

## BOQ Tripura Cricket Stadium

Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
10.2	1:4:8 (1 cement:4 coarse sand: 8 graded stone aggregate 40 mm nominal size) for bed concrete.	Cum.	120	4301.15	516138.00
11	Brick work with bricks of class designation 75 in foundation and plinth in : cement mortar 1:4( 1cement:4 coarse sand).	Cum.	140	4753.45	665483.00
12	12mm cement plaster of mix 1:4(1 cement:4 coarse sand).	Sqm.	800	172.30	137840.00
13	Centring and shuttering including strutting, propping etc. and removal of form work for edges of slabs and breaks in floor and walls under 20cm wide.	Meter	1200	116.40	139680.00
<b>TOTAL</b>					<b>2577315.30</b>

Rain Water Harvesting					
SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
	<b>Preambles:</b> The following items shall be executed at four locations at any depth, nothing shall be paid extra for shifting of material & machines etc.				
1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level.				
1.1	All type of Soil-350mm dia	Meter	480	445.25	213,720.00
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer				
2.1	200 mm nominal size dia	Meter	420	878.60	369,012.00
3	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well screen (RMS) pipe with ribs conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer				
3.1	200 mm nominal size dia	Meter	180	820.80	147,744.00
4	Providing, laying, placing in position and fixing Geotextile membrane of approved sample by Engineer-in-charge in recharge wells at appropriate location as shown in standard drawing approved by local body.	Sqm.	12	450.00	5,400.00
5	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	cum	32	878.85	28,123.20
6	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	48	504.15	24,199.20
7	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	cum	48	910.65	43,711.20
8	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer -in-charge.	cum	48	852.60	40,924.80
9	Providing, placing & dressing coarse sand, river boulder in position in recharge wells as per standard drawing/design approved by local body, complete in all respects.				
1	Constructing Recharge well cum desilting chamber of 15mx5mx3m clear size including structural design of slabs and wall complete including Brick or RCC wall, base concrete, filter media, excavation, extra heavy duty SFRC manhole covers complete in all respects as per standard design.	Each	2	600000.00	1,200,000.00
	<b>TOTAL</b>				<b>2072834.40</b>

Pumps & Water Treatment					
Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
<b>Raw Water Pump</b>					
1	Providing and fixing vertical, inline multistage centrifugal pumping set with stainless steel S S-304 stage casing and SS-304 impellers with stainless steel SS-316L shaft as per IEC standards and GJL250 cast iron suction & discharge casing, connected to TEFC ventilated induction motor of 2 pole, 2900 RPM, suitable for 400/440 Volts, 3 phase, 50 Hz A.C. supply with pressure gauge and with gunmetal isolation cocks, vibration elimination pads etc. complete with base and frame, nuts and bolts and necessary RCC foundations as per requirement as per instructions and pump shall have following duty:				
1.1	No. of Pumps 3 (2 Working + 1 Stand by)				
	Capacity : app 400 lpm				
	Head : 25m	Set	1	750000.00	750000.00
<b>Domestic Water Transfer Pump</b>					
2	Providing, fixing and testing of domestic water transfer pumps as follows:-				
2.1	Horizontal, inline multistage centrifugal pumping set with stainless steel SS-304 stage casing and SS-304 impellers with stainless steel SS-316L shaft as per IEC standards and GJL250 cast iron suction & discharge casing, connected to TEFC ventilated induction motor of 2 pole, 2900rpm, suitable for 400/440 Volts, 3 phase, 50 Hz A.C. supply No. of Pumps: 3 (2 Working +1 Standby)				
2.2	Control Panel with programmable logic controller (PLC) for cyclic operation of pumps. Pump working sequence should change after every operation. Contractor overload relays and MCBs should conform to IEC 898 - 1995/ specifications. Blinking indications for pumps start, trip, low level trip, health supply should be provided in the panel along with the ammeter & voltmeter. Control panel should also consist of cooling fan and variable frequency drive and pressure vessel of 100 litres of FRP.				
2.3	Liquid level controller comprising of level controller, probes at high level of OH tank to cut-off motorised valve, one probes at mid level of OH tank to cut-in motorised valve including cost of motorised valve				
2.4	Ball valves to be used should be Hot Pressed brass OT-58 with stainless steel ball and P.T.F.E seal and O-Ring. NRVs to be used should be with Springs and O-Ring arrangement.				
2.5	Complete set system to be mounted on a common base frame and shall follow following duty:				
2.5.1	Capacity : app. 400 lpm				
	Head : app. 50 m	Set	1	700000.00	700000.00
<b>Pressure Filter (Domestic Water)</b>					
3	Providing and fixing vertical pressure filter with dual media filter (comprising of 600mm bed depth of graded sand gravel and 600mm bed depth of Anthracite/Activated Carbon Filter) fabricated from high performance M.S plate of minimum 8mm thick for shell & 10mm thick for dished ends with top and bottom flanged openings including top and bottom hub and lateral distribution and collection system complete with initial charge of filter media, face piping, valves, accessories, painting, testing and commissioning complete. (Tested to 6 Kg/cm <sup>2</sup> )				
	Discharge : 48000 lph				
	Filtration Rate : 15000 lit./m <sup>2</sup> /h				
	Suggested dia app : 2.00 m	Each	1	450000.00	450000.00
<b>Water Softener</b>					
4	Providing and fixing 'Cation' ION exchange water softener fabricated from minimum 8mm thick M.S. plate on shell and 10mm thick M.S. plate on dished ends complete with initial charge of filter media and ION exchange resins, face piping accessories, piping testing and commissioning complete with resins of approved quality and make and brine tank of required capacity. (Bidder must indicate type and quantity of resin used and quantity of salt required per regeneration).				
	Minimum expected rate of flow: 48000 lph				
	Total soft water to be produced between two regeneration: app. 400 Cu.m				
	Expected raw water hardness : app. 700-800 ppm				
	Expected treated water hardness: less than 50 ppm				
	Max. working pressure : 4 Kg/cm <sup>2</sup>	Each	1	450000.00	450000.00
<b>IRON REMOVAL FILTER</b>					
5	Providing and fixing iron removal filter fabricated from minimum 8mm thick M.S. plate on shell and 10mm thick M.S. plate on dished ends complete with initial charge of filter media and ION exchange resins, face piping accessories, piping testing and commissioning complete with resins of approved quality and make and brine tank of required capacity. (Bidder must indicate type and quantity of resin used and quantity of salt required per regeneration).				
	Minimum expected rate of flow: 48000 lph				
	Total soft water to be produced between two regeneration: app. 400 Cu.m				
	Expected raw water iron : app. 0.3-0.5 ppm				
	Expected treated water iron: less than .01 ppm				
	Max. working pressure : 4 Kg/cm <sup>2</sup>	Each	1	550000.00	550000.00
6	Providing and fixing M.S salt saturator, internally rubber lined as per requirement and externally painted with suitable anti-corrosive paint, with all required accessories for holding and supplying salt for softener complete in all respects, with electrically operated stirrer and of capacity 1000 litres.	Each	2	75000.00	150000.00
7	Providing motor control centres fabricated from 16 gauges M.S. sheet with powder coated finish. The control panels should be comparable with H.P. of the motor as specified. For domestic water transfer pumps, raw water pump, auto chemical doser sump pump etc. in plant room.				
7.1	One incoming main isolation 315 A TPN MCCB				
7.2	Fully taped aluminum bus bar 400 A TPN in a separate bus bar chamber.				
7.3	Isolation switch units with MCCB of required rating, for each unit.				
7.4	Fully automatic DOL starter with push button and ON/OFF indicating lights for each unit, for following requirements:				
7.4.1	i) Raw water pump 3 Nos. of 5 HP each (2 working +1 standby)				
7.4.2	ii) Domestic water transfer pumps 3 Nos. of 10 HP each (1 working + 1 standby) (Only connections to Built up Panel)				
7.4.3	vi) Auto chemical doser of 2 nos of 1 HP capacity (1 working + 1 stand by)				

Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
7.4.4	ii) Sump pumps 2 Nos. of 2 HP each (1 working + 1 standby) (Only connections to Built up Panel)				
7.5	Rotary switches for Auto/Manual ON/OFF operations for each unit.				
7.6	Rotary duty selector switches.				
7.7	Panel type voltmeter 150mm with rotary selector switch for reading voltage between phases.				
7.8	Panel type ammeter 100mm square. One for each motors with appropriate range.				
7.9	Neon phases indicating lights on the incoming mains.				
8.1	Single phase preventor for each motor.				
8.2	CT Operated Relay.				
8.3	All internal wiring colour coded from incoming mains to various switchgear, starter, meter, indicating lamp and bus bar. All the cable entry to the panel shall be from the top.				
8.3.1	(All for above from item (a) to (i) complete set). (The shop drawing to be prepared and approved before fabrication)	Set	1	250000.00	250000.00
9	Providing and fixing motor pump controller cum water level indicating panel in powder coated sheet metal box in 16 gauges M.S including the following:				
9.1	Electronic water level controller working on magnetic type sensing probes with necessary length of armored cable up to control panel.				
9.2	Electronic minimum 4-level indicator with magnetic type sensing probes and necessary length of armored cable up to control panel.				
9.3	Arrangement of alternate switching mechanism for operational and standby pumps.				
(A)	For Water level indicators with following details:				
i)	Underground tanks				
	Minimum 4 level Multi level indicators with magnetic type sensor probes complete.	Each	1	20000.00	20000.00
(B)	For water level controllers with electronic sensing probe complete in all respect for following functions.				
i)	Raw Water Pumps				
	To cut off at low level in raw water U.G tanks And cut off at high level in U.G Domestic and soft water tank.	Set	1	20000.00	20000.00
10	Providing and fixing G.I. pipes (I.S. 1239 heavy duty class) complete with all necessary G.I. Fittings including all necessary fittings like bends, elbows, tees etc., either welded or screwed or flanged joints as per requirements, including all anchor blocks, anchor fasteners, couplings in all respects including enamel painting of required shade, cutting holes and chases in RCC wall and making good complete (The cost of flanges will be paid separately).				
10.1	15mm dia	Metre	4	400.00	1600.00
10.2	20mm dia	Metre	4	500.00	2000.00
10.3	25mm dia	Metre	20	750.00	15000.00
10.4	32mm dia	Metre	2	900.00	1800.00
10.5	40mm dia	Metre	40	1000.00	40000.00
10.6	50mm dia	Metre	30	1200.00	36000.00
10.7	65mm dia	Metre	30	1400.00	42000.00
10.8	80mm dia	Metre	40	1500.00	60000.00
10.9	100mm dia	Metre	60	1800.00	108000.00
11.1	150mm dia	Metre	80	2400.00	192000.00
12	Providing and fixing galvanised steel flanges screwed or welded complete with 1.5m thick Teflon gaskets, nuts, bolts and washers etc., complete including testing of joints. The flanges shall be as per I.S. 6392-1971 table (6&7)				
12.1	50mm nominal bore	Each	2	1000.00	2000.00
12.2	65mm nominal bore	Each	2	1200.00	2400.00
12.3	80mm nominal bore	Each	6	1500.00	9000.00
12.4	100mm nominal bore	Each	8	2000.00	16000.00
12.5	150mm nominal bore	Each	8	3000.00	24000.00
13	Providing and fixing standard Blind flanges screwed or welded complete with 1.5mm thick Teflon gasket, nuts, bolts and washers etc., complete including testing of joints. The flanges shall be as per I.S. 6392-1971 (Table 6 & 7)				
13.1	100mm dia	Each	6	2000.00	12000.00
13.2	150mm dia	Each	6	3000.00	18000.00
14	Providing and fixing rubber expansion joints (to provide relief from stresses at pipe flanges) as per specification of the manufacturers i.e M/s Kanwal Industrial corporation.				
14.1	100mm dia	Each	4	3500.00	14000.00
14.2	150mm dia	Each	4	4500.00	18000.00
15	Providing and fixing C.I double flanges suction strainer bucket type/ 'Y' type including, nuts, bolts and 3mm thick rubber insertion complete.				
15.1	150mm dia	Each	3	8500.00	25500.00
16	Providing and fixing brass/bronze lever operated ball valve of full flow with stainless steel ball (AISI 304 and spindle AISI 410) with setting and gland of superior quality having minimum working pressure of 20 kg/cm <sup>2</sup> .				
16.1	15mm dia	Each	1	600.00	600.00
16.2	20mm dia	Each	1	750.00	750.00
16.3	25mm dia	Each	1	900.00	900.00
16.4	32mm dia	Each	1	1500.00	1500.00
16.5	40mm dia	Each	3	2000.00	6000.00
16.6	50mm dia	Each	3	3500.00	10500.00
16.7	65mm dia	Each	4	5000.00	20000.00
17	Providing and fixing butterfly valves, wafer end type class PN 1.0 as per I.S.13095 - 1991 or BS:5155, including necessary nuts, bolts, gaskets etc. complete (without gear box)				
17.1	80mm dia nominal bore.	Each	6	6500.00	39000.00
17.2	100mm dia nominal bore.	Each	6	8000.00	48000.00
17.3	150mm dia nominal bore.	Each	6	10000.00	60000.00
18	Providing and fixing gunmetal non-return valves vertical or horizontal tested to 20 Kg/cm <sup>2</sup> as per IS:778.				
18.1	25mm nominal bore.	Each	1	850.00	850.00
18.2	32mm nominal bore.	Each	1	1400.00	1400.00
18.3	40mm nominal bore.	Each	1	1800.00	1800.00
18.4	50mm nominal bore.	Each	1	4000.00	4000.00

Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
19	Providing and fixing C.I double flanged horizontal/vertical type non-return valve including nuts, bolts, 3mm thick rubber insertions complete to I.S.5312, Part-I, swing type class PN 1.6.				
19.1	65mm nominal bore	Each	4	5000.00	20000.00
19.2	80mm nominal bore	Each	4	6000.00	24000.00
19.3	100mm dia nominal bore	Each	4	7500.00	30000.00
19.4	150mm dia nominal bore	Each	4	9000.00	36000.00
20	Providing and fixing heavy duty copper armored cables 1.1 KVA grade including necessary support clamps at ceiling level and connection legs complete in all respects				
20.1	Power cable 3 core 2.5 Sq.mm	Metre	200	100.00	20000.00
20.2	Power cable 3 core 4 Sq.mm	Metre	120	200.00	24000.00
20.3	Power cable 3 core 6 Sq.mm	Metre	40	400.00	16000.00
20.4	Power cable 3 core 10 Sq.mm	Metre	10	600.00	6000.00
20.5	Power cable 2 core 1.5 Sq.mm	Metre	400	75.00	30000.00
20.6	Power cable 3 core 10 Sq.mm	Metre	10	600.00	6000.00
21	G.I earthing wire 8 gauge from all motor and M.C.C panel to be connected in as approved manner to the general earthing system complete.	Metre	150	100.00	15000.00
22	Providing earthing station for pumps and M.C.C panel including excavation, C.I. manhole cover and frame complete as per specifications and I.E. rules.	Each	1	12000.00	12000.00
23	Providing and fixing M.S. slotted cable tray supported from ceiling at intervals of 60cms on both ends including cable clips with nuts and bolts welding of support rods with ceiling inserts or through dash fasteners cutting and making good complete.				
23.1	300mm wide	Metre	60	1800.00	108000.00
23.2	150mm wide	Metre	80	1200.00	96000.00
24	Providing and fixing M.S. structural work fabricated from standard section e.g. M.S. rounds, angles, channels, plates including cutting to size, drilling, welding fixing and welding to insert plates in RCC structural members or through dash fasteners as per site conditions as directed by Engineer in-charge including cutting and making good the walls, ceilings and floors (for pipe supports, clamps etc.)	Kg	500	150.00	75000.00
25	Providing and fixing UV Unit for domestic water supply complete in all respects for 550 LPS water supply flow rate.	Each	1	150000.00	150000.00
<b>Submersible pumps for basement drainage &amp; Sewage sumps</b>					
26	Submersible single stage single entry pumps with C.I body and C.I. two vane enclosed type impeller connected to TEFC submersible motor for 415 volts, 3 phase, 50 cycles including MCC panel with level controllers, auto control, sequential change over facility with one proper working at low level & two proper working at high level with an audible alarm including all interconnectivity cables, with both pumps connected to common outlet header including valves, non return valves, lifting chains etc. complete in all respect.				
26.1	Sewage Sump (one working+One standby) (Solid handling capacity 50mm) Capacity- 225 lpm (Each) Head - 10 m HP (Approx) 1.0 HP	Set	2	200000.00	400000.00
26.2	Drainage Sump (one working+One standby) (Solid handling capacity 50mm) Capacity- 600 lpm (Each) Head - 10 m HP (Approx) 3.0 HP	Set	2	400000.00	800000.00
<b>Domestic Water Pump (Boosting System)</b>					
27	Providing fixing and testing of packaged factory fitted variables frequency drive type skid mounted hydropneumatic system with variable speed system comprising of :- <b>Note:Only Factory Fitted assembly is acceptable</b>				
27.1	Vertical, inline multistage centrifugal pumping set with stainless steel SS-304 stage casing and SS-304 impellers with stainless steel SS-316L shaft as per IEC standards and GJL250 cast iron suction & discharge casing, connected to TEFC ventilated induction motor of 2 pole, 2900rpm, suitable for 400/440 Volts, 3 phase, 50 Hz A.C. supply No. of Pumps: 2 (1 Working +1 Standby)				
27.2	Pressure vessel of non corrosive FRP composite construction lined with NSF and/or FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of 5 times the vessel operating pressure and cycle tested for 2,50,000 cycles.				
27.3	No. and capacity of Pressure Vessel – 01 Nos. x 50 Litrs)				
27.4	Control Panel with programmable logic controller (PLC) for cyclic operation of pumps. Pump working sequence should change after every operation. Contractor overload relays and MCBs should conform to IEC 898 – 1995/ specifications. Blinking indications for pumps start, trip, low level trip, health supply should be provided in the panel along with the ammeter & voltmeter. Control panel should also consist of cooling fan.				
27.5	Pressure switches bellow type fitted with micro switch and having maximum pressure and differential scale, should conforming BS-6134 standards and IP55 protection class.				
27.6	Suction and delivery header with Ball valves to be used should be Hot Pressed brass OT-58 with stainless steel ball and P.T.F.E seal and O-Ring. NRVs to be used should be with Springs and O Ring arrangement. 25mm dia motorised valve with control panel to cut-in and cut-off the motorised valve in case of low and high water level in water tank.				
27.7	Complete set system to be mounted on a common base frame and shall follow following duty				
	Capacity app. 150 lpm				
	Head app. 25 m	Set	1	450000.00	450000.00
<b>TOTAL</b>					<b>6492600.00</b>

Sewage Treatment Plant					
Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
<b>SEWAGE TREATMENT PLANT</b>					
1.	Design, supplying, installing, testing & commissioning of prefabricated <b>Sewage Treatment Plant</b> (including civil work excavation, back filling & disposal of surplus earth MS/Civil construction work) for the following duty: Also taking NOC from local pollution control Board is in the scope of vendor:				
	Nature of effluent - Domestic Sewage from Public Toilet, Kitchens, & Water of general nature.				
	Daily average flow - 300 Cum / Day				
	pH - 7.5 – 8.5				
	BOD5 - 250 – 400 Mg/L				
	S. Solids - 200 – 450 Mg/L				
	COD - 600 – 800 Mg/L				
	Oil & Grease - 50 Mg / L				
	<b>Effluent discharge standard after treatment</b>				
	pH - 6.0 – 8.5				
	BOD5 - Less than 20Mg/L				
	S. Solids - Less than 10 Mg/L				
	COD - Less than 60 Mg/L				
	Oil & Grease - Less than 5 Mg / L				
	Sewage treatment plant shall include the following items:				
	Screen chamber				
	Sewage equalization tank/sump				
	Aeration tank				
	Clarifier tank				
	Sludge holding tank				
	Chlorine contact tank				
	Tertiary Treatment Filter, Softener & Dosing Equipment				
	Air Blowers, Pumps & equipment				
	Piping, valves etc				
	Electrical Panel & Cabling				
	Flushing water tank				
	Irrigation water storage tank				
	Soft water tank				
	Common plant room adjacent to STP.				
	Puddle flanges as required for the STP.				
	UV treatment	Job	1	7500000.00	7500000.00
	<b>TOTAL</b>				<b>7500000.00</b>

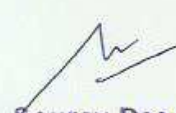
Hot Water System					
Sl. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
A.	I				
1.	Providing and fixing solar water heater with following specs: <b>System capacity:300 LPD</b> System type:Thermosyphon Circulation <b>SOLAR COLLECTORS</b> Type of collector:Cu-Cu, Ultra sonically welded Size of collector:2080x1070x100mm Absorber area 2 sqm Absorber Coating:Selective coated black chrome Nelson Collectors absorbtivity:>0.95 Collectors emmissivity:<0.20 Collector box material:Extruded Aluminium frame 1.4mm No. of risers:3 Nos. Fin width:120mm Hardware:SS-304 Weight:40 Kgs(Dry) No. of collector=9 Nos <b>INSULATING MATERIAL FOR SOLAR COLLECTORS</b> Material:Rockwool Thickness of bottom insulation:50mm Thickness of side insulation:25mm Thermal conductivity:0.029 W/mk Density:40 Kg./cum <b>COLLECTOR'S GLAZING MATERIAL :</b> Material:Toughned clear glass Thickness:4mm Transitivity:88% Glass Beeding:EPDM <b>COLLECTOR'S STANDS</b> Material:30x30x3mm thick Details of protective coating:powder coated <b>HOT WATER STORAGE TANK</b> No. of tank with capacity: 1 No 3000 lts Material:SS-304 Insulating material for tank:Glass wool Thermal conductivity of insulation:0.028 to 0.033 W/mk Density of insulation material:48 Kg/cum Thickness of insulation material:100mm Cladding material:Al 22 SWG <b>SYSTEM PIPING:GI B class (IS:1239)</b> Pipe fitting :ISI Marked Valves:Gunmetal Insulation:Glass wool Insulation material density:48kg/m Insulation thickness:50mm Insulation cover:Wiremesh finished with aluminium cladding <b>INSTRUMATION &amp; CONTROLS</b> <b>Water meter</b> Type:IS marked Material:Gunmetal Vane type:Metallic form designed End connection:screwed end <b>Temperature Gauge</b> Type:Dial gauge, mercury in type tube Material:SS stem Vane type:0-120 deg celcius End connection:1/2" BSP <b>Gate valve</b> Type:Screwed Material:Gunmetal Make:ISI Quality <b>Strainer</b> Type:Y type Material:cast Iron Purpose:Filtration of suspended material	Set	1	350,000.00	350,000.00
2.	Providing and fixing geyers of 50 liters capacity including angle valve complete in all respects.	Each	12	20,000.00	240,000.00
	<b>TOTAL</b>				<b>590,000.00</b>

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Sourav Das Gupta  
Hony. General Secretary  
Tripura Cricket Association.

FIRE FIGHTING WORKS		
ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1.	PIPING & VALVES	8846217.28
2.	FIRE HYDRANT ACCESSORIES	2856108.50
3.	SPRINKLERS, WATER CURTAIN & ACCESSORIES	2125613.00
4.	FIRE PUMPS & ACCESSORIES	3984577.00
5.	FIRE EXTINGUISHERS & MISC. ITEMS	1355025.00
6.	FIRE CHECK DOORS	5000000.00
7.	PRESSURISATION FANS	650000.00
	<b>GRAND TOTAL</b>	<b>24817540.78</b>

  
**Sourav Das Gupta**  
 Hony. General Secretary  
 Tripura Cricket Association

Fire Fighting Works					
SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
1.	<b>PIPING &amp; VALVES</b>				
1	Providing and fixing M.S. pipe to I.S. 1239 (Heavy class) complete with all supports & fittings like, unions, couplings, bends, elbows, tees, offsets, reducers, flanges as per table 'E' etc. to complete the work as per the requirement at site including painting with one coat of primer after surface preparation and two coats of synthetic enamel paint, cutting and making good the walls good complete. Pipe upto 40 mm dia threaded joints with holdtite, 50 mm dia and above should be welded joint ( all type ) ( internal works/External Works).				
1.1	25 mm dia.	RM	3000	355.25	1,065,750.00
1.2	32 mm dia.	RM	400	456.75	182,700.00
1.3	40 mm dia.	RM	600	507.50	304,500.00
1.4	50 mm dia.	RM	600	568.40	341,040.00
1.5	65 mm dia.	RM	501	715.58	358,503.08
1.6	80 mm dia.	RM	300	872.90	261,870.00
1.7	100mm dia	RM	105	1319.50	138,547.50
1.8	150mm dia	RM	2500	1877.75	4,694,375.00
1.9	200 mm dia(7.35mm thick) IS:3589	RM	26	2436.00	63,336.00
1.10	250 mm dia(7.35mm thick) IS:3589	RM	29	3045.00	88,305.00
2	Providing and fixing one coat of 4 mm thick PYPKOTE/ COATAK anti-rust pipe protection including primer and lap of 25mm on external buried pipe including surface preparation, complete in all respects.				
2.1	150mm dia	RM	100	243.60	24,360.00
2.2	100mm dia	RM	30	182.70	5,481.00
2.3	80mm dia	RM	22	162.40	3,572.80
3	Excavating trenches of required width for pipes cables etc. in any type of soil including excavation for sockets and dressing of sides ramming of bottom, depth upto 1.5 M including getting out the excavated soil, and then returning the soil as required in layers not exceeding 20cms in depth including consolidating Sets deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed within a lead of 50m.				
3.1	80 mm dia. but not exceeding 300 mm dia.	RM	152	152.25	23,142.00
4	Providing and fixing cast iron dual plate wafer type non return valves of PN1.6 including nuts, bolts, 1.5mm thick compressed asbestos gasket including matching flanges as per table "E" complete				
4.1	65 mm dia.	Nos	4	3552.50	14,210.00
4.2	80 mm dia.	Nos	2	4567.50	9,135.00
4.3	100 mm dia.	Nos	2	5075.00	10,150.00
4.4	150 mm dia.	Nos	53	8120.00	430,360.00
5	Providing and fixing cast iron double flanged horizontal/vertical non return valves of PN1.6 including nuts, bolts, 3mm thick compressed asbestos gasket including matching flanges as per table "E" complete as per IS:5312 swing type (For Pumps Only)				
5.1	80 mm dia.	Nos	1	6597.50	6,597.50
5.2	100 mm dia.	Nos	1	7612.50	7,612.50
5.3	150 mm dia.	Nos	3	9135.00	27,405.00
5.4	200 mm dia.	Nos	1	15225.00	15,225.00
5.5	250 mm dia.	Nos	1	18270.00	18,270.00
6	Providing and fixing C.I. butterfly valves PN 1.6 complete with bolts, nuts 1.5mm thick compressed asbestos gasket companion flanges as per table "E" complete.				
6.1	250 mm dia with gear	Nos	1	12180.00	12,180.00
6.2	200 mm dia with gear	Nos	2	9135.00	18,270.00
6.3	150 mm dia with lever	Nos	66	6597.50	435,435.00
6.4	100 mm dia with lever	Nos	3	5075.00	15,225.00
6.5	80 mm dia with lever	Nos	1	4060.00	4,060.00
6.6	65 mm dia with lever	Nos	1	3045.00	3,045.00
7	Providing and fixing C.I. foot valves including nuts, bolts, 1.5mm thick compressed asbestos gasket complete and companion flange as per table "E" in all respects				
7.1	150 mm dia.	Nos	1	10150.00	10,150.00
8	Providing and fixing brass ball valve (full bore type) with plastic coated lever and screwed female ends tested to 20 Kg/ cm <sup>2</sup> of approved quality as specified.				
8.1	25 mm dia.	Nos	59	913.50	53,896.50
8.2	50 mm dia	Nos	4	1624.00	6,496.00

## BOQ Tripura Cricket Stadium

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
9	Providing and fixing dial type pressure gauge with isolation cock and copper pipe at hydrant station.				
9.1	Dial diameter 100 mm calibration 0-15 kg/ sq.cm	Nos	96	1015.00	97,440.00
10	Cutting Holes in RCC slab by diamond cutting tools complete in all respects.				
10.1	For 150mm dia MS Heavy Class Pipe	Each	96	685.13	65,772.00
10.2	For 100mm dia MS Heavy Class Pipe	Each	4	456.75	1,827.00
10.3	For 80mm dia MS Heavy Class Pipe	Each	48	365.40	17,539.20
10.4	For 65mm dia MS Heavy Class Pipe	Each	4	299.43	1,197.70
10.5	For 50mm dia MS Heavy Class Pipe	Each	4	228.36	913.50
11	Providing and fixing gunmetal single acting air release valve with screwed inlet 25 mm dia.	Nos	4	1573.25	6,293.00
12	Providing and fixing blank flanges as per table 'E' with asbestos gasket, nut, bolts, washers complete				
12.1	200 mm dia.	Nos	4	507.5	2,030.00
<b>TOTAL</b>					<b>8,846,217.28</b>
<b>II. FIRE HYDRANT ACCESSORIES</b>					
13	Providing and fixing SS316 Single headed landing valve conforming to IS -5290 (Type-A) with 63 mm dia. single instantaneous female coupling on the outlet SS316 metal blank cap and chain, necessary companion flanges, nuts, bolts, washer and gasket complete as per specification. (ISI marked). All parts and body shall be of SS316 as per IS:5290.				
13.1	Single outlet	Nos	59	10150.00	598,850.00
14	Providing and fixing first aid fire hose reel drum wall mounting, swinging type(Powder coated finish in fire red) fitted with 20 mm dia. 30 m long high pressure hose(IS:444, Type-2) with 5 mm outlet SS nozzle with shut off valve (IS:8090). Name of Manufacturer should be embossed on the drum and complete hose reel drum shall be conforming to IS:884)	Nos	48	5582.50	267,960.00
15	Providing and fixing 63 mm dia. 15m long rubberized lined hose including SS316 male and female instantaneous type coupling approved by fire authority, machine wound with copper wire complete in all respects. Hose shall conform to IS 636 Type-A and coupling to IS 903 -1975 ( ISI marked)	Nos	118	4872.00	574,896.00
16	Providing and fixing standard short size SS316 branch pipe with gunmetal nozzle 16 mm dia. outlet with standard instantaneous type 63 mm dia. coupling (ISI marked, IS:903)	Nos	59	2537.50	149,712.50
17	Providing and fixing door with frame for all internal fire hydrants fabricated from 20x20x3 mm and 40x20x3 mm aluminium hollow box sections mounted with 3 no. of 100 mm Aluminium butt hinge on Aluminium angle frame of 45x45x5 mm size with hold fasts fixed to wall with P.C.C. (1:2:4) blocks 100x100x100 mm including 2 nos allen key lock for locking along with padlock arrangement & fully glazed with 4 mm thick float glass approved by local Fire Authority, powder coated fire red finish with " fire hose' written on front suitable to house 15 mm long two length of canvas hose with couplings, one no of branch pipe, one fire mans axe and two numbers of portable extinguishers, first aid fire hose and supports for hoses, branch pipes, Axe and hose reel. Size 2100x 900 mm complete as per approved design including necessary fixing arrangement for hoses & axe and branch pipe.)	Nos	48	7612.50	365,400.00
18	Providing and fixing fire hose cabinet fabricated from 16 gauge M.S. Sheet with single or double glazed front door and locking arrangement, painted "Fire Red" with powder coated paint "Fire Hose" written on front including suitable supports to place 900 mm above ground level, approximately size 750x600x250 mm deep (to house two lengths of canvas hose with couplings, branch pipe and nozzle for external hydrants)	Nos.	11	4060.00	44,660.00
19	Providing and fixing gunmetal fire brigade inlet head as per IS:904 Specification tested for 20 Kg/cm2 with 63 mm dia. instantaneous type inlet and 100/150mm dia.. flanged outlet with built-in check valve for fire brigade connection to under ground tanks and fire risers including companion flanges as portable " E" including nuts, bolts & washers etc.				
19.1	Four way	Nos	6	13195.00	79,170.00

## BOQ Tripura Cricket Stadium

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
20	Providing and fixing gunmetal fire brigade suction 150 mm dia. for fire tank complete with PVC Cap companion flange as per table "E" nuts, bolts, gasket etc				
20.1	150 mm	Nos.	1	8120.00	8,120.00
21	Air Cushion Tank for Risers				
	Providing and fixing of air vessel of the following specifications fabricated with MS Pipe of thickness specified.				
	specifications				
21.1	Diameter : 200 mm				
21.2	Shell Thickness: 6.35 mm				
21.3	Dish Ends : 10 mm				
21.4	Height : 1000 mm				
21.5	Finishing: Two coats of red enamel paint over primer out side and two coats of epoxy coating inside.				
21.6	Material of construction: M.S				
21.7	Test Pressure: 20 Kg/Sq.Cm.				
21.8	Height of supporting legs: 400 mm				
21.9	Quantity	Each	48	15225.00	730,800.00
	Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrasonic test report to be submitted on supply of vessel and test to be conducted at the presence of Plumbing-In-Charge. Also cost shall include two nos. Gunmetal NRV(ISI Marked)				
22	Providing and fixing "Y" suction strainer with flanged connection 250 mm dia. suitable for 2850 lpm discharge with stainless steel 20 mesh complete including companion flanges etc. suitable for 200 dia. inlet and 200 dia. outlet including inside with rubberized paint and outside with two coats of enamel paint of approved shade after surface preparation necessary stainless steel nuts, bolts, washers etc..				
		Nos	2	18270.00	36,540.00
	<b>TOTAL</b>				<b>2,856,108.50</b>
III.	<b>SPRINKLERS, WATER CURTAIN &amp; ACCESSORIES</b>				
23	Providing and fixing 15 mm gunmetal sprinkler head with quartz bulb and set to operate at specified temperature pendent/ upright/ side wall /quick response as per instruction fixed with loctite. Temperature of operation 68 deg.C K-80				

## BOQ Tripura Cricket Stadium

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
23.1	Normal response Pendent type/ upright type	Nos	1600	304.50	487,200.00
23.2	Normal response Side wall type	Nos	100	355.25	35,525.00
23.3	Extended throw normal response Up right type	Nos	200	406.00	81,200.00
24	Providing & fixing 25mm dia. UL listed gunmetal inspector test and drain valve with integral sight glass connected to drain line complete in all respects.	Nos	48	253.75	12,180.00
25	Providing and fixing electrically operated flow indicating switches model System Sensor in sprinkler branch line on each floor with necessary junction box installed in accessible place (Wiring from switches to panel and stair case pressurization not included)				
25.1	100/65/50 mm dia.	Nos	48	5075.00	243,600.00
26	Providing and fixing gunmetal installation valve with turbine type automatic alarm to be connected with control valve , drain valve, test valve and piping as per manufacturer's specifications complete in all respects.				
26.1	150 mm dia.	Nos	2	50750.00	101,500.00
27	Providing and fixing UL/Fm listed water curtain nozzle chrome plated complete including fixing in position on pipe complete in all respects with Teflon tape. (Size=15NB)	Each	96	355.25	34,104.00
28	Providing and fixing UL/Fm listed Deluge valve complete including fixing in position on pipe complete in all respects with drain valve, inlet/outlet. (Size=80NB)	Each	2	50750	101,500.00
29	Providing and fixing UL/Fm listed powder coated finish Escutcheon plate complete including fixing in position on pipe and ceiling complete in all respects. (Size=15NB)	Each	96	355.25	34,104.00
30	Providing and fixing UL/Fm listed SS braided flexible pipe with accessories complete with all accessories specified in technical specifications(Size=15B)				
30.1	780mm long	Each	500	1015	507,500.00
30.2	1000mm long	Each	400	1218	487,200.00
	<b>TOTAL</b>				<b>2,125,613.00</b>
<b>IV.</b>	<b>FIRE PUMPS &amp; ACCESSORIES</b>				
	( All pumps will be supplied with wearing ring ,mechanical seal and coupling guard and Base Frame. Rates Quoted for pumps shall include making of foundation, supply and fixing of base frame, foot valve on suction side, butterfly valve and NRV on delivery side complete in all respects)				
31	Wet Riser Pump and Sprinkler Pump(Single stage) Providing and fixing Factory fitted horizontal split casing pumping set with volute bronze impeller connected to a TEFC induction motor suitable for 410/440 volts, 3 phase , 50 cycles AC supply as per the details given below.				
31.1	Capacity : 2850 lpm				
31.2	Head : 70 meter				
31.3	HP : As per Approved performance curve				

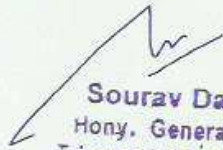
SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
31.4	No of stages : single				
31.5	RPM : 2900				
31.6	Mover : Electric Motor driven				
31.7	Material of Construction/Specification				
	Shaft & Sleeve : S.S. 410				
	Impeller : Bronze				
	Casing : CI				
	Bearing : Grease lubricated				
	Seal : Mechanical Seal				
	Quantity :	Each	2	760000.00	1,520,000.00
	Note: Pump and Motor should meet the additional requirements as specified in the Specifications				
32	Jockey Pump:Providing and fixing factory fitted horizontal centrifugal pump with volute brozne impeller conntected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles , AC supply with the following specifications:				
32.1	Capacity : 180 lpm				
32.2	Head : 70 m.				
32.3	HP : As per Approved performance curve				
32.4	RPM : 2900				
32.5	Mover : Electric Motor driven				
32.6	Material of Construction:				
	Shaft & Sleeve : S.S. 410				
	Impeller : Bronze				
	Bearing : Grease lubricated				
	Seal : Mechanical Seal				
	Quantity :	Each	1	152250.00	152,250.00
	<b>Diesel Engine Driven Fire Pump</b>				
33	Supplying and fixing factory fitted single stage horizontal split casing pumping set of the following specifications including vibration elimination pads.				
33.1	Capacity : 2850 LPM				
33.2	Head : 70m				
33.3	HP : As per approved performance curve				
33.4	RPM : 1800 (pump and engine)				
33.5	Material of Construction:				
	Shaft & Sleeve : S.S. 410				
	Impeller : Bronze				
	Bearing : Grease, lubricated				
	Seal - Mechanical seal.				
33.6	Pump foundation as per manufacturer.				
	Quantity :	Each	1	950000.00	950,000.00
	Note: Pump and motor should meet the additional requirement as specified on the specifications and rates will be inclusive of everything as mentioned in the specifications.				
34	Water Curtain Pump:(Single Stage)Providing and fixing factory fitted horizontal centrifugal pump with volute brozne impeller connected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles , AC supply with the following specifications:				
34.1	Capacity : 1620 lpm				
34.2	Head : 110 m.				
34.3	HP : As per Approved performance curve				
34.4	RPM : 2900				
34.5	Mover : Electric Motor driven				
34.6	Material of Construction:				
	Shaft & Sleeve : S.S. 410				
	Impeller : Bronze				
	Bearing : Grease lubricated				
	Seal : Mechanical Seal				
	Quantity :	Each	1	650000.00	650,000.00

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
35	Air Vessel for Fire Pump: Providing and fixing of air vessel of the following specifications fabricated with MS sheets.				
35.1	a. Diameter : 400 mm				
35.2	b. Shell Thickness: 8 mm				
35.3	c. Dish Ends : 10 mm				
35.4	d. Height : 1500 mm				
35.5	e. Finishing: Two coats of red enamel paint over primer out side and two coats of epoxy coating inside.				
35.6	f. Material of construction: M.S				
35.7	g. Test Pressure: 22 Kg/Sq.Cm.				
35.8	h. Height of supporting legs: 400 mm				
35.9	i. Quantity	Each	1	45675.00	45,675.00
	Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrasonic test report to be submitted on supply of vessel and test to be conducted at the presence of Plumbing-In-Charge.				
36	Providing and fixing liquid level controller for fire pump to stop fire pump in case of low level of water in tank, cost of conduit, cable and panel including making connection to pump panel and commissioning complete.				
36.1	Float type Sensor with panel	Nos	4	10150.00	40,600.00
36.2	Installation	Nos	4	1015.00	4,060.00
37	Providing and fixing dual type pressure switch suitable for 1-20 Kg/cm <sup>2</sup> including electrical connections setting of Cut-In and cut-Off pressure complete in all respects.	Nos	4	1827.00	7,308.00
38	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of motor control centre shall be fabricated out of 14 gauge CRCA sheet steel in form in 3b formation with reinforcement of suitable size angle iron, channel 'T' sections irons and /or flats wherever necessary. Cable gland plates shall be provided on top as well as at the bottom of the panels. Panels shall be treated with all anticorrosive process before painting as per specifications with 2 coats of red oxide primer and final approved postal red color shade of powder coated paint. 2 Nos. earthing terminals shall be provided for 3 phase, 4 wire, 50 Hz supply system. Lifting hooks shall also be provided in case of large panels. Approval shall be taken for each panel before fabrication. Cadmium Plated hardware shall be used in fabrication of panels.				
	<b>Incomer:</b>				
	One incoming main isolation TPN MCCB of 630A rating				
	One fully taped copper bus bar of 800A capacity in separate bus bar chamber.				
	One square panel type Voltmeter reading 0-500 V with rotary selector switch for reading voltage between phases.				
	One panel type Amperemeter (0-630A) with selector switch and CT				
	3 phase indication lights				
	<b>Outgoing</b>				
	2 nos. 160A TPN MCCB for main pump				
	1 no. 100A TPN MCCB for Water curtain pump				
	1 no. 40A TPN MCB one for jockey pump				
	2 nos. Star-Delta starter, one no. DOL Starter of suitable capacity				
	3 nos. single phase preventors of suitable rating one for each motor				
	1 no. 40A TPN MCB one for jockey pump				
	3 nos. rotary type auto/manual off selector switch.				
	Space for 4 Nos. liquid level controller				
	Providing and fixing 1 No. auto start panel activated with pressure switch for diesel engine complete with all accessories, batteries, battery charger of suitable rating, MCB timers, push buttons, microprocessor based alarm annunciator, wiring and cabling including connection to diesel engine complete as required ready for working				
	Appropriate etched aluminium identification plate for each starter/switch.				
	Colour coded internal wiring from main to bus bar, switchgear, starters, indicating lamps complete in all respects.	Each	1	431375.00	431,375.00
39	Supplying & laying of following 1100 volt grade PVC insulated sheathed copper conductor armoured cable as per specification in cable trays, clamped includes anchor fastners to wall with suitable clamps, saddles fixing bolts including connecting testing and commissioning. (For Jockey Pump 2 Runs)				

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
39.1	3 core 6 sqmm	Meter	80	152.25	12,180.00
40	Supplying & laying of following 1100 volt grade PVC insulated sheathed XLPE aluminium conductor armoured cables as per specification in cable trays, ducts, clamped includes anchor fastners to wall with suitable clamps, saddles fixing bolts including connecting testing and commissioning.(For Main Hydrant/Sprinkler Pumps)				
40.1	3 core 150 sqmm	Meter	80	304.50	24,360.00
41	Cable end termination of the following PVC insulated sheathed PVC/XLPE aluminium conductor armoured cables of 1100 volt grade including supplying and fixing of crimping aluminium lugs, double compression glands with earthing facility at both ends of cables etc. complete as required				
41.1	3 core 150 sqmm Aluminium conductor cable	Nos	4	203.00	812.00
41.2	3 core 6 sqmm Copper conductor cable	Nos	8	101.50	812.00
42	Supply and fixing of perforated type GI cable trays of the following sizes as per specifications				
42.1	150 mm x 40 x 40 x 2 mm thick	Meter	60	812.00	48,720.00
42.2	300 mm x 40 x 40 x 2 mm thick	Meter	30	1421.00	42,630.00
43	Supply, Testing & Commissioning, fixing of following bare GI/Copper tapes / wires including all necessary fixing accessories and effecting connections as per specifications.				
43.1	4mm dia Copper wire	Meter	20	50.75	1,015.00
43.2	25 x 3 mm thick Copper tape	Meter	40	101.50	4,060.00
44	Providing and fixing M.S. structural work fabricated from standard sections, (MS rounds, angles, channels, slotted angle, etc.) including cutting to size, drilling, welding or insert plates including cost of (Hilti) fasteners, clamp in RCC structural members as directed, including two or more coats of synthetic enamel paint over one coat of primer after surface preparation including cutting and making good walls.	Kg	200	152.25	30,450.00
45	Providing and fixing diesel engine exhaust pipe with M.S. pipe to I.S. 1239 (Heavy Class) complete with all supports & fittings like, unions, couplings, bends, elbows, tees, offsets, reducers, flanges as per table 'E' etc. to complete the work as per the requirement at site including insulating the pipe with 12 mm thick supercera ceramic fibre rope over two coats of primer after surface preparation and two coats of bitumastic paint, cutting and making good the walls good complete.	Meter	15	1218	18,270.00
<b>TOTAL</b>					<b>3,984,577.00</b>
<b>V. FIRE EXTINGUISHERS &amp; MISC. ITEMS</b>					
46	Providing and fixing Carbon-di-oxide fire extinguishers consisting of welded M.S cylindrical body, squeeze lever discharge valve fitted with internal discharge tube, 30cms long high pressure discharge hose, discharge nozzle, suspension bracket, conforming to IS : 15683 finished externally with red enamel paint and fixed to wall with brackets with rawl plug/dash fasteners complete with internal charge. Capacity 4.5 kg. ISI Marked.( Contractor should submit test certificate form manufacturer along with serial number of every extinguishers supplied.)	Nos	70	6597.50	461,825.00
47	Providing and fixing mechanical foam type (ISI marked) fire extinguishers consisting of welded M.S. cylindrical body squeeze lever discharge valve 30 cm long high pressure discharge hose, discharge nozzle suspension bracket ISI marked finished externally with red enamel paint and fixed to wall with brackets complete with internal charger.				
47.1	9 liters capacity. (IS. 15683)	Nos	10	3045.00	30,450.00
48	Providing and fixing water Co2 (ISI marked) extinguishers including all accessories as per IS specification with wall bracket with rawl plug				
48.1	Capacity 9 liters. (IS:15683)	Nos	70	3045.00	213,150.00
49	Providing and fixing ABC powder type fire extinguishers consisting of welded M.S cylindrical body automatic modular ABC powder type extinguisher actuated through a sprinkler head mounted on The extinguisher body finished externally with red enamel paint and fixed to ceiling with brackets complete with internal charge. (For Transformer/DG/L.T panel room)				
49.1	Capacity 4 Kg. (IS:15683)	Nos	70	3045.00	213,150.00
50	Providing and fixing of self illuminated / auto glow "EXIT" signs printed on photoluminescent sheet containing self illuminated base chemical, of appropriate size not less than 400 x 150 mm, suspended from ceiling or fixed to the walls with accessories as required and as directed at site.	Nos	80	1,015.00	81,200.00

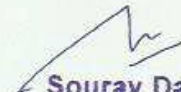
## BOQ Tripura Cricket Stadium

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
51	Providing and fixing Carbon-di-oxide fire extinguishers consisting of welded M.S cylindrical body, squeeze lever discharge valve fitted with internal discharge tube, 30cms long high pressure discharge hose, discharge nozzle, trolly mounted, confirming to IS : 15683 finished externally with red enamel paint and fixed to wall with brackets with rawl plug/dash fasteners complete with internal charge. Capacity 22.5 kg. ISI Marked.( Contractor should submit test certificate form manufacturer along with serial number of every extinguishers supplied.)	Each	5	30,450.00	152,250.00

  
**Sourav Das Gupta**  
Hony. General Secretary  
Tripura Cricket Association

## BOQ Tripura Cricket Stadium

SL. No.	Description	Unit	Qty.	Rate(Rs.)	Amount (Rs.)
52	Providing and fixing mechanical foam type (ISI marked) fire extinguishers consisting of welded M.S. cylindrical body squeeze lever discharge valve 30 cm long high pressure discharge hose, discharge nozzle, trolley mounted ISI marked finished externally with red enamel paint and fixed to wall with brackets complete with internal charger.				
52.1	50 liters capacity. (IS. 15683)	Each	5	40600	203,000.00
	TOTAL				1,355,025.00
<b>VI. FIRE CHECK DOORS</b>					
53	Supply & fixing Fire check door shutters consisting of vertical and horizontal rails/ style as per specification along with PYROSWISS EXTRA of SAINTGOBAIN OR EQUIVALENT Make 6.0mm thick clear toughened glass tested upto 2 hour and complies with both BS 476: Part 22. Makes to be used as per approved list of manufacturer complete with door closer, painting of fittings and ball bearing hinges (Required For Staircase, Lift lobby locations doors)	Sqm	250	20000.00	5,000,000.00
	TOTAL				5,000,000.00
<b>VI. PRESSURISATION FANS</b>					
54	Supply, installation, testing and commissioning of tube axial flow fans for exhaust air suitable for installing in any position in Horizontal or vertical. The motor shall be suitable for 415 V $\pm$ 10% volts three phase 50cycle, AC supply. The fan shall be equipped with mounting bracket & outlet core required at discharge. The fan shall be low RPM (less than 1000 RPM) and capacities based on minimum 30 MMWC static pressure or to suit the system. shall be as follows:				
54.1	6500 CFM @ 30 MMWG (for lift well pressurization)	Set	10	65000.00	650,000.00
	TOTAL				650,000.00



**Sourav Das Gupta**  
Hony. General Secretary  
Tripura Cricket Association

HVAC SYSTEM WORKS		
ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1	COST OF HVAC WORKS	41915820.00
	GRAND TOTAL	41915820.00

## HVAC SYSTEM WORKS

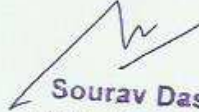
Sl. No.	Item Description	Unit	Qty.	Rate	Total Amt. Rs.
1	Supply, erection, testing & commissioning including refrigerant charging of Air Cooled ALL Inverter Scroll VRF type system. Unit shall be factory assembled, powder coated GI sheet metal cabinets, all hardware of anti rust quality, refrigerant Cooled PCB, conformal coating on PCB to protect from duct & humidity, must have Wide voltage range from 320 V to 460 V, hydrophilic blue fin material for better corrosion resistance, top discharge type with Brushless DC Motor only. Outdoor Units must be Hot Air Top Discharge Type, as per site requirement.				
	The ODU capacity must be delivering actual cooling capacity at 42 deg C, no unloading upto 56 deg C, minimum COP must be 3.8 at 100% Load & 4.1 at 50% load at an ambient of 41 Deg C. Outdoor COP Calculation Must be furnished as per table, attached with Specification,				
	Condenser Heat exchanger made of copper tubes, Should inner grooved for high heat transfer. The condenser fans are to be fitted with high efficiency BLDC motor that regulate air flow depending on demand resulting more power saving.				
	The VRF system must compatible with R410A green Refrigerant only. System must be pre-charged at Factory. If required additional, based on the site, then it will be charged additional at site.				
1.1	66 HP	Nos.	5	1413400.00	7,067,000.00
1.2	56 HP	Nos.	1	1337400.00	1,337,400.00
1.3	44 HP	Nos.	9	938600.00	8,447,400.00
1.4	18 HP	Nos.	1	457600.00	457,600.00
2	Supply, erection, testing & commissioning of VRF cassette multifold indoor units comprising of coil section, filter section and high static fan section. The unit shall be ceiling suspended type and complete with all standard accessories.				
2.1	4 WAY CASSETTE UNIT 1.7 TR- (Min Air flow - 655 CFM)	Nos.	49	42500.00	2,082,500.00
2.2	4 WAY CASSETTE UNIT 2.0 TR - (Min Air flow - 655 CFM)	Nos.	8	42800.00	342,400.00
2.3	4 WAY CASSETTE UNIT 2.8 TR- (Min air flow - 1100 CFM)	Nos.	125	50900.00	6,362,500.00
2.4	4 WAY CASSETTE UNIT 3.2 TR- (Min air flow-1100 CFM)	Nos.	18	49500.00	891,000.00
3	Supply, erection, testing & commissioning of VRF ducted indoor units comprising of coil section, filter section and high static fan section. The unit shall be ceiling suspended type and complete with all standard accessories.				
3.1	8.0 TR Hi Static ductable unit of 3100 CFM	Nos.	6	73000.00	438,000.00
4	Supply, erection, testing & commissioning of cordless remote control	Nos.	200	900.00	180,000.00

## BOQ Tripura Cricket Stadium

Sl. No.	Item Description	Unit	Qty.	Rate	Total Amt. Rs.
5	Supply, erection, testing & commissioning of corded remote control	Nos.	6	3100.00	18,600.00
6	Supply, erection, testing & commissioning of individual Y joints / Refnet Joints for connecting IDU with Refrigerant piping.	Lot	1	1416000.00	1,416,000.00
7	Supply installation testing commissioning of tube axial fan having 18000cfm and 50 mm static supply air fan.	Nos.	1	700000.00	700,000.00
8	Supply installation testing commissioning of tube axial fan having 14500cfm and 40 mm static fan for exhaust.	Nos.	1	580000.00	580,000.00
9	Supply, erection, testing & commissioning of refrigerant piping to be manufactured from hard drawn copper complete with nitrile rubber based insulation 19/13mm				
9.1	41.275 mm OD (insulation - 19 mm thk.)	RMT	545	2300.00	1,253,500.00
9.2	38.02 mm OD (insulation - 19 mm thk.)	RMT	513	2050.00	1,051,650.00
9.3	34.9 mm OD (insulation - 19 mm thk.)	RMT	475	1850.00	878,750.00
9.4	28.6 mm OD (insulation - 19 mm thk.)	RMT	455	1600.00	728,000.00
9.5	25.02 mm OD (insulation - 19 mm thk.)	RMT	523	1440.00	753,120.00
9.6	22.2 mm OD (insulation - 19 mm thk.)	RMT	640	1250.00	800,000.00
9.7	19.1 mm OD (insulation - 13 mm thk.)	RMT	1045	990.00	1,034,550.00
9.8	15.9 mm OD (insulation - 13 mm thk.)	RMT	110	800.00	88,000.00
9.9	12.7 mm OD (insulation - 13 mm thk.)	RMT	280	650.00	182,000.00
10.0	9.5 mm OD (insulation - 13 mm thk.)	RMT	950	590.00	560,500.00
10.1	6.35 mm OD (insulation - 13mm thk.)	RMT	750	550.00	412,500.00
10	Supply, erection, testing & commissioning of drain piping of 25 mm dia of HDPE construction	RMT	900	215.00	193,500.00
11	Supply, erection, testing & commissioning of drain piping of 32 mm dia of HDPE construction	RMT	560	250.00	140,000.00
12	Supply, erection, testing & commissioning of drain piping of 40 mm dia of HDPE construction	RMT	310	300.00	93,000.00
13	Supply and Installation of R410 Gas	kg	380	1900.00	722,000.00
14	Supply, erection, testing & commissioning of 2C x 1.5 sq. mm shielded copper control cable in PVC conduit	RMT	3175	210.00	666,750.00
15	Supplying, Installing, Testing and Commissioning with all lead and lifts, all levels - GSS Ducting. The work shall include all ancillary items like supports, clamps,				
15.1	0.63 mm (24G) Ducting	Sqmt	600	750.00	450,000.00
15.2	0.8 mm (22G) Ducting	Sqmt	350	900.00	315,000.00
16	Supplying, Installing, Testing and Commissioning with all lead and lifts, all levels - Powder coated, extruded aluminium, removable center core type, supply air diffusers with volume control dampers of aluminium construction.	Sqmt	8	8500.00	68,000.00


## BOQ Tripura Cricket Stadium

Sl. No.	Item Description	Unit	Qty.	Rate	Total Amt. Rs.
17	Supplying, Installing, Testing and Commissioning with all lead and lifts, all levels -Powder coated, extruded aluminium, removable center core type <b>Return air diffusers</b> without volume control dampers of aluminium construction .	Sqmt	12	7500.00	90,000.00
18	Supplying, Installing, Testing and Commissioning with all lead and lifts, all levels - <b>Collar Damper</b> of opposed blade type made out of Aluminium alloy extrusion.	Sqmt	3	4000.00	12,000.00
19	Supplying, Installing, Testing and Commissioning Thermal <b>insulation</b> with with 13 mm thk nitrile rubber.	Sqmt	200	750.00	150,000.00
20	Supplying, Installing, Testing and Commissioning <b>Acoustical insulation</b> with ith 12 mm thick rigid board fibreglass covered with aluminium perforated sheet.	Sqmt	100	972.00	97,200.00
21	MS Frame for mounting the modular outdoor unit at terrace	Nos.	40	7055.00	282,200.00
22	Supply, erection, testing & commissioning of perforated GI cable tray for running the exposed pipeline at terrace	RMT	610	920.00	561,200.00
23	Supply, erection, testing & commissioning of Tube Axial Fan 900CFM Capacity	Nos.	4	3000.00	12,000.00
<b>Total price (Inclusive of Taxes and duties) Rs</b>					<b>41,915,820.00</b>

  
**Sourav Das Gupta**  
 Hony. General Secretary  
 Tripura Cricket Association

BOQ Cricket Stadium

LIFT WORKS		
ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1	COST OF LIFT WORKS	29312062.50
	GRAND TOTAL	29312062.50

  
**Sourav Das Gupta**  
Hony. General Secretary  
Tripura Cricket Association

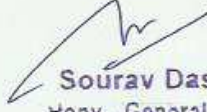
LIFT WORKS					
SL. NO.	PARTICULAR	UNIT	QTY	RATE	AMOUNT
1	Supplying, installation, testing and commissioning of 13 Passenger (884 Kg) lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - MAIN PAVILION				
	Floor: G+4				
	Travel : 15 Meters (approx.)				
	Stops and Opening : 4 Stops & 4 Opening				
	controller: AC Variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required				
	Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant				
	power: 415V 3phase 50 HZ, 4-wire system				
	type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish)				
	b. landing doors: stainless steel scratch proof (moon rock finish)				
	A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car				
	Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	4.00	2777250.00	11109000.00
2	Supplying, installation, testing and commissioning of 1000 kg Goods cum passenger lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - MAIN PAVILION				
	Floor: G+4				
	Travel : 15 Meters (approx.)				
	Stops and Opening : 5 Stops & 5 Opening				
	controller: AC Variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required				
	Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant				
	power: 415V 3phase 50 HZ, 4-wire system				
	type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish)				
	b. landing doors: stainless steel scratch proof (moon rock finish)				
	A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car				
	Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	1.00	3048937.50	3048937.50
3	Supplying, installation, testing and commissioning of 1500 kg Goods cum passenger lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - MAIN PAVILION				
	Floor: B+G+4				
	Travel : 20 Meters (approx.)				
	Stops and Opening : 6 Stops & 6 Opening				
	controller: AC Variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required				

## BOQ Tripura Cricket Stadium

SL. NO.	PARTICULAR	UNIT	QTY	RATE	AMOUNT
	Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant				
	power: 415V 3phase 50 HZ, 4-wire system				
	type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish)				
	b. landing doors: stainless steel scratch proof (moon rock finish)				
	A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car				
	Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	1.00	4347000.00	4347000.00
4	Supplying, installation, testing and commissioning of 13 Passenger (884 Kg) lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - MEDIA PAVILION				
	Floor: G+4				
	Travel : 15 Meters (approx.)				
	Stops and Opening : 4 Stops & 4 Opening				
	controller: AC Variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required				
	Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant				
	power: 415V 3phase 50 HZ, 4-wire system				
	type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish)				
	b. landing doors: stainless steel scratch proof (moon rock finish)				
	A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car				
	Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	2.00	2777250.00	5554500.00
5	Supplying, installation, testing and commissioning of 13 Passenger (884 Kg) lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - MEDIA PAVILION				
	Floor: G+4				
	Travel : 15 Meters (approx.)				
	Stops and Opening : 5 Stops & 5 Opening				
	controller: AC Variable voltage and variable frequency				
	Automatic rescue device complete with dry maintenance free batteries as required				
	Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant				
	power: 415V 3phase 50 HZ, 4-wire system				
	type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish)				
	b. landing doors: stainless steel scratch proof (moon rock finish)				
	A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car				

## BOQ Tripura Cricket Stadium

SL. NO.	PARTICULAR	UNIT	QTY	RATE	AMOUNT
	Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	1.00	2777250.00	2777250.00
6	Supplying, installation, testing and commissioning of 10 Passenger (680 Kg) lifts having contract speed of 1.0 MPS serving different floors in the lift shaft as per detailed specifications and as under: - TV PRODUCTION Floor: B+G+3 Travel : 20 Meters (approx.) Stops and Opening :5 Stops & 5 Opening controller: AC Variable voltage and variable frequency Automatic rescue device complete with dry maintenance free batteries as required Operation: Microprocessor based single automatic push button / simplex selective collective / duplex selective collective/ with/ without attendant power: 415V 3phase 50 HZ, 4-wire system type of door: a. car: power operated center opening horizontal sliding, stainless steel scratch proof (moon rock finish) b. landing doors: stainless steel scratch proof (moon rock finish) A hand rail not less than 600mm long at 900 mm above floor level to be fixed adjacent to control panel in the lift car Voice announcement system in the car to announce the position of the elevator in the hoist-way as the car passes or stops at a floor served by the elevator				
	Lift as per Above description complete as required.	Set	1.00	2475375.00	2475375.00
	<b>TOTAL</b>				<b>29312062.50</b>

  
**Sourav Das Gupta**  
 Hony. General Secretary  
 Tripura Cricket Association

CRICKET STADIUM LIGHTING WORKS		
ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1	COST OF CRICKET STADIUM LIGHTING	85000000.00
	GRAND TOTAL	85000000.00

Cricket Stadium Lighting (2500 to 3000 Lux Level)					
SI No	Head Description	Qty	Unit	Unit Rate (Rs.)	Amount (Rs.)
1.	Design, Manufacture, Supply, Assembly, Installation, Commissioning of Hot Dip Galvanised High Masts 44M as per specifications and approved make with cross-arm fixing plates, cross-arms, ladder, platform etc. complete in all respects.	6	Sets		
2.	Design, Manufacture, Supply, Installation of Foundation Bolts with nuts, washers, temp plate and anchor plates as per approved make complete in all respects.	6	Sets		
3.	Design, Supply of materials, construction of Civil Foundation inclusive of all Materials, Labour and Tools & Machinery as per drawing design to suit the high-mast complete in all respects.	6	Jobs		
4.	Design, Manufacture, Supply, Installation, Testing & Commissioning of Imported Constant illumination Technolgy Main Floodlights fixture of 1.5kw Metal Halide of approved make complete with HID Lamp as per specification and complete in all respects.	450	Sets		
5.	Design, Manufacture, Supply, Installation, Testing & Commissioning of Imported Constant illumination Technolgy Security Floodlights fixture of 1.5kw Metal Halide of approved make complete with HID Lamp as per specification and complete in all respects.	12	Sets		
6.	Supply, Testing & Commissioning of Imported Control Gear and boxes / racks to suit above rating of floodlights for each high-mast as per approved makes complete in all respects.	6	Lots		

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HONY. GENERAL SECRETARY, TCA  
 Sourav Das Gupta  
 Hony. General Secretary  
 Tripura Cricket Association

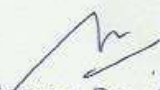
SI No	Head Description	Qty	Unit	Unit Rate (Rs.)	Amount (Rs.)
7.	Supply, Installation, Testing & Commissioning of Internal Wiring 2.5sqmm (min) copper conductor, PVC insulated, PVC sleeve protected to connect from Control Gear to each Floodlight inside each high-mast as per approved make complete in all respects.	6	Lots		
8.	Design, Manufacture, Supply, Installation, Testing & Commissioning of Electrical Main LT Panel as per system requirement consisting of 2 In-comer and metering section and 6 outgoing feeders and one spare feeder, all of suitable rating and size as required by the lighting system as per approved makes complete in all respects.	1	No.		
9.	Design, Manufacture, Supply, Installation, Testing & Commissioning of Electrical Mast LT Panel as per system requirement consisting of 1 In-comer and metering section and 3 outgoing feeders and one spare feeder, all of suitable rating and size as required by the lighting system as per approved makes complete in all respects.	6	Nos.		
10.	Supply, Installation, Testing & Commissioning of LED Type of Aviation Obstruction Lights along with connecting internal cable and mounting arrangement on top of the mast as per approved make complete in all respects.	8	Sets		
11.	Supply, Installation, Testing & Commissioning of power cable 3.5cx120sqmm AYWY Al conductor, XLPE insulated, PVC sheathed, Steel armoured type laid buried in trench with brick cover as per approved make complete in all respects. To connect the Main Panel to each High Mast panel.	1000	Meter		

Sl No	Head Description	Qty	Unit	Unit Rate (Rs.)	Amount (Rs.)
12.	Supply, Installation, Testing & Commissioning of control cable 4cx16sqmm YWY Cu conductor, XLPE insulated, PVC sheathed, Steel armoured type laid buried in trench with brick cover as per approved make complete in all respects. To connect the Security Lights for each High Masts	1000	Meter		
13.	Supply, Installation, Testing & Commissioning of control cable 3cx2.5sqmm YWY Cu conductor, XLPE insulated, PVC sheathed, Steel armoured type laid buried in trench with brick cover as per approved make complete in all respects. To connect the AOL circuits for each High Masts	1000	Meter		
14.	Supply, Installation, Testing & Commissioning of copper wiring 10sqmm PVC insulated to connect from High Mast panel to Control Gear Boxes as per approved make complete in all respects.	1000	Meter		
15.	Supply, Installation of GI plate earth electrode type earth station including chamber etc. as per IS complete in all respects.	26	Sets		
16.	Supply, Installation of GI earth strip of 25 x 5 mm size connecting between GI pipe earth electrode and body earth points on mast / panel buried in ground complete in all respects.	260	Meters		
<b>TOTAL</b>					<b>85000000.00</b>

## SPORTS LIGHTING OF CRICKET STADIUM FOR CTV TELECAST


## 10 Year Life Cycle Cost Sheet

Sl. No.	Parameters	Values
1	Model & Make of Imported Floodlights	
2	Quantity of Floodlights Offered	a
3	Kw per lamp (incl ballast loss)	b
4	Power Load Kw per hour	a x b
5	Energy Cost - Rupees per KwH	10.0
6	Hours used per year	500.0
7	Energy Cost per year	(a x b) x 10 x 500
	<b>10 Year Total Energy Cost</b>	<b>X = {(a x b) x 10 x 500} x 10</b>
8	Useful Lamp Life	In hours (d)
9	Group Relamp in 10 years	5000 hours / (d)
10	Cost of lamp	Rs. (e)
	<b>10 Year Cost of group relamp</b>	<b>a x e x (5000 / d)</b>
11	Estimated qty of lamps replace / year	f
12	Total spot relamp in ten years	f x 10
	<b>10 Year Cost of Spot relamp</b>	<b>(f x e x 10)</b>
	<b>Total Relamp Cost</b>	<b>Y=(a x e x (5000/d)) + (f x e x 10)</b>
13	Ballast Replacement Cost for 10 years	g
14	Capacitor Replacement Cost for 10 years	h
15	Ignitor Replacement Cost for 10 years	i
	<b>10 Year Cost of Component replacement</b>	<b>Z = (g + h + i)</b>
	<b>Energy + Re-lamp + Maintenance Cost 10 years</b>	<b>X + Y + Z</b>

  
**Sourav Das Gupta**  
 Hony. General Secretary  
 Tripura Cricket Association

BOQ Tripura Cricket Stadium

Laying of Subsurface Drainage System for Tripura Cricket Out Field & Pitches		
ABSTRACT OF COST		
SL. NO.	ITEMS OF WORKS	AMOUNT
1	COST OF WORKS	61798600.00
	GRAND TOTAL	61798600.00

  
Sourav Das Gupta  
Hony. General Secretary  
Tripura Cricket Association

BOQ Tripura Cricket Stadium.

Laying of Subsurface Drainage System for Tripura Cricket Out Field & Pitches					
Sr.	Item Description	Unit	Quantity	Rate	Amount
1	Soil for ground filling .5 M depth considerd(The rate are cut and fill with in trhe site)	Cum	RO	200	
2	Fine Dresing and Compaction(25mm top)	sqm	20000	28.00	560000.00
3	Excavation of Trenches for Drainage (200 x 300 mm) and shifting of soil out side of stadium.	Rmt.	6660	95.00	632700.00
4	Supply of Geotextile (for trenches)	sqm	12600	68.00	856800.00
5	Laying of Geotextile	sqm	12600	38.00	478800.00
6	Supplying of Perforated Pipe (88/100mm)	Rmt.	6030	175.00	1055250.00
7	Supplying of ' Y ' Joints double	Nos	220	800.00	176000.00
8	Supplying of ' Y ' Joints single	Nos	50	700.00	35000.00
9	Supplying of End Caps 4" PVC	Nos	220	135.00	29700.00
10	Installation, jointing and fixing of Perforated Pipe 4" and 6"	Rmt.	6030	165.00	994950.00
11	Suppying of 'T' Joints 6"	Nos	20	600.00	12000.00
12	Suppying of Cross	Nos	20	580.00	11600.00
13	Supply of 6" PVC pipe 4 kg/	Rmt.	624	550.00	343200.00
14	Supply of 6" PVC End Cap	Nos	20	230.00	4600.00
15	Coupler 6"	Nos	25	160.00	4000.00
16	Coupler 4"	Nos	200	90.00	18000.00
17	Supplying of Aggregate 6 - 10 mm size for Trenches	Cum	347	4950.00	1717650.00
18	Supply of agregate 100 mm blanket layer(compacted)	Cum	3000	4950.00	14850000.00
19	Washing Charges of aggregate	Cum	R/O	870.00	
20	Carting and Laying of 8-10 mm aggregate	Cum	3347	650.00	2175550.00
21	Supplying of Unseived Sand 8" thick compacted(River sand)	Cum	5200	950.00	4940000.00
22	Sieving of sand	Cum	R/O	730.00	
23	Carting and Laying of Unseived Sand	Cum	3000	680.00	2040000.00
24	picking of stone from sand(unsieved)	Cum	3000	125.00	375000.00
25	Carting and laying of sieved sand	Cum	3000	680.00	2040000.00
26	Supply of Organic Matter 100kg/100sqm(Neem Cake)	kg	20000	32.00	640000.00
27	Spreading and Mixing of OM on the top of final layer (50mm)	sqm	20000	28.00	560000.00
28	Basal Fertilization & Starter fertilizer	sqm	20000	32.00	640000.00
29	Supply of bermuda grass(Loose)	LS			750000.00
30	Grassing with 3 month maintenance(Dibbling/Sprigging)	sqm	20000	130.00	2600000.00
31	Course Sand for pitch(764 sqm)	Cum	76	950.00	72200.00
32	Fine Sand for pitch	Cum	76	900.00	68400.00
33	Black Soil for Pitch	Cum	600	30000.00	18000000.00
34	Laying of Sand and soil in layer for pitch making, siezing of pitch soil etc	Cum	752	6500.00	4888000.00
35	Grassing of pitch including grass	sqm	764	300.00	229200.00
	<b>TOTAL</b>				<b>61798600.00</b>