

OVERHEAD TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
27.00	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25mmthick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions 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 (1cement : 3 coarse sand) 20mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :				
27.10	Using rough Kota stone	SQM		1243.25	-
28.00	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :				
28.10	Serrated with central bulb (225mm wide, 8-11mm thick).	RMT		490.20	-
	TOTAL OF WATER PROFFING WORK				
	JOINERY WORK				
29.00	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
29.10	Using M.S. angels 40x40x6 mm for diagonal braces.	SQM	9.45	3073.85	29,048.00
	TOTAL OF JOINERY WORK				29,048.00
	STEEL WORK				
30.00	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying a priming coat of approved steel primer.				
30.10	E.R.W. tubes.	KG	1324.44	129.15	171,052.00
31.00	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
31.10	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	KG	3000.00	90.10	270,300.00
	TOTAL OF STEEL WORK				441,352.00
	PILE WORK				

OVERHEAD TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
32.00	Boring, providing and installing bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below the pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring, with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. all complete, including removal of excavated earth with all lifts and leads (Length of pile for payment shall be measured upto bottom of pile cap).				
32.10	500 mm dia. piles	RNM	105.60	1953.85	206,327.00
	TOTAL OF PILE WORK				206,327.00
	MISCELLINIOUS ITEMS				
33.00	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	EACH	120.00	311.60	37,392.00
34.00	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality				
34.10	Circular shape 560 mm internal diameter	EACH	5.00	1511.55	7,558.00
	TOTAL OF MISCELLINIOUS ITEMS				44,950.00
	WATE PROFFING WORK				
35.00	Providing and applying Injection water proofing treatment for basement, under ground tank and other RCC structure with the following operations				
	FOR VERTICAL WALLS (post construction)				

OVERHEAD TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
36.00	Providing and laying water proofing treatment by chemical injection grout process in water tank (Under ground and Over head) or other areas using 20 mm dia MS nozzles of minimum 25mm deep in walls placed and fixed @1.2m distance in both direction in the wall and @ 0.75m c/c along construction joints, consisting of injecting cement slurries of different viscosities under pressure by pump using acrylic based water proofing chemical mixed with neat cement slurry and sealing off nozzles after the injection operation with suitable admixture including providing and applying two coats of acrylic based water proofing chemical mixed with neat cement slurry as per manufacturers specifications and providing 12-15mm thick neat finished cement plaster 1:3 (1 cement : 3 coarse sand) added with acrylic based water proofing chemical as per manufacturers specification and direction of Project Manager.	SQM	118.69	480.00	56,971.00
	FOR HORIZONTAL SURFACES				
37.00	Providing and laying water proofing treatment by chemical injection grout process on base of under ground water tank and to the construction joints of RCC raft and as per the direction of the Structural Consultant and as per specifications comprising of two layers of Cement mortar 1:3 mixed with Acrylica water proofing compound, providing and fixing 20 mm dia MS pipe sleeves at 1.2m C/C and grouting acrylic based water proofing chemical mixed with neat cement slurry through the pipes with, complete with cutting & sealing of the pipes as per specification and direction of the Project Manager.	SQM	64	425.00	27,200.00
	TOTAL OF WATE PROFFING WORK				84,171.00

ESTIMATED FOR UNDFR GROUND TANK OF STADIUM TRIPURA

UNDFR GROUND TANK		
SL. NO	ITEMS OF WORKS	AMOUNT
A	EARTH WORK	275,592.00
B	CONCRETE WORK	13,346,630.00
C	FORM WORK	999,886.00
D	MASONARY WORK	
E	FINISHING WORK	151,617.00
F	FLOORING WORK	1,110,158.00
G	WATER PROFFING WORK	2,194,946.00
H	JOINERY WORK	10,651.00
I	STEEL WORK	42,620.00
J	MISCELLINIOUS WORK	61,995.00
	GRAND TOTAL	18,194,095.00

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
EARTH WORK					
1.00	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sum on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
1.1	All kinds of soil	CUM	1369.78	155.60	213138.00
2.00	Extra for every additional lift of 1.5 m or part thereof in excavation/ banking excavated or stacked materials.				
2.1	All kinds of soil.	CUM	661.27	46.25	30584.00
3.00	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	CUM	283.54	112.40	31870.00
TOTAL OF EARTH WORK					275592.00
CONCRETE WORK					
4.0	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
4.1	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	CUM	37.54	4004.00	150302.00
5.00	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, 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.				
5.10	All works up to plinth level.	CUM	666.83	6296.15	4198492.00
6.00	Providing M-30 grade concrete instead of M-25 grade BMC/RMC.	CUM	666.83	76.50	51013.00
7.00	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
7.10	Thermo-Mechanically Treated bars.	KG	131377.72	68.10	8946823.00
TOTAL OF CONCRETE WORK					13346630.00
FORM WORK					
8.00	Centering and shuttering including strutting, propping etc. and removal of form for :				
8.1	Foundations, footings, bases of columns, etc. for mass concrete.	SQM	106.29	196.45	20881.00

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
8.2	Wall (any thickness) including attached pilasters, buttersesses, plinth and string course etc	SQM	2133.23	360.80	769671.00
8.3	Lintels, beams, plinth beams, girders, bressumers and cantilevers. with water proof ply 12mm thick.	SQM	30.79	423.65	13046.00
8.4	Suspended floors, roofs, landings, balconies and access platform. with water proof ply 12mm thick.	SQM	300.78	493.55	148449.00
9.0	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)				
9.1	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	SQM	300.78	159.05	47839.00
TOTAL OF FORM WORK					999886.00
FINISHING					
10.00	15 mm cement plaster on rough side of single or half brick wall of mix :				
10.10	1:6 (1 cement: 6 fine sand)	SQM	353.29	172.80	61049.00
11.00	6 mm cement plaster of mix :				
11.10	1:3 (1 cement: 3 fine sand)	SQM	120.15	134.70	16185.00
12.00	Distempering with 1st quality acrylic distemper (ready mixed) of approved manufacturer, of required shade and colour complete, as per manufacturer's specification.				
12.10	Two or more coats on new work.	SQM	473.45	50.65	23980.00
13.00	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :				
13.10	Water thinnable cement primer.	SQM	473.45	35.85	16973.00
14.00	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
14.10	Two or more coats on new work.	SQM	35.00	106.25	3719.00
15.00	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	SQM	331.41	89.65	29711.00
TOTAL OF FINIHING WORK					151617.00
FLOORING					

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
16.00	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : as per drawing/specification or directed by Engineer In charge.				
16.10	25 mm thick.	SQM	15.84	1141.60	18083.00
17.00	Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete as per drawing/specification or directed by Engineer In charge..				
		SQM	7.18	1191.25	8550.00
18.00	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete				
18.10	40mm thick with 20mm nominal size stone aggregate.	SQM	95.52	353.35	33752.00
19.00	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer.) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete as per drawing/specification or directed by Engineer In charge.				
		SQM	1066.90	836.65	892618.00
20.00	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS :15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4Coarse sand) including pointing the joints with white cement and matching pigment etc., complete.				
		SQM	151.47	904.45	137001.00
21.00	Extra for providing floor hardner of Fosroc make Nitoflor-Hardstop standard in approved make @ 4.5 Kg per Sqm or as per the manufaxcturer's specification and as direction of the Engineer-in-Charge.				
		SQM	95.52	210.99	20154.00
TOTAL OF FLOORING WORK					1110158.00
WATER PROFFING					

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
22.00	Providing and laying in situ seven course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric membrane over roof consisting of first coat of bitumen primer @ 0.40Kg per sqm, 2nd & 4th&6th courses of bonding material @ 1.20 Kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd&5th layer of roofing membrane APP modified Polymeric membrane 2.0mm thick of 3.00 Kg/sqm weight consisting of five layers prefabricated with centre core as 100micron HMDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20micron HMDPE film. 5th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12mm layer of cement mortar 1:3 (1 cement: 3 fine sand) and finished neat (item of laying brick tiles shall be paid for separately).	SQM	27.89	572.25	15958.00
23.00	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) 1st layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer complete as per drawing/specification or directed by Engineer In charge.				
23.10	Using rough kota stone.	SQM	407.77	1022.45	416921.00
24.00	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions 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 water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :				
24.10	Using rough Kota stone	SQM	615.55	1243.25	765278.00

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
25.00	Providing and Placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete :				
25.10	Serrated with central bulb (225mm wide, 8-11mm thick).	RMT	857.41	490.20	420302.00
26.00	Providing and applying Injection water proofing treatment for basement, under ground tank and other RCC structure with the following operations				
	FOR VERTICAL WALLS (post construction)				
27.00	Providing and laying water proofing treatment by chemical injection grout process in water tank (Under ground and Over head) or other areas using 20 mm dia MS nozzles of minimum 25mm deep in walls placed and fixed @1.2m distance in both direction in the wall and @ 0.75m c/c along construction joints, consisting of injecting cement slurries of different viscosities under pressure by pump using acrylic based water proofing chemical mixed with neat cement slurry and sealing off nozzles after the injection operation with suitable admixture including providing and applying two coats of acrylic based water proofing chemical mixed with neat cement slurry as per manufacturers specifications and providing 12-15mm thick neat finished cement plaster 1:3 (1 cement : 3 coarse sand) added with acrylic based water proofing chemical as per manufacturers specification and direction of Project Manager.	SQM	1066.90	480.00	512110.00
	FOR HORIZONTAL SURFACES				
28.00	Providing and laying water proofing treatment by chemical injection grout process on base of under ground water tank and to the construction joints of RCC raft and as per the direction of the Structural Consultant and as per specifications comprising of two layers of Cement mortar 1:3 mixed with Acrylica water proofing compound, providing and fixing 20 mm dia MS pipe sleeves at 1.2m C/C and grouting acrylic based water proofing chemical mixed with neat cement slurry through the pipes with, complete with cutting & sealing of the pipes as per specification and direction of the Project Manager.	SQM	151.47	425.00	64377.00
	TOTAL OF WATER PROFFING WORK				2194946.00
	JOINERY WORK				
29.00	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
29.10	Using M.S. angels 40x40x6 mm for diagonal braces.	SQM	3.47	3073.85	10651.00
	TOTAL OF JOINERY WORK				10651.00

UNDER GROUND TANK

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
	STEEL WORK				
30.00	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying a priming coat of approved steel primer.				
30.10	E.R.W. tubes.	KG	330.00	129.15	42620.00
	TOTAL OF ROLLING SHUTTERS & STEEL WORK				42620.00
	MISCELLINIOUS ITEMS				
31.00	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	EACH	165.00	311.60	51414.00
32.00	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality				
32.10	Circular shape 560 mm internal diameter	EACH	7.00	1511.55	10581.00
	TOTAL OF MISCELLINIOUS ITEMS				61995.00

ESTIMATED FOR DEVELOPMENT WORK OF STADIUM TRIPURA


DEVELOPMENT WORK		
SL. NO	ITEMS OF WORKS	AMOUNT
1.00	COST OF DEVELOPMENT AND ROAD WORK	56,081,254.00
	GRAND TOTAL	56,081,254.00

DEVELOPMENT AND ROAD WORK FOR CRICKET STADIUM

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
EARTH WORK					
1.00	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30cm in depth. 1.5m in width as well as 10 sum on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.	Cum	4554.01	155.6	708,604.00
2	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the subgrade and disposal of surplus earth with lead upto 50 metres.	Sqm	9108.02	81.29	740,391.00
3	Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density	Cum	1821.6	10.15	18,489.00
4	Granular Sub-base with well Graded Material { Using jhama brick aggregate) (Table 400.1 MoRT&H) (a) By Mix in Place Method: Construction of granular sub-base by providing well graded material (53 mm to 0.075 mm jhama brick Aggregate, Grading-1),spreading in uniform layers with tractor with attachments or motor grader on prepared surface, mixing by mix in place method with rotavator at OMC,applying and brooming sand to fill up the interstices of coarse aggregate,watering and compacting with smooth wheel roller to achieve the desired density.complete as per MoRT&H Technical Specification Clause 401. (1.) For Grading 1 IVJtppal	Cum	2732.41	2303.60	6,294,380.00
5	[Water Bound Macadam Sub-base/Base ,WBM Grading II Providing,laying,spreading and compacting 63mm to 0.075 jhama brick aggregates to water bound macadam specification including spreading in uniform thickness,hand picking,rolling with three wheel 80-100 KN static rollr/vibratory roller in stage to proper grade and camber,applying and booming and binding materials to fill up the interstices of coarse aggregate watering and compacting to the required density as per MoRT&H Technical Specification Clause 404 (a) By Manual Means	Cum	621	3623.10	2,249,945.00
6	[Water Bound Macadam Sub-base/Base ,WBM Grading III: Providing,laying,spreading and compacting 53mm to 0.075 jhama brick aggregates to water bound macadam specification including spreading in uniform thickness,hand picking,rolling with three wheel 80-100 KN static roller/vibratory roller in stage to proper grade and camber,applying and booming and binding materials to fill up the interstices of coarse aggregate watering and compacting to the required density as per MoRT&H Technical Specification Clause 404 (a) By Manual Means.	Cum	621	3663.00	2,274,723.00

DEVELOPMENT AND ROAD WORK FOR CRICKET STADIUM

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
7	Providing and applying tack coat using bitumen emulsion conforming to IS: 8887. using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom With medium setting bitumen emulsion On W.B.M/W.M.M @ 0.4kg/sqrm	Sqm	8280.02	19.70	163,116.00
8	Providing and laying bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge. 50 to 100 mm average compacted thickness with bitumea of grade VG-30 @ 3.5 0% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cum	621	6724.35	4,175,821.00
9	Providing and laying semi- dense Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification: complete and as per directions of Engineer-in-Charge. 25 mm compacted thickness with bitumen of grade VG-30 @5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared n Batch Type Hot Mix Plant of 100-120 TPH capacity-	Sqm	8280.02	220.50	1,825,744.00
10	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. New work (Two or more coats)	Sqm	414	122.15	50,570.00
11	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature. ointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm). including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Enjtteej^eteael-----	Cum	186.3	5295.90	986,626.00


Sourav Das Gupta
 Hony. General Secretary
 Tripura Cricket Association

DEVELOPMENT AND ROAD WORK FOR CRICKET STADIUM

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
12	Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement, 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc. complete and as per direction of Engineer-in-charge	Sqm	828	354.20	293,278.00
13	Providing and laying non-pressure NP2 class (light duty) R.C.C pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete.450 mm dia. R.C.C. pipe	Rmt	250	705.90	176,475.00
14	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2*fine sand) including testing of joints etc. complete.600 mm dia. R.C.C. pipe	Rmt	250	1379.45	344,863.00
Pavement / Parking					
15	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete.				-
15.1	40mm thick with 20mm nominal size stone aggregate.	Sqm	154.61	353.35	54,631.00
16	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Sqm	1600.05	602.20	963,550.00
17	Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25. of size 1000 *450x50 mm, reinforced with 8 mm dia four no longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S-flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge.	EACH	568.33	960.20	545,710.00
18	Supplying at site:				-
18.1	Welded steel wire fabric of required width having rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately).	KG	16311.08	66.05	1,077,347.00

DEVELOPMENT AND ROAD WORK FOR CRICKET STADIUM

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
19	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x60cm of mix 1:5:10 (1 cement: 5 fine sand : 10 graded stone aggregate 40mm nominal size), every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar ribs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately):	SQM	2718.5125	28.15	76,526.00
20	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	CUM	29010	112.40	3,260,724.00
21	Supplying and stacking of good earth at site including royalty and carriage up to 1 km (earth measured in stacks will be reduced by 20% for payment).	Cum	29010	260.70	7,562,907.00
22	Carriage of material s	cum	29010	210.77	6,114,438.00
22.1	Earth up to 10 km				
23	Providing and laying factory made chamfered edge Cement Concrete paver blocks of required strength, thickness & size/shape, made by table vibratory method, to attain superior smooth finish using PL) or equivalent moulds.laid in required Grey colour & pattern over 50mm thick compacted bed of coarse 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 jamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks, lawns, drive ways or light traffic parking etc. all complete as per manufacturer's specifications & direction of Engineer -in-Charge: (a) 80 mm thick c.c paver block of M-30 grade with approved color design and pattern	Sqm	2433.2	737.70	1,794,972.00
24	Grass Paver Providing & laying 80 mm thick reflective type open jointed (grass) paver block of minimum compressive strength of 400 kg/sq.cm in unipaver shape of approved make The rates are inclusive of providing & laying/spreading approved quality average 50mm thick sand bedding including compaction & filling joints with sand at site. The edges are to be neatly trimmed to fit within kerbs along the periphery of the paved area all complete as per specification, drawing & as per direction of Engineer-in-Charge.	Sqm	10271.6	1345.50	13,820,438.00
25	Extra for providing pigment in UPS flooring	Sqm	154.61	35.00	5,411.00

DEVELOPMENT AND ROAD WORK FOR CRICKET STADIUM

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
26	Extra for providing floor hardner of Fosroc make Nitoflor-Hardstop standard in approved make @ 4.5 Kg per Sqm or as per the manufacturer's specification and as direction of the Engineer-in-Charge.	Sqm	154.61	211.00	32,623.00
27	Providing & fixing 22 mm thick pre-polished colored concrete desiner tiles making by strong vibratorycompaction technology using 50% white cement & 50% ordinary cement size 300mm x 300mm, laid in footpath & courtyard, on 20 mm thick bed cement mortar 14 (1 Cement : 4 fine sand) joined with neat cement slurry mixed with pigment to match the sade of tiles including rubbing and polishing complete as per direction of the Engineer-in-charge.	Sqm	672.14	697.70	468,952.00
TOTAL					56,081,254.00


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 Tripura Cricket Association

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SCHEDULE OF QUANTITIES FOR SUPPLY, ERECTION, TESTING AND COMMISSIONING OF ELECTRICAL WORKS FOR PROPOSED CRICKET STADIUM AT AGARTALA

ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1	COST OF ELECTRICAL WORKS	102062252.23
	GRAND TOTAL	102062252.23

SCHEDULE OF QUANTITIES FOR SUPPLY, ERECTION, TESTING AND COMMISSIONING OF ELECTRICAL WORKS FOR PROPOSED CRICKET STADIUM AT AGARTALA					
S.NO	DESCRIPTION OF ITEM	UNIT	QTY.	RATE (RS.)	AMOUNT (RS.)
1	Wiring for Light /Ceiling Fan / Exhaust Fan/ Call Bell point with 1.5 sq.mm FR PVC insulated multi-stranded copper conductor cable in surface / recessed PVC conduit, with modular switch, modular plate, suitable GI box, and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.				
a)	Group -C	Point	3427	718.00	2460586.00
2	Wiring for Light plug 2 x 2.5 sq.mm FR PVC insulated multi-stranded copper conductor, single core cable in recessed ISI marked PVC conduit along with 1 No. 2.5 sq.mm FR PVC insulated copper earth wire for loop earthing as required.	Metre	4985	131.00	653035.00
3	Wiring for power plug 2 x 4 sq.mm FR PVC insulated multi-stranded copper conductor single core cable in surface / recessed PVC conduit along with 1 No. 4 sq.mm insulated copper earth wire for loop earthing as required.	Metre	9540	162.00	1545480.00
4	Wiring for power plug with 2 x 6 sq.mm FR PVC insulated multi-stranded copper conductor single core cable in surface / recessed PVC conduit along with 1 No. 6 sq.mm FR PVC insulated copper earth wire for loop earthing as required.	Metre	50	221.00	11050.00
5	Wiring for power plug with 4 x 6 sq.mm FR PVC insulated multi-stranded copper conductor single core cable in surface / recessed PVC conduit along with 2 Nos. 6 sq.mm PVC insulated solid copper earth wire for loop earthing as required.	Metre	50	389.00	19450.00
6	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non residential buildings).	Each	1054	303.00	319362.00
7	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	Each	527	395.00	208165.00
8	Wiring for circuit wiring with 2 x 2.5 sq.mm FR PVC insulated multi-stranded copper conductor single core cable with 1 x 2.5 sq.mm. FR PVC included earth wire in recessed PVC conduit as required.	Metre	11423	131.00	1496456.23

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9	Wiring for group light points with 2 x 2.5 sq.mm FR PVC insulated multi-stranded copper conductor single core cable in recessed PVC conduit with accessories like junction boxes, bends, socket and connectors including continuous running of 1 No. 2.5 sq.mm FR PVC insulated solid copper conductor earth wire complete with earthing the fixtures and outlet boxes as per specification and drawings (basements, staircase and lift well light point wiring).	Metre	1000	131.00	131000.00
10	Wiring for sub mains wiring with following sizes of FR PVC insulated, multi-stranded copper conductor single core cables in surface / recessed PVC conduit as required.				
a)	4 x 6 sq.mm + 2 x 6 sq.mm. earth wire	Metre	500	389.00	194500.00
b)	4 x 10 sq.mm + 2 x 10 sq.mm. earth wire	Metre	300	597.00	179100.00
c)	4 x 16 sq.mm + 2 x 16 sq.mm. earth wire	Metre	400	883.00	353200.00
d)	4 x 25 sq.mm + 2 x 16 sq.mm. earth wire	Metre	50	935.00	46750.00
11	Supplying, fixing, connecting, testing and commissioning of following way, three poles and neutral, pre-wired, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete suitable for incomer MCB and RCCB, with loose wire box, terminal blocks, duly pre-wired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland, interconnections, phosphatised and powder coated including earthing etc as required.				
a)	8-way, double door	Nos.	81	11123.00	900963.00
b)	12-way, double door	Nos.	14	14768.00	206752.00
12	supplying fixing following rating four pole 415 volts, isolator in existing MCB DB complete with connections, testing and commissioning etc., as required.				
a)	40 amps, c-curve	Nos.	81	659.00	53379.00
b)	63 amps, c-curve	Nos.	14	670.00	9380.00
13	supplying fixing following rating four pole 415 volts, four pole (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc., as required.				
a)	40 amps	Nos.	81	2123.00	171963.00
b)	63 amps	Nos.	14	2294.00	32116.00
14	supplying and fixing 5 amps to 32 amps rating of SP MCB, 240 volts, "C" series, miniature circuit breaker suitable for inductive load in existing MCB DB complete with connections, testing and commissioning etc., as required.	Nos.	2448	169.00	413712.00

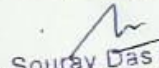
15	Providing and fixing MV danger plate of 200 x 150mm of mild steel at least 2mm thick and vitreous enameled white paint on both side and with inscription in signal red color on front side as required.	Each	20	141.00	2820.00
16	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.				
a)	100mm dia	Metre	550	337.00	185350.00
b)	250mm dia	Metre	700	455.00	318500.00
17	Supply and making end termination with brass double compression gland including providing and crimping of Aluminium solder less lugs / ferrules for XLPE armoured power Aluminium conductor cable 1.1 KV grade of following sizes:-				
a)	3.5 x 300 sq.mm	Set	30	1086.00	32580.00
b)	3.5 x 240 sq.mm	Set	8	969.00	7752.00
c)	3.5 x 185 sq.mm	Set	40	784.00	31360.00
d)	3.5 x 120 sq.mm	Set	8	484.00	3872.00
e)	3.5 x 70 sq.mm	Set	2	382.00	764.00
f)	3.5 x 50 sq.mm	Set	32	342.00	10944.00
g)	3.5 x 35 sq.mm	Set	4	270.00	1080.00
h)	4 x 25 sq.mm	Metre	34	248.00	8432.00
i)	4 x 16 sq.mm	Metre	96	245.00	23520.00
j)	4 x 10 sq.mm	Set	106	193.00	20458.00
18	Supplying and making indoor cable end termination with cast resin compound, including lugs and other jointing materials complete with all accessories for following sizes of 3 core, XLPE Aluminium conductor cable of 11 KV grade as required.				
a.	3Cx185 Sq.mm.	set	5	1726.00	8630.00
19	Supplying and making outdoor cable end termination with cast resin compound, including lugs and other jointing materials complete with all accessories for following sizes of 3 core, XLPE Aluminium conductor cable of 11 KV grade as required.				
a.	3Cx185 Sq.mm.	set	1	3230.00	3230.00
20	Supplying and fixing cable route marker with route indication on 150mm dia cast iron disc bolted to 40x40x3mm angle iron grouted in 1:3:6 concrete block 150x150x300mm deep including two coats of Aluminium paint on the metal work.	Each	100	288.00	28800.00
21	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, including, bends, tees, reducers, cross sections etc suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
a)	100 mm width X 50 mm depth X 1.6 mm thickness	Metre	600	461.00	276600.00

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b)	150 mm width X 50 mm depth X 1.6 mm thickness	Metre	500	520.00	260000.00
c)	300 mm width X 50 mm depth X 1.6 mm thickness	Metre	350	789.00	276150.00
d)	450 mm width X 50 mm depth X 2.0 mm thickness	Metre	50	1117.00	55850.00
e)	600 mm width X 50 mm depth X 2.0 mm thickness	Metre	100	1386.00	138600.00
22	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	66	4490.00	296340.00
23	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	24	9292.00	223008.00
24	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	Metre	240	753.00	180720.00
25	Supplying and laying 25 mm X 5 mm G.I. strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Metre	660	109.00	71940.00
26	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	39	1082.00	42198.00
27	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Metre	330	421.00	138930.00
28	Providing and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15 mm dia G.I. pipe from earth electrode including connection with G.I. thimble excavation and re-filling as required.	Metre	11700	151.00	1766700.00
29	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Metre	480	856.00	410880.00
30	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre	1680	142.00	238560.00
31	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	Metre	180	1599.00	287820.00
32	Supply and fixing of H.T. Danger notice plate of 250x200mm made of mild steel at least 2mm thick and vitreous enameled white on both side with inscription in signal red colour on front side as required.	Each	4	155.00	620.00

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33	Supplying, drawing, connecting and testing of 0.5 mm dia annealed copper conductor PVC insulated PVC sheathed telephone wire in existing conduit/wire way duct etc. as required of following sizes:				
a)	4 Pair (8 core)	Metre	200	27.00	5400.00
b)	2 Pair (4 core)	Metre	3360	18.00	60480.00
34	Supplying and fixing of following sizes of PVC conduit along with the accessories in surface / recess including cutting the wall and making good the same in case of recessed conduit as required as per specification.				
a)	20mm dia PVC conduit	Metre	4500	53.00	238500.00
b)	25mm dia PVC conduit	Metre	2700	65.00	175500.00
c)	32mm dia PVC conduit	Metre	1600	85.00	136000.00
35	Providing and laying of 80mm dia medium class GI pipe including all fixing accessories concealed or surface as required.	Metre	100	697.00	69700.00
36	Supplying and fixing M.S. box with modular type telephone (RJ-11) outlet complete as required.	Each	84	95.00	7980.00
37	Supplying and fixing M.S. box with modular type coaxial outlet for TV antenna complete as required.	Each	150	94.00	14100.00
38	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.				
	1 or 2 Module (75mmX75mm)	Each	234	166.00	38844.00
39	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required.				
	1 or 2 Module	Each	234	79.00	18486.00
40	Providing, laying, connecting and testing of unarmoured TV cable RG-6 PVC insulated cable along wall or ceiling or through existing pipe.	Metre	4500	28.00	126000.00
42	Supplying of recessed type LED down-lighter with high efficiency white reflector and high transmissive diffuser ,fitting complete with, holder, electronic driver, heat sink and LED (less than 10% THD), low depth with die cast Aluminium housing 1 x 36 W LED with CRI >70, including with driver connections etc. as required	Each	42	6264.00	263088.00
43	Supplying of recessed type LED down-lighter with high efficiency white reflector and high transmissive diffuser ,fitting complete with, holder, electronic driver, heat sink and LED (less than 10% THD), low depth with die cast Aluminium housing 1 x 15 W LED with CRI >70, including with driver connections etc. as required	Each	1537	1764.00	2711268.00

44	Supplying of surface type LED with high efficiency white reflector and high transmissive diffuser ,fitting complete with, holder, driver, heat sink and LED (less than 10% THD), low depth with die cast Aluminium housing 1 x 15W LED with CRI >70, including with driver connections etc. as required	Each	618	1764.00	1090152.00
45	Supplying of surface type LED down-lighter with high efficiency white reflector and high transmissive diffuser ,fitting complete with, holder, driver, heat sink and LED (less than 10% THD), low depth with die cast Aluminium housing 1 x 11W LED with CRI >70, including with driver connections etc. as required	Each	374	2654.00	992596.00
46	Supplying, fixing, connecting, testing and commissioning of 1 x 28 watt T-5 light fixture luminaire complete with electronic ballast, lockable holders and fluorescent lamp including connection etc. as required	Each	448	888.00	397824.00
47	Supplying, fixing, testing and commissioning of mirror light 1 x 13 watt LED 1200mm luminaire complete with electronic ballast, lockable holders and LED lamp including connection etc. as required	Each	174	3664.00	637536.00
48	Supplying, fixing, connecting, testing and commissioning of Bulkhead type light fitting with poly carbonate diffuser complete with driver 1 x 6 W LED lamp including connections etc. as required	Each	71	1659.00	117789.00
49	Supply, installation, connecting, testing and commissioning of illuminated exit sign with 1 x 6 watt LED lamp including providing maintenance free batteries & charger capable of working for 2 hr duration mounted on recessed/ ceiling/wall complete with the approved EXIT self adhesive labels as per site requirement as required	Each	48	5750.00	276000.00
50	Supplying, fixing, connecting, testing and commissioning of highbay LED complete with , wire guard, holder, ballast 1 x 140 W lamp including connections etc. as required	Each	19	22578.00	428982.00
51	Supplying, fixing, connecting, testing and commissioning of up-down light with Metal halide lamp complete with , wire guard, holder, ballast 1 x 70 W lamp including connections etc. as required	Each	22	4976.00	109472.00
52	Supplying, erection, connecting, testing and commissioning of following size exhaust fan complete with gravity louver and connection with 3 core flexible wire as required.				
	a) 150 mm 900 RPM	Each	27	1819.00	49113.00
	b) 305mm 1400 RPM	Each	56	4474.00	250544.00
	c) 457mm 900 RPM	Each	15	7055.00	105825.00
53	Supply, installation, connecting, testing and commissioning of daylight sensor cum occupancy sensor including all wiring in the existing conduits required	Each	39	2598.00	101322.00

54	Supplying, fixing, connecting, testing and commissioning of surface/ recessed mount light with Metal halide lamp complete with , wire guard, holder, ballast 1 x 70 W lamp including connections etc. as required	Each	15	4976.00	74640.00
55	Supplying, installation, testing and commissioning of L.T. panel as per IEC:61439-I fully compartmentalized cubical type sheet clad floor mounted totally enclosed , IP-54 protection, free standing, floor mounted dust and vermin proof, indoor type compartmentalized powder coated of approved shade after antirust treatment (with min seven tanks) extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having 50KA fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc. as required as per specification and schematic diagram as required.				
	Note:				
	The incoming of Transformer feeder & DG feeder as shown on drawing shall be connected through bus duct. The suitable adopter box shall be provided on top only.				
	all ACB shall have microprocessor based O/C, E/C, E/F release with MODBUS RTU on board communication and shall have Ics=Icu=Icw=65KA for 1 sec & should be supplied with adapter terminal connections whose orientation can be changed on site.				
	All MCCB shall have microprocessor based release with MODBUS RTU on RS485 on board communication port. The total discrimination shall be ensured with the help of discrimination charts. All Cts & Pts shall be cast resin type. All MCCB shall have Ics=100% Icu and should have isolation feature & Class II front face as standard.				
	All ACBs shall have pre wired contacts for ON, OFF, Trip, Rackin, Rackout, spring charge status for SCADA communication along with display.				
	All MCCBs shall be motorized with microprocessor based release having spare wired contacts for monitoring ON/OFF and Trip shall be provided for SCADA communication and control for ON/OFF.				
	TVM shall have RS 485 modbus RTU on board communication protocol for SCADA communication.				
	The LT panel manufacturer shall provide necessary Aux. Contacts, multiply those contacts in the respective panels to hook up in PLC system				
	TRANSFORMER INCOMER [1 Nos.] shall be equipped as: 1600 KVA)				
	1 No. 2500A ,4P, EDO ACB with 230 V A.C. spring charged motor and with built-in microprocessor based releases for OC, S/C & E/F protection (IDMTL + instantaneous (high set)) with socket for connection (compatibility with Microsoft) as well as 6 NO + 6 NC auxiliary contacts (switch).				
	1 No. 24 volt D.C. Shunt release				

1 No. 230 volt A.C.closing coil				
1 No. 415 volt A.C. under voltage release.				
1 No. 2500 Amp. Ammeter (digital type) with inbuilt ASS				
1 Set of CTs 2500 A/ 5A class-1 for metering				
1 No.Volt Meter (digital type) with inbuilt VSS & control fuses.				
1 No.P.F. meter (digital type)				
1 No.KWH meter (digital type)				
1 No. C.T. 2500 / 5A Class-1 for Capacitor panel.				
Under Voltage relay 415 V A.C.				
Over Voltage relay 415 V A.C.				
O/C, S/C, and E/F relay				
Breaker control switch				
1 Set of phase indication lights R,Y,B.				
1set of ON-OFF-TRIP ckt. Healthy. indication lights				
Spring charged indication.				
TRANSFORMER INCOMER [1 Nos.] shall be equipped as: 500 KVA)				
1 No. 800A ,4P, EDO ACB with 230 V A.C. spring charged motor and with built-in microprocessor based releases for OC, S/C & E/F protection (IDMTL + instantaneous (high set)) with socket for connection (compatibility with Microsoft) as well as 6 NO + 6 NC auxiliary contacts (switch).				
1 No. 24 volt D.C.Shunt release				
1 No. 230 volt A.C.closing coil				
1 No. 415 volt A.C. under voltage release.				
1 No. 800 Amp. Ammeter (digital type) with inbuilt ASS				
1 Set of CTs 1250 A/ 5A class-1 for metering				
1 No.Volt Meter (digital type) with inbuilt VSS & control fuses.				
1 No.P.F. meter (digital type)				
1 No.KWH meter (digital type)				
1 No. C.T.800 / 5A Class-1 for Capacitor panel.				
Under Voltage relay 415 V A.C.				
Over Voltage relay 415 V A.C.				
O/C, S/C, and E/F relay				
Breaker control switch				
1 Set of phase indication lights R,Y,B.				
1set of ON-OFF-TRIP ckt. Healthy. indication lights				
Spring charged indication.				
D.G. SET INCOMERS [2Nos.] shall be equipped as: (500 KVA)				
1 No. 800A ,4P, EDO ACB with 230 V A.C. spring charged motor and with built-in microprocessor based releases for OC, S/C & E/F protection (IDMTL + instantaneous (high set)) with socket for connection (compatibility with Microsoft) as well as 6 NO + 6 NC auxiliary contacts (switch).				
1 No. 24 volt D.C.Shunt release				
1 No. 230 volt A.C.closing coil				
1 No. 415 volt A.C. under voltage release.				
1 Set of CTs 800 A/ 5A class-1 for metering				
Digital Tri-Vector meter with KVAR, KW, KWH, PF, Ampere, Volts, Frequency metering				

Battery charger 230 V/ 24 V DC, 20 A with DC ammeter and DC voltmeter. Charger should have all basic protections like over load, over Voltage reverse polarity etc.				
Under Voltage relay 415 V A.C.				
Over Voltage relay 415 V A.C.				
O/C, S/C, and E/F relay				
Three phase differential relay				
Trip circuit supervision relay				
Auxillary relay				
Master trip relay				
Breaker control switch				
Automatic load supervision relay				
1 Set of phase indication lights R,Y,B.				
1set of ON-OFF-TRIP ckt. Healthy. indication lights				
Spring charged indication.				
D.G. SET INCOMERS [1Nos.] shall be equipped as: (315 KVA)				
1 Nos. 630A TPN MCCB (50 KA) with electronic releases				
1 Set of CTs 630A/ 5A class-1 for metering				
Digital Tri-Vector meter with KVAR, KW, KWH, PF, Ampere, Volts, Frequency metering				
Three phase differential relay				
Trip circuit supervision relay				
Automatic load supervision relay				
1 Set of phase indication lights R,Y,B.				
1set of ON-OFF-TRIP ckt. Healthy. indication lights				
SOLAR POWER PLANT INCOMERS [1 Nos.] shall be equipped as: (40 KVA)				
1 Nos. 100A TPN MCCB (35 KA) with electronic releases				
1 Set of CTs 100 A/ 5A class-1 for metering				
Digital Tri-Vector meter with KVAR, KW, KWH, PF, Ampere, Volts, Frequency metering				
1 Set of phase indication lights R,Y,B.				
1set of ON-OFF-TRIP ckt. Healthy. indication lights				
BUS BARS:-				
1600 Amps. FP Aluminium bus bars (50 KA)				
BUS COUPLER:-				
2 No. 800A ,4POLE ,EDO ACB with 230 V A.C. spring charged motor.				
2 sets Breaker Control switch				
2 Sets of phase indication lights R,Y,B.				
2 sets of ON-OFF-TRIP ckt. Healthy. indication lights				
Interlocking: Transformer incomers and bus couplers shall be electrically and mechanically interlocked so that no different source can be paralleled at any point of time.				
OUTGOINGS:-				
1 No. 1250A ,4P, MDO ACB with built-in microprocessor based releases for OC, S/C & E/F protection				

	3 Nos. 400A TPN MCCB (50 KA) with electronic releases				
	13 Nos.200A TPN MCCB (50 KA) with electronic releases				
	12 Nos.100A TPN MCCB (50 KA) with electronic releases				
	3 Nos.63A TPN MCCB (50 KA) with electronic releases	Set	1	5508561.00	5508561.00
	Note:				
	All outgoing feeders shall have ON/OFF indication lights.				
56	Auto Manual load management (For 3 Nos.) DG Sets PLC system.	Set	1	1319505.00	1319505.00
	3 Nos. no volt monitors for DG supply				
	2 Nos. no volt monitors for main supply				
	1 No. PLC Comprising:				
	a. PLC (Allen Bradley/ siemens)				
	b. 5 Nos. Power monitors				
	c. PLC rack				
	d. Digital input modes				
	e. Digital Output modes				
	f. EPROM (EP)				
	g. Man Machine interface (MMI)				
	h. Grafix Software for PLC				
	i. 1 set mimic (SEM)				
	j. Set of Auxiliary relays				
	k. Set of indicating lights and push buttons				
	l. set of control MCBs				
	m. Communication cable from PLC to computer as per requirement				
	n. 1 No. Auto-manual-semi auto & test switches				
	o. 1 No. status indicator				
	p. 1 KVA UPS				
	q. 1 No. Auxiliary transformer (star/star)				
	r. 1 No. printer A3 size				
	s. PC as per specifications (Refer list of makes of materials)				
	Metering				
	Power & Energy monitor model (EM 6400 with RS-238/485 port accuracy class 0.5)				
	Visual Indications & Control				
	1 set running				
	1 No. Emergency stop push button				
	1 No. Breaker close push button				
	1 No. Breaker trip push button				
	Annunciation				
	Annunciator with hooter, test, accept and reset Push button & Annunciate				
	Annunciator Inscriptions:				
1	Solid state Annunciator (3 Nos. DG sets) for DG-1/ DG-2/ DG-3				

	Inscription:			
	Electrical Fault			
	Excitation Failure			
	Reverse Power			
	Emergency Shutdown			
	Over speed			
	Low Lube oil pressure			
	High water temperature			
	Engine overheating			
	Bearing temperature high			
	Winding temperature high			
	Low fuel level			
	Exhaust quality			
	Spare			
	Spare			
	Spare			
	Spare			
2	Solid state Annunciator (1 No.) for ASP			
	Inscription			
	DG-1 Fails to Start			
	DG-1 Neutral Discrepancy			
	DG-1 ACB Fails to Close			
	DG-2 Fails to Start			
	DG-2 Neutral Discrepancy			
	DG-2 ACB Fails to Close			
	DG-3 Fails to Start			
	DG-3 Neutral Discrepancy			
	DG-3 ACB Fails to Close			
	Annunciator shall have facility for PC interface			
3	Status indicator Annunciator (1No.) for ASP			
	DG-1 Supply Available			
	DG-1 ACB connected to Bus			
	DG-1 Neutral ON			
	DG-2 Supply Available			
	DG-2 ACB connected to Bus			
	DG-2 Neutral ON			
	DG-3 Supply Available			
	DG-3 ACB connected to Bus			
	DG-3 Neutral ON			
	BC - ACB ON			
	System operation:			
	The emergency Diesel -Alternator sets will function as follows:			
	DG SUPPLY : 3 NOS			
	MAINS SUPPLY : 2 NOS.			
	BUS COUPLER : 1 NOS			
	Manual Mode:			
	Two different source / supply can't be paralleled as interlocking is Provided between all the incomers and Bus Couplers in both Auto/Manual mode.			

	PLC on manual mode:			
a.	When all Grid supply available, breaker of all mains shall be switched ON with B/C in off position, all sections of bus bar will be fed through Grid supply.			
b.	On Grid failure all mains breaker will get tripped and depending on the load demand any one of the DG can be started and respective DG Breaker along with bus-coupler can be switched 'ON' to charge the complete Bus manually. However D.G. can be started automatically if it is in Auto Mode.			
c.	We can run one D.G. and one mains supply (but not on the same bus) with bus coupler in off position or Vice-Versa.			
d.	No time delay shall be applicable in Manual Mode for closing and tripping of air ckt. Breaker.			
	Auto Mode:			
i.	Grid Supply Healthy:			
	When all mains supply available, breaker of all mains shall be switched ON with B/C in off position, all sections of bus bar will be fed through Grid supply.			
ii.	On Grid Failure:			
	Option - 1.			
	DG 1 in auto mode, rest of D.G.s in manual or in off mode. As Soon as Grid fails DG1 will be started automatically. Healthiness of the DG1 voltage will be sensed by PLC through Under Voltage Relay provided in DG incomer and closing command will be given by PLC to DG1 incomer Breaker and B/C will have time delay of 10 seconds, will be closed so that complete load will be feed through DG1 and similarly in case with DG2, DG3, DG4			
	Option - 2			
	DG1 & DG2 in Auto mode and other DG sets are Manual or in off Mode In this case both the DG sets will start as soon as grid fails. After attaining proper Voltage PLC will give closing command to DG1, DG2 and bus coupler will get tripped. If either of DG fails to start than in-between bus coupler will get closed to charge the complete bus through single DG set. Further if faulty DG becomes healthy and comes in line than in-between bus coupler will get tripped and DG breaker will get closed.			
	Option - 3			
a.	If all D.G.s are in Auto mode then the bus coupler will be in ON position and the DG will get Start one by one as per the priority set as per the load conditions.			

b.	If load on DG exceeds 80% of its full load after 10 sec. of time delay in order to check load consistency, the next DG which is in auto mode and healthy condition will start automatically bus coupler will get tripped through PLC and DG breaker of new DG will get closed.				
c.	If total load on the bus bar is less than 60%, the last DG will trip after time delay of 300 sec and Bus coupler will get open, engine will stop after a idle run of 180 sec if the operator desires to stop the engine without any idle run, select the DG in test mode or can press the emergency push button.				
d.	On mains restoration of (45 seconds stabilized) supply all DG Breaker will gets tripped and Mains breaker will get closed. B/C will get closed with time delay say of 10 seconds. On further failure of Grid supply same sequence of operation will be followed as above.				
57	Supplying, installation, testing and commissioning of free standing, front operated cubical type capacitor control panel with Aluminium bus bars of current density 0.8Amps/sq.mm.& rupturing capacity (35KA), LED indicating lamps interconnections with under noted switch gears as per technical specifications and drawings complete as required. All MCCB shall have rotary operating handles. (capacitor control panel)				
	600 kvar capacitor control panel				
	1 No.1250A ,TPN ,MDO ACB with releases for O/C,S/C&E/F.protection.				
	1 No. Ammeter (digital type) with inbuilt ASS				
	1 No.Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No.12 step A.P.F.C.Relay (digital type)				
	3 Nos. CTs- 1250/5 Amps. CI-1				
	1 Set phase indication lights (R, Y, B)				
	1250 Amps. TP&N aluminium bus bars (50 KA)				
	12 No.125 Amps. TPN MCCB(50 KA) with electronic releases.				
	12 No.50 KVAR TP Shunt capacitor with discharge register and 7% D-tuned Harmonic reactor filter				
	12 No.110 Amps. TP capacitor duty contactors.				
	1 No. Auto-Off-Manual selector switch.				
	12 Sets self illuminated Red-Green ON-OFF push buttons.	Set	1	1757532.00	1757532.00
58	Supplying, installation, testing and commissioning of free standing, front operated cubical type capacitor control panel with Aluminium bus bars of current density 0.8Amps/sq.mm.& rupturing capacity (35KA), LED indicating lamps interconnections with under noted switch gears as per technical specifications and drawings complete as required. All MCCB shall have rotary operating handles. (capacitor control panel)				
	180 kvar capacitor control panel				

	1 Nos. 400A TPN MCCB (35 KA) with electronic releases				
	1 No. Ammeter (digital type) with inbuilt ASS				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 12 step A.P.F.C. Relay (digital type)				
	3 Nos. CTs- 400/5 Amps. CL-1				
	1 Set phase indication lights (R, Y, B)				
	400 Amps. TP&N Aluminium bus bars (35 KA)				
	12 No. 40 Amps. TPN MCB				
	12 No. 15 KVAR TP Shunt capacitor with discharge register and 7% D-tuned Harmonic reactor filter.				
	12 No. 30 Amps. TP capacitor duty contactors.				
	12 Sets self illuminated Red-Green ON-OFF push buttons.	Set	1	730949.00	730949.00
59	Supplying, installation, testing and commissioning of indoor type free standing, front operated cubical type capacitor control panel with Aluminium bus bars of current density 0.8Amps/sq.mm.& rupturing capacity (50KA), LED indicating lamps interconnections with under noted switch gears as per technical specifications and single line diagram complete as required. All MCCB shall have rotary operating handles. (High mast change over Panel)				
	INCOMER:-				
	4 No. 1000A ,4P, EDO ACB with built-in microprocessor based releases for OC, S/C & E/F protection with extended terminal for cable connection from DG sets.				
	Provision for 4 Nos. 625 KVA DG sets- incoer				
	3 nos. 1000A three phase Automatic change over switch				
	4 Set of phase indication lights R,Y,B.				
	BUS BARS:-				
	1000 Amps. FP Aluminium bus bars (35 KA)				
	OUT GOINGS:-				
	8 Nos. 400A TPN, MCCB (25 KA).	Set	1	2660708.00	2660708.00
60	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB- Main Pavilion)				
	INCOMER:-				
	1 Nos. 200 Amps. TPN MCCB(35 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				

	1 No. 0-200 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (35 KA)				
	OUT GOINGS:-				
	12 Nos. 63 Amps. TPN MCCB(25 KA) with electronic releases.	Set	1	336318.00	336318.00
61	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (Main Pavilion Floor Panel – Light & power)				
	INCOMER:-				
	1 Nos. 63 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	8 Nos. 40A TPN, MCB (10KA).	Set	6	82723.00	496338.00
62	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB-TV Production)				
	INCOMER:-				
	1 Nos. 200 Amps. TPN MCCB (25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-200 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	2 Nos. 63 Amps. TPN MCCB (25 KA) with electronic releases.				
	9 Nos. 63A TPN, MCB (10KA).	Set	1	128831.00	128831.00

63	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB- General stand - 1.2)				
	INCOMER:-				
	1 Nos. 100 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-100 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	100 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	8 Nos. 40A TPN, MCB (10 KA).	Set	2	81367.00	162734.00
64	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB-Media Pavilion Panel -1)				
	INCOMER:-				
	1 Nos. 200 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-200 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	2 Nos. 63 Amps. TPN MCCB (25 KA) with electronic releases.				
	6 Nos.40A TPN, MCB (10 KA).				
	4 Nos.63A TPN, MCB (10 KA).	Set	1	131544.00	131544.00

65	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB-Media Pavilion Panel-2)				
	INCOMER:-				
	1 Nos. 100 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-100 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	3 Nos.63A TPN, MCB (10 KA).				
	7 Nos.40A TPN, MCB (10 KA).	Set	1	86792.00	86792.00
66	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB- Premium seat Panel-1)				
	INCOMER:-				
	1 Nos. 100 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-100 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	2 Nos.63A TPN, MCB (10 KA).				
	5 Nos.40A TPN, MCB (10 KA).	Set	1	82723.00	82723.00
67	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (MDB- Premium seat Panel-2)				

	INCOMER:-				
	1 Nos. 100 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-100 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	4 Nos. 40A TPN, MCB (10 KA).	Set	1	71874.00	71874.00
68	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (UPS Panel - Main Pavilion & PS-II)				
	INCOMER:-				
	1 Nos. 63 Amps. FP MCCB (25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. 4P Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	18 Nos. 40A FP, MCB (10 KA).	Set	1	115270.00	115270.00
69	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed , extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (UPS Panel – Media Pavilion & GS-II)				
	INCOMER:-				
	1 Nos. 63 Amps. FP MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. 4P Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	12 Nos. 40A FP, MCB (10 KA).	Set	1	100353.00	100353.00

70	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (UPS Panel - TV Production, basement, PS-1 & GS-I)				
	INCOMER:-				
	1 Nos. 63 Amps. FP MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	200 Amps. 4P Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	17 Nos. 40A FP, MCB (10 KA).	Set	1	112558.00	112558.00
71	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (Lift Panel)				
	INCOMER:-				
	1 Nos. 63 Amps. TPN MCCB (25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	100 Amps. TPN Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	3 Nos.63A TPN, MCB (10 KA).				
	2 Nos.32A TPN, MCB (10 KA).	Set	3	73230.00	219690.00
72	Supply, laying and testing of under noted sizes of Aluminium conductor XLPE insulated PVC sheathed & sleeved armoured and overall PVC sleeved 1.1 KV grade power distribution cables conforming to relevant IS code and as per specification in ground (in existing trenches) through pipe or on wall / racks cable trays including dressing and clamping the cable with MS zinc passivated clamps etc. as required.				

a)	3.5 x 300 sq.mm	Metre	2460	2588.00	6366480.00
b)	3.5 x 240 sq.mm	Metre	1200	2111.00	2533200.00
c)	3.5 x 185 sq.mm	Metre	4150	1675.00	6951250.00
d)	3.5 x 120 sq.mm	Metre	800	1135.00	908000.00
e)	3.5 x 70 sq.mm	Metre	200	731.00	146200.00
f)	3.5 x 50 sq.mm	Metre	1000	539.00	539000.00
g)	3.5 x 35 sq.mm	Metre	400	533.00	213200.00
h)	4 x 25 sq.mm	Metre	900	416.00	374400.00
i)	4 x 16 sq.mm	Metre	2450	360.00	882000.00
j)	4 x 10 sq.mm	Metre	2650	243.00	643950.00
73	Supply, laying and testing of under noted sizes of copper conductor XLPE insulated PVC sheathed & sleeved armoured and overall PVC sleeved 1.1 KV grade power distribution cables conforming to relevant IS code and as per specification in ground (in existing trenches) through pipe or on wall / racks cable trays including dressing and clamping the cable with MS zinc passivated clamps etc. as required.				
a)	4 x 6 sq.mm	Metre	300	573.00	171900.00
b)	4 x 4 sq.mm	Metre	500	411.00	205500.00
c)	4 x 2.5 sq.mm	Metre	1000	301.00	301000.00
d)	3 C x 6 sq.mm	Metre	100	446.00	44600.00
e)	3 C x 4 sq.mm	Metre	200	323.00	64600.00
f)	3 C x 2.5 sq.mm	Metre	100	243.00	24300.00
74	Supply and making end termination with brass double compression gland including providing and crimping of copper solder less lugs / ferrules for XLPE armoured power copper conductor cable 1.1 KV grade of following sizes:-				
a)	4 x 6 sq.mm	Set	20	146.00	2920.00
b)	4 x 4 sq.mm	Set	50	146.00	7300.00
c)	4 x 2.5 sq.mm	Set	62	146.00	9052.00
d)	3 C x 6 sq.mm	Set	4	146.00	584.00
e)	3 C x 4 sq.mm	Set	10	146.00	1460.00
f)	3 C x 2.5 sq.mm	Set	4	146.00	584.00
75	Supplying, laying, connecting, terminating, testing & commissioning of under noted sizes of PVC insulated, PVC sheathed unarmoured and overall PVC sleeved 1.1 KV grade control cables in pipe, wall, racks, cable trays, including, dressing, clamping with M.S Zinc passivated clamps etc as required conforming to relevant IS code and technical specifications.				
a)	8C x 1.5 sq.mm	Metre	50	345.00	17250.00
b)	10C x 1.5 sq.mm	Metre	50	459.00	22950.00
c)	14C x 1.5 sq.mm	Metre	50	601.00	30050.00
76	Supplying, laying, of following sizes XLPE, 11 KV earthed cable in existing open structure/ Hume pipe including in vertical formation as per technical specification and complete as required. (The payments of cable length shall only be made upto gland in panel on both sides not for loop and connection cables of approximate length upto 2 metres either sides.)				

a.	3Cx185 Sq.mm.	Metre	150	2904.00	435600.00
77	Supplying and fixing ladder type prefabricated CRCA sheet steel Stove enameled cable tray complete with bend/tee joints, coupling plate and nut bolts washers etc. with side runner 20 x 100 x 2.5mm and centre rungs of size 15 x 30 x 2.5mm c/c 250mm. including providing and fixing of hangers etc. as required.				
a)	300mm	Metre	200	600.00	120000.00
b)	450mm	Metre	100	1000.00	100000.00
c)	600mm	Metre	50	1200.00	60000.00
d)	900mm	Metre	50	1600.00	80000.00
78	Supply and fixing of steel work in position including clamps, frame work of flats, angle iron, channel with fabrication work including cutting, bending, welding, drilling bolting etc. for cable supports, panel supports, DG exhaust, fuel pipe supports, bus duct supports etc as per design as required. One coat of primer and 2 coats of enamel paint of approved shade shall be provided.	Kg.	2000	70.00	140000.00
79	Providing, laying, connecting and testing of multi-core telephone armoured cable of conductor size 0.63mm dia annealed copper conductor PVC insulated PVC sheathed jelly filled (as per DOT specification) cable along wall or ceiling or through existing pipe.				
a)	10 Pair telephone cable	Metre	550	163.00	89650.00
b)	20 Pair telephone cable	Metre	300	236.00	70800.00
c)	50 Pair telephone cable	Metre	200	463.00	92600.00
d)	100 Pair telephone cable	Metre	200	710.00	142000.00
80	Providing, fixing connecting and testing of under noted size of solderless telephone tag block Krone make in surface/recess in wall required size of M.S. box with hinged lockable cover duly stove enamel painted.				
a)	10 pair tag block	Each	11	1566.00	17226.00
b)	20 pair tag block	Each	3	2428.00	7284.00
c)	50 pair tag block	Each	1	6236.00	6236.00
d)	100 pair tag block	Each	1	7567.00	7567.00
81	Supplying and fixing M.S. box with Phenolic laminate plate 4- way splitter box for TV antenna complete as required.	Each	75	1162.00	87150.00
82	Supplying and fixing GI box with modular type data/computer (RJ-45) outlet complete as required.	Each	128	402.00	51456.00
83	Providing, laying, connecting and testing of data/computer Cat-6 cable along wall or ceiling or through existing pipe, including penta scanning documentation etc as required.	Metre	5120	33.00	168960.00
84	Supplying and fixing of 450 x 450 x 150 M.S. box with Phenolic laminate plate of 16 SWG M.S. Sheet with hinged door cover for mounting TV amplifier including wooden base plate complete as required.	Each	20	8425.00	168500.00

85	Supply , Installation , Testing and commissioning of IP Based voice Communication System with 04 Port Voicemail ,04 Port FXS ,04 Port FXO ,1 PRI Trunk lines (30 Ch) Circuit with CLIP Facility 200 IP users License ,01 Nos. IP Operator Console,100 Party Conference ,Speed Dial, Music on Hold , Internal/ External ring difference ,Call Barring, Call Pickup. - Redundant server in active-Active mode Approved Make : Toshiba/Avaya/Tadiran	Nos	1	3104125.00	3104125.00
86	Supply , Installation , Testing and commissioning of Type 1 IP Phone . Graphic LCD display with backlight 3 user accounts with multi-line appearance keys Local and company-wide phone directories. Approved Make : Toshiba/Avaya/Tadiran	Nos	5	10569.00	52845.00
87	Supply , Installation , Testing and commissioning of Type 2 IP Phone 2 VoIP account 2x15 characters LCD, IPV6, 2xLAN, PoE Approved Make : Toshiba/Avaya/Tadiran	Nos	15	6997.00	104955.00
88	Supply, Installation, Testing & Commissioning of Microprocessor based 10 loop capacity , Networkable Analogue Addressable type Fire Alarm Control panel. The FACP shall have minimum 640 character Display with fully functional computerized keypad. Each loop shall have a minimum loading of 125 detectors and 125 devices in one loop with 20% spare capacity. Four access levels, flash EPROM, 240 volts AC power supply, automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working and for 2 hours during an emergency conditions as required. The FACP shall be UL 9th Edition Listed. FACP should have sufficient digital amplifier with sufficient cards for the PA riser and FFT riser. There shall be provision for connecting microphone and telephone handset to this panel. Failure of Fire Alarm Panel CPU shall not result in failure of operation of Amplifiers complete as per specifications as required.	Set	1	1699082.00	1699082.00
89	Supply, installation, testing and commissioning of UL listed integral microprocessor (not micro-controller) intelligent soft addressable photoelectric or optical smoke detectors based with moisture free & gold plated terminals in base complete as per specifications as required.	Each	926	4082.00	3779932.00
90	Supply, installation, testing and commissioning of UL listed response indicator with LED indicator lamps complete as per specifications as required.	Each	325	157.00	51025.00

91	Supply, installation, testing and commissioning of UL listed integral microprocessor (not micro-controller) intelligent soft addressable type heat detector (combined rate of rise and fixed temperature) consists of two independent thermistors, designed to automatically compensate changes in ambient temperature with moisture free, rust free & gold plated terminals in base complete as per specifications as required.	Each	17	3470.00	58990.00
92	Supply, installation, testing and commissioning of UL listed integral microprocessor (not micro-controller) intelligent soft addressable type Ductable smoke detector including air sampling unit/sampling chamber complete as per specification as required.	Each	20	13808.00	276160.00
93	Supply, installation, testing and commissioning of UL listed integral microprocessor (not micro-controller) intelligent soft addressable type manual call point, 1 stage with in-built LED, lighting up automatically to confirm its actuation complete as per specification as required.	Each	39	3298.00	128622.00
94	Supply, installation, testing and commissioning of UL listed listed wall mounted hooter with strobe (100 dba) complete as per specification as required.	Each	39	1879.00	73281.00
95	Supply, installation, testing and commissioning of UL listed listed surface/ recessed type mounted directly on wall/ ceiling with 1/4-1/2 tap changer speakers with line matching transformer complete as per specification as required.	Each	439	2164.00	949996.00
96	Supply, installation, testing and commissioning of integral microprocessor (not micro-controller) input, output, control, isolator and monitor modules for shutting down lifts, AHU's and controlling lift pressurization fans and ventilation fans etc. including power supply for driving the module as per requirement.	Each	50	4599.00	229950.00
97	Supplying, fixing, testing and commissioning of UL listed telephone talk back units (fire fighter telephone handset) compatible to MFACP complete as required.	Each	39	9407.00	366873.00
98	Supply, Installation, Testing & Commissioning Networkable Active Repeater Panel with 640 Character Backlit LCD Display and fully function Qwerty Keypad with digital voice evacuation system. DVC shall have riser for PA System and rise for Fire Fighter's two way communication system. Same make as of FACP. UL Listed Repeater Panel should be on true peer to peer network.	Each	1	187879.00	187879.00

99	Supply, Installation, Testing & Commissioning of Fire Command Station including Graphical User Interface Software. The GUI based main network software shall be capable of graphically representing each node being monitored with floor plans and icons depicting the actual locations of the various systems; and / or sensors' locations. The GUI software shall be located in control room and shall monitor all the blocks panel connected with each other. The software shall provide the facility to Monitor, Control all the Digital Voice Evacuation as well as 2 way communication from main control room using voice signals over Fire Network along with the Fire detection signal. The Graphic workstation shall act as an independent node communicating on the peer to peer true peer to peer network and shall not be dependent on the Fire Panel CPU for operation (failure of any CPU shall not result in failure of Graphic Workstation).	Each	1	159914.00	159914.00
100	Supplying, laying, testing and commissioning of point wiring for smoke detectors, heat detectors with 2 x 1.5 sq.mm FRLS PVC insulated armoured copper conductor cable clamped in ceiling including loop circuit from main fire alarm panel located at ground floor in fire control room complete as required.	RM	15780	125.00	1972500.00
101	Supplying, laying, testing and commissioning of point wiring for hooter with 4 x 1.5 sq.mm FRLS PVC insulated armoured copper conductor cable clamped in ceiling including loop circuit from main fire alarm panel located at ground floor in fire control room complete as required.	RM	3510	156.00	547560.00
102	Supplying, wiring, testing and commissioning of point wiring for speakers with 2 core 1.5 Sq.mm cu. Twisted copper conductor wire including loop wiring from MFPCP in M.S conduit with conduit accessories complete as required.	RM	6585	120.00	790200.00
103	Supplying, wiring, testing and commissioning of point wiring for telephone talk back units with 2 pair (4 core) 0.61mm dia annealed copper conductor PVC insulated PVC sheathed telephone cable in M.S. conduit with conduit accessories complete as required.	RM	3510	145.00	508950.00
104	Supply, installation, testing and commissioning of 1/2.7" CMOS IP Dome Camera , Picture Elements 1080p (1920 x 1080 pixels), Resolution 1080p / 720p / VGA, 30 FPS (All Resolutions) ,True Day/Night with Removable IR Cut Filter, IR Illuminator (25 Meter Max Effective Range) 850nm, Minimum Illumination 0.0001 (0.0 With IR Illumination), Dynamic Range 69dB, Compression(H.264, MJPEG), Bandwidth Configurable , Max Streams -4, Gain Control AGC, White Balance Auto / Manual / ATW , Backlight Compensation On/Off 3-9mm Vari focal	nos	19	64296.00	1221624.00

105	Supply, installation, testing and commissioning of 1/2.7" CMOS IP Dome Camera outdoor type with PTZ, Picture Elements 1080p (1920 x 1080 pixels), Resolution 1080p / 720p / VGA, 30 FPS (All Resolutions) .True Day/Night with Removable IR Cut Filter, IR Illuminator (25 Meter Max Effective Range) 850nm, Minimum Illumination 0.0001 (0.0 With IR Illumination), Dynamic Range 69dB, Compression(H.264, MJPEG), Bandwidth Configurable , Max Streams -4, Gain Control AGC, White Balance Auto / Manual / ATW , Backlight Compensation On/Off,3-9mm Vari focal.	nos	20	265305.00	5306100.00
106	Supply, installation, testing and commissioning of Monitoring software video surveillance all channels real-time live monitoring simultaneously in single PC, Support for various video format : H.264, MPEG-4, MJPEG , Support for various video resolution: megapixel (1M, 2M, 3M), Full HD, 4CIF, Half D1, VGA, CIF, Powerful E-map based monitoring, Remote PTZ control and power area zoom, Support for various search and playback options : date and time based search : event (alarm, motion, intelligent video) based search: normal playback, backward playback, fast/slow playback, step playback , Notification in case of event occurring : highlighting in the border of video window : display event log message in real time, Back up capability : manual back up: AVI, REC1, SEC format, Multi-level user access and authority management , Support for multi-language user interface, Automatic search of network cameras for quick and easy configuration, Easy device management (configuration, firmware upgrade), inputs to ibms system complete as required.	Set	1	446078.00	446078.00
107	Supply, installation, testing and commissioning of 24 port network switch with PoE	nos	6	141890.00	851340.00
108	Supply, installation, testing and commissioning of Layer 3 switch at server end as directed by Engineer-in-Charge	nos	1	437486.00	437486.00
109	Supply Installation, Testing & Commissioning of Suitable storage for above cameras with storage capacity of 10 TB (to be provided) and provision (without storage) for 30 days recording space for storage rack of all cameras in 25 fps, 720 dpi resolution, 24x7 working in full capacity recording with 20% spare capacity, scalable upto 90 days. The vendor shall furnish detailed calculation for the same.	Set	1	533451.00	533451.00
110	Supply, installation, testing and commissioning of Wall mounted 6U closed racks with power supply complete as required for the network racks	nos	6	7147.00	42882.00
111	Supply, installation, testing and commissioning of 42U floor mounted closed rack with power supply , ladder complete as required	nos	1	84252.00	84252.00

112	Supply, installation, testing and commissioning of Armored Optical Fiber 6 Core Cable for switch to switch connectivity	metre	1000	279.00	279000.00
113	Supply, laying, terminating, testing of cat-6 cable in FRLS existing PVC conduits	metre	3900	33.00	128700.00
114	Supply Installation, Testing & Commissioning of Intel i7 4th Generation processor 3Ghz, 4GB RAM with 2TB hard disk, DVD-RW/keyboard/optical mouse/LAN card/19" LED monitor. Minimum 6 USB ports. With pre-loaded licensed Windows 7 Professional software, software license for remote monitoring of CCTV system as per specifications.	nos	1	131055.00	131055.00
115	Supply, installation, testing and commissioning of color high resolution LED Video wall of comprising of 4 nos. 40 inch display, full HD, equivalent to SAMSUNG 400 UX-2 make complete with all accessories.	Set	1	325229.00	325229.00
116	Supply Installation, Testing & Commissioning of RJ-45 outlets near the cameras	nos	39	402.00	15678.00
117	Supply Installation, Testing & Commissioning of Media Converter SM/SFP Module	nos	1	7886.00	7886.00
118	Supply Installation, Testing & Commissioning of LIU to Media converter connectivity.	nos	6	17127.00	102762.00
119	Supply Installation, Testing & Commissioning of 8 port loaded fiber LIU box with pigtails and couplers	nos	6	14294.00	85764.00
120	Supply, Installation, testing & commissioning of 1x 30 KVA UPS system configuration with 3Phase Input and 3 Phase Output True On Line Double Conversion UPS including Battery Circuit Breaker for Each Module CRCA housing with all required fixing accessories and hardware, Inbuilt Galvanic Isolation Transformer, Inbuilt Static switch bypass and inverter in each UPS module, In-Built Manual Maintenance by-pass, Sealed Maintenance free batteries for 15 Min back up, Battery Racks MS Powder Coated etc complete as required.	Set	3	528211.00	1584633.00
121	Supply, Erection, Installation & Commissioning of External Lightning Wide Area Protection System based on pro-active Early Streamer Emission (ESE) Technology. No external power source required. Break down time not more than 245.5 Micro second. Wind Resistance up to 120miles/hours. Produces a leader of not less than 2x10E8 V/m/s in the lightning generated electromagnetic field with Level-I protection radius of 79 meters at 5 mtr. Mast including mast for supporting the device. Device confirming to NFC17-102 & UNE 21186 standards & CPRI Tested.	Set	3	372950.00	1118850.00
122	Supply, Erection, Installation & Commissioning of the Down Conductor which is a 70 Sq. mm flexible, single core PVC insulated copper cable.	RM	150	450.00	67500.00

123	Supply, Erection, Installation & Commissioning of Lightning Event Counter (Model: LEC-IV) for counting the number of lightning strikes without any power supply. The Counter should be mounted on the Down Conductor and the triggering impulse should be $> = 1.5$ KA for $8/20\mu s$. The Lightning Event Counter should be robust, non-resettable mechanical counter with IP65 rated enclosure suitable for external application.	Set	3	3500.00	10500.00
124	Supply, Erection, Installation & Commissioning of the Earthing system which should cater for the Lightning Protection System earthing and should be maintenance free. Earth Enhancing Compounds should be used to treat the soil for lowering the effective ground impedance. Maintenance free earth pits made of ground enhancing material (GEM) - 3 or 4 bags of 11.3 Kg each and 250 microns copper bonded ground rods - 4 nos of size 5' length and 5/8" diameter connected with each other with 25 x 3 mm Copper Strip and high performance earth clamps	Set	3	30000.00	90000.00
125	Design, supply at site, installation, testing & commissioning of 3-phase, 415 volt, 1500 RPM, 50 HZ, air-cooled, Diesel generator set of 315 KVA at 0.8 pf lagging diesel engine alternator set mounted on common base frame in outdoor type acoustic enclosure, day tank capacity of 990 liters, with AMF Panel, battery, batter charger, return fuel cooler, anti vibration mounting pads including residential silencer, engine alternator, auto start, safeties with accessories as per specification complete as required. Diesel engine shall conform to IS:10000 and alternator shall be self excited complete with AVR to IS:4722.	Set.	1	4081049.00	4081049.00
126	Supplying and fixing of under noted 'B' class MS pipe for DG exhaust complete with bends, elbow, flanges etc. as required.				
a)	200 mm dia pipe	Metre	10	3179.00	31790.00
127	Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 22 gauge Aluminium sheet cladding etc. as required for the under mentioned dia pipe.				
a)	200 mm dia pipe	Metre	10	1437.00	14370.00
128	Supply, Installation, testing and commissioning of 11 KV HT metering panel board suitable for indoor installation for use on 11 KV 50 C/S earthed system including CTs and PTs complete with connections etc as required.				
a)	3 - Nos. PT's 11KV /Rt.3 /110V/Rt.3 cast resin type.				
b)	3 - Nos. CTs - 200/5A class -1or as per state electricity board				
c)	2 sets of HRC fuses with fuse base (H.T. fuse - 1 A & LT fuse 2-6 A)				
d)	Bus link Fuses with fuse base				

e)	2 Nos. indoor cable end box for 3C x 240 Sq.mm. 11 KV Aluminium conductor XLPE cable (Incoming & outgoing Cables)				
f)	1 No. Electronic Digital trivector meter 200/5A accuracy class-1.0 or as per state electricity board	Set	1	153242.00	153242.00
	Note:				
	The supplier/ contractor shall get tested and get approvals of the metering panels as well as equipments including their sealing etc. from state electricity board as required.				
129	Supply , Installation, testing & commissioning of 500 KVA copper wound 11/0.433 KV, 50 C/S, Delta star connected oil immersed outdoor type transformer with ON load circuit tap changer unit range, minus 10% to plus 5% on HT side in steps of 2.5% complete with first filling of oil along with complete accessories as per specifications including supply & fixing of MS channel of size 100x50x6 mm, drying/ filtration of oil etc as required.	Each	1	1573653.00	1573653.00
130	Supply , Installation, testing & commissioning of 1600 KVA copper wound 11/0.433 KV, 50 C/S, Delta star connected oil immersed outdoor type transformer with ON load circuit tap changer unit range, minus 10% to plus 5% on HT side in steps of 2.5% complete with first filling of oil along with complete accessories as per specifications including supply & fixing of MS channel of size 100x50x6 mm, drying/ filtration of oil etc as required.	Each	1	2635868.00	2635868.00
131	Supply Installation testing and commissioning of extendable type HT panel board suitable for indoor installation for use on 11 KV 50 C/S earthed system having a symmetrical breaking capacity of 350MVA for 1 Sec. at 11 KV comprising triple pole VCB. Panel shall be equipped with following accessories as per specifications and schematic drawing.				
	Panel shall be comprising of:				
	1- Metal Clad housing with track having 630A TP integral VCB with Electric operated draw out type mechanism (spring charged motor - 230 VAC).				
	1- Set of air insulated copper bus bar & chamber.				
	1- Set of isolating plug and receptacle.				
	1- Set of Automatic safety shutter.				
	1- Set of breaker control switch (TNC)				
	2- Sets of CT's				
	CT- I -100/5A class 5P-10(15 VA)				
	CT- II - 100/5A class -1(15 VA)				
	1 - Digital Ammeter, selector switch. (Built-in)				
	3 - Nos. PT's 11KV /Rt.3 /110V/Rt 3 of (100 VA) cast resin type				
	1 - H.T Cable box for 3C x 185 sq.mm Aluminium conductor XLPE cable (11 KV earthed system).				
	1 - No. Tripping coil & closing Coil 24V DC/110V A.C.				
	1 - Set of ON/OFF/Trip & circuit healthy and phase indicating lights.				

	1- 3 element O/C, EF & SC relay (IDMTL & Hi - set) with required setting.				
	1- set Auxiliary relay.				
	1- Master trip relay				
	1-set Trip circuit supervision				
	1-Restricted Earth fault relay				
	B. Outgoing Panel 2 Nos. each shall be comprising of:				
	1- Metal Clad housing with track having 630A TP integral VCB with Electric operated draw out type mechanism (spring charged motor - 230 VAC).				
	1- Set of air insulated copper bus bar & chamber.				
	1- Set of isolating plug and receptacle.				
	1- Set of Automatic safety shutter.				
	1- Set of breaker control switch (TNC)				
	2- Sets of CT's				
	CT- I -100/5A class 5P-10(15 VA)				
	CT- II - 100/5A class -1(15 VA)				
	1 - Digital Ammeter, selector switch. (Built-in)				
	1 - H.T. Cable box for 3C x 240 sq.mm aluminium conductor XLPE cable (33 KV earthed system).				
	1 - No. Tripping coil & closing Coil 24V DC/110V A.C.				
	1 - Set of ON/OFF/Trip & circuit healthy and phase indicating lights.				
	1- 3 element O/C, EF & SC relay (IDMTL & Hi - set) with required setting.				
	1- set Auxiliary relay.				
	1- Master trip relay				
	1-set Trip circuit supervision				
	1-Restricted Earth fault relay	Set	1	1315437.00	1315437.00
132	Supply, erection, testing & commissioning of 230 V, single phase, 2 wire, A.C. to 24V D.C. 100 AH sealed maintenance free batteries with semiconductor/ IGBT (half wave rectifier) with auto-manual trickle boost facility battery charging units complete including 1 No. Distribution board having 63 Amps DP MCB incomer and 12 No. 16/ 20 Amps DP MCBs (D.C. duty) as outgoing complete as required as per technical specifications.	Set	1	20000.00	20000.00
133	Supplying and fixing of non-skid rubber mat 20mm thick and 900mm width as required including cutting to required lengths of approved make with Test Certificates for H.T. 11 KV panels.	Metre	6	1500.00	9000.00
134	Supplying and fixing of non-skid rubber mat 16mm thick and 900mm width as required including cutting to required lengths of approved make with Test Certificates for L.T. panels.	Metre	10	1200.00	12000.00
135	Supplying and fixing of fire bucket painted red and duly filled with sand conforming to IS: 2546-1974.	Each	28	250.00	7000.00
136	Supplying and fixing of MS stand suitable for supporting two buckets (Pedestal type)	Each	6	1000.00	6000.00

137	Supplying and fixing of MS stand suitable for supporting four buckets (Pedestal type)	Each	4	1500.00	6000.00
138	Supplying and fixing of shock restoration chart written in English and Hindi duly framed in as required.	Each	4	800.00	3200.00
139	Supplying and fixing of carbon dioxide fire extinguisher type 4 kgs. Capacity of approved make with wall mounting bracket as required conforming to IS: 2878/1976 (Push type).	Each	4	4250.00	17000.00
140	Supplying and fixing of first aid box as approved complete with standard kit as prescribed by Indian Red Cross.	Each	1	500.00	500.00
141	Providing and fixing UPVC pipes as per IS:13592 suitable for 6 Kg/ sq cm pressure, including all fittings with accessories i.e. bends, junctions, cowls, offsets, PVC pipe clips/holders etc. and jointing with rubber rings and cement solvent complete as per manufacturer's specifications with excavation, refilling and disposal of surplus earth, including cutting holes in walls and floors wherever required and making good the same, complete as directed by the Engineer-in-Charge.				
a.	110 sq.mm outer dia	Metre	500	308.00	154000.00
b.	200 sq.mm outer dia	Metre	800	1045.00	836000.00
142	Supplying, installation, testing and commissioning of L.T. panel fully compartmentalized cubical type sheet clad floor mounted totally enclosed, extensible on both sides, switch board suitable for use on 415 Volts 3-phase, 4 wire, 50 Hz system having required fault capacity, housed with incoming and outgoing, Aluminium bus bars with current rating of 0.8 Amp/sq.mm, interconnection etc. with indication lamps, accessories etc, as required as per specification and schematic diagram as required. (Street lighting Panel)				
	INCOMER:-				
	1 Nos.63 Amps. TPN MCCB(25 KA) with electronic releases.				
	1 Set phase indication lights (R, Y, B)				
	1 No. Volt Meter (digital type) with inbuilt VSS & control fuses.				
	1 No. 0-63 Amp. Ammeter (digital type) with inbuilt ASS				
	BUS BARS:-				
	100 Amps. TP&N Aluminium bus bars (25 KA)				
	OUT GOINGS:-				
	8 Nos. 63A TPN, MCB (10KA).				
	4 Nos. 24 Hr Timer Switch				
	4 Nos. 63A TPN contactor	Set	2	146461.00	292922.00
143	Supply, fixing, testing & commissioning of the bollard Lighting Fixture of approved make Bollard including 1 no. 24 watt LED lamp of approved shade along with ignitor, necessary brackets, 4 meter powder coated MS pole including connections as required.	Each	32	38147.00	1220704.00

BOQ Tripura Cricket Stadium

144	Supply, fixing, testing & commissioning of the Gate Lighting Fixture of approved make including 1 no. 150 watt MH lamp along with ignitor, necessary brackets, including connections as required.	Each	6	35935.00	215610.00
145	Supply, fixing, testing & commissioning of the bollard Lighting Fixture of approved make Bollard including 1 no. 8 watt LED lamp of approved shade along with ignitor, necessary brackets, including connections as required.	Each	28	12384.00	346752.00
146	Supply, fixing, testing & commissioning of the buried Lighting Fixture of approved make including 1 no. 30 watt LED lamp of approved shade along with ignitor, necessary brackets, including connections as required.	Each	45	12881.00	579645.00
147	supply, installation, testing & commissioning of following sizes of wall bracket fans.				
a.	400 mm dia	Each	196	3069.00	601524.00
b.	600 mm dia industrial type	Each	26	12055.00	313430.00
148	Supplying, fixing, testing and commissioning of 5 Star BEE rating 1200mm sweep ceiling fan complete with blades, down rod, shackle insulator, canopy etc. including providing of electronic step regulator with face plate matching the existing modular switches as required.	Each	40	2909.00	116360.00
TOTAL					102062252.23

ESTIMATED FOR PLUMBING WORK OF STADIUM TRIPURA

SL. NO	ITEMS OF WORKS	AMOUNT
1	INTERNAL PLUMBING WORK	9,825,043.80
2	EXTERNAL SEWERAGE WORKS	2,939,873.25
3	EXTERNAL WATER SUPPLY SYSTEM	3,784,800.55
4	STORM WATER DRAINS	2,577,315.30
5	RAIN WATER HARVESTING	2,072,834.40
6	PUMPS & WATER TREATMENT	6,492,600.00
7	SEWAGE TREATMENT PLANT	7,500,000.00
8	HOT WATER SYSTEM	590,000.00
	GRAND TOTAL	35,782,467.30

PLUMBING WORK [INTERNAL & EXTERNAL]

Sl. No	Description of Work	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
PLUMBING WORKS					
Internal Plumbing Works					
1.	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :				
1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests.	Each	123	3392.80	417,314.40
2	Providing and fixing white vitreous china extended wall mounting water closet of size 780x370x690 mm of approved shape including providing & fixing white vitreous china cistern with dual flush fitting, of flushing capacity 3 litre/6 litre (adjustable to 4 litre/8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete.	Each	91	10100.90	919,181.90
3	Providing and fixing white vitreous china battery based infrared sensor operated urinal of approx. size 610 x 390 x 370 mm having pre & post flushing with water (250 ml & 500 ml consumption), having water inlet from back side, including fixing to wall with suitable brackets all as per manufacturers specification and direction of Engineer-in-charge..	Each	3	16724.95	50,174.85
4	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 a) 15 mm				
4.1	15mm nominal bore	Each	461	507.70	234,049.70
5	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931				
5.1	15 mm nominal bore.	Each	93	459.50	42,733.50
6	Providing and fixing PTMT towel ring trapezoidal shape 215mm long, 200mm wide with a minimum distances of 37mm from wall face with concealed fittings arrangement of approved quality and colour. Weighing not less than 88 gms.	Nos.	41	218.50	8,958.50
7	Providing and fixing PTMT liquid soap container 109mm wide, 125mm high and 112mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour. weighing not less than 105 gms.	Each	41	228.50	9,368.50
8	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
8.1	25 mm nominal bore	Each	20	428.85	8,577.00
8.2	32 mm nominal bore	Each	71	501.50	35,606.50