



**GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION**  
(A GOVT. OF GUJARAT UNDERTAKING)

## E-TENDER NOTICE NO. 01 of 2026-27

### ONLINE TENDER PAPERS

**Name of work:** "SITC of 8.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free comprehensive guarantee period with 5 Years Operation & Maintenance at GIDC, Sachin Industrial Estate (Re-Invite)"

1	Estimated cost	:	Rs. 6,70,15,805.00/-
2	Tender fee	:	Rs. 14,160.00/-
3	E.M.D.	:	Rs. 6,70,200.00/-
4	Date on (or before) which the tender with DD / FDR for Tender fee & EMD (by scanning) except required documents must upload on the web site of <a href="http://www.gidc.nprocure.com">www.gidc.nprocure.com</a>	:	<b>From 29-05-2026 to 20-06-2026 up to 17.00 hours</b>
5	Date on (or before) which DD/FDR in original for Tender fee & EMD and required documents must reach in the office of <b>THE EXECUTIVE ENGINEER (M&amp;E), GIDC, Vapi/Surat Plot No. C-5/101, opp. Tel. Exchange, GIDC, Char Rasta, Vapi-396195</b> by personally i.e. hand delivery	:	From 22-06-2026 to 23-06-2026 upto 17.00 hours
6	Opening of Technical Bid & PQ Application	:	On dtd. 24-06-2026 at 12.00 noon.
7	Eligible class of Registered	:	Valid "A" Class and above registration in R & B Electrical wing with Electrical Contractor License & Similar Type work Experience.

**Office of the Executive Engineer (M&E), Vapi/Surat**  
PLOT NO.C-5/101, OPP. TEL. EXCHANGE, GIDC, CHAR RASTA, VAPI-396 195

**Name of work:** "SITC of 8.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free comprehensive guarantee period with 5 Years Operation & Maintenance at GIDC, Sachin Industrial Estate (Re-Invite)"

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ગુજરાત ઔદ્યોગિક વિકાસ નિગમ

(ગુજરાત સરકારનું સાહસ)  
અધિક્ષક ઇજનેરશ્રી )દ.ગુ (ની કચેરી,  
પ્લોટ નં .પ્લોટનં .સી-૫ /૧૦૧ ,  
ચાર રસ્તા, જીઆઈડીસી, વાપી -૩૯૬૧૯૫

**જાહેર નિવિદાનં. ૦૧૨૭-૨૦૨૬/**

અધિક્ષક ઇજનેરશ્રી ,(ગુ.દ)જી ,સી.ડી.આઇ.વાપીનાં તાબા હેઠળ આવેલ કાર્યપાલક ઇજનેરશ્રી વાપી ,જીઆઈડીસી ,માટે ૧૨ )બાર( કામો માટેના ટેન્ડર ઓનલાઇન અને ૨ (બે)કામો માટેના ટેન્ડર ઓફલાઇન પદ્ધતિથી મંગાવવામાં આવે છે આ કામની દર્શાવેલ .

અંદાજીત કિંમતરૂ. ૨ ૬૬.થી ૭૯૯ ૩૩ લાખની.છે .ઓનલાઇન ટેન્ડર વેબ સાઇટ [www.nprocure.com](http://www.nprocure.com) ઉપરથી તા . ૨૯/૦૫ .૨૦૨૬ થી તા/૨૦૦/૬૨૦૨૬/ ડાઉનલોડ.મર્યાદામાં કરી શકાશે-અપલોડ નિયત સમય-

આ કામની વિગતવાર જાહેર નિવિદા ઓફિસનાં નોટીસ બોર્ડ ઉપર અને જી ની વેબસાઇટ.સી.ડી.આઇ.[www.gidc.gujarat.gov.in](http://www.gidc.gujarat.gov.in) માં જોઇ શકાશે .નિવિદામાં જણાવેલ ટેન્ડરકારણ જણાવ્યા વગર સ્વીકારવા ન સ્વીકારવા તેમજ રદ કરવા એ નિગમનો અબાધિત , વધુમાં .સ્વીકાર્ય નથી/બાના મુક્તિ પ્રમાણપત્ર ગ્રાહ્ય .જે તમામને બંધનકર્તા રહેશે ,અધિકાર છે, ટેન્ડરને લગતા તમામ સુધારા વધારા/[www.nprocure.com](http://www.nprocure.com) વેબ.સાઇટ પર ટેન્ડર ભરવાની છેલ્લી તારીખ સુધી જોવાની રહેશે-

અધિક્ષક ઇજનેર (ગુ.દ)

ગુ ,.નિ.વિ.ઓ.વાપી.

**GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION**

(A Govt of Gujarat Undertaking)

O/o the Superintending Engineer (SG)

Plot No. C5/101, Char Rasta,

GIDC, Vapi – 396 195.

**E-TENDER NOTICE No. 01 of 2026-2027**

The tender for the work having cost of Rs. 2.66 lakh to 799.33 lakh is invited by office of the Superintending Engineer (SG), G.I.D.C., Vapi under jurisdiction of the Executive Engineer, GIDC, Surat. Tender for total 12 (Twelve) works can be upload - download online and 2 (Two) work can be offline dt. 29/05/2026 to 20/06/2026 on website [www.tender.nprocure.com/GeM](http://www.tender.nprocure.com/GeM). The detailed tender notice can be seen in GIDC office notice board / GIDC website [www.gidc.gujarat.gov.in](http://www.gidc.gujarat.gov.in) Right to reject the tender without assigning any reasons thereof are reserved by G.I.D.C., which will be binding to all bidders. Please stay touring web site - [www.tender.nprocure.com/GeM](http://www.tender.nprocure.com/GeM) for any corrigendum/ addendum / modification till last date of receipt.

Superintending Engineer (SG)

G.I.D.C., Vapi.

# GUJARAT INDUSTRIAL DEVELOPMENT CORPORATION



(A Govt. of Gujarat Undertaking)

Office of the Superintending Engineer (SG)

Plot No. C5/101, Char Rasta GIDC, Vapi -396195

Email: - [se-surat@gidcgujarat.org](mailto:se-surat@gidcgujarat.org), [se-vapi@gidcgujarat.org](mailto:se-vapi@gidcgujarat.org)

## E-TENDER NOTICE NO. 01 OF 2026 – 27

E-tender for the following works of GIDC are publically invited from the intending bidders, by the **Superintending Engineer(S.G.), GIDC, “Vapi”, Plot No. C5/101, Char Rasta, GIDC, Vapi-396195** by E-tendering only, on web site <https://www.nprocure.com>, [www.statetenders.gujarat.gov.in](http://www.statetenders.gujarat.gov.in)

(i) whose names are borne on the approved list of registered contractors in the required class & category with Gujarat State R&BD/W.R.D/GIDC & other State Governments equivalent AND (ii) and the intending bidders who are registered in appropriate category of C.P.W.D., M.E.S., Railways and Indian State Governments, can also bid provided the bidder produce such registration certificate at the time of bidding and obtain registration in required class & category from the Gujarat State R&BD/W.R.D/GIDC before issuing work order. Bidder will solely be responsible for obtaining the required registration.

The tender under Sr. No. 01 to 14 is invited in single bid system will be opened on schedule date, specified under schedule of E-tender.

### GENERAL DETAILS OF WORKS:

	Name of work	(1) Estimated cost (2) Earnest Money Deposit (3) Non-refundable Tender Fee (Inclusive of 18% G.S.T)	Class of Registration
<b>VAPI DIVISION (ONLINE TENDERS)</b>			
1.	Construction of Main RCC SWD along with Asphalt main road & street Light at Industrial area of 52 Hectar at GIDC Umargam. (Re-Invite)	(1) Rs. 7,99,33,435.00 (2) Rs. 7,99,334.00 (3) Rs. 14,160.00	“AA” Class with Special category-III Road & above
2.	Furniture work for GIDC Guest House at Umargam. (Re-Invite)	(1) Rs. 96,34,900.00 (2) Rs. 96,349.00 (3) Rs. 2,832.00	“D” class & above
<b>VAPI DIVISION (OFFLINE TENDER)</b>			
3.	ARC work of Hiring Vehicle for the office of the Dy. Executive Engineer, GIDC Sarigam. (Re-Invite)	(1) Rs. 4,89,600.00 (2) Rs. 4,896.00 (3) Rs. 708.00	Travel Agent/Owner of the vehicle having R.T.O. Taxi passing should be less than 2 years old. EV/ Hybrid Preferable.
<b>SURAT DIVISION (ONLINE TENDERS)</b>			

Signature of Contractor

Executive Engineer (M&E)

G.I.D.C., Vapi/Surat.

4.	"SITC of 7.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fitting with allied accessories including five years free maintenance guarantee period for Bardoli Industrial Estate, GIDC, Surat. (Re-Invite)	(1) 16,98,039.00 (2) 17,000.00 (3) 1,062.00	Valid "E1" Class and above registration in R & B Electrical wing with Electrical Contractor License.
5.	SITC of 7.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fitting with allied accessories including five years free maintenance guarantee period for Olpad Industrial Estate, GIDC, Surat. (Re-Invite)	(1) Rs. 21,83,484.00 (2) Rs. 21,900.00 (3) Rs. 1,062.00	Valid "E1" Class and above registration in R & B Electrical wing with Electrical Contractor License.
6.	SITC of 7.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fitting with allied accessories including five years free maintenance guarantee period for Nizar Industrial Estate, GIDC, Surat. (Re-Invite)	(1) Rs. 16,77,690.00 (2) Rs. 16,800.00 (3) Rs. 1,062.00	Valid "E1" Class and above registration in R & B Electrical wing with Electrical Contractor License.
7.	"SITC of 8.0 Mtr.- Hot Dip galvanised Octagonal type Streetlight Pole with 90 W LED Streetlight fitting with allied accessories including five years free maintenance guarantee period at Sachin Industrial Estate." (Re-Invite)	(1) 6,70,15,805.00 (2) 6,70,200.00 (3) 14,160.00	Valid "A" Class and above registration in R & B Electrical wing with Electrical Contractor License & Similar type work experience.
8.	"SITC of CCTV camera network setup with allied accessories and network devices at Appareal Park Denotified Area & SEZ Area, GIDC, Sachin, Surat. (2 <sup>nd</sup> Attempt)"	(1) Rs. 24,66,329.00 (2) Rs. 24,670.00 (3) Rs. 1,062.00	Valid "A" Class and above registration in R & B Electrical wing with Electrical Contractor License & Similar type work experience.
9.	SITC of submerged Centrifugal pump set with auto coupling & allied accessories for U/G Sump & ESR of W/S scheme @ Appareal Park, Sachin, GIDC, Surat.	(1) Rs. 24,94,236.00 (2) Rs. 24,950.00 (3) Rs. 1,062.00	Valid "E1" Class and above registration in R & B Electrical wing with Electrical Contractor License.
10.	Annual Rate Contract for Operation of Pumping Machinery, Electrical Panel & allied equipment of Borewell and Sump of Water Supply Scheme at Appareal Park, SEZ, Surat.	(1) Rs. 18,45,876.00 (2) Rs. 18,500.00 (3) Rs. 1,062.00	Valid "E1" Class and above registration in R & B Electrical wing with Electrical Contractor License.
11.	ARC for Supply of Sweeper-cum-Labour for Housekeeping Services at Division Office Building, GIDC Surat.	(1) Rs. 34,65,860.66 (2) Rs. 34,658.00 (3) Rs. 1,770.00	As per Tender Documents
12.	Providing Khansama and other service at GIDC, Surat.	(1) Rs. 10,72,529.78 (2) Rs. 10,725.00 (3) Rs. 1,062.00	As per Tender Documents
13.	Construction of RCC Under Sump at Ichhapore Bhatpore GIDC, Surat.	(1) Rs. 55,40,694.96 (2) Rs. 55,407.00 (3) Rs. 2,832.00	As per Tender Documents
<b>SURAT DIVISION (OFFLINE TENDER)</b>			

Signature of Contractor

Executive Engineer (M&amp;E)

G.I.D.C., Vapi/Surat.

14.	ARC for Supply of Operator for Main Pumping Station Icchapore Bhatpore GIDC.	(1) Rs. 2,66,601.72 (2) Rs. 2,666.00 (3) Rs. 708.00	As per Tender Documents
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#### (A) SCHEDULE OF E-TENDERING

(i)	Downloading of Tender Documents from Web site of <a href="http://www.gidc.nprocure.com">www.gidc.nprocure.com</a> . (The tender document for these works are available only in Electronic format which Bidder can download afree of cost)	<b>From 29-05-2026 to 20-06-2026 up to 17.00 hours.</b>
(ii)	<b>SUBMISSION OF TENDER</b> <b>(A) Online submission</b> I) Online submission of bid documents. II) Scanned copies of DD for tender fee & EMD in electronic format only through online	<b>From 29-05-2026 to 20-06-2026 up to 17.00 hours.</b>
	<b>(B) Submission in physical form</b> I) D.D. / FDR in original (for Tender fee & EMD) Other documents mentioned in para C, for the purpose of verification only (in physical form) by personally i.e. by Speed Post / Currier /Hand delivery. <b>(Kindly refer C-1, 2 &amp; 3)</b>	<b>From 22-06-2026 to 23-06-2026 up to 17.00 hours.</b>
(iii)	<b>Prebid meeting (Offline / Online)</b> In the Office of Superintending Engineer (SG), GIDC, "Vapi", Plot No. C5/101, Char Rasta, GIDC, Vapi-396195	Not Applicable
(iv)	<b>Opening of Technical Bid documents.</b>	In the Office of Superintending Engineer (SG), GIDC, "Vapi", Plot No. C5/101, Char Rasta, GIDC, Vapi-396195 as under: <ul style="list-style-type: none"> <li><b>Approximate on dt. 24/06/2026 at 12:00 noon for Sr. No. 1 to 14.</b></li> </ul>

#### (B) On line Submission of Tender

- 1) Bidders can prepare & edit their offers number of times before tender submission date & time. After tender submission date & time, bidder cannot edit their offer submitted in any case. No written or online request in this regard shall be granted.
- 2) Bidder shall submit their offer i.e. Pre-qualification document with Technical Bid & Price Bid in Electronic format on above mentioned website & Date shown above after digitally signing the same.
- 3) **For the purpose of verification**, the original documents for Pre-qualification submitted in electronic format should be submitted in physical form as under:

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

- For Sr. No. 01 to 03 at O/o Executive Engineer, GIDC, Vapi, Plot No. C5/101, Char Rasta, GIDC, Vapi - 396195.
- For Sr. No. 04 to 10 at O/o Executive Engineer (M&E), GIDC, Vapi, Plot No. C5/101, Char Rasta, GIDC, Vapi - 396195.
- For Sr. No. 11 to 14 at O/o Executive Engineer, GIDC, Surat, Plot No. 326+327, Bhatpor, GIDC, Surat - 394510.

By personally i.e. by hand delivery, courier, RPAD, Speed Post during office hours.

- 4) Offers submitted without digitally signed will not be accepted.
- 5) Offers i.e. Pre-qualification document with Technical Bid & Price Bid in physical form will not be accepted in any case.
- 6) It is Bidder's responsibility to verify Online Corrigendum/Amendments until last submission date and time as well as before Final Submission of Bid.
- 7) Required documents for pre Pre-qualification document received later than the time specified will not be accepted in any case and the bid of that bidder shall be considered non-responsive.

**(C) Submission of Tender Fees, EMD**

- 1) Interested Bidders can view these tender documents online, but bidders who are interested in bidding these tender can download tender documents from web site as mentioned above and bidder who wish to submit their offer shall pay non-refundable **tender fee in the form of Account Payee Demand Draft payable respectively as under drawn on any Nationalized Bank in favor of**

- **Executive Engineer, GIDC, Vapi for the work at Sr. 01 To 03 (DD payable at Vapi)**
- **Executive Engineer, GIDC, Surat for the work at Sr. 04 To 14 (DD payable at Surat)**

- 2) EMD in the form of Account Payee Demand Draft / F.D.R. payable at Vapi drawn on any Scheduled / Nationalized Bank in favour of as mentioned as under. EMD in the form of Bank Guarantee of the Scheduled Bank or Nationalized Bank also acceptable as per the manner set out in the prevailing Form B1, Form B2 & Form C Agreement.

- **Executive Engineer, GIDC, Vapi for the work at Sr. 01 To 03 (DD payable at Vapi)**
- **Executive Engineer, GIDC, Surat for the work at Sr. 04 To 14 (DD payable at Surat)**

- 3) Demand Draft for E.M.D. & Tender Fee shall be submitted in Electronic Format only through Online (by scanning) while uploading the Bid. This submission shall mean that E.M.D. & Tender Fee are received. Accordingly, offer of those shall be opened whose E.M.D. & Tender Fee is received electronically. **However, for the purpose of realization of D.D., Bidder shall send the D.D. in original for the works in the manner set out in above point (C -1 & 2) by personally i.e. by Speed Post / Currier / Hand delivery during office hours as per point No. B-3.**

- 4) **Required Documents mentioned as under (a), (b) & (c) are mandatory for submitting scanned copies through ONLINE. Otherwise tender offer shall be treated as NON RESPONSIVE, without any further intimation.**

- a) Scanned copy of tender fee and EMD
- b) Required Class of registration, Latest Income Tax return filed, RPFC registration certificate with latest challan, GST Registration & Pan Card.

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.



c) Fresh Valid Bank Solvency- (Current Financial Year) - (20% value of the estimated cost put to tender) and Experience certificate

5) **For the purpose of verification**, the original documents submitted in electronic format should be submitted in physical form **for the works in the manner set out in above point (C-3)** by personally i.e. by hand delivery, courier, RPAD, Speed Post during office hours.

- **Executive Engineer, GIDC, Vapi for the work at Sr. 01 to 03.**
- **Executive Engineer (M&E), GIDC, Vapi for the work at Sr. 04 to 10.**
- **Executive Engineer, GIDC, Surat for the work at Sr. 11 to 14.**

Tender fee, EMD in original and other required documents for verification received before or later than the time **specified in (A) SCHEDULE OF E-TENDERING, (ii)(B) Submission in Physical form as mentioned above**, will not be accepted in any case and the bid of that bidder shall be considered non-responsive. GIDC will not be responsible for delay in receipt of such documents due to any reasons by the postal department or any other agencies.

If any clarification / query regarding these tenders are required, do not hesitate to contactor concern Executive Engineers;

- For the work at Sr. No. 01 To 03 - Shri D. B. Sagar, Executive Engineer, GIDC, Vapi – Mo. 9726424267.
- For the work at Sr. No. 04 To 10 - Shri N. V. Patel, Executive Engineer (M&E), GIDC, Vapi/Surat – Mo. 9879110106
- For the work at Sr. No. 11 To 14 - Shri P. H. Menat, Executive Engineer, GIDC, Surat – Mo. 7600402980.

**S.E. (SG)  
GIDC, Vapi.**

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Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

## MEMORANDUM OF WORK IN BRIEF

1)	Name of work	SITC of 8.0 Mtr.- Hot Dip galvanized Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free maintenance guarantee period at GIDC, Sachin Industrial Estate (Re-Invite)
2)	Estimated cost	Rs. 6,70,15,805.00/-
3)	Joint Venture (J.V)	➤ Joint Venture (J.V) is not allowed.
4)	Earnest Money Deposit (EMD)	➤ <b>Rs. 6,70,200.00/-</b> in the form of D.D. / F.D.R for the minimum period of 180 days in favor of "Executive Engineer, GIDC, Surat" from any Nationalized / Scheduled Bank only except Co-Operative Bank.
5)	Validity period of tender offer.	120 days from the date of opening the bids.
6)	Security Deposit	<b>Rs. 33,50,790.00/- (5%)</b>
(i)	(2.5%) [In the form of Small Saving Scheme or Security of Sardar Sarovar Nigam or Bank guarantee of Nationalized Schedule Bank]	<b>Rs. 16,75,395.00/- (2.5%)</b>
(ii)	To be deducted from Current R.A. bills.	<b>Rs. 16,75,395.00/- (2.5%)</b>
(iii)	Performance Bond	Bidder has to submit Performance Bond in the form of small savings certificate (NSC), SSNNL bonds/FDR/Bank Guarantee of Nationalized scheduled bank for 5% of Estimated cost put to tender <b>Rs. 33,50,790.00/- (5%)</b>
7)	Liquidated Damages	As per clause No.2 of B1 Form attached herewith.
8)	Defect liability	The defect liability period shall be Five years from the certified date of completion of work ( Clause 17A of B1)
9)	Free Maintenance guarantee period under clause no.17B of form B1 of form B1 (but with change for five year instead of five year)	<ul style="list-style-type: none"> <li>• Five Years Free Maintenance Guarantee with effect from the certified date of completion.</li> <li>• Agency has to provide 5% amount of tender amount as a Free Maintenance Guarantee bond having 5-year validity after completion of work. If Street lights is not maintaining and keep in working condition for 5 years, Free maintenance Guarantee bond will be for feited and work shall be carry out on risk and cost of contractor. (Clause 17B of B2-Agreement is not applicable.)</li> </ul>

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

10)	Workers Welfare Cess Under the Building & Other Construction Workers Cess Act 1996 <b>(Labour Cess)</b>	<b>1%</b> of the value of work done shall be deducted from the all bills payable to the contractor.
11)	Testing Charges	<b>1%</b> of the Estimate cost shall be deducted from the all bills payable to the contractor.
12)	Time limit for completion of work from the date of written order to commence.	<b>9 (Nine) Months.</b>
13)	<b><u>Submission date &amp; time of tender documents.</u></b>	
i)	a) Date on (or before) which the tender with DD / FDR for Tender fee & EMD (by scanning) except required documents must upload on the web site of <b><u>www.gidc.nprocure.com</u></b>	From 29 -05-2026 to 20 -06-2026 up to 17.00 hours.
	b) Date on (or before) which DD/FDR in original for Tender fee & EMD and required documents must reach in the office of <b>THE EXECUTIVE ENGINEER (M&amp;E), GIDC, Vapi/Surat Plot No. C-5/101, opp. Tel. Exchange, GIDC, Char Rasta, Vapi-396195</b> by personally i.e. hand delivery	From 22 -06-2026 to 23 -06-2026 up to 17.00 hours. Physical submission of documents prior or after this dates will not be considered and bids of the agency will be considered as non-responsive.
ii)	<b><u>Mode of sending the tender documents.</u></b>	
	a) The tender with DD / FDR for Tender fee & EMD (by scanning) except required documents	By Online through e - tendering process
	b) DD/FDR in original for Tender fee & EMD and required documents	By RPAD/Speed Post/Courier/Hand-Delivery to Office of The Executive Engineer (M&E), PLOT NO.C-5/101, OPP. TEL. EXCHANGE, GIDC, CHAR RASTA, VAPI-396 195. Phone: 0261-2840208,
14)	Opening of Technical bid	Preferably On dtd. 24 - 06 - 2026 at 12.00 noon.
15)	Tender to be opened by	Superintending Engineer (SG), GIDC, Vapi/Surat Plot No. C5/101, Char Rasta, GIDC, Vapi-396195

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

16)	Description essential to be made on sealed cover for documents to be submitted by <b>personally</b> /Hand Delivery/Speed post/courier	Name of Work: - SITC of 8.0 Mtr.- Hot Dip galvanized Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free maintenance guarantee period at GIDC, Sachin Industrial Estate (Re-Invite)  (2) Date of receiving the documents From 22/06/2026 to 23/06/2026 upto 17.00 Hrs.
17)	Mode of quoting the rate in Schedule "B" attached with Tender document.	In percentage rate, In figures as well as in words. Any missed-outs, discrepancies it may attract rejection of tender.
18)	<b>Important Note:</b>	<p>The intending Bidders is requested to visit the site and familiarized themselves thoroughly with the site conditions and all other aspects affecting the work Under this Contract before submitting the tender. No claim / extension of time whatsoever shall be entertained on account of prevailing site conditions. Bidder has to upload following documents online with tender.</p> <ul style="list-style-type: none"> <li>• Scan copy of DD of Tender Fee.</li> <li>• Scan copy of DD/FDR of EMD.</li> <li>• Scan copy of Bank Solvency.</li> <li>• Registration required Valid "B" Class and above registration with Electrical Contractor License.</li> <li>• Copy of annual turnover certificate issued by chartered accountant for last three financial years.</li> <li>• Copy of form-3A / Experience certificate issued by employer (Government / Semi Government/ Private) as required as per Pre- Qualification criteria. subletting work experience shall not be considered.</li> <li>• Schedule-E "Experience all projects in progress" as under in prescribed format.</li> <li>• Litigation history.</li> <li>• Affidavit regarding Termination /Blacklisting/ Ban / Registration on Rs. 300/- stamp paper &amp; notarized.</li> <li>• The undertaking for deploying machinery/equipment on Rs.300/- stamp paper &amp; notarized.</li> <li>• Copy of registration certificate of firm / documents of public limited / private limited / partnership firm / proprietor firm/</li> <li>• Copy of Power of Attorney.</li> <li>• In case of Private work (W.O., Agreement, Final Bill copy, TDS Copy, Copy of Form-3A / Experience certificate showing all</li> </ul>

Signature of Contractor

Executive Engineer (M&amp;E)

G.I.D.C., Vapi/Surat.

		relevant details issued by employer & certified by Chartered Accountant, Copy of letter of permission given by employer for subletting the work etc.)
19)	Site Visit	<b>Contact Person:</b> <b>1. Shri N.V. Patel</b> Executive Engineer (M&E) GIDC, Vapi/ Surat. Mo. No 9879110106  <b>2. Shri G. B. Patel</b> Dy. Executive Engineer [M&E], GIDC, Surat. Mo. No. 9825133258
20)	Vehicle Facilities	Contractor at his own cost will provide one four-wheeler vehicle as desired by site in-charge. i.e. <b>A.C.</b> Model of MARUTI XL6/ MARUTI ERTIGA/KIA OR Equivalent including cost of fuel, maintenance, salary of Driver, Mobile for Official communication etc. with 2500 Km. range for official use till the completion of work.

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

## INSTRUCTIONS TO BIDDERS

### INTRODUCTION:

Bids i.e., Price Bid and Technical Bid with Prequalification Application for SITC of 8.0 Mtr.- Hot Dip galvanized Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free maintenance guarantee period at GIDC, Sachin Industrial Estate (Re-Invite)" Is invited from contractors on e- tendering process. The contractors, who wish to bid for this contract, should also apply for prequalification in the manner set out in this document.

The price bid will be opened only of those tenderers pre-qualified by the G I D C , S u r a t as having necessary qualification, suitability to perform the contract satisfactorily and also opened Technical Bid with Prequalification Application will be considered. Technical Bid with Prequalification Application of dis-qualified bidders will not be considered.

1. LOCATION OF WORK AND SITE INFORMATION:

The work site is located at Sachin Industrial Estate.

2. SCOPE OF WORKS:

1. The works include "SITC of 8.0 Mtr.- Hot Dip galvanized Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free maintenance guarantee period at GIDC, Sachin Industrial Estate (Re-Invite)"

2. The contractor shall, upon the completion of works, hand over the site of works in neat & clean manner.

The proposed works are as under.

" SITC of 8.0 Mtr.- Hot Dip galvanized Octagonal type Streetlight Pole with 90 W LED Streetlight fittings, CCMS Panel with allied accessories including five years free maintenance guarantee period at GIDC, Sachin Industrial Estate (Re-Invite)"	As per Schedule - B
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3. BIDDER'S RESPONSIBILITY

The intending Bidders shall be deemed to have visited the site and familiarized themselves thoroughly with the site conditions and all other aspects affecting the work under this Contract before submitting the tender. No claim / extension of time whatsoever shall be entertained on account of prevailing site conditions. Interested Bidders may obtain further information at the following address: Office of the Executive Engineer GIDC, Surat, Plot No. 326+327, Bhatpor GIDC Estate, Magdalla – Ichhapor Road, Village: Bhatpor, Post: Bhatha, Dist.: Surat – 394510.Phone: 0261-2840208,

4. EARNEST MONEY DEPOSIT (EMD)

EMD is payable in the manner set out in the Technical Bid with Prequalification Application.

5. SECURITY DEPOSIT (SD)

SD is payable in the manner set out in the Technical Bid with Prequalification Application by the successful tenderer. The security Deposit deducted from R.A Bill shall not be released against bank guarantee at any time during and after the work. Thus, Bank guarantee shall not be accepted for Security deposit at any stage.

6. PERFORMANCE

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

## BOND / BANK GUARANTEE OF NATIONALIZED BANK

Performance Bond / Bank guarantee of Nationalized Bank is payable in the manner set out in the Technical Bid with Prequalification Application.

### 7. PROGRAMME OF WORK:

The program of work for this contract is as under.

Receipt of tender online	Validity period	Period of completion
22/06/2026 to 23/06/2026 up to 17.00 hrs.	120 days from the date of opening of technical bid.	09 (Nine) Months

The time is essence of the contract. The contractor shall have to ensure progress of the work proportionately, failure to adhere to this; he shall be liable to compensation as per the Clause No. 2 & 7 of Form B-1 attached herewith.

### 8. SUPERVISION OF WORK:

GIDC reserves the rights to get check of the quality of works through Third Party Inspectors in addition to the Engineer-in-charge of the G.I.D.C. The Corporation reserves the rights to en-cash the Performance Guarantee Bond & Bank Guarantee or N.S.C. / F.D / S.S.N.N.L., if required. For details, please refer Special conditions and Clause No. **17B of Form B-1** attached with the Technical Bid with Prequalification Application.

### 9. PRICE VARIATION:

The Price variation shall not be payable.

### 10. MOBILIZATION ADVANCE: - Not applicable

Mobilization advance shall not be payable as per GIDC circular.

### 11. POWER SUPPLY / WATER SUPPLY / OTHER UTILITIES

The Contractor will make his own arrangement at his cost for power supply / water supply and other utilities required for the execution of work and arrangements for temporary distribution. All the works will be done as per IEA regulations.

### 12. CONDITIONS OF CONTRACT:

Condition of contract will be as per Form **B - 1 (CONTRACT AGREEMENT TO BE EXECUTED)** attached with Technical Bid with Prequalification Application, or modified as needed for local conditions & others documents will be governed as per the documents and conditions of contract finalized for the work. All works will confirm to the Indian Standards.

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

**13 Free Maintenance Guarantee Period**

Free Maintenance Guarantee Period will be considering for 05 (Five) year after successful completion of work & 05 (Five) Years defect liability period (Clause17B of B-1 Agreement).

Successful bidder has to provide 5% amount of Estimate amount as a Maintenance Guarantee bond in the form of Narmada Bond of Sardar Sarovar Narmada Nigam Ltd or in any form of National Small Saving scheme or FDR of Nationalized / Schedule Bank having validity in favor of The Executive Engineer, GIDC, Surat after completion of work.

**UNITS RATES UNDER SCHEDULE "B":**

The Unit rates specified for various items to be executed as per Schedule "B" attached with the Price Bid are inclusive all labours, materials, testing charges, equipment's, all incidental charges involving in the work except GST and as specified in the Mode of measurement & payment of detailed specifications of items incl. all taxes, royalty, octroi, transportation cost etc. all as applicable presently as to be enforced for future by any / all including Central/State Government & Statutory bodies from time to time.

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.



### PRE-QUALIFICATION APPLICATION

- (1) **Following constitution of Pre-Qualification evaluation committees is finalized.**

**Statement 1.1**

Sr. No.	Constitution of Committee
1.	<b>Committee of the Superintending Engineer as under.</b> (1) Superintending Engineer (FO) – Chairmen (2) Executive Engineer (FO) – Member (3) Executive Engineer (M&E) – Member (4) Account Officer/Divisional Accountant- (FO) – Member

- (2) **Prequalification criteria for the Mechanical / Electrical works. (2.1)**

**Eligibility: -**

**(2.1.1) Bidder's registration: -**

**(2.1.1.1)**

- (i) Bidder should have valid registration with Electrical Contractor License from licensing board and R&B Electrical Division approved contractor having “A” Class and above registration.

- (2.1.1.2) If the Contractor’s registration in the required class with Gujarat state R&BD / W.R.D. / GIDC is expired on or before the last date of online bidding period of the tender, the bidder must submit through online in electronic form the application for renewal of the same with the concerned department along with receipt of fees paid for it. In such cases, the bidder at his own responsibility must produce valid renewed registration certificate in the required class & category with Gujarat state R&BD / W.R.D. / GIDC before the date of opening of technical bid. Failing to which the bidder shall be disqualified for opening of his price bid. Bidder will solely be responsible for obtaining the required registration.

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

- (2.1.1.3) In context to above Para (2.1.1.2), it is clarified that the bidder who is having registration in class & category below than the minimum required class & category and the bidder have applied for up-gradation in required class and category with Gujarat state R&BD / W.R.D. / GIDC shall not be considered valid. In such cases the bidder shall not be considered eligible for bidding.
- (2.1.1.4) The contractor, who are registered in appropriate category of C.P.W.D., M.E.S., Railways and Indian state government, can also bid provided the bidder produce such registration certificate at the time of bidding and obtain registration in required class & category from the Gujarat state R&BD / W.R.D./ GIDC before issuing work order. Bidder will solely be responsible for obtaining the required registration.

**Note :- Joint Venture (JV) is not allowed.**

**(2.2) Annual Turn Over:**

- (2.2.1)** Average **Updated** Annual Financial Turnover during the last three years, i.e. 01/04/2023 to 31/03/2026 financial year shall be at least 30 % of the estimated cost, i.e. **Rs. 2.01 Crore.**
- (2.2.2)** For arriving at update value, total amount of Turn Over of any one financial year shall be multiplied by the enhancement factor corresponding to that financial year. Following enhancement factor will be applied to total amount of Turn Over in any one financial year and to bring them to the base year.

Year	Financial year	Enhancement factor
<b>Base (year of inviting tender)</b>	<b>2026 to 2027</b>	<b>1.00</b>
<b>-1</b>	<b>2025 to 2026</b>	<b>1.10</b>
<b>-2</b>	<b>2024 to 2025</b>	<b>1.21</b>
<b>-3</b>	<b>2023 to 2024</b>	<b>1.33</b>

**(2.3) Successful experience:**

(2.3.1) Bidder must have experience of successfully completed similar works during last Seven years ending last day of month previous to one in which applications are invited be either of the following.

“Three similar completed works **updated** costing not less than the amount equal to 40% of the estimated cost.” (i.e. Not Less than 2.68 Crore)

OR

“Two similar completed works **updated** costing not less than the amount equal to 50% of the estimated cost.” (i.e. Not Less than 3.35 Crore)

OR

“One similar completed work **updated** costing not less than the amount equal to 80% of the estimated cost.” (i.e. Not Less than 5.36 Crore)

(2.3.2) For arriving at update value, final amount of the work, completed in any one financial year shall be multiplied by the enhancement factor corresponding to that financial year. Following enhancement factors will be applied to final amount of work, completed in any one financial year and to bring them to the base year. The current financial year in which bid is invited shall be considered as the base year.

<b>Year</b>	<b>Financial year</b>	<b>Enhancement factor</b>
<b>Base (Year of inviting tender)</b>	<b>2026 to 2027</b>	<b>1.00</b>
<b>-1</b>	<b>2025 to 2026</b>	<b>1.10</b>
<b>-2</b>	<b>2024 to 2025</b>	<b>1.21</b>
<b>-3</b>	<b>2023 to 2024</b>	<b>1.33</b>
<b>-4</b>	<b>2022 to 2023</b>	<b>1.46</b>
<b>-5</b>	<b>2021 to 2022</b>	<b>1.61</b>

A work would qualify as similar work only if it meets with definitions given in below **Appendix-A**.

## APPENDIX-A

- (2.3.1) Bidder must have experience of successfully completed similar works during **last Seven years** ending last day of month previous to one in which applications are invited be either of the following.

The Bidder must valid electrical contractor license issued by the licensing board, valid registration in "A" class with R&B Electrical wing and must have completed at **least single work involving component of SITC** of Hot Dip Galvanized Octagonal type Street Light Pole with LED Street light Fittings, CCMS Panel with allied accessories required in Street Light network having updated completion cost of the work not less than **Rs.5.36 Crore** (i.e. 80% of the estimated cost put to tender.)

**OR**

The Bidder must have completed **at least two different work** involving component of SITC of Hot Dip Galvanized Octagonal Type Street Light Pole with LED Street Light Fitting, CCMS Panel with allied accessories required in Street Light Network having updated completion cost of the work not less than **RS.3.35 Crore** (i.e. 50% of the estimated cost put to tender.)

**OR**

The Bidder must have completed **at least three different work** involving component of SITC of Hot Dip Galvanized Octagonal Type Street Light Pole with LED Street Light Fitting, CCMS Panel with allied accessories required in Street Light Network having updated completion cost of the work not less than **RS.2.68 Crore** (i.e. 40% of the estimated cost put to tender.)

### ***Similar Nature of Work: -***

Supply, Installation, Testing & Commissioning of outdoor street lighting works any where in India. A work would qualify as similar work only if it meets with definitions given in above Appendix-A. Tenderer having subletting work Experience shall not be considered and such tenders must be rejected.

- (2.3.1.1) A work would qualify as similar work only if it meets with definitions given in Appendix-A.

- (2.3.1.2) For updating completion cost of the work to the current financial year, procedure narrated in Para (2.2.2) shall mutatis mutandis apply.

### **(2.4) Bid Capacity:**

- (2.4.1)** The bidder must have available bid capacity (ABC) more than the amount put to tender. (Rs 6,70,15,805.00/-).

$$ABC = 2 * A * N - B$$

Where,

**A** is the maximum of updated total amount of works executed in any one year of the last five financial years i.e. from Dt.01/04/2021 to Dt.31/03/2026.

**N** is the number of years prescribed for completion of the proposed work. i.e (09/12=0.75)

**B** is the amount of the exiting commitments and on-going works to be discharged during time interval of N years from the bid due date. As per following schedule-E.

### SCHEDULE-E

#### “EXPERIENCE ALL PROJECTS IN PROGRESS”

Give information about all projects which are in progress including the company has received a letter of intent / acceptance but a formal contract has not yet been awarded.

Employer	Engineer responsible for supervision	Location & description of works	Value of contract	Cost of work executed as on date of this bid	Remaining work to be executed as on date of this bid	Percentage of practical completion	Date of work order	Stipulated date of completion of work	Likely date of completion	Reasons for slow progress, if any.
1	2	3	4	5	6	7	8	9	10	11
Total										

**Note:** - Non-disclosure of any information in the schedule will result in disqualification of the bidder.

(Signature of bidder)

**(2.4.2)** For the purpose of updating amount of works executed in any year, procedure narrated as under shall be applied.

**(2.4.3)** For arriving at update value, total amount of works executed in any one year shall be multiplied by the enhancement factor corresponding to that year. Following enhancement factors will be applied to total amount of works executed in any one year and to bring them to the base year. The current financial year in which bid is invited shall be considered as the base year.

<b>Year</b>	<b>Financial year</b>	<b>Enhancement factor</b>
<b>Base (Year of inviting tender)</b>	<b>2025 to 2026</b>	<b>1.00</b>
<b>-1</b>	<b>2024 to 2025</b>	<b>1.10</b>
<b>-2</b>	<b>2023 to 2024</b>	<b>1.21</b>
<b>-3</b>	<b>2022 to 2023</b>	<b>1.33</b>
<b>-4</b>	<b>2021 to 2022</b>	<b>1.46</b>
<b>-5</b>	<b>2020 to 2021</b>	<b>1.61</b>

**(2.4.4)** Existing commitments shall include all such works for which letters of acceptance of the tenders have been received by bidder till the date on which bidder has submitted his bid for the proposed work.

**2.5. Litigation history:**

**(2.5.1)** The applicant should provide accurate information on litigation and/or arbitration resulting from contracts completed or under execution by him over the last five financial years. A consistent history of arbitration awards/judgements against the applicant or any partner of a joint venture may result in disqualification for proposed work. If the details of litigation history is hidden by the applicant and later on it comes to knowledge of the employer the bidder shall be disqualified for the proposed work and other appropriate action shall be taken against the bidder.

**(2.5.2)** Information of litigation history in following statement to be submitted, if any other wise Nil / Not Applicable statement to be submitted.

### LITIGATION HISTORY

Sr. No.	Name of Contract	Work Completed or Under Execution	Financial Year	Brief Detail of the arbitration / Litigation Matter	Department in Opposition	Whether awards / Judgements is pending or made?	Details of result of Arbitration / Judgement	Whether Judgement in Favour or in Against

(Signature of bidder)

**(2.6) Affidavit regarding Termination / Blacklisting / Ban / Registration kept in Abeyance. :-**

- (2.6.1) The bidders shall be disqualified for opening of his price bid if he is under blacklist and / or under ban and /or his registration is under abeyance by any Central / State Government Department, Board, Corporation, Municipal Corporation, Municipality, Government Local Bodies, University etc.
- (2.6.2) The bidder shall have to submit prescribed notarized affidavit on appropriate stamp paper as under, failing to which the bidder shall be disqualified for opening of his price bid.

**Affidavit regarding Termination / Blacklisting / Ban / Registration kept in Abeyance.**

(To be submitted on Rs.300/- stamp paper.)

**Name of work :-**

**Tender ID :-**

I, \_\_\_\_\_, Age, \_\_\_\_\_, Resident of, \_\_\_\_\_ in the capacity of \_\_\_\_\_ Do hereby solemnly affirm and declare as under.

We are not under blacklist and / or under ban and /or our registration has not been kept under abeyance by any Central / State Government Department, Board, Corporation, Municipal Corporation, Municipality, Government Local Bodies, University etc. as on date of participating for this bid.

Date :-

Authorized signatory

Place :-

**(2.7) Machinery / Equipment: -**

Bidder shall have to submit a prescribed notarized undertaking on Rs.300/- stamp paper for deploying machinery/equipment for the work under tender as per below.

**Undertaking for deploying Machineries/Equipments/Tools & Plants**

(To be submitted on **Rs.300/-** stamp paper)

Name of Work: -

Tender ID: -

**APPENDIX – B**

Indicative List of minimum Plant & Equipment to be deployed on Contract Work.

Sr. No	Type of Equipment
1	Megar – Range up to 1GOhm / Multimeter / Digital Clamp Meter/Hydraulic van/ Tower ladder vehicle/ boom van more than 10mtr. etc. along with its ownership RTO Registration Book (RC) / Safety Tools / Portable DG Set up to 15 KVA & Other Machineries / Equipment / Tools as and when required by Engineer-in-charge for the work until completion of the work and throughout the Comprehensive Maintenance Period.

I/We hereby undertake that if i/we awarded the above said work then i/we shall deploy all Machineries/Equipments/Tools and Plants etc. as shown in the Appendix-B in fully working condition and utilize the same while execution of the work.

We also undertake that i/we shall deploy other Machineries/Equipments/Tools and Plants etc. over and above shown in Appendix-B in working condition and utilize the same as per instruction of Engineer-In-Charge.

Failing to above we shall not object any action taken against us within the tender provision.

In case of any dispute, Superintendent Engineer's decision shall be final.

Date :-

**Authorized signatory**

Place :-

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.



**(2.8) Bidding in E-tendering:-**

- (2.8.1) Submission of documents must be through e-tendering i.e. electronic form, unless specified in Para (2.9).
- (2.8.2) All of the online submitted documents must be clearly readable, failing to which the same shall be considered as void.
- (2.8.3) Bids of those bidders who have submitted all information, statistical details as required in the bid documents through E-Tendering will only be considered. If the employer desires any clarification, for verification/clarification, ambiguity of difference found in the documents/statistical details submitted online (by e-tendering) by the bidder the same shall be furnished within stipulated time otherwise further processing will be carried out in absence of above and the bidders shall be liable for any consequence.
- (2.8.4) No bidder can participate in more than one bid for proposed work.

**(2.9) Submission of documents: -**

- (2.9.1) Following documents/papers shall form part of the bid & must be submitted through online in electronic form unless specified separately, failing to which the bidder shall be dis-qualified for opening of his price bid.
  - (2.9.1.1) D.D. of require tender fee. (To be submitted in electronic form at the time of online submission of the bid & the same to be submitted in original during prescribed time period for submission of documents in physical form.)
  - (2.9.1.2) DD/FDR & BG of required EMD. (To be submitted in electronic form at the time of online submission of the bid & the same to be submitted in original during prescribed time period for submission of documents in physical form.)
  - (2.9.1.3) Copy of valid bank solvency certificate of minimum 20 % amount of the estimated cost put to the tender of the work. (Bank Solvency certificate issued during current calendar year is considered as valid up to end of the December of the current calendar year. 31<sup>st</sup> march of the next calendar year. In case, where solvency certificate is not obtained in time, the certificate of previous year will be considered valid up to the end of March of current calendar year. In some certificates date of validity is stated. In such cases the same stated date is considered for validation instead of end of December of the current calendar year.)
  - (2.9.1.4) Copy of relevant required Registration Certificate / Certificates. (In case of renewal, copy of application & receipt of fee paid.)
  - (2.9.1.5) Copy of annual turnover certificate issued by chartered accountant for last three financial years. (If turnover of any of the last three financial years is not shown in the certificate then the same shall be considered as NIL and accordingly average annual turnover of last three financial year/years shall be calculated.)
  - (2.9.1.6) Copy of form-3A / Experience certificate issued by employer (Government / Semi Government) showing all details as required as per Pre-Qualification criteria of successful experience of similar work and copy of letter of permission given by employer (Government / Semi Government) for subletting the work, if case may be of.
    - (2.9.1.7) when employer is not a government, following need also to be furnished.
      - (2.9.1.7.1) Copy of work order.
      - (2.9.1.7.2) Copy of agreement.

- (2.9.1.7.3) Copy of Form-3A / Experience certificate showing all relevant details issued by employer & certified by Chartered Accountant.
- (2.9.1.7.4) Copy of final bill.
- (2.9.1.7.5) Copy of TDS certificates.
- (2.9.1.7.6) Copy of letter of permission given by employer for subletting the work.
- (2.9.1.8) Copy of annual total amount of works executed certificate issued by chartered accountant for last five financial years. (If annual total amount of works executed of any or some of the last five financial years is not shown in the certificate then annual total amount of works executed of financial year/years which has been shown in the certificate shall only be considered.)
- (2.9.1.9) Schedule-E "Experience all projects in progress" as under in prescribed format as Per Para (2.4).
- (2.9.1.10) Litigation history as per Para (2.5).
- (2.9.1.11) Affidavit regarding Termination / Blacklisting / Ban / Registration kept in Abeyance as per Para (2.6).
- (2.1.1.12) The undertaking for deploying machinery/equipment for the work under tender as per Para (2.7).
- (2.9.2) Following documents/papers shall also form part of the bid, but these documents are not mandatory to be submitted through online in electronic form. However, the same shall be submitted in physical form, if not submitted through online in electronic form, within time period given by authority holding the digital key, failing to which the bidder shall be dis-qualified for opening of his price bid.
- (2.9.2.1) Copy of registration certificate of firm / documents of public limited / private limited / partnership firm / proprietor firm, whichever is applicable. For example, Partnership Deed, Certificate of incorporation, Memorandum of association, Article of Association etc.
- (2.9.2.2) Copy of Power of Attorney, if any.
- (2.9.2.3) Copy of PAN Card.
- (2.9.2.4) Copy of latest income tax return certificate. (Note :- latest income tax return certificate means the income tax return certificate of the last completed financial year for which pre-determined/extended time period by the Income Tax Department for filing income tax return is over on or before last date of online submission.
- (2.9.2.5) Copy of Goods & Services (G.S.T.) registration certificate.
- (2.9.2.6) Copy of RPFC registration certificate.
- (2.9.2.7) Copy of RPFC Challan of any of the completed last three months from the month of last date of online submission of the tender.
- (2.9.3) Following Undertaking / Declaration to be incorporated on **(n) Procure website** in such a manner that without attending this undertaking / declaration the tender cannot be uploaded.

### UNDERTAKING / DECLARATRION

- "I hereby declare that I have after thoroughly understand the Pre-Qualification criteria / conditions and the details filed & documents submitted are true and correct to the best of my knowledge and belief. I shall not have any objection against any action taken by GIDC if any of the information submitted is found to be incorrect / false."
- (2.9.4) Any information, data, statistics etc. which are not related to bid document will not be considered in evaluation even through furnished by the applicant.
- (2.9.5) In accordance with stipulated of Para (2.8), employer reserves the right to call any information/documents which is mandatory, essential and critical for the purpose of evaluation. Any information provided by the applicant after last date of electronic submission will not be considered in evaluation, unless except the employer has specially asked for any information/document, which is mandatory, essential and critical for evaluation of PQ document. If required information is not furnished within stipulated time, proposal will be liable for rejection.
- (2.9.6) If any of the information provided by the bidder is found false during scrutiny or at the later stage, his EMD shall be forfeited and he shall be disqualified for the proposed work. In case when bidder has furnished exemption certificate in lieu of EMD, an amount equal to EMD shall be appropriated from his FDR pledged to avail of exemption certificate. If any of the information provided by the bidder is found false after award of work, the performance security of the bidder shall be forfeited and the contract shall be terminated.
- (2.9.7) Authority holding the digital key ((n) code solution), respective Executive Engineer of Civil branch, respective Executive Engineer of M&E branch and Account Officer / Divisional Accountant of the respective Division office shall be jointly liable to download, evaluate, verify all online documents submitted by the bidder with respect to Pre-Qualification criteria.
- (2.9.8) In case of committee of Chief Engineer, concerned field Superintending Engineer and Concerned field Executive Engineers (Civil) & (M&E), after carried out all above procedures and verifying all print outs of the online documents submitted by the bidders, shall submit the same documents (Indicating page no. on each & every documents submitted by the bidder through online in electronic form.) along with evaluation sheet (Details against each P.Q. Criteria along with page No., remarks etc. **Note :-** To be prepared by respective Executive Engineer of Civil branch, respective Executive Engineer of M&E branch and Account Officer / Divisional Accountant of the respective Division office jointly), duly signed by all the concerned, to Chairman (i.e. Chief Engineer) of the Pre-Qualification committee and also shall brief the other members of the Pre-Qualification committee on documents submitted by the bidders through online in electronic form and evaluation done by his office, at the time of meeting of the Pre-Qualification committee.
- (2.9.9) In case of committee of Superintending Engineer, concerned field Executive Engineer (Civil) & (M&E) and Account Officer/Divisional Account jointly, after carried out all above procedures and verifying all print outs of the online documents submitted by the bidders, shall submit the same documents (Indicating page no. on each & every documents submitted by the bidder through online in electronic form.) along with evaluation sheet (Details against each P.Q. Criteria along with page No., remarks etc.), duly signed by all the concerned, to Chairman, (i.e. Superintending Engineer) of the Pre-Qualification committee and also shall jointly brief the Chairman of the Pre-Qualification committee on documents submitted by the bidders through online in

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electronic form and jointly evaluation done by them, at the time of meeting of the Pre-Qualification committee.

- (2.9.10) Accordingly, concerned Pre-Qualification committee shall decide to qualify / dis-qualify the bidder & circulate / issue minutes of the meeting to concerned for further action.

## ANNXURE - II

### Form of Bank Guarantee (Earnest Money Deposit)

Whereas M/s. .... (Hereinafter called Bidder) is desirous and prepared to tender for work in accordance with terms and conditions of Tender No. .... dated ..... And whereas we..... Bank, agree to give the Bidder a Guarantee for the Earnest Money Deposit.

1. Therefore, we here by affirm that we are Guarantors on behalf of the Bidder upto a total of Rupees ..... (i.e. Rs..... ) and we undertake to pay the Executive Engineer, Gujarat Industrial Development Corporation, Surat, upon his first written demand and without demur, without delay and without necessity of previous notice of individual or administrative procedure and without necessity to prove the bank the defects or short coming or debit of the bidder any sum within the limit of Rupees.....
2. We further agree that the guarantee here in contained shall remain in full force and effect during the period that would be taken for the acceptance of tender. However, unless a demand or claim under this guarantee is made only in writing on or before the ..... We shall be discharged from all liabilities under the guarantee there after.
3. We undertake not to revoke the guarantee during its currency except with the previous consent of the Executive Engineer, Gujarat Industrial Development Corporation, Surat, in writing.
4. We lastly undertake not to revoke the guarantee for any change in constitution of the Bidder or the Bank.

Signature and Seal of Guarantor

Date :

Bank :

Address :

## **APPENDIX – C**

### **SELF EVALUATION FORM**

Sr. No.	Component	Requirement as per tender	M/s. ....	Page No.	Remarks
			DETAILS FURNISHED BY BIDDER		
1	Tender Fees including GST	Rs.14,160.00/- by DD	<div style="border: 1px solid black; padding: 2px;">Name of Bank</div> <div style="border: 1px solid black; padding: 2px;">D.D. No. and Date</div> <div style="border: 1px solid black; padding: 2px;">Amount in Rs.</div>		
2	EMD	Rs.6,70,200.00/- by DD / FDR	<div style="border: 1px solid black; padding: 2px;">Name of Bank</div> <div style="border: 1px solid black; padding: 2px;">D.D. / F.D.R. No. and Date</div> <div style="border: 1px solid black; padding: 2px;">Amount in Rs.</div>		
3	Bank Solvency Certificate	20% amount of Estimated Cost i.e. <b>Rs. 1.34 Crore</b> )	<div style="border: 1px solid black; padding: 2px;">Name of Bank</div> <div style="border: 1px solid black; padding: 2px;">Amount in Rs.</div> <div style="border: 1px solid black; padding: 2px;">Date of Issue</div> <div style="border: 1px solid black; padding: 2px;">Valid up to Date.</div>		
4	Registration certificate (Electrical)	Bidder shall have valid <b>Electrical Contractor License</b> having valid registratiion  in "A" class with Gujarat State, Roads & Buildings Department's Electrical wing	<div style="border: 1px solid black; padding: 2px;">Self agency</div> <div style="border: 1px solid black; padding: 2px;">Name of the Department</div> <div style="border: 1px solid black; padding: 2px;">Valid Up to Date</div> <div style="border: 1px solid black; padding: 2px;">Authority</div> <div style="border: 1px solid black; padding: 2px;">Electrical Contractor License No.</div> <div style="border: 1px solid black; padding: 2px; height: 100px;">Validity</div>		

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5	C.A. Certified and copy of Annual Turnover for Last Three Financial Years	Average updated Annual Financial Turnover during the last three year shall be at least Rs. 2.01 Crore (i.e. 30 % of the estimated cost.) (Refer Para 2.9.1.5)	<table border="1"> <thead> <tr> <th>Year</th> <th>Financial year</th> <th>Enhancement Factor</th> <th>Turn Over</th> </tr> </thead> <tbody> <tr> <td>Bae (year of inviting tender)</td> <td>2026-2027</td> <td>1.00</td> <td></td> </tr> <tr> <td>-1</td> <td>2025-2026</td> <td>1.10</td> <td></td> </tr> <tr> <td>-2</td> <td>2024-2025</td> <td>1.21</td> <td></td> </tr> <tr> <td>-3</td> <td>2023-2024</td> <td>1.33</td> <td></td> </tr> </tbody> </table>	Year	Financial year	Enhancement Factor	Turn Over	Bae (year of inviting tender)	2026-2027	1.00		-1	2025-2026	1.10		-2	2024-2025	1.21		-3	2023-2024	1.33				C.A. Certified Copy must be submitted.				
Year	Financial year	Enhancement Factor	Turn Over																											
Bae (year of inviting tender)	2026-2027	1.00																												
-1	2025-2026	1.10																												
-2	2024-2025	1.21																												
-3	2023-2024	1.33																												
6	Successful Experience of Similar Work: copy of completion work. (Form 3A) must submit by the bidder. (As per Appendix - A)	<p>The Bidder must have completed <b>single work</b> as Per Definition of Similar work experience having completion cost not less than <b>Rs.5.36 Crore.</b></p> <p>(80% of the estimated cost of Work)</p> <p><b>OR</b></p> <p>The Bidder must have completed <b>Two work</b> as Per Definition of Similar work experience having completion cost not less than <b>Rs.3.35 Crore.</b></p> <p>(50% of the estimated cost of Work)</p> <p><b>OR</b></p> <p>The Bidder must have completed <b>three works</b> as Per Definition of Similar Similar work experience having completion cost not less than <b>Rs.2.68 Crore.</b></p> <p>(40% of the estimated cost of Work)</p>	<table border="1"> <tbody> <tr> <td>Name of work</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Date of Completion</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Amount of Work (Rs. Lakh)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Enhancement Factor</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Updated Amount (Rs. Lakh)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Name of Department and Authority</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Name of work				Date of Completion				Amount of Work (Rs. Lakh)				Enhancement Factor				Updated Amount (Rs. Lakh)				Name of Department and Authority						
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			<b>Private work details</b>			
		<b>1</b>	Copy of work order	NA		
		<b>2</b>	Copy of agreement	NA		
		<b>3</b>	Copy of form 3A	NA		
		<b>4</b>	Copy of final bill	NA		
		<b>5</b>	Copy of TDS	NA		
		<b>6</b>	Copy of letter of permission given by employer for subletting the work	NA		
7	Experience all projects in progress"- SCHEDULE-E	(Refer Para 2.4)				
8	Litigation History	(Refer Para 2.5)				
9	Affidavit regarding Termination / Blacklisting / Ban / Registration kept in Abeyance	(Refer Para 2.6)			Details shall be given on Rs. 300/- stamp paper duly notarized	
10	Machinery/Equipment: Proof of deployment of required minimum machinery / equipment mentioned in Appendix - B	(Refer Para 2.7)			Details shall be given on Rs. 300/- stamp paper duly notarized	
11	Registration certificate / Documents of /public Limited / Private Limited/ Partnership deed / Proprietor Firm.	To be furnished whichever is applicable				
12	Power of Attorney					
13	<b>Bid Capacity</b>					

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	<b>ABC=2*A*N-B</b>  A = Maximum updated total amount executed in any <b>one year from 2021-22 to 2025-26</b>  N = 0.75 (Time Limit 09 Months ) is the number of years prescribed for completion of the proposed work. B is the amount of the existing commitments and ongoing works to be discharged during time interval of N years from the bid due date. As per following schedule E. The bidder must have Available Bid Capacity (ABC) more than the tender amount i.e. <b>Rs. 6,70,15,805.00/-</b>		<b>A=</b> <b>N=</b> <b>B=</b> <b>ABC =</b>			
14	C.A. Certified copy of Annual <b>work execution amount</b> for Last F i v e Financial Years (For Bid capacity)		<b>Year</b>  Base (Year of inviting tender)  -1  -2  -3  -4  -5	<b>Financial Year</b>  2026-2027  2025-2026  2024-2025  2023-2024  2022-2023  2021-2022	<b>Enh. Factor</b>  1.00  1.10  1.21  1.33  1.46  1.61	<b>Updated value of turn over (Lacks)</b>       
15	Latest Income tax return filed and PAN Card Details	(A) Year of Income tax Return filed  (B) PAN Card No.	Assessment Year Name PAN Card No. Name			
16	Goods and Service Tax (GST) Number	GST No.	GST No. Name			
17	RPFC Registration certificate & RPFC Challen	(A) RPFC Registration Certificate No. Name (B) RPFC Challen of any of the completed last three months from the monthh of last date of submission of the tender. Name				
18	Undertaking / Declaration	Truth fullness certificate				
19	Other Remarks					
20	Whether Qualified or not?					

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

## SPECIAL CONDITIONS

### 1) JOINT VENTURE (J.V.)

1.1) Joint Venture (J.V.) is not allowed.

### 2) Free Maintenance guarantee period:

The contractor shall also undertake Five years' comprehensive free maintenance contract starting from the date of completion of the work.

2.1.) The contractor shall have to give Five years' maintenance guarantee period from the certified date of completion of work as per clause No. 17B of B1 agreement attached herewith. During this period contractor shall have to maintain & repair works done under this contract by him at his risk and cost as per direction of the Engineer-in-charge of GIDC.

The requirement and nature of repair work will be decided by Engineer-in-charge and will be binding to contractor. **If any discrepancy regarding maintenance work, final decision to be taken by Executive Engineer (M&E), Vapi/Surat.**

2.2) The maintenance work shall be carried out by the contractor as and where required and asked by the Engineer-in-charge without fail & within the period given by Engineer-in-charge. The contractor shall attend the complaint in maximum 48 hours and rectify it to the satisfaction of Engineer-in-Charge.

### 2.3) NO PAYMENT TOWARDS MAINTENANCE WORK: -

If the contractor does not maintain the Electrification work of building including its components & other works done under this contract to the entire satisfaction of GIDC / Engineer-in-charge, GIDC will undertake repair works by themselves and the expenditure so incurred shall be recovered from Maintenance Guarantee Bond. GIDC reserves right to en-cash Maintenance Guarantee Bond.

2.4) The maintenance guarantee amount shall be given for 5% of the estimated cost / 5% of Approved tender cost whichever is more and in the form of Bank Guarantee of Nationalized Bank / Schedule Bank for the period of minimum Five year and shall only be released after satisfactory completion of maintenance guarantee period of Five year. The maintenance guarantee bond shall have to be executed on non-judicial stamp paper in standard Performa.

### 3) SUPERVISION OF WORK:

G.I.D.C. reserves rights to get check the quality of works through **THIRD PARTY INSPECTION** also in addition to the Engineer-in-charge & Quality Control Units of the Corporation.

### 4) PRICE VARIATION CLAUSE:

Not Applicable.

### 5) SURVEYING & MEASURING EQUIPMENTS:

Equipment's for surveying & measurement on the work shall be procured by the contractor for his use. The same also be made available to the Engineer at site or any work connected with the contract without any additional charges.

### 6) UNITS RATES UNDER SCHEDULE "B":

The Unit rates specified for various items to be executed as per Schedule "B" attached with the Price Bid are inclusive all labours, materials, testing charges, equipments, all incidental charges involving in the work and as specified in the Mode of measurement & payment of detailed specification of items incl.

all taxes, royalty, octroi, transportation cost etc. all as applicable presently as to be enforced for future by any / all including Central/State Government & Statutory bodies from time to time.

- 7) The tenders are invited by GIDC as implementing agency (i.e. Client) and hence agreement is to be executed between GIDC and successful agency.
- 8) GIDC will deduct 1% of the Estimated Cost from each Running Account Bill against the testing charges of materials.
- 9) **IMPORTANT NOTE: -**

Self-Evaluation form Placed in Pre-Qualification (Technical Bid - (Part-II)) as a Annexure-C is mandatory and required details as per Performa with page number must be field-up. If such detail is not submitted with the bid documents, the bid shall be liable for disqualification.

GIDC reserves the right, without any obligation or liability, to accept or reject any or all the bid at any stage of the process, to cancel or modify the process or any part thereof or to vary any of the terms and conditions at any time, without assigning any reason whatsoever.

## **General scope of work:**

### **General:**

The scope of the works covers Design, manufacturing, factory testing, supply, delivery to site, unloading, handling and storage at site, complete installation including cement concrete foundation and supporting steel structure wherever necessary, final check-up, painting, performance testing and commissioning including comprehensive free operation and maintenance contract with required manpower for Five years for Mechanical/Electrical and related equipment and other required accessories to be supplied under these specifications on turnkey basis. The scopes also include first filling of consumables and satisfactory performance of all equipment provided in the price schedule.

Note:- Bidder has to design & Submit Mechanical , Electrical , Plumbing & Fire Fighting Services drawing/documents as per Norms of Latest National Building Code (NBC) / Lift, Fire & Safety for Industrial Building and Relevant IS Standards to GIDC for Approval. Contractor has to appoint MEPF Consultant to get it done all required drawing & documents for the said work.

The contractor shall be fully responsible for the electrical, mechanical equipment and others installations for storage, theft, fire, natural calamity etc. till the entire work covered by this contract is satisfactorily completed by him and handed over to the owner.

All the installations shall be of high quality, safe, durable, complete and fully operational including all necessary items, spares and accessories whether not specified in details. All the works shall be completed in accordance with the regulations and standards to the satisfactions of the owner.

All the equipment and accessories shall be manufactured and specifications. The equipment's / materials shall be vendor only as per the regulations, relevant standards selected and procure from the approved. The contractor shall have to arrange inspection and testing of the equipment/ materials as per the Indian Standard specifications or equivalent at his cost. During the inspection, the OEM shall have to provide traceable certificates (of authorized bodies) of test and calibration instruments/ equipment's that are used for testing of instruments.

The following test certificate shall be provided.

- Certificate of calibration with its accuracy and uncertainty
- Certificate of standard and classification
- MOC certificate of instruments and its parts.

The equipment shall be installed as per the instruction of respective manufacturer of equipment and approved by the owner. The contractor shall have to submit a completion certificate of electrical license holder for installation of electrical equipments for inspection of installation for release of power supply connection by concern power supply authority. On completion of work, the contractor shall have to submit inbuilt drawing indicating the complete road wise and phase wise installation of the streetlight.

### **Documentation required**

- 1) Within 7 days after issue of an acceptance letter, the contractor is required to submit bar chart for showing planning and progress of work.

### **Record Drawing**

"Drawing for the layout of internal electrification has to be prepared by the Contractor and the same must be approved from the Competent Authority of GIDC, before starting the electrical work. Agency has to do the execution of work as per approved drawing. If any change is requiring in execution, agency has to take prior approval of Engineer in Charge.

### **INSPECTION OF MATERIALS BEFORE DISPATCH AT SITE:**

No materials shall be dispatched without inspection, accepted and approved by the authorized representative of the Department. Inspection charges, to & fro charges, lodging & boarding charges, if any, shall have to borne by the contractor.

### **Quality Assurance / Quality Control Program**

The contractor shall include in his offer the quality assurance program containing the overall quality management and procedure which is required. The contractor shall establish document and maintained an effective quality assurance system. The owner / consultant or their representative reserve the right to inspect / witness, review any or all stages of work at shop / site as deemed necessary for quality assurance.

### **Safety of materials**

The contractor shall provide proper and adequate storage facilities to protect all the materials and equipments including those issued / out items in contract / GIDC against damage, theft from any cause what so ever.

### **Scope of work:**

Any item of work, either supply or erection of materials which have not been specifically mentioned in this specification and drawing but are necessary to complete the work for trouble free, efficient operation and guarantee performance of the entire System offered shall be deemed as included within the scope of this specification and shall be provided by the contractor without any extra cost to the owner.

### **Care of the works**

From the commencement to virtual completion of the work, the contractor shall take full responsibility for the care for all works including all temporary works and any damages, loss or injury shall happen to the works or to any part thereof to any temporary works from any cause whatsoever, shall at his own cost repair and make good the same, so that at completion of the work shall be in good order and in conformity in every respects with the requirements of the contract and the Engineer In Charge's instruction.

### **Special Note:**

1. This is a turnkey work. If any items / work required be executed, but not mentioning in the scope of work shall be carried out by the agency for which no extra payment shall be made by the Department.
2. The material shall be supplied as per the make/brand given in the Annexure, but wherever the make is not mentioned, the material shall be supplied only ISI mark.
3. The sample/Data Sheet of each item as per tender specifications shall be got approved from concern DEE (M&E)/ XEN (M&E), before placing the order by the contractor to the OEM.
4. The whole work is covered under the Five years free maintenance and replacement Guarantee period. The manpower and tools maintenance required for replacement during the routine maintenance shall be provided by the contractor. The contractor should attend in case of the fault / non-working within 48 hours failing which the Corporation shall carry out the rectification work at risk & cost of the contractor. The expenditure so incurred, shall be recovered from the balance/payable amount of contractor or performance bond / security deposit paid by the contractor.
5. The material shall be dispatched only after due inspection carried out by the inspecting authority deputed by GIDC, the contractor has to provide all the facilities for testing and inspection of the material to the Inspector. The inspection shall be given preferably at the Original manufacturer works.
6. As soon as the material is ready, before dispatched, the contractor has to inform concerned **XEN (M&E)/DEE (M&E)** of Estate for the inspection.

## STATUTORY APPROVALS AND LIASONING

The approval from any authority required as per statutory rules and regulations of central/state government shall be the contractor's responsibility unless otherwise specified in the tender document. The application on behalf of the Owner for submission to relevant authorities shall be prepared and submitted by the contractor well ahead of time so that the actual construction/commissioning of the work is not delayed for want of the approval/ inspection by concerned shall be arranged by the contractor and necessary co-ordination and liaison work in this respect shall be responsibility of the contractor. However, statutory fees paid, if any for all inspections and approvals by such authorities shall be reimbursed at actual by the Owner to the contractor on production of document evidence.

Any defective work resulting from poor working ship and / or material supplied by contractor, as pointed out by any statutory authority shall be rectified by the contractor at no extra cost to the Owner. However, any change / addition required to be made to meet the requirement of the statutory authorities, the same shall be carried out by the contractor and shall be paid on unit rate basis. The inspection and acceptance of the work by statutory authorities / Owner shall, however, not absolve the contractor from any of this responsibility under this contract. Contractor has to do all kind of liaisoning work with DISCOM (GEB).

1. It shall be the sole liability of the contractor (including the contracting firm/company) to obtain and to abide by all necessary licenses/permissions from the concerned authorities as provided under the various labour legislations including the labour license obtained as per the provisions of the Contract Labour (Regulation & Abolition) Act, 1970.
2. The contractor shall discharge obligations as provided under various applicable statutory enactments including the Employees Provident Fund & Miscellaneous Provisions Act, 1952, the Employees State Insurance (ESI) Act, 1948, the Contract Labour (Regulation and Abolition) Act, 1970, the Inter-state Migrant workmen (Regulation of Employment & Conditions of Service) Act, 1979, the Minimum Wages Act, 1948, the Payment of Wages Act, 1936, the Workmen's Compensation Act, 1923 and other relevant Acts, Rules and Regulations enforced from time to time.
3. The contractor shall be responsible for required contributions towards P.F. Pension, ESI or any other statutory payments to be made in respect of the contract and the personnel employed for rendering service to GIDC and shall deposit these amounts on or before the prescribed dates. Every contractor shall submit the proof of depositing the employees' and employer's contributions.
4. The contractor shall also be responsible to pay any administrative/inspection charges thereof, wherever applicable, in respect of the personnel employed by him for the work of GIDC.
5. **The contractor shall regularly submit all relevant records/documents to GIDC representative for verification and upon such satisfaction only, GIDC will allow reimbursement of the amounts paid.**
6. The contractor shall be solely responsible for the payment of wages and other dues to the personnel deployed by him latest by 7<sup>th</sup> of the subsequent month. The contractor shall be directly responsible and indemnify the company against all charges, dues, claims etc. arising out of the disputes relating to the dues and employment of personnel deployed by him.
7. The contractor shall indemnify the Company against all losses or damages, if any, caused to it on account of acts of the personnel deployed by him. The contractor shall ensure regular and effective supervision and control of the personnel deployed by him and give suitable direction for undertaking the contractual obligations.
8. The contractor shall assist the Owner with his good offices in acquiring necessary working permissions from various authorities
9. The contractor shall also be responsible to pay any administrative/inspection charges thereof, wherever applicable, in respect of the personnel employed by him for the work of GIDC.

## 10. AS BUILT DRAWINGS

Contractor shall prepare a complete set of as built drawing. From the start of construction contractor shall daily process any changes in to two sets of drawing. Deleted parts shall be

indicated in red, new part in blue, remarks in green and in changer part in yellow, in said drawings. After completion of work 6 sets with original shall be submitted to GIDC/ PMC.

**Special Note:** All Mechanical, Electrical, Plumbing & Fire Safety Items, panels, Earthing, Lifts, Lighting Fixtures and other items drawing shall be as per National Building code norms and relevant Indian standards and Approved make & rate as per R&B, GWS&SB, CPWD and Govt. Rate contract must be approved by GIDC Engineer in charge.

Schedule-B					
Sr No	DESCRIPTION	QTY	UNIT	Rate/Unit	Total Amount
1	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.(G) 8 Mtr. Long 70 mm Top X 155 mm bottom dia, 3 mm thickness with 260mmX260mmX16mm base plate, 4-M20 Bolts and 600mm long with necessary G.I. J Bolts Approx Pole weight 84 kg	1,640.00	Ea	14,009.90	2,29,76,236.00
2	Providing and fixing of Solderless Crimping Type Aluminium Lugs (4 Nos. per termination) conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadium plated nut bolts in an approved manner. (B) 10 Sq. MM (As Per Make List)	1,640.00	Ea	11.99	19,663.60
3	Providing & erecting approved make of SP MCB 6A to 25A Miniature circuit breaker single pole 6A to 25A suitable to operate on 240V AC system and having breaking capacity 10 kA to be erected in existing box confirming to IS 8828/1998 with ISI/ CE Mark,Cat-III. (Make will be as per attched make list)	1,640.00	Ea	111.27	1,82,482.80
4	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.	1,640.00	Ea	368.05	6,03,602.00
5	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. [A] Single Arm Bracket 1.5 Mtr	1,640.00	Ea	683.04	11,20,185.60

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6	Supplying and erecting LED street light fittings with High power White LEDS wattage of 1 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 5000 K to 5700K, Uniformity ratio 0.45, Luminaire efficacy> 130 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-66), Surge protection -4KV integral and Light must have 440VAC line supply with over-voltage protection. (iv). Above 90 Watt. Make:- CREE/OSRAM/PHILIPS/Nessa/Lumileds/NICHIA/SE OUL/BridgeLux (U.S.A) make LED used for luminaire ( fittings required LM 79 & LM-80 certificates)	1,640.00	Ea	5,975.27	97,99,442.80
7	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.(h) 2.50 Sq.mm 3 core round PVC sheathed	13,121.50	Mtr	72.76	9,54,720.34
8	Providing and erecting XLPE (IS:7098)(1)-88 ISI armoured cable multistrand / Solid Aluminium conductor for 1.1 KV. to be laid on wall with core) necessary clamps or in existing trench / pipe of following size of cables. © 4 core 10 Sq.mm. (Make: RR/KEI/Havells/Polycab)	57,400.00	Mtr	136.96	78,61,504.00
9	Providing & laying of approved make Doubled 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. (As Per Make List)	49,200.00	Mtr	61.63	30,32,196.00
10	Providing & laying of approved make Doubled 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. (C) 90 mm outer dia. (As Per Make List)	2,000.00	Mtr	95.01	1,90,020.00

11	Supplying & erecting in earthpit of minimum bore dia. 225mm size approved make Safe Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 80 mm having 80-200 Micron galvanising, Inner pipe dia of 40 mm having 200-250 Micron galvanising, connection terminal dia of 14 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover.(approved make OEM has to submit test certificate including value of earth resistane of installation.[A] For electrical installation up to 440 V Length of Pipe - 1 Mtr Back filling compound - 1 Nos. of Bag of 15 Kgs.	15.00	Ea	5,841.74	87,626.10
12	Drilling the road without breaking the road surface (Asphalt) for laying of cable for feeding power supply by making up to following size of holes at both ends complete.(B) Up to 150 mm bore dia	1,500.00	Mtr.	513.56	7,70,340.00
13	Making trench in soft soil of suitable width of 90 cm deep for laying cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	49,200.00	Mtr.	46.23	22,74,516.00

14	<p>Providing and erecting Three Phase IoT GSM/GPRS Central Control &amp; Monitoring System (CCMS) Panel for Streetlights Smart Feeder Panel with 3 Phase GSM/GPRS CCMS Streetlight Controller with LCD Display (1 Nos.). Streetlight Controller with Individual each Phase Control (Energy Saving feature) and Spare relay facility. Streetlight Controller having 10 years of reserved battery for RTC. With 50 programmable schedule, month-wise offset settable facility, Astronomic sunrise/sunset time programming in-built for year long schedule. Operating Voltage @ 440 V AC with Over Voltage &amp; Short Circuit protection. 2 hour Battery Back-up for Streetlight Controller. Panel to have 1 Nos. of 3 Phase – Class 1 Energy Meter for Energy &amp; Fault monitoring on CCMS Web Dashboard. Panel consisting of 3 Nos. of 3 Pole Contactors (3 x 18 A), 7 Nos. of 1 Pole Miniature Circuit Breakers (32 Amp.) for Bypass, Input / Output supply functionalities, 1 Nos. of 4 Pole Earth leakage circuit breaker for safety protection. Standard lock &amp; key facility for Panel security. Door Switch for unauthorized access &amp; tamper detection. Accelerometer for panel movement detection &amp; tamper alerts. Suitable amount of Wires, Connectors, Terminal Blocks included in Panel. 16/18 gauge M S with industrial exterior powder coated PP with seven tank process RAL 7035 All weather-proof Enclosure Panel having IP65 rating. Waterproof Glands &amp; Grounding Stand included. Dedicated IoT communication GSM/GPRS SIM Card (with minimum 5 years of recharge) for Wireless Communication with CCMS Web Dashboard. 5 Years Data Hosting &amp; Server Charges to be included with CCMS Web Dashboard. Load status, Live analytics, Energy Meter monitoring (Parameters such as kW, kWh, PF, I, V), comparative analytics, reports generation facility. Fault detection on web dashboard. GIS Mapping of CCMS Panel on Web Dashboard. Secured MQTT Communication for Cloud. Includes Android &amp; iOS Mobile Application. Local communication facility via Mobile Application in case of GPRS connectivity failure.</p>	15.00	Ea	59,915.26	8,98,728.90
15	<p>Providing &amp; erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 25 KA. at 415 V, having normal current rating up to 25 A to 100A. with Fixed thermal &amp; magnetic release suitable to work on A.C. supply 50 c/s. with all internal connections &amp; complete erected in existing 16 G.M.S. housing. (Cat - III) suitable to work on AC supply with all internal connection-ICS=100% of ICU only.(1 No. per Distribution Box) (Make will be as per attached make list)</p>	15.00	Ea	6,171.27	92,569.05

16	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.(c) 2 to 4 core 10 Sq. mm (Make will be as per attched make list)	45.00	Ea	36.81	1,656.45
17	Making trench in Hard Murrum / Tar Road of suitable width of 90 cm or required depth for laying any size of cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	49,200.00	Mtr.	61.63	30,32,196.00
18	Providing , erecting , fabricating the M.S. structure as per requirement on site incorporating proper size of M.S. angles,square,round, flats, bars, channels, sections complete with cutting, welding, grinding & finishing duly painted with one coat of red oxide with erection on site as per direction of engineer in charge with necessary grouting, cementing, plastering & finishing complete.	150.00	Kg.	77.04	11,556.00
19	Providing & erecting weather proof, dust & vermin proof, floor mounted front operated indoor type cubical panel board necessary IP-42 and above protection as per approval from engineer incharge made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary accesories , supporting angles/ flats channel including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of supplied switch gears, BUSBARS, suitable size of inter connecting PVC copper wire / copper-aluminium strips, rubber grommets, rib, bakelite control fuses/MCB for measuring instruments, earth bus & earth bolts, foundation flange - bolts-base Plates, sufficient nos. of hinged doors, handles with locking arrangement and rubber gasket,heavy duty end terminal connection,danger notice board,necessary ventilation,earthing strip complete. The Panel shall be painted with epoxy powder coating. (The rates excludes the cost of switchgears, bus bars, inter connecting mains & Copper Aluminium strips, meters, Fuses etc. The dimension shall be measured excluding base beams) The panel shall be supplied with following approved manufacturers with following size.(C) The standard companies switch gear shall be used and only manufacturers as per IEC 61439 for beneficial use. (iv) with 1000 mm. depth	15.00	Sq. Mtr.	45,099.08	6,76,486.20

20	Providing and Supplying ISI mark G.I. Pipes with Couplings of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance for departmental stores, stacking etc complete (IS-1239). Heavy Duty 80 mm	12.00	Rmt.	589.74	7,076.88
21	Agency has to do successful operation and maintenance of Street light network by using their manpower, material, tools & tackles etc. for 5 Years Operation & Maintenance. Payment will be released monthly based on certificate of successful operation and maintenance of installed street light network by DEE[M&E], GIDC, Surat in this work. More criteria of successful operation and maintenance is described in technical specification with 5 Years Free Comprehensive Guarantee period. Total Quantities are as follows: Operation of 1640 poles for 60 months i.e. 1640*60= 98400.	98,400.00	Pole-month	126.25	1,24,23,000.00
<b>Total Amount Rs.:-</b>				<b>6,70,15,805.00/-</b>	

**Note:- The rate offered here should be exclusive of GST. GST will be extra at actual on offered price.**

**Note:-** The Unit rates specified for various items to be executed as per Schedule "B" attached with the Price Bid are excluding GST but inclusive all labours, materials, testing charges, equipments, all incidental charges involving in the work and as specified in the Mode of measurement & payment of detailed specifications of items incl. all taxes, royalty, octroi, transportation cost etc. all as applicable presently as to be enforced for future by any / all including Central/State Government & Statutory bodies from time to time.

1. The rates offered should be inclusive of all taxes (excluding GST), duties, service tax, wages, incidental charges, if any & up to the site as per the prevailing rates and considering the period of the contract. No extra charges shall be paid. The rates should be firm during period of the contract.
2. For round clock Maintenance of Street Lights minimum persons are to be engaged as per annexure enclosed for 06 months period and up to date fixation of new agency.

I/We agree to carry out above work at \_\_\_\_\_% above the estimated Rate put to tender

Percentage in words (\_\_\_\_\_)

I/We agree to carry out above work at \_\_\_\_\_% below the estimated Rate put to tender

Percentage in words (\_\_\_\_\_)

Estimated Amount put to

Estimated Amount put to

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

Tender **Rs. 6,70,15,805.00/-**

Tender **Rs. 6,70,15,805.00/-**

Add % Above Rs.\_\_\_\_\_.

Deduct % Below Rs.\_\_\_\_\_

Net Amount Rs.\_\_\_\_\_(In figures).

Net Amount Rs.\_\_\_\_\_(In figures)

Rs.\_\_\_\_\_(In Words).

Rs.\_\_\_\_\_(In Words)

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I/we have read the condition mentioned in this tender and agree to abide by the same

Signature of contractor.

Executive Engineer(M&E)

GIDC, VAPI/ Surat

**IMPORTANT NOTE:**

1. The Unit rates specified for various items to be executed as per Schedule "B" attached with the Price Bid are excluding GST but inclusive all labours, materials, testing charges, equipments, all incidental charges involving in the work and as specified in the Mode of measurement & payment of detailed specifications of items incl. all taxes, royalty, octroi, transportation cost etc. all as applicable presently as to be enforced for future by any / all including Central/State Government & Statutory bodies from time to time.
2. Please note that the agency, in whose favour the tender is finalized by the competent authority, should have to submit the document like insurance of the staff engaged RPFC No., Labour license etc.
3. I / we agree to supply the above materials at the rate mentioned above.
4. I / we have read the conditions mentioned in this tender & agree to abide by the same.
5. GIDC, SURAT will not issue any tax exemption from i.e. 'P', 'C' or 'D'. The tenderer may quote rates accordingly.
6. The agency in whose favour tender is finalized has to enter into **B1 agreement** and conditions and clauses of the agreement shall be binding to the agency. If agency desire to study, the same is available in the office of Executive Engineer(M&E), GIDC, Vapi/ Surat during working days and office hours.
7. The tendered has to inspect the site and found out the quantum of repairs/overhauling service work involved before quoting the rates.
8. Labour work required for handling, lifting lowering, shifting, loading, unloading, transportation etc. of any pumps & allied equipments with tools & tackles shall be arranged by the tenderer.
9. Any Dg set with tools & tackles to be shifted/transported within premises/any office building/ repairer work shop, shall be arranged by the tenderer.

### ❖ **PAYMENT TERMS & CONDITION.**

<b>Sr.No</b>	<b>Description</b>	<b>% of Full Tender Rates to be released.</b>
1	On Supply of Items at site duly inspected/tested at OEM placed & verified by DEE (M&E) or Engineer-In-Charge of project.	70%
2	After completion of Installation/Erection work in all respect & duly inspected by DEE (M&E) or Engineer-In-Charge of project.	15%
3	On Testing work completed & duly inspected by DEE(M&E) or Engineer-In-Charge of project.	10%
4	On Commissioning of entire street lighting system at the satisfaction of DEE (M&E) or Engineer-In-Charge of project.	05%

**For Item No. 21 of Schedule – B, Payment will be released as follows:**

<b>Comprehensive Operation &amp; Maintenance and Repairing period of 5 years</b>		
<b>Sr No</b>	<b>PARTICULAR</b>	<b>Payment release schedule</b>
1	Payment will be released for this item quarterly After Successful completion of monthly reports street light network and operation and maintenance monthly report of successful completion of operation must be certified by the DEE (M&E) GIDC, Surat for the release of payment.	<b>Every 3 months [i.e rate/unit * total quantity ]</b>

The payment shall be released as under:

- a) The payment of total tendered amount shall be made by installments. Payments of R.A. Bills shall be made to the contractor as per items, in measurable units executed according to the specifications duly checked & certified by DEE (M&E), GIDC, Surat.
- b) The payment on the basis of work carried out shall be made by the Executive Engineer(M&E), GIDC, Vapi/Surat on presentation of bills in triplicate by the contractor subject to satisfactory performance of the work and to the satisfaction of the Engineer in Charge.
- c) No advance payment shall be made by Executive Engineer(M&E), GIDC, Vapi/Surat for the work.
- d) 100% payment of tender item will be released after execution of item and certified by DEE[M&E],GIDC, SURAT

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.



- e) This payment terms will be applicable for item No.1 to 20. For Item No.21, payment will be released as mentioned in Item No.21 in Detailed Technical Specification.

**Note:**

1. **Actual Date of Completion:** Actual date of completion of said work will be considered after successful completion of Item No.1 to 20 of Schedule-B and as per Final bill. Actual date of Completion will be certified by Dy. Executive Engineer [M&E]-in-charge.
2. **Final Bill:** Final bill of said work will be considered on successful completion of work as per Item No.1 to 20 of Schedule-B.
3. **Bill of Item No. 21 of schedule B:-** RA Bill of item no.21 will be release quarterly after successful completion of operation of streetlight network each month from actual date of completion and each month report of successful completion of operation of street light network must be certified by DEE[M&E],GIDC, Surat. If, Operation work is not satisfactory done by Agency, payment for that year will not be released.
4. **Release of Security Deposit and Performance Bond:**  
Initial Security Deposit [50% of total Security Deposit] along with Performance Bond will be released after 15 days from the final completion certificate of "Item No.1 to Item No.20 of Schedule-B" is issued by the Engineer-in charge.
5. The payment for Item No.21 amount made after recovery if any.

## **DETAILED TECHNICAL SPECIFICATIONS**

### **Item No.1 :**

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. (G) 8 Mtr. Long 70 mm Top X 155 mm bottom dia, 3 mm thickness with 260mmX260mmX16mm base plate, 4-M20 Bolts and 600mm long with necessary G.I. J Bolts Approx Pole weight 84 kg

#### **Structure:**

- Poles shall be continuously tapered octagonal cross section, presenting a good and pleasing appearance and based on proven design conforming to international standards, to give an assured performance, and reliable service. The pole shall be suitable for wind loadings as per IS 875 part 3 1987.
- Poles shall be provided with base plate, which shall be free from any lamination or incursion. The welded connection of the base flange shall be fully developed to the strength of the entire section. The base plate shall be welded to the bottom of the pole before dipping in the galvanizing bath. The base of the pole shall be complete in all respects with base plate before hot dip galvanizing internally and externally as per ASTM A 123 and 153. Pole shall be hot dip galvanized in single dipping method. No cutting or welding shall be allowed on the pole after hot dip galvanizing.
- An adequate door opening shall be provided at the base of the pole at a convenient location. Provision shall be given inside this door for fixing the electrical terminals. The opening shall be such that it permits clear access to the inside of the pole. The door opening shall be complete with a close fitting, vandal resistant, door; provided with a screw type locking facility
- The Decorative bracket shall be fabricated having the design to be approved by the Department/Engineer-In-charge. Suitable arrangement shall be provided at the top of the street light pole for fixing of street light fixtures. MS plate to be welded at the bottom of the pole and the necessary earthing termination bolt and the cable entry for the Luminaries etc. shall be provided at proper distance for fixing of junction box.
- The installation of pole shall be done as per direction of Engineer -In- charge as per site requirement between two poles. Special care shall be taken while erection of poles so that these are not strained or damaged during erection and are firmly stayed till the foundation are secured, as per instruction of Engineer- in-charge and as per drawing. The alignment of all the poles and the height shall be in one line so that from the distance it looks in one line. The material shall not be dispatched without prior inspection by the inspecting authority appointed by the department or DEE (M&E) GIDC Surat.
- The pole must be erected on suitable Reinforcement Cement Concrete (RCC) foundation recommended by OEM with approved drawings with Suitable Cement Concrete with necessary water curing FE 415 Steel and Excavation & finishing in approved manner and as per drawing & including excavation and as per instruction of Engineer In charge or as per St.lgt Pole OEM recommendation.

### **Item No.2:**

Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size

evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (B) 10 Sq.mm.

Mode of Measurement: - On Each Basis.

**Item No.3:**

Providing & erecting approved make of SP MCB 6A to 25A Miniature circuit breaker single pole 6A to 25A suitable to operate on 240V AC system and having breaking capacity 10 kA to be erected in existing box confirming to IS 8828/1998 with ISI/ CE Mark, Cat-III. (Make will be as per attached make list)

Mode of Measurement: - On Each. Basis.

**Item No.4:**

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.

Mode of Measurement: - On Each. Basis.

**Item No.5:**

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. [A] Single Arm Bracket 1.5 Mtr

Mode of Measurement: - On Each Basis.

**Item No.6:**

Supplying and erecting LED street light fittings with High power White LEDS wattage of 1 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 5000 K to 5700K, Uniformity ratio 0.45, Luminaire efficacy> 130 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-66), Surge protection -4KV integral and Light must have 440VAC line supply with over-voltage protection. (iv). Above 90 Watt. Make:- CREE/OSRAM/PHILIPS/Nessa/Lumileds/NICHIA/SEOUL/BridgeLux (U.S.A) make LED used for luminaire ( fittings required LM 79 & LM-80 certificates)

Mode of Measurement: - On Each Basis.

Work shall be carried out as per the description of the item and as per instruction of engineer in charge. The sample shall be got approved before execution.

This specification is for technical and general requirements design, development, manufacturing, testing and S.I.T.C. of energy efficient LED luminaire complete with all accessories, LED lamps with suitable current control driver circuit and required optics including mounting arrangement for streetlight going to use at the site.

#### CODES & STANDARDS: -

- IS: 513 Cold-rolled low carbon steel sheets and strips
- IEC 60529 Classification of degree of protections provided by enclosures (IP Codes)
- EN 55015, CISPR15 Limits and methods of measurement of radio disturbance characteristic of electrical lighting and similar equipment.
- IEC 62031 LED modules for general Lighting-Safety requirements
- The luminaries shall conform to norms on transient voltages, voltage dips and fluctuations as per EN 61547 Equipment for general lighting purposes–EMC immunity requirement
- EN 60929 Performance, AC supplied electronics ballast for tubular fluorescent lamps performance requirement.
- IEC 60598-2-1 Fixed general-purpose luminaries
- IEC 60598-1 Luminaries - General requirement and tests
- IEC 61000-3-2 Electro Magnetic compatibility (EMC) - Limits for Harmonic current emission – (equipment input current  $\leq 16$  A per phase).
- IEC 60068-2-38 Environmental Testing: Test Z- AD: composite temperature/ humidity cyclic test
- IEC 61347-2-13 Lamp control gear: particular requirements for DC or AC supplied electronic control gear for LED modules.
- IS 10322 Specification for the luminaries
- The luminaries shall comply with IS 10322 for functional, photometric and safety requirements. The fixture shall conform to safety standard EN 60598.
- IS 4905 Method for random sampling.
- LM 79 LED luminaire photometry measurement.
- LM 80 Lumen Maintenance
- IEC62384 DC or AC supplied electronic control gear for LED modules performance requirements

- IEC/ PAS 62612 Self-ballasted LED lamps for general lighting services- Performance requirements.
- IEC 62471 - Photo-biological safety of lamps and lamp systems.
- RoHS (Reduction of Hazardous Substances).
- The luminaries fitted with LED source shall be CE and ISO certified to ensure quality of the LED source.
- ANSI C.78.377.2008 - Specifications for the Chromaticity of Solid-State Lighting Products.
- IESNA LM- 79-08 - IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
- IESNA LM-80-08 (Recommended)- IESNA Approved Method for Measuring Lumen Maintenance of LED Lighting Sources.
- UL Standards (Latest Approved) –
  - **8750** Light Emitting Diode (LED) Light Sources for use in Lighting Products.
  - **1598** Luminaries.
  - **1012** Power Units other than Class-2
  - **1310** Class-2 Power Units
  - **2108** Low Voltage Lighting Systems.

#### ENVIRONMENTAL CONDITIONS: -

- Maximum ambient air temperature: 50° C
- Minimum ambient air temperature: 5° C
- Max. Relative humidity: 90%
- Average Rainfall: 55 inches
- Atmosphere: Dusty and Heavy chemical smoke at times in certain areas.
- Coastal area: The equipment shall be designed to work in coastal area in humid, salt laden and corrosive atmosphere.

#### CONSTRUCTIONAL FEATURES:

##### General:

Luminaire shall be made of die cast aluminum / extruded Aluminum body with powder coated finish having safety.

The casing of the lighting luminaries shall be made of pressure die cast aluminium coated with epoxy polyester powder coat single. The driver unit must be accessible

and if need be replaceable easily and with minimum use of tools.

The casing made of non-corrosive aluminium having high conductivity shall have external surface designed in a manner so as to act as an efficient heat sink to extract heat generated at PN-junction of a LED. Efforts shall be made to install the fittings on the required street light pole without compromising on the performance of the LEDs or luminary.

The Fixture manufacturer shall perform solder point temperature ( $T_{sp}$ ) measurement and compute junction temperature ( $T_j$ ). The manufacturer shall show the proof that the junction temperature shall not go beyond the LED manufacturer's maximum junction temperature for long term lumen maintenance (i.e., 70% of the original value of lumen output after 50000 hours of operation).

Lumen intensity distribution shall be available according to following standard: EN 13032- 1, EN 13032-2 and EN 15193.

The lumen output at end of lifetime shall be supplied as well as initial lumen output, with temperature at which the lumens are rated.

Test result shall be provided to indicate adequate thermal performance for the long term operation of the LED's at an operating temperature ( $T_a$ ) of not less than 35°C in accordance to relevant local or international standards. The LED junction temperature shall be maintained at or below manufacturer's recommendation. The rated LED life L70/B20 shall be more than 50,000 hours at LED operating at ( $T_a$ ) 35°C. Heat sink used should be aluminum extrusion having high conductivity. Heat sink should be integrated within luminaire and efforts shall be made to keep the overall outer dimensions optimum such that it permits sufficient heat dissipation through the body itself so as to prevent abnormal temperature inside the luminaire and consequential damage to cover, gasket material, LEDs, lenses and drivers.

The luminary shall be provided with a built-in external heat sink as well as an aluminium MCPCB printed circuit board, designed in such a way that the heat generated within the LED source is efficiently dissipated to the surrounding atmosphere without abnormal rise in temperature. Any debris build up shall not degrade heat dissipation performance of the luminaries. A lighting luminaire fitted with an assisted cooling system is not acceptable.

LED must be mounted on Metal core PCB with suitable large area surface by means of fins to dissipate the conduct heat. The fins must be exposed to ambient flowing air.

The assembly and manufacturing process for the LED source assembly in modules/arrays shall be designed to assure all internal components are adequately supported to withstand sudden impacts and mechanical shock and vibration from high winds and other sources.

All luminaries shall be provided with toughened glass of min. 0.8 mm thickness of sufficient strength. UV stabilized Poly carbonate material is also acceptable. High efficiency prismatic diffuser/Lens under the LED chamber to protect the LED and luminaries shall be provided.

No part shall be constructed of polycarbonate unless it is UV stabilized. Material used for the lens of LED source shall be of toughened glass, heat resistant and shall not undergo discoloration during lifetime of the LED source. It shall conform to ASTM specifications for the materials. Any discoloration observed in the lens shall be considered a failure under warranty clause.

All luminaries shall be provided with acrylic / polycarbonate / glass diffusers and/or aluminized reflectors and/or lenses to provide proper road lighting distribution.

Toughened and/or tempered glass of sufficient strength may be provided under the LED chamber to protect the LEDs and luminaries.

The LED lens shall be UV stabilized and shall be capable of withstanding ultraviolet (direct sunlight) exposure for a minimum period of 60 months without exhibiting evidence of deterioration.

The finish of the fixture shall be powder coated and of grey colour. The luminaire shall provide efficient uniform illumination.

The luminaire shall be assembled without any glue so that it is fully recyclable and environmentally friendly. Final assembly of the luminaire shall be done by manufacturer in an ISO-14001 certified factory.

The luminaries shall be capable of operating normally in ambient temperatures from -20°C to 50°C maintaining junction temperature below 100°C and heat sink temperature below 60°C, ensuring efficient thermal management of the luminaire.

The manufacturers shall ensure that the fixture is designed in such a manner that it

conducts the heat away from the LEDs as efficiently as possible. The design shall ensure that the junction temperature is kept as low as possible during operation. Thermal management shall be in such a way that Luminary shall have trouble free operations from -20 °C to +50°C. The following tests shall be done to determine efficient thermal Management.

The fixture shall be designed in such a manner that it is easy to handle and install, is not too large and unwieldy, is of robust construction, light weight and conforms to minimum IP66 class of protection for outdoor use. Luminary's manufacturer should submit IP test report from Govt. Accredited Test Lab / R&D Labs.

Suitable number of LED lamps shall be used in the luminaires. The manufacturer shall submit the proof of procurement of LEDs from OEMs at the time of testing. Suitable reflector/ lenses may also be provided to increase the illumination uniformity and distribution.

The electrical component of the LED and LED driver must be suitably enclosed in hermetically sealed unit.

The connecting wires used inside the luminaire, shall be low smoke halogen free, fire retardants-beam cable and fuse protection shall be provided in input side.

The material used in the construction of driver printed boards; driver enclosure etc. shall be non-flammable and heat resistant. Also, all the PCBs in the system shall be coated to prevent any corrosion.

Design of the thermal management shall be done in such a way that it shall not affect the properties of the diffuser.

The equipment should be compliant to IEC 60598-1, IEC 62031 and IEC/PAS 62612 depending on the type of luminary.

The LED Module(s), Driver gear, etc. shall be designed in such a way so that temperature of heat sink shall not exceed 70° C.

The driver module on board circuitry shall include voltage surge protection to withstand High-repetition noise transients as stated in Section 2.1.6 of NEMA Standard TS-2/ 1992.



The Entire LED lamps should be driven by minimum 2 or more numbers of the driver circuits. The entire power supply to the LED Lamps should be divided among the drivers, thus each driver controlling a group of LED lamps if required for Higher wattage of LED Fitting.

All the material used in the luminaire shall be halogen free and fire retardant confirming to standard.

The LED fitted lighting fittings shall operate at 50 Hz +/- 5 % Hz AC over a voltage Ranging from 100V to 300V with a power factor > 0.95 in a 3-wire distribution system. The total power consumption in the LED lighting fixture shall not exceed the total guaranteed power consumption including power consumption in the electronic circuit of the driver for that particular application over the entire voltage range given in clause. Driver output DC Voltage shall be less than 60V DC complying to safety extra low voltage compliance.

#### Low voltage compliance: -

The fluctuations in line voltage shall have no visible effect on luminous intensity of the LED luminaries. The operating voltage of the luminaries shall be 230V. All parameters measured at this voltage shall stand valid for the entire operating voltage range of 100- 300V.

Total harmonic distortion (THD) of current and voltage induced into the AC power supply by an LED lighting source shall not exceed 15% for current and 5% for voltage. Harmonic Generation shall be as per EN61000-3-2 and EN61000-3-3 / IEEE 519.

The lighting luminaries shall withstand the following tests.

- a. HV test of 10 KV
- b. IR test of 500V
- c. Product shall cut off its supply when voltage exceeds 300V and regains its normal working @ 230vac

The output circuit shall have short circuit and open circuit protection inbuilt to the driver unit.

The infrastructure for Quality Assurance facilities to verify/ test/ prove above specifications must be available at the manufacturing facility. The compliance shall

be indicated clearly in the tender itself.

All fasteners must be of stainless steel.

All glands inside/ outside luminaire must be metallic

Heat sink must be thermally connected to MCPCB/ LED light source.

High power and high lumen efficient LEDs suitable for following features shall be used:

The LEDs shall be of reputed make such as CREE / OSRAM / PHILIPS Lumileds / NICHIA / SEOUL/ Bridge Lux (U.S.A.).

LED module/ array shall deliver at least 70 % of initial lumens, when installed for a minimum of 50,000 hours

The rated LED life L70/B20 shall be more than 50,000 hours at LED operating at (Ta) 35°C. The working life of the lamp at junction temperature of 85° C (max) at operating current shall be more than 50,000 working hours of accumulative operation and shall be suitable for continuous operation of 24 hours per day. These features shall be supported with datasheet.

To enhance the secondary optics of the fixture, suitable Acrylic Optical Lenses shall be used.

The Correlated Color Temperature (CCT) of the LED fixture shall be in the range of 5700±300K °K.

The luminaries shall ensure a CRI of  $\geq 70$ .

The Uniformity Ratio ( $E_{min} / E_{avg}$ ) shall be minimum of 40%.

The LED luminaries shall produce constant lux level in the voltage range of 100V to 3000V. Voltage variations/ fluctuations in the specified voltage range shall not impinge upon the lux level it produces.

The life span of the LED source including its Driver shall be minimum or greater than 50000 hours.

The P/N junction temperature of individual LED must not exceed 100°C. High Thermal conduction must be achieved by use of silicon heat conductive greases and adhesive.

#### Applicable standards:

The standards and code of practices referred to below shall be the latest editions including all official amendments and revisions.

General safety requirements: IS 1913 - for  
luminaries Luminaries for street lighting: IS 10322 -  
electric cables

Current waveform for the LED drivers should meet relevant national and international standard. xxii. Electronic components IC (Integrated circuit) shall be of industrial grade or above.

Metallic film/ Paper/ Polyester Capacitor shall be rated for a sustained operating temperature of 105° C.

The construction of PCBs and the assembly for components for PCBs should be as per IS standards.

Adequate heat sink with proper thermal management shall be provided.

Lumen maintenance report as per LM 80 guidelines shall be produced for the power LEDs used.

Thermal management shall be in such a way that LED soldering point temperature shall not go beyond 75° C.

The LED luminaries shall be free of glare.

#### LED DRIVER specification used for streetlight: -

Current waveform should meet relevant nation and international standard.

LED Driver shall withstand voltage of 440 V for 1 minute and restore normal working when normal voltage is applied.

The life of the driver should match life of LED luminaire.

Maximum Temperature rise  $\leq 30^{\circ}\text{C}$  @  $45^{\circ}\text{C}$  Tamb. with safety margin of  $10^{\circ}\text{C}$ .

The driver should comply to CISPR 15 for limits and methods of measurement of Radio Disturbance characteristics

The equipment should comply to IEC 61547 for EMC immunity requirements

The control gear should be compliant to IEC 61347-2-13, IEC 62031 and IEC 62384 as per the requirements.

The driver of the luminaires should have Short Circuit, Over Voltage, Over current, Over temperature, Under Voltage, String Open protections.

#### TESTS & CERTIFICATES: -

- i. Design Qualification Testing shall be performed by the manufacturer or an independent testing lab hired by the manufacturer on new LED module/ array designs and when a major change has been implemented on an existing design.
- ii. The bidder shall submit manufacturer's test certificates complete with verification of Design Qualification Testing details by an independent testing authority.
- iii. The Luminaire manufacturer must show proof that the LEDs they use have been tested and approved to IESNA's LM80. The manufacturer must be able to provide the test data set to establish the authenticity and genuineness of the LEDs.
- iv. Tests conducted on LED luminaries are classified as:
  - a) Type test,
  - b) Acceptance test,
  - c) Routine test and
  - d) Mock-up test.

#### Type Test: -

Type test certificates for both the luminaires shall be provided with the technical-bid.

**These Test** shall be carried out to prove confirmation with the requirements of specification and general quality/ design features of the unit. In case of any change in Bill of Material or design of unit, complete type test shall be repeated.

If any sample fails in any of the type tests, fresh samples shall be taken and tested. If any sample again fails in that test, the whole lot shall be rejected. The selected fixtures from the lot shall be type tested from the ERDA/CPRI/UL.

#### Acceptance Tests: -

These tests are carried out by an inspecting authority at the supplier's premises on sample taken from a lot for the purpose of acceptance of a lot. Acceptance tests shall not be carried out from particular size from the lot on which type tests have already been conducted. Recommended sampling plan is given below.

#### Routine Tests:

These tests shall be performed by the manufacturer on each complete unit of the same type and the results shall be submitted to the inspecting agency, prior to offering the lot for acceptance test. The firm shall maintain the records with traceability.

#### Mock up Test:

The successful bidder shall provide proposed LED lamp and luminaries on three consecutive poles as demonstration to prove the suitability of the fittings matching with the requirement in regards to lux level, quality of illumination for professional, objective & impartial review jointly by the bidders team along with team of GIDC Engineers. This shall be carried prior to submission of detail design for approval.

#### Sample size and criteria for conformity:

The luminaries shall be selected from the lot at random. In order to ensure randomness of selection, procedures given in IS 4905-1968 (Reaffirmed 2001) may be followed.

Sr. No.	Description of test	Prototype Test	Type Test	Acceptance Test	Routine Test
1	Visual and Dimensional check	Y	Y	Y	Y
2	Checking of documents of purchase of LED	Y	Y	Y	Y
3	Resistance to humidity	Y	Y	--	--

4	Insulation resistance test	Y	Y	Y	Y
5	HV test	Y	Y	Y	Y
6	Over voltage protection	Y	Y	Y	--
7	Surge protection	Y	Y	Y	--
8	Reverse polarity	Y	Y	Y	Y
9	Temperature rise Test	Y	Y	--	--
10	Ra(Color Rendering Index) measurement test	Y	Y	--	--
11	Lux measurement	Y	Y	Y	Y
12	Fire retardant Test	Y	Y	--	--
13	Test for IP 67 protection	Y	Y	Y	--
14	Environmental tests	Y	--	--	--
15	Reliability Test	Y	--	--	--
16	Life Test	Y	Y	--	--
17	Endurance Test	Y	--	--	--
18	LM-79	Y	Y	Y	Y

Method of Testing: -

**Visual and Dimensional Check:**

The unit shall be checked visually for all dimensions as per approved design and drawing.

General workmanship should be good; all the components properly secured and sharp edges shall be rounded off. Check the marking and quality of the workmanship

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Vapi/Surat.

visually. Check the rating and make of electronic/ electrical items.

#### Checking of documents of purchase of LED

Check Document of purchase of LED lamps of approved sources viz. CREE/OSRAM/PHILIPS Lumileds/NICHIA/SEOUL/BRIDGELUX (USA) make LED used for luminaire.

#### Resistance to humidity test

This is carried out by suspending the painted panels in corrosion chamber maintained at 100% RH and temperature cycle of 42 to 48° C for 7 days and examining it for any sign of deterioration and corrosion of metal surface.

#### Insulation resistance test

The insulation resistance of the unit between earth and current carrying parts shorted together shall not be less than 2 MΩ when measured with 500 V megger.

#### HV test

Immediately after insulation resistance test, an AC voltage of 1.72 KV rms (1500 + 2 x rated voltage) of sine wave form of 50 Hz shall be applied for one minute between the live parts and frame. There shall not be any kind of break down, flashover or tripping of supply.

#### Over voltage protection

The LED Driver Shall be cut off once voltage exceeds 310V +/- 10 VAC. It shall be reconnected when supply comes within limit.

#### Surge protection

It shall withstand a surge of 10 kV at the input terminals for all types.

#### Reverse polarity

The Luminaire shall withstand polarity reversal. It shall be operated with reverse voltage for 5 minutes at maximum value of voltage range. At the end of this period, the supply shall be made correct polarity and Luminaire shall operate in a normal way.

#### Temperature rise Test:

Temperature rise Test shall be conducted at 100 V ~ with full load. The temperature

rise shall be recorded by temperature detectors mounted at the specified reference points on the body of semiconductors, capacitors and other components as agreed between purchaser and manufacturer. The maximum-recorded temperature under worst conditions shall be corrected to 55° C and compared with maximum permissible temperature (for power devices at junction). Under loading conditions as specified above, the corrected temperature of the power devices shall have a safety margin of minimum 10°C. Temperature at junction shall not exceed 100° C when corrected to 55° C. The Luminaire shall also be subjected for short time rating after continuous loading to ensure the temperature rise is within the permissible limit. The maximum temperature rise of the electronics devices on the PCBs shall be in limit for industrial grade components suitable for 85° C environment. In case of exceeding limit, use of MIL-grade component shall be considered keeping RDSO informed.

#### Ra (Colour Rendering Index) measurement test:

The lumen is the unit of luminous flux, which is equal to the flux emitted in a solid angle of one steradian by a uniform point source of one candela.

The initial reading of the chromaticity co-ordinates x & y shall be within 5 SDCM (Standards Deviation for Colour matching) from the standardised rated value as per Annex: D of IEC 60081- 1997. The initial reading of the general colour-rendering index (Ra) shall not be less than the rated value decreased by 3.

The lumen maintenance of the lamp shall not be less than 80% of the initial lumen after 20,000 burning hours and 70% of the initial lumen after 50,000 hours. The initial lumen will be taken after 100 hours aging.

Photometric test shall be conducted as per Annexure: B of IEC 60081-97.

The lumen maintenance test shall be done as per Annexure: C of IEC 60081-97.

#### Fire retardant Test:

Fire Retardant test shall be conducted as per IEC 60332-1 of the wire used in the luminaires.

#### Test for IP 67 protection:

This test shall be conducted as per IEC 60529.



#### Environmental tests (Prototype Test):

The Luminaire shall meet the following tests as prescribed in IEC-60571.

- (i) Dry heat test.
- (ii) Damp heat test
- (iii) Test in corrosive atmosphere
- (iv) Combined dust, humidity and heat test

#### Reliability Test:

The reliability can only be determined in actual service. However, the following tests shall be carried out on the prototype to simulate as close as possible, the service conditions.

There shall be no failure during this test.

The light unit shall be mounted in an oven maintained at 45° C.

- (ii) The light will be operated at the specified maximum voltage and at 45° C for a period of 100 hours.

#### Photometry Test: -

The test shall be carried out for Total Luminous Flux, Luminous Intensity Distribution, Electrical Power, Luminous Efficacy (calculation), Color Characteristics- Chromaticity, CCT & CRI etc. as per IES LM 79.

**The following tests and measurements shall be conducted to verify the LED photometric data:**

- (a) ISO lux Diagram;**
- (b) Coefficient of Utilisation curves;**
- (c) Polar Lighting Distribution Diagrams.**

**Manufacturer shall be having full glass photogenic meter in their own facility.**  
**LM79 should be witnessed by GIDC Engineer.**

#### Life Test

The lumen maintenance & life test shall be done as per IES LM 80 for LEDs.

## Endurance Test

The Luminaire shall be kept "ON" with input voltage of 250 V ~ for 200 hours. After this the Luminaire is subjected to 20,000 cycles of "ON" and "OFF", each cycle consisting of 3 seconds "ON" and 10 seconds "OFF" period. Luminaire should survive this test. Test is to be continued for 20,000 cycles, followed by performance test.

The luminaire should be tested as per IEC 60598-2-3: 2002 standards and following test reports should be submitted: -

- (i) Heat Resistance Test
- (ii) Thermal Test
- (iii) Ingress Protection Test
- (iv) Drop Test
- (v) Electrical/ Insulation Resistance Test,
- (vi) Endurance Test,
- (vii) Humidity Test,
- (viii) Electrical and Photometric Measurements Test Report (IES LM 79)
- (ix) LED Lumen Maintenance Test Report (IES LM 80)
- (x) Vibration test as per ANSI.

Note :- 100% lot for the given streetlight order will have to manufactured. 2 random samples will be selected by GIDC officials from the whole lot. Testing to be done at ERDA/UL/HYPHYSIS/NABL If testing fails, whole lot gets rejected.

### **Safety:**

The Luminaire shall comply with the safety requirements as per IEC 61195.

**All Tests defined for acceptance other than LM 79 and LM 80 are allowed to carry out at Manufacturer works. The offered LED streetlight luminaires must have passed IES LM 79, IES LM 80 from UL/ ERTL laboratory only and attested copies of the test certificates must be attached.**

**IES file of the tested product will be compared with the design submitted after order and both should match.**

**One (1) copy of all test certificates and reports certified by accredited laboratories shall be furnished to GIDC.**

#### INFRINGEMENT OF PATENT RIGHTS

GIDC shall not be responsible for infringement of patent rights arising due to similarity in design, manufacturing process, use of the components, used in design, development and manufacturing of these light luminaires and any other factor which may cause such dispute. The responsibility to settle any issue rises with the manufacturer.

#### MARKING:

The following information shall be distinctly and indelibly engraved on the housing: Client's name – GIDC, Surat.

Year of

manufacture

Batch Number

Serial Number

Name of Manufacturer (Engraving only, stickers not allowed) Rated wattage and voltage (input)

LED Make

Input frequency Marking Like CE, CB.

#### GUARANTEED TERMS & CONDITIONS: -

In addition to meeting the performance requirements for the minimum period of 60 months, the manufacturer shall provide a written comprehensive guarantee against defects in materials and workmanship for the modules/ arrays for a period of 60 months after acceptance of the modules/ arrays. Replacement modules shall be provided promptly after receipt of modules that have failed at no cost to the Owner.

The bidder shall stand guarantee for full replacement of the luminary due to any failure in 5 years, from the date of purchase. Failures shall include failure/ deterioration of LEDs in terms of performance like guaranteed luminous efficiency, high junction temperature, and abnormal lamp lumen depreciation, deterioration in LED including its lens, driver unit and quality of light. The vendor shall replace the entire LED module/ array of the defective luminaire with new module /array free of

cost immediately.

In the event of single LED source getting defective, the entire array/ module shall be replaced by the bidder by the new fittings.

The bidder shall stand guarantee against lumen depreciation beyond 20%. Vendor shall ensure that LED module/ array shall deliver at least 70% of initial lumens, when installed for a minimum of 50,000 hours, failing which bidder shall carry out necessary rectification free of cost to the entire satisfaction of GIDC.

The bidder shall maintain appropriate level of inventory in India for immediate replacement of a defective/ malfunctioning luminary/ LED module/ array/ driver etc.

#### WARRENTY:-

Bidder shall have to offer the following minimum warranty:

The LED Light Fixture supplier / manufacturer shall provide a warranty against all defective materials and workmanship up to Five (5) years after the date of Completion of the Works certified by GIDC.

The Deed of extended warranty shall be submitted upon the acceptance of the LED Light Fixture.

Provide five-year replacement warranty for defective or non-starting LED source assemblies and all drivers

Provide a five-year warranty for luminaries exhibiting inadequate lumen maintenance at the end of the warranty period in compliance with the following table:

A	<b>L 70 lifetime claim</b>	<b>Min. Luminant @ 5 Year</b>
	30,000 Hours	92.50%
	50,000 Hours	85.50%
	1,00,000 hours	80.00%

luminaire dirt depreciation (LDD) factor may be included in the above calculation, such a value be determined by mutual agreement between GIDC and the manufacturer, consistent with local ambient environmental conditions and practice

A luminaries dirt depreciation (LDD) factor may be included in the above calculation, such a value be determined by mutual agreement between GIDC and the manufacturer, consistent with local ambient environmental conditions and practice

A monitoring programme to implement above will be determined by mutual agreement between GIDC and the Bidder. The Costs of the monitoring programme over the five-year warranty period will be borne by the bidder, unless agreed otherwise by GIDC and the Bidder.

The warranty shall cover all LED light sources (Packages or modules/arrays) including but not limited to the LED die, enclosure, and phosphor if the expected life of the luminaire system is not maintained net of LDD, the bidder shall replace the light source(s) and /or luminaries as needed.

#### Photometric information

The proponent needs to submit the following photometric Photometric modelling results, preferably within a LM79 report, from an independent accredited laboratory showing generic candlepower traces and ISO foot candle plots for the proposed luminaries' product.

1. Photometric information data and diagrams that model the luminance flux distribution of the proposed luminaire referencing the site characteristics given in above. The proponent should consider the following during the modelling exercise
2. Such modelling should verify that the products proposed luminaire will meet Indian Roadway lighting standard IS 1944, which specifies average luminance (Eavg) and uniformity (Emin/Eavg) for roads at the above sites.
3. Use industry accepted, standardized software like Dialux for the above modelling while modelling, a maintenance factor of 0.8 should be used
4. Note the proponent needs to submit a soft copy of the IES file of the proposed luminaire along with the bid

#### Lumen maintenance statement

1. The proponent must submit a lumen maintenance statement that estimates how many operating hours can be expected from the proposed luminaire product until its light output declines to 70% of its initial output (L70) given the specific climactic character, including

extremes of temperature and high humidity, associated with the than local condition.

2. The lumen maintenance statement should also clearly explain that how or what method was used to determine the rated life time
3. Describe in details the thermal management how the physical and thermal design of the luminaire will prevent the LED chips from overheating on extremely hot days
4. Other trials of pilot projects submit information and contacts for other relevant trials in which the proponent's proposed luminaire product or similar products sold by the agency have been tested in the field
5. Such information should include LM80 report for the LED chip package employed in the product illuminance measurements, if available, taken over a minimum of two years of operation from pilot project the proposed luminaire product, or a similar luminaire product, in the field.

**Item No.7:**

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.(h) 2.50 Sq.mm 3 core round PVC sheathed

Mode of Measurement: - On Mtr Basis.

**Item No.8:**

Providing and erecting XLPE (IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables (c) 4 core 10 Sq. mm

Mode of Measurement: - On Mtr Basis.

Work shall be carried out as per the description of the item and as per instruction of engineer in charge. The sample shall be got approved before execution.

This section shall cover supply, installation, connection, termination, testing and commissioning of medium voltage cables. The cables shall be installed either underground or on cable tray, or on cable support, or in purpose made built up trench or any other method as indicated in the relevant drawings. As per instruction of Engineer In charge. In this work the cable shall be required for providing power connection to the street light pole.

The copper flexible cable shall be provided for connection from the pole box to the luminaries and it shall be of ISI marked only and approved list of make.

**CODES AND STANDARDS**

The design, manufacture, testing and supply of the brand new cables under this specification shall comply with the latest revisions including amendments of the following standards.

IS: 1554-I : PVC insulated heavy-duty cables for working Voltages up to 1100 Volts. IS: 3961-II : Recommended current ratings for cables.

IS: 8130 : Conductors for insulated cables.

IS: 583 : PVC insulation and sheath of electric cables. IS: 10810 : Test procedures for cables.

IS: 10418 : Specification for drums for electric cables.

IS: 7098 - I: Specification for cross linked polyethylene Insulated PVC sheathed cables for working voltages up to and

including 1100 volts. IS: 3975 : Mild steel wire, strips, and tapes for armoring of cables.

#### **GENERAL**

MV cables shall be supplied, inspected, laid, tested and commissioned in accordance with drawings, specifications, relevant Indian standards specifications and cable manufacturer's instructions. The cable shall be delivered at site in original drums with manufacturer's name clearly written in the drum.

The recommendations of the cable manufacturer with regard to jointing and sealing shall be strictly followed.

#### **MATERIAL**

The MV cables shall be XLPE insulated Aluminum / Copper conductor armored cable conforming to IS: (IS: 7098 (I) - 88) laid in trenches, ducts and underground as shown in drawings.

#### **TECHNICAL REQUIREMENTS**

Power cables shall be 1100 volts grade, multi core constructed as per IS: (IS: 7098 (i) - 88) as follows. Stranded aluminum / copper conductor

Extruded PVC insulation cores

laid up Extruded PVC inner

sheath Galvanized steel wire

armored Extruded PVC outer

sheath

Conductor shall be hard drawn aluminum / copper wires grade H2 as per

IS: 8130 Insulation shall be of XLPE type - A as per IS: 7098-1-88 and its

latest version.

The cables shall be suitable for laying in racks, ducts, trenches, conduits and

underground-buried installation with uncontrolled back fill and chances of flooding of water.

Cables shall be designed to withstand all mechanical, electrical and thermal stresses under steady state and transit operating conditions. The cable should withstand the system fault current with insulation screen / armour insulated at one end. Bidder shall furnish calculations in support of capability of cables for 3 phase faults. Armour shall be designed to withstand the earth fault currents. The current carrying capacity of armour shall not be less than the earth fault current values of the system.

Progressive automatic in line sequential marking of the length of cables in meters at every one meter shall be provided on the outer sheath of all cables and also the marking of property of GIDC, Surat.

Cables shall be supplied in non-returnable wooden drums as per IS: 10418. Both ends of the cables shall be properly sealed with PVC / rubber caps so as to eliminate ingress of water during transportation, storage and erection.

#### **INSPECTION**

All cables shall be inspected upon receipt at site and checked for any damage during transit.

While selecting cable routes, corrosive soils, ground surroundings sewage effluent etc. shall be avoided, where this is not feasible, special precautions as decided by the Engineer In charge particularly for HV cable installations, shall be taken. Street lighting and service line to each pole should have separate route.

#### **LAYING METHODS**

Cables shall be laid direct in Doubled walled corrugated pipes.

Joint in the cable throughout its length of lying shall be avoided as far as possible and if unavoidable, prior approval of site Engineer shall be taken. If allowed, proper straight through epoxy joint shall be made without any additional cost. A loop of one Mtr. Of each length of cable shall be left near each street light pole. Also a loop of one meter shall be provided on both end of the cable. This additional length shall be used for fresh termination in future. Cable for this loop shall be paid for supply and laying. During the preliminary stages of laying cables, consideration should be given to proper location of the joint position so that when the cables are actually laid, the joints are made in the most suitable places. As far as possible, water-logged locations, carriage ways, pavements, proximity to telephone cables, gas or water mains, inaccessible places, ducts, pipes, racks etc., shall be avoided for joint position.

#### **LAYING DIRECT IN GROUND**

##### **General**

This method shall be adopted where the cable route is through open boundary, along roads lanes etc., and where no frequent excavations are encountered and where re excavation is easy possible without affecting other services.



**TRENCHING:****Width of trench:**

The width of trench shall first determine on the following basis. The minimum width of trench for laying single cable shall be 35 Cms.

Where more than one cable is to be laid in the same trench, in horizontal formation, the width of trench shall be increased such that the inter-axial spacing between the cables, except where otherwise specified shall be at least 20 Cms. There shall be a clearance of at least 15 Cms between axis of the end cables and the sides of the trench.

**Depth of Trench:**

The depth of trench shall be determined on the following basis.

Where cables are laid in single tier formation, the total depth of trench shall not be less than 90 Cms. for cables up to 1.1 KV and 120 Cms. for cables above 1.1 KV

When more than one tier of cables is unavoidable and vertical formation of laying is adopted, depth of trench in above shall be increased by 30 Cms for each additional tier to be formed.

**Excavation of trenches:**

The trenches shall be excavated in reasonably straight lines. Wherever there is a change in direction, suitable curvature shall be provided complying with the requirements of the manufacturer.

Adequate precautions should be taken not to damage any existing cable(s), pipes or other such installation in the proposed route during excavation. Wherever bricks, tiles or protective covers or bare cables are encountered, further excavation shall not be carried out without the approval of the Engineer In charge.

If there is any danger of a trench collapsing or endangering adjacent structures, the sides should be well shored up with timbering and / or sheeting as the excavation proceeds. Where necessary, these may even be left in places when back filling the trench

Excavation through lawns shall be done in consultation with the staff of the department

The bottom of the trench shall be a leveled and free from stone, brickbat etc. The trench shall then be provided with a layer of clean, dry sand cushion of not less than 8 Cms in depth

**Laying of cable in trench:**

At the time of issue of cable for laying, the cores shall be tested for continuity and insulation resistance

When the cable has been properly straightened, the cores are tested for continuity and insulation resistance and the cable is then measured. The ends of all lead sheathed cables shall be sealed with solder immediately. In case of XLPE cables moisture seal tape shall be used for this purpose.

Cable laid in pipe in a single tier formation shall have a covering of clean, dry sand of not less than 15 cms above the base cushion of sand before the protective cover is laid.

In the case of vertical multi-tier-formation after the first cable has been laid, a sand cushion of 30 Cms shall be provided over initial bed before the second tier is laid. If additional tiers are formed, each of the subsequent tiers also shall have a sand cushion of 30cms as stated above. The top most cable shall have final sand covering not less than 15 Cms i.e., 7.5 CMS below & 7.5 CMS above the cable before the protective cover is laid.

At the time of original installation, approximately 5 Mtrs. of surplus cable shall be left on each end of the cable and on each side of underground joints (Straight through / Tee / Termination) and at entries and places as may be decided by the Engineer in charge. The surplus cable shall be left in the form of a loop. Where there are long runs of cable length, loose cable may be left at suitable intervals as specified by the Engineer In charge.

Unless otherwise, specified, the cables shall be protected by second class bricks of not less than 23 Cms. x 10 Cms. x 7.5 Cms. (Nominal size) protection covers placed on top of the sand, (Bricks to be laid breadth wise) or the full length of the cable to the satisfaction of the Engineer In charge. Where more than one cable is to be laid in the same trench, this protective covering shall cover all the cables and projects at least 5 Cms. over the sides of the end cables or as per drawing.

#### **BACK FILLING**

The trenches shall be then back filled with excavated earth free from stones or other sharp-edged debris and shall be rammed and watered, if necessary, in successive layers not exceeding 30 Cms. Unless otherwise specified, a crown of earth not less than 50 mm in the center and tapering towards the sides of the trench shall be left to allow for subsidence. The crown of earth however should not exceed 10 Cms. so as not to be a hazard to vehicular traffic. The temporary re-installment of roadways should be inspected at regular intervals, particularly during the wet weather, and any settlement should be made good by further filling as may be required.

After the subsidence has ceased, trenches cut through roadways or other paved areas shall be restored to the same density and material as the surrounding area and repaved to the satisfaction of the Engineer In charge.

Where road turns or lawns have been cut or kernald stones displaced, the same shall be repaired and made good except surfacing. Asphaltting to the satisfaction of the Engineer and all surplus earth or rock removed to places as specified.

#### **ROUTE MARKER**

Route marker shall be provided along straight runs of the cable at locations approved by the Engineer In charge and generally at intervals not exceeding 30 Mtr. Markers shall also be provided to identify change in the direction of the cable route and also for location of every underground joint.

Route markers duly marked with "GIDC" shall be made out of 230 mm x 120 mm x 5 mm Iron Clad, bolted on to 35mm x 35mm x 6mm angle iron 60cm, long, flushed with ground in cement foundation as directed by the Engineer in-charge. Such plate marker shall be mounted parallel to a 0.5 Mtr. or so away from the edge of the trench.

The working cable and other details such as voltage grading size etc. as furnished by the Engineer in charge shall be inscribed on the marker.

At every cable straight through joint, marker shall be provided with tag plates both upstream and downstream of the joint.

#### **LAYING IN PIPES / CLOSED DUCTS**

In locations such as road crossing, entry to pump house on poles, in paved areas etc. cables shall be laid in pipes or closed ducts.

Stoneware pipes, G.I., C.I. or spun reinforced concrete pipes shall be used for such purposes. In the case of new construction, pipes as required, shall be laid along with the civil works and jointed as per the instructions of the Engineer In charge. The size of the pipe shall be as per schedule B for more than one cable. These pipes shall be laid directly in ground without any special bed except for SW pipe which shall be laid over 10 cm thick cement concrete 1:5:10 (1 cement: 5 coarse sands: 10 graded stone aggregate of 40 mm nominal size) bed. No sand cushioning or tiles need be used in such situations. Unless otherwise specified, the top surface of pipes shall be at a minimum depth of 1.0 m from the ground level when laid under roads, pavements etc. Where steel pipes are employed for protection of single core cables feeding AC load, the pipe should be large enough to contain both cables in case of single-phase system and all cables in the case of poly phase system.

Pipes for cable entries shall slope downwards and suitably sealed to prevent entry of water. Further, the mouth of the pipes at the road-crossing end shall be suitably sealed to avoid entry of water.

All chases and passage necessary for the laying of service cable connections to street poles shall be cut as required, and made good to the original finish and to the satisfaction of the Engineer In charge.

Cable grips / draw wires and winches etc. may be employed for drawing cables through pipes closed ducts etc.

#### **TESTING**

Prior to laying cables and prior to energizing the cables, following tests shall

be carried out Insulation resistance test between phases, phase to neutral and phase to earth.

Continuity test of all the phases, neutral and earth continuity conductor. Sheathing continuity test.

Earth resistance test of all the phases and neutral.

All cables before laying shall be tested with a 500 volts megger for 1.1 KV grade or with a 2,500 / 5,000 volts megger for cables of higher voltages.

All cables shall be subjected to above-mentioned tests during laying, before covering the cables by protective covers and back filling and also before the jointing operations.

All tests shall be carried out in accordance with relevant Indian standard code of practice and Indian Electricity Rules. The Contractor shall provide necessary instruments, equipment, and Labor for conducting the above test and shall bear all expenses in connection with such tests. All tests shall be carried out in the presence of the representative of the Corporation and results shall be recorded in prescribed forms.

**Item No.9 & 10:**

Providing & laying of approved make Doubled 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.

And

(c) 90 mm outer dia.

Mode of Measurement: - On Mtr Basis.

**LAYING METHODS**

Pipes shall be laid direct in ground / closed ducts, in open ducts or on surface depending on environmental conditions.

**TRENCHING:**

**Width of trench:**

The width of trench shall first determine on the following basis. The minimum width of trench for laying single cable shall be 35 Cms.

There more than one cable is to be laid in the same trench, in horizontal formation, the width of trench shall be increased such that the inter-axial spacing between the cables, except where otherwise specified shall be at least 20 Cms.

There shall be a clearance of at least 15 Cms between axis of the end cables and the sides of the trench.

**Depth of Trench:**

The depth of trench shall be determined on the following basis.

Where cables are laid in single tier formation, the total depth of trench shall not be less than 90 Cms. for cables up to 1.1 KV and 120 Cms. for cables above 1.1 KV

When more than one tier of cables is unavoidable and vertical formation of laying is adopted, depth of trench in above shall be increased by 30 Cms for each additional tier to be formed.

**Excavation of trenches:**

The trenches shall be excavated in reasonably straight lines. Wherever there is a change in direction, suitable curvature shall be provided complying with the requirements of the manufacturer.

Adequate precautions should be taken not to damage any existing cable(s), pipes or other such installation in the proposed route during excavation. Wherever bricks, tiles or protective covers or bare cables are encountered, further excavation shall not be carried out without the approval of the Engineer In charge.

If there is any danger of a trench collapsing or endangering adjacent structures, the sides should be well shored up with timbering and / or sheeting as the excavation proceeds. Where necessary, these may even be left in places when back filling the trench

Excavation through lawns shall be done in consultation with the staff of the department

The bottom of the trench shall be a leveled and free from stone, brickbat etc. The trench shall then be provided with a layer of clean, dry sand cushion of not less than 8 Cms in depth Laying of pipe in trench as directed by engineer in charge.

In locations such as road crossing, entry to pump house on poles, in paved areas etc. cables shall be laid in pipes or closed ducts.

Stoneware pipes, G.I., C.I. or spun reinforced concrete pipes shall be used for such purposes. In the case of new construction, pipes as required, shall be laid along with the civil works and jointed as per the instructions of the Engineer In charge. The size of the pipe shall be as per schedule B for more than one cable. These pipes shall be laid directly in ground without any special bed except for SW pipe which shall be laid over 10 cm thick cement concrete 1:5:10(1 cement: 5 coarse sands: 10 graded stone

aggregate of 40 mm nominal size) bed. No sand cushioning or tiles need be used in such situations. Unless otherwise specified, the top surface of pipes shall be at a minimum depth of

1.0 m from the ground level when laid under roads, pavements etc. Where steel pipes are employed for protection of single core cables feeding AC load, the pipe should be large enough to contain both cables in case of single-phase system and all cables in the case of poly phase system.

Pipes for cable entries shall slope downwards and suitably sealed to prevent entry of water. Further, the mouth of the pipes at the road-crossing end shall be suitably sealed to avoid entry of water.

All chases and passage necessary for the laying of service cable connections to street poles shall be cut as required, and made good to the original finish and to the satisfaction of the Engineer In charge.

Cable grips / draw wires and winches etc. may be employed for drawing cable through pipes closed ducts etc.

#### **BACK FILLING**

The trenches shall be then back filled with excavated earth free from stones or other sharp-edged debris and shall be rammed and watered, if necessary, in successive layers not exceeding 30 Cms. Unless otherwise specified, a crown of earth not less than 50 mm in the center and tapering towards the sides of the trench shall be left to allow for subsidence. The crown of earth however should not exceed 10 Cms. so as not to be a hazard to vehicular traffic. The temporary re-installment of roadways should be inspected at regular intervals, particularly during the wet weather, and any settlement should be made good by further filling as may be required.

After the subsidence has ceased, trenches cut through roadways or other paved areas shall be restored to the same density and material as the surrounding area and repaved to the satisfaction of the Engineer In charge.

Where road turns or lawns have been cut or kernal stones displaced, the same shall be repaired and made good except surfacing. Asphalt to the satisfaction of the Engineer and all surplus earth or rock removed to places as specified.

Pipes for cable entries shall slope downwards and suitably sealed to prevent entry of water. Further, the mouth of the pipes at the road-crossing end shall be suitably sealed to avoid entry of water.

All chases and passage necessary for the laying of service cable connections to street poles shall be cut as required, and made good to the original finish and to the satisfaction of the Engineer In charge.

Cable grips / draw wires and winches etc. may be employed for drawing cables

through pipes & loose ducts etc.

**Item No.11:**

Supplying & erecting in earthpit of minimum bore dia. 225mm size approved make Safe Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 80 mm having 80-200 Micron galvanising, Inner pipe dia of 40 mm having 200-250 Micron galvanising, connection terminal dia of 14 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover.(approved make OEM has to submit test certificate including value of earth resistance of installation.[A] For electrical installation up to 440 V

Length of Pipe - 1 Mtr

Back filling compound - 1 Nos. of Bag of 15 Kgs.

Mode of Measurement: - On Each. Basis.

**General:**

All the non-current carrying metal parts of the electrical installation and mechanical equipment's shall be earthed properly. The metal conductor, trenching cables armor and sheath; electrical panels boards; lighting fixtures; and connected by means of specified earthing system. An earth continuity conductor shall be installed with all the feeders and circuits and shall be connected from the earth bar of the panel boards; earth pin of the socket outlets and to any metallic wall plates used.

◆ Scope of work:

The scope of work shall be covers supply; laying; Earthing GI installation; connecting; testing and commissioning of:

1. Earthing station.
2. Earthing G.I./Aluminum/copper strips from earthing station to equipotential bar / Section pillar.
3. Earthing G.I./Aluminum/copper strips from earthing station to equipotential bar to lay feeder / Section pillar.
4. Bonding of Non- current carrying part and metallic parts of the electrical installation.
5. Earthing station to be provided shall comprise of earth Electrode of copper plate in earth pits, earth bus/grid of GI flats 25 mm x 6 mm and bare GI wires as earth continuity conductor.

◆ CODE AND STANDARDS.

The entire earth system shall conform to the following standards and rules as applicable.

1. IS 3043 – 1966 Code of practice for earthing.
2. Indian Electricity Act 1990.
3. Indian Electricity Rules 1956.

All codes and standards mean the latest. Where not specified otherwise the installation shall generally follow the Indian Standard Codes of practice in absence of Indian standard.

◆ GENERAL REQUIREMENT:

1. GI flat 25 mm x 6 mm strips of specified size shall directly earth Neutral of the Transformer / section pillar.
2. Enclosures and frame work of all current carrying equipment and accessories, structural steel/ columns shall be adequately earthed to a single earthing system, unless separate earthing systems are specifically stipulated. All electrical equipment shall be earthed at two distinct points.

◆ EARTH ELECTRODES IN EARTH PITS.

Plate Electrodes of copper shall be 600 X 600 X 3.15mm thick.

◆ EARTH BUS AND EARTH CONTINUITY CONDUCTOR.

1. Earth bus is a copper strip or flat of specified size interconnecting all earth electrodes.
2. Switches and power Distribution Boards shall be earthed by a copper flat strip.
3. Panels fused DBs shall be earthed by a continuity conductor, as specified. Minimum size of continuity conductor shall be 6 SWG bare soft drawn.
4. Road Lighting poles shall be earthed with GI stranded wire conductor while for lighting and power wiring bare copper conductor shall be provided unless otherwise specified to use insulated conductor.

◆ RESISTANCE TO EARTH:

The resistance to each earthing system shall not exceed 1.0 ohm to 3.0 ohm.

◆ Earthing Station:

1. Plate Electrode Earthing:

Earthing electrode shall consist of copper plate not less than 600 X 600 X 3.15 mm thick, as called for in the drawings. The plate electrode shall be buried as far as practicable below permanent moisture level but, in any case, not less than 2.5 Mts. Below ground level. Wherever possible earth electrode shall be located as near the



water tap, water drain or a down take pipe as possible, Earth Electrodes shall not be kept clear of the factory foundations and in no case shall it be nearer than 2 meters from the outdoor face of the wall. The earth plate shall be set vertically and surrounded with 150mm thick layer of charcoal dust and salt mixture 25mm GI pipe shall run from the main earth conductors shall be connected to the electrode just below the funnel, with proper terminal lugs and checks nuts of copper/brass for copper plate. The funnel over the GI pipe and earth connections houses in a masonry chamber, approximately 350-mm length X 300 mm wide and 300mm deep.

The masonry chamber shall be provided with a cast Iron hinged cover resting over a Cast Iron frame embedded in masonry.

♦ INSTALLATION AND CONNECTION:

1. The plate/ pipe electrode as far as practicable shall be buried below permanent moisture level but in no case not less than 2.5 M below finished ground level.
2. The plate /pipe electrode shall be kept clear of the building foundation and in no case; it shall be nearer by less than 2 M from outer face of the finished ground level. The plate electrode shall be installed vertically and shall be surrounded with 150 mm. thick layers of Char- coal dust and Salt mixture. 25mm. Dia. of G.I. pipe for watering shall run from top edge of the plate / pipe Electrode to the mid-level of block masonry chamber.
3. Top of the pipe shall be provided with G.I. funnel and screen for watering the earth / ground through the pipe
4. The funnel with screen over the G.I. pipe for watering to the earth shall be housed in a block masonry chamber as shown in the drawing.
5. The masonry chamber shall be provided with a cast Iron hinged cover resting over the Cast Iron frame which shall be embedded in the block masonry.
6. Construction of the earthing station shall in general be as shown in the drawing and shall conform to the requirement on earth electrodes mentioned in the latest edition of India Standard IS 3043, Code of practice for Earthing Installation.
7. The earth conductors (Strips / Wires – copper / Hot dip G.I.) inside the building shall properly be clamped /supported on the wall with Galvanized Iron clamps and Mild Steel Zinc plated screws /bolts. The conductors outside the building shall be laid at least 600 mm. below the finished ground level.
8. The earth conductors shall either terminate on earthing socket provided on the equipment

shall be fastened to the foundation bolt and/ or on frames of the equipment. The earthing connection to equipment body shall be done after removing paint and other oily substances from the body and then properly be finished.

9. Over lapping of earth conductors during straight through joints, where required, shall be of minimum 75mm long.

10. The earth conductors shall be in one length between the earthing grid and the equipment to be earthed.

◆ EARTH LEADS AND CONNECTIONS.

Earth led shall be bare copper or galvanized steel 25mm x 6 mm sizes shown on drawings. At road crossing necessary Hume pipes shall be laid. Earth led run on surface of wall or ceiling shall be fixed on saddles so that strip is at least 8 mm away from the wall surface.

The complete earthing system shall be mechanically and electrically bonded to provide an independent return path to the earth source.

◆ EQUIPMENT EARTHING.

All apparatus and equipment transmitting or utilizing power shall be earthed in the following manner. Copper / G. I. earth strips / wires shall be used unless otherwise indicated in the schedule B.

◆ POWER TRANSMISSION APARTUS.

1. Metallic conduit shall not be accepted as an earth continuity conductor A separate insulated/ bare earth continuity conductor of size 50 % minimum & maximum shall be provided.

Copper Aluminum G.I. Minimum (Sq.mm.) 2.54.06 Maximum 65100200

2. The earth continuity conductor to the drawn inside the conduit shall be insulated.

3. Nonmetallic conduit shall have an insulated earth continuity conductor of the same size as for metallic conduit. All metal junction and switch boxes shall have an inside earth stud to which the earth conductor shall be distinctly colored (Green or Green / Yellow) for easy identification.

4. Armored cable shall be earthed by two distinct earth connections to the armoring at both the ends and the size of connection being as for the metallic conduit.

5. In the case of unarmored cable, an earth continuity conductor shall either be run outside along with the cable or shall from a separate insulated core of the cable. Three phase power panel and distribution boards shall have two distinct earth connections of the size correlated to the incoming

cable size. In case of single phase DB's a single earth connection is adequate.

◆ UTILIZING EQUIPMENT:

1. All street light poles shall have an earth stud and be connected to the cable armoring using 6.5 sq.mm. Copper or equivalent unless shown otherwise. For street lighting poles planted in ground,

2.4 M long 6 SWG bare GI wire shall be coiled and buried with every fourth pole in addition to connection to cable armoring.

2. An equipment-earthing grid shall be established as shown in the drawing. All earth connections to all panels, DB's and equipment shall be connected to the nearest point of the earthing grid.

◆ TEST:

1. The entire earthing installation shall be tested per requirements of Indian Standard specification IS: 3043,

2. The following earth resistance values shall be measured with an approved earth megger and recorded.

Each earthing station      Earth continuity conductors.

3. Earth conductor resistance for each earthed equipment shall be measured which shall not exceed 1 to 3 Ohm in each case.

4. Measurements of earth resistance shall be carried out before earth connections are made between the earth and the object to be earthed.

5. All tests shall be carried out in presence of the Engineer In charge /Electrical Inspector – if required.

◆ MODE OF MEASUREMENT:

1. Provision of earthing station complete with excavation, electrode, and watering pipe. Soil, treatment, masonry chamber with cast iron cover etc. shall be treated on unit of measurement;

2. The following items of work shall be measured and paid per unit length covering the cost of the earth wires/strips clamps. Labour etc.

a. Main equipment earthing grid and connection to the earthing stations

b. Connection to the weight board, power panels, DB etc.

◆ The cost of earthing the following items shall become part of the cost of the item itself and no separate payment for earthing shall be made.

1. Isolating switches and section pillar shall form part of amounting frame, switch starter etc.

2. Light fittings form part of installation of the light fitting.

3. Conduit wiring, cabling shall form part of the wiring of cabling.

Street lighting shall form part of the street light poles.

**Item No.12:**

Drilling the road without breaking the road surface (Asphalt) for laying of cable for feeding power supply by making up to following size of holes at both ends complete. (B) Up to 150 mm bore dia

Mode of Measurement: - On Mtr. Basis.

**Item No.13:**

Making trench in soft soil of suitable width of 90 cm deep for laying cable or locating the fault all over the run and back filling the same and making the surface as normal ground.

Mode of Measurement: - On Mtr. Basis.

**Item No. 14:**

Providing and erecting Three Phase IoT GSM/GPRS Central Control & Monitoring System (CCMS) Panel for Streetlights Smart Feeder Panel with 3 Phase GSM/GPRS CCMS Streetlight Controller with LCD Display (1 Nos.). Streetlight Controller with Individual each Phase Control (Energy Saving feature) and Spare relay facility. Streetlight Controller having 10 years of reserved battery for RTC. With 50 programmable schedule, month-wise offset settable facility, Astronomic sunrise/sunset time programming in-built for year long schedule. Operating Voltage @ 440 V AC with Over Voltage & Short Circuit protection. 2 hour Battery Back-up for Streetlight Controller. Panel to have 1 Nos. of 3 Phase – Class 1 Energy Meter for Energy & Fault monitoring on CCMS Web Dashboard. Panel consisting of 3 Nos. of 3 Pole Contactors (3 x 18 A), 7 Nos. of 1 Pole Miniature Circuit Breakers (32 Amp.) for Bypass, Input / Output supply functionalities, 1 Nos. of 4 Pole Earth leakage circuit breaker for safety protection. Standard lock & key facility for Panel security. Door Switch for unauthorized access & tamper detection. Accelerometer for panel movement detection & tamper alerts. Suitable amount of Wires, Connectors, Terminal Blocks included in Panel. 16/18 gauge M S with industrial exterior powder coated PP with seven tank process RAL 7035 All weather-proof Enclosure Panel having IP65 rating. Waterproof Glands & Grounding Stand included. Dedicated IoT communication GSM/GPRS SIM Card (with minimum 5 years of recharge) for Wireless Communication with CCMS Web Dashboard. 5 Years Data Hosting & Server Charges to be included with CCMS Web Dashboard. Load status, Live analytics, Energy Meter monitoring (Parameters such as kW, kWh, PF, I, V), comparative analytics, reports generation facility. Fault detection on web dashboard. GIS Mapping of CCMS Panel on Web Dashboard. Secured MQTT Communication for Cloud. Includes Android & iOS Mobile Application. Local communication facility via Mobile Application in case of GPRS connectivity failure.

Mode of Measurement: - On Each. Basis.

**Item No.15:**

Providing & erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 25 KA. at 415 V, having normal current rating up to 25 A to 100A. with Fixed thermal & magnetic release suitable to work on A.C. supply 50 c/s. with all internal connections & complete erected in existing 16 G.M.S. housing. (Cat - III) suitable to work on AC supply with all internal connection-ICS=100% of ICU only. (1 No. per Distribution Box) (Make will be as per attached make list)

Mode of Measurement: - On Ea. Basis.

**Item No.16:**

Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.(c) 2 to 4 core 10 Sq. mm (Make will be as per attached make list)

Mode of Measurement: - On No. Basis.

**Item No.17:**

Making trench in Hard Murrum / Tar Road of suitable width of 90 cm or required depth for laying any size of cable or locating the fault all over the run and back filling the same and making the surface as normal ground.

Mode of Measurement: - On Mtr. Basis.

**Item No.18:**

Providing , erecting , fabricating the M.S. structure as per requirement on site incorporating proper size of M.S. angles,square,round, flats, bars, channels, sections complete with cutting, welding, grinding & finishing duly painted with one coat of red oxide with erection on site as per direction of engineer in charge with necessary grouting, cementing, plastering & finishing complete.

Mode of Measurement: - On Kg. Basis.

**Item No.19:**

Providing & erecting weather proof, dust & vermin proof, floor mounted front operated indoor type cubical panel board necessary IP-42 and above protection as per approval from engineer incharge made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary accesories , supporting angles/ flats channel including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of supplied switch gears, BUSBARS, suitable size of inter connecting PVC copper wire / copper-aluminium strips, rubber grommets, rib, bakelite control fuses/MCB for measuring instruments, earth bus & earth bolts, foundation flange - bolts-base Plates, sufficient nos. of hinged doors, handles with locking arrangement and rubber gasket,heavy duty end terminal connection,danger notice board,necessary ventilation,earthing strip complete. The Panel shall be painted with epoxy powder coating. (The rates excludes the cost of switchgears, bus bars, inter connecting mains & Copper Aluminium strips, meters, Fuses etc. The dimension shall be measured excluding base beams) The panel shall be supplied with following approved manufacturers with following size.(C) The standard companies switch gear shall be used and only manufacturers as per IEC 61439 for beneficial use. (iv) with 1000 mm. depth

Mode of Measurement: - On Sq. Mtr. Basis.

**Item No.20:**

Providing and Supplying ISI mark G.I. Pipes with Couplings of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyence for departmental stores, stacking etc complete (IS-1239). Heavy Duty 80 mm

Mode of Measurement: - On RMtr. Basis.

**Item No.21:**

Agency has to do successful operation and maintenance of Street light network by using their manpower, material, tools & tackles etc. for 5 Years Operation & Maintenance. Payment will be released monthly based on certificate of successful operation and maintenance of street light network by DEE[M&E], GIDC, Surat in this work. Total Quantities are as follows: Operation of 1640 poles for 60 months i.e.  $1640 \times 60 = 98400$ .

**Note:**

**Bill of Item No. 21 of schedule B:-** RA Bill of item no.21 will be release quarterly after successful completion of operation of streetlight network each month from actual date of completion and each month report of successful completion of operation of street light network must be certified by DEE[M&E],GIDC, Surat. If, Operation work is not satisfactory done by Agency, payment for that year will not be released.

Mode of Measurement: - On Pole-Month. Basis.

**LIST OF APPROVED MAKE/VENDOR OF ITEMS FOR STREETLIGHT**

SR. NO.	LIST OF ITEMS	APPROVED MAKES
1	STREETLIGHT POLE	Bajaj/Utkarsh/Surya/Transrail/Valmont/KP Green
2	STREETLIGHT BRACKET	FABRICATED FROM M.S. ERW "B" CLASS PIPE MANUFACTURED AS PER IS: 2713: 1980 or as per make of streetlight pole.
3	STREET LIGHT FIXTURE [LED Light]	Wipro/ Crompton/ Surya/ Philips/ Bajaj/Lighting Technologies/Litson/ Helonix/ Jaquar.
4	XLPE ARMOURED CABLE	Polycab/ Havells/Rr Kabel/Kei.
5	LUG	Dowell's / Ismail/ 3 - D/ Jainsan
6	GLAND	Comet/ Hmi/ Siemens.
7	MCB/MCCB	Legrand/ Havells/ L&T/ C&S / Schneider Electric/ Siemens.
8	FR PVC INSULATED WIRE/Cables	Polycab/ Havells/ Rr Kabel.
9	DOUBLE WALL CORRUGATED (DWC) POLYTHINE PIPE	Duraguard / Jain Irrigation/Gemini.
10	CCMS Panel	Memighty/ BNN Power/ KAKATIA/OLECTR.

***If Agency want to use other brand from above mentioned list, he must take approval of Executive Engineer (M&E), GIDC, SURAT and also provide valid reason for the change in Make.***

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Surat.

**B-1 Agreement**

Signature of Contractor

Executive Engineer (M&E)  
G.I.D.C., Surat.