

JUNAGADH MUNICIPAL CORPORATION**PROJECT DIVISION**

NAME OF WORK : PREPARATION OF PLAN, ESTIMATES AND DTP FOR BRIDGE ACROSS SONREKH RIVER NEAR SHAKKARBAUG
ZOO, JUNAGADH

SCHEDULE - B / BOQ ABSTRACT FOR TENDER UPLOADING**TOTAL EXCLUDING GST : ₹ 11,80,99,633.00**

Sr. No.	Complete Description of Item	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
PART-A : BRIDGE PROPER					
1	Excavation for foundation in sand, gravel, clay soft soils and murrum etc. including shoring, strutting dewatering as necessary and disposing of the excavated stuff as directed.(A) Depth upto 3.0 M. and lead upto 100m for 10 Cum	1139.00	cum	506.05	5,76,390.95
2	Excavation in hard rock by dry-wet blasting and chiselling including dewatering preparing foundation base by proper benching and stepping and disposing of the excavated stuff as directed.(B) prohibited Blasting work.	2657.00	cum	1,658.72	44,07,219.04
3	Providing and filling trenches of Labour charges - Excavator in rocky strata with ordinary cement concrete M-75	2080.00	cum	2,941.05	61,17,384.00
4	Providing and casting in situ Ordinary cement concrete M-150 for R.C.C. Raft and cut-off walls including necessary shuttering laying, vibrating, ramming and curing complete.	104.00	cum	3,760.85	3,91,128.40
5	Providing and casting in situ controlled cement concrete M-350 for R.C.C. well cap / Pilecap/Footing including necessary formwork, vibrating, curing and finishing complete.	818.00	cum	5,951.00	48,67,918.00
6	Providing and filling sand behind abutments and between returns in layers as directed	875.00	cum	556.51	4,86,946.25
7	Providing and filling sand behind abutments and between returns in layers as directed	3103.00	cum	556.51	17,26,850.53
8	Providing and laying - Fitter Media 600mm thick directed at the back of abutments, returns and wing walls as per detailed specifications.	566.00	sqm	1,227.08	6,94,527.28
9	Providing & laying weep hole in Abutments, and returns by using A.C. pipe of 100mm including laying in proper grede and jointing the completed as per detailed specification.	566.00	Nos	60.86	34,446.76
10	Providing and placing in position FE 550D TMT Bar reinforcement including, cutting, bending hooking and tying complete as per detailed drawings & As per EIC	115.44	T	73,127.42	84,41,829.36
11	Providing and casting in situ controlled cement concrete M-350 for R.C.C. return as per drawings including centering shuttering, scaffolding where necessary, laying vibrating, curing and finishing complete.	1289.00	cum	7,079.00	91,24,831.00
12	Providing and casting in situ controlled cement concrete M-350 for R.C.C. return as per drawings including centering shuttering, scaffolding where necessary, laying vibrating, curing and finishing complete.	321.00	cum	7,079.00	22,72,359.00

13	Providing and casting in situ controlled cement concrete M-350 for R.C.C. return as per drawings including centering shuttering, scaffolding where necessary, laying vibrating, curing and finishing complete.	7.00	cum	7,079.00	49,553.00
14	Providing and casting in situ controlled cement concrete M-350 for R.C.C. return as per drawings including centering shuttering, scaffolding where necessary, laying vibrating, curing and finishing complete.	20.00	cum	7,079.00	1,41,580.00
15	Providing and placing in position FE 500D TMT Bar reinforcement including, cutting, bending hooking and tying complete as per detailed drawings & Engineer in Charge.	268.85	T	73,127.42	1,96,60,131.36
16	Providing and fixing in position fully moulded restrained elastometric Bearings as per detailed drawings & Engineer in Charge.	742.00	cc	0.89	660.38
17	Providing and fixing in position fully moulded restrained elastometric Bearings as per detailed drawings & Engineer in Charge.	1600.00	cc	0.89	1,424.00
18	Providing and casting in situ or precast controlled Cement Concrete M-500 for prestressed concrete work in Super structure including centering, shuttering, curing, scaffolding, ramming, vibrating, finishing, launching or shifting complete.(I) Solid Slab.(II) Deck Slab.(III) Main Girders.(IV) Diaphragm or cross girder.	480.00	cum	8,721.02	41,86,089.60
19	Providing and casting in situ controlled cement concrete M-350 for Wearing coat including centering, scaffolding, curing and finishing complete.	84.00	cum	5,763.00	4,84,092.00
20	Providing, fabricating, and fixing in position single strip seal expansion joint consisting of edge beams, anchorages, and a chloroprene / neoprene rubber electronic sealing element. The system must be capable of accommodating movement up to 80 mm (±40 mm). The assembly includes alignment, fixing of anchor loops to the structural reinforcement steel, casting with high-grade concrete (M-40/M-50 grade) in the nosing area, complete with all materials, machinery, tools, labor, and testing. All works must be executed strictly in accordance with detailed design drawings, MoRTH Specification Clause 2607 and IRC guidelines.	65.00	m	12,000.00	7,80,000.00
21	Providing C.I. 100mm diameter water spouts including necessary iron gratings as per drawings.	56.00	Nos	903.37	50,588.72
22	Providing and casting in situ controlled cement concrete M-400 for R.C.C. solid slab including centering, scaffolding, curing and finishing complete.	82.00	cum	5,849.00	4,79,618.00
23	Providing and casting in situ controlled cement concrete M-350 for R.C.C. Crash barrier including centering, scaffolding, curing and finishing complete.	182.00	cum	5,763.00	10,48,866.00
24	Providing and casting in situ Ordinary cement concrete M-150 for R.C.C. Raft and cut-off walls including necessary shuttering laying, vibrating, ramming and curing complete.	29.00	cum	3,760.85	1,09,064.65
25	Providing and placing in position FE 500D TMT Bar reinforcement including, cutting, bending hooking and tying complete as per detailed drawings	135.23	T	73,443.05	99,31,703.65
26	Providing and fixing in position to exact profile high tensile steel wires of required ultimate strength including bending, cutting, tying providing necessary standard and anchorages, sheathing, stressing, grouting, ducts as per detailed drawing including necessary plant and machinery complete.	9.57	T	71,685.00	6,86,025.45
27	Carrying out load test of super structure as directed including all necessary materials plant equipment, instruments, labour and arrangements for test directed	300.00	T	168.24	50,472.00
28	Supplying & laying of bi-axial extruded high modulus polypropylene geogrid conforming to MORT&H specification for base/sub-base reinforcement having minimum tensile strength 40kN/m in the longitudinal and transverse direction, with 14kN/m and 28kN/m tensile strength at 2% and 5% strain respectively in the longitudinal and transverse direction, junction efficiency not less than 95% and with 38mm X 38mm mesh opening.	4285.00	SQM	249.00	10,66,965.00
29	Dismantling the existing structure including removing and stacking the dismantled materials as and where directed by Engineer in Charge of Junagadh Municipal Corporation (A) R.C.C. work	6880.00	Cum	921.14	63,37,443.20

30	Providing and fixing pre-cast Rubber Dye / steel Dye inter locking concrete block 60mm thick with grade of concrete M300 pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658 : 2006 including 35 mm Sand layer for levelling and filling the joint with sand in proper line and level as per guidelines of IRC : SP 63-2018 etc. Complete.	189.00	SQM	699.93	1,32,286.77
	Sub Total - Part A : Bridge Proper				8,43,38,394.36
PART-B : DIVERSION, APPROACH & ROAD SAFETY FURNITURE					
31	Excavation for foundation upto 1.5 M. depth including sorting out and stacking of useful materials and disposing of excavated stuff up to 50M. lead. (A) Loose or Soft Soil	990.00	cum	121.72	1,20,502.80
32	Providing and casting in situ Ordinary cement concrete M-150 for R.C.C. Raft and cut-off walls including necessary shuttering laying, vibrating, ramming and curing complete.	149.00	cum	3,760.85	5,60,366.65
33	Providing and laying cement concrete 1:4:8 (1cement : 4coarse sand : 8 B.T.Crushed stone aggregates 40 mm. nominal size) and curing complete excluding cost of from work in : (a) Foundation and plinth	482.00	cum	2,742.27	13,21,774.14
34	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culverts including setting and joining the pipes in cm. 1:2 watering and laying (to level or slopes) of I.S.458/1971 Class NP 4 Casted by vertically vibrated technology of following internal diameters. 1200mm dia	625.00	rmt	5,504.96	34,40,600.00
35	Providing and casting in situ controlled cement concrete M-200 for R.C.C. including necessary formwork, vibrating, curing and finishing complete.	2219.00	cum	5,278.42	1,17,12,813.98
36	Providing and filling sand behind abutments and between returns in layers as directed	507.00	cum	556.51	2,82,150.57
37	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site spreading, grading to required slope and compacting to meet requirement to table 300-2 Construction of Embankment with Material Obtained from Borrowpits area within 3.0 Km Lead (CBR > 8)	3908.00	cum	353.48	13,81,399.84
38	Providing and placing in position FE 500D TMT Bar reinforcement including, cutting, bending hooking and tying complete as per detailed drawings	77.64	T	73,443.04	57,02,117.63
39	Dismantling the existing structure including removing and stacking the dismantelled materials as and where directed. (A) R.C.C. work	2219.00	cum	921.14	20,44,009.66
40	Providing and placing in position FE 500D TMT Bar reinforcement including, cutting, bending hooking and tying complete as per detailed drawings (Credit of Dismantaling)	-77.64	T	36,721.52	-28,51,058.81
41	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culverts including setting and joining the pipes in cm. 1:2 watering and laying (to level or slopes) of I.S.458/1971 Class NP 4 Casted by vertically vibrated technology of following internal diameters. 1200mm dia (Credit of Dismantaling)	-625.00	Rmt	2,752.48	-17,20,300.00
42	Providing and fixing post and pipe railing as per detailed drawing including 3 coats of painting to steel works complete.	320.00	Rmt	1,202.20	3,84,704.00
43	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 ((in 2 Layers Saperately, Grade I - Top Layer, Grade V - bottom Layer) As per Instruction by EIC (JMC))	696.00	cum	1,096.80	7,63,373.19
44	Wet Mix Macadam (Plant Mix Method) : Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with grader in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	768.00	cum	988.49	7,59,160.32

45	Providing and applying primer coat with SS1 grade bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.70 to 1.00 kg/sqm using mechanical means.	3315.00	Sqm	78.07	2,58,802.05
46	Tack Coat on Bituminous surfaces : Providing and applying tack coat with VG 30 or RS1 Bitumen Emulsion as per instruction of Engineer -In - Charge of JMC using emulsion pressure distributor at the rate of 0.20 to 0.30 kg per sqm on the prepared bituminous surface cleaned with mechanical broom.	6630.00	Sqm	21.25	1,40,887.50
47	Dense Graded Bituminous Macadam Grading : 2 -Providing and laying dense graded bituminous macadam with higher capacity batch type HMP using crushed aggregates of specified grading, premixed with bituminous binder @ 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects.	249.00	Cum	11,950.81	29,75,751.69
48	Bituminous Concrete Grading 2: -Providing and laying bituminous concrete with higher capacity batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects	193.00	Cum	14,101.68	27,21,624.24
49	Providing and erecting retro-reflectorized Cautionary, Mandatory and Informatory Sign Boards conforming to IRC:67-2022, manufactured using 2 mm thick Aluminium Alloy Sheet (IS 736, Grade 19000 or equivalent) with High Intensity Prismatic (HIP) / Type XI Retro-reflective Sheeting, including approved legends, symbols and borders as specified, fixed over hot dip galvanized mild steel tubular posts complete with RCC foundation, excavation, concrete, backfilling, all fittings, nuts, bolts, clamps and complete as directed by the Engineer.	16.00	Each	6,251.00	1,00,016.00
50	Providing and fixing Hazard Marker (Object Marker) conforming to IRC:67 using retro-reflective micro-prismatic sheeting over Aluminium Composite Panel/Aluminium Sheet complete with hot dip galvanized support post, RCC foundation including excavation, PCC, backfilling, all fixtures, clamps, nuts and bolts complete. Complete as per specifications and direction of Engineer.	8.00	Each	3,483.85	27,870.80
51	Providing and erecting Chevron Alignment Sign Boards conforming to IRC:67 fabricated using 2 mm thick aluminium sheet with High Intensity Prismatic Retro-reflective Sheeting fixed over galvanized tubular steel support including concrete foundation, excavation, erection and all incidental works complete.	18.00	Each	4,635.00	83,430.00
52	Providing and laying hot applied Thermoplastic Road Marking Compound of approved colour, 2.5 mm thick including reflectorising glass beads @ 250 gm/sqm over prepared road surface after cleaning, in accordance with IRC:35 and MoRTH Specifications Clause 803 complete including machinery, labour, protection and traffic control during execution.	50.40	Sqm	364.08	18,349.63
53	Providing and fixing Raised Pavement Marker (Road Stud/Cat Eye) of approved make having high intensity retro-reflective lenses fixed with two component epoxy adhesive after cleaning the road surface complete in accordance with IRC:35 and manufacturer's specification.	120.00	Each	215.25	25,830.00
54	Providing, supplying, erecting, maintaining and removing approved steel/water filled barricades of minimum 1.2 m height fitted with retro-reflective sheeting, flashing amber lamps, caution tape and warning boards including shifting during various stages of construction complete.	80.00	Rmt	750.00	60,000.00

55	Providing, supplying, installing, operating, maintaining and removing Solar Powered Flashing Amber Warning Beacon (Solar Blinker) conforming to IRC:SP:55, IRC:67 and MoRTH Specifications, comprising high-intensity amber LED flashing lamp of minimum 200 mm diameter, solar photovoltaic module, maintenance-free rechargeable battery, automatic dusk-to-dawn controller, weatherproof IP65 housing, corrosion-resistant mounting bracket suitable for fixing on barricades, sign posts or drums, complete with all accessories.	18.00	Each	6,200.00	1,11,600.00
56	Providing and fixing Flexible Median Marker made of UV stabilized engineering plastic fitted with High Intensity Prismatic Retro-reflective sheeting complete with stainless steel fixing arrangement and epoxy anchoring on concrete/bituminous surface complete.	12.00	Each	280.00	3,360.00
57	Providing, supplying, fixing, maintaining, shifting during various stages of construction and removing after completion approved make Temporary Traffic Delineators (Flexible Delineator Posts/Lane Channelizers) conforming to IRC:SP:55, IRC:67 and relevant MoRTH Specifications, manufactured from UV stabilized high-density polyethylene (HDPE) or polyurethane material having minimum height of 750 mm above finished road level, fitted with two or more bands of High Intensity Prismatic Grade retro-reflective sheeting (HIP) visible from both directions. The delineator shall be provided with a heavy-duty rubber or polymer base of minimum 6 kg weight or approved anchor base, complete with galvanized base plate, anchor bolts/chemical fasteners, all fixtures, hardware and accessories. The item shall include transportation, erection, fixing on temporary diversion road, maintenance during the construction period, replacement of damaged units, cleaning of retro-reflective sheeting, shifting during different stages of traffic management and	60.00	Each	2,100.00	1,26,000.00
Sub Total - Part B : Diversion, Approach & Road Safety Furniture					3,05,55,135.87
PART-C : UTILITY SHIFTING					
58	<p>Providing all labour, materials, plant & machinery, tools, tackles, temporary works and all incidental arrangements for joint survey, identification, locating, exposing, protection, dismantling, disconnecting, shifting, diversion, supporting, lowering, relaying, reconnecting, testing and commissioning of existing underground and overhead utilities affected due to construction of the proposed bridge, approaches and allied works, including but not limited to water supply pipelines, sewer lines, storm water drains, electrical HT/LT cables, street lighting system, telecom/OFC ducts, traffic signal cables and other public utility services. The item shall include excavation, temporary supports, cutting, welding, fabrication, specials, fittings, valves, thrust/anchor blocks, anti-corrosive treatment, bedding, jointing, temporary bypass arrangements, shutdown coordination with utility agencies, testing, chlorination wherever applicable, reinstatement of utility services, traffic management, barricading, safety measures, disposal of unserviceable materials and all other incidental works complete as directed by the Engineer-in-Charge and in accordance with the specifications of the respective Utility Owning Department.</p> <p>The quantities shown in the BOQ are tentative and are provided only for the purpose of bid evaluation. Payment shall be made only for the actual quantities of utility shifting executed at site, jointly measured and certified by the Engineer-in-Charge and the concerned Utility Owning Department. No payment shall be made for utilities not shifted, abandoned utilities, utilities shifted directly by the Utility Owning Department under separate demand note, or quantities not actually executed. The quoted rates shall be deemed to include all labour, materials, equipment, temporary works, testing, commissioning, traffic management, coordination with utility agencies, statutory approvals, contractor's overheads, profit and all incidental expenses required for satisfactory completion of the work. No additional payment or claim shall be admissible on any account beyond the measured quantities accepted by the Engineer-in-Charge. The Contractor shall satisfy himself regarding the location and extent of existing utilities by visiting the site before submission of the bid</p>	1.00	Lump sum	27,40,410.20	27,40,410.20

	Sub Total - Part C : Utility Shifting				27,40,410.20
PART-D : ELECTRICAL POLE WORKS					
59	Supplying and erecting Flexible PVC insulated multi strand multi core 1.1 kv grade ISI marked copper wires of following size to be erected as directed.(e) 1.50 Sq.mm 3 core round PVC sheathed	100.00	Mtrs	58.00	5,800.00
60	Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K,Uniformity ratio >0.45, Luminaire efficacy> 100 lumens/watt . LED driver efficiency > 85 %.(fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.)(A) Street Light (IP-65), Surge protection -4KV integral and ,Light must have 440VAC line supply with over-voltage protection. (v)above 120 to 160 watts (CAT III)	8.00	Nos.	7,798.00	62,384.00
61	providing and erecting Miniature circuit breaker single pole 0.5A to 2A system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark. Cat-iii	8.00	Nos.	295.00	2,360.00
62	Providing and erecting HOT deep Galvanised iron strip/wire 4.064mm to 1.626mm.	4.00	Kgs	77.00	308.00
63	Providing and erecting Pipe type earthing having 150 cms.long and 2.5 cms. dia. galvanised iron pipe with coupling and buch buried in specially prepared earth pit complete with necessary 8 SWG earth wire.	4.00	Nos.	365.00	1,460.00
64	Providing and erecting XLPE (IS:7098)(I)-88 ISI armoured cable multistrand / Solid Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables (A) 4 core 4 Sq. mm	120.00	Mtrs.	139.00	16,680.00
65	Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II)with necessary connecting accessories of same material at required depth in existing trench for laying of cable. below ground / road surface for enclosing cable (A)50 mm outer dia	120.00	Mtrs.	62.00	7,440.00
66	Supplying and erecting approved make Octagonal pole made from HR sheet steel. The pole should be made as per IS. and shall be coated with hot dip galvanizing as per IS 2629/2633/4759, suitable suspend local wind speed with integral Junction box consist of terminal plate of min 6mm Hylam sheet, standard profile 35mmX7.5mm Din-Rail for MCB Mounting, stud type terminal and arrangement for cable termination to be erected With Suitable foundation (Included) as per details given by manufacturer considering site requirement. ((I) 10 Mtr. Long 70 mm Top X 175 mm bottom dia, 4 mm thickness with 275mmX275mmX16mm base plate, 4-M24 Bolts and 750mm long with necessary G.I. J Bolts .Approx Pole weight 145 kg	4.00	Nos.	19,577.00	78,308.00
67	Providing and erecting Street Light pole bracket comprising main B Class GI pipe of 4.2 cm/require outside dia. complete with suitable B Class G.I. sleeve tubing of approx. 45cms.length and suitable for 76.5 mm /80mm / required size of pole top having sufficient fasteners for fixing the brackets and having spread of 1.5.mtr. length with 110 deg.with vertical plane & suitable welded stays, reducer and with check nuts complete painted with one coat of Red oxide / PU base primer and two coats of Aluminium / PU paint. paint with following nos of arms.	4.00	Nos.	993.00	3,972.00

68	Smart 4G Timer, Supply of IoT based 4G Smart Streetlight Control & Monitoring System having a Smart Panel comprising of 1 Phase IoT Streetlight Smart 4G Timer with 16x2 LCD to display RSSI, relay status, RTC time & diagnostics., Controller with 8-hour battery backup during external power failure. External power failure alert immediately to cloud., 110-630 V AC @ 50-60 Hz – 1 phase operating range., Standby power consumption <3W., Smart 4G Timer with RS232 port for DLMS Energy meter & RS485/UART/RS232 port for any external device communication., Smart 4G Timer must be compatible with any make / brand of DLMS (RS232) Energy Meter., DI: 3 Nos. (1 Contactor / Latch detection, 1 for SPD, 1 for Door Sensor.), DO: 1 Relay for control with 1 extra spare relay., Highly Precise TCXO RTC with 10-year battery reserve., automatically syncs with internal, cellular, server & GPS clock; with logs stored in the CCMS Web Software., Smart 4G Timer with dual SIM functionality for connectivity backup., 4G M2M SIM 5-Year communication included., Local configuration via WiFi / BLE for maintenance or during force majeure., GPS chip inbuilt of Smart 4G Timer for auto location tracking & astronomic schedule location., 50 programmable schedules., Astronomic scheduling with monthly offsets., Smart 4G Timer has inbuilt timer stores schedules locally & also stores schedule execution logs locally, syncs to cloud whenever connected to cloud., Auto-scheduler overrides manual operations., Monitoring & alerts for MCB trips & SPD failure., Over/under voltage, current, overload, power factor & short circuit protections with alerts via Dashboard, App, SMS, WhatsApp & Email., Contactor / Latch chattering protection & alerts., Smart 4G Timer with neutral failure protection and alert., During earthing failure to Panel, it must generate alerts on CCMS Dashboard for safety., During earthing failure to Panel. it must generate alerts on CCMS Dashboard for safety., Bult-in Watchdog for anti-jamming., Smart 4G Timer must send Regular "heartbeat" on software for CCMS status., Accelerometer for tamper & panel movement detection & alerts., Smart 4G Timer must be tested from an NABL Lab for Surge Test @ 6 KV (IEC 61000-4-5), ESD Test @ 4 KV (IEC 61000-4-2), EFT @ 2 KV (IEC 61000-4-4), Conducted Emission @ 150 KHz-30 MHz (CISPR11), Damp Heat Test (40 Deg C @ 95% RH) 2 cycles of 12+12 hours (IS: 9000 (Part 5/Sec.2):1981 latest) with all test passing criteria as "Temporary degradation or loss of function or performance which is self-recoverable", FOTA functionality required for upgrades., Smart 4G Timer sends & stores online/offline data of controller & load for lamp burn hours analysis., It stores & syncs connectivity logs for configuration of network connections & analytics., PANEL & SWITCHGEAR, The panel includes a Class 1 DLMS energy meter NABL approved with 1-2 months of stored data of daily, hourly, monthly, load survey, instantaneous, events, tamper data & with power events stored in meter memory for audit purpose., Must monitor V, I, KWH, KVA, PF, KVAH, etc., Panel made with 2 mm CRCA sheet with ground mountable stand complete with gland plate, waterproof glands, earthing bolt., Panel to have transparent window to view DISCOM Energy Meter display., IP55, weatherproof panel with RAL7035 powder-coated., Smart 4G Timer must be fitted on removable terminal blocks for easy maintenance., Switchgear includes 1 Nos. 3 pole Contactor / Latch having minimum 100 A Load carrying capacity per phase, all other switchgear & wires: 60 A load carrying capacity., Contactor / Latch rating such that spare load like decorative lights can be operated., Spare 3 Pole Contactor / Latch (1 Nos.) also available in panel for	1.00	Nos.	1,43,238.00	1,43,238.00
69	Providing and constructing RCC foundation with pedestal for installation of Smart 4G Street Lighting Control Panel / Feeder Pillar, including setting out, excavation in all types of soil, dressing and ramming of bottom, 100 mm thick PCC 1:4:8, RCC M25 as per IS 456:2000, centering, shuttering, vibration, curing, finishing, minimum 150 mm clear plinth above finished ground level, fixing 4 Nos. M16 hot-dip galvanized foundation bolts with template, cable entry sleeve of 100 mm HDPE/GI pipe, earthing provision, non-shrink grouting after panel erection, backfilling in 150 mm layers with watering and compaction, disposal of surplus earth within 50 m lead, and all labour, material, T&P and incidental works complete as per IS 456:2000, IS 875 Part 3, IS 2062, CPWD/Gujarat PWD specifications and as directed by Engineer-in-Charge.	1.00	L.s.	1,20,000.00	1,20,000.00
70	SITC of 14.2 mm dia 3 mtr long Earth electrode of High tensile steel electrode with 250 micron copper bonding & 1 bag of Carbon fill Based environment friendly backfill tested as per IEC 62561-7 in NABL accredited Laboratory and suitable stainless Steel double sided clamp. Eco Friendly rust proof heavy duty weather proof Polyethylene Earth Pit Chamber with following dimensions :254 mm dia (top), 330 mm dia (bottom) & 260 mm (height).	4.00	Nos.	5,933.00	23,732.00

	Sub Total - Part D : Electrical Pole Works				4,65,682.00
71	Rounding off / reconciliation adjustment to match sanctioned estimate total excluding GST	1.00	LS	10.57	10.57
	GRAND TOTAL EXCLUDING GST (A+B+C+D)				11,80,99,633.00
	<i>Note: GST shall be paid extra as applicable. BOQ amount above is excluding GST and reconciled with sanctioned estimate.</i>				