shower complete with 115cm long bend pipe, including fixtures (Excluding hand shower)etc. complete.	2.00	No	4715.00	9430.00
14.62	Providing & fixing jaquar make telephonic hand shower 80mm round with 1.5m long jaquar make flexible chrome tube which connected to three way mixer including fixtures etc. complete.	2.00	No	2809.00	5618.00
14.63	Providing & fixing Cera make Platform top wash hand basin of size 602mm x 433mm including vertical pillar cock, Stop Cock, West Coupling, West Pipe, Connection Pipe, etc complete or as directed.	4.00	No	10505.00	42020.00
14.64	Providing and fixing stainless steel sink approved brand (nirali or equlant) Kitchen sink as per IS 13983 with CI brackets and stainless steel plug 40mm including painting of fittings and brackets, cutting, and making good the walls wherever required (kitchen sink nirali make with drain board of size 510x915mm bowl depth 200mm)	4.00	Nos.	11198.00	44792.00
14.65	Providing & fixing granite counter wash basin of size upto 3' x 1.5' for counter including coloured oval shape wash basin with Jaquar make Pillar tap, CP bottle trap, connector, angle cock complete including kaddpa supports, moulding, facia patti all complete as directed by Engineer incharge.	2.00	No	22415.00	44830.00
14.66	P/F ISI approved heavy type ½" dia CP Bib cock of Seiko made including socket, union nut etc. complete as directed	4.00	Nos.	506.00	2024.00
14.67	Providing and fixing hindware make white glazed earthenware pedstal wash hand basin of size 56cm x 43cm , pedstal height 68cm including one cold water contentail series 450mm long swan neck tap of jaquar , brackets, rubber plugs and brass chain, stop tap of jaquar and necessary pipe connection including jaquar make bottle trap etc. Complete as directed	2.00	No	10367.00	20734.00
14.68	Providing & fixing hindware make Platform top wash basin of size 63cm x 50cm including ,one cold water contentail series 450mm long swan neck tap of jaquar,Stop Cock, West Coupling, jaquar make bottle trap, Connection Pipe, etc complete or as directed.	2.00	No.	16335.00	32670.00
14.69	Providing & fixing ISI approve long swan neck pillar tap jaquar make including necessary fixtures etc.complete as directed	10.00	No	1875.00	18750.00
14.70	Providing & fixing ISI approve heavy type Kitchen sink cock with swinging casted spout (wall mounted) jaquar make including necessary fixtures etc.complete as directed	2.00	No	1650.00	3300.00
14.71	Providing and fixing PVC low/high level flushing cistern with all fittings as approved by IITB inlet G.I. pipe with stop tap, providing and fixing 32mm or required heavy duty PVC outlet bend pipe from flushing cistern upto the w.c. pan, 15mm dia PVC connection to the tank etc. Make Hindware/ CERA/ Slimline/ Hindustan/ Nycer etc . all complete. as directed.	70.00	No	1278.00	89460.00

14.72	Providing and fixing stainless steel jet spray of approved make including necessary pipe of required length socket/union etc, complete as directed by Engineer in charge. contractor will be allowed to take away old jet spray if available and for which 5% deduction will be made of schedule rate of this item. Etc. complete.	150.00	No	739.00	110850.00
14.73	Providing and fixing CON-CHR-347 KN sink cock of jaquar make including fitting fixture etc, complete as directed by Engineer in charge	30.00	No	1715.00	51450.00
14.74	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank with 'C' class pipe upto 6 meter of length or as required of any dia elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line and remaking to original connections after repair etc. complete.	10.00	Job	4584.00	45840.00
14.75	Providing and fixing Wall mounted closet STUDIO 20061 (41x36x52)cm along with white seat cover, anchor fastner, washer including removing the old pan and fixing the new with proper position etc all complete	5.00	No	11206.00	56030.00
14.76	Providing and fixing 2 in 1 jaquar wall mixer with provision with 115mm long bend pipe on upper side, connecting legs and wall flanges with all labour charges including removing existing wall mixture and depositing to Estate store etc complete	12.00	No	4223.00	50676.00
14.77	Providing and fixing Angular Stop Cock with Wall Flange for wash basin, kichen sink, etc. of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged stop cock and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled taps should be deposited in Estate store and take certificate of it)	12.00	No.	1,344.00	16128.00
14.78	Providing and fixing 2-way Bib Cock with Wall Flange for toilets, etc. of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged 2-way bib cock and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled taps should be deposited in Estate store and take certificate of it)	12.00	No.	2,264.00	27168.00
14.79	Providing and fixing Sink Cock with Swinging Spout for kitchen sink of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged sink cock and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled taps should be deposited in Estate store and take certificate of it)	6.00	No.	1,746.00	10476.00
14.80	Providing and fixing Overhead Shower 70 mm dia Round Shape Single Flow (ABS Body Chrome Plated with Gray Face Plate) with Rubit Cleaning System for bathroom of Essco make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged overhead shower and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled shower should be deposited in Estate store and take certificate of it)	6.00	No.	999.00	5994.00

14.81	Providing and fixing Easy Flex Tube in Chrome Finish with Nuts for shower jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Flex Tube and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled material should be deposited in Estate store and take certificate of it)	6.00	No.	1,056.00	6336.00
14.82	Providing and fixing Hand Shower Pack (Single flow 70mm fround shape hand shower with 1.5M long spirochrome flex hose & wall bracket of Essco make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged hand shower pack and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled material should be deposited in Estate store and take certificate of it)	6.00	No.	2,158.00	12948.00
14.83	Providing and fixing Bath Tub Spout With Button Attachment For Hand Shower With Wall Flange of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged bath tub spout and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled taps should be deposited in Estate store and take certificate of it)	3.00	No.	2,091.00	6273.00
14.84	Providing and fixing Single lever kit consisting of operating lever, wall flange & button of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Single lever kit and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	3.00	No.	2,321.00	6963.00
14.85	Providing and fixing Bottle Trap (with Internal Partition) 32mm Size with 300mm & 190mm Long Wall Connection Pipes & Wall Flange of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged Bottle trap and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	15.00	No.	2,468.00	37020.00
14.86	Providing and fixing Towel Rack 600mm Long with Lower Hangers, Stainless Steel of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged towel rack and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	6.00	No.	3,154.00	18924.00
14.87	Providing and fixing Premium Wall Bracket for Hand Shower, ø35mm & 100mm Long Round Shape of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged wall bracket and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	10.00	No.	681.00	6810.00

14.88	Providing and fixing Premium Soap Dish Holder of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged soap dish holder and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	10.00	No.	710.00	7100.00
14.89	Providing and fixing Cloth Liner Retractable (Stainless Steel) of jaquar make, as per existing model, heavy type including necessary fittings and fixtures, removing the old damaged cloth liner and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	3.00	No.	1,227.00	3681.00
14.90	Providing and fixing Concealed Flush tank with kit of parryware make, as per existing model, including necessary fittings and fixtures, removing the old flush tank and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	6.00	No.	4,677.00	28062.00
14.91	Removing the extended Gas vent C.I pipe above terraces of H2, H1 or IIB Buildings by removing & cutting the existing CI pipe above roof and closed the hole portion in roof by filling and packing it with Cement concrete 1:1.5:3 and refixing the old Cowl and existing pipe below roof slab with clamp including scaffolding, cement joint etc. complete as directed by site in charge.	20.00	Nos	173.00	3460.00
14.92	Providing and fixing ISI approved HDPE pipes manufactured by NOCIL / PIL of 50mm diameters with wall thickness of 2.60 mm to 10.00mm for taking drain water with all required fittings such as bend, tee, elbows etc. with proper line and gradient connecting all joints with fusion butt welding by using hot plate, keeping hole in wall / pardi etc. filling the patches, with cement concrete 1:1½:3, clamping the pipes on wall / column etc. with the use of scaffolding, testing the line, providing inspection joints with and caps etc. all complete as directed.	15.00	Rmt	518.00	7770.00
14.93	Providing and fixing wall mounted coloured western toilet of parryware make (Model no. Cardiff type , CO270) (Cascade commode system) including built in ceramic flushing cistern with all fixtures & fittings as per desired colours, item including removing existing damaged commode and disposing desired location all complete.	1.00	No	23400.00	23400.00
14.94	Providing and fixing wall mounted coloured western toilet of parryware make Verve type , CO269 including built in ceramic flushing cistern with all fixtures & fittings as per desired colours, item including removing existing damaged commode and disposing desired location all complete.	1.00	No	25267.00	25267.00
					25379376.04
15	Drainage				
15.1	Providing and fixing 560mm dia. Medium duty ductile iron manhole covers with frame for inspection chamber / manhole / gully trap and other required places manufactured by M/s.NECO or equivalent etc. all complete as directed.	13.00	Each	9973.00	129649.00

15.2	Providing and fixing 560mm dia. Heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places manufactured by M/s.NECO or equivalent etc. all complete as directed.	13.00	Each	11160.00	145080.00
15.3	Providing and fixing 600mm x 450mm rectangular medium duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	12.00	Each	13204.00	158448.00
15.4	Providing and fixing 600mm x 450mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	12.00	Each	18660.00	223920.00
15.5	Providing and fixing 900mm x 450mm rectangular medium duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	13.00	Each	13733.00	178529.00
15.6	Providing and fixing 900mm x 450mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	22.00	Each	16297.00	358534.00
15.7	Providing and fixing 900mm x 600mm rectangular medium duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	13.00	Each	17102.00	222326.00
15.8	Providing and fixing 900mm x 600mm rectangular heavy duty ductile iron manhole covers with frame for inspection chamber / manhole / gulley trap and other required places of NECO or equivalent make etc. all complete as directed.	12.00	Each	21052.00	252624.00
15.9	Providing and fixing precast RCC slab for drain cover and chamber cover of required size with M-25 grade concrete and reinforced with 10mm dia main steel bars (along shorter span) and 8mm. dia distribution bars (along longer span) at 100mm center to center including making steel form work, making temporary concrete platform for casting, compaction using surface vibrator, with two lifting hooks of 6mm dia / holes of 25mm dia finishing the surface with smooth cement finish curing, placing the precast slab in proper position etc. complete as directed.	32.00	m3	15380.00	492160.00
15.10	Providing and fixing 150mm dia. Salt glazed stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc.	130.00	Rmt	374.97	48746.25
15.11	Providing and fixing 100mm dia. Salt glazed stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc.	140.00	Rmt	247.94	34711.06

15.12	Providing lowering, and laying 150mm dia NP2 class R.C.C. spun pipes conforming to IS 458 of 300 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, jointing with hemp yarn and cement mortar 1:2 caulking the joints, finishing, curing etc. complete as directed.	120.00	Rmt	408.97	49075.87
15.13	Providing lowering, and laying 250mm dia NP2 class R.C.C. spun pipes conforming to IS 458 of 300 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, jointing with hemp yarn and cement mortar 1:2 caulking the joints, finishing, curing etc. complete as directed.	30.00	Rmt	552.68	16580.48
15.14	Providing lowering, and laying 300mm dia NP2 class R.C.C. spun pipes conforming to IS 458 of 300 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, jointing with hemp yarn and cement mortar 1:2 caulking the joints, finishing, curing etc. complete as directed.	70.00	Rmt	594.53	41617.15
15.15	Providing and fixing PE 100 & PN 6 having 225mm dia.(OD) ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL/ SUPREAM with wall thickness of 15mm for drainage pipe line with all required fittings etc. with proper line and gradient connecting all joints with fusion butt welding by using suitable welding machine or hot plate etc, testing the line & joints as per manufacturer specification or as per direction of Engineer In-charge etc. all complete as directed by Engineer In-charge.	10.00	Rmt	1793.00	17930.00
15.16	Providing and fixing PE 100 & PN 6 having 315mm dia.(OD) ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL/ SUPREAM with wall thickness of 15mm for drainage pipe line with all required fittings etc. with proper line and gradient connecting all joints with fusion butt welding by using suitable welding machine or hot plate etc, testing the line & joints as per manufacturer specification or as per direction of Engineer In-charge etc. all complete as directed by Engineer In-charge.	250.00	Rmt	3117.00	779250.00
15.17	Constructing conical manhole of size 900mm internal diameter at bottom and 525mm internal diameter at top up to depth 1500 mm with brick masonry circular wall 340mm thick in cement mortar 1:6 over a bed of 230mm thick cement concrete M-20 (1:1½:3) foundation square shape in plan with 150mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 20mm thick on internal, external and all exposed faces, finished with floating coat of neat cement, including necessary cement concrete M-20 (1:1½:3) for forming benching and channel, providing and fixing C.I. steps weighing not less than 3.50 Kg. fixing top one at 450mm from top level and remaining steps at 300mm vertical spacing in staggered fashion, including providing and fixing precast R.C.C. frame and cover of thickness 100/150mm, heavy duty, manufactured by K.K.Manholes or equivalent as approved by Engineer Incharge and fixing with cement concrete coping M-20 (1:1½ :3) and plastering complete including necessary dewatering etc.all complete as directed by Engineer In-charge.	30.00	No.	24210.00	726300.00

15.18	Extra over item No. 15.17 & 15.30 for depth beyond 1500mm in cylindrical shape of 900mm diameter with 340mm thick brick masonry wall in cement mortar 1:6 providing and fixing C.I. steps, plastering, finishing, dewatering etc. all as specified in item No. 8 above and as directed.	17.00	Rmt	10834.00	184178.00
15.19	Making necessary connection / disconnection to existing chamber / branch line / tank or as specified etc. with making necessary hole / cutting etc. & remaking the same etc.all competed as directed by Engineer In-charge.	45.00	No.	803.00	36135.00
15.20	Providing and fixing HDPE green Braided, Knotted construction safety net of 6mm thickness with mesh size of 3 – 4 inch square to ceiling in various class rooms, With inner lay mesh of Delux Mono Knitted net, Border / Tie cord rope shall be of 12 mm dia Polypropylene (PP) (rope of M/s. Kwality Nets Mfg Company or approved equivalent make of specified type) The safety net to be fixed as per the size required at site. The cost includes all supplying & fixing the materials with labourers , fixing hooks, scaffolding & ropes required for tying / fixing etc all complete as directed by Engineer-In-charge.	1000.00	m2	356.00	356000.00
15.21	Providing and fixing .P.V.C. water pipes 75mm dia. having wall thickness 3.2 to 3.8mm price or any approved brand conforming to I.S. including P.V.C. plug bend, necessary fittings such as offsets, shoe bend including fixing the pipe on wall using approved M.S brackets projecting 25mm to 40mm from face of wall & fixing with heavy duty PVC clips of approved quality & number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding, and maintenance for 3 years for any leakages or dislocation of pipes. All the PVC fittings and additional two piece socket clips shall be got approved from engineer in charge complete.	224.00	Rmt	753.00	168672.00
15.22	Providing & fixing 75mm dia. PVC temporary drain pipe line with fittings, necessary Coupling, bends, tees by supporting on scaffolding and maintaining the same from time to time till the new permanent drain pipes are laid and connected	430.00	Rmt	139.00	59770.00
15.23	Providing & fixing 100mm dia. PVC temporary drain pipe line with fittings, necessary Coupling, bends, tees by supporting on scaffolding and maintaining the same from time to time till the new permanent drain pipes are laid and connected.	290.00	Rmt	188.00	54520.00
15.24	Lowering down existing rain water trap as per required depth if possible including cutting and lowering down at a required depth by filling joints make it water tight including labours, tools and plants joint filling material, transport etc complete as directed by Engineer Incharge.	8.00	No	884.00	7072.00
15.25	Raising manhole cover and frame of any size slab to required level including dismantling existing slab and making good the damage as required (a) Rectangular manhole/ chamber of any size	25.00	No	1989.57	49739.14

15.26	Raising manhole cover and frame of any size slab to required level including dismantling existing slab and making good the damage as required (b) Circular manhole of any size	25.00	No	1631.00	40774.90
15.27	Providing lowering, and laying NP2 class R.C.C. spun pipes conforming to IS 458 of 450 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, providing and applying a coat of black bituminous paint to inside surface, water tight jointing with hemp yarn and cement mortar 1:1 caulking the joints, finishing, curing, testing the joints hydraulically etc. complete as directed.	10.00	Rmt	826.59	8265.88
15.28	Providing lowering, and laying NP2 class R.C.C. spun pipes conforming to IS 458 of 600 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, providing and applying a coat of black bituminous paint to inside surface, water tight jointing with hemp yarn and cement mortar 1:1 caulking the joints, finishing, curing, testing the joints hydraulically etc. complete as directed.	10.00	Rmt	1601.81	16018.11
15.29	Providing lowering, and laying NP2 class R.C.C. spun pipes conforming to IS 458 of 900 mm dia (n.b) with necessary collars, laid to correct grade, alignment and levels at all depth including cutting to required length, providing and applying a coat of black bituminous paint to inside surface, water tight jointing with hemp yarn and cement mortar 1:1 caulking the joints, finishing, curing, testing the joints hydraulically etc. complete as directed.	10.00	Rmt	2280.38	22803.82
15.30	Constructing conical manhole of size 1500mm internal diameter at bottom and 525mm internal diameter at top in conical shape upto 1500mm depth with brick masonry circular wall 340mm thick and below 1500mm to 1800mm depth in cylindrical shape wall with 450mm thick in cement mortar 1:6 over abed of 230mm thick cement concrete M-20 (1:1½:3) foundation square shape in plan with 150mm minimum offset beyond masonry wall plastering with cement mortar 1:4, 20mm thick on internal, external and all exposed faces, finished with floating coat of neat cement, including necessary cement concrete M-20 (1:1½ :3) for forming benching and channel, providing and fixing C.I. steps weighing not less than 3.50 Kg. fixing top one at 450mm from top level and remaining steps at 300mm vertical spacing in staggered fashion, including providing and fixing precast R.C.C. frame and cover of thickness 100/150mm, heavy duty, manufactured by K.K.Manholes or equivalent as approved by Engineer Incharge and fixing with cement concrete coping M-20 (1:1½ : 3) and plastering complete including necessary dewatering etc.all complete as directed by Engineer In-charge. for Man holes of depth up to 1800mm.	10.00	No.	39118.00	391180.00

15.31	Providing and fixing 100mm(ID) dia. ISI approved HDPE pipes manufactured by ARHAM Engineering/ BERLIA /NOCIL / PIL with wall thickness of 6 mm to 8mm for taking sewage waste water with all required fittings such as bend, elbows etc. with proper line and gradient connecting all joints with fusion butt welding by using suitable welding machine or hot plate, testing the line & joint as per manufacturer specification etc. all complete as directed by Engineer In-charge.	50.00	Rmt	864.00	43200.00
					5313809.65
16	Watersupply				
16.1	Providing and laying in trenches 15 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	710.00	Rmt	183.67	130408.09
16.2	Providing and laying in trenches 20 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	660.00	Rmt	213.60	140974.47
16.3	Providing and laying in trenches 25 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	660.00	Rmt	236.01	155768.09
16.4	Providing and laying in trenches 32 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	360.00	Rmt	283.65	102114.14
16.5	Providing and laying in trenches 40 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	360.00	Rmt	345.16	124258.13
16.6	Providing and laying in trenches 50 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	630.00	Rmt	392.91	247535.99

16.7	Providing and laying in trenches 65 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	120.00	Rmt	517.89	62146.26
16.8	Providing and laying in trenches 80 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipe having weight as per IS specification with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees, reducers, enlargers, plugs, etc. including providing and applying two coats of oil paint with one coat of primer including trenching and refilling etc. complete or as directed.	120.00	Rmt	660.74	79289.11
16.9	Providing and laying 15 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	2300.00	Rmt	213.71	491538.38
16.10	Providing and laying 20 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	2250.00	Rmt	256.99	578235.77
16.11	Providing and laying 25 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	1050.00	Rmt	284.17	298374.64
16.12	Providing and laying 32 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	700.00	Rmt	353.53	247471.78

16.13	Providing and laying 40 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	650.00	Rmt	451.90	293736.95
16.14	Providing and laying 50 mm dia nominal bore I.S.I. approved 'C class galvanized iron pipes having weight as per IS specification to walls, ceilings, floors etc. with screwed sockets, back nuts, elbows, tees, reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls / slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding etc. or as directed etc. complete.	600.00	Rmt	541.62	324971.17
16.15	Providing and fixing 20mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	305.00	Nos	454.65	138669.67
16.16	Providing and fixing 25mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	251.00	Nos	490.94	123226.49
16.17	Providing and fixing 32mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	197.00	Nos	574.12	113102.15
16.18	Providing and fixing 40mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	91.00	Nos	670.37	61003.98
16.19	Providing and fixing 50mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	61.00	Nos	859.78	52446.54

16.20	Providing and fixing 65mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	21.00	Nos	1475.35	30982.33
16.21	Providing and fixing 80mm dia. nominal bore gun metal gate valve with C.I. wheel of approved quality (screwed end) with required fittings and fixtures etc. completed as directed.	14.00	Nos	2200.76	30810.58
16.22	Providing and fixing 15 mm dia nominal bore brass stop cock of approved quality with required fittings and fixtures etc. completed as directed.	510.00	Nos	298.21	152087.74
16.23	Providing and fixing 20 mm dia nominal bore brass stop cock of approved quality with required fittings and fixtures etc. completed as directed.	210.00	Nos	321.49	67512.00
16.24	Providing and fixing 1/2" dia stop cocks and bib cocks of Jaquar (continental series) fittings concealed or open including necessary fittings and fixtures etc. complete as directed.	1850.00	Nos	1018.00	1883300.00
16.25	Providing and fixing 1/2" dia two way taps of Jaquar (continental series) fittings concealed or open including necessary fittings and fixtures etc. complete as directed.	550.00	Nos	1231.00	677050.00
16.26	Providing and fixing 1/2" dia angular stop cocks of Jaquar (continental series) fittings concealed or open including necessary fittings and fixtures etc. complete as directed.	750.00	Nos	943.00	707250.00
16.27	Providing and fixing 12mm dia heavy duty brass chromium plated three way taps with all fittings etc all complete as directed.	1000.00	Nos	1645.00	1645000.00
16.28	Providing and fixing G.I. Pipes 15 mm dia nominal bore complete with G.I. fittings and clamps, making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall etc. completed as directed.	1150.00	Rmt	327.56	376696.66
16.29	Providing and fixing G.I. Pipes 20 mm dia nominal bore complete with G.I. fittings and clamps, making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall etc. completed as directed.	270.00	Rmt	362.53	97883.46
16.30	Providing and fixing 450 x 300 x 150 mm white glazed earthenware sink including waste coupling, PVC pipe upto trap, testing etc. complete.	14.00	Nos	6192.00	86688.00

16.31	Providing and fixing 600 x 400x 200 mm white glazed earthenware sink including waste coupling, PVC pipe upto trap, testing etc. complete.	210.00	Nos	9504.00	1995840.00
16.32	Providing and fixing 100mm dia. chromium plated brass shower rose of approved quality to 15mm dia supply pipe including necessary bend and socket complete.	406.00	Nos	82.15	33352.31
16.33	Providing and fixing 150mm dia. chromium plated brass shower rose of approved quality to 15mm dia supply pipe including necessary bend and socket complete.	52.00	Nos	98.49	5121.30
16.34	Providing and fixing 450 mm long towel rail PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour etc. completed as directed.	2.00	Nos	447.37	894.75
16.35	Providing and fixing 600 mm long towel rail PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour etc. completed as directed.	410.00	Nos	484.64	198700.88
16.36	Providing and fixing C.P brass toilet roll holder of approved make including necessary socket/ union etc. complete as directed.	300.00	Nos	441.81	132544.07
16.37	Providing and fixing stealth faucet hand shower with flexible tube with chrome finish and wall hook of approved Jaquar make including necessary socket/ union etc. complete as directed.	674.00	Nos	1300.00	876200.00
16.38	Providing and fixing gun metal pressure reducing valve I.S.I. approved heavy type including removing existing pressure reducing valve , with all required fittings etc. complete as directed a)25 mm dia	36.00	nos	4783.00	172188.00
16.39	Providing and fixing gun metal pressure reducing valve I.S.I. approved heavy type including removing existing pressure reducing valve , with all required fittings etc. complete as directed b) 32mm dia	36.00	nos	5557.00	200052.00

16.40	Connection of pipe line which is newly laid to old pipe line in wall with 4" to 5" barrel piece, union, elbow & 14" barel piece etc. required fittings and fixtures including making hole carefully in wall without disturbing existing pipe line, p/f new line of existing dia remaking good the demolished portion from outside to restore the same in original condition neatly, painting to pipe etc. complete. (extra pipe line will be paid in respective item) a) 15mm dia	112.00	Per job	711.00	79632.00
16.41	Connection of pipe line which is newly laid to old pipe line in wall with 4" to 5" barrel piece, union, elbow & 14" barel piece etc. required fittings and fixtures including making hole carefully in wall without disturbing existing pipe line, p/f new line of existing dia remaking good the demolished portion from outside to restore the same in original condition neatly, painting to pipe etc. complete. (extra pipe line will be paid in respective item) b) 20mm dia	112.00	per job	930.00	104160.00
16.42	Providing and laying 100mm dia in trenches centrifugally cast (spun) Iron pipes, water quality conforming to I.S. 1536 specification including lowering down in trenches, connecting with existing and new lines, pumps etc. including cutting to length as per requirement, placing in position to correct line and alignment for jointing, testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq.cm after making necessary joints etc. complete. (joints will be paid separately).	100.00	Rmt	1236.24	123624.10
16.43	Providing and laying 150mm dia in trenches centrifugally cast (spun) Iron pipes, water quality conforming to I.S. 1536 specification including lowering down in trenches, connecting with existing and new lines, pumps etc. including cutting to length as per requirement, placing in position to correct line and alignment for jointing, testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq.cm after making necessary joints etc. complete. (joints will be paid separately).	100.00	Rmt	1859.21	185920.56
16.44	Providing and laying 200mm dia in trenches centrifugally cast (spun) Iron pipes, water quality conforming to I.S. 1536 specification including lowering down in trenches, connecting with existing and new lines, pumps etc. including cutting to length as per requirement, placing in position to correct line and alignment for jointing, testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq.cm after making necessary joints etc. complete. (joints will be paid separately).	100.00	Rmt	3153.58	315357.55

16.45	Providing and laying 250mm dia in trenches centrifugally cast (spun) Iron pipes, water quality conforming to I.S. 1536 specification including lowering down in trenches, connecting with existing and new lines, pumps etc. including cutting to length as per requirement, placing in position to correct line and alignment for jointing, testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq.cm after making necessary joints etc. complete. (joints will be paid separately).	100.00	Rmt	4117.92	411791.80
16.46	Providing and laying 300mm dia in trenches centrifugally cast (spun) Iron pipes, water quality conforming to I.S. 1536 specification including lowering down in trenches, connecting with existing and new lines, pumps etc. including cutting to length as per requirement, placing in position to correct line and alignment for jointing, testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq.cm after making necessary joints etc. complete. (joints will be paid separately).	100.00	Rmt	5551.02	555101.75
16.47	Providing and laying flanged C.I. standard specials such as tees, bends, collars, tapers, caps etc., suitable for flanged jointing as per IS : 1538 : Up to 300 mm dia	10.00	quintal	7662.40	76624.01
16.48	Providing and making lead caulked joints to cast iron pipes and specials including cost of pig lead, spurn yarn, fuel, labour, lead pouring, caulking etc complete including testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq. cm. (100 mm dia pipe joints with not less than 2.20 Kg. lead per joint.)	10.00	No	257.57	2575.67
16.49	Providing and making lead caulked joints to cast iron pipes and specials including cost of pig lead, spurn yarn, fuel, labour, lead pouring, caulking etc complete including testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq. cm. (150 mm dia pipe joints with not less than 2.20 Kg. lead per joint.)	10.00	No	386.61	3866.08

16.50	Providing and making lead caulked joints to cast iron pipes and specials including cost of pig lead, spurn yarn, fuel, labour, lead pouring, caulking etc complete including testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq. cm. (200 mm dia pipe joints with not less than 2.20 Kg. lead per joint.)	10.00	No	513.07	5130.70
16.51	Providing and making lead caulked joints to cast iron pipes and specials including cost of pig lead, spurn yarn, fuel, labour, lead pouring, caulking etc complete including testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq. cm. (250 mm dia pipe joints with not less than 2.20 Kg. lead per joint.)	10.00	No	641.14	6411.37
16.52	Providing and making lead caulked joints to cast iron pipes and specials including cost of pig lead, spurn yarn, fuel, labour, lead pouring, caulking etc complete including testing the pipes and joints hydraulically with a pressure upto 10 kg. / sq. cm. (300 mm dia pipe joints with not less than 2.20 Kg. lead per joint.)	10.00	No	771.90	7718.98
16.53	Providing flanged joints to double flanged C.I./ D.I. pipes and specials, including testing of joints : 80 mm diameter pipe	10.00	No	137.07	1370.67
16.54	Providing and laying S&S C.I. standard specials such as tees, bends, collars, tapers, caps etc. (Heavy class : Up to 300 mm dia	10.00	quintal	5132.19	51321.92

16.55	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 150 mm dia Ductile Iron Class K-9 pipes	50.00	Rmt	1649.10	82455.24
16.56	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 200 mm dia Ductile Iron Class K-9 pipes	50.00	Rmt	2268.80	113440.09
16.57	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 250 mm dia Ductile Iron Class K-9 pipes	50.00	Rmt	3158.62	157931.01
16.58	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 300 mm dia Ductile Iron Class K-9 pipes	50.00	Rmt	3928.97	196448.53
16.59	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 : 100 mm dia Ductile Iron Double Flanged	10.00	Rmt	1579.28	15792.81

16.60	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 : 150 mm dia Ductile Iron Double Flanged	10.00	Rmt	2369.98	23699.83
16.61	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 : 200 mm dia Ductile Iron Double Flanged	10.00	Rmt	2987.39	29873.87
16.62	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 : 250 mm dia Ductile Iron Double Flanged	10.00	Rmt	4241.28	42412.84
16.63	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS : 8329 : 300 mm dia Ductile Iron Double Flanged	10.00	Rmt	5448.35	54483.46
16.64	Providing and laying temporary loop connection in H1 type building to main water supply inlet and outlet of water tank using 'C' class GI pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line including scaffolding if required and remaking to original connections after repair etc. complete.	5.00	Job	4986.00	24930.00

16.65	Providing and laying temporary loop connection in type IIB type building to main water supply inlet and outlet of water tank using 'C' class GI pipes of any dia. With all fittings like elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line including scaffolding if required and remaking to original connections after repair etc. complete.	5.00	Job	5073.00	25365.00
16.66	Providing and laying temporary loop connection to main water supply inlet and outlet of water tank with CPVC pipe of any dia elbows, tees, reducers, plugs, clamps etc. including other connections and commissioning the water supply line including scaffolding if required and remaking to original connections after repair etc. complete.	5.00	nos	3230.00	16150.00
					15849015.77
17	Aluminium Work				
17.1	Providing, making and fixing fully glazed aluminium double glass partition using 15micron/ powder coated anodized aluminium section of size 100x37x1.5mm thick (1.90Kg/Rmt), P/F 5mm thick clear plain glass in two layer for top and bottom section and 5mm thick writable glass in two layers for middle section of the partition with all required fittings such as rubber gasket, silica gel, silicon selent, glazing clips, screws and other required fittings etc. completed as directed. (all alu. fittings should 15 micron anodized or powder coated.)	152.00	m2	8292.00	1260384.00
17.2	Providing and fixing 300mm long heavy duty brass oxidized aldrops with require fittings and fixtures etc. complete.	282.00	Nos	571.00	161022.00
17.3	Providing and fixing 300mm long stainless steel heavy duty aldrops with require fittings and fixtures etc. complete.	170.00	Nos	479.00	81430.00
17.4	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with float glass panes of 5 mm thickness including EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge .	11.00	m2	1151.05	12661.60
17.5	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with float glass panes of 8 mm thickness including EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of Engineer-in-charge .	11.00	m2	1322.98	14552.73
17.6	Providing and fixing 3mm thick plain aluminium composite sheet in partition, paneling and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	18.00	m2	844.00	15192.00
17.7	Providing and fixing 4mm thick both side designer aluminium composite sheet in partition, paneling and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	50.00	m2	1253.00	62650.00
17.8	Providing and fixing 4mm thick both side plain aluminium composite sheet in partition, paneling and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	60.00	m2	1080.00	64800.00

17.9	Providing and fixing 6mm thick transparent acrylic sheet in partition, paneling and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	40.00	m2	781.00	31240.00
17.10	Providing and fixing 6mm thick opaque acrylic sheet in partition, paneling and any other work with necessary fittings and fixtures etc. complete as per the directions of Engineer-in-charge .	25.00	m2	988.00	24700.00
17.11	Providing and fixing PVC gasket/ rubber lining with necessary fittings and fixtures etc. completed as directed.	450.00	Rmt	25.00	11250.00
17.12	Providing and fixing stainless steel (SS 304 grade) plate with necessary stainless steel screws etc. complete as directed.	12.00	kg	399.00	4788.00
17.13	Providing and fixing fly proof stainless steel mesh of approved quality to windows, grills, doors and any other location using teak wood or aluminium anodised section of require size with necessary fittings and fixtures etc. complete as directed.	760.00	m2	1540.41	1170714.82
17.14	Providing and fixing 300mm long stainless steel handles to door of approved quality and design with necessary fittings and fixtures etc. completed as directed.	72.00	Set	626.00	45072.00
17.15	Providing and fixing 450mm long stainless steel handles to door of approved quality and design with necessary fittings and fixtures etc. completed as directed.	28.00	Set	741.00	20748.00
17.16	Providing and fixing without anodising or powder coating aluminium section for door frame, windows, partitions and any other require work etc. of required size including fixing with required fittings such as screws and other required fittings including fixing in proper alignment, rectifying all damaged, P/F wood inside frame for fixing hinges etc. completed as directed.	40.00	Kg	437.00	17480.00
17.17	Providing and fixing 15 micron anodized/ powder coated aluminium section for door frame, windows, partitions and any other require work etc. of required size including fixing with required fittings such as screws and other required fittings including fixing in proper alignment, rectifying all damaged, P/F wood inside frame for fixing hinges etc. completed as directed.	450.00	Kg	495.00	222750.00
17.18	Silicone sealants around window frames / window frame joints and drill holes for water outlet when the rain water on the glass fall into the channel and overflows (wherever required) including scaffolding etc all complete as directed by Engineer In-charge.	1400.00	Rmt	70.00	98000.00
17.19	Extra over for making glass toughened of any thickness including transport etc. completed as directed.	101.00	m2	1399.00	141299.00
17.20	Extra over for edge polishing to glass of any thickness including transport etc. completed as directed.	151.00	Rmt	52.00	7852.00

17.21	Providing and fixing in position two track aluminium sliding windows using drain bottom section of size 61 mm x 45 mm x 1.3 mm thick(1.055kg/Rmt) for bottom, sections of size 61 mm x 31mm x 1.3 mm thick(0.659Kg/Rmt) for sides and top. The shutter should be of bearing bottom of size 40 mm x18 mm x 1.25 mm thick(0.417Kg/Rmt) , top member of size 40 mm x 18 mm x 1.20 mm thick(0.475Kg/Rmt), Interlocking section size of 43 mm x 27 mm x 1.30 mm thick(0.558Kg/Rmt) and handle section of size 43mm x 18 mm x 1.30 mm thick(0.424Kg/Rmt) including providing and fixing 5mm thk. glass in the shutter using rubber gasket, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	270.00	m2	5399.00	1457730.00
17.22	Providing and fixing in position three track aluminium sliding windows using drain bottom section of size 92 mm x 45 mm x 1.05 mm (1.659kg/mtr) thick for bottom, sections of size 92 mm x 31mm x 1.3 mm (0.933kg/mtr) thick for sides and top. The shutter comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing 5mm thk. glass in the shutter using rubber gasket, approved quality minimum two nos. PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	400.00	m2	5895.00	2358000.00
17.23	Supplying, fabricating and fixing in position partly openable and partly fixed aluminium window using aluminium sections 42 x 30 x 1.5mm (not less than 0.526 kg/mtr) size aluminum single border outer frame of window shutter, 42 x 37 x 1.5mm (not less than 0.724 kg/mtr) size aluminum Z section for window shutter, 28 x 14.5 x 1.5mm size (not less than 0.286 kg/mtr), aluminum clip for window shutter, 45 x 45 x 1.5mm size (not less than 0.764 kg/mtr) Z aluminum center patti for mullion, 37mm x 37mm (not less than 0.820 kg/mtr) angles 2mm thick, 5mm thick plain or frosted glasses with rubber gasket, 3 Nos. S.S. hinges 75mm size (heavy) on each window shutter, aluminum tower bolt 100mm size 1 Nos on each leaf, aluminum stay 200mm to 250mm long 1 No per leaf, aluminum handle 1 Nos. per leaf, provision for fixing AC with teak wood members inside box, (if required) including fixing the window shutter on the aluminium single side partition section for outer frame and intermediate section of size 63x38x1.47mm thick (not less than 0.781 kg/mtr)etc. complete.(all aluminium sections should be 15 micron anodized / powder coated section)	130.00	m2	7565.00	983450.00

17.24	Providing and fixing in position shutter in sliding window using aluminium section for bottom and top member of size 40 mm x 18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing 304 grade stainless steel mosquito proof mesh in the shutter using approved quality minimum two nos.PVC rollers, necessary locks, handles and other required fittings, making shutter removable as and when require etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	230.00	m2	2818.00	648140.00
17.25	Providing, making and fixing partly glazed partly opaque aluminium partition using 63mm x 38mm x 1.65mm (not less than 0.942kg/mtr)15 micron / powder coated anodized aluminium single groove partition section and 63mm x 38mm x 1.53mm (not less than 0.942kg/mtr) 15 micron / powder coated anodized aluminium double groove partition section for frame and ½” (12mm) thick both side decorative prelaminate three layer flat pressed teakwood particle board (phenol Bonded) of BWP type exterior grade for opaque panels and 5mm thick clear plate glass fixed with glazing clips, rubber gasket etc. complete.	220.00	m2	3991.00	878020.00
17.26	Providing, making and fixing partly glazed partly opaque aluminium partition using 63mm x 38mm x 1.65mm (not less than 0.942kg/mtr)15 micron / powder coated anodized aluminium single groove partition section and 63mm x 38mm x 1.53mm (not less than 0.942kg/mtr) 15 micron / powder coated anodized aluminium double groove partition section for frame and 4mm thick both side colour and designer aluminium composite sheet of approved make of approved colour up to 1200mm height or as per requirement and 5mm thick clear plate glass fixed with glazing clips, rubber gasket etc. complete.	520.00	m2	3909.00	2032680.00
17.27	Providing, making and fixing fully opaque aluminium partition using 63mm x 38mm x 1.65mm (not less than 0.942kg/mtr)15 micron / powder coated anodized aluminium single groove partition section and 63mm x 38mm x 1.53mm (not less than 0.942kg/mtr) 15 micron / powder coated anodized aluminium double groove partition section for frame, providing and fixing 4mm thick both side colour and designer aluminium composite sheet of approved make of approved colour fixed with glazing clips, rubber gasket etc. complete.	190.00	m2	3937.00	748030.00
17.28	Providing, making and fixing fully opaque aluminium partition using 63mm x 38mm x 1.65mm (not less than 0.942kg/mtr)15 micron / powder coated anodized aluminium single groove partition section and 63mm x 38mm x 1.53mm (not less than 0.942kg/mtr) 15 micron / powder coated anodized aluminium double groove partition section for frame, providing and fixing ½” (12mm) thick both side decorative prelaminate three layer flat pressed teakwood particle board (phenol Bonded) of BWP type exterior grade fixed with glazing clips etc. complete.	61.00	m2	3757.00	229177.00

17.29	Supplying, fabricating and fixing in position fully glazed double leaf aluminum anodized openable door shutter using aluminum standard door section 80mm x 40mm (not less than 1.055 kg/mtr) for all verticals, top & bottom members, providing and fixing 5mm thick clear/ bajri glass, glazing clips, rubber gasket including heavy duty hinges, 1' long decorative stainless steel handles 2 nos. for each shutter, lock, vertical aluminium section at side etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated and fittings should be approved before installation)	121.00	m2	4395.00	531795.00
17.30	Providing, fabricating and fixing in position partly opaque and partly glazed aluminum anodized openable door in single or double leaf shutter using aluminum standard door section 80mm x 40mm (not less than 1.139kg/mtr) for verticals and middle, 100mm x 40mm (not less than 1.60kg/mtr) for top & bottom members, 12mm thick both side decorative prelaminated particle board (Novapan) of approved colour up to 1200mm height and 5mm thick clear/ bajri glass above opaque panels, glazing clips, rubber gasket including using 3 nos stainless steel hinges 4" long for each shutter, 9" long stainless steel handles 2 nos. for each shutter, lock, stainless steel tower bolt 8" long 1 no for each shutter and other required fittings etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated)	66.00	m2	5604.00	369864.00
17.31	Providing, fabricating and fixing in position partly opaque and partly glazed aluminum anodized openable door in single or double leaf shutter using aluminum standard door section 80mm x 40mm (not less than 1.139kg/mtr) for verticals and middle, 100mm x 40mm (not less than 1.60kg/mtr) for top & bottom members, 4mm thick both side colour and designer aluminium composite sheet up to 1200mm height or as per plan and 5mm thick clear/ bajri glass above opaque panels, glazing clips, rubber gasket including using 3 nos stainless steel hinges 4" long for each shutter, 9" long stainless steel handles 2 nos. for each shutter, lock, stainless steel tower bolt 8" long 1 no for each shutter and other required fittings etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated)	161.00	m2	5569.00	896609.00
17.32	Supplying, fabricating and fixing in position partly opaque and partly glazed aluminum anodized sliding door shutter using aluminum standard door section 80mm x 40mm for verticals, 100mm x 40mm for top, middle & bottom members, 4mm thick both side colour and designer aluminium composite sheet of approved make and approved colour and 5mm thick clear/ bajri glass above opaque panels, glazing clips, rubber gasket including P/F sliding arrangement for top and bottom of door shutter, handles 2 nos., lock, vertical aluminium section at side etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated). Width and height of shutter will be measured for payement.	111.00	m2	4945.00	548895.00

17.33	Supplying, fabricating and fixing in position partly opaque and partly glazed aluminum anodized sliding door shutter using aluminum standard door section 80mm x 40mm for verticals, 100mm x 40mm for top, middle & bottom members, 12mm thick both side decorative prelaminate particle board (Novapan) of approved colour for opaque panels and 5mm thick clear/ bajri glass above opaque panels, glazing clips, rubber gasket including P/F sliding arrangement for top and bottom of door shutter, handles 2 nos., lock, vertical aluminium section at side etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated). Width and height of shutter will be measured for payment.	21.00	m2	4984.00	104664.00
17.34	Supplying, fabricating and fixing in position fully glazed double leaf aluminum anodized sliding door shutter using aluminum standard door section 80mm x 40mm (not less than 1.055 kg/mtr) for all verticals, top & bottom members, providing and fixing 5mm thick clear/ bajri glass, glazing clips, rubber gasket including P/F sliding arrangement for top and bottom of door shutter, handles 2 nos., lock, vertical aluminium section at side etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated and fittings should be approved before installation)	31.00	m2	4154.00	128774.00
17.35	Providing and fixing double leaf SS 304 grade stainless steel door 32mm thick with stainless steel frame of required size fabricated in company with 3 nos. 4" long heavy duty S.S Hinges for each shutter, lock, 2 nos. 230mm long S.S Handle for each shutter, 9" long S.S tower bolt for each shutter, providing and fixing vision panel using 5mm thick plain glass with S.S bedding and stainless steel grill in vision panel including fittings such as screws and other required fittings etc. completed as directed.	31.00	m2	21349.00	661819.00
17.36	Providing and fixing aluminum decorative type ornamental grills 50mm x 50mm opening size and 10mm thick on an anodized aluminum outer frame 50 x 25 x 17 gauge thick and intermediate members of hollow type box section, providing U / F type channels of required size around the grill etc. all complete as directed	140.00	m2	3578.00	500920.00
17.37	Providing and fixing aluminium louvered ventilators using 50mm x 25mm x 16 gauge (not less than 0.593 kg/mtr) aluminium box frame anodized to 15 microns / powder coated for outer frame and intermediate vertical members as directed including 5mm thick plain or frosted glass 125mm wide for louvers at proper inclination including P/F glass on adjustable aluminium louvered of approved size and making provision of fixing exhaust fan etc. all complete.	100.00	m2	5691.00	569100.00
17.38	Providing, making and fixing fully glazed aluminium double glass partition using 15micron/ powder coated anodized aluminium section of size 100x37x1.5mm thick (1.90Kg/Rmt), P/F 5mm thick clear plain glass in two layer with all required fittings such as rubber gasket, silica gel, silicon sealant, glazing clips, screws and other required fittings etc. completed as directed. (all alu. fittings should 15 micron anodized or powder coated.)	14.00	m2	6913.00	96782.00

17.39	Providing and fixing 12mm thick Toughen glass openable door shutter including heavy duty decorative stainless steel handles 300mm long (2 Nos.) on each leaf, lock of approved quality and make, heavy duty floor spring of CNR brand having capacity not less than 150kg for each leaf with dorma make top and bottom patch fittings, SS top and bottom pivot including making proper adjustment for smooth operation including making necessary excavation in floor for fixing the floor spring and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete all as directed Engineer-in Charge.	40.00	m2	7995.00	319800.00
17.40	Providing & fixing in position Aluminum partition made using 2.5" x 1.5" Aluminum pipe section at 600mm c/c as frame with 3mm thick one side designer aluminium composite sheet manufacturer by Altobond with approved pattern and colour on inside portion using double tape and silicone sealant, making necessary arrangement of raceway with removable type panels for electrical/ lan/ telephone work, with all required fittings and fixtures, inserting wood packing wherever required etc. complete as directed.	40.00	m2	3852.00	154080.00
17.41	P/F in position aluminium two track sliding windows in heavy anodized section 15 micron powder coated 30mm series including fixing of tracks, making holes for drainage water fixing 5mm thick clear double glass including adding silicate gel crystals or equivalent material in between two glasses, glazing clips, silicon sealant, rubber gasket, locks with handles and other require fittings, pressure patti,etc. all completed as directed. (all alu. fittings and sections should be 15 micron anodized or powder coated.)	32.00	m2	8413.00	269216.00
17.42	P/F in position aluminium three track sliding windows in heavy anodized section 15 micron powder coated 30mm series including fixing of tracks, making holes for drainage water fixing 5mm thick clear double glass including adding silicate gel crystals or equivalent material in between two glasses, glazing clips, silicon sealant, rubber gasket, locks with handles and other require fittings, pressure patti, etc. all completed as directed. (all alu. fittings and sections should be 15 micron anodized or powder coated.)	32.00	m2	8427.00	269664.00
17.43	Supplying, fabricating and fixing in position fully openable aluminium window using aluminium sections 42 x 30 x 1.5mm (not less than 0.526 kg/mtr) size aluminum single border outer frame of window shutter, 42 x 37 x 1.5mm (not less than 0.724 kg/mtr) size aluminum Z section for window shutter, 28 x 14.5 x 1.5mm size (not less than 0.286 kg/mtr), aluminum clip for window shutter, 45 x 45 x 1.5mm size (not less than 0.764 kg/mtr) Z aluminum center patti for mullion, 37mm x 37mm (not less than 0.820 kg/mtr) angles 2mm thick, 5mm thick plain or frosted glasses with rubber gasket, 3 Nos. S.S. hinges 75mm size (heavy) on each window shutter, aluminum tower bolt 100mm size 1 Nos on each leaf, aluminum stay 200mm to 250mm long 1 No per leaf, aluminum handle 1 Nos. per leaf, etc. complete.(all aluminium sections should be 15 micron anodized / powder coated section)	120.00	m2	6389.00	766680.00

17.44	Providing and fixing IS : 3564 marked hyper make hydraulic door closer of hyper door to door shutter including making proper adjustment for smooth operation etc. complete.	436.00	Nos	1503.00	655308.00
17.45	Providing and fixing double action hydraulic floor spring With stainless steel cover plate minimum 1.25 mm thickness of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.	40.00	Nos	2355.42	94216.87
17.46	Providing and fixing Godrej make concealed type door closer of approved quality and make to door shutter including making proper adjustment for smooth operation etc. complete.	22.00	Nos	5828.00	128216.00
17.47	Providing and fixing 3" Anchor Fastener wherever necessary etc. complete.	176.00	Nos	39.00	6864.00
17.48	Providing and fixing mirrors 6mm thick of approved Indian quality copper plated with 10mm thick waterproof plywood backing, fixing mirror on wall with cup washer and screws etc. all complete as directed.	84.00	m2	2757.00	231588.00
17.49	Providing and fixing blackout horizontal (Marvell Make) roller blinds water resistant cloth of required size and colour including all necessary accessories and installation at any height etc. complete all as directed. (sample of blind should be approved before installation)	130.00	m2	1485.00	193050.00
17.50	Providing and fixing translucent horizontal (Marvell Make) roller blinds water resistant cloth of required size and colour including all necessary accessories and installation at any height etc. complete all as directed. (sample of blind should be approved before installation)	170.00	m2	1423.00	241910.00
17.51	Providing and fixing sun screen horizontal (Marvell Make) roller blinds water resistant cloth of required size and colour including all necessary accessories and installation at any height etc. complete all as directed. (sample of blind should be approved before installation)	140.00	m2	1547.00	216580.00
17.52	Providing and fixing 25mm to 50mm wide vertical venetain blinds in aluminium or fabric strips of approved make and colour with all accessories etc. complete as directed	80.00	m2	2085.00	166800.00
17.53	Providing and fixing reflective type sun control film of approved type of Garware make with cutting, fixing etc. complete as directed.	680.00	m2	1060.00	720800.00
17.54	Providing and fixing heavy duty capsule hinges for M.S gate including fixing with gate with necessary welding etc. completed as directed.	32.00	No	352.00	11264.00
17.55	Providing and fixing medium duty capsule hinges for M.S gate including fixing with gate with necessary welding etc. completed as directed.	20.00	No	254.00	5080.00
17.56	Providing stainless steel signboard and name board plate (18 gauge) and fixing the same over walls and doors using stainless steel stud of approved quality etc. completed as directed.	710.00	sq. inch	18.00	12780.00

17.57	Removing existing wallpaper from wall carefully without damaging the wall plaster and Providing & Pasting new wall paper of make Splendor, Royal, STC (Imported) of approved design with required adhesive all complete as directed by Engineer- incharge.	25.00	m2	1609.00	40225.00
17.58	Providing, making and fixing fully opaque aluminium partition using 63mm x 37mm x 1.5mm aluminium partition section fitted with 6mm thick shera board on both side of Aluminum frame, including including cutting, fixing and fitting, making Aluminum frame etc. all complete as directed.	300.00	m2	₹2,977.00	893100.00
17.59	Providing, supplying and fixing new (10+10)mm thick doubled clear Toughened glass in facade of New Gymkhana building at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (10+10)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (10+10)mm will be considered as one Sqm area for payment)	50.00	m2	15,591.00	779550.00
17.60	Providing, supplying and fixing new (8+8)mm thick doubled clear Toughened glass in entrance canopy of New Gymkhana building at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (8+8)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (8+8)mm will be considered as one Sqm area for payment)	50.00	m2	13,216.00	660800.00
17.61	Providing, supplying and fixing new (5+5)mm thick doubled clear Toughened glass in entrance canopy of New Gymkhana building at any height including removing the old damaged/broken glass including fixing with lamination sheet as per site requirements between two (8+8)mm thick doubled glass including required fittings and fixtures, filling the gaps with silicon sealant etc all complete as directed by Engineer Incharge. (Double glass of (8+8)mm will be considered as one Sqm area for payment)	50.00	m2	9306.00	465300.00
17.62	Providing and fixing fire rated door having 2 hours of fire resistant of TATA PRAVESH make including G.I frame profile of 100 x 58mm, 1.5/1.6mm thickness and 0.80mm to 2mm thick extra stiffeners to support the accessories filled with rockwool with door shutter of 44mm to 46mm thick made of G.I sheet of 1.2mm thickness powder coated of Pure Polyester (PP) Coating, 60-90 microns (supplied by Jotun/Akzonobel) and filled with honeycomb (Cell size 21mm) including fixing the frame with anchor fastners (Hilti make) and including the following hardwares like S.S ball bearing butt hinges 4" – 4nos, S.S 'D' Type Handle – 1 pair, Vision wired glass (1Hrs fire rated, schott Pryan make) of size 200mm x 300 mm- 1 No, Door closer- 1 no, Panic bar- 1 No and all necessary required fittings and fixtures etc all complete as directed by Engineer In-charge. Note :- 1.All hardware are of GEZE/DORMA/HAFELE make 2.Five years warranty for defects/damage of fixtures & fittings for each door will be submitted on Rs 500 non-judicial stamp paper.)	200.00	m2	12143.00	2428600.00

17.63	Providing and fixing 15 to 20mm thick decorative boards of fibrous plaster of paris at the Mess dining and T.V. room ceiling as per existing pattern with center patta of 9”/4” size with both side moulding,fixing the same with screws mechanically in proper line and level,finishing with jointing,paper tape,one coat of primer and two coats of acrylic oil bound distemper and ceiling painting wherever required including removing the existing damaged sheets and disposing the same in low lying area inside IITB campus,scaffolding etc. All complete as directed.	360.00	Rmt	935.00	336600.00
17.64	Carefully removing the existing aluminium sliding window with frame and shutter and refixing the same with proper modification like cutting the frames, glass, fixing new S.S. 304 flyproof mesh for mosquito for a new height after window granite work including necessary fittings and fixtures, stepladder etc all complete as directed.	500.00	Nos	2868.00	1434000.00
17.65	Providing and fixing Aluminium fly proof mesh fixed in frame made of Aluminum section of 37mmx18mmx1.2mm including fixing it on existing wooden frame with all necessary fitting and fixtures with proper locking arrangement and scaffolding etc. all complete as directed.(Note: All aluminium sections should be 15 micron anodized/ powder coated).	100.00	m2	3232.00	323200.00
17.66	Providing, fabrication & fixing structural glazing work using aluminum sections for vertical and horizontal having size 114mm x63mm x2.5mm thick (not less than 2.44 kg/mtr.), providing and fixing 4mm thick designer aluminium composite sheet of approved colour and pattern in the panels with all necessary fittings, fixtures, screws, pump filled structural silicon sealent & hardware, making partition watertight, scaffolding etc complete. (all aluminium sections should be 15 micron anodized/ powder coated and shop drawing will be provided by contractor before execution of work.)	10.00	m2	10711.00	107110.00
17.67	P/F Pivoted windows using 'Z' section of size 42 x 32 x 1.5mm (not less than 0.920 kg/mtr), 15 micron anodised,providing and fixing 6mm thk. tinted toughening glass including all necessary fittings such as aluminium Z clips, aluminium pipe, aluminium angle, screws,nails,aluminium pivoted stay 2 nos.,aluminium Z handels 1 no. etc. and other required fittings including microwave EPDM rubber gaskets,pump filled structural silicon sealent & hardware, making window watertight, scaffolding etc. completed as directed. (all aluminium sections should be 15 micron anodized/ powder coated and shop drawing will be provided by contractor before execution of work.)	10.00	m2	9098.00	90980.00
17.68	Providing, fabrication & fixing structural glazing work using aluminum sections for vertical and horizontal having size 114mm x63mm x2.5mm thick (not less than 2.44 kg/mtr.), providing and fixing Tinted toughened 6mm thick glass in the panels with all necessary fittings, fixtures, screws, pump filled structural silicon sealent & hardware, making partition watertight, scaffolding till any height etc complete. (all aluminium sections should be 15 micron anodized/ powder coated and shop drawing will be provided by contractor before execution of work.)	10.00	m2	13205.00	132050.00

17.69	Providing and fixing in position fixed glazing/ partition using 63mm x 38mm x 1.65mm (0.942 kg/rmt) 15 micron / powder coated anodized aluminium partition section for frame with screws and providing 5mm thick clear plate glass fixed to the above frame using glazing clip with rubber gaskets, filling all gaps with appropriate fillers etc. all complete.(Jindal Make)	16.00	m2	4594.00	73504.00
17.70	Providing and fixing in position aluminium 15 micron anodized openable window with stainless steel flyproof mesh of 304 grade having aluminium powder coated “ L” pipe section 38mm x 25mm (0.45kg/rmt) for frame and shutter frame of 38mm x 18mm (0.45kg/m) aluminium section and fixing the stainless steel mesh with U channel with screws including necessary fitting and fixtures such as two numbers stainless hinges, stainless steel handle one number and magnet or tower bolt two numbers etc. complete as directed. (Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	10.00	m2	3580.00	35800.00
17.71	Providing and fixing openable shutter made up of aluminium anodized 15 micron handle section 38mm x 18mm(0.45kg/rmt) or near available sections on top, bottom and sides, P/F 4mm thick hardner sheet of Bckelite of desire shead and pattern, P/F stainless steel hinges 75mmx35mm(2 nos.) for each shutter,1nos. of S.S tower bolt on each shutter,1no handle(S.S) for each shutter, magnet etc. including fixing the shutter over the L pipe section of 38mmx25mmx1.5mm (45kg/rmt) with screws in line and level,rectification of all damages etc. complete as directed. (Note: All aluminium sections and fitting are 15 micron anodized and of Jindal make)	20.00	m2	5290.00	105800.00
17.72	P/F 25mm dia aluminum powder coted heavy duty (58.33gram/ft) approved draftery curtain rod with decorative side holders including required fittings and screws (length upto 1.5m) all complete	20.00	Rmt	337.00	6740.00
17.73	P/F 25mm dia aluminum powder coted heavy duty (58.33gram/ft)approved draftery curtain rod with decorative side holders and middle brackets including required fittings and screws(length beyond 1.5m) all complete	20.00	Rmt	333.00	6660.00
17.74	P/F 25mm dia Stainless steel 304 grade heavy duty 16 gauge approved pattern curtain rod with decorative side holders and middle brackets including required fittings and screws all complete	10.00	Rmt	826.00	8260.00

17.75	Providing ,Fabricating and fixing at all floors, locations and heights stainless steel storage / Service Units / kitchen trolleys below existing granite Kitchen Platform upto depth 24 " to 26" as required made with 304 S.S. (Food grade) Comprising of 19mm square pipes outer frame , sink unit with bottle and bin holders , bottle pull out , utensils and storage unit kit etc. as desired by Engineer incharge and as per approved design consisting of 6mm dia S.S. round bars and 5mm dia distribution S.S. round bars or 1 mm thick perforated S.S. sheet where ever required & fabricated as directed including cost of providing teakwood Frame work , Sliding channel, 18mm waterproof plywood with sunmica facia , handles , screws , nails, cost of materials , transporting , labour, wastage and testing etc complete as directed(weight of the trolley should not be less than 55kg/sqm of elevational area)	10.00	Rmt	23309.00	233090.00
17.76	Providing & fixing in position wall unit, overhead storage, made out of using 18mm thick waterproof plywood sides & shutters,6mm thick waterproof plywood backing, 1 mm thick sunmica for all exposed surfaces , CP teakwood frame work / supports fixing the unit on wall , handles with providing & fixing glass shelf of 12mm thick 1 no at 45 cm including necessary edging, moulding , buffing etc. & locking arrangement , hinges & other hardware & required fitting etc. all complete as directed	10.00	m2	13476.00	134760.00
17.77	Providing and fixing in position aluminium 2 track sliding double glass window in heavy anodized section 15 micron with including frame work of aluminium hollow pipe section 75mm x 25mm size with 14 gauge thick weight of 1.036kg/m , aluminium sliding track of size 66.5x50mm of weight 1.329kg/m with shutter section of size 66x26mm of weight 0.774kg/m including gazing clip of size 38.7x 28.5 mm of weight 0.303kg/m including making holes for draining of water fixing 5mm thick clear double glass shutter with rubber gasket, concealed lock, Meeti make heavy quality bearing including all necessary fittings required for double glass window , providing silicon sealent if required all complete as directed.(all aluminium section will be Jindhal make)	10.00	m2	12467.00	124670.00

17.78	Providing and fixing in position three track aluminium sliding windows of six shutter using aluminium section of bottom of size 116mm x 25mm x 1.35 mm (1.160kg/mtr) thick ,for sides and top section of size 116mm x 25mm x 1.4 mm (1.005kg/mtr) thick . The shutter comprising of bearing bottom section of 60mm x25mm x1.45mm (0.781kg/rmt) and handle aluminium section member of size 50 mm x25mm x 1.5 mm (0.717kg/mtr) thick , interlocking aluminium section with both side interlocking arrangement 44.5mmx25mmx1.06mm(0.637kg/m) and interlocking section with one interlocking arrangement of 45mmx25mmx1.2mm(0.595kg/m) and for central locking providing F section of of section of 40mm x25mm x1.5mm (0.545kg/rmt) including providing and fixing S.S 304 grade flyproof mesh in two shutter using ,aluminium U clip & 6mm toughen glass in four shutter using rubber gasket,. Heavy type of PVC rollers for each shutter, necessary sliding shutter latch, handles, PVC lining and other required fittings etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized & Jindhal make).	17.00	m2	6835.00	116195.00
17.79	Providing and fixing extra shutter of comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.40kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing 5.0mm thick glass (Plain or frosted) in the shutter using neoprene gasket, approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized & Jindhal make)	20.00	m2	2477.00	49540.00
17.80	Providing & fixing in position aluminium 15 micron anodized fixed section with S.S. mosquito net of 304 grade at Ground floor area window having aluminum section of 38mmx18mm (0.45kg/m) for outer & intermediate frame, fixing SS mesh with U channel with screws including fixing aluminium section every interval approx. 0.6m in both direction, removing & refixing exiting M.S. Grill , cleaning, spladder etc. Complete.	420.00	m2	1952.00	819840.00
17.81	Replacement of damaged wooden window frames with P/F aluminium outer hollow box frame anodized section of size 65mm x 30mmx 1.5mm (0.227 kg/rft) and removing the existing double glass shutter & damaged teak wood frame with making good base surface with neat cement mortar 1:4 and providing & fabricating aluminium frame of same size and including re- fixing the existing aluminium shutter on anodized aluminium frame with proper rubber gaskets and other fittings such as handle,screws,hinges etc. complete.	30.00	m2	5505.00	165150.00
17.82	Providing and fixing magnet catch set as per existing model including necessary fittings and fixtures, removing the old damaged set and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	25.00	No.	221.00	5525.00

17.83	Providing and fixing Mortise Lock with handles of Shalimar or equivalent make, as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	24.00	No.	3,112.00	74688.00
17.84	Providing and fixing Mortise lock cylinder 80mm with keys as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	24.00	No.	763.00	18312.00
17.85	Providing and fixing Door Stopper S.S. finish Heavy type, as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	40.00	No.	118.00	4720.00
17.86	Providing and fixing Main door side stainless steel safety chain lock heavy type, as per existing model including necessary fittings and fixtures, removing the old damaged set without damaging to door and cleaning the site etc. all complete as directed by Engineer In-charge. (Note: The old dismantled materials should be deposited in Estate store and take certificate of it)	40.00	No.	336.00	13440.00
17.87	Replacing by providing and fixing 5mm thick plain /bajari sheet glass of doors and windows etc. Including putty. Make Modi Guard/Saint-Gobain/Pilkington/Asahi Float etc. complete.	100.00	m2	1284.00	128400.00
17.88	Providing and fixing brass eye glass of approved quality, type,make,size and shape etc to door shutter complete.contractor will be allowed to take away old peep glass eye glass if available and for which 5% deduction will be made of schedule rate of this item	50.00	No	238.00	11900.00
17.89	Providing and fixing for drying cloth unit 6mm dia nylon rope etc. complete contractor will be allowed to take away old rope if available and for which 5% deduction will be made of schedule rate of this item	500.00	Rmt	8.00	4000.00
17.90	Removing, making addition/ alternation and refixing existing two track Aluminum sliding window size 1.40 x 1.20m for provision of exhaust fan providing and fixing using required aluminium section aluminum pipe 3"x1" ,1"x2" T/B shutter channel,1"x3/4" 'F' channel & 1"x1 1/2"L' channel ,5mm clear glass, 3/4" bearing 4nos ,rubber gasket,wool foil, star lock including etc. complete.	2.00	Job	3363.00	6726.00
17.91	Providing & Fixing Stainless steel 304 grade kitchen trolley including 3 nos drawers supporting frame with minimum 25kg /Rmt of length of trolley below kitchen counter including channels & 18mm thick plywood and 1mm sunmica both side, and 40 x 50mm finished size teakwood frame with including 2 coat of polishing etc. complete.	10.00	Rmt	17940.00	179400.00

17.92	Providing and fixing shutter below platform and for cupboard made of aluminium anodized 15 micron or powder coated L type section for frame 38 x 25x1.2mm or near available handle section 40x18x1.2mm for shutter Top & bottom and sides, P/F 4mm thick hardner sheet of bakelite P/F stainless steel hinges 75mm x 20mm , S.S. Tower bolt and magnet . handle (S.S.) fixing shutter on aluminium frame with screws properly in line and level, etc. Complete.	50.00	m2	3563.00	178150.00
17.93	Providing and fixing aluminium framing for the existing/new mirror of Ananta with 2" x 1" aluminum handle patti, rubber gasket, 1" x 1" x 2" aluminum 'L' and screws including removing the mirror from the wall safely and refixing it back with necessary fitting and cleaning the site etc complete.	6.00	Per No	4088.00	24528.00
17.94	Providing and fixing in position three track aluminium sliding in the electric duct openings using rectangular box section of size 100mmx40mmx1.30mm for outer frame,bottom section of size 92 mm x 31.75 mm x 1.2 mm thick for bottom, sections of size 92 mm x 31.75mm x 1.2 mm thick for sides and top. The shutter of bottom and top member of size 40 mm x18 mm x 1.20 mm thick , interlocking section of size 40 mm x 18 mm x 1.19 mm thick and handle section of size 40mm x 18 mm x 1.20 mm thick,3/4x1/2x1mm thick F channel including providing and fixing 4mm thk. hardner sheet in the shutter, using rubber gasket, 50x50x5mm BEST aluminium mesh at upper including 304 SS mosquito mesh over portion of shutter for ventilation,approved quality minimum two nos. PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings. complete as directed by Engineer in charge Including removing the existing wooden plwood panneling and contractor will be allowed to take away for which 5% will be deducted from such rate of this item . (Note: All aluminium sections and fitting are 15 micron anodized).	60.00	m2	3595.00	215700.00
17.95	Providing and fixing anodized 75±20 micron aluminium partly louvered and partly fixed ventilators in passage area using 75mm x 25mm x 16 guage thick aluminium (Jindal make) section for outer frame, 5mm thick frosted glass 100 to 150mm wide panes for louvers at proper inclinations. Providing and fixing U – channels for glasses with rubber gasket, filling all joints with proper fillers etc. Including removing the old aluminum window etc.all complete Powder coating of aluminium section will have to be tested in the laboratory of IITB / VJTI / SPCE and the testing charges are to be paid by the contractor. Note:contractor will be allowed to take away old window if available and for which 5% deduction will be made of schedule rate of this item	30.00	m2	7156.00	214680.00
17.96	Providing and fixing anodized 75±20 micron aluminium louvered ventilators in staircase window using 75mm x 25mm x 16 guage thick aluminium (Jindal make) section for outer frame, 5mm thick frosted glass 100 to 150mm wide panes for louvers at proper inclinations. Providing and fixing U – channels for glasses,filling all joints with proper fillers etc. all complete. Note:contractor will be allowed to take away old window if available and for which 5% deduction will be made of schedule rate of this item	10.00	m2	5621.00	56210.00

17.97	Providing/fixing toughened laminated thermal insulated glass having all clean cut and polished edges of IITB approved brand at all heights for balcony/outer railings including fixing it with appropriate D bracket SS 304 including removing old types of glass and cleaning & safely disposing all the glass pieces away.	3.00	m2	9,786.00	29358.00
17.98	Providing and fixing SS 304 heavy duty hinges of 3.5'' x 4.5'' for glass partition wall in bathroom of Enox or any other IITB approved brand including safely removing and refixing by making it in proper alignment and operation. (Note: The old dismantled hinges should be deposited in Estate store and take certificate of it)	4.00	Job	4410.00	17640.00
17.99	Carefully removing ACP sheet paneling with aluminium frame work and refixing the same at its original location by correcting slope without damaging it with all necessary fittings, fixtures, screws, gaskets, pump filled structural silicon sealant & hardware, making joints watertight with use of double scaffolding up to any height etc. completed as directed Engineer In-charge..	136.00	m2	508.00	69088.00
17.100	Providing & fixing in position Aluminum partition made using 2.5" x 1.5" Aluminum pipe section at 600mm c/c as frame (without anodizing) with 12mm thick marine plywood of IITB approved make using screws, nails in proper line and level, making necessary arrangement of raceway with removable type panels for electrical/ lan/ telephone work, with all required fittings and fixtures, inserting wood packing wherever required etc. complete as directed.	50.00	m2	6890.00	344500.00
17.101	Providing and fixing in position two track aluminium sliding shutters for Notice Board using rectangular box section of size 125mm x 38mm x 1.5mm (1.268 kg/m) for outer frame, sections of size 61mm x 31mm x 1.3mm (0.628 kg/m) thick for bottom, sections of size 61mm x 31mm x 1.3mm (0.52 kg/m) thick for sides and top. The shutter should be of bearing bottom of size 40mm x 18mm x 1.25mm (0.493kg/m) thick, top member of size 40mm x 18mm x 1.20mm (0.410 kg/m) thick, interlocking section size of 43mm x 27mm x 1.3mm (0.469 kg/m) thick and handle section of size 40mm x 18mm x 1.3mm (0.410 kg/m) thick including providing and fixing 5mm thk clear glass in the shutter with PVC lining & rubber, approved quality minimum two nos. PVC rollers for each shutter, necessary locking arrangement with keys, handles, PVC lining and other required fittings, including providing & fixing Soft board covered with green cloth complete as directed by Engineer in charge. Note : All aluminium sections and fittings are 15 micron anodized/powder coated).	20.00	m2	7134.00	142680.00
17.102	Providing and Fixing 12mm thick Acoustic Sheet for sound proof of approved brand like armstrong etc. size 600mm x 600mm on teakwood frame of size 50mm x 37mm having anti termite coating including one coat of wood primer and two coats of synthetic enamel paint, fixing the same on existing wall/ceiling with screws/nails, fevicol including necessary fittings and fixtures as per site requirement and as directed by Engineer-In-Charge. -	45.00	m2	3725.00	167625.00

17.103	Providing and fixing 25 mm thick neoprene rubber sheet having density not less than 1.35g/cubic cm, and weight not less than 32.5 kg per sqm in desired location pasting or placing it with directed procedure using necessary material etc all complete including transportation, etc all complete. (material is to be approved before placing by Engineer In charge)	10.00	m2	4329.00	43290.00
17.104	Providing and fixing in position three track aluminium sliding windows using sections of size 92 mm x 31mm x 1.30 mm (0.933kg/mtr) thick for bottom, sections of size 92 mm x 31mm x 1.30 mm (0.933kg/mtr) thick for sides and top. The shutter comprising of bottom and top member of size 40 mm x18 mm x 1.25 mm (0.417kg/mtr) thick , interlocking section of size 40 mm x 18 mm x 1.10 mm (0.469kg/mtr) thick and handle section of size 40mm x 18 mm x 1.25 mm (0.417kg/mtr) thick including providing and fixing 5mm thk. glass in the shutter using rubber gaskek with require fittings such as approved quality minimum two nos.PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	10.00	m2	5895.00	58950.00
17.105	Providing and fixing in position two track aluminium sliding windows using sections of size 61 mm x 31mm x 1.3 mm (not less than 0.659kg/mtr) thick for bottom, sides and top. The shutter should be of bearing bottom of size 40 mm x18 mm x 1.25 mm (not less than 0.417kg/mtr) thick , top member of size 40 mm x 18 mm x 1.20 mm (not less than 0.475kg/mtr) thick, Interlocking section size of 43 mm x 27 mm x 1.30 mm (not less than 0.558kg/mtr) thick and handle section of size 43mm x 18 mm x 1.30 mm (not less than 0.424kg/mtr) thick including providing and fixing 5mm thk. glass in the shutter using rubber gasket, approved quality minimum two nos. PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittingsetc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	10.00	m2	5399.00	53990.00
17.106	Providing and fixing in position two track aluminium sliding windows using sections of size 61 mm x 31mm x 1.3 mm (not less than 0.659kg/mtr) thick for bottom, sides and top. The shutter should be of bearing bottom of size 40 mm x18 mm x 1.25 mm (not less than 0.417kg/mtr) thick , top member of size 40 mm x 18 mm x 1.20 mm (not less than 0.475kg/mtr) thick, Interlocking section size of 43 mm x 27 mm x 1.30 mm (not less than 0.558kg/mtr) thick and handle section of size 43mm x 18 mm x 1.30 mm (not less than 0.424kg/mtr) thick including providing and fixing 304 grade stainless steel mosquito proof mesh in the shutter, approved quality minimum two nos. PVC rollers for each shutter, necessary locks, handles, PVC lining and other required fittings, provision for fixing A.C. units (if required) etc. complete as directed by Engineer in charge.(Note: All aluminium sections and fitting are 15 micron anodized/ powder coated).	10.00	m2	4581.00	45810.00

17.107	Supplying, fabricating and fixing in position aluminium louvered ventilator using aluminum box section of size 63mmx37mm (not less than 1.054 kg/mtr) for outer frame, aluminium flat of size 25mm x 5mm of weight not less than 0.337 Kg/mtr for fixing louvers of size 79mm x 30.3mm x 2mm of weight not less than 0.599 Kg/m (jindal section 20782), filling all gaps with appropriate fillers, screws, bolts etc. all complete as directed. (All aluminium sections should be 15 micron anodized/ powder coated)	10.50	m2	5284.00	55482.00
					33413248.02
18	Waterproofing Work				
18.1	Removing existing waterproofing treatment from the WC up to the mother slab including tiles, plaster etc. of any thickness without damages to structure using electrically operated cutting tools, leveling and cleaning the surface for providing new specialist waterproofing treatment, including lowering down the debris and stacking the same at a distance of 50mtr etc. all complete as directed.	9300.00	m2	78.00	725400.00
18.2	Providing waterproof plaster in WC 20mm thick for in cement mortar 1:3 with neat finishing, floating using waterproofing compound at the rate of 2% by weight of cement	6800.00	m2	478.00	3250400.00
18.3	Providing & laying brickbat coba on terrace, chajjas & in w.c. and bath in all positions in cement mortar 1:5 with waterproofing compound at the rate of 2% by weight of cement and covering 10 years' guarantee including all leads, lifts including furnishing a guarantee on requisite judicial stamp paper etc. complete.	5800.00	m3	6093.00	35339400.00
18.4	Providing waterproof bedding for flooring of bath and W.C. 25mm thick in cement mortar 1:3 using waterproofing compound 2% by weight of cement including levelling, curing etc.	6000.00	m2	394.00	2364000.00

18.5	<p>Providing and applying exterior coating for wall including Cleaning the surface, removing the laitance, greese, old paints, contaminants, curing compound with wire brushing with water pressure wash. Fine hair line cracks more than 0.50 mm must be widened up to 5 mm minimum in V shape and then fill cracks with Dr. Fixit Crack-X Paste on masonry plaster surface. Apply primer coat prepared with Dr. Fixit Crack-X Paste and water in 1:1 proportion over the crack. Fill Dr. Fixit Crack-X Paste when the surface is tacky and not dried completely. Press Dr. Fixit Crack-X Paste firmly into the crack with a spatula or putty knives and level with the surface. Care must be taken to avoid formation of cavities or bubbles during application. Allow it to set for 24 hours and then apply another coat of Dr. Fixit Crack-X Paste. Apply one coat of Dr. Fixit Primeseal with water in proportion of 2:1 and stir well until a uniform consistency is achieved. Apply a single coat of diluted Primeseal on the cleaned substrate. Allow it to dry for 2 to 3 hours. Apply 1 coat of undiluted Dr. Fixit Raincoat Waterproof Coating (Base Coat) over the primed surface. Allow the Dr. Fixit Raincoat Waterproof Coating to dry for 4 – 6 Hrs. Apply using brush / roller / airless spray. Apply 1 coat of undiluted High Build durable exterior waterproof wall coating Dr. Fixit Raincoat Select Top coat over the Dr. Fixit Raincoat Waterproof Coating at applied areas. Apply using brush / roller / airless spray to achieve DFT of 170 – 180 microns. Allow the Dr. Fixit Raincoat Select Top coat to dry for 6 – 8 Hrs.</p>	36000.00	m2	314.00	11304000.00
	<p>Allow the coated surface to air cure fully for 7 days. Work includes scaffolding and covering the floor, window glass with plastic sheet and as directed by this office. Work shall be got executed through certified applicator of the product manufacturing company only and work shall be guaranteed for 07 years by the contractor on requisite stamp paper including submitting written guarantee from said certified applicator.</p>				
18.6	<p>Providing and applying three coats of Dr. Fixit Roof seal coating including preparing surface by pressure washing the surface to remove all algae, mould, dirt, dust, chalking and waste products. All visible hairline cracks more than 0.50mm and not giving hollow sound on the IPS/screed or at the junctions of flat roof & vertical parapet wall, pipe joints, should be cut and widen V shape with mechanical cutter in the size (6mm W x 6mm D) and fill with Dr. Fixit PU Sealant covering the entire area uniformly with suitable gun. Allow sealant to cure a minimum 24 hours. Apply minimum 50mm - 100 mm width 45 GSM Glass Fibre Mesh / non-woven geo textile fleece with the coat of Dr. Fixit Roofseal Select along the length of crack. Apply one coat of Dr. Fixit Primeseal primer dilute with water in the ratio 2:1. Allow it to dry for 2 to 3 hours. Apply 1st coat of Dr. Fixit Roofseal Select at the rate of 2.0 sqmt / litre / coat. An open 45 Gsm glass fibre mesh of 2.5 mm x 2.5 mm must be sandwiched between the first and second coat. While the 1st coat is still wet, place the fibre mesh on it. Allow the first coat to dry for 6-8 hours. Apply second coat of Dr. Fixit Roofseal Select with the same application coverage. Application direction of second coat should be perpendicular to that of the first coat. Allow second coat to dry for 6-8 hours.</p>	22000.00	m2	470.00	10340000.00

	Apply third coat of Dr. Fixit Roofseal Select at an application direction that is perpendicular to that of the second coat with same application coverage rate. Check to see no void surface is left untreated / uncoated. Allow the system to air cure for 7 days minimum. A total thickness of 1 mm must be achieved when Dr. Fixit Roofseal Select is dry. Work Shall be got executed through certified applicator of the product manufacturing company only and work shall be guaranteed for 07 years by the contractor on requisite stamp paper including submitting written guarantee from said certified applicator.				
18.7	Providing and laying waterproofing treatment of 120mm av. thickness consisting of 12mm thick layer in cement mortar 1:3 with water proofing compound 2% by weight of cement as base, constructing and laying brick bat coba in cement mortar 1:5 with waterproofing compound at the rate of 2% by weight of cement and having average thickness of 80mm and finishing with 20mm thick cement plaster layer in cement mortar 1:3 with water proofing compound 2% by weight of cement including laying glass fibre cloth of approved quality in top layer including all lead, lifts and laid to proper slope to drain off water entirely including watta at the junction of parapet and work upto a height of 300mm or as directed and including finishing the top layer of water proofing treatment with false marking of 30cm x 30cm or as directed and covering the whole treatment with ten years' guarantee, on requisite stamp paper etc. complete.	1000.00	m2	1,186.25	1186250.00
18.8	Providing and laying water proofing cement concrete flooring to terrace to average 50mm thickness with 1:2:3 cement concrete laid to proper level and slope using silt free clear river sand including compaction, filling joints, adding recommended waterproofing admixtures at the rate of 1Kg per cement bag, laying in required position flooring of broken china mosaic (broken piece of glazed tiled) of approved colour & pattern over a bed of cement mortar 1:4 adding waterproofing compound as per manufacturer's specification, finishing with neat cement float, giving proper slopes, compaction, curing, finishing preparing bell mouth including all lead and lifts etc. testing the roof by ponding with water for 14 days, providing waterproofing guarantee for 7 (seven) years in requisite non judicial stamp paper in favour of IITB etc. Complete. Note: In case of leakage during monsoon, contractor has to rectify leakage within 24hrs of intimation given by Estate Office, else Estate Office shall cover the surface with tarpaulin sheet at contractor's risk and cost.	11500.00	m2	963.00	11074500.00

18.9	<p>Providing and applying waterproofing treatment for horizontal surfaces using ROOF 540 waterproofing system manufacturer by Perfect Seal or Mastersealroof- 3500 waterproofing system manufacturer by BASF or CHRYSO PROOF ACRYLIC Five Layer System. The waterproofing treatment should be carry out as per manufacturers specifications with all lead, lift,polymer coating on entire surface etc. with use of scaffolding and covering the whole treatment with ten years guarantee on requisite five hundred rupees stamp paper. Work Shall be got executed through certified applicator of the product manufacturing company only including submitting written guarantee from said certified applicator. etc. complete as directed. Note: In case of leakage during monsoon, contractor has to rectify leakage within 24 hrs of intimation given by Estate Office, else Estate Office shall cover the surface with tarpaulin sheet at contractor's risk and cost.</p>	50.00	m2	830.00	41500.00
18.10	<p>Providing and applying waterproofing treatment for vertical surfaces using ROOF 540 waterproofing system manufacturer by Perfect Seal or Mastersealroof- 3500 waterproofing system manufacturer by BASF or Chryso Proof Acrylic five layer system manufactured by M/s Chryso. The waterproofing treatment should carry out as per manufacturers specifications with all lead, lift, polymer coating on entire surface etc. with use of scaffolding and covering the whole treatment with ten years guarantee, on requisite five hundred rupees stamp paper Work Shall be got executed through certified applicator of the product manufacturing company only including submitting written guarantee from said certified applicator. Etc. complete as directed. Note: In case of leakage during monsoon, contractor has to rectify leakage within 24 hrs of intimation given by Estate Office, else Estate Office shall cover the surface with tarpaulin sheet at contractor's risk and cost.</p>	50.00	m2	730.00	36500.00
18.11	<p>Providing and applying waterproofing treatment for vertical & horizontal construction joint using Masterseal NP1 sealant waterproofing system manufactured by BASF or CHRYSO Polyband system by Chryso India Ltd. The waterproofing treatment should be carry out as per manufacturers specifications with all lead, lift etc. with use of scaffolding and covering the whole treatment with ten years guarantee on requisite five hundred rupees stamp paper. Work Shall be got executed through certified applicator of the product manufacturing company only including submitting written guarantee from said certified applicator. etc. complete as directed. Note: In case of leakage during monsoon, contractor has to rectify leakage within 24 hrs of intimation given by Estate Office, else Estate Office shall cover the surface with tarpaulin sheet at contractor's risk and cost.</p>	20.00	Rmt	2,250.00	45000.00

18.12	Providing and laying in situ marble mosaic of 10mm thickness with white and coloured marble chips upto maximum size of 6mm in coloured cement in suitable panels including glass strips including providing under layer of IPS 50mm thickness with 1:2:3 cement concrete laid to proper level and slope using silt free clear river sand including compaction, filling joints, adding recommended waterproofing compound at the rate of 1Kg per cement bag, finishing with neat cement float, giving proper slopes, compaction, curing, finishing preparing bell mouth including all lead and lift etc. testing the roof by ponding with water for 14 days, providing waterproofing guarantee for 10 (Ten) years in requisite judicial stamp paper in favour of IITB etc. Complete. Note: In case of leakage during monsoon, contractor has to rectify leakage within 24hrs of intimation given by Estate Office, else Estate Office shall cover the surface with tarpaulin sheet at contractor's risk and cost.	50.00	m2	827.00	41350.00
18.13	Removing the existing waterproofing sheet bitumen/ dongri cloth/ tarfelt layer coating etc, of any thickness of terrace water proofing without damages to structure,brick bat layer, using electrically operated cutting tools, (pulverising/boshing tool breaking machine to avoid crack and vibration to structure) grinder, leveling and cleaning the surface for providing new waterproofing treatment etc. all complete, and collecting the removed membrane in guny bags and lowering down carefully with tied rope without causing dust nuisance as directed. (throwing down the APP/Tarfelt sheet from terrace will not be allowed)	3700.00	m2	203.00	751100.00
18.14	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3 mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufactured of density at 25°C, 0.87 - 0.89 kg/litre and viscosity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/5 cm.Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147.The laying of membrane shall be got done through the authorised applicator of the approved manufacturer of membrane (NILOBIT/STP/Pedilite or equivalent) including repairing the damaged rainwater spouts on terraces on existing membrane and patchwork with bitumen coating and finishing the surface with heat reflective bitumen based silver paint @0.10 ltr/sqm and covering the hole treatment with five years guarantee,on requisite stamp paper etc. complete	3700.00	m2	470.88	1742256.00

18.15	Providing and laying integral cement based treatment for waterproofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) Ist layer of 22mm to 25mm thick approved and specified shahabad stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound 2% by weight of cement 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 25mm thick cement mortar 1:3 (1 cement: 3 coarsesand) mixed with water proofing compound in recommended proportions. As directed by Engineer Incharge.	70.00	m2	1166.65	81665.29
18.16	Providing and laying integral cement based treatment for waterproofing on vertical surface by fixing rough shahabad stone slab 22mm to 25mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportion with a gap of 20mm (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) 20mm thick with neat cement punning mixed with waterproofing compound in recommended proportion complete at all levels and as directed by Engineer in charge.	70.00	m2	1436.94	100585.82
18.17	Providing and applying Dr.Fixit Dampguard Classic(Base + Hardener) as per manufactures specification including scrapping applying first coat of Dampguard Classic over that applying Damguard Classic Putty followed by Scrapping and after that applying final coat of Damgurad Classic etc.complete all as directed.	2000.00	m2	422.00	844000.00
18.18	Providing and applying one coat of Walgard Prime followed by 2 coats of Wagarad WB PU coating as per manufactures specification.(Apurva India Pvt.Ldt Make) etc complete all as directed.	1000.00	m2	392.00	392000.00
18.19	Dismantling PCC, IPS layer of any thickness above brick bat coba(till naked slab if brickbat coba is absent) from terrace floor/chajjas of building carefully without damaging the existing brickbat(if present), levelling the surface, cleaning the site, stacking the debris outside at designated spot etc. complete.	50.00	m3	1143.14	57157.16

18.20	Providing and laying water proofing cement concrete flooring to terrace to average 50mm thick with 1:2:3 cement concrete laid to proper level and slope using silt free clear river sand including compaction, filling joints, adding recommended waterproofing admixtures @ 2% by weight of cement, marking lines to give appearances of tiles of 30cm x 30cm or other approved size laid diagonally / square, finishing with extra cement in any colour as directed, testing the roof by ponding with water for 14 days, providing waterproofing guarantee for 7 (seven) years in requisite non judicial stamp paper in favour of IITB including all lead and lift etc. complete.	15.00	m2	601.00	9015.00
					79726079.27
19	Hiring Charges				
19.10	Hire charges for providing poclain for cutting and leveling the heaps of soil, for desilting / widening/deepening the kachha nallah /drains including necessary labour, operator, fuel etc. excavating, shifting, spreading and leveling the soil / debris at low lying area along the alignment of the proposed path using the machinery etc. all complete as directed.	64.00	Per Hr.	2981.00	190784.00
19.20	Hire charges for providing J.C.B for cutting and leveling the heaps of soil, for desilting / widening/deepening the kachha nallah /drains including necessary labour, operator, fuel etc. excavating, shifting, spreading and leveling the soil / debris at low lying area using the machinery etc. all complete as directed.	96.00	Per Hr.	1141.00	109536.00
19.30	Hiring charge of road roller 8 to 10 ton capacity for rolling and levelling in various locations in IITB campus. The hiring charges are inclusive of wages of roller driver, cleaner, diesel/oil, incidentals etc, payment will be given for the actual period of roller operated and no breaks will be considered for payment.	10.00	Per Hr.	819.00	8190.00
					308510.00
20	Special Items				
20.1	Providing and erecting 2.00 meter high temporary barricading at site as per drawing/ direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion for day and night, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously including shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer In-Charge.etc all complete as directed by Engineer In charge. (Note :- One time payment shall be made for providing barricading from start of work till completion of work i/c shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).	20.00	Rmt	1808.13	36162.56

20.2	Removing the Electrical fittings, wires and electrical conduit pipes from the ceiling surface and Staircases area during the repairing works and keeping aside with proper screws, nuts and bolts and Re-fixing the same with proper fittings with screws and anchor bolts after the completion of repairing works.	30.00	rmt	340.00	10200.00
20.3	Removing the electrical cable, points, conduits carefully without damage and refixing the same with all necessary fittings etc. all complete as directed by Engineer Incharge.	487.00	Points	111.00	54057.00
20.4	Providing & fixing 25mm thick teak wood wooden flooring including cleaning, proper alignment etc all complete as directed by Engineer In-charge.	297.00	m2	4420.00	1312740.00
20.5	Filling in roads with approved moorum brough from outside sources and filling in layesr not exceeding 150mm thick including breaking clods, watering, rolling each layer with power roller of minimum 8 tonnes capacity to attain at least 90% of proctor density, dressing the sides and top to the required profile and grade etc. complete including testing of proctor density and submitting repaorts etc. complete as directed.	495.00	m3	1264.62	625986.90
20.6	Providing making and erecting in position full height partition made using Gyp Board partition both side (Stud type) wall with glass wool insulation with standard GI section for frame work as per manufacturers specification ,with necessary fittings and fixtures,sealing the joints with sealing tapes, 6mm ply on both sides for receiving skirting and as directed as per drawing	10.00	m2	1047.00	10470.00
20.7	Providing and fixing in position 10mm thk back painted glass board approved colour and make including necessary edge polish and studs for fixing . Do as directed and drawings	10.00	m2	1607.00	16070.00
20.8	Providing Holes/Sleeve in wall 75 m dia for Air conditioning pipes .PVC pipe of 75 mm to be inserted in the said hole.End caps on both sides to be provided.A minimal slope to be maintained towards outside to prevent any leakage .	10.00	Nos.	2500.00	25000.00
					2090686.46
Gross Total Amount Rs. (20 heads)					634855603.27
Say Rs.					634855603.00
At Par					
(In words. _____%) (In figures.....%) Above					
(In words. _____%) (In figures.....%) Below					
Gross Total Amount Rs.					
CGST 9%					
SGST 9%					
Net Total Amount Rs.					
Say Rs.					

(Rupees in words _____)

_____)
 (Percentage for above/below, rates for all items / net amount / total to be filled in words as well as in figures, it should be mention clear & correct. If it is not done or found incomplete, it will be assumed as incomplete tender submitted by the agency & tender opening committee may reject your offer at the time of opening of tenders / quotations).

Note:

1) If you will engage labourer 20 or more any day, you have to get labour licence as per contract Regulation & Abolition Act 1970 Rule 1971, and also, you have to keep all such recored for inspection to the Principal Employer. If you will engage labour up to 10 Nos. per day, you have to file returns after completion of work as per Building & Construction Act to the Office of Regional Labour Commissioner (Central), Sion, Mumbai.

2) This schedule of work is legal documents of Estate Office, IIT Bombay and directed to enlisted contractors to get the copy of schedule of work to fill the rates and can submit his offer. No changes in schedule of work is allowed i.e. item description , units , quantity, rates, etc. If noticed his offer will be rejected and the contractor will be blacklisted or any other strict action will be initiated against him.

3) This work is to be executed as per the the clauses mentioned in the tender document signed by you. In addition to the existing safety clause of the tender documents a penalty of Rs. 5,000/- (per case) will be recovered from the bills of the particular work, in case any safety violations are noticed.

4) Tender will be rejected if white ink applied for correction in the schedule of work.

5) Taxes as per government notification time to time.

6) Contractor must pay GST Taxes to concern authority within 30 days time limit after receipt of payment from IIT Bombay & said record must be submitted to IIT Bombay Accounts Section, otherwise action will be taken as deemed fit.

7) If any malpractices / fraud / negligent professional behaviour or any discrepancy / inconsistency / disparity / deviation / disagreement / dissimilarity / mismatch noticed, their contract will be terminated by issuing one month notice by following legal procedure and will be blacklisted and informed to all Government Authorities and Organisations.

8) Quantity of line items may vary based on actual requirement of this office.

9) Tender will be rejected if white ink applied for correction in the schedule of work.

Sd/-
Superintending Engineer

Signature of the Contractor
With Official Stamp