Notice Inviting On-line Tender

Details about Tender:

Department Name	U. T. of DNH & Daman & Diu
Circle/Division	Ex. Eng., P.W.D., W.D-I, Daman.
IFB No / Tender Notice No.	**24/2020-21.**
Name of Project	**PROVIDING DECORATIVE STREET LIGHTS AT DAMAN DISTRICT.**
Name of Work	**PROVIDING DECORATIVE STREET LIGHTS AT DAMAN DISTRICT.**
Estimated Contract Value (INR)	**Rs.22,21,44,373/- (Twenty two Crore Twenty One Lakhs Forty Four Thousand Three Hundred Seventy Three only)**
Period Of Completion(in Months)	**18 Months**
Bidding Type	Open
Bid Call (Nos)	1
Tender Currency Type	Single
Tender Currency Settings	Indian Rupee(INR)
Joint Venture	Not Applicable
Rebate	Not Applicable

Amount Details

Bid Document Fee :	**Rs.1500/-(One Thousand Five Hundred Only)**
Bid Document Fee Payable To :	Ex. Eng., P.W.D., W.D-I, Daman.
Bid Security/EMD (INR) :	**Rs.32,21,444/- (Thirty Two Lakhs Twenty One Thousand Four hundred Forty Four Only)**
Bid Security/EMD In Favour Of :	Ex. Eng., P.W.D., W.D-I, Daman.

Tender Dates

Bid Document Downloading Start Date	**Automatic System Generated**
Bid Document Downloading End Date	**24/07/2021; up to 14:00 hrs.**
Pre Bid Meeting	**17/07/2021 at 15: PM**
Last Date & Time for Receipt of Bids	**24/07/2021; up to 15:00 hrs.**
Bid Validity Period	90 Days
Remarks	Document attached (Please refer the Document before uploading the tender)
Bid Opening Date	**24/07/2021 at 16.00 hrs., if possible.**

Other Details

Officer Inviting Bids :	Ex. Eng., P.W.D., W.D-I, Daman.
Bid Opening Authority :	Ex. Eng., P.W.D., W.D-I, Daman.
Address :	O/o the Ex. Eng., P.W.D., W.D-I, 2nd Floor, Multi Office Complex, Near Moti Daman Market, Moti Daman.
Contact Details :	0260 - 2230926, 2230422.
Office E-mail ID:	eepwd-dmn-dd@nic.in

N O T E

The Book of General Conditions of contract for C.P.W.D. works 2014 & in Tender Documents the word of Sale tax / VAT (except service tax), purchase tax, turnover tax, Central/State Excise/Custom Duty, etc may be read as GST.

NIT

Name of work: Providing decorative street lights at Daman.

Estimated Cost:- Rs. 22,21,44,373/-

Earnest Money:- Rs.32,21,444/-

Period of Completion:- 18 Months including monsoon

Defect & Maintenance Liability Period: 5 Years from the date of Final Completion of Work.

NIT No. :- - - - - - -- - - - - -- - - - - -- - - - - -- - - - - -

INFORMATION AND INSTRUCTIONS FOR CONTRACTORS FOR e- TENDERING FORMING PART OF NIT AND TO BE POSTED ON WEBSITE

1. Information and instructions for Contractors will form part of NIT and to be uploaded On **https://ddtenders.gov.in** .

2. The intending bidder must have digital signature to submit the bid.

3. The Bid Document as uploaded can be viewed and downloaded free of cost by anyone including intending bidder.

4. The Earnest Money of **Rs.32,21,444/-**Drawn in favour of Executive Engineer, PWD, Work Division-1, Moti Daman in the shape of FDR/~~Demand Draft~~ shall be scanned and uploaded to the e-Tendering website within the period of bid submission. It is mandatory to submit tender fees and EMD online failing which the price bid of that agency will not be opened online and Physical submission of such scanned documents shall reach to office of the **Executive Engineer** within 3 (three) working days after closing of online bidding. A part of Earnest Money is acceptable in the form of Bank Guarantee also. In such cases 50% of the Earnest Money or Rs. 20 Lakhs whichever is less shall have to be submitted in shape of FDR/Demand Draft prescribed above as and balance can be submitted in form of Bank Guarantee from a Nationalized Bank.

5. Draft information and instructions for Contractors for e-Tendering where bids are to be inviting on Single stage two **packet bid system** are enclosed as **Annexure - 20A.13.2.**

6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.

8. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.

9. Certificate of Financial Turn Over: At the time of submission of bid contractor may upload Affidavit/ Certificate from CA mentioning Financial Turnover of last 3 years, ending 31st march of previous financial year or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

10. It is mandatory to fill details / upload scanned copies of all the documents such as VAT registration/Sales Tax registration / GST registration as stipulated in the bid document. If such document is not uploaded his bid will become invalid and cost of bid document & processing fee shall not be refunded.

11. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the contractor the bid shall become invalid and cost of bid document and processing fee shall not be refunded.

12. Contractor must ensure to quote rate of each item.

13. The contractor shall guarantee the installation / work for a period of 60 months (including maintenance period) from the date of issue of completion certificate. Any damage or defect that may arise or lie undiscovered at the time of issue of completion certificate, connected in any way with the equipment or materials supplied by him or in the workmanship shall be rectified or replaced by the contractor at his own expense as deemed necessary by PWD or in default, PWD may cause the same to be made good by other workmen and deduct expenses (of which the certificate of PWD shall be final) from any sums that may be the or at any time thereafter, become due to the contractor or from his security deposit, or the proceeds of sale thereof, or of a sufficient portion thereof.

    At the end of the defects liability period the contractor shall submit a written application for release of security deposit. PWD shall release the money only after ensuring that all the defects have been rectified by the contractor satisfactorily.

    However incase of contracts involving maintenance of building and services work after construction of same building work beyond defect liability period, 50% of performance Guarantee shall be retain as security deposit. The same shall be returned year wise proportionately.

ANNEXURE-20A.13.2

(Amended as per MAN-224-C)

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE (Applicable for inviting bids on three bid system)

Executive Engineer, PWD, Work Division-1, Moti Daman **on behalf of the President of India** invites **online** the Item rate bid from **firms/contractors** of repute in **Single Stage two packet bid systems** for the following work:

S.No.	NIT No.	Name of work & Location	Estimated Cost put to bid (in Rs.)	Earnest Money (in Rs.)	Defect & Maintenance Liability	Last date and time of submission of technical and financial bid	Period during which EMD, Cost of Bid Document, E-Tender Processing Fee and other Documents shall be submitted	Time & date of opening of technical bid (if Possible)	Period of Completion
1	2	3	4	5	6	7	8	9	10.
1		**Name of work: Providing decorative street lights at Daman.**	Rs. 22,21,44,373/-	Rs. 32,21,444/-	Five years from date of Final completion of work.	**24/07/2021 Up to 2:00 pm**	**24/07/2021 After last date & time of submission of bid and upto 2:00 pm on**	**24/07/2021 At 4.00 pm**	**18 Months**

NOTE: The Defect & Maintenance Liability Period provided in the above table shall apply with pursuant to the clause 17 of General Condition of Contract and Article 6 of the Integrity Agreement as per the General Condition of Contract.

1. **PREQUALIFICATION CRITERIA FOR THE TENDERER**

1. The Bidder should be Manufacturer of LED street light luminaires/ poles of **approved makes from Neri, Keselec, Rosa, Simes, and Ligman** or as approved by the Engineer-in-charge or their authorized dealer/channel partner (specific authorization letter from the manufacturer required).
2. If Bidder is other than Luminaire Manufacturer, he should produce authorization & Technical support letter from Luminaire manufacturing company to quote their particular model.
3. Details of the proposed luminaire shall be submitted.
4. One year Warranty letter as per technical specification from bidder along with manufacturer Warranty letter.
5. Demand Draft/Pay Order/Bank Guarantee of 18 months in favour of PWD only to be forwarded towards EMD of Rs. _____/- ( ).
6. Demand Draft/Pay Order in favour of PWD only to be forwarded towards non-refundable Tender Fee.
7. The Bidder must have an experience of similar nature works and must have carried out such work within last 7 years ending last day of month previous to the one in which applications are invited. All certificates/evidences shall be duly attested / certified. All work / experience details should be furnished with attested copies.("similar nature works" signifies supply/providing & erecting work of Streetlight/ outdoor luminaires/ decorative street lights).

1. Firms/contractors who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted. Following are initial criteria for eligibility.

(a) Should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of last date of submission of tender.

Three similar completed works costing not less than the amount equal to 40% of the Estimated Project Cost.

or

Two similar completed works, costing not less than the amount equal to 60% of the Estimated Project Cost.

or

One similar completed work of aggregate cost not less than the amount equal to 80% of the Estimated Project Cost.

And

(ii) One Completed work of any nature (either part of (i) above or a separate one) costing not less than the amount equal to 40% of the Estimated Project Cost with some Central Government Department/State Government Department/Central Autonomous Body/Central Public Sector undertaking/ State Autonomous Body/ State Public Sector undertaking / City Development Authority / Municipal Corporation of city formed under any act by central / state Government and published in Central / State Gazette.

The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for tender.

NOTE: TDS (Tax deducted at sources) certificate for private works shall be enclosed other than Govt. works for above mention criteria.

(b) Average annual **financial turnover** on construction works should be 50% of the Estimated Project Cost during the immediate last three consecutive financial year. (Scanned copy of certificate from CA to be uploaded).

(c) Should not have **incurred any loss** in more than two years during the last five years ending 31st March 2021. (Scanned copy of certificate from CA to be uploaded).
(d) The applicant should have a solvency of amount equal to 40% of the Estimated Project Cost certified by his Bankers.

2. The bidder should not have been blacklisted by any Central Government/State Government Offices/PSUs etc and self-certificate is to be scanned and uploaded.

3. The intending bidder must read the terms and conditions of Form **CPWD-6** carefully. He should only submit his bid if he consider himself eligible and he is in possession of all the documents required.

4. Information and Instructions for bidders posted on website shall form of bid document.

5. The bid document consisting of indicative drawings specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from **website https://ddtenders.gov.in** free of cost.

6. But the bid can only be submitted **after filling the EMD (F.D.R.)** in favour of **Executive Engineer, PWD, Work Division-1, Moti Daman and other documents as specified.**

e-Tender Processing Fee - Rs. 1,500/- (No refundable)shall be payable to inform of DD in favour of Executive Engineer, PWD, Work Division-1, Moti Daman.
7. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

8. The intending bidder must have valid digital signature to submit the bid.

9. **Certificate of Financial Turn Over:** At the time of submission of bid contractor may upload Affidavit/ Certificate from CA mentioning Financial Turnover of last 3 years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

10. Contractor must ensure to quote rate of each item.

11. The technical bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.

12. **Pre Bid conference** shall be held at the office of Executive Engineer, PWD, Work Division-1, Moti Daman on **17/07/2021**to clear the doubts of intending bidders, if any.

13. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

14. The bidder has to furnish three affidavits as follows.

a) I/We ……. S/o …… R/o …….. undertake and confirm that eligible similar works has /have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be debarred for tendering in Executive Engineer, PWD, Work Division-1, Moti Damanin future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

b) I/We…… S/o……R/o…….. hereby declare that:-

i) I have submitted the requisite EMD amount, scanned copy uploaded

ii) In case of my tender is not accepted as per terms & condition of NIT and for any refund is made to me, the refund may please be made to my account as per details given below:-

A. Name of agency:- ……..
B. Bank, Branch code, Place details etc:-…….
C. Account No…….
D. IFSC code No……
E. UTR/RTGS No……

Executive Engineer, PWD, Work Division-1, Moti Daman shall not be responsible in any way for none crediting of EMD/amount in the account of Executive Engineer, PWD, Work Division-1, Moti Daman by due date and time as mentioned in NIT.

c) I/We …… S/o……. resident of ……. Hereby solemnly affirm and declare as under:-

i) That I am sole proprietor/Partner of M/s…….. , R/o…….

List of documents to be scanned and uploaded within the period of bid submission.

1. Certificates of Work Experience and other details as per Performa A to H.
2. Certificate of Financial Turnover and Profit and loss details from CA.
3. Bank Solvency Certificate.
4. Any other Document as specified in the press notice.
5. Affidavit as per provisions of CPWD-6.
6. Copy of bidder Pan Card & GST.
7. i.) Copy of FDR/ Bank Demand Draft/ bank guarantee if any towards EMD
   ii) Registration certificate under Moti Daman (UT) Vat-2004 (shall be furnish by the agency within 15 days from the date of acceptance of tender) or Registration under Any new / prevailing Tax Law as per GOI / Local Authority at the time of bidding.
   iii) An affidavit that VAT and GST return have been filed.
   vi) Affidavit regarding work not executed through another agency.

8. The Tenderer shall also have to attach following documents along with technical bid of the tender.

a) Valid Electrical Contractor License.
b) If Bidder is other than Luminaire Manufacturer, Bidder shall be registered with PWD or any other Government/Semi Government body for Rs. Lacs & above Class. Certified copy shall be attached
c) Organization setup.
d) Copy of last 3 Years Income Tax Return.
e) GST Registration.
f) Proof of Financial Capability.
g) PF Registration Certificate

FORM FOR EARNEST MONEY (BANK GUARANTEE)

WHEREAS, contractor..... (Name of contractor) (hereinafter called "the contractor") has submitted his tender dated ..... (date) for the construction of ..... (name of work) (hereinafter called "the Tender") KNOW ALL PEOPLE by these presents that we ..... (name of bank) having our registered office at ..... (hereinafter called "the Bank") are bound unto Executive Engineer, PWD, Work Division-1, Moti Daman, in the sum of Rs. ..... (Rs. In words .....) for which payment well and truly to be made to the said Engineer-in-Charge the Bank binds itself, his successors and assigns by these presents.
SEALED with the Common Seal of the said Bank this .....day of 2018

THE CONDITIONS of this obligation are:

(1) If after tender opening the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender;

(2) If the contractor having been notified of the acceptance of his tender by the Engineer-in- Charge:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required; OR

(b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor, OR

(c)fails or refuses to start the work, in accordance with the provisions of the contract and Instructions to contractor, OR

(d)fails or refuses to submit fresh Bank Guarantee of an equal amount of this Bank Guarantee, against Security Deposit after award of contract.

We undertake to pay to the Engineer-in-Charge up to the above amount upon receipt of his first written demand, without the Engineer-in-Charge having to substantiates his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by his is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date* ..... after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the Engineer-in-Charge, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE ..... SIGNATURE OF THE BANK

WITNESS ..... SEAL
(SIGNATURE, NAME AND ADDRESS)
*Date to be worked out on the basis of validity period of 6 months from last date of receipt of tender.

SECTION-I

TECHNICAL BID DOCUMENT
BRIEF PARTICULARS OF THE WORK

1. **Providing decorative street lights at Daman.**

2. Work shall be executed according to **General Conditions of Contract for CPWD Works 2019** provided separately. The applicant may also download general conditions from website of CPWD.

SECTION-II
INFORMATION & INSTRUCTIONS FOR APPLICANTS

I. General:

1 Letter of transmittal and forms for deciding eligibility are given in Section III.

2. All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars / queries are not applicable in case of the applicant, it should be stated as "not applicable". The applicants are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the PQ application being summarily disqualified. Application made by telegram or telex and those received late will not be entertained.

3. The application should be typewritten. The applicant should sign each page of the application.

4. Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialing, dating and rewriting. Pages of the eligibility criteria document are numbered. Additional sheets, if any added by the contractor, should also be numbered by him. They should be submitted as a package with signed letter of transmittal.

5. References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the applicant should be signed by an officer not below the rank of **Executive Engineer or equivalent**.

6. After opening of the Technical bids, **Executive Engineer** shall prepare a list of deficiencies found in the bids of each bidder vis-a-vis requirements as per NIT within one week and send these lists to individual bidders by Speed Post with a request to furnish required documents within one week of receipt, failing which it will be presumed that they do not have any further documents to furnish and decision on bids will be taken accordingly. (Added vide OM DG/MAN/257dt. 28.12.2012)

7. The applicant may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the employer.

8. Any information furnished by the applicant & found to be incorrect either immediately or at a later date, would render him liable to be debarred from tendering / taking up of work in PWD, Work Division-1, Moti Daman. Such applicant will be debarred from tendering in PWD, Work Division-1, Moti Daman and 50% of EMD shall be forfeited.

9. The contractor shall carry out performance tests of entire installation as per standard specifications before the work is finally accepted and nothing extra whatsoever shall be payable to the contractor for the tests.

10. The contractor shall be responsible to arrange at his own cost all necessary T&P required for the execution of work.

11. The contractor shall make his own arrangement for water and temporary electric connections, if required, and make necessary payment for it direct to the department concerned.

12. The contractor shall be deemed to have fully acquainted himself with the nature and extent of the work and working conditions at site before submitting the tender. The work shall be executed as per preference of items approved by Engineer-in-charge. If the materials, drawing, designs etc. are not available due to any conditions the programme of the contractors shall be modified accordingly and no compensations/damages shall be payable.

13. The contractor shall take all safety measures precautions by exhibiting necessary caution boards, red flags, red lights, and barriers to avoid any accident during execution of work. The contractor shall be responsible for all damages and accident due to negligence on his part. The contractor shall also provide helmets, safety belts etc. required for labours.

14. No payment will be made to the contractor for damages caused by rains or other natural calamities or riots during execution of the work and no claims on this account will be entertained.

15. The rates of all items of work shall, unless clearly specified otherwise are including cost of all labour, material and other inputs involved in the execution of the item.

16. The Mandatory tests required for materials shall be got done from the labs approved by Executive Engineer, PWD, Work Division-1, Moti Daman & all the testing charges shall be borne by the contractor, cost of sample and its carriage shall also be borne by the contractor. Nothing extra shall be paid on this account by the department.

17. The contractor shall make all efforts to mechanize the construction work to maximum possible extent by using the latest T & P / machinery and equipment etc.

18. The time of completion shall be essence of the contract and to be strictly adhered to by the contractor. He shall provide a PERT chart showing all the activity and events for timely completion of the project.

19. The various items of the work shall be taken up simultaneously wherever possible to speed up the work. Nothing extra shall be paid on this account.

20. The contractor shall maintain in good condition all work during execution till completion of entire work allotted to him.

21. Tenders with any conditions including that of conditional rebate shall be rejected forthwith.

22. The contractor should make necessary arrangement for round the clock working including working on Sundays and holidays except National holidays& the planning should be done accordingly.

23. The Contractor shall make necessary arrangements for medical aid to all his workers including availability of first aid box all the time aid the site of work

24. The design and drawing may be revised any time during execution of work by competent authority. No claim shall be entertained on this account

25. Even BIS marked material may be subjected to the quality test at the discretion of the Engineer-in-charge. Whenever BIS marked materials are brought to the site of work the contractor shall, if required by the engineer-in-charge, furnish manufacturers test certificate or test certificates confirming to the relevant IS Codes.

26. Contractor is required to fulfil the provisions of PF (under EPF Scheme) and other labour laws as applicable time to time. The ESI & EPF contribution on the part of employer in respect of this contract shall be paid by the contractor.

27. The work may be inspected by central Vigilance Commission or any other agency on behalf of Executive Engineer, PWD, Work Division-1, Moti Daman Any deduction/ compensation proposed by CVC or Executive Engineer, PWD, Work Division-1, Moti Daman in regard to defective work or work not confirming to specifications, loss of time, amount shall be deducted from bills. No claim of the contractor whatsoever shall be entertained on this account.

28. The department will be responsible only to the contractor and his authorized representative and none else, with whom contractor may be in liaison or associated in any manner.

29. The contractor shall also make necessary agreement at his own cost for diesel generator sets required for the work, so that the same can be used by him during failure/none availability of electricity. Necessary permission etc. if required shall be taken by him from the concerned authorities. Nothing extra shall be paid on this account

30. Nothing extra, what so ever shall be payable to the contractor for executing the work as per general specifications and special conditions in all the above paras.

31. The agency shall be fully responsible for safety of labour, working staff etc. Proper safety equipments like helmets, safety belts, gumboots, barricading etc as per requirement of site shall be provided by the agency and agency shall be fully responsible for any accident and consequent claims etc. if any and Executive Engineer, PWD, Work Division-1, Moti Daman shall not be responsible in any more.

32. The quality assurance of the work shall be got done through the third party approved by the Executive Engineer, PWD, Work Division-1, Moti Daman and the payment of work done shall be released to contractor after certification of third party for its quality etc. The charges of third party shall be borne by Executive Engineer, PWD, Work Division-1, Moti Daman.

32 Definitions

32.1 In this documents the following words and expression have the meaning here by assigned to them.

32.2 Employee: means the **Executive Engineer, PWD, Work Division-1, Moti Daman** on behalf of the President of India.

32.3 Bidder: means the individual proprietary firm, in partnership, limited company private or public corporation.

32.4 Year means "Financial Year" unless stated otherwise.

32.5 The word CPWD in NIT and Standard Tender Form may be read as PWD, Work Division-1, Moti Daman.

33 Method of application

33.1 If the bidder is an individual, the application shall be signed by him above his full type written name and current address.

33.2 If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full type written name and the full name of his firm with its current address.

33.3 If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.

33.4 If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

34 Final decision making authority

The employer reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the bidders.

35 Particulars provisional

The particulars of the work given in Section-I are provisional. They are liable to change and must be considered only as advance information to assist the bidder.

36. Criminal Liabilities: The Contractor / Consultant / Architect / TPQA agency will be held criminally liable and will be subject to prosecution in case of substandard material supply, usage, substandard work execution, substandard work or faulty design etc.

II. Site visit

The applicant is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

III. Initial criteria for eligibility

(i) Should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of last date of submission of tender.

Three similar completed works costing not less than the amount equal to 40% of the Estimated Project Cost.

or

Two similar completed works, costing not less than the amount equal to 60% of the Estimated Project Cost.

or

One similar completed work of aggregate cost not less than the amount equal to 80% of the Estimated Project Cost.

And

(ii) One Completed work of any nature (either part of (i) above or a separate one) costing not less than the amount equal to 40% of the Estimated Project Cost with some Central Government Department/ State Government Department/ Central Autonomous Body/ Central Public Sector undertaking/ State Autonomous Body/ State Public Sector undertaking / City Development Authority / Municipal Corporation of city formed under any act by central / state Government and published in Central / State Gazette.

(iv) Experience gained as nominated sub contractor shall be considered provided following conditions are met:

- If the contract signed between the employer and main contractor has provision for sub contracting and a signed copy of such contract or its relevant part is submitted

- Work completion certificate from the Main Contractor is provided

NOTE: TDS (Tax deducted at sources) certificate for private works shall be enclosed other than Govt. works for above mention criteria.

(v) ***Definition of Similar Nature of work***

"SITC Street lighting works" Government / Semi Govt. and PSU organizations." Copies of work order and completion certificate from the concerned organization in the name of tenderer shall be submitted. Experience of joint venture/Sub contractor/Back to Back work shall not be considered.

The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for tender.

(b) The Bidder should have average annual **financial turn over** on construction works should be **50% of the Estimated Project Cost** during the immediate last three consecutive financial year. (Scanned copy of certificate from CA to be uploaded).

(c) Should not have **incurred any loss in more than two years** during the last five years ending 31st March 2017. (Scanned copy of certificate from CA to be uploaded).

(d) The applicant should have a **solvency of 40% of the Estimated Project Cost** certified by his Banker

(e) Experience of similar works shall only be considered of the Main firm with valid documents.

(iii) The bidder should not have been blacklisted by any Central Government/State Govt. Offices/PSUs and self-certificate is to be scanned and uploaded.

(iv) The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender. The bidding capacity shall be worked out by the following formula:

Bidding Capacity = [AxNx2]-B
Where,
A = Maximum value of construction works executed in any one year during the last five years taking into account the completed as well as works in progress.
N = Number of years prescribed for completion of work for which bids has been invited and it will be considered one in case of period is less than one year.
B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited.

(v) The applicant should own construction equipment as per list required for the proper and timely execution of the work. Else, he should certify that he would be able to manage the equipment by hiring etc., and submit the list of firms from whom he proposes to hire.

(vi) The bidders should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The applicant should submit a list of these employees stating clearly how these would be involved in this work.

vii) The bidders performance for each work completed in the last seven years and in hand should be certified by an officer not below the rank of **Executive Engineer or equivalent.**

IV. Evaluation criteria

IV.1. The details submitted by the applicant will be evaluated for eligibility by Competent Authority or a Committee constituted by him. If required, the works executed by the applicant, who otherwise qualify, may be got inspected by a Committee or any other authority as decided by Competent Authority. The details submitted by the applicants will be generally evaluated in the following manner:
IV.1.1 The initial criteria prescribed in para-III above in respect of experience of similar class of works completed, bidding capacity and financial turn over etc. will first be scrutinized and the applicant's eligibility for the work shall be determined.
IV.1.2 The applicants qualifying the initial criteria as set out in para-III (i) to III (vii) above will be evaluated for following criteria by scoring method on the basis of details furnished by them:

(a)	Financial strength (Form 'A' & 'B')	20 marks
(b)	Experience in similar nature of work during last seven years (Form 'C')	20 marks

(c)	Performance on works (Form 'D') – Time over run	20 marks
(d)	Performance on works (Form 'DE') – Quality	40 marks
	Total	**100 marks**

To become eligible for short listing, the applicant must secure at least **fifty** percent marks in each criteria and **sixty** percent marks in aggregate.

The Authority, however, reserves the right to restrict the list of such qualified contractors to any number at it's sole discretion

NOTE: The average value of performance of works for time over run and quality shall be taken on the basis of performance report and eligible similar works.

IV.2 Even though any applicant may satisfy the above requirements, he would be liable to disqualification if he has:

(a) Made **misleading or false representation or deliberately suppressed the information** in the forms, statements and enclosures required in the eligibility criteria document,

(b) Record of poor performance such as abandoning work, not properly completing the contract, or financial failures / weaknesses etc.

V. Financial information

Bidder should furnish the following financial information:

Annual financial statement for the last five year in (Form "A") and solvency certificate in (Form "B")

VI Experience in works highlighting experience in similar works

VI.1 Bidder should furnish the following:

(a) List of all works of similar nature successfully completed during the last seven years in (Form "C").

(b) List of the projects under execution or awarded in (Form "D").

VI.2 Particulars of completed works and performance of the bidder duly authenticated/certified by an officer not below the rank of **Executive Engineer or equivalent** should be furnished separately for each work completed or in progress in (Form "E").

VI.3 Information in (Form "D") should be complete and no work should be left out.

VII Organisation information

Bidder is required to submit the information in respect of his organization in Forms “F” & “G”

VIII Construction plant and equipment

Bidder should furnish the list of construction plant and equipment including steel shuttering, centring and scaffolding to be used in carrying out the work. (In Form “H”). Details of any other plant & equipment required for the work not included in Form “F” and available with the applicant may also be indicated.

IX Letter of transmittal

The bidder should submit the letter of transmittal attached with the document.

X Opening of Price bid

After evaluation of applications, a list of short listed agencies will be prepared. Thereafter the financial bids of only the qualified and technically acceptable bidders shall be opened at the notified time, date and place in the presence of the qualified bidders or their representatives. The bids shall remain valid for 120 days(as prescribed in CPWD-6 for e-tendering) from the opening of technical bid.

XI Award criteria

1. Subject to clause X above the Authority shall award the work to the eligible bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest Evaluated Price Bid.

2 The employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:

(a) Amend the scope and value of contract to the bidder.
(b) Reject any or all the applications without assigning any reason.

3 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

XII.3 CRITERIA FOR EVALUATION OF THE PERFORMANCE OF CONTRACTORS FOR PRE-ELIGIBILITY:

<table>
<tr><td></td><td colspan="2">Attributes</td><td colspan="2">Evaluation</td></tr>
<tr><td>(a)</td><td colspan="2">Financial strength (20 marks)
(i) Average annual turnover 16 marks
(ii) solvency Certificate 4 marks</td><td colspan="2">(i) 60% marks for minimum eligibility criteria
(ii)100% marks for twice the minimum eligibility criteria or more
In between (i) & (ii) – on pro-rata basis.</td></tr>
<tr><td>(b)</td><td colspan="2">Experience in similar class(20 marks)
Class of works</td><td colspan="2">(i) 60% marks for minimum eligibility criteria
(ii)100% marks for twice the minimum eligibility criteria or more
In between (i) & (ii) – on pro-rata basis.</td></tr>
<tr><td>(c)</td><td colspan="2">Performance on works (20 marks)
(time over run)</td><td colspan="2"></td></tr>
<tr><td></td><td>Parameter</td><td>Calculation for points</td><td>Score</td><td>Marks</td></tr>
<tr><td></td><td>(i) Without levy of compensation.
(ii) With levy of compensation.
(iii) Levy of compensation not decided</td><td>If TOR=</td><td>1.00 2.00 3.00 >3.50
20 15 10 10
20 5 0 -5
20 10 0 0</td><td>20</td></tr>
<tr><td colspan="5">TOR = AT/ ST, where AT = Actual time; ST = Stipulated Time.
Note: Marks for value in between the stages indicated above is to be determined by straight line variation basis.</td></tr>
<tr><td>(d)</td><td colspan="2">Performance of works (Quality)</td><td colspan="2">(40 marks)</td></tr>
<tr><td></td><td colspan="2">(i) Very Good
(ii) Good
(iii) Fair
(iv) Poor</td><td colspan="2">40
30
20
0</td></tr>
</table>

SECTION III
INFORMATION REGARDING ELIGIBILITY
LETTER OF TRANSMITTAL

From:

To
Executive Engineer,
PWD, Work Division-1,
Moti Daman

Subject: Submission of Application for the **work of Providing decorative street lights at Daman.**

Having examined the details given in press notice and application document for the above work, I we hereby submit the relevant information.

1. I / we hereby certify that the statement made and information supplied in the enclosed forms A to H and accompanying statement are true and correct.

2. I / we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.

3. I / we submit the requisite certified solvency certificate and authorize Executive Engineer, PWD, Work Division-1, Moti Daman to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I / we also authorize Executive Engineer, PWD, Work Division-1, Moti Damanto approach individuals, employers, firms and corporation to verify our competence and general reputation.

4. I / we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following works:

Name of work: Certificate from

Enclosures:

Seal of applicant

Date of submission:

Signature(s) of Applicants(s)

FORM 'A'
FINANCIAL INFORMATION

I. Financial Analysis: - Details to be furnished duly supported by figures in balance sheet / profit & loss account for the **last five years** duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

Year	Gross Annual turnover on construction works.	Profit / Loss
2016-17		
2017-18		
2018-19		
2019-20		
2020-21		

***If available.**

II. Financial arrangements for carrying out the proposed work.

III. Solvency Certificate from Bankers of the applicant in the prescribed Form 'B'.

Signature of Chartered Accountant with seal

Signature of Bidder(s).

FORM 'B'
FORM OF BANKERS' CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge and information that M/s. / Sh. …….. having marginally noted address, a customer of our bank are / is respectable and can be treated as good for any engagement up to a limit of Rs……. (Rupees …… …… only).

This certificate is issued without any guarantee or responsibility on the Bank or any of the officers.

(Signature)

For the Bank

Note:-

1. Bankers certificates should be on letter head of the Bank, sealed in cover addressed to tendering authority.

2. In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM 'C'

DETAILS OF ALL WORKS OF SIMILAR CLASS COMPLETED DURING THE LAST SEVEN YEARS ENDING LAST DAY OF THE SUBMISSION OF BID.

S. No.	Name of work / project & location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commen-cement as per contract	Stipulated date of completion	Actual date of completion	Litigation arbitration cases pending / in progress with details *	Name and address / telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

* Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Applicant(s)

FORM 'D'

PROJECTS UNDER EXECUTION OR AWARDED

S. No.	Name of work / project & location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commen - cement as per contract	Stipulated date of completion	Upto date %age progress of work	Slow progress if any & reasons thereof	Name and address / telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Certified that the above list of works is complete and no work has been left out and that the information given is correct to my knowledge and belief.

Signature of Applicant (s)

FORM 'D'

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORMS 'C' & 'D'

1.	Name of work / project & location	:	
2.	Agreement No.	:	
3.	Estimated cost	:	
4.	Tendered cost	:	
5.	Date of start	:	
6.	Date of completion (i) Stipulated date of completion (ii) Actual date of completion	:	
7.	Amount of compensation levied for delayed completion, if any		
8.	Amount of reduced rate items, if any		
9.	Performance report: 1) Quality of work 2) Financial soundness 3) Technical Proficiency 4) Resourcefulness 5) General Behaviour		 Very Good / Good / Fair / Poor Very Good / Good / Fair / Poor Very Good / Good / Fair / Poor Very Good / Good / Fair / Poor Very Good / Good / Fair / Poor

Dated: **Executive Engineer or Equivalent**

FORM 'E'
STRUCTURE & ORGANISATION

1. Name & address of the applicant

2. Telephone no. / Telex no. / Fax no.

3. Legal status of the applicant (attach copies of original document defining the legal status)

(a) An Individual
(b) A proprietary firm
(c) A firm in partnership
(d) A limited company or Corporation

4. Particulars of registration with various Government Bodies (attach attested photocopy)

Organization / Place of Registration	**Registration No.**

1. Names and titles of Directors & Officers with designation to be concerned with this work.

2. Designation of individuals authorized to act for the organization.

3. Was the applicant ever required to suspend furniture for a period of more than six months continuously after he commenced the work? If so, give the name of the project and reasons of suspension of work.

4. Has the applicant, or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.

5. Has the applicant, or any constituent partner in case of partnership firm, ever been debarred / black listed for tendering in any organization at any time? If so, give details.

6. Partnership applicant, or any constituent partner in case of partnership firm, ever been convicted by the court of law? If so, give details.

7. In which field of Civil Engineering the applicant has specialization and interest?

8. Any other information considered necessary but not included above.

Signature of Applicant(s)

FORM 'G'
DETAILS OF TECHNICAL & ADMINISTRATIVE PERSONNEL TO BE EMPLOYED FOR THE WORK

S. No.	Designation	Total No.	No. available for this work	Name	Qualifications	Professional experience & details of work carried out	How these would be involved in this work	Remarks
1	2	3	4	5	6	7	8	9

Signature of Applicant(s)

FORM 'H'
DETAILS OF CONSTRUCTION PLANT AND EQUIPMENT LIKELY TO BE USED IN CARRYING OUT THE WORK

NOTE: The T & P list, if required will be verified by the department in respect of ownership.

S.No.	Name of equipment	Nos.	Capacity or type	Age	Condition	Ownership status			Current location	Remarks
						Presently	Leased	To be purchased		
1	2	3	4	5	6	7	8	9	10	11
1.	**Earth moving equipment**									
	Excavators (various sizes)									
2.	**Equipment for hoisting & lifting**									
	Tower									
	Builder's hoist									
3.	**Equipment for concrete work**									
	Concrete batching plant									
	Concrete pump									
	Concrete transit mixer									
	Concrete mixer (diesel)									
	Concrete mixer (electrical)									
	Needle vibrator (electrical)									
	Needle vibrator (petrol)									
	Table vibrator (elect./ petrol)									
4.	**Equipment for**									

	building work									
	Block making machine									
	Bar bending machine									
	Bar cutting machine									
	Wood thickness planer									
	Drilling machine									
	Circular saw machine									
	Welding generators									
	Welding transformer Cube testing machines									
	M.S. Pipes									
	Steel shuttering									
	Steel scaffolding									
	Grinding/polishing machines									
5.	**Equipment for road work**									
	Road rollers									
	Bitumen paver									
	Hot mix plant									
	Spreaders									
	Earth rammers									
	Vibratory road rollers									

6.	**Equipment for transportation**									
	Tippers									
	Trucks									
7.	**Pneumatic equipment**									
	Air compressor (diesel)									
8.	**De-watering equipment**									
	Pump (diesel)									
	Pump (electric)									
9.	**Power equipment**									
	Diesel generators									
	(Any other plant/equipment)									

Signature of Applicant(s)

CPWD-6
FOR e-Tendering

1. Item rate bids are invited on behalf of President of India, from firms/ contractors of repute in **Three bid system** for the work: **Providing decorative street lights at Daman.**

The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

Estimated Cost:- **Rs. 22,21,44,373/-**

Earnest Money:- **Rs. 32,21,444/-**

1.1 The work is estimated to cost **Estimated Cost:- Estimated Cost:- Rs. 22,21,44,373/-**

This estimate, however, is given merely as a rough guide.

1.2 Intending tenderer is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:-
Criteria of eligibility for submission of tender documents

1.2.1 Firms/contractors who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted. Following are initial criteria for eligibility.

(a) Should have satisfactorily completed the works as mentioned below during the last Seven years ending previous day of the last date of bid submission.

(i) Experience of having successfully completed the works as mentioned below during the last Seven years ending previous day of last date of submission of tender

Three similar completed works costing not less than the amount equal to 40% of estimated cost put to tender.

or

Two similar completed works, costing not less than the amount equal to 60% of estimated cost put to tender.

or

One similar completed work of aggregate cost not less than the amount equal to 80% of estimated cost put to tender.

And

(ii) One Completed work of any nature (either part of (i) above or a separate one) costing not less than the amount equal 40% of estimated cost of work with some Central Government Department/ State Government Department/ Central Autonomous Body/ Central Public Sector undertaking/ State Autonomous Body/ State Public Sector undertaking / City Development Authority / Municipal

Corporation of city formed under any act by central / state Government and published in Central / State Gazette.
NOTE: TDS (Tax deducted at sources) certificate for private works shall be enclosed other than Govt. works for above mention criteria.

The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for tender.

(b) Experience gained as nominated sub contractor shall be considered provided following conditions are met:

- If the contract signed between the employer and main contractor has provision for sub contracting and a signed copy of such contract or its relevant part is submitted

- Work completion certificate from the Main Contractor is provided

(c) ***Definition of Similar Nature of work***

Similar nature of work shall mean

"SITC Street lighting works" Government / Semi Govt. and PSU organizations." Copies of work order and completion certificate from the concerned organization in the name of tenderer shall be submitted. Experience of joint venture/Sub contractor/Back to Back work shall not be considered.

1.2.2 To become eligible for issue of bid, the bidders shall have to furnish an affidavit asunder:-

I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in **PWD, Work Division-1, Moti Daman** in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee. **(Scanned copy to be uploaded at the time of submission of bid).**

2. Agreement shall be drawn with the successful bidders on prescribed **Form No. CPWD8** which is available as a Govt. of India Publication and also available on website https://ddtenders.gov.in Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.

3. The time allowed for carrying out the work will be from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.

4. (i)The site for the work is available.
(ii) The Architectural and Structural Drawings and specifications for various components for the work are available and attached separately with NIT.

5. The bid document consisting of indicative specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with

and other necessary documents except Standard General Conditions of Contract Form can be seen on **websitehttps://ddtenders.gov.in** at free of cost.

6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.

8. The **Earnest Money of Rs. 32,21,444/- Drawn in favour (F.D.R.) of Executive Engineer, PWD, Work Division-1, Moti Daman** in the shape of FDR shall be scanned and uploaded to the e-Tendering website within the period of bid submission. It is mandatory to submit tender fees and EMD online failing which the price bid of that agency will not be opened online and Physical submission of such scanned documents shall reach to office of the **Executive Engineer** within 3 (three) working days after closing of online bidding. A part of Earnest Money is acceptable in the form of Bank Guarantee also. In such cases 50% of the Earnest Money or Rs. 20 Lakhs whichever is less shall have to be submitted in shape of FDR prescribed above as and balance can be submitted in form of Bank Guarantee from a Nationalized Bank/schedule bank.

Copy of enlistment order and certificate of work experience and other document as specified in the press notice shall be scanned and uploaded to the e-tendering website within the period of bid submission. No document shall be entertained in physical manner before approval of Technical bid by the competent authority.

Online bid documents submitted by intending bidders shall be opened only of those bidders, whose EMD and other documents are found in order as per condition of NIT.

9. The bid submitted shall become invalid if:
(i) The bidders is found ineligible.
(ii) The bidders does not upload all the documents **(G.S.T.)** as stipulated in the bid document
(iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically in the office of tender opening authority.

10. The contractor whose bid is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the bid amount within the period specified in Schedule F. This guarantee shall be in the form of an irrevocable bank guarantee bond of any scheduled bank or the State Bank of India in the prescribed form given in Annexure. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The Earnest money deposited along with tender shall be returned after receiving the aforesaid performance.

11. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground, the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may

influence or affect their bid. A bidders shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

12. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

13. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

14. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

15. The contractor shall not be permitted to bid for works in the PWD, Work Division-1, Moti Daman (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate
the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer to the Executive Engineer, PWD, Work Division-1, Moti Daman. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

16. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

17. The tender for the works shall remain open for acceptance for a period of ninety **(90) days** from the date of opening of technical bid. If any tenderer withdraws his tender before the said period or issues of letter of acceptance, whichever is earlier, or makes any modification in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money

as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work

18. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-

a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, SOQs forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

b) Standard CPWD **Form-8 and Rules and directions provided in the General Contract Conditions 2014 published by CPWD.**

Executive Engineer,
PWD, Work
Division-1, Moti Daman

PRINCIPAL OF TRANSPARENCY

To,
……..,
……..,
……..

Sub: NIT No. ……. for the work of **Providing decorative street lights at Daman.**

Dear Sir,
It is here by declared that Executive Engineer, PWD, Work Division-1, Moti Damanis committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the President of India.

Yours faithfully

Executive Engineer,
PWD, Work Division-1,
Moti Daman.

Acknowledgement by Bidder for acceptance of principal of integrity

To,
Executive Engineer,
PWD, Work Division-1,
Moti Daman

Sub: Submission of Tender for the work of Providing decorative street lights at Daman.

Dear Sir,

I/We acknowledge that Executive Engineer, PWD, Work Division-1, Moti Daman is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that

I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by Executive Engineer, PWD, Work Division-1, Moti Daman. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, Executive Engineer, PWD, Work Division-1, Moti Daman shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully
(Duly authorized signatory of the Bidder)

To be signed by the bidder and same signatory competent / authorized to sign the relevant contract on behalf of president of India.

INTEGRITY AGREEMENT

This Integrity Agreement is made at ..... on this..... day of 2019

BETWEEN

President of India represented through Executive Engineer, PWD, Work Division-1, Moti Daman(Hereinafter referred as the which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

…….....
(Name and Address of the Individual/firm/Company)
through ..... (Hereinafter referred to as the (Details of duly authorized signatory)
"**Bidder/Contractor**" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No. .....) (hereinafter referred to as "**Tender/Bid**") and intends to award, under laid down organizational procedure, contract for …….....
(Name of work)
hereinafter referred to as the "**Contract**".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "**Integrity Pact**" or "**Pact**"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

Article 1: Commitment of the Principal/Owner

1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

(b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of **fraud or corruption or Coercion or Collusion** of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:

a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.

b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/Contract(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on

behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose (with each tender as per proforma enclosed) any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.

3) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice **means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.**

5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

1) If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days notice to the contractor shall have powers to disqualify the Bidder(s)/Contractor(s) from the Tender process or terminate/determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.

2) **Forfeiture of EMD/Performance Guarantee/Security Deposit**: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.

3) **Criminal Liability:** If the Principal/Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Indian Penal code (IPC)/Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

1) The Bidder declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.

2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/ Owner.
3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Subcontractors

1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Subcontractors/ sub-vendors.

2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.

3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor **365 days** after the completion of work under the contract or till the continuation of defect and maintenance liability period, whichever is more and for all other bidders, till the Contract has been awarded.
If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, Executive Engineer, PWD, Work Division-1, Moti Daman.

Article 7- Other Provisions

1) This Pact is subject to Indian Law, place of performance and jurisdiction is the **Head quarters of the Division** of the Principal/Owner, who has floated the Tender.

2) Changes and supplements need to be made in writing. Side agreements have not been made.

3) If the Contractor is a partnership firm, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partnership firm members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.

4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to

their original intensions.

5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this **Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.**

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:
.....
(For and on behalf of Principal/Owner)
.....
(For and on behalf of Bidder/Contractor)

WITNESSES:
.....
(signature, name and address)

.....
(signature, name and address)

Place:

Dated

PWD, Work Division-1, Moti Daman

STATE/UT : Daman &Diu
CIRCLE : PWD Daman.
BRANCH : **Executive Engineer, PWD, Work Division-1, Moti Daman**
DIVISION :
ZONE : CE, PWD, Daman & Diu.

Item Rate Tender & Contract for Works

(A) Tender for the work of :- **Providing decorative street lights at Daman..**

(i)	Bid Document Downloading End Date	Up to **24/07/2021**, 14.00 hrs.
(ii)	Pre Bid Meeting	On **12/05/2021,** 15:00 hrs.
(iii)	Last Date & Time for Receipt of Bids	On **24/07/2021**, up to 15.00 hrs.
(iv)	Technical Bid to be opened online	On **24/07/2021**, 16.00 hrs.(if Possible)
(v)	Financial Bid to be opened online	On **24/07/2021**, 16.10 hrs.(if Possible)

(after approval of technical bid by the competent authority)

T E N D E R

I/We have read and examined the notice inviting tender, schedule, A, B, C, D ,E & F. Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Executive Engineer, PWD, Work Division-1, Moti Daman within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

We agree to keep the tender open for acceptance for the period of One Twenty (120) days from the date of opening of technical bid and not to make any modifications in its terms & conditions.

A sum of **Rs.32,21,444/-**is hereby submitted as earnest money. If I/We fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said Executive Engineer, PWD, Work Division-1, Moti Daman or his successors in office shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, If I/ We fail to commence work as specified, I/We agree that Executive Engineer, PWD, Work Division-1, Moti Daman or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the

performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and
12.3 of the tender form.

Further, I/We agree that in case of forfeiture of Earnest Money or both Earnest Money and performance guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in PWD, Work Division-1, Moti Damanin future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information / derived therefrom to any person other than a person to whom I/We, am/are authorised to communicate the same or use the information in any manner prejudicial to the safety of the state.

Dated ……

Signature of the Contractor
Postal Address ----------
Telephone No.----------
FAX ----------
E-MAIL ----------

Witness:---------- -----
Address:----------
Occupation:----------

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf President of India for a sum of Rs. *_ _ _ _ _ _ _ _ _ _ (Rupees *_)

The letters referred to below shall form part of this contract Agreement:-

(a) ------------------------------*
(b) ------------------------------*
(c) -----------------------------*

For & on behalf of the
Executive Engineer, PWD,
Work Division-1,
Moti Daman
Signature…………………………..

Dated ……………..

Designation…………………………….

SCHEDULES

SCHEDULE‘A’

Scheduleof quantities,enclosedasseparatefile totheNIT.

SCHEDULE‘B’

Scheduleofmaterialstobeissued to thecontractor:

S.No.	Description of item	Quantity	Rates in figures &words at which the materialwill be chargedtothe contractor.	Place of issue
1	2	3	4	5
----------NIL----------				

SCHEDULE‘C’

Toolsandplantstobehiredtothecontractor:

Sl. No.	Description	Hire charges per day	Placeofissue
1	2	3	4
----------NIL----------			

SCHEDULE‘D’

Extra schedule for specific requirements/documents for thework,ifany.**NIL**

SCHEDULE‘E’

Reference to General Conditions of contract: Aspertheformno.CPWD8 and General ContractConditions-2014Published by CPWD for Civil works which is available on CPWD web site at http://cpwd.gov.in/Publication/GCC14.pdf.

Name of work:- **Providing decorative street lights at Daman.**

Estimatedcostofwork:-Rs. 22,21,44,373/-

(i) **Earnest money:-Rs. 32,21,444/-**to be returned after receipt of Performance Guarantee

(ii) Performance Guarantee:- **5% of tendered Value.**

(iii) Security deposit :- 2.5**% of tendered Value to be deducted from the running bills**

SCHEDULE 'F'

General Rules & Directions: -

Officer inviting tender:		Executive Engineer, PWD, Work Division-1, Moti Daman
Definitions:		
2 (v)	Engineer-in-Charge	Executive Engineer, PWD, Work Division-1, Moti Daman
2 (viii)	Accepting Authority	**Chief Engineer PWD, Daman & Diu.**
2 (x)	Percentage on cost of materials and labour to cover all overheads and profits.	15%
2 (xi)	Standard schedule of Rates	Valsad R&B division, Valsad district 2015-16, Gujarat State water supply SOR 2015-16, Gujarat State Electrical SOR 2015 & Market Rate.
2 (xii)	Department	PWD, Daman and Diu.
9 (ii)	Standard CPWD contract form	CPWD form 8 and General Contract Conditions 2014 published by CPWD & corrected up to the date of bidding.
Clause 1 (i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance. (ii) Maximum allowable extension with late fee @ 0.1% per day of the Performance Guarantee beyond the period providedin (i) above.		15 days 15 days
Clause 2 Authority for fixing compensation under clause 2.		**Superintendent engineer. PWD Daman or Chief Engineer.**
Clause 2A Whether Clause 2A shall be applicable		**No**
Clause 5 Number of days from the date of issue of letter of acceptance for reckoning date of start		**22 days**

Table of Mile Stones

S.No.	Description Milestone	Time Allowed in days (from date of start)	Amount to be with held in case of non achievement of mile stone
1.	1/8 of the whole work	1/4 of the whole work	In the event of non achieving the necessary progress as assessed from the running payments, 1% of tendered value of work will be with held for failure of each mile stone.
2.	3/8 of the whole work	1/2 of the whole work	
3.	3/4 of the whole work	3/4 of the whole work	
4.	Full	Full	

Time allowed for execution of work : 18 Months

Authority to decide:	
1. Extension of time	Superintendent Engineer, PWD or Chief Engineer, PWD
2. Rescheduling of mile stones	Superintendent Engineer, PWD or Chief Engineer, PWD
3. Shifting of date of start incase of delay in handing over of the site	Superintendent Engineer, PWD or Chief Engineer, PWD
Clause 6, 6A **Clause applicable – (6 or 6A)**	**Clause 6A**
Clause 7 Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	**Rs. 0.74 Crores or as decided by Engineer- in-Charge.** (ECPT/T.L*60%) **Subject to Compliance of satisfactory test results from Approved laboratory for different items of work which includes NDT, Core Cutting etc.**
Clause 10A List of testing equipment to be provided by the contractor at site lab.	**As per CPWD Specification-2019 Volume-I & II and relevant IS Codes.** Testing equipment required at site should be as below. 1. Cube testing machine 2. Set of cube moulds for concrete 3. Slump Testing Cone 4. Rapid moisture master 5. Weighing balance (scientific & Conventional) 6. Set of sieves 7. Vernier calipers 8. Theodolite and allied instruments 9.Calibrated Glass Jars 10.Automatic Ovens 11. Any other equipment's as desired by Engineer in Charge.
Clause 10 – B(ii) Whether clause 10-B(ii) shall be applicable	**Not Applicable**
Clause 10C – Component of labour expressed as percent of value of work	**Not Applicable**

Clause 10 CA:-

S.No.	Materials covered under this clause	Applicable All India Price Index (Base 2011-2012 = 100)	Base price and its corresponding period of all the materials covered under clause 10CA **	
			Base price	**Corresponding period**
1	Cement (PPC)	**109.9***	*Rs. 4756/- mt*	2020-21
2	Reinforcement Bars TMT-FE 500D			
(i)	Primary Producer	**82***	Rs. 3675/- per quintal	2020-21
3	Structural Steel	**85.6***	Rs. 4497/- Per quintal	2020-21
4	POL			
5	……			

* WPI for financial year 2016-17.
** Base price and its corresponding period of all the materials covered under clause 10CA is to be mentioned at the time of approval of NIT. In case of recall of tenders the base price may be modified by adopting latest base price, and its corresponding period.

Clause 10CC – (Clause 10CC to be applicable in contracts with stipulated period of completion exceeding the period shown in next column.) Schedule of component of other Materials, Labour, POL etc. for price escalation	12 months
Component of civil (Except materials covered under clause 10 CA)/ Electrical construction materials expressed as percent of total value of work. Total material %=75%	Xm= - - - - (to be worked out after deducting material of 10CA from 75%)
Component of labour expressed as percent of total value of work.	Y =25%
Component of POL expressed as percent of total value of work. Note: Xm…..% should be equal to (100)-(materials covered under clause 10CA i.e. Cement, Steel and other material specified in clause 10CA + Component of Labour + Component of P.O.L)	Z = NIL

Clause 11: Specifications to be followed for execution of work.	CPWD Specification for works-2019 Vol I &II with up to date correction slips till last date of submission of tender and as detailed in nomenclature of items.

Clause 12:- Type of work:-**Original Work**

Clause 12.2.& 12.3	
Deviation limit beyond which clauses 12.2 & 12.3 shall apply for**Super Structure**.	**30%**
Deviation limit beyond which clauses 12.2 & 12.3 shall apply for **foundation work**.	**100%**

Clause 16 Competent Authority for deciding reduced rates.	Superintendent Engineer, PWD or Chief Engineer, PWD Daman and Diu.

Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site.
All latest electrical related equipment carring out of such type works.

Clause 25 **Constitution of Dispute Redressal Committee:**	**(a) For total claims more than Rs. 25.00 lakh.** **As per manual provision** **(b) For total claims up to Rs. 25.00 lakh.** As per manual provision

Clause 36(i)
Requirement of Technical Representative (s) and Recovery Rates

Sl. No.	Minimum Qualification of Technical Representative	Discipline	Designation ((Principal Technical / Technical Representative)	Minimum Experience In years	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36 (i)	
						Figures (in Rs.)	Words
1	Graduate Engineer with minimum experience of 20 years	Electrical Engineer	Project Manager	20	1	Rs. 60,000/- per month	Rs. Sixty Thousand per Month Only
2	Graduate Engineer with minimum experience of 12 years	Electrical Engineer	Deputy project manager	12	1	Rs. 40,000/- per Month	Rs. Forty Thousand per Month Only
3	Graduate Engineer or Diploma Holder Engineer with minimum experience of 5 to 10 years respectively.	Electrical Engineer	Project / site engineer	5 to 10	1+1	Rs. 25,000/- per Month	Rs. Twenty Five Thousand per Month Only
4.	Graduate Engineer or Diploma Holder Engineer with minimum experience of 2 to 5 years respectively.	Electrical Engineer	Project Planning / quality / billing engineer.	2 to 5	1+1	Rs. 15,000/- per Month	Rs. Fifteen Thousand per Month Only

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holders with minimum 10 years relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause 42

(i)	(a) Schedule/statement for determining the theoretical quantity of cement & bitumen on the on basis **Valsad District SOR 2015-2016 /Market rate**

(ii)	Variations permissible on theoretical quantities:	
a)	Cement for works with estimated cost put to tender not more than Rs. 5 lakhs	3% plus/minus
	for works with estimated cost put to tender more than Rs 5 lakh	2% plus/minus
b)	Bitumen for all works.	2.5% plus only & nil on minus side
c)	Steel Reinforcement and structural steel sections for each diameter, section and category.	2% plus/minus
d)	All other materials.	Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor.	
		Excess beyond permissible variation	Less use beyond the permissible variation
1.	**Cement**	**Nil**	**Rs. 4756/- (Rupees Four thousand Seven Hundred Fifty six only) Per MT**
2.	**Reinforcement Bars (TMT)** **(a) Primary Producer** **(b) Secondary Producer**	**Nil** **Nil**	**Rs. 3675/- (Rupees Three Thousand Six Hundred seventy Five only) Per QT**
3.	**Structural steel**	**Nil**	**Rs.4497/- (Rupees Four Thousand Four Hundred Ninety Seven Only) Per QT**

1. The work, in general, shall be executed as per the description of item, specifications attached, CPWD specifications 2019 Vol, l, & II with correction slips issued up to 31.07.2014 and MORTH Specifications for Roads & Bridge works (Fifth Revision) –2013. And matching with specification of central electricity authorities norms.

   Any additional standard specifications or criteria published by the IRC/BIS or other foreign standard and in practice on the date of receipt of tenders shall also be taken into account. In the absence of any definite provisions on any particular issue in the above mentioned specifications, the design and construction shall be in conformity with the Sound Engineering Practice and in all such matters the decision of the Engineer-in-Charge shall be final and binding on the contractor and nothing shall be paid extra.

   In case of any discrepancy or contradiction amongst the specified standards the following order of preferences shall generally prevail.

   i. Nomenclature of items etc given in Schedule of Quantities & Scope of Work.

   ii. Particular Specifications, general conditions and additional conditions if any.

   iii. Drawings attached with the tender.

   iv. MORTH Specifications for Roads and Bridge Works (Fifth revision, 2013) published by IRC. And matching with specification of central electricity authorities norms.

   v. CPWD specifications, 2014, Vol I & II with correction slips up to 31.10.2014.

   vi. All relevant IS Codes with the latest revisions.

   vii. Foreign standards, such as BS, AASHTO, CEB-FIP etc. and accepted international practice as approved by Engineer-in-Charge.

   viii. Sound Engineering Practice as per directions of the Engineer- in-Charge.

   If there are varying or conflicting provisions made in any document forming part of the contract, the Engineer-in-Charge shall be the deciding authority with regard to the intention / interpretation of the document and his decision shall be binding without any reservations.

2. Whenever any reference to any Indian standard specifications occurs in the document relating to this contract the same shall be inclusive of all the amendments issued thereto or revisions thereof, if any, up to 31.10.2014.
3. The work shall be carried out in the manner complying in all respects with requirement of relevant bye-laws of the local bodies under the jurisdiction of which the entire work is to be executed or as directed by the Engineer-in-charge and nothing extra will be paid on this account.
4. The contractor shall be responsible to arrange at his own cost all necessary T&P required for the execution of work.
5. The contractor shall make his own arrangement for temporary electric connections, if required, and make necessary payment for it direct to the department concerned.
6. The contractor shall make necessary arrangement at his own cost for silent type diesel generator sets required for the work, so that the same can be used by him during failure/none availability of electricity. Necessary permission etc. if required shall be taken by him from the concerned authorities. Nothing extra shall be paid on this account.

7. The contractor shall be deemed to have fully acquainted himself with the nature and extent of the work and working conditions at site before submitting the tender. The work shall be executed as per preference approved by Engineer-in-charge. If the materials, drawing, designs etc. are not available due to any conditions, the programme of the contractors shall be modified accordingly and no compensations/damages shall be payable.

8. The contractor shall take all precautions by exhibiting necessary caution boards, red flags, red lights, barricades and barriers to avoid any accident during execution of work. The contractor shall be responsible for all damages and accident due to negligence on his part. The contractor shall also provide helmets, safety belts, etc. required for labours.

9. No payment will be made to the contractor for damages caused by rains or other natural calamities or riots during execution of the work and no claims on this account will be entertained.

10. The rates of all items of work shall, unless clearly specified otherwise in the CPWD specifications, include cost of all labour, material and other inputs involved in the execution & completion of the item in all respects.

11. All mandatory tests will be done from the lab/expert agency, duly approved by E.E (list enclosed). The expenditure for the mandatory tests shall be borne by the contractor including the cost of collecting samples and cartage to lab as well as testing charges etc.

12. The contractor shall ensure quality control measures on different aspects of construction materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of the work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control. The quality assurance of the work shall be got done through the third party appointed by the E.E and the payment of work done shall be released to contractor after certification of third party for its quantity and quality etc. The charges of third party shall be borne by E.E.

13. The contractor shall make all efforts to mechanize the construction work to maximum possible extent by using the latest T & P / machinery and equipment etc.

14. The time of completion shall be essence of the contract and to be strictly adhered to by the contractor. He shall provide a programme of action showing all the activities and event for timely completion of the project. No time and cost over-run shall be allowed including interruption due to rains or otherwise.

15. The contractor should make necessary arrangement for water at his own cost required for construction and drinking purposes. Nothing extra shall be paid on this account.

16. The various items of the work shall be taken up simultaneously whenever possible to speed up the work. Nothing extra shall be paid on this account.

17. The contractor shall maintain in good condition all work during execution till completion of entire work assigned to him.

18. Contractor shall ensure that no service like water supply, sewerage, telephone, gas and power etc. is disturbed/ damaged. It shall be the sole responsibility of the contractor to restore any damage to any service and to pay compensation/recovery if demanded by the concerned department. Nothing extra shall be payable on this account.

19. Cooperation with other contractors: The contractor shall extend his cooperation with the other contractors engaged for the work especially in respect of sharing of the site and adjustments in the working programme for the interrelation activities of the work. Due care shall be taken by the contractor to avoid damages/loss to the works executed by the other agencies, failing which the same shall be made good by the contractor at his cost.

20. The contractor shall make arrangement for sufficient quantity of all the materials required for construction of work conforming to required/related specifications.

21. Proper labour hutments with all the required civic amenities as per CPWD Norms shall be constructed by the contractor at site of work. He has to remove all the hutments on completion.

22. The Contractor shall make necessary arrangements for medical aid to all his workers including availability of first aid box all the time at the site of work.

23. Even ISI marked material may be subjected to the quality test at the discretion of the Engineer-in-charge. Whenever ISI marked materials are brought to the site of work the contractor shall, if required by the engineer-in-charge, furnish manufacturers test certificate or test certificates confirm to the relevant IS Codes and BIS License valid on that date. However, cement/steel will be necessarily tested before start of work and will not be used till approved by Engineer-in-charge.

24. The work may be inspected by Third Party Engineers/ CTE/ Central Vigilance Commission or any other agency on behalf of E.E. Any deduction/compensation proposed by these agencies or E.E in regard to defective work or work not confirming to specifications, loss of time shall be deducted from bills. No claim of the contractor whatsoever shall be entertained on this account.

25. The Contractor shall submit the labour report fortnightly for the labour (skilled/unskilled) engaged by him at the site. In case of failure, a recovery of Rs.500/- for each fortnight shall be made on this account.

26. "The contractor shall submit completion plans, L-section, cross sections of roads and cross sections of drains constructed by him in the work, at the time of final bill.

27. Nothing extra, what so ever shall be payable to the contractor for executing the work as per general specifications and special conditions in all the above paras.

28. The contractor should remove from site, the net surplus earth only. If he disposes earth more than the surplus quantity and earth is required later to be brought from outside, the contractor shall be liable to supply at site the such required quantity of earth of required quality at his own cost and nothing shall be paid on the account. The quantity of the surplus earth to be disposed off from the site shall be worked out on the basis of levels to be taken before and after the excavation. The decision of the Engineer-in-charge regarding the quantity of net surplus earth shall be final & binding. Nothing extra shall be payable to the contractor for stacking the excavated earth

29. The contractor has to arrange Ready Mix Concrete (RMC) from the RMC producing plants of cement manufacturers (located within 50km distance from the site of work).

30. Contractor may be allowed to prepare the concrete at site provided he install his own automatic batch mix concrete plant of capacity not less than 30 cum per hour. In case preparation of concrete at site by automatic batch mix plant, the necessary deduction/ substitution shall be made as per clause 12 of General Condition of Contract 2014. The calibration of the automatic batch mix plant for concrete work shall be got done by the agency in presence of Engineer-in-charge or his authorized representative. The space at site for installation of automatic batch mix plant may be provided, if available, by E.E and lump sum rent @ Rs. 1,20,000/- per month shall be recovered from the agency for this account from the date agency installed the plant at site up to the date of removal of plant from the site. The agency has to remove the plant from site as soon as the work of concreting is complete but not later than the actual completion date of work.

31. The contractor shall have to mention the details of RMC plant from where he intends to bring the design mix concrete in the tender documents. If allowed, the plant including all material to be used in batch mix shall be open to inspection by Engineer-in-charge or his representative, whenever required.

32. The material to be used for preparation of the design mix shall be provided by the contractor as per agreement conditions and the same shall be submitted by Engineer-in-charge of the

work to IIT/CRRI/DTU etc. and the design mix shall be approved by Engineer-in-charge for execution.

33. E.E shall not pay extra for transportation cartage charges of RMC for transporting the ready mix concrete at site.

34. The RMC plant should supply three computer generated copies of challans/ bill indicating quantity of RMC, concrete, cement, slump value and grade with time of departure from the plant.

35. The E.E will verify the challan/bills received from the plant furnished by contractor in support of the RMC supplied, before making payment of RMC to the contractor. The above condition should only be relaxed in exceptional circumstances and to meet the emergency only by the Chief Engineer concerned.

36. Copy of the Design Mix is to be sent to the concerned division. Any change in the source of supply be permitted only on written approval from EE concerned.

37. RMC supplier will supply the Mix as per approved Design Mix and will sent the copy of the computerized challan indicating slump, w/c ratio, quantity of RMC along with every transit mixer.

38. Site staff will get the transit mixer uploaded if the proper challan from the approved supplier is found in order and record of the same be maintained.

39. EE concerned at any stage can send the mix to the laboratory for test for quantity of cement.

40. If Mix is not found as per the Design Mix then the concerned plant shall be debarred for supplying RMC to E.E work sites. This aspect shall be informed to the RMC supplier before commencement of the supply of RMC by the concerned EE.

41. The department will deal only with the contractor and his authorized representative and none else, with whom contractor may be in liaison or associated in any manner.

42. **INSURANCE POLICIES**

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge. **All Risk Insurance Policy for an amount 1.25 times the contract amount for this work, with Engineer-in-Charge as the first beneficiary.** The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Department from any liability during the execution of the work. Further, **he shall obtain and submit to the Engineer-in-Charge, a third party insurance policy for maximum Rs.10 lacs for each accident, with the Engineer-in-Charge as the first beneficiary.** The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that similar Insurance Policies are also taken by his Sub-Contractors / specialized agencies. The Contractor shall however be responsible, to the Department, for any claim or loss resulting from the failure of his Sub Contractors / specialized agencies in obtaining such Insurance Policies. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

43. **TEMPORARY BARRICADING**

Proper temporary barricading by fencing with G.I. sheets, shall be carried out by the Contractor at the start of work for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the buildings in the adjacent plots. It shall be done by providing, erecting, maintaining temporary protective barricading, 2.5 meters in height, made in panels, with each panel having MS frames / MS scaffolding pipes of suitable size and stiffness, with 24 gauge thick GI corrugated sheet or suitably stiffened plain GI sheet fixed on frames. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 2 meters spacing, for the entire duration till completion of the work. He shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. Temporary protective roofing near the Entrance to the building, under construction, shall be made to protect the visiting officials from getting hurt by falling debris etc. Also, one or more coat of enamel paint of shade as approved and directed by the Engineer-in-Charge shall be applied on the panels shall be painted over that in suitable sizes, shapes and numbers as directed by the Engineer-in-Charge. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in- Charge. Nothing extra shall be payable on this account.

44. **WARNING/ CAUTION BOARDS**

All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. These signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer - in - Charge. Nothing extra shall be payable on this account.

45. **SIGN BOARDS**

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in- Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Sub- Contractors and specialized agencies. Nothing extra shall be payable on this account.

46. **REMOVAL OF 'MALBA' ETC. FROM SITE**

The Contractor shall not stack building material/ malba / muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-Charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the Contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material / malba as stated above, the Contractor shall be liable to pay the stacking charges / penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer -in-Charge shall be at liberty to recover, such sums due but not paid to the concerned authorities on the above

counts, from any sums due to the Contractor including amount of the Security Deposit and performance guarantee in respect of this contract agreement.

47. **SCAFFOLDING**

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the Contractor. It shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. It shall be designed to take all incidental loads. It should cater to the' safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

48. The Contractor shall maintain all the work in good condition till the completion of entire work. The Contractor shall be responsible for and shall make good, all damages and repairs, rendered necessary due to fire, rain, traffic, floods or any other causes. The Engineer-in-Charge shall not be responsible for any claims for injuries to person/workmen or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor or of any other of his representatives, in his employment during the execution of the work. The compensation, if any, shall be paid directly to the Department / authority / persons concerned, by the Contractor at his own cost.

49. For completing the work in given time frame, the Contractor might be required to work in two or more shifts (including night shifts).

50. The Contractor shall render all help and assistance in documenting the total sequences of this project by way of photography, slides, audio / video recording etc. Nothing extra shall be payable to Contractor on this account. However, cost of photographs, slides, audio / video-graphy etc shall be borne by the Contractor. The original films shall be the property of the Department. No copy shall be prepared without the prior approval of the Engineer- in Charge.

51. **CLEARING AND GRUBBING**

Clearing and grubbing land shall include uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials - By Mechanical Means: In area of light jungle, as per Clause 201 of MoRTH Specifications.

52. **EARTHWORK**

Earthwork in cutting in all sorts of soil and soft murrum including conveying and spreading the stuff, embankment as and where directed from the end of the cutting with all required lead and lift for all types of soil as per Clause 301 of MoRTH Specifications.

53. All the works to be carried out as per detail drawings and specifications mention in the schedule and materials is of standard make and made approved by the engineer in charge with relevant IS Code / central electrical authorities norms.

54. Legal jurisdiction is within Daman District only.

Executive Engineer (P.W.D., W.D-I, DAMAN)

PERFORMANCE GUARANTEE

(i) The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent) of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance. This period can be further extended by the Engineer-in-Charge up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 10,000/-) or Deposit at Call receipt of any scheduled bank/Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay Order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.

(ii) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest.

(iii) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the Executive Engineer, PWD, Work Division-1, Moti Daman is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.

(b) Failure by the contractor to pay Executive Engineer, PWD, Work Division-1, Moti Daman any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.

(iv) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Executive Engineer, PWD, Work Division-1, Moti Daman.

ADDITIONAL CONDITIONS

1. The contractors are advised to get acquainted with the proposed work and its site and also study the Architectural Drawings, specifications and special conditions carefully before tendering. No claim of any sort shall be entertained on account of any site conditions and ignorance of specifications and special conditions.

2. The work shall be carried out as per **CPWD specifications for works-2019 Vol. I & II** matching with the electrical norms with up to date correction slips unless otherwise specified in the nomenclature of individual item or in the specifications and special conditions, where specifications are silent, the decision of Engineer-in-Charge shall be final and binding on contractors.

3. The rates for different items of work shall apply for all heights and depths, leads and lifts unless otherwise specified in the agreement or specifications applicable to the agreement.

4. Any damage done by the contractor to any existing work during the course of execution of the work shall be made good by him at his own cost.

5. Articles manufactured by the reputed firms and approved by Engineer-in-Charge shall only be used. Only articles classified, as 'first quality' by the manufacturer shall be used unless otherwise specified. In case articles bearing ISI certification are not available in the market, quality of samples brought by the contractor shall be judged by standards laid down in the relevant CPWD specifications. For the items not covered by CPWD specifications relevant BIS standards shall apply. The sample of materials to be brought to site for use in work shall be got approved from the Engineer-in-Charge before actual execution of work.

6. The contractor shall submit a detailed programme of work within 15 days of the date of issue of letter of intent. Detailed programme should include all the mile stone, cash flow, material procurement, manpower deployment. Program must show clearly the critical path to complete the project in time. The Engineer-in-Charge can modify the programme and the contractor shall have to work accordingly. During review of work progress, Engineer in Charge can ask to modify the programme. Contractor shall resubmit the modified programme in 2 days.

7. The quantities of each item shall not be exceeded beyond the agreement quantities without prior permission of Engineer-in-Charge.

8. **Statutory deductions on account of GST, income tax and surcharge as applicable shall be made from the gross amount of the bill**.

9. The contractor shall make his own arrangements for obtaining electric connection, if required and make necessary payments directly to the department concerned.

10. All types of mortars to be used in the work shall be mixed in the mechanical mixer and hand mixing shall not be permitted.

11. The contractor shall make his own arrangement for getting the permission to ply the trucks from the traffic police.

12. No payment shall be made to the contractor for any damage caused by rain, snow fall, floods or any other natural causes whatsoever during the execution of work. The damage caused to work shall have to be made good by the contractor at his own cost and no claim on this account shall be entertained.

13. Other agencies may also simultaneously be executing the work of electrification, Horticulture or external services and other building works for the same building. Along with this work. The contractor shall afford necessary facilities for the same and no claim in the matter shall be entertained. The contractor shall especially co-ordinate with the other agencies carrying out their work.

14. Some restrictions may be imposed by the security staff etc. on the working and or movement of labour and materials, etc, the contractor shall be bound to follow all such restrictions / instructions and nothing shall be payable on this account.

15. The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards. He shall be responsible for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of the work by storing materials on the road.

16. The contractor shall be fully responsible for the safe custody of the material issued or brought by him to site for doing the work.

17. Testing of materials: -
In case there is any discrepancy in the frequency of testing as given in the list of mandatory test and that in the individual sub-head of work as per the **CPWD specifications for works-2019 Vol-I & II and relevant IS-Code** with up to date correction slips, the higher of the two frequencies shall be followed and nothing extra shall be payable to the contractor on this account.
Contractor shall carryout all required test pre and post construction including NDT for cement, steel, flooring tiles, piles (load test and integrity test etc..) or any other item related to construction without claiming any extra cost what so ever from the employer in this regard. The Electrical materials is duly tested from recognized Govt. institution / SVNIT/ IIT.

Samples of all fittings and fixture to be provided shall be got approved from the Engineer-in-charge before use in the work.
18. The rate for all items of work, shall unless otherwise clearly specified include cost of all labour, material and other inputs including making of any sleeves, core cuts, core cut filling material, expansion materials, weather prevention coats, clamps, bolts, nuts etc. involved in the execution of the items. All Items to be executed in line with the drawings provided in the tender. Rates to be quoted taking in account tender drawings and details. No extra payment shall be entertained against such items.

19. The order of preference in case of any discrepancy as indicated in condition no. 8.1 under "Conditions of Contract" given in the **General Conditions of contract for Central P.W.D work 2014**(with amended up to last date of submission of tender) form may be read as the following.

a. Description of Schedule of quantities.
b. Additional Specifications and special conditions, if any.
c. Contract clauses of **General conditions of contract for Central P.W.D works 2014**(with amended up to last date of submission of tender)form.
d. CPWD Specifications.
e. Architectural drawings.
f. Indian Standard Specifications / BIS.
g. Sound engineering practice.

Any reference made to any Indian Standard Specifications in these documents, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up to last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian Standards applicable to the work at site.

20. The contractor shall make his own arrangement of water for construction and drinking purpose as well for electricity and its distribution at his own cost. The department will render only assistance to the contractor for making application to DJB/ authorised Electric supply agency, if required. All the fees and charges including consumption charges shall be borne by the contractor. The water should be as per CPWD specifications, 2014. Matching with electrical norms.

21. The contractor will not have any claim in case of any delay by the Engineer-in-Charge in removal of trees or shifting, removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structure etc., if any which may come in the way of the work. However, suitable extension of time can be granted to cover such delay.

22. The malba /garbage generated at site due to construction activities shall be removed from the site immediately & shall be disposed off by the contractor to the approved dumping site identified by the Engineer-in-charge. The surplus soil/earth shall be disposed of as per the directions of Engineer-in-charge separately.

23. The contractor shall clean the site thoroughly of scaffolding materials, rubbish, equipments left out of his work and dress the site around the building to the complete satisfaction of the Engineer-in-charge before the work is treated as completed.

24. The labour welfare cess/ fund @ 1% of gross work done shall be deducted.

25. **Maintenance of Register of Tests**- All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.

26. **Maintenance of Material at Site (MAS) Register**- All the MAS Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge.

27. Contractor shall be responsible for safe custody of all the test registers.

28. Barricading

i. The site is to be barricaded on all sites with 3m high GS sheets.
ii. The detailed design of barricading of considering height of barricade, wind load etc. should be prepared by contractor. The design calculation and working drawing will be provided by the contractor & approved by Engineer- in- Charge. The G.S sheet barricading will be designed above the wall area on the iron frame embedded properly in concrete block.
iii. Access gate of adequate sized opening in barricading should be provided to allow smooth flow of contractor's machinery, trucks, trailers etc.
iv. Contractor shall take measures to maintain the integrity of the barricade and will maintain safe work condition at site.
v. Contractor shall write **Executive Engineer, PWD, Work Division-1, Moti Daman** name and logo at suitable interval over a primary coat of red oxide zinc chromate primer and paint as directed by Engineer-in-Charge.
vi. After successful completion of work, all the barricading will be dismantled/removed by contractor and it will be the property of contractor.
vii. The work of barricading mentioned as above shall be executed by the agency at his own cost and nothing shall be paid on this account.

30. Refund of security deposit regarding specialized items of work

(1) For some of the specialized items of work such as waterproofing works, Sanitary installations/ Water Supply/ Drainage Works, Aluminum Doors/ Windows/ ventilators/ Structural Glazing Works, Stone/ Tile Works, kiln seasoned and chemically treated wooden shutters etc. that are entrusted to specialized firms or registered contractors who associate specialized agencies, the contractor/firm executing the work should be asked to give a specific guarantee that they shall be responsible for removal of any defects cropping up in these works executed by them during the guarantee period. The form of the guarantee to be executed by the contractors is given vide Annexure I to V .

(2) It has further been decided that 2.5% of the security deducted from the bills of the contractors shallbe refunded to him after expiry of maintenance period in accordance with the terms of the contract in this behalf.

31. Defect and Maintenance Liability Period: The Defect & Maintenance Liability Period for the Work shall be of the 5 year from the date of completion construction work. The above mentioned period shall supersede the defect liability period provided in the Clause 17 of General condition of Contract (GCC) and shall be applicable for the Work with reference to the provisions of clause 17 of GCC and Article 6 of the Integrity Agreement as per the GCC and as well as per Clause 1.7 of Section 1.
32. All the materials during the Defect and Maintenance Liability period shall be readily available at the site. The replacement of the materials shall be taken place within 48 hours by the notice of Engineer-in-Charge if not penalty will be applicable on the Contractor.
33. Important Instructions to the Contractor/ Works being executed:

    a. This is an important restoration project involving an early 20th century building, which has a great heritage value not only for the PWD, WD-IInow but also for the city of Diu. For this reason the agencies involved in the project will have to exercise tremendous sensitivity in

handling the work on this building and will strictly follow the Engineer-In-Charge instructions on drawings and specifications for the works.

b. The agencies will require especially skilled work force in different trades involved which vary from ceramics to metal and stained glass inlay, in order to restore the building elements, which have suffered degradation due to ageing

c. The entire work shall have to be carried out strictly under the instructions of the Engineer-In-Charge, and at no point the work shall proceed without sufficient details and mock-ups required to carry out the details on actual site.

d. Any new work as per the details and specifications on the existing building will have to be properly inserted with least interference to the original structure and it has to be carefully achieved as per the instructions of the Engineer-In-Charge, such that it is reversible and does not damage the existing structure in any case.

e. Appropriate laboratory test and sampling shall be carried out while using new materials to match them with the existing materials to avoid and mismatch and material incongruity. The agencies will have to undertake these investigations as directed by the Engineer-In-Charge.

f. The agency will maintain appropriate record of supervision and a log kept of any new evidence and additional decision during the process of executing. The agency must appoint a well-qualified Supervisor, trained in dealing with historic buildings for the period of execution of works. The Engineer-In-Charge shall approve this appointment.

g. No action of the agency should amount to removal of parts of the building from its original location at any cost. If this has become necessary for the reasons of safety of the building, the Engineer-In-Charge instructions will be communicated with a procedure to deal with such a situation and his instructions will be considered final in the matter.

h. Agency must take all the precaution to safeguard the historic property while the restoration work is in progress by proper cordons and boundary limits.

i. The entire affected portion where the work is being carried out shall be temporarily secured and supported as the case may be. The scaffolds and such temporary work shall be independent and shall not be attached to the existing building in any manner.

j. The agency must appoint required trained security personnel to watch the site during the process of execution.

SPECIAL CONDITIONS FOR PROCUREMENT OF CEMENT

1. The contractor shall procure OPC cement in work from reputed manufacturers of cement having a production capacity not less than one million tonnes or more per annum, such as ACC, Ultra Tech, Siddhi, Sanghi Cement, Birla Jute & cement corporation of India etc., as approved by Ministry of Industry, Government of India and holding license to use ISI certification mark for their product. The tenderers may also submit a list of names of cement manufacturers which he propose to use in the work. The tender accepting authority reserves rights to accept or reject name (s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer fully or partially.

The supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking. Samples of cement arranged by the contractors shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS codes. In case of test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

2. The cement shall be brought at site in bulk supply of approximately 25 tonnes or as decided by the Engineer-in-charge. The cement godown of the capacity to store a minimum of 500 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made.

3. Double lock provision shall be made to the door of cement godown. The keys of one lock shall remain with **Executive Engineer, PWD, Work Division-1, Moti Daman** Engineer-in-charge or his authorized representative and the keys of the other lock shall remain with the contractor. The contractors shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitated the inspection of the cement godown by the Engineer-in-Charge at any time.

4. The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of charge the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor / department in the manner indicated below:

(a) By the contractor, if the result shows that the cement does not conform to relevant BIS code.

(b) By the department, if the result shows that the cement conforms to relevant BIS codes.

5. The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case of cement consumption is less than theoretical consumption including permissible variation, recovery at the rate show prescribed shall be made. In case of excess consumption no adjustment need to made.

6. Cement brought to site and cement remaining unused after completion of work shall not be removed form site without written permission of Engineer-in-Charge.

7. The damaged cement shall be removed from the site immediately by the contactor on receipt of a notice in writing form the Engineer-in-Charge. If he does not do so within three days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.

SPECIAL CONDITION FOR PROCUREMENT OF STEEL

1. The contractor shall procure TMT bars of **Fe500-D grade / CRS steel as per schedule**(the grade to be procured is to be specified) from primary producers such as SAIL or TISCO or RINL or JINDAL or JSW Steel Ltd. as approved by the Ministry of Steel. In case of non-availability of steel form primary producers the NIT approving authority may permit use of TMT reinforcement bars/ CRS Steel procured from secondary producers. In such cases following action is to be taken by NIT approving authority:

a. The grade of the steel **Fe500-D grade/ CRS steel as per schedule**to be procured is to be specified as per BIS 1786-2008.

b. The secondary producers must have valid BIS licence to produce HSD bars conforming to IS 1786 : 2008. In addition to BIS licence, the secondary producer must have valid licence from either of the firms Tempcore, Thermex Evcon Turbo & Turbo Quench to produce TMT Bars/ CRS Steel.

c. The TMT bars / CRS Steel procured form primary producers shall conform to manufacture's specifications.

d. The TMT bars / CRS Steelprocured form secondary producers shall conform to the specifications as laid by Tempcore, Thermex, Evcon Turbo & Turbo Quench as the case may be.

e. TMT bars procured either from primary producers or secondary producers, the specifications shall meet the provisions of IS 1786 : 2008 pertaining to **Fe500-D grade/ CRS steel as per schedule** as specified in the tender of steel as specified in the tender .

f. All TMT Bars/ CRS Steel to be duly factory coated against corrosion in coastal environments.

2. The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

3. Sample shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications as defined under para (1) (d) & (1) (e) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time after the written orders from the Engineer-in-Charge to do so.

4. The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-Charge.

5. The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

6. For checking nominal mass tensile strength bend test, re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below.

Size of bar	For consignment below 100 Tones	For consignment over 100 Tones
Under 10mm dia bars.	One sample for each 25 Tones or part thereof.	One sample for each 40 Tones or part thereof.
10mm to 16mm dia bars.	One sample for each 35 Tones or part thereof.	One sample for each 45 Tones or part thereof.
Over 16mm dia bars.	One sample for each 45 Tones or part thereof.	One sample for each 50 Tones or part thereof.

7. The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of test shall be borne by the contractor.

8. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption no adjustment need to be made.

9. The steel brought to site and steel remaining unused shall not be removed form site without the written permission of the Engineer-in-Charge.

10. In case contractor is permitted to use TMT reinforcement bars procured form secondary producers then:

10.1 The rate of providing & laying TMT reinforcement bars / CRS Steel as quoted by the contractor in the tender shall also be reduced by **Rs.10/- per kg**.

PARTICULAR SPECIFICATIONS

1 **GENERAL**: The work in general shall be executed as per the description of items, special conditions, provision of this NIT and **CPWD Specifications for works-2019, Vol. – I & II** with up-to-date correction slips:-

1.1 The work shall be executed and measured as per metric dimensions given in the Schedule of Quantities, drawings etc. (FPS units wherever indicated are for guidance only)

1.2 All stone aggregate and stone ballast shall be of hard stone variety to be obtained from approved quarries and or any other source to be got approved from the Engineer-in-charge.

2 Dewatering:

i. Sub-soil water table at work site is reported to be about approx1 meter to 2 Meter below general ground level.

ii. Dewatering shall be carried out by suitable means with adequate stand-by arrangements and the disposal of water shall be done as per the direction of the Engineer-in-charge.

iii. The subsoil water from dewatering may be required to be connected to the raw water grid in the area for use in horticultural purpose, for which no extra payment will be made. However, only the cost of providing and laying pipe line beyond site boundary shall be paid.

iv. Sub-soil water level shall be maintained at least 50cm below the P.C.C level during laying of P.C.C water proofing treatment, laying of basement raft and beams including filling of earth/sand under the basement floor. The water table shall not be allowed to rise above base of raft level until completion of outer retaining wall including water proofing of vertical surface of walls and back filling along the walls upto ground level and until the structure attains such height to counter balance the uplift pressure. The Rate for earth work in excavation in or under water and /or liquid mud are inclusive of pumping out or bailing out water and to maintain sub-soil water table at lower level during execution as per specifications and Structural drawings. For other items of cement concrete, reinforcement cement concrete, brick work, steel work, finishing work, water proofing & soil anchors nothing extra is payable for execution of these items under water.

v. The rates quoted by the contractor shall be inclusive of working in or under water conditions and including pumping or bailing out water encountered from any source such as rains, floods, leakage from sewer and water mains, sub soil water table being high or for reasons of stability of structure or any other cause whatsoever. The extent and decision of pumping or bailing out of water shall be as per requirements of site and stability of structure and decision of Engineer-in-charge in this regard shall be final and binding on the contractor. Nothing extra shall be payable on this account.

vi. The contractor shall carry out detailed hydrological survey for designing dewatering scheme. The dewatering scheme shall be got designed from IIT/CBRI/NCBM. The safety of adjacent structures shall be ensured as per the Sl No. 3. (xv) given below

3 TEMPORARY EARTH RETAINING STRUCTURE :

i. The space for movement of heavy construction machineries or the space for open earth excavation by benching, in steps or in slope may not be available. A temporary earth retaining structures like Steel sheet pile / soldier pile etc. with strutting or soil / rock anchors shall be required for the safety of existing building and trees before taking up deep basement excavation work for the construction of basement.

ii. The information and details given herein, in the architectural, structural drawings, preliminary soil investigation report and elsewhere in the tender documents is only indicative and for general information and guidance only. The Contractor and his associate, structural Design Consultant shall inspect the site of work and get familiar with the actual site conditions.

iii. The department shall not be responsible if soil is found to be of different character and properties during actual execution of work or testing of soil. The Department shall not be responsible for the inaccuracy thereof or any interpretation or conclusion drawn from them by the contractor.

iv. The contractor may carryout detailed soil investigation at his own cost if he considers so.

v. The detailed analysis, design, drawing of temporary earth retaining structure shall be obtained from reputed institute like from IIT/CBRI/CRRI/ NCCBM and shall be submitted along with detailed calculation sheets with references of relevant BIS codes, manual etc. within 30 days from the date of issue of acceptance letter by the Engineer-in-charge. The design shall be based on the actual soil properties/ characteristics and shall be able to withstand the surcharge of existing buildings, excavated earth, dynamic loads of vehicular movement and vibrations caused by construction machinery and equipments. The strutting, or the anchors, and the waler beam etc. shall be as per the structural design and analysis. The department will have option to get the design proof checked from designated consultant. The contractor shall modify the design and drawings and resubmit the same, if required without any extra cost / claim. However, the contractor shall be solely responsible for the design, safety of men, materials and stability of existing structure and trees.

vi. The Analysis, Design & Drawing of temporary earth retaining structure shall specify details like the spacing, type, size, unit weight, material, elastic section modulus of members, depth of embedment, Specification for wooden lagging, waler beams and anchors etc.

vii. The expenses on design, drawing of temporary earth retaining structure, soil investigation and geo technical survey shall be borne by the Contractor The quoted rates shall include all the above expenses and no claim for cost/ expenses shall be entertained by the department.

viii. If required by the Engineer-in-Charge, contractor shall provide basic equipment/devices for measurements of deformations / settlements to measure ground water table, Settlement gauge etc. to check settlement of adjoining buildings. The equipments will be installed as per direction of Engineer-in-charge. Calibration and measurements of all equipments shall be performed by the contractor and shall be checked by independent agency if desired by the Engineer –in-Charge. Results from each measurement shall be recorded & submitted to Engineer-in-charge expeditiously.

ix. The work of providing temporary earth retaining structure as per approved design and drawings shall be carried out by the contractor either himself if he has the required experience of executed such works or through experienced associated agency having satisfactory completed of work (s) of Providing Steel Sheet Piles or Soldier Piles/H-Beams and or Diaphragm Wall etc. as earth retaining structure.

x. The materials for removable temporary earth retaining structure/ shoring / strutting etc. shall be the property of contractor and after successful completion of raft & retaining wall the same shall be removed from the site after use as per direction of Engineer-in-charge.

xi. Sheet piles/ Soldier piles and appurtenant materials shall be tested and certified to meet the specified chemical, mechanical and sectional properties requirement prior to delivery to site, as per relevant IS code.

xii. Before execution of work, the contractor shall submit the construction procedure/ Methodology and Specifications of Temporary Earth Retaining Structure from the structural consultant viz IIT/CBRI/NCBM and shall get approved from Engineer in Charge. The work of earth retaining structure shall be carried out strictly in accordance with the sequence, specifications, and procedure given in approved structural design & drawings and as per direction of Engineer in Charge.

xiii. The Contractor shall submit the layout plan showing alignment arrangement of proposed temporary earth retaining structure clearly indicating the clear distance from the existing buildings /trees and the proposed basement along with design and drawing showing complete details.

xiv. The rate quoted by the agency shall be inclusive of mobilization to site all necessary machineries, equipments, handling, storing, installation, cutting holes, splicing, driving, re-driving, bailing out water, pulling out and removal of the temporary earth retaining structure / strutting, instrumentations etc. men, materials etc., other incidentals for execution of work, with all safety measure as required for the execution of construction work for safety of surrounding existing buildings structures, parked / moving vehicles, equipments etc. as per direction of Engineer-in-charge.

xv. The safety of the adjacent existing buildings is to ensure so that no settlement or any damage due to settlement, land slide etc. because of deep basement excavation work is caused. For the safety, the Contractor shall install required apparatus / equipments for close monitoring any settlement or crack development, damages in the nearby buildings at his own cost. The contractor shall provide all necessary equipments/gauges for measurements of deformation/settlement in the adjacent buildings as directed by Engineer-in-charge. Monitoring instruments are to be maintained in good working conditions throughout the construction period is responsibility of contractor. Daily reading of instruments shall be recorded and got checked by the authorized representative of Engineer-in-charge. Checking operations (at least once in a week) shall be done by an experienced independent agency appointed by contractor with approval of Engineer-in-charge. All expenditure incurred on this independent agency shall be borne by the contractor. The Contractor shall be held liable for all damages on any account including defective installation, execution and removal of earth retaining structure.

xvi. The non-submission of the analysis, design & drawings of Temporary Earth Retaining Structure within 30 days from the date of start or failure to resubmit within 7 days if required by the Engineer-in-Charge shall amount to non performance on the part of contractor/ Agency. The Engineer-in-charge shall be at liberty to take action to forfeit the Earnest money and the performance guarantee and shall be at disposal of Government of India.

xvii. **Measurement** : For the payment of temporary earth retaining structure, the depth of exposed excavated vertical earth face and the perimeter in straight horizontal length correct to a centimeter shall be measured. The area shall be worked out in sqm nearest to two decimal. The temporary earth retaining structural member shall be measured upto the dredge line only for measuring depth. No payment shall be made for the embedded structural member below dredge line. The payment shall be made only for the surface area and nothing extra is payable for erecting system of sheets/pegs/wedges/waler beam/ channel etc.

xvii. **Rates:** The Rate shall be inclusive of all the operations, analysis, design redesign and drawings for temporary earth retaining structure, removal of temporary earth retaining structure ,soil investigation, geo technical survey to locate the underground services /cables, water supply and sewer lines etc., equipments, instrumentation inserts, anchors, waler beams materials, equipment machineries tools tackles and plants, bailing out water etc. complete required for safe execution of work as per approved structural design / drawing and as per direction of Engineer-in -charge .
xviii. Rate of item is inclusive of detailed soil investigation of area where construction activity to be carried out including Geo-technical survey of the area for locating electric, sewer water supply lines and other services in the proposed area of construction.

4. RCC WORK

4.01 Approved curing compounds may be used in lieu of moist curing with the permission of the Engineer-in-Charge. Such compound shall be applied to all exposed surfaces of the concrete as soon as possible after the concrete has set. Impermeable membrane such as polythene sheet covering the concrete surface may also be used to provide effective barrier against the evaporation. For this no extra payment shall be admissible.

4.02 The finishing of RCC shall be very good so that no finishing /rendering is required. The extra provision of water proof ply for the same has been taken. Plastering even at the cost of the contractor will not be allowed on ceiling, beams, RCC walls and columns etc.

4.1 Design Mix Concrete:-Design mix concrete shall be used in the work for all structural members. Following parameters shall be adopted for mix design as per IS-456-2000 (Latest Edition)

4.1.1 Approved admixtures conforming to IS 9103 shall be permitted to be used. The chloride content in the admixture shall satisfy the requirement of BS 5075. The total amount of chloride content in the admixture mixed concrete shall satisfy the requirement of IS 456-2000.

4.1.3 The concrete mix design with and without admixture will be carried out by the contractor, at his own cost, through one of the following laboratories/Test houses to be approved by Engineer-in-charge:-

(i) IIT, New Delhi / Any other IITs / NITs

(ii) National Council for Cement & Building Materials, Ballabhgarh.
(iii) CRRI, New Delhi
(iv) New Delhi college of Engineering
(iiv) SVNIT Surat

4.1.4 In the event of all the four laboratories being unable to carry out the requisite design/testing, the contractor shall have to get the same done from any other reputed laboratory with prior approval of the Engineer-in-Charge.

4.1.5 The various ingredients for mix design/laboratory tests shall be sent to the approved lab/test houses through the Engineer-in-charge and the samples of such ingredients sent shall be preserved at site by the contractor till completion of work or change in Design Mix whichever is earlier. The sample shall be taken from the approved materials which are proposed to be used in the work.

4.1.6 The Contractor shall submit the mix design report from approved laboratory for approval of Engineer-in-Charge within 45 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the mix design is approved by Engineer-in-charge.
The contractor shall make cubes of trial mixes as per approved mix design at site laboratory for all grades of concrete in presence of the Engineer in charge using same ingredients as adopted for design mix, prior to commencement of concreting and get them tested in presence of Engineer-in-charge . The testing and the acceptance of the trial mixes shall be as per CPWD Specifications. The conformity of mix design should be established by conducting three repeat trial mix tests. In each repeat trial mix test six cubes of standard size 15 cm x 15 cm x 15 cm shall be cast, out of which three cubes shall be tested after 7 days & 3 cubes shall be tested after 28 days. This provision shall be as per relevant paras of CPWD specifications 2014.

4.2 90% of the total trial mix tests shall be done in the laboratory established at site by the contractor and remaining 10% in the laboratory of Central Design Organization, CPWD or in any other laboratory as directed by Engineer-in Charge. Samples of various materials required for testing shall be provided free of cost by the contractor. Testing charges, if any, shall be borne by the department provided the sample passes the test, otherwise it shall be borne by the contractor. All other expenditures required to be incurred for taking the samples, conveyance, packing etc. shall be borne by the contractor himself. (This supersedes provision of clause 10A of General Conditions of Contract for CPWD works (CPWD-8). The contractor shall produce all the materials in advance so that there is sufficient time for testing and approval of the materials and clearance before use in work. The Engineer in charge shall be at liberty to test representative sample(s) of each item of schedule of quantity in any approved laboratory as decided by him. The samples of testing shall be provided by the contractor free of cost. Any expenditure required to be incurred for taking sample, conveyance and packing shall be borne by the contractor. In case of any sample of particular lot fails in testing the contractor shall be bound to replace the entire lot with fresh material of prescribed specifications. The rejected lot shall bereturned to the contractor only after fresh lot is supplied. Testing charge in respect of failed sample will be recovered from the contractor.

4.3 For each change of source or quality / characteristic properties of the ingredients from that approved & used in the concrete mix during the work, a fresh mix design shall be got done by the contractor. However, maximum two such changes shall be permitted in the whole work. For any

change, the Contractor shall bear the cost of fresh Mix Design. Revised trial mix tests shall be conducted at laboratory established at site or Engineer-in-Charge may order for testing of these cubes from the independent laboratory and shall be submitted by the contractor as per the direction of the Engineer-in-charge.

4.4 The cost of packaging, sealing, transportation, loading, unloading, cost of samples and the testing charges for mix design in all cases shall be borne by the contractor.

4.5 The mix design shall be done considering the degree of quality control as **"Good"** in all cases.
Where batching plants are used, moisture content may be determined by moisture probes fitted to the batching plants.

5.1.5 Work Strength Test & Acceptance criteria :-

(a) Acceptance of concrete, work strength test & cube test shall be carried out as per CPWD specification 2014 Vol-I with up to date correction slips.

7.6 Construction Joints:

The construction joints shall be provided only at locations shown in the structural drawings or as approved by Engineer-in-Charge. Reinforcement shall continue through construction joints

The foreign matter and laitance shall be cleaned properly by compressed air before start of further work.

All construction joints in RCC raft, shall be injection grouted with cement slurry. Nothing extra shall be paid on this account.

8.0 Guarantee Bond:
Ten years guarantee bond in prescribed proforma attached at **Annexure-I** herewith shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability/liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor.
Separate guarantee bonds shall be submitted by the Contractor for different type of water proofing work.

Ten per cent of the cost of water proofing work shall be retained as security deposit and the amount so withheld would be released after ten years from the date of expiry of maintenance period under the agreement, if the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period, it shall be rectified by the contractor within seven days of receipt of intimation of defects in the work. If the defects pointed out are not attended within the specified period, the same will be got done from other agency at the risk and cost of contractor.

The security deposit against this item of work shall be in addition to the security deposit mentioned elsewhere in contract form.

S P E C I A L C O N D I T I O N S

1. This tender is for Supply, Erection, and Testing & Commissioning of Decorative Streetlight System.
2. Deviations in technical specifications and commercial terms shall not be allowed.
3. Bidder shall be registered with PWD or any other Government/Semi Government body for in appropriate Class. Certified copy shall be attached in P. Q. Bid.
4. Bidder shall be registered with PWD or any other Government/Semi Government body for in appropriate Class. Certified copy shall be attached in P. Q. Bid.
5. Tender must be accompanied by an Earnest money deposit of Rs. (Rupees Only) in the form of Demand draft / Pay Order of any Nationalized Bank in favour of the "PWD DAMAN.
6. Bidder shall have average annual turnover 50% on the estimated cost put to the tender Lacs during last three years.
7. This Item Rate contract is for a period of 18 month from the date of work order; rates shall remain firm for entire contract period.
8. Quoted price shall be inclusive of all taxes, duties, packing-forwarding etc.
9. In case of site clearance is not available due to any reason suitable extension shall be given to the contractor carry out the work.
10. Work to be Started after Sub-order issued By the Engineer-in-charge. No material advance will be given where work could not be starter/ sub-order issued.
11. The concern Authority has Reserved right to select Model and Design Other than Mentioned in Specification.
12. If it is required to operate any item that is not covered under this tender, the contractor shall carry out the same at the rate of prevailing SOR or approved rate by PWD or market rate.
13. Tenderer shall have to give twelve months guarantee of all items against manufacturing defect from the date of commissioning.
14. The tender shall remain valid for acceptance for a period of 120 days from the date of opening of the tender. The Tenderer shall not be entitled during the said period of 120 days to revoke or cancel his tender or to vary the tender or to vary the given or any term thereof. In case of tender revoking or canceling his tender or revoking the same or vary in term in regard to thereof, the Owner shall forfeit the earnest money paid by him along with the tender.
15. The rates quoted by the Tenderer shall be inclusive of all taxes and duties
16. The successful Tenderer shall be required to execute an agreement within 15 days from the date of issue of the work order. In the event of failure on the part of the successful Tenderer to sign the agreement within the above stipulated time period the earnest money or his initial

Security Deposit will be forfeited and the acceptance of the tender shall be considered as cancelled.

17. It shall be obligatory at the part of the prospective tenders to attend the Pre-Tender conference without fail, to get clear, the confusion, doubts, regarding the description, units quantity etc. of the schedule items under schedule 'A' of tender document and also, get clarified the doubts, discrepancy in drawings & the schedules if there is any, in the minds of the prospective tenders, before submitting their tenders otherwise, the tenders of defaulting Tenders may be summarily rejected and set a side.
18. It will be obligatory at the part of the contractor to screen and wash the sand, if it is stipulated for use in construction work by way of sand screening and washing machine.
19. (i) Press notification is to be attached. (ii) In CPWD Form 6, date of opening is to be mentioned wherever required. The enclosed Tender documents are approved subject to the following conditions:-
    1) Preparing the work programme in the form of bar-chart soon after the issue of work order and prior to signing of the agreement in consultation with the contractor and furnish the same along with copy of Tendered Agreement to the contractor and the E.E. shall ensure and ascertain that this work programme is strictly be adhered and followed by the department as well as by the contractor.
    2) For obtaining the letter from the contractor stating that (i) He has taken over the site and there is no encumbrance and hurdles on the site of the work for commencing and completing the execution of work within the stipulated time limit. (ii) The contractor has received the certified true copy of the Tendered. Agreement along with the required designs and drawings, clarification and explanation and he has understood the nature, scope and extent of the work properly and he does not require any more details or drawings from the department to commence and complete the work within the stipulated time limit.
    3) Maintaining and operating the prescribed registers and records/ documents at the site of work during the course of the work as per the instructions contained in the CPWD works Manual and he shall ensure and ascertain that full proof records of the contractors performances, quality wise, quantity wise and time schedule wise are regularly maintained and operated and the same are countersigned by the contractors under his own signature so that the actual performance of the contractor can be proved and established through these records in the event of the contractor giving for the Arbitration/course of litigation, on account of any dispute, allegation, blames, claims against the department which may be put forth by the contractor subsequently.

4) Reasonability & Justification of the tender should be prepared as per CPWD works Manual Section 19.4.3 & 19.4.3.1 and AOR is also to be attached alongwith the tender at the time of submission for acceptance.
5) The work should be carried out as per guideline issued by CPWD, MHA, MOSRT & H, G.O.I. Ministry of Finance & General Finance Rules.
6) After installation of street light final installation checking and material checking is to be certified by independent electrical consultant / electrical authority / certificate from recognized institution i.e SVNIT / IIT.
7) All material use for this work is of standard make & made duly checked by third party.

Special condition of Manufacturer

Documents require to be submitted alongwith tender for Technical Evaluation:

1) LM79 report from Third party NABL approved lab complying tender specification

2) IS10322 (IP (Optical & control gear) ,IK & Thermal) report from Third Party NABL approved lab complying tender specification.Proposed luminaire must be BIS certified.BIS certificate of model famiily streetlight complying IS 10322 and LM79 report from matching tender submissionmust be attached alongwith bid

3) Tender specification complying letter from manufacturer both for luminaire as well as pole alongwith manufacturer authrorisation letter for participation of tender,Bidder must propose only one make from the approved list

4) LM80 report of LED to be used

5) Lighting design alongwith IES file of the luminaire.

6) Catalogue of offered products matching and highlighting tender specification

7) Drawing of Pole /bracket signed and stamped by Manufacturer

8) Luminaire manufacturer must be in lighting business from last ten years In India and having its own manufacturing facility in India.

9) Price bid of bidder shall only be open after technical evaluation of document as per tender specification….Bidder failing submitting above document will be rejected and not consider for technical evaluation.

Necessary documents of the Luminaire Manufacturer to be submitted by bidder along with tender document as below:

(i) The Luminaire manufacturer should be in the business of Lighting
Business for at least last 10 years.

(ii) Average annual turnover of the Luminaire Manufacturer should be of
Rs. 3000 lac (min.) per year for the last 10 years. Audited CA certified copy claiming the same as a proof must be attached with tender document

(iv) Luminaire manufacturer shall possess own manufacturing facility in India from last ten years. Photographs of the same shall have to be submitted along with the tender.The company must posses ISO 9001 and 14001 in the stream of design,marketing and manufacturing of LED luminaire and poles/brackets..Certificate of registration complying the same must attached with tender document.

SPECIAL CONDITION:-

All the agencies are hereby directed to scan their tender fees and E.M.D. and Technical document online only. It is mandatory to submit tender fee and EMD online failing which the price bid of that agency will not be opened online.

Physical submission of such scanned documents shall reach to office of the Executive Engineer within 3 (three) working days after closing of online bidding. The agency should confirm and certified that the document scanned online (i.e. Tender fees and EMD) are also physically submitted in the sealed cover. If physical document is not found in sealed cover then necessary action will be initiated against the concerned agencies for debarring him/her for the period of one years in the U.T. of Daman, DIU and Dadra and Nagar Haveli.

Sign of the Contractor.

Executive Engineer,
P.W.D.W.D,- I., Daman.

- DETAILED TECHNICAL SPECIFICATIONS

Pole Foundation for 8 Mtr pole :-

Providing M-20 / 1:2:4/ 1:4:8 Reinforce cement concrete foundation for 8 Mtr. & 70 % PCC from bottom including excavation for the pole of size **60 x 60 x 150 cms 500mm X 500mm or recommended by pole manufacturer.** Deep in below ground level with plinth of 45 cms x 45 cms(or 45 cms dia x 45 cms) or 1400 mm high upper ground level **with necessary curing FE-415 Steel** curing and finishing or as recommended by pole manufacturer in approved manner and as per drawing, specification & including excavation and as per instruction of Engineer In charge. Suitable to Item No.1 - (1 No. Per St. Lght Pole)

Make:- Same as per Pole Manufacturer / OEM Recommendation and approved drawing.

Mode of Measurement: Measurements shall be taken on No. basis

Providing & fixing of 'J" type EN8 grad foundation bolts:-

S.I.T.C of set of 4 Nos. M 20 x 600 long 'J' type EN 8 grade foundation bolts same as recommended by OEM/ pole manufacturer along with templates for the above poles and as per specification.(1 Set. Per Pole)

The poles shall be suitably designed for ground and flange mounting. The J-bolt size shall be of 20mm diameter and of EN-8 GRADE. Each individual J-bolt shall be complete with washers and nuts (the washers and nuts quantity shall be directed by the Engineer-in-charge) .

Mode of Measurement:- Measurements shall be taken on Set basis.

CABLE LUGS:-

Providing and fixing of Solderless 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 and as per specification. Size : For the Cable of 10 Sq. mm.&16 sq. mm.

Providing and fixing of Solderless Crimping Type Aluminium Lugs (4 Nos. per termination) conforming to IS suitable for 1 x 4.0 Core x 10 Sq. MM PVC Insulated Aluminium Armoured cable tail complete erected with insulating materials for each termination. - (2 Nos. Termination Per St. Light Pole & 8 Nos.per MSP)

Mode of Measurement:- Measurements shall be taken on No. basis.

SUPPLY, LAYING, TESTING AND COMMISSIONING OF ARMOURED XLPE CABLE AND UMARMOURED PVC CABLE :

Providing, laying, testing & commissioning mains with 1.1 kV grade FR PVC insulated ISI Marked Stranded unarmored Copper cable having Conductor 3 Wire 2.5 Sq. MM.,3 core round PVC sheathed in exising pipe/ in street light pole erected with 2.5 Sq. MM. copper conductor FR PVC insulated stranded wire of green colour for earth continuity.

Mode of Measurement: Measurements shall be taken on Rmt basis.

Providing, laying, testing & commissioning of XLPE (IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor suitable for 1.1 KV. grade to be laid 90 cms under ground or to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or on floor and making the ground as per original and as per specification. For street light between two poles & Service connections. Size : 1 x 4.0 Core x 10.0/16/25 Sq. MM with Class 2 conductor category. (For Streetlight between two poles & Service Connections.)

Make:-finolex , havells ,RR ,Poly Cab , kei,AVOCAB

Mode of Measurement: Measurements shall be taken on Rmt basis.

Refer General Technical Parameters as follows:-

1	**Dimensional Details**	Unit		
1.1	Number of Cores		4	4
1.2	Conductor Cross-Sectional Area	mm²	16	10
1.3	Type of Cable		A2XWY	A2XWY
1.4	Approximate Overall Diameter	mm	21.5	19.50
1.5	Approximate Cable Weight	kg/km	860	675
2	**Conductor :**			
2.1	Conductor Flexibility class		Class – 2	Class – 2
	Material		Stranded AL	Stranded AL
2.2	Number & Wire Diameter (For Guidance)	No/mm	07 / 1.73	07 / 1.35
2.3	Shape		Sector	Circular
3	**Insulation :**			
	Material		Cross Linked Polyethylene	Cross Linked Polyethylene
3.1	Average Thickness (Min.)	mm	0.7	0.7
3.2	Minimum Thickness	mm	0.53	0.53
3.3	Core Identification (As per Cl. No. 10.1 of IS:7098 (part-1)		R,Y,Blue& Black	R,Y,Blue& Black
4	**Extruded ST2 PVC Inner Sheath :**			
	Material		(As per Cl. No. 10.1 of IS:7098 (part-1)	(As per Cl. No. 10.1 of IS:7098 (part-1)
4.1	Minimum Thickness	mm	0.3	0.3
5	**Armour :**			

	Material		Galvanized Round Wire	Galvanized Round Wire
5.1	Size of Armour	mm	1.6	1.4
6	**Outer Sheath :**			
	Material		Polyvinyl Chloride ST2 Compound	Polyvinyl Chloride ST2 Compound
6.1	Minimum Thickness	mm	1.4	1.4
6.2	Colour		Black	Black
7	**Electrical Parameters**			
7.1	Rated Voltage Uo/U	kV	0.65/1.1	0.65/1.1
7.2	Maximum Conductor DC Resistance at 20°C	Ω/km	1.91	3.08
7.3	Permissible Cont. Current Rating in condition laid direct Air at 40°C	A	69	54
7.4	Permissible Cont. Current Rating in condition laid direct Underground at 40°C	A	74	57
7.5	Maximum Continuous Operating Temperature	°C	90	90
7.6	Maximum Conductor temperature during short circuit	°C	250	250
7.7	Short Circuit Current Rating of Conductor for 1sec.	kA	1.5	0.94
8	**Packaging**			
8.1	Standard Delivery Length	M	500/1000/1500	500/1000/1500
8.2	Tolerance	%	± 5	± 5
9	**Applicable Standards**			
9.1	Cable		IS 7098-1	IS 7098-1
9.2	Conductor		IS 8130	IS 8130
9.3	Insulation		IS 7098-1	IS 7098-1
9.4	Sheath Material		IS 5831	IS 5831
9.5	Test		IS : 7098 Part I (All acceptance Tests)	IS : 7098 Part I (All acceptance Tests)
10	**Installation Guidelines**			
10.1	Minimum Bending Radius	mm	12 x Overall Dia.	12 x Overall Dia.
10.2	Safe Pulling Force	N/mm²	30	30

Double Walled Corrugated (DWC) pipes :-

S.I.T.C of 50 mm nominal OD, Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II & & BSEN-50086) with necessary connecting accessories like coupler, Tee, L-Bow, etc. Required depth (90 cms) including excavation for laying of cable below ground/road surface enclosing/ passing of cable through DWC Pipe and back filling the same to make ground as per original & as per instruction of Engineer incharge- For Street light cable & Service Cable of 1 x 4 Cor x 10/16 Sq. mm.

Mode of Measurment:- Measurements shall be taken on Rmt. basis.

General :

Double wall corrugated (DWC) pipes should be made of High Density Polyethylene (HDPE) Raw material. The DWC HDPE pipes should be suitable for the LT cable installation works and should be in as per IS-14930 & BSEN 50086 standards the standards The outer wall should be of corrugated type for the maximum load bearing strength and the inner wall must be smooth for easy installation of cables without any friction. The DWC Pipes should be as per IS14930 & BSEN 50086 standards. The pipes must be very good Resistance to Corrosion, chemically inert & environmentally safe, good impact strength , Light in weight and easy to handle and transport.. Different colors of DWC pipes can be used for cable identification.

Make: Duraline , Gemini , Sy-Ron , rex

Sr. No.	Outer diameter (mm)	Inner Diameter (mm)	Suggested - Average/ Minimum Weight (Grams / per mtr)
1	50	As Per Standard	As Per Standard

PROVIDING & FIXING OF DECORATIVE STREET LIGHTS IN DAMAN DISTRICT.

1. Supply of Decorative Luminaires BIS approved(alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg. Diamteter and height of the protector should not be more than 320 mm. Protectorgrade with UVresistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided

with disconnector to avoid electrical shocks.Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement.The luminaire is provided with Inbuilt autocutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 9000 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-75W.
Make : Neri 851/Rosa OW/Ligman/ Keselec Porto-NU-75 watt/Simes or make as approved by the Engineer-in-charge.

2. Supply of Decorative Luminaires BIS approved(alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protectorgrade with UVresistant IK 09 (Confirm by IS10322 report fromThird party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks.Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement.The luminaire is provided with Inbuilt autocutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 4800 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-40W.
Make : Neri 851/Rosa OW/Ligman/ Keselec Porto-NU-40 watt/Simes or make as approved by the Engineer-in-charge.

3. Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The

protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 10500 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-90W.

Make : Neri 851/Rosa OW /Keselec Porto-NU-90 watt /Ligman/Simes or make as approved by the Engineer-in-charge.

4. Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation.

Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 11500 lumen (Confirmed by LM79 report from Third party NABL

approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. Watt -110

Make : Neri 851/Rosa OW/Ligman /Keselec Porto-NU-110 watt/Simes or make as approved by the Engineer-in-charge.

5. Supply of 8 Mtr height decorative having cast iron decorative base and pipe dia of 165 mm OD & 1 mtr long with decorative cast iron decorative reducer jointing with 89 mm OD straight pipe with ornamental cast iron decorative ring. Pole shall be mounted on square base plate 280*280 *14 mm thickness suitable for mounting on 4 nos foundation bolts. The Pole Shaft should be fabricated out of Steel tube of grade YST 240.and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable. Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint. The streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure.

Make: Neri/Rosa/Ligman/ Keselec /Simes as per drawingand matching specification or make as approved by the Engineer-in-charge.

6. Decorative Single Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative single arm bracket span of 500 to 1000 mm(as per lighting illumination design) single side (As per attached drawing), Hot dip galvanized as per ASTM A123, with minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 9 to 14 kg and bracket is painted with High quality Marine grade paint, painted in closed paint booth chamber in closed area and control environment. Model: Chatsworth Pole with Cascade Bracket. **Make: Neri/Rosa/Simes/ Keselec /Ligman as per drawing and matching specification or make as approved by the Engineer-in-charge.**

7. Decorative Double Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative Double arm bracket span of 500 to 1000 mm(as per lighting illumination design) each side (As per attached drawing) , Hot dip galvanized as per ASTM A123,With minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 15 to 20 kg and bracket is painted with High quality Marine grade paint, painted in closed paint booth chamber in closed area and control environment. Model: Chatsworth Pole with Cascade Bracket.

Make :Keselec/Neri/ Rosa/Simes/Ligman as per drawing and matching specification or make as approved by the Engineer-in-charge.

8. Supply of Decorative Luminaire with bracket for Urban lighting, body made of painted aluminium, The protector is made of PMMA with IK 07 (Confirm by IS10322 report from Third party NABL approved lab) Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab) Luminaire .Minimum Luminaire dimensions of 540* 350 mm . The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Minimum Luminaire efficacy is 110 lm/ watt system lumen 4400 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K, CRI>70 (Confirmed by LM79 report from Third party NABL approved lab) Luminaire is suitable for operating temperature (Ta) from -20° to 50°c. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. Require lighting design along with IES file of the luminaire. The bracket design should be made of hot-dip galvanized steel tube for suspended light fixtures as per drawing.

Make : Neri Light 21/Bega 77991 /Simes/Ligman/ Keselec Valemake matching technical specification or make as approved by the Engineer-in-charge.

9. Supply of streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure. The Pole Shaft should be fabricated out of Steel tube of grade YST 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint. 4 mtr pole with base diameter 140 mm up to 1 mtr height and rest 76 mm with base plate 250*250 *12 mm thickness, Height 4 meters.

Make : /Rosa/Ligman/Simesas/ Keselec /Neri per drawing and matching specification or make as approved by the Engineer-in-charge.

10. Supply of Decorative tree type structure(as per drawing)consist with Decorative curved cone shape LED fixtures.The decorative aesthetic curved cone design of LED fixture should be in eye catching yellow color. The decorative curved cone LED fixture should create spot which is suitable for public application. The curved shape fixture consist body

of Polycarbonate materialwith impact resistance of IK08. Luminaire should be powered by 80W high power LED source optic for better light projection. Its optical compartment should have IP66 ingress protection. LED Driver of luminaire should have internal surge protection of 4KV and 10kV of external surge protection.Electronic driver is having power factor>0.90*, THD<20*%, CRI>70 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 8800 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K.Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours.The whole height of 8 Meter column structure should be combination of inclined 3 nos. of conical pole. The plant like design, decorative bracket made from YST-240 steel pipe with three different branches. The plant like designed bracket should have mounting arrangement for decorative curved LED fixtures. The structure should be completely hot-dip galvanized and surface finished with PU paint. The curved cone fixture should set at angle that create warm and soft atmosphere by near area of installation. Combination of three poles should have common bas plate of 1000 x 1000 mm size and thickness of 20 mm. There should be separate service doors at the bottom of each conical poles for electrical terminations, mounting MCB and connectors. **Make : Hess/ Keselec/Bega or make as approved by the Engineer-in-charge.**

11. Supply of 6Mtr height decorative having cast iron decorativebase and pipe dia of 140 mm OD of 1mtr long , middle dia 76 mm with decorative cast iron decorative reducer jointing with straight pipe with ornamental cast iron decorative ring. Pole shall be mounted on square base plate 250*250 *14 mm thickness suitable for mounting on 4 nos foundation bolts. The Pole Shaft should be fabricated out of Steel tube of grade YST 240.and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable. Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint(Marine grade paint) to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint. The streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure.
Make: Neri/Rosa/Ligman/Simes/ Keselec as per drawingand matching specification or make as approved by the Engineer-in-charge..

TERMINATION PLATE WITH MCB:-

Supplying & erecting of backelite sheet 12 mm thick HYLAM make on existing angle iron frame, having the weight 1 KG & Size suitable to mount on JB with bakelite connector strip 4 way - 2 Nos. / 8 ways- 1 No. (incoming & outgoing cable) with stud type terminals suitable for 4 C x 10 Sq. mm. cable and double pole 6 A to 32 A switch to operate on 240 V, A. C. supply and having overload & short circuit tripping element and breaking capacity 10 kA conforming to IS: 8828/ 1996 IS/IEC 60898-1-

2003 having true contact indication and no line load bias with pollution degree class 3 and mechanical life is>100000 Operation for lighting Load (C Curve) with DIN rail and mounting clamp with nuts, bolts & washers suitable for erection on pole with cable clamps & earth bolt for lighting Load (B Curve) in existing box as per Drawing , specification or instructed by engineer in chagre) (1 Set. Per Street light Pole).
Technical Data 2 Pole MCB :- Number of poles - 2, Characteristic - B
Breaking Capacity – 10 kA
Rated voltage - 1 pole 240/415 V - Multiple pole 415 V. Frequency - 45 to 60 HZ,
Maximum operating voltage - 240 V
Fixing - Snap fixing on standard DIN rail profile EN 50 023 - 35 x 7.5

Make:- ABB/L & T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/HAGER
Mode of Measurement:- Measurement shall be taken on No. basis

Road Lighting Design Table

Sr No	Road, PWD-Daman	KM	Pole height	Bracket length	Road width	Installation	Spacing	Avg lux	Min / Avg	Min/ Max
1	Kachal Falia to check post	Na	8 mt	1mt	19 mt	opposite	21	25	0.55	0.4
2	Kadaya to Daman Char Rast	Na	8 mt	1mt	16	opposite	24	25	0.5	0.35
3	Dabhel Somnath Road	2.1	8mt	1 mt	20	center verge	22	25	0.52	0.25
4	Moti Daman Bridge	0.3	Na	Na	Na	opposite	Na	Na	Na	Na
5	Patlara Bridge	0.7	8 mt	1 mt	14	opposite	24	26	0.56	0.41
6	Kunta Boarder to Bhenslore	2.4 km	8	1 mt double side	25 mt	Center verge	25	25	0.45	0.23
7	Masal chowk to Bhenslore	3.8 km	8	1 mt single side	14 mt	opposite	27	20	0.45	0.3
8	Kachigaum to Zari Bridge	8.1 km	8	1 mt double side	21 mt	center verge	22	25	0.5	0.33
9	Somnath to Kachigam road	5.8 km	8	1 mt double side	22.5 mt	center verge	21	25	0.5	0.32
10	Bhimpore char rasta to Coastal	1.9 km	8	1 mt single side	14 mt	opposite	30	22	0.45	0.28
11	Zari Causeway to Bhemti	5 km	8	1 mt single side	13.5 mt	single side	18	22	0.45	0.27
12	Bhimpore to shital	Na	8	1 mt siggle	13 mt	single side	13	26	0.48	0.33

	chwokdi			side						

LIST OF APPROVED VENDOR OF ITEMS / EQUIPMENTS FOR STREETLIGHT

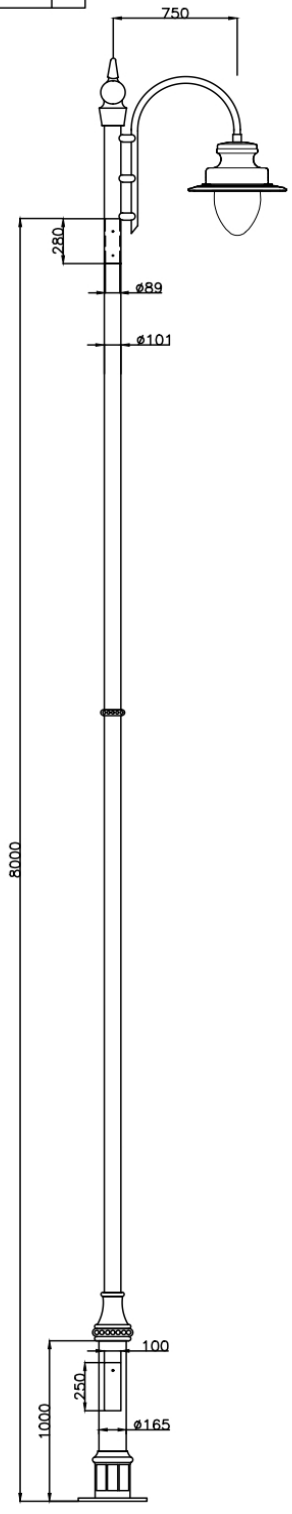
SR. NO.	LIST OF ITEMS	APPROVED MAKES
1	POLE	Neri 851/Rosa OW/Ligman/ Keselec /Simes or make as approved by the Engineer-in-charge.
2	DECORATIVE STREET LIGHT BRACKET	Neri 851/Rosa OW/Ligman/ Keselec /Simes or make as approved by the Engineer-in-charge.
3	LED STREET LIGHT FITTING	Neri 851/Rosa OW/Ligman/ Keselec /Simes or make as approved by the Engineer-in-charge.
4	XLPE ARMOURED CABLE	FINOLEX//POLYCAB/HAVELLS/KEI/RR /AVOCABCable
5	LUG	DOWELL's/ISMILE/3D/JAINSON
6	GLAND	COMET/HMI/SIEMENSE
7	MCB/ELCB/MCCB	ABB/C&S/L&T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/ HAGER
8	DIGITAL TIME SWITCH CONTACTOR	ABB/C&S/L&T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/ HAGER
9	FR PVC INSULATED WIRE	FINOLEX//POLYCAB/HAVELLS/KEI/RR /AVOCAB WIRE
11	DOUBLE WALL CORRUGATED (DWC POLYTHINE PIPE)	Duraline , Gemini , Sy-Ron , rex

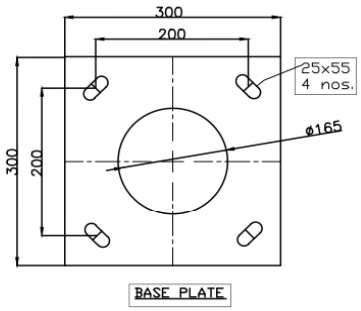
NOTE:-

DESIGN OF POLE AND BRACKET

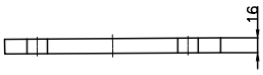
POLE PART NO.	REV
	0
BRACKET PART NO.(DOH)	REV
	0
BASE PLATE PART TEMP NO.	REV
	0

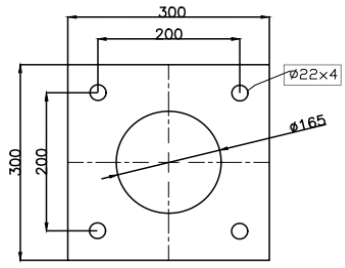
GENERAL ARRANGEMENT : FOR CUSTOMER APPROVAL ONLY





BASE PLATE





BASE PLATE TEMPLATE

SCALE 2:1

NOTE:

Material:-

1) Shaft - IS 1239 ERW pipe or equivalent.
2) Base plate- IS 2062 or equivalent.
3) All parts of Pole and Bracket assembly shall be Hot Dip Galvanised with avg. GI thickness 65µm.
4) Our standard color of Pole shall be RAL-7037.

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Keselec Lighting Private Limited

Keselec

ALL DIMENSION ARE IN mm	MATERIAL:		NAME	SIG.	DATE
TOLERANCE WHERE UNSPECIFIED IS: Follow ISO2768m	TITLE: CHATSWORTH POLE 8M- GI WITH BASE PLATE PAINTED FOR CASCADE BKT. 0.7M SOH WITH PORTO	DGN.	RS		14.01.20
		CHK.	SAN		14.01.20
		APPD.	TS		14.01.20

SCALE: NTS	CLIENT:	PART NO:	DWG NO: 2020-01-sk-006	REV: 0

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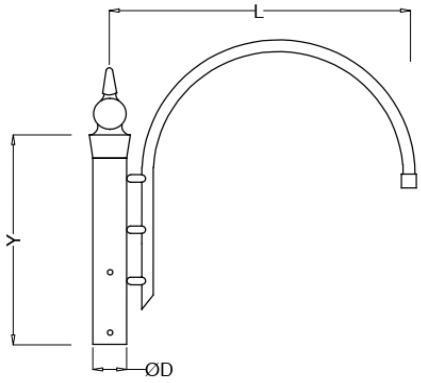
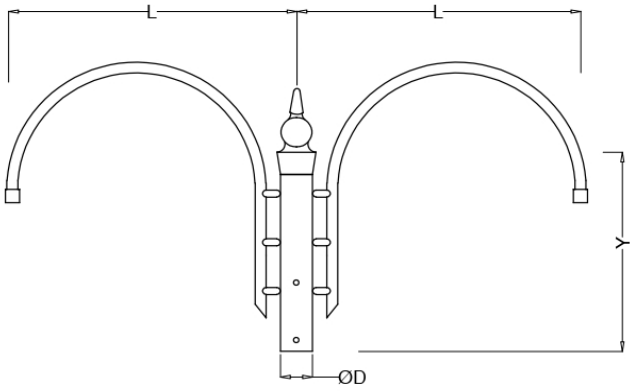
Technical Data Sheet	**CASCADE BRACKET** Elegant street light bracket	Keselec



Detail of single arm bracket

Sr no.	Length (L) (mm)	(Y) (mm)
1	500	950
2	750	950
3	1000	950

SR NO.	ØD	Suitable Pole
1	Ø76	Blenheim Pole Chatsworth Pole Nemo Pole (≤ 6m)
2	Ø89	Blenheim Pole Chatsworth Pole Nemo Pole (> 6m & upto 8m)
3	Ø114	Blenheim Pole Chatsworth Pole Nemo Pole (> 8m & upto 10m)



Detail of double arm bracket

Sr no.	Length (L) (mm)	(Y) (mm)
1	500	950
2	750	950
3	1000	950

SR NO.	ØD	Suitable Pole
1	Ø76	Blenheim Pole Chatsworth Pole Nemo Pole (≤ 6m)
2	Ø89	Blenheim Pole Chatsworth Pole Nemo Pole (> 6m & upto 8m)
3	Ø114	Blenheim Pole Chatsworth Pole Nemo Pole (> 8m & upto 10m)

Technical Specification

1) Design Standard EN40

2) Hot dip galvanised to ASTM A123, with minimum average GI coating of 65µm.

3) PU(Polyurethane) Painted with avg. DFT of 70µm, using very high quality paint & primer.

4) Marine grade paint is available at additional cost.

5) Use KOC (Keselec Ordering Code) for colour,texture & embellishment of brackets.

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Technical Data Sheet	**CASCADE BRACKET** Elegant street light bracket	Keselec

Keselec Ordering Code (KOC)

Example: CAB S B B CLP H2

Bracket Name → **Orientation** → **Length of Bracket** → **Pole height** → **Pole name code**

Bracket Name	Orientation	Length of Bracket	Pole height	Pole name code
CAB Cascade	S - Single Overhang	A - 500mm	A - ≤ 6m	**BLP** Blenheim
	D - Double Overhang	B - 750mm	B - > 6m ≤ 8m	**CWP** Chatsworth
	X - Custom	C - 1000mm	C - > 8m ≤ 10m	**NMP** Nemo
		X - Custom	X - Custom	

Main colour & Texture → **Embelishment colour** → **Marine grade paint** → **Accessories**

Main colour & Texture	Embelishment colour	Marine grade paint	Accessories
A1 - Black 600 - G	(Blank) - Not Applicable	(Blank) - Not Applicable	(Blank) - Not applicable
A2 - Black 600 - M	G - Gold	Y - Yes	Y - Special requirement
B1 - Harvest Green 231 - G	S - Silver		
C1 - Superior White - G	X - Custom		
C2 - Superior White - M			
D3 - Charcoal 012 - E			
E3 - Suzuki Silver 031 - E			
F1 - Signal Red 505 - G			
G3 - Copper Dust 035 - E			
H2 - RAL 7037 - M			
I3 - Pantone 8403C Grey - E			
XX - Custom			

G - Glossy
M - Matt
E - Metallic

Annexure- A

LED FIXTURES TECHNICAL PARTICULARS

The LED Street Light system will have to meet the following Specifications:

Sr No.	Description	PWD Requirment	Bidder's Specification
1	LED Fixture Make	Neri/Keselec/Rosa/Simes/Ligman or make as approved by the Engineer-in-charge. (Mentioned Only One Make)	
2	Street light pole & bracket	Neri/Keselec/Rosa/Simes/Ligman or make as approved by the Engineer-in-charge. (Mentioned Only One Make)	
3	Wattage of Fixtures	40W/75 W / 90/110 W	
4	Stated Luminaire efficacy of Fixture	Minimum 115 to 120 lm/watt	
5	Lumen output (as per LM79 report, mentioning current In mA)	**Bidder has to specify**	
6	Lumen Depriciation (L70 mentioning temperature in Deg C and	**Bidder has to specify**	

	current mA)		
7	Lighting Distribution Type	Cut Off/ Semi Cut Off type as per IESNA Type II/ III Lighting Distribution	
8	Maintenance Factor	0.85	

9	Correlated colour temperature (CCT)	4000K ± 300K (Cool White)	
10	Protection Class	IP 66, Class 1 as per IEC 60529.	
11	Impact Resistance of Protector	IK 09	
12	Avg. Ambient Temperature (as per IEC)	35 deg C	
13	Power Factor	> 0.95	
14	Housing Construction	Spun Aluminium with detail dimentions of to and bottom spun as per tender specification	
15	Protector	Single Piece Injection moulded PC protector	

16	Optical & Control gear compartment	IP66 (Optical Compartment) permanantely sealed and IP65 control gear compartment alongwith detail of opening of Optical and control gear compartment as per tender specs	
17	Disconnector	Electrical Disconnector to avoid shocks	
18	Application	Outdoor use	
19	System Efficacy - Lm/W at 35 deg C Amb. Temp. (supported by LM79 Test report from government approved lab)	Minimum 115 lm/watt at 80 CRI	
20	Warranty	1 Years replacement warranty on the SITC of LEDs, Fixture & Driver which covering material fixture,	

		finish and workmanship.	
21	Protection	Over Heat, Over Load, Short Circuit, HV Surge upto 10 KV	
21.1	Over Voltage protection	Should be able to withstand 320V for minimum 24 hours	
22	Earthing		
23	Certification	LM 79, LM 80, RoHS, EMC, EMI, CE	
24	Electrical Connector		

25	Usage Hours	Dusk to Down (12 Hrs.)	
26	LED life - time (LM 70)	> 50000 Hrs (with Min. 70 % Lumen Maintenance @ Ta = 35 deg C)	

27	Beam angle	To be specify	
28	LED	High Power White LED of 1 Watt and above	
29	Name of LED chip manufacturer	CREE / OSRAM / PHILIPS Lumileds / NICHIA (Mentioned Only One Make)	
30	LED chip model name and number	**Bidder has to specify**	
31	LM 80 report from the LED chip manufacturer on the lumen depreciation characteristics of the specific LED chip employed in the proposed luminaire product	**Bidder has to specify**	
32	LED junction temp. in deg C Ta= 35 deg C	>75	
33	Lens Material	Polycarbonate /PMMA	

34	Working Humdity	10% - 93 % RH	
35	Working Temp in deg C	05 to 50 deg C	
36	Driver Current	≤ 750 mA **OR** **Bidder has to specify**	
37	Driver Efficiency	>85%	
38	Expected lifetime of the LED driver used in the proposed luminaire	**Bidder has to specify**	

39	Total Harmonic Distortion (THD) Amp	< 15 %	
40	Input Voltage Range (Vac)	140-270 V AC with Auto resetting Safety Cut-off.	
41	Input Frequency	50 Hz +/- 3% Hz	
42	CRI (Color Rendering Index)	Greater or equal than 80	
43	Lumen Maintenance Factor	70% upto 50000 Burning Hrs. Life Span	
44	Uniformity Ratio	0.4	
45	IEC Compliance	Confirming to IEC61347-1 & IEC 61347-2-13	
		IEC 61547,610-3-2,CISPR-15	
46		Electrical safety certification such as ISI and CII, BIS.	

47	Test Reports:-	The tenderer must submit the test reports from Third party NABL accredited test laboratory of offered luminaires confirming to all type test as per IS 10322 (Part5 Sec 3)/ IS 16105/106 2012 and essentially LM79(For luminaire efficiency & performance) and LM80 (For LED Source life	

N O T E

1. All the Deputy Engineers, Agencies, Auditors and Divisional Accountant are hereby directed to take the note of the following contents.

   During the execution, the expenditure should not exceed the Administrative approval and Expenditure sanction or Technical sanction whichever is less. If the work requires the revised Administrative approval and revised Technical sanction, execution of work beyond Administrative approval and Technical sanction shall be allowed only on the receipt of revised Administrative approval and revised Technical sanction.

2. Copies of other drawings and documents pertaining to the works will be open for inspection by the tenderers at the office of the undersigned.

   Tenderers are advised to inspect and examine the site and its surrounding and satisfy themselves before submitting their tenders as to know the nature of the ground.

3. Right to accept or reject any or all the tenders without assigning any reasons thereof is reserved by the undersigned.

Executive Engineer,

P.W.D., W.D.I, DAMAN .

ADDITIONAL CONDITION – IV FOR CESS DEDUCTION AT SOURCE AT THE RATE OF 1% OF THE TOTAL COST OF CONSTRUCTION WORK UNDER THE BUILDING AND OTHER CONSTRUCTION WORKER'S WELFARE CESS ACT, 1996.

Under section 3 (2) of the Buildings and Other Construction Worker's Welfare Cess, Act,1996. there will be deduction at source for cess at the rate of 1% of total cost of construction work involved from each R.A. Bill of the work done by the Contractor being an employer and the same shall be transferred to the "Daman & Diu Building and Other Construction Workers welfare Fund" of the Board constituted by UT Administration of Daman & Diu by notification as per section 3 (3) of the Building and Other Construction Workers Welfare Cess Act, 1996.

Signature of the Contractor

Executive Engineer,

P.W.D., W.D.-I., DAMAN.

U N D E R T A K I N G

I, …… ……..…….…….……..…..…… have

(NAME OF CONTRACTOR)

Inspected the site of work, location, etc. at which this work is required to be executed and I, have clearly, without any doubt and confusion, understood the nature scope and extent of the work, with reference to Schedule "A" drawing and terms and condition furnished with the N.I.T. document and thereafter, I have worked out my tendered rates for cash item, independently, so as to execute this work completely, in all respect, without any further requirement / demand of any kind the P.W.D., and then submitted my tenders for the work of **" Providing decorative street lights at Daman** And as such, I hereby give an undertaking that I have the capacity to execute, at my tendered rates, this work completely, in all respect, as per the prescribed specification and upto the satisfaction of the Engineer-in-charge, within the stipulated time limit and as per the direction, and work programme of the Engineer-in-charge and I shall not suspend / abandon, this work, for any reason, and also, shall not create any dispute, claim or confrontation of any kind with the Department, for completion of this work at my tendered amount only.

SIGNATURE OF THE CONTRACTOR

DATED :

PLACE :

To,

The Executive Engineer,

P.W.D., Work Division No.-I,

DAMAN.

▪ DETAILED TECHNICAL SPECIFICATIONS

Sr. No.	ITEM NO.	DESCRIPTION
1	1	Supply of Decorative Luminaires BIS approved(alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protectorgrade with UVresistant IK 09 (Confirm by IS10322 report fromThird party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks.Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement.The luminaire is provided with Inbuilt autocutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 9000 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-75W. **Make :Keselec Porto-NU-75 watt/Neri 851/Rosa OW/Ligman/Simes**
2	2	Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped

		with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 10500 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-75W. **Make :Keselec Porto-NU-90 watt/Neri 851/Rosa OW/Ligman/Simes**
3	3	Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 11500 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. **Make :Keselec Porto-NU-100 watt/Neri 851/Rosa OW/Ligman/Simes**
4	4	Supply of 8 Mtr height decorative having cast iron decorativebase and pipe dia of 165 mm OD & 1 mtr long with decorative cast iron decorative reducer jointing with 89 mm OD straight pipe with ornamental cast iron decorative ring. Pole shall be mounted on square base plate 280*280 *14 mm thickness suitable for mounting on 4 nos foundation bolts. The Pole Shaft should be fabricated out of Steel tube of grade YST 240.and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft

		structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint.The streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure. **Make: Keselec /Neri/Rosa/Ligman/Simes as per drawingand matching specification.**
5	5	Decorative Single Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative single arm bracket span of 500 to 1000 mm(as per lighting illumination design) single side (As per attached drawing), Hot dip galvanized as per ASTM A123, with minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 9 to 14 kg and bracket is painted with High quality Marine grade paint,painted in closed paint booth chamber in closed area and control environment. Model: Chatsworth Pole with Cascade Bracket. **Make: Keselec /Neri/Rosa/Simes/Ligman as per drawing and matching specification.**
6	6	Decorative Double Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative Double arm bracket span of 500 to 1000 mm(as per lighting illumination design) each side (As per attached drawing) , Hot dipgalvanized as per ASTM A123,With minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 15 to 20 kg and bracket is painted with High quality Marine grade paint,painted in closed paint booth chamber in closed area and control environment. Model: Chatsworth Pole with Cascade Bracket. **Make :Keselec/Neri/ Rosa/Simes/Ligman as per drawing and matching specification**.
7	7	Supply of Decorative Luminaire with bracket for Urban lighting, body made of painted aluminium, The protector is made of PMMA with IK 07 (Confirm by IS10322 report from Third party NABL approved lab) Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab) Luminaire .Minimum Luminaire dimensions of 540* 350 mm . The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Minimum Luminaire efficacy is 110 lm/ watt system lumen 4400 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K, CRI>70 (Confirmed by LM79 report from Third party NABL approved lab) Luminaire is suitable for operating temperature (Ta) from -20° to 50°c. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. Require lighting design along with IES file of the luminaire. The bracket design should be made of hot-dip galvanized steel tube for suspended light fixtures as per drawing. **Make :Keselec Vale/Neri Light 21/Bega 77991 /Simes/Ligmanmake matching technical specification.**

8	8	Supply of streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure. The Pole Shaft should be fabricated out of Steel tube of grade YST 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint. 4 mtr pole with base diameter 140 mm up to 1 mtr height and rest 76 mm with base plate 250*250 *12 mm thickness, Height 4 meters. **Make : Keselec /Neri/Rosa/Ligman/Simesas per drawing and matching specification**
9	9	Supply of Decorative tree type structure(as per drawing)consist with Decorative curved cone shape LED fixtures.The decorative aesthetic curved cone design of LED fixture should be in eye catching yellow color. The decorative curved cone LED fixture should create spot which is suitable for public application. The curved shape fixture consist body of Polycarbonate materialwith impact resistance of IK08. Luminaire should be powered by 80W high power LED source optic for better light projection. Its optical compartment should have IP66 ingress protection. LED Driver of luminaire should have internal surge protection of 4KV and 10kV of external surge protection.Electronic driver is having power factor>0.90*, THD<20*%, CRI>70 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 8800 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K.Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours.The whole height of 8 Meter column structure should be combination of inclined 3 nos. of conical pole. The plant like design, decorative bracket made from YST-240 steel pipe with three different branches. The plant like designed bracket should have mounting arrangement for decorative curved LED fixtures. The structure should be completely hot-dip galvanized and surface finished with PU paint. The curved cone fixture should set at angle that create warm and soft atmosphere by near area of installation. Combination of three poles should have common bas plate of 1000 x 1000 mm size and thickness of 20 mm. There should be separate service doors at the bottom of each conical poles for electrical terminations, mounting MCB and connectors. **Make :Keselec/Hess/Bega**
10	10	Supply & fixing of EN-grade foundation J-BOLT M20x600mm long.
11	11	Service connection charges (3 -phase)
12	12	Mains with 15l marked, 1.5 KV grade electrolyte multi stranded, annealed copper conductor with heat resistant PVC Insulated conforms to IS 694, IEC-227 erected in existing pipe of following size (Specifically for control panel,relays, power switchgears, motor starters & control wiring) with requiredsize of copper lungs, nuts and bolts if required. (F) One wire 10.00 sq.mm.

13	13	Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 25 KA at 415V, having normal current rating up to 25A. to 100A with Fixed 4 thermal & magnetic release suitable to work on AC supply 50 c/s. with all internal No connections & complete erected in existing 16 G.M.S. housing. ICS = 100% of ICU only
14	14	Miniature circuit breaker single pole 6A to 32A. suitable to operate on 240V.A.C. system and having breaking capacity 10 KA to be erected in existing box.Confirming to IS 8828 / 1996 with ISI Mark. Cat. III.
15	15	Providing & erecting weather proof, dust & vermin proof. floor mounted front operated indoor type cubicle panel board having IP 64 protectionmade from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S. sheet for internal partitions with necessary supporting angles, flats 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, busbar, with suitable size of inter connecting PVC copper wire / copper - aluminum strips, rubber grommets, rib, bakelite control fuses for measuring instruments, earth bus & earth bolts, foundation flange & bolts "-base Plates, sufficient nos of hinged doors, handles with locking arrangement and rubber gasket 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 manufactures withfollowing size. (B)Locally fabricated panel board. With 350mm. depth
16	16	Supplying & erecting XLPE (15: 7098088 ISi unarmoured copper cable 1.1 KV grade to be erected as directed of following size. 3 core 2.5 sq.mm **make:-finolex , havells ,RR ,Poly Cab , kei**
17	17	Providing and erecting XLPE (IS: 7089088 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. 4 core 10 Sq.mm. **make:-finolex , havells ,RR ,Poly Cab , kei**
18	18	Providing and erecting XLPE (IS: 7089088 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. 4 core 16 Sq.mm. **make:-finolex , havells ,RR ,Poly Cab , kei**
19	19	Making trench in soft soil of suitable width of 75 cms deep for laying cable or locating the fault all over the run and backfilling the same and making the surface as normal grou
20	20	Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene (conforming to IS 14930 II)with necessary connecting accessories of same material at required depth for laying of cable. below ground / road surface for enclosing cable and back filling the same to make ground as per original.(A)50 mm dia **Make: Duraline , Gemini , Sy-Ron , rex**
21	21	Solderless 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. 16 sq.mm.
22	22	Supplying & erecting approved make Digital time switch having lithium cell 6years operative and operate battery backup 1 channel day clock with 14memory programme, suitable to operate on 240V + 5%, 16A with, floatingcontacts Minimum switching setup time 1 minimum & LCD display also comprised permanent ON/OFF switching Programming switches & housed in fire proof thermoplastic enclosure & transparent cover erected as required with necessary connection erected as directed.

23	23	Supplying & erecting power contactor for timer switch complete erected as per direction Cat. III. 4 Pole 440V 25 Amp.
24	24	Drilling the road without breaking the road surface(asphalt)for laying of cable for feeding power supply by making at both ends complete. (As Instructed by engineer in charge.)
25	25	Making trench in Hard murrum/Tar road of suitable width of 90 cms or rrequires depth for laying any cable or locating the fault all over the run and back filling the same and making the surfaces as normal as ground. (As Instructed by engineer in charge.)
26	26	Supplying & erecting in earthpit of minimum bore dia. 225mm size ASH or approved make Safe Earthing Electrode consisting Pipe-in- Pipe Technology as per IS 3043-1987 made of corrosion free G.I.Pipes having Outer pipe dia of 80 mm having 80-200 Micron galvanizing, Inner pipe dia of 40 mm having 200-250 Micron galvanizing, 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. [A] For electrical installation up to 440 V,Length of Pipe - 1 Mtr,Back filling compound - 1 Nos. of Bag of 15 Kgs.
27	27	Supplying and erecting backelite sheet 12mm thick HYLAM make on existing angle iron frame having the weight 1 KG & Size suitable to mount on JB with backelite connector strip 4 way - 2 nos./ 8 ways - 1 no. (incoming & out going cable) with stud type terminals suitable for 4 C x 16 sq.mm cable with 6-32 A, 240V MCB Double Pole Switch for Lighting Load (B curve) having 10KA breaking capacity & confirms to IS: 8828 in existing box having capacity as below to operate on 240 V, A. C. supply and having overload & short circuit tripping element and breaking capacity 10 kA conforming to IS/IEC 60898-1-2003 / IS: 8828 - 1996 having true contact indication and no line load bias with pollution degree class 3 and mechanical life is>100000 Operation for lighting Load with DIN rail with mounting clamp with nuts, bolts & washers suitable for erection on pole with cable clamps & earth bolt., for lighting Load (B Curve) in existing box as per Drawing , specification or instructed by engineer in chagre)

Pole Foundation for 8 Mtr pole :-

Providing M-20 / 1:2:4/ 1:4:8 Reinforce cement concrete foundation for 8 Mtr. & 70 % PCC from bottom including excavation for the pole of size **60 x 60 x 150 cms 500mm X 500mm or recommended by pole manufacturer.** Deep in below ground level with plinth of 45 cms x 45 cms(or 45 cms dia x 45 cms) or 1400 mm high upper ground level **with necessary curing FE-415 Steel** curing and finishing or as recommended by pole manufacturer in approved manner and as per drawing, specification & including excavation and as per instruction of Engineer In charge. Suitable to Item No.1 - (1 No. Per St. Lght Pole)

Make:- Same as per Pole Manufacturer / OEM Recommendation and approved drawing.

Mode of Measurement: Measurements shall be taken on No. basis.

Providing & fixing of 'J" type EN8 grad foundation bolts:-

S.I.T.C of set of 4 Nos. M 20 x 600 long 'J' type EN 8 grade foundation bolts same as recommended by OEM/ pole manufacturer along with templates for the above poles and as per specification.(1 Set. Per Pole)

The poles shall be suitably designed for ground and flange mounting. The J-bolt size shall be of 20mm diameter and of EN-8 GRADE. Each individual J-bolt shall be complete with washers and nuts (the washers and nuts quantity shall be recommended by the pole supplier) .

Mode of Measurement:- Measurements shall be taken on Set basis.

CABLE LUGS:-

Providing and fixing of Solderless 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 and as per specification. Size : For the Cable of 10 Sq. mm.&16 sq. mm.

Providing and fixing of Solderless Crimping Type Aluminium Lugs (4 Nos. per termination) conforming to IS suitable for 1 x 4.0 Core x 10 Sq. MM PVC Insulated Aluminium Armoured cable tail complete erected with insulating materials for each termination. - (2 Nos. Termination Per St. Light Pole & 8 Nos.per MSP)

Mode of Measurement:- Measurements shall be taken on No. basis.

SUPPLY, LAYING, TESTING AND COMMISSIONING OF ARMOURED XLPE CABLE AND UMARMOURED PVC CABLE :

Providing, laying, testing & commissioning mains with 1.1 kV grade FR PVC insulated ISI Marked Stranded unarmored Copper cable having Conductor 3 Wire 2.5 Sq. MM.,3 core round PVC sheathed in exising pipe/ in street light pole erected with 2.5 Sq. MM. copper conductor FR PVC insulated stranded wire of green colour for earth continuity.

Mode of Measurement: Measurements shall be taken on Rmt basis.

Providing, laying, testing & commissioning of XLPE (IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor suitable for 1.1 KV. grade to be laid 90 cms under ground or to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or on floor and making the ground as per original and as per specification. For street light between two poles & Service connections. Size : 1 x 4.0 Core x 10.0/16 Sq. MM with Class 2 conductor category. (For Streetlight between two poles & Service

Connections.)

Make:-finolex , havells ,RR ,Poly Cab , kei

Mode of Measurement: Measurements shall be taken on Rmt basis.

Refer General Technical Parameters as follows:-

1	**Dimensional Details**	Unit		
1.1	Number of Cores		4	4
1.2	Conductor Cross-Sectional Area	mm²	16	10
1.3	Type of Cable		A2XWY	A2XWY
1.4	Approximate Overall Diameter	mm	21.5	19.50
1.5	Approximate Cable Weight	kg/km	860	675
2	**Conductor :**			
2.1	Conductor Flexibility class		Class – 2	Class – 2
	Material		Stranded AL	Stranded AL
2.2	Number & Wire Diameter (For Guidance)	No/mm	07 / 1.73	07 / 1.35
2.3	Shape		Sector	Circular
3	**Insulation :**			
	Material		Cross Linked Polyethylene	Cross Linked Polyethylene
3.1	Average Thickness (Min.)	mm	0.7	0.7
3.2	Minimum Thickness	mm	0.53	0.53
3.3	Core Identification (As per Cl. No. 10.1 of IS:7098 (part-1)		R,Y,Blue& Black	R,Y,Blue& Black
4	**Extruded ST2 PVC Inner Sheath :**			
	Material		(As per Cl. No. 10.1 of IS:7098 (part-1)	(As per Cl. No. 10.1 of IS:7098 (part-1)
4.1	Minimum Thickness	mm	0.3	0.3
5	**Armour :**			
	Material		Galvanized Round Wire	Galvanized Round Wire
5.1	Size of Armour	mm	1.6	1.4
6	**Outer Sheath :**			
	Material		Polyvinyl Chloride ST2 Compound	Polyvinyl Chloride ST2 Compound
6.1	Minimum Thickness	mm	1.4	1.4
6.2	Colour		Black	Black
7	**Electrical Parameters**			
7.1	Rated Voltage Uo/U	kV	0.65/1.1	0.65/1.1

7.2	Maximum Conductor DC Resistance at 20°C	Ω/km	1.91	3.08
7.3	Permissible Cont. Current Rating in condition laid direct Air at 40°C	A	69	54
7.4	Permissible Cont. Current Rating in condition laid direct Underground at 40°C	A	74	57
7.5	Maximum Continuous Operating Temperature	°C	90	90
7.6	Maximum Conductor temperature during short circuit	°C	250	250
7.7	Short Circuit Current Rating of Conductor for 1sec.	kA	1.5	0.94
8	**Packaging**			
8.1	Standard Delivery Length	M	500/1000/1500	500/1000/1500
8.2	Tolerance	%	± 5	± 5
9	**Applicable Standards**			
9.1	Cable		IS 7098-1	IS 7098-1
9.2	Conductor		IS 8130	IS 8130
9.3	Insulation		IS 7098-1	IS 7098-1
9.4	Sheath Material		IS 5831	IS 5831
9.5	Test		IS : 7098 Part I (All acceptance Tests)	IS : 7098 Part I (All acceptance Tests)
10	**Installation Guidelines**			
10.1	Minimum Bending Radius	mm	12 x Overall Dia.	12 x Overall Dia.
10.2	Safe Pulling Force	N/mm²	30	30

Double Walled Corrugated (DWC) pipes :-

S.I.T.C of 50 mm nominal OD, Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II & & BSEN-50086) with necessary connecting accessories like coupler, Tee, L-Bow, etc. Required depth (90 cms) including excavation for laying of cable below ground/road surface enclosing/ passing of cable through DWC Pipe and back filling the same to make ground as per original & as per instruction of Engineer incharge- For Street light cable & Service Cable of 1 x 4 Cor x 10/16 Sq. mm.

Mode of Measurment:- Measurements shall be taken on Rmt. basis.

General :

Double wall corrugated (DWC) pipes should be made of High Density Polyethylene (HDPE) Raw material. The DWC HDPE pipes should be suitable for the LT cable installation works and should be in

as per IS-14930 & BSEN 50086 standards the standards The outer wall should be of corrugated type for the maximum load bearing strength and the inner wall must be smooth for easy installation of cables without any friction. The DWC Pipes should be as per IS14930 & BSEN 50086 standards. The pipes must be very good Resistance to Corrosion, chemically inert & environmentally safe, good impact strength , Light in weight and easy to handle and transport.. Different colors of DWC pipes can be used for cable identification.

Make: Duraline , Gemini , Sy-Ron , rex

Sr. No.	Outer diameter (mm)	Inner Diameter (mm)	Suggested - Average/ Minimum Weight (Grams / per mtr)
1	50	As Per Standard	As Per Standard

Supply, Erection, Testing and Commissioning (SETC) of Decorative Pole ,Luminaires and bracket.

1. Supply of Decorative Luminaires BIS approved(alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protectorgrade with UVresistant IK 09 (Confirm by IS10322 report fromThird party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks.Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement.The luminaire is provided with Inbuilt autocutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 9000 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-75W.

   Make :Keselec Porto-NU-75 watt/Neri 851/Rosa OW/Ligman/Simes

2. Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation.Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 10500 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. WATT-75W.

Make :Keselec Porto-NU-90 watt/Neri 851/Rosa OW/Ligman/Simes

3. Supply of Decorative Luminaires BIS approved (alongwith BIS certification of model streetlight family confirming to IS 10322 & LM79 parameters as per tender specs) for Urban lighting, body made of painted spun aluminium with Top spun aluminium minimum thickness of 1.5 mm,Dia should not exceed 435 mm and height should not exceed 265 mm ,weight should not be less than 1.35 kg and Lower spun aluminium of minimum thickness of 1.5 mm ,dia should not exceed 595 mm ,height should not exceed 40 mm and weight should not be less than 1 kg.Body of the fixture must be in two parts and fixture opening of the fixture is from front side for the ease of operation . The protector is made of single piece injection moulded polycarbonate with thickness of 3 mm and weight should not exceed 1 kg.Diamteter and height of the protector should not be more than 320 mm..Protector grade with UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Protector holding spun with a thickness of 3 mm with a minimum diameter of 420 mm and weight more than 0.3 kg. ring Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab). Luminaire offers tool free access to gear compartment with IP65 protection(Confirmed by IS10322 report from Third party NABL approved lab) Foam gasket for control gear assembly with minimum sixe of 18*12.Minimum Luminaire dimensions of 545* 550 mm . Luminaire can be installed as a suspended luminaire with 1 inch BSP stainless steel pipe with 2 chuck nuts is provided..The luminaire must be provided with Air vent plug in optical compartment.The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnector to avoid electrical shocks. Easy access to control gear compartment by opening

special draw latch with zinc plated material and hinge kind of arrangement. The luminaire is provided with Inbuilt auto cutoff arrangement to save from abnormal power fluctuation. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*%, CRI>80 and input voltage range from 120-227V AC at 50Hz. Minimum lumen 11500 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000 as per ANSI. presented with Dialux report and IES file of the luminaire System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20° to 50°C. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours.

Make :Keselec Porto-NU-100 watt/Neri 851/Rosa OW/Ligman/Simes

4. Supply of 8 Mtr height decorative having cast iron decorativebase and pipe dia of 165 mm OD & 1 mtr long with decorative cast iron decorative reducer jointing with 89 mm OD straight pipe with ornamental cast iron decorative ring. Pole shall be mounted on square base plate 280*280 *14 mm thickness suitable for mounting on 4 nos foundation bolts. The Pole Shaft should be fabricated out of Steel tube of grade YST 240.and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint.The streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure.

Make: Keselec /Neri/Rosa/Ligman/Simes as per drawingand matching specification.

5. Decorative Single Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative single arm bracket span of 500 to 1000 mm(as per lighting illumination design) single side (As per attached drawing), Hot dip galvanized as per ASTM A123, with minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 9 to 14 kg and bracket is painted with High quality Marine grade paint,painted in closed paint booth chamber in closed area and control environment. Model: Chatsworth Pole with Cascade Bracket.

Make: Keselec /Neri/Rosa/Simes/Ligman as per drawing and matching specification.

6. Decorative Double Arm Cascade bracket with 900 to 1000 mm height mounted on Pole. Decorative Double arm bracket span of 500 to 1000 mm(as per lighting illumination design) each side (As per attached drawing) , Hot dipgalvanized as per ASTM A123,With minimum Average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and prime. Bracket weight should be of 15 to 20 kg and bracket is painted with High quality Marine grade paint,painted in closed paint booth chamber in closed area and control

environment. Model: Chatsworth Pole with Cascade Bracket.
Make :Keselec/Neri/ Rosa/Simes/Ligman as per drawing and matching specification.

7. Supply of Decorative Luminaire with bracket for Urban lighting, body made of painted aluminium, The protector is made of PMMA with IK 07 (Confirm by IS10322 report from Third party NABL approved lab) Permanently sealed optical compartment with IP66 protection.(Confirmed by IS10322 report from Third party NABL approved lab) Luminaire .Minimum Luminaire dimensions of 540* 350 mm . The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. Fixture is having external surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Minimum Luminaire efficacy is 110 lm/ watt system lumen 4400 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K, CRI>70 (Confirmed by LM79 report from Third party NABL approved lab) Luminaire is suitable for operating temperature (Ta) from -20° to 50°c. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. Require lighting design along with IES file of the luminaire. The bracket design should be made of hot-dip galvanized steel tube for suspended light fixtures as per drawing.

Make :Keselec Vale/Neri Light 21/Bega 77991 /Simes/Ligmanmake matching technical specification.

8. Supply of streetlight pole shall be of 'composite' construction designed to withstand specified 'dead load' pertaining to the luminaire and its mounting accessories and 'wind load' corresponding to a basic wind speed of 169kmph without any deformation or damage to the structure. The Pole Shaft should be fabricated out of Steel tube of grade YST 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of Steel A36/A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others). Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions. The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 microns. The painting shall be carried out by experienced and trained technicians using proven and established painting procedure. Only 'controlled' paint drying process shall be used to ensure proper adhesion and finish of the paint. 4 mtr pole with base diameter 140 mm up to 1 mtr height and rest 76 mm with base plate 250*250 *12 mm thickness, Height 4 meters. **Make : Keselec /Neri/Rosa/Ligman/Simesas per drawing and matching specification**

9. Supply of Decorative tree type structure(as per drawing)consist with Decorative curved cone shape LED fixtures.The decorative aesthetic curved cone design of LED fixture should be in eye catching yellow color. The decorative curved cone LED fixture should create spot which is suitable for public application. The curved shape fixture consist body of Polycarbonate materialwith impact resistance of IK08. Luminaire should be powered by 80W high power LED source optic for better light projection. Its optical compartment should have IP66 ingress protection. LED Driver of luminaire should have internal surge protection of 4KV and 10kV of external surge protection.Electronic driver is having power factor>0.90*, THD<20*%, CRI>70 and input voltage

range from 120-227V AC at 50Hz. Minimum lumen 8800 lumen (Confirmed by LM79 report from Third party NABL approved lab) in CCT range of 4000K.Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours.The whole height of 8 Meter column structure should be combination of inclined 3 nos. of conical pole. The plant like design, decorative bracket made from YST-240 steel pipe with three different branches. The plant like designed bracket should have mounting arrangement for decorative curved LED fixtures. The structure should be completely hot-dip galvanized and surface finished with PU paint. The curved cone fixture should set at angle that create warm and soft atmosphere by near area of installation. Combination of three poles should have common bas plate of 1000 x 1000 mm size and thickness of 20 mm. There should be separate service doors at the bottom of each conical poles for electrical terminations, mounting MCB and connectors.
Make :Keselec/Hess/Bega

TERMINATION PLATE WITH MCB:-

Supplying & erecting of backelite sheet 12 mm thick HYLAM make on existing angle iron frame, having the weight 1 KG & Size suitable to mount on JB with bakelite connector strip 4 way - 2 Nos. / 8 ways- 1 No. (incoming & outgoing cable) with stud type terminals suitable for 4 C x 10 Sq. mm. cable and double pole 6 A to 32 A switch to operate on 240 V, A. C. supply and having overload & short circuit tripping element and breaking capacity 10 kA conforming to IS: 8828/ 1996 IS/IEC 60898-1-2003 having true contact indication and no line load bias with pollution degree class 3 and mechanical life is>100000 Operation for lighting Load (C Curve) with DIN rail and mounting clamp with nuts, bolts & washers suitable for erection on pole with cable clamps & earth bolt for lighting Load (B Curve) in existing box as per Drawing , specification or instructed by engineer in chagre) (1 Set. Per Street light Pole).
Technical Data 2 Pole MCB :- Number of poles - 2, Characteristic - B
Breaking Capacity – 10 kA
Rated voltage - 1 pole 240/415 V - Multiple pole 415 V. Frequency - 45 to 60 HZ,
Maximum operating voltage - 240 V
Fixing - Snap fixing on standard DIN rail profile EN 50 023 - 35 x 7.5

Make:- ABB/L & T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/HAGER
Mode of Measurement:- Measurement shall be taken on No. basis

LIST OF APPROVED VENDOR OF ITEMS / EQUIPMENTS FOR STREETLIGHT

SR. NO.	LIST OF ITEMS	APPROVED MAKES
1	POLE	**Keselec /Neri 851/Rosa OW/Ligman/Simes**
2	DECORATIVE STREE LIGHT BRACKET	**Keselec /Neri 851/Rosa OW/Ligman/Simes**
3	LED STREET LIGH FITTING	**Keselec /Neri 851/Rosa OW/Ligman/Simes**
4	XLPE ARMOURED CABLE	FINOLEX//POLYCAB/HAVELLS/KEI/RR Cable
5	LUG	DOWELL's/ISMILE/3D/JAINSON
6	GLAND	COMET/HMI/SIEMENSE
7	MCB/ELCB/MCCB	ABB/L&T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/HAGER
8	DIGITAL TIME SWITCH CONTACTOR	ABB/L&T/SIMENSE/HAVELLS/LEGRAND/SCHNEIDER/HAGER
9	FR PVC INSULATED WIR	FINOLEX//POLYCAB/HAVELLS/KEI/RR Cable
11	DOUBLE WAL CORRUGATED (DWC POLYTHINE PIPE	**Duraline , Gemini , Sy-Ron , rex**

Special condition of Manufacturer

Documents require to be submitted alongwith tender for Technical Evaluation:

1) LM79 report from Third party NABL approved lab complying tender specification

2) IS10322 (IP (Optical & control gear) ,IK & Thermal) report from Third Party NABL approved lab complying tender specification.Proposed luminaire must be BIS certified.BIS certificate of model famiily streetlight complying IS 10322 and LM79 report from matching tender submissionmust be attached alongwith bid

3) Tender specification complying letter from manufacturer both for luminaire as well as pole alongwith manufacturer authrorisation letter for participation of tender,Bidder must propose only one make from the approved list

4) LM80 report of LED to be used

5) Lighting design alongwith IES file of the luminaire.

6) Catalogue of offered products matching and highlighting tender specification

7) Drawing of Pole /bracket signed and stamped by Manufacturer

8) Luminaire manufacturer must be in lighting business from last ten years In India and having its own manufacturing facility in India.

9) Manufacturer must have supplied Minimum 50000 streetlight led luminaire in India and out of which Minimum 2000 Nos of same shape LED luminaire in last 10 years in India under its own brand name…PO copies and undertaking from company on stamp paper must be provided alongwith tender copy to be presented as a proof alongwith tender

10) Manufacturer must have supplied Minimum 25000 Nos of PU painted poles/brackets in India in last ten years and 2000 Nos of same family of poles in last 10 years in India under its own brand name…PO copies and undertaking from company on stamp paper must be provided as a proof alongwith tender

11) Price bid of bidder shall only be open after technical evaluation of document as per tender specification….Bidder failing submitting above document will be rejected and not consider for technical evaluation.

Necessary documents of the Luminaire Manufacturer to be submitted by bidder alongwith tender document as below:

(i) Luminaire Manufacturer should have average orders for streetlight luminaires Worth not less than, i.e. Rs.1000 lac per year over the last 10 years.

(ii) The Luminaire manufacturer should be in the business of Lighting Business for at least last 10 years. Copies of orders to be submitted with summary sheet as a proof for the same.

(iii) Average annual turnover of the Luminaire Manufacturer should be of Rs. 3000 lac (min.) per year for the last 10 years. Audited CA certified copy claiming the same as a proof must be attached with tender document

(iv) Luminaire manufacturer shall possess own manufacturing facility in India from last ten years. Photographs of the same shall have to be submitted along with the tender.The company must posses ISO 9001 and 14001 in the stream of design,marketing and manufacturing of LED luminaire and poles/brackets..Certificate of registration complying the same must attached with tender document.

SCHEDULE A

Name work : Decorative street lights at Daman District.

Sr. No.	Item	Total Qty	Unit	Rate	Amount
1	Mains with ISI marked, 1.5 KV grade electrolyte multi stranded, annealed copper conductor with heat resistant PVC insulated conforms to IS 694, IEC -227 erected in existing pipe of following size (Specifically for control panel, relays, power switchgears, motor starters & control wiring) with required size of copper lungs, nuts and bolts if required.One wire 10.00 sq. mm	1875	mtr.	0	0
2	Supplying and erecting Flexible PVC insulated multistrand multicore 1.1 kv grade ISI marked copper wires c	33622	mtr.	0	0
3	Supplying & erecting following spare parts for panel mounting Switch Disconnector Fuse Units. Neutral Link for. (i) 32 / 63 / 125 Amps.	75	ea	0	0
4	Approved make Three pole moulded case circuit breaker having breaking capacity ICU of 25 K.A. at 415V, having normal current rating up to 25A. to100A. 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.	75	ea	0	0
5	Miniature circuit breaker single pole 6A to 32A. Suitable to operate on 240V. A.C. system and having breaking capacity 10 KA to be erected in existing box. Confirming to IS 8828 / 1996 with ISI Mark.	3417	ea	0	0
6	Providing and erecting required size HOT deep Galvanised strip for earthing of H.T. OCB / ACB / Transformer LT panel board, Motors etc. using Proper clamp.	885	kg	0	0
7	Supplying & erecting earth pit of minimum bore dia. 150mm size, approved make Safe Earthing Electrode consisting Pipe-in-pipe Technology as per IS 3043-1987 made of corrosion free G.I. Pipe having Outer pipe dia of 50mm having 80-200 Micron galvanizing, Inner pipe dia of 25mm having 200-250 Micron galvanizing, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications.	150	ea	0	0
8	Cast iron earth plate size 30 x 30 x 0.35 cms. hurried in specially prepared 2.5 Mtr. deep earth pit complete with necessary G.I. strip in G.I. pipe 2 Mtr. long with coupling and G.I. plug for earthing of switch gear, conduit run or power plug etc.	2715	ea	0	0

9	Providing and erecting XLPE (IS: 7089) (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. 4 core 16 Sq. mm	74345	mtr.	0	0
	4 core 25 Sq. mm.	4000	mtr.	0	0
10	Marking trench in soft soil of suitable width of 90 cms. Deep for laying cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	3950	mtr.	0	0
11	Marking trench in Hard murrum / Tar Road of suitable width of 90 cms. or required depth for laying and size of cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	57221	mtr.	0	0
	Add if additional machineries like hammer driller or JCB use (Add)	3796	mtr.	0	0
11	Providing & laying R.C.C. hume pipe for cable to be laid 90cms. Below ground across the road crossing or on floor with necessary material in an approved manner and making the ground as per original. 100 mm dia.	606	mtr	0	0
12	Supplying following size of Light duty “A” Class G.I. Pipe & erecting as directed by Engineer – in – charge 50 mm. dia.	1296	mtr	0	0
13	Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene (conforming to IS 14930 II) with necessary connecting accessories of same material at required depth for laying of cable. Below ground / road surface for enclosing cable and backfilling the same to make ground as per original 50 mm. dia.	70543	mtr	0	0
14	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. 2 to 4 core 25 Sq. mm.	325	ea	0	0
15	Solderless crimping type Aluminium lugs confirming 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. 16 Sq. mm.	22232	ea	0	0
	25 Sq. mm.	584	ea	0	0

16	Terminal board of size 5.0 x 127 x 152.4mm. bakelite sheet with 15Amp. kitkat pattern porcelain fuse unit with suitable brass studs with nuts, washers and clamps of size 25mm x 3mm suitable for. Pole painted with one coat of red lead paint.	2455	ea	0	0
17	Foundation for burial type pole Providing M-20/1:2:4 cement concrete foundation & 70% PCC from bottom including excavation for the pole of size 45 x 45 x 100 cms. Deep in below ground level with plinth of 45cms x 45cms (or 45 cms dia x 45 cms) high upper ground level with necessary curing and finishing in approved manner. (for 4 & 6 mtr pole).	293	ea	0	0
18	Providing M-20/1:2:4 cement concrete foundation & 70% PCC from bottom including excavation for the pole with 60 x 60 x 120 cms. Deep in below ground level plinth of 45cms x 45cms (or 45 cms dia x 45 cms) high upper ground level with necessary curing and finishing in approved manner. (for 7.5 & 8/8.5 mtr pole).	2162	ea	0	0
19	Supplying and erecting MINI SECTION PILLAR 75 x 60 x 45 cms. fabricated from 16 Gauge. T	75	ea	0	0
20	Supplying and erecting bakelite sheet 12mm thick HYLAM make on existing angle iron frame.	374	kg	0	0
21	Fabricating the box type item made from M.S. Sheet with A.I. supports wings doors, handles other hardware materials as per required design finishing with three tank powder coating processed painted erected as directed including minor civil work.	1625	kg	0	0
22	Supplying & erecting approved make Digital time switch having lithium cell 6 years operative and operate battery backup 1 channel day clock with 14 memory programme , suitable to operate on 240V + 5%, 16A with, floating contacts Minimum switching setup time 1 minimum & LCD display also comprised permanent ON/OFF switching Programming switches & housed in fire proof thermoplastic enclosure & transparent cover erected as required with necessary connection erected as directed.	75	ea	0	0
23	Supplying & erecting power contactor for time switch complete erected as per direction Cat. III. 4 Pole 440V 40 Amp.	75	ea	0	0
24	Providing I.S mark H.Y.S.D reinforcement for R.C.C work including, bending and placing in position complete upto foor two level.	4841.38	kg	0	0

25	Supply, erecting, testing & commissioning of Decorative Luminaires for Urban lighting, body made of painted spun aluminum, the protector is made of polycarbonate grade UV-resistant (IK 08)with third party NABL report, permanently sealed optical compartment with IP66 protection supported by third party NABL report. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system, PMMA lenses with wide photometry for increased pole spacing. Fixture is having a surge protection of 10KV. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Luminaire efficacy is 117 lm/ watt system lumen greater than 4700 lumen with third party NABL report in CCT range of 4000k as per ANSI. System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20 to 50c tested in third party NABL Lab. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. Make: Keselec, Model: PORTO 40W LED, as per design & drawing and as directed by the Engineer in-charge. (Eq. makes: Philips, Bajaj, Crompton, Havells, Wipro,Philips, Neri,Orient.)	293	ea	0	0
26	Supply, erection, testing & commissioning of Decorative Luminaires Watt: 75 W Make: Keselec, Model: PORTO NU 75W LED/ Bajaj/ Philips/ Wipro/ Havells, complying above specification as per drawing and as directed by Engineer-in-charge. Supply, erecting, testing & commissioning of Decorative Luminaires for Urban lighting, body made of painted spun aluminium, The protector is made of polycarbonate grade UV-resistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system, PMMA lenses with wide photometry for increased pole spacing.	498	ea	0	0
	Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360 V AC for 2 hours. MakePhilips/ Neri/Orient , Model: PORTO 75W LED, Bajaj Borage 75W led or Surya SLE PT 75W VEGA company makes as per design & drawing and as directed by the Engineer-in-charge. Supply, erection, testing & commissioning of Decorative with BIS certified luminaire and with BIS certification (as per drawing) for urban lightening, body made of painted spun aluminium, the deep bowl protector is made of polycarbonate grade UV resistant IK 09 (confirm by IS10322 report from third party NABL approved lab) Permanently sealed optical compartment with IP66 protection. (confirmed by IS102322 report form third party NABL approved lab) Luminaire offers tool free access to gear compartment with IP65 protection (confirmed by IS 10322 report from third party NABL approved lab). Minimum Luminaire dimension of 540* 550 mm luminaire can be installed as a suspended luminaire. The Luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnect or to avoid electrical shocks.	910	ea	0	0

	Lux, with Avg. uniformity- 65%, in/Max- 45%, MF-0.85 for 8 mt mounting height and 18 mt spacing (central or side). With maximum 1 mt arm bracket and with 0 degree inclination presented with road lightening design report and IES file of the luminaire system life of 50000 burning hours with 70% of initial lumens maintained.Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320 Supply, erection, testing & commissioning of 320 V AC for 2hours. Watt: 90 W Make: Keselec make, Model: PORTO NI 90 W LED/ Bajaj/ Philips/ Havells/ Wipro/Neri/Orient complying tender specification and as directed by the Engineer-in-charge. Supply erceting tesing and ccommsiioning of Decorative luminaous (as per drawing) for urban lighting body made of painted spun aliminiyum.	1138	ea	0	0
	Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360V AC for 2 hours. Watt:110W Make: Keselec, Model: PORTO NU 110 W LED/ Bajaj/ Philips/Neri/Orient complying above specification as per drawing and as directed by Engineer-in-charge. Supply, erecting, testing & commissioning of Decorative Luminaire for Urban lighting, body made of painted spun aluminium, The deep bowl protector is made of polycarbonate grade UV resistant IK 09 (Confirm by IS10322 report from Third party NABL approved lab) Permanently sealed optical compartment with IP66 protection. (Confirmed by IS10322 report from Third party NABL approved lab) Luminaire offers tool free access to control gear compartment with IP65 protection (Confirmed by IS10322 report from Third party NABL approved lab). Minimum Luminaire dimensions of 545 * 550 mm. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with PMMA lenses with wide photometry for increased pole spacing. The luminaire is provided with disconnect or to avoid electrical shocks. Easy access to control gear compartment by opening special latch kind of arrangement.	1090	ea	0	0
30	Decorative single Arm Cascade bracket with 940 mm height mounted on Pole. Decorative single arm bracket of 1 mt single side (as per attached drawing) as per EN 40 standard, hot dip galvanized as per EN-40 standard, hot dip galvanized as per ASTM A123, with minimum average GI Coating of 65 micron. PU painted with DFT of 70 micron using with high quality paint and primer. Bracket weight should not be lesser than 14 kg and bracket is painted with high quality Marine grade paint, painted in closed paint booth chamber in closed and control environment. Model: Chatsworth Pole with Cascade bracket. Make: Keselec/ Bajaj/ Philips/ Neri/Orientcomplying technical specification.	1979	ea	0	0
31	Decorative Double Arm Cascade bracket with 940 mm height mounted on Pole. Decorative Double arm bracket of 1 mt each side (as per attached drawing) as per EN-40 standard, hot dip galvanized as per ASTM A123, with minimum average GI coating of 65 micron, PU painted with DFT of 70 micron using with high quality paint and primer. Bracket weight should not be lesser than 20 kg and bracket is painted with high quality Marine grade paint, painted in closed paint booth chamber in closed and control environment. Model: Chatsworth pole with cascade Bracket. Make: Keselec/ Bajaj/ Philips/ Neri/Orient complying technical specification	925	ea	0	0

33	Supply of 8 mtr height decorative Chatsworth pole having cast iron decorative octagonal base and pipe dia of 165 mm OD & 1 mtr long with decorative cast iron reducer jointing with 89 mm OD straight pipe with ornamental cast iron ring. Pol shall be mounted on square base plate 280*280*14 mm thickness suitable for mounting on 4 nos. foundation bolts. The pole shaft should be fabricated out of steel tube of grade YSt 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of steel A36/ A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP test. Supply, erecting, testing & commissioning of Decorative Luminaires for Urban lighting, body made of painted spun aluminium, The protector is made of polycarbonate grade UV-resistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system, PMMA lenses with wide photometry for increased pole spacing. The pole shall be provided with an opening at the bottom with removable cover for providing connectors, MCB, etc. (to be supplied by others) Appropriate reinforcement shall be provided to compensate for the loss of section at this point to ensure overall structural stability of the pole under specified operating conditions.The pole shaft structure shall be hot dip galvanized through single dip process as per ASTM A123 and minimum average coating shall not be less than 65 microns. No mechanical operation, such as welding, drilling, etc. should be carried out on the pole structure post hot dip galvanizing. Poles using pre galvanized steel tubes or hot dip galvanized through double dip process are not acceptable.Complete pole shall be treated with high quality primer and thereafter coated with Polyurethane paint to minimum average DFT of 70 Microns.	1300	ea	0	0
34	Supply, erection, testing & commissioning of 8 Mtr height Single arm type decorative Chatsworth pole having cast iron decorative octagonal base and pipe dia of 165 mm dia & 1 mtr long with decorative cast iron reducer jointing with 89 mm OD Straight pipe with ornamental cast iron ring. Pole shall be mounted on Square base plate 280*280*14 mm thickness suitable for mounting on 4 nos foundation bolts. The pole shaft should be fabricated out of steel tube of grade YSt 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the materials. Structurally designed base plate of steel A36/ A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP Test.	100	ea	0	0

	(Rates assumed under Buy Back Scheme of old poles. Rates is after deducting the price of old poles.) Supply of 8 mtr height decorative Chatsworth pole having cast iron decorative octagonal base and pipe dia of 165 mm OD & 1 mtr long with decorative cast iron reducer jointing with 89 mm OD straight pipe with ornamental cast iron ring. Pol shall be mounted on square base plate 280*280*14 mm thickness suitable for mounting on 4 nos. foundation bolts. The pole shaft should be fabricated out of steel tube of grade YSt 240 and batch test reports for chemical and mechanical properties of material should be submitted along with the bid. Structurally designed base plate of steel A36/ A572-50 or equivalent should be welded with the pole shaft. The welding shall be of high quality, carried out by qualified welders using approved welding procedures and tested for its quality through NDT method, such as DP test.	1048	ea	0	0
36	Supply & fixing of EN-grade foundation bolt M20 x 600mm long. (4 Nos.)	1626	set	0	0
37	Services connection charges (3-Phase).	75	ea	0	0
38	Removal of street light pole 9 mtr. long with fixtures & stacking at the lead of upto 10 Km.	117	ea	0	0
39	Horizontal boring below the road more than 0.9 mts. Depth with 4" size HDPE pipe for cable crossing complete	30	mtr	0	0

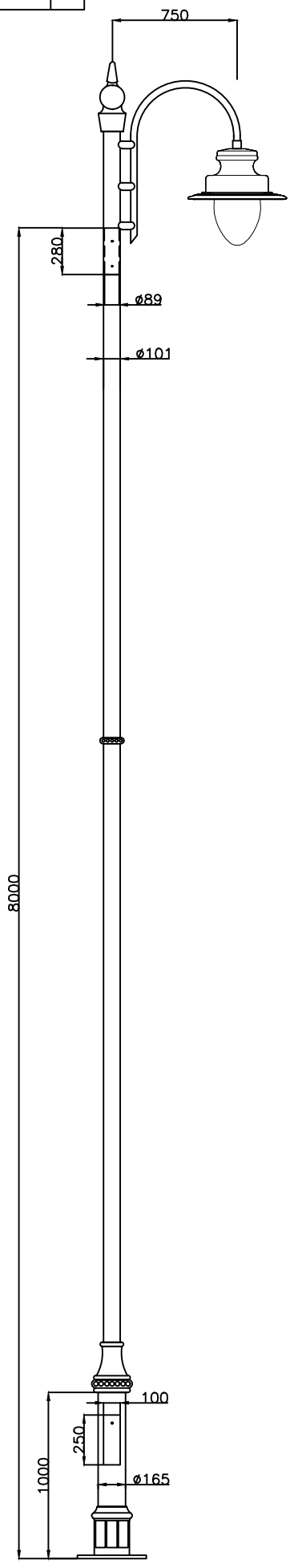
Signature of Contractor

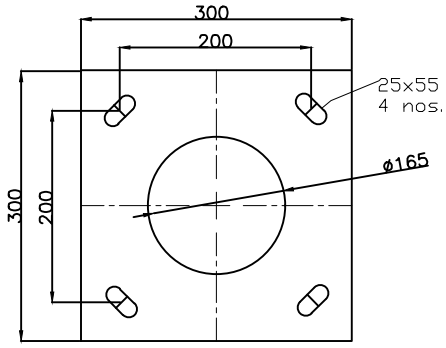
Asst. Surveyor of Works
PWD, WD-I, Daman.

Executive Emngineer
PWD, WD-I, Daman.

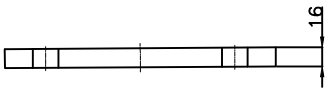
POLE PART NO.	REV
	0
BRACKET PART NO.(DOH)	REV
	0
BASE PLATE PART TEMP NO.	REV
	0

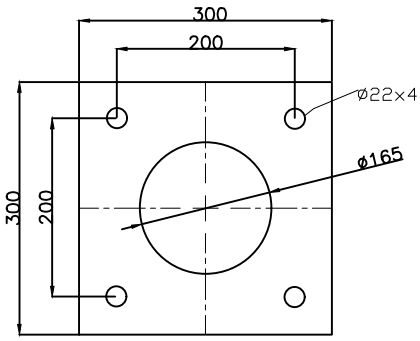
GENERAL ARRANGEMENT : FOR CUSTOMER APPROVAL ONLY





BASE PLATE





BASE PLATE TEMPLATE

SCALE 2:1

NOTE:

Material:-

1) Shaft - IS 1239 ERW pipe or equivalent.

2) Base plate- IS 2062 or equivalent.

3) All parts of Pole and Bracket assembly shall be Hot Dip Galvanised with avg. GI thickness 65µm.

4) Our standard color of Pole shall be RAL-7037.

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Keselec

ALL DIMENSION ARE IN mm	MATERIAL:		NAME	SIG.	DATE
TOLERANCE WHERE UNSPECIFIED IS: Follow ISO2768m	TITLE: CHATSWORTH POLE 8M- GI WITH BASE PLATE PAINTED FOR CASCADE BKT. 0.7M SOH WITH PORTO	DGN.	RS		14.01.20
		CHK.	SAN		14.01.20
		APPD.	TS		14.01.20

SCALE: NTS	CLIENT:	PART NO:	DWG NO: 2020-01-sk-006	REV: 0

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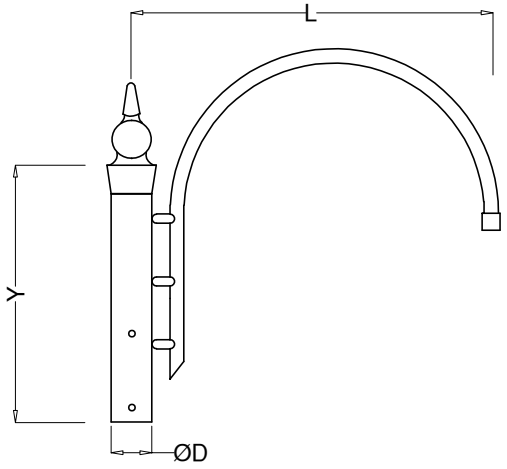
Technical Data Sheet

CASCADE BRACKET

Elegant street light bracket

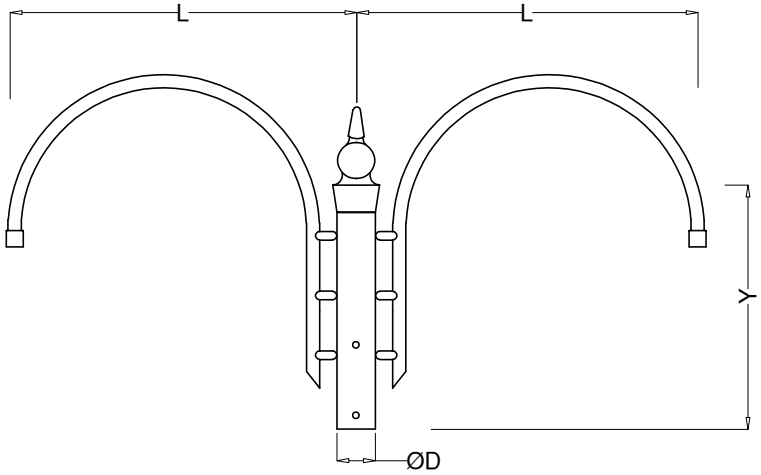
Keselec



Detail of single arm bracket

Sr no.	Length (L) (mm)	(Y) (mm)
1	500	950
2	750	950
3	1000	950

SR NO.	ØD	Suitable Pole
1	Ø76	Blenheim Pole Chatsworth Pole Nemo Pole (≤ 6m)
2	Ø89	Blenheim Pole Chatsworth Pole Nemo Pole (> 6m & upto 8m)
3	Ø114	Blenheim Pole Chatsworth Pole Nemo Pole (> 8m & upto 10m)



Detail of double arm bracket

Sr no.	Length (L) (mm)	(Y) (mm)
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2	750	950
3	1000	950

SR NO.	ØD	Suitable Pole
1	Ø76	Blenheim Pole Chatsworth Pole Nemo Pole (≤ 6m)
2	Ø89	Blenheim Pole Chatsworth Pole Nemo Pole (> 6m & upto 8m)
3	Ø114	Blenheim Pole Chatsworth Pole Nemo Pole (> 8m & upto 10m)

Technical Specification

1) Design Standard EN40

2) Hot dip galvanised to ASTM A123, with minimum average GI coating of 65µm.

3) PU(Polyurethane) Painted with avg. DFT of 70µm, using very high quality paint & primer.

4) Marine grade paint is available at additional cost.

5) Use KOC (Keselec Ordering Code) for colour,texture & embellishment of brackets.

Keselec Ordering Code (KOC)

Example: CAB S B B CLP H2

Bracket Name
- **CAB** Cascade

Orientation
- S - Single Overhang
- D - Double Overhang
- X - Custom

Length of Bracket
- A - 500mm
- B - 750mm
- C - 1000mm
- X - Custom

Pole height
- A - ≤ 6m
- B - > 6m ≤ 8m
- C - > 8m ≤ 10m
- X - Custom

Pole name code
- **BLP** Blenheim
- **CWP** Chatsworth
- **NMP** Nemo

Main colour & Texture
- A1 - Black 600 - G
- A2 - Black 600 - M
- B1 - Harvest Green 231 - G
- C1 - Superior White - G
- C2 - Superior White - M
- D3 - Charcoal 012 - E
- E3 - Suzuki Silver 031 - E
- F1 - Signal Red 505 - G
- G3 - Copper Dust 035 - E
- H2 - RAL 7037 - M
- I3 - Pantone 8403C Grey - E
- XX - Custom

G - Glossy
M - Matt
E - Metallic

Embelishment colour
- (Blank) - Not Applicable
- G - Gold
- S - Silver
- X - Custom

Marine grade paint
- (Blank) - Not Applicable
- Y - Yes

Accessories
- (Blank) - Not applicable
- Y - Special requirement

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Signature Not Verified
Digitally signed by MUKESHCHANDAR D GOHIL
Date: 2021.07.08 17:11:52 IST
Location: Daman and Diu-DN